ASAHI PENTAX
AUTO 110

REPAIR MANUAL

PRODUCT NO. 24100
PARTS LIST
AND
SERVICE MANUAL
AND
PRODUCT 66502
ASAHI PENTAX 110 WINDER
PARTS LIST

ASAHI KOGAKU

TOKYO JAPAN

PRODUCT No.24100

ASAHI PENTAX auto 110

A2

Modification Changes
January, 1979

Product No. 24100 — Asahi Pentax Auto 110

Old		New
0-A102	Front board assembly	1-A102
A111	Collar	A111-01
A112	Release lock lever spring	A112-01
C3	1st wind gear	C3-01
C20	2nd wind gear shaft	C20-01
C21(A,B,C,)	2nd wind gear	C21-01(A,B,C)
C22	Release restriction plate	C22-01
M5	LED frame	M5-01
M1	Eyepiece frame	M1-01
T100	P.C. board pattern assembly	T100-01

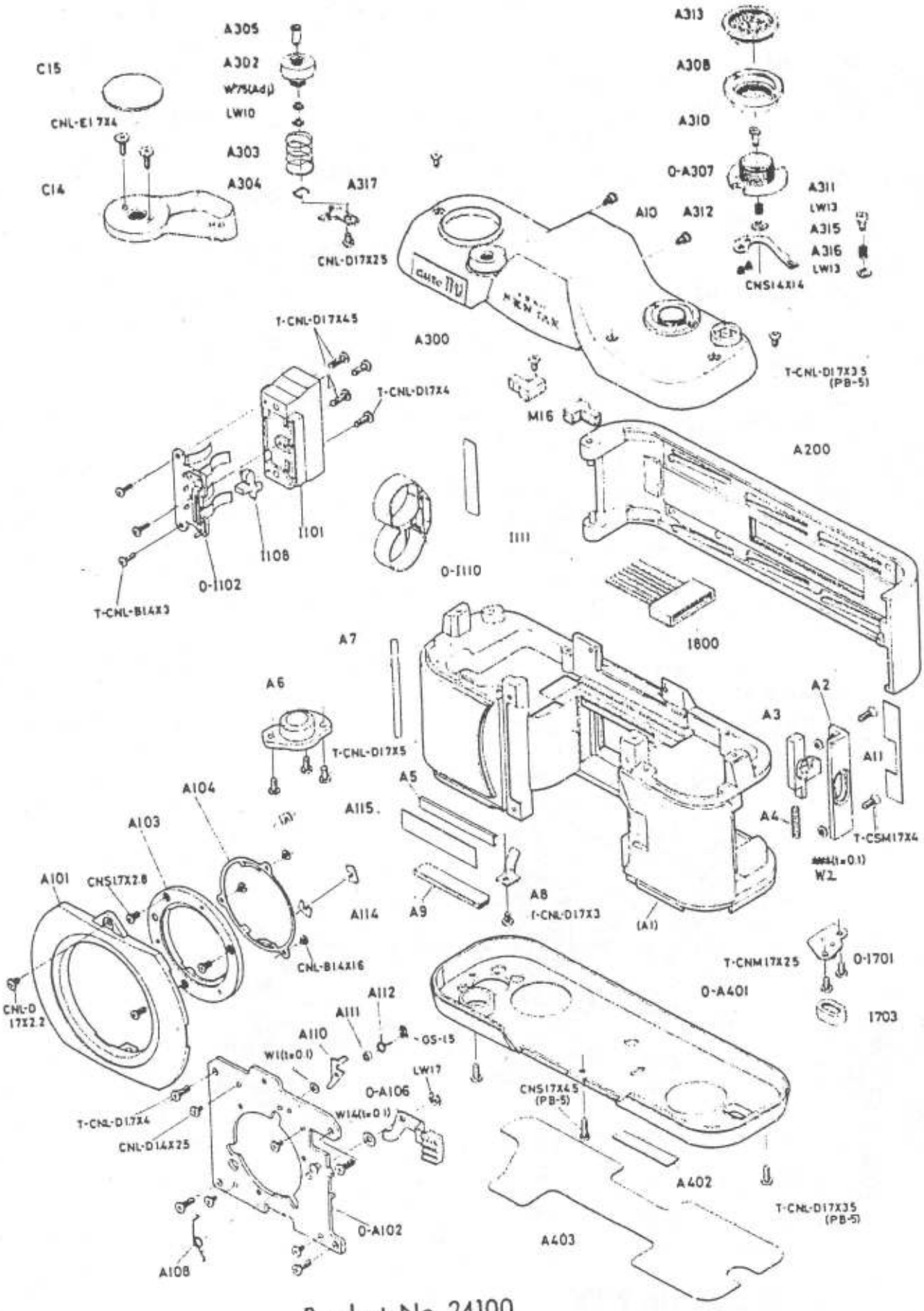
New Parts

T210	Cord holder
T211	Relay P.C. board
T300	LED P.C. board pattern assembly

Discontinued parts

I800	Connector
M13	Cord holder
M15	Dust prevention sheet A (at T100)
M16 x 2	Dust prevention sheet B (at A300)
T201	Relay P.C. board A
T203	Relay P.C. board B

EXPLODED ILLUSTRATION



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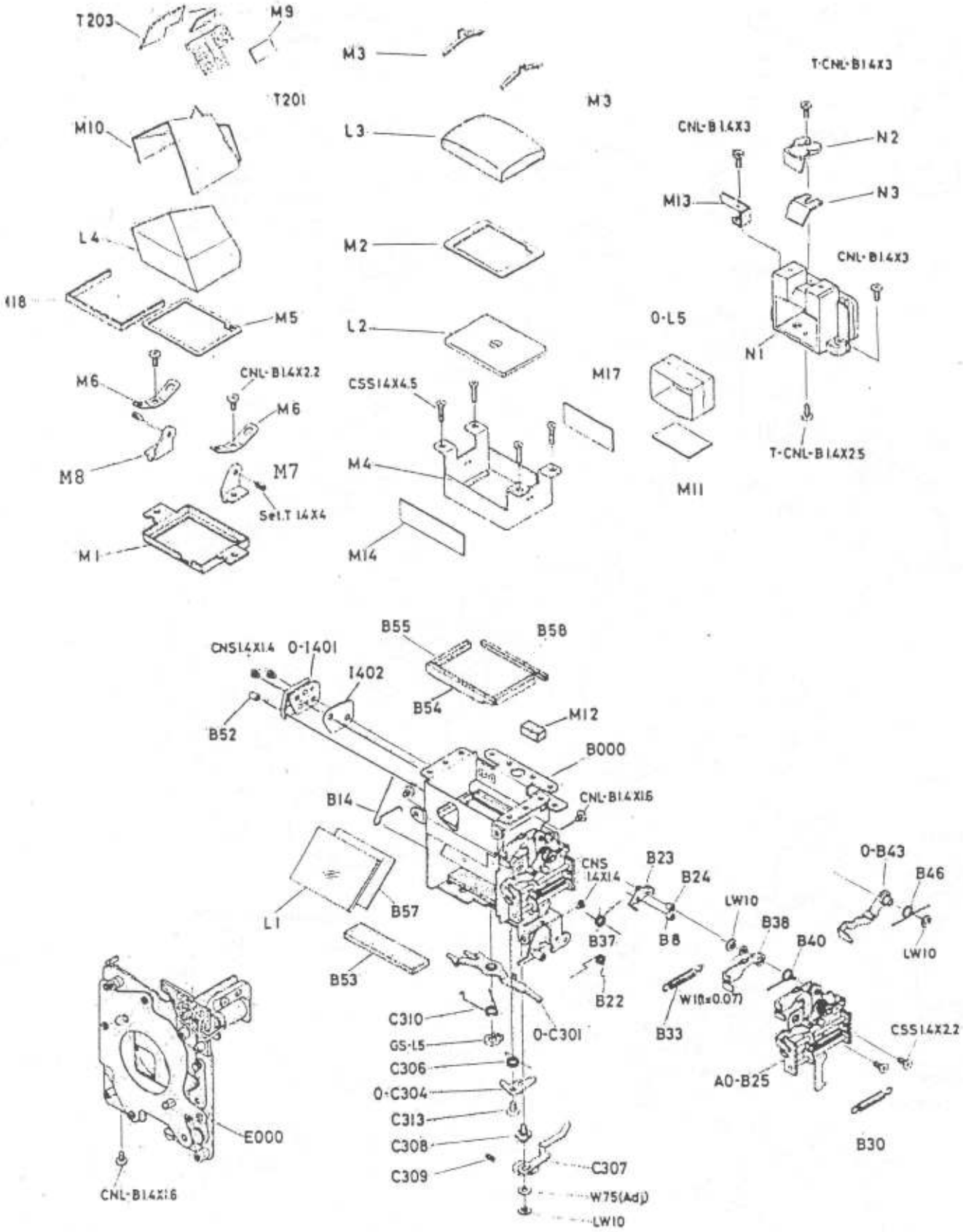
ASAHI PENTAX AUTO 110

Fig. 1

A4

EXPLODED ILLUSTRATION



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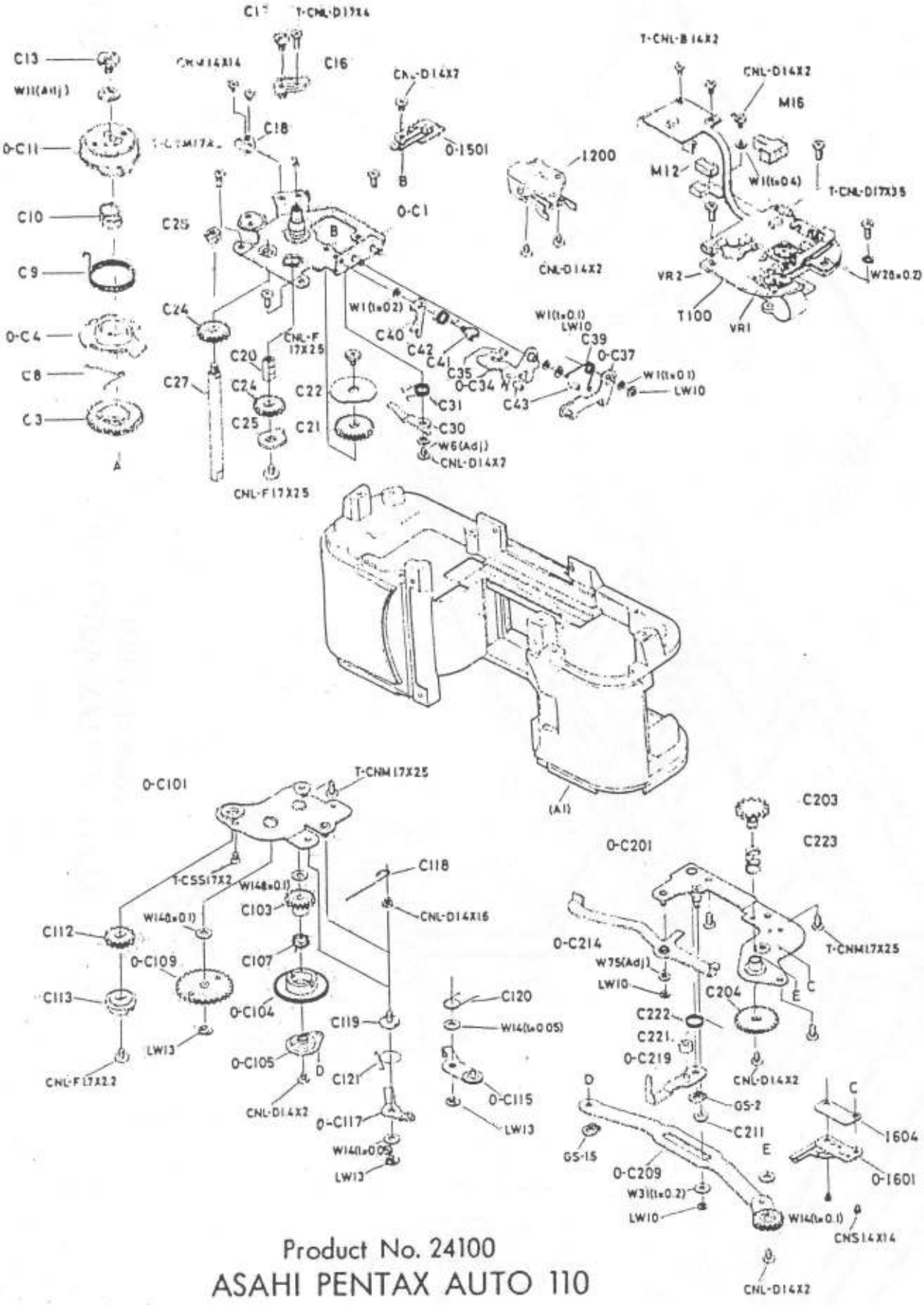
ASAHI PENTAX AUTO 110

Fig. 2

EXPLODED ILLUSTRATION



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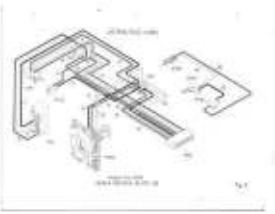
ASAHI PENTAX AUTO 110

Fig. 3



DISTRIBUTING WIRES

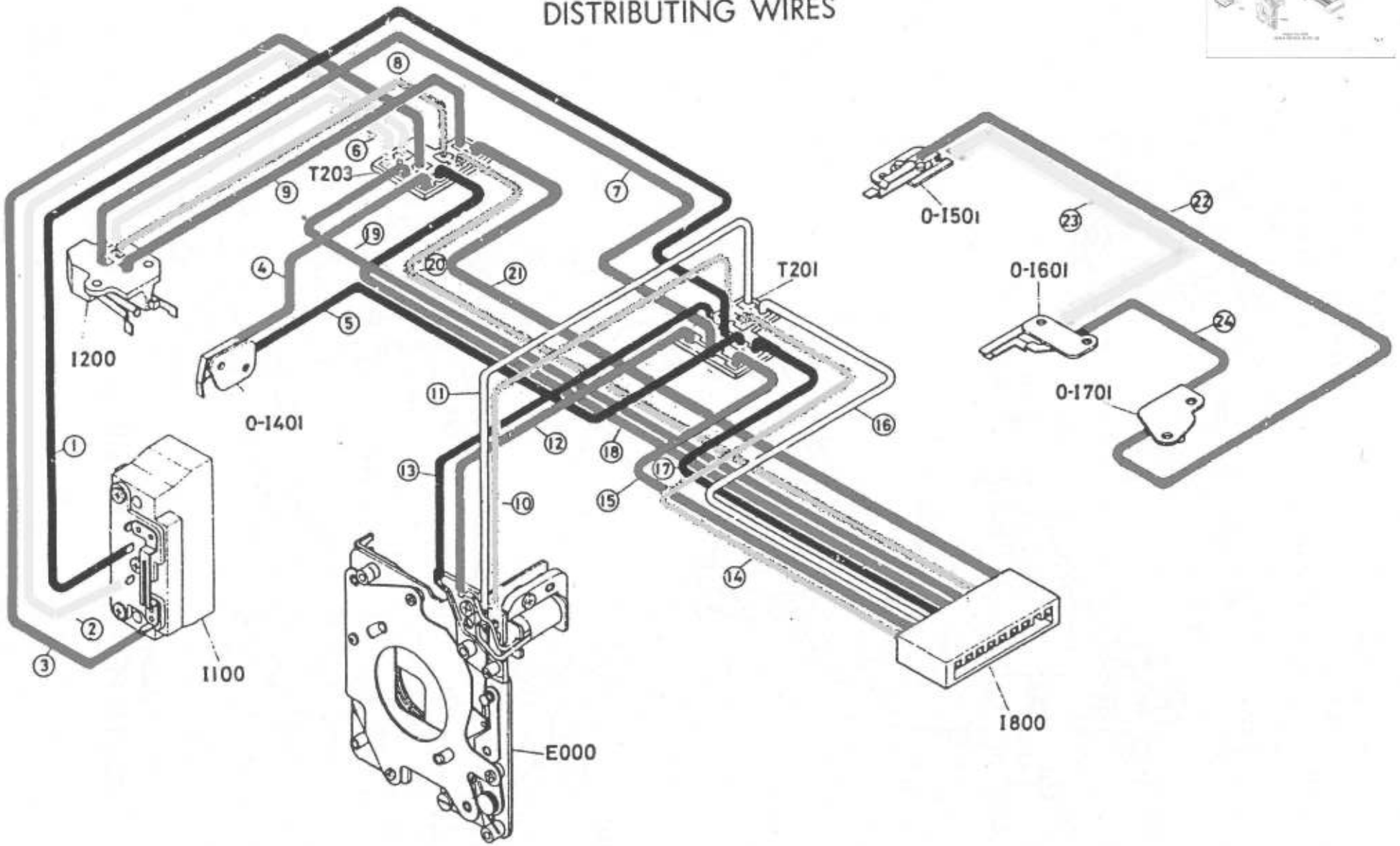


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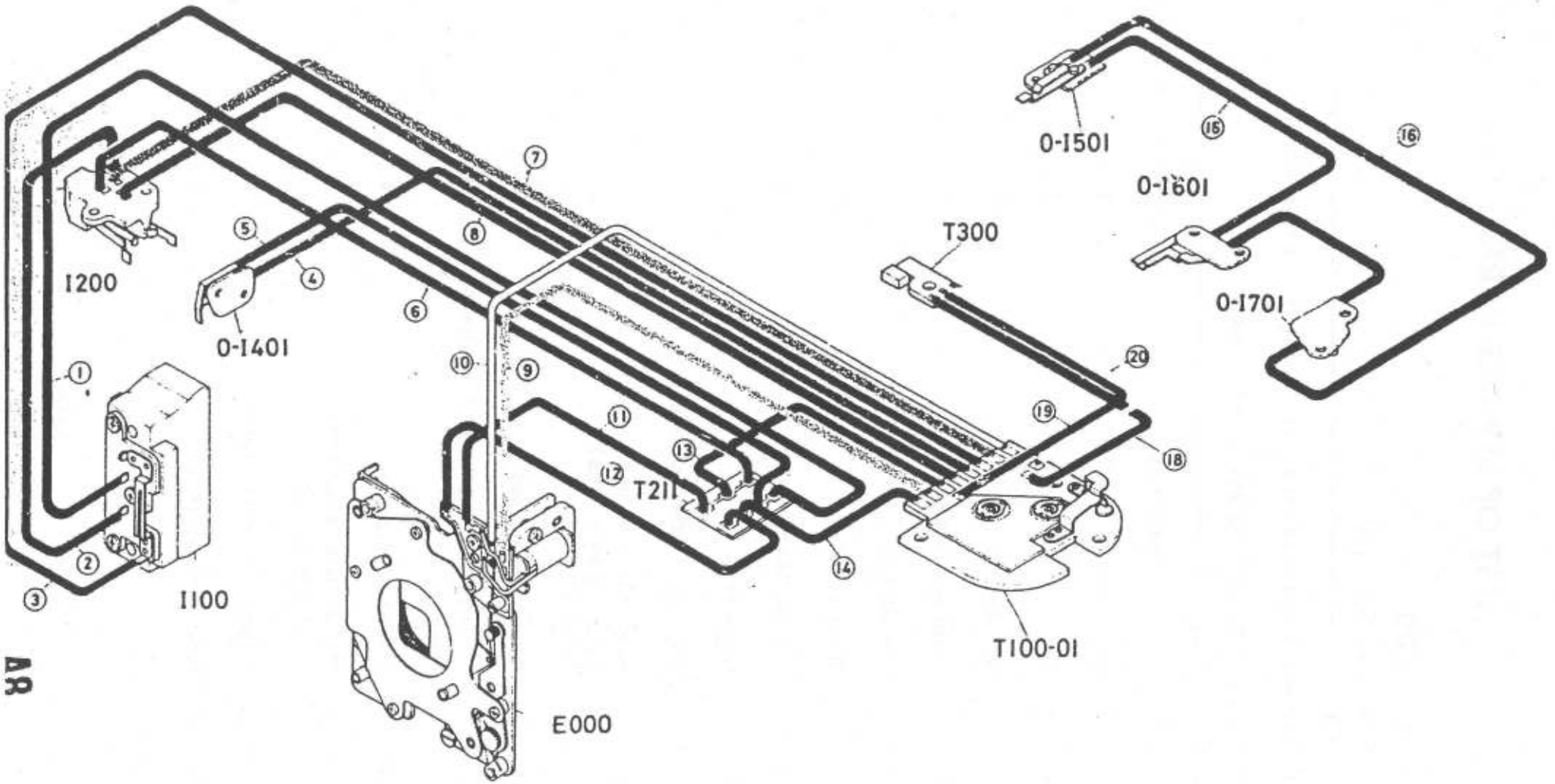
Fig. 4

DISTRIBUTING WIRES



Product No. 24100

ASAHI PENTAX *auto 110*

Fig. 4 - 1

LIST OF SERVICE PARTS

Product No. 24100

ASAHI PENTAX auto 110

Note: 1. The parts with numbers starting '0-' are assemblies.

2. Only available parts are listed below.

Parts No.	Description	Quantity	Interchangeability
A2	Key cover	1	
A3	Key	1	
A4	Key spring	1	
A5	Light seal plate A	1	
A6	Tripod seat	1	
A7	Strap shaft	1	
A8	Mirror charge lever retainer	1	
A9	Light seal	1	
A10	Top cover retainer screw	2	
A11	Back cover adjusting seal	1	
A13	Front cover seal	2	
A101	Front cover	1	
0-A102	Front board assy. (A102, A105, A107, A109, A113)	1	
1-A102	(A102, A105, A107, A109-01, A113)		
A103	Mount	1	
A104	Mount spring	1	
0-A106	Mount lock lever assy. (A106, A116)	1	
A108	Mount lock lever spring	1	
A110	Release lock lever	1	

Parts No.	Description	Quantity	Interchangeability
A111	Collar 0.9mm	1	
A111-01	Collar 0.75mm	1	
A112	Release lock lever spring	1	
A112-01	Release lock lever sprong	1	
A114-00A	Adjusting washer a (t=0.4)		
-00B	" b (t=0.3)		
-00C	" c (t=0.2)	1	
-00D	" d (t=0.1)		
-00E	" e (t=0.05)		
-00F	" f (t=0.03)		
A115	Light seal plate B	1	
A200	Back cover assy. (A201, A202, A203, A204 x2)	1	
A300	Top cover assy. (A301～A305, 0-A307, A308, A310～A316, M1b x2, CNL-D1.7x2.5, CNS1.4x1.4 x2, LW10, LW13 x2, W75)	1	
A302	Shutter release button	1	
A303	Shutter release button spring	1	
A304	Lock spring	1	
A305	Shutter release button shaft	1	
0-A307	X-contact seat assy, (A307, A309)	1	
A308	X-contact seat nut	1	
A310	X-contact pin	1	
A311	X-contact spring A	1	
A312	X-contact spring B	1	
A313	X-contact cap	1	
A315	Auto-manual switch button	1	
A316	Auto-manual switch button spring	1	
0-A401	Bottom cover assy. (A401, A403)	1	

Parts No.	Description	Quantity	Interchangeability
A402	Serial number plate	1	
A403	Scratch protection seal	1	
B000	Mirror housing complete assy. (B1~B4, B5 x6, B7, B8, B9 x2, B10~B33 B34 x2, B35 x2, B36~B54, B55 x2, B56~B60, C303, C305, C308, C312, L1, CNS1.4x1.4 x7, CSS1.4x1.6 x4)	1	
B6	Flip up pin roller	1	
B14	Light seal actuating plate spring	1	
B22	Restitution plate hook lever spring	1	
B23	Bounce prevention lever	1	
B24	Bounce prevention lever retainer	1	
A0-B25	Mirror actuating plate assy. (B25, B33, B34 x2, B38, B47, LW10 x2)	1	
B30	Mirror flip up spring	1	
B33	Mirror restitution spring	1	
B37	Mirror restoring spring	1	
B38	Mirror flip up plate hook lever	1	
B40	Flip up plate hook lever spring	1	
0-B43	Shutter opening lever assy. (B43, B45)	1	
B46	Opening lever spring	1	
B52	Insulation tube	1	
B53	Light seal A	1	
B54	Light seal B	1	
B55	Light seal C	2	
B57	Mirror adhesive tape	1	
B58	Mirror sheet light seal	1	

Parts No.	Description	Quantity	Interchangeability
0-C1	Top mech. plate assy. (C1, C2, C19, C26, C29, C32 x2)	1	
C3-01	1st wind gear	1	
0-C4	Wind ring assy. (C4, C7)	1	
C8	Ratchet spring	1	
C9	Wind lever spring	1	
C10	Friction spring	1	
0-C11	Wind lever seat assy. (C11, C12)	1	
C13	Wind shaft retainer screw	1	23900-C154
C14	Wind lever	1	
C15	Wind lever covering	1	
C16	Wind stopper	1	
C17	Wind lever spring hanger	1	
C18	Pre-advance angle spring	1	
C20-01	2nd wind gear shaft	1	
C21-00A -00B -00C	2nd wind gear	1	
C22	Release restriction plate	1	
C24	3rd wind gear	2	
C25	Wind restriction plate	1	
C27	Wind shaft	1	
C28	Wind shaft nut	1	
C30	Wind restriction lever	1	
C31	Wind restriction lever spring	1	
0-C34	Release actuating lever assy. (C34, C33, C36)	1	

Parts No.	Description	Quantity	Interchangeability
C35	Insulation tube A	1	
0-C37	Release actuating plate assy. (C37, C33, C38)	1	
C39	Release actuating spring	1	
C40	Hook lever	1	
C41	Hook lever shaft	1	
C42	Hook lever spring	1	
C43	Insulation tube B	2	
0-C101	Bottom mech. plate A assy. (C101, C26, C102, C108, C114)	1	
C103	6th wind gear	1	
C104	Ratchet wheel	1	
0-C105	Link seat assy. (C105, C106)	1	
C107	Anti-reverse spring	1	
0-C109	5th wind gear assy. (C109, C110 x2, C111 x2)	1	
C112-00A -00B -00C	4th wind gear a " b " c	1	
C113	Joint	1	
0-C115	Ratchet assy. (C115, C116, W70)	1	
0-C117	Bottom wind stopper assy. (C117, B27)	1	
C118	Anti-reverse stopper	1	
C119	Stopper shaft	1	
C120	Ratchet spring	1	
C121	Bottom wind stopper spring	1	

Parts No.	Description	Quantity	Interchangeability
0-C201	Bottom mech. plate 'B' assy. (C201, C202, C205, C210, C212, C218)	1	
C203	9th wind gear	1	
C204	8th wind gear	1	
0-C209	Wind link assy. (C209, C206, C207, C208)	1	
C211	Wind link collar	1	
0-C214	Mirror charge lever assy. (C214, C213)	1	
0-C219	Shutter charge lever assy. (C219, C220)	1	
C221	Shutter charge lever pin roller	1	
C222	Shutter charge lever spring	1	
C223	9th wind gear friction spring	1	
0-C301	Ratchet release lever assy. (C301, C302)	1	
0-C304	Release lever hook plate assy. (C304, C311)	1	
C306	Hook lever spring	1	
C307	Film spacing lever	1	
C308	Film spacing lever shaft	1	
C309	Film spacing lever spring	1	
C310	Release lever spring	1	
C313	Hook plate shaft retainer screw	1	
E000	Shutter block	1	
1101	Battery case	1	
0-1102	Battery case base plate assy. (1102, 1107)	1	

	Parts No.	Description	Quantity	Interchangeability
	I108	ASA switch lever	1	
	0-I110	Battery holder assy. (I110, I111)	1	
	I111	Polarity label	1	
	I200	Power and Memory switch block	1	
	0-I401	X-safety switch assy. (I401, I402, I403, I404, I405 x2)	1	
	I402	Insulation sheet	1	
	0-I501	Winder switch A assy. (I501, I405 x2, I502, I503)	1	
	0-I601	Winder switch B assy. (I601, I405 x2, I602, I603, I604)	1	
	I604	Insulation sheet	1	
	0-I701	Winder contact circuit board assy. (I701, I702 x2)	1	
	I703	Contact seat	1	
*	I800	Connector	1	
	L1	Mirror	1	
	L2	Fresnel lens	1	
	L3	Ground glass	1	
	L4	Penta prism	1	
	0-L5	Eyepiece assy. (L5, L6)	1	
	M1	Prism seat	1	
	M2-01	Ground glass mask	1	
	M3	Ground glass retainer	1	
	M4	Ground glass frame	1	
	M5-01	LED frame	1	

* discontinued

	Parts No.	Description	Quantity	Interchangeability
	M6	Focus adjustment spring	2	
	M7	Prism retainer A	1	
	M8	Prism retainer B	1	
	M9	Prism protection plate	2	
	M10	Prism protector	1	
	M11	Eyepiece protection plate	1	
*	M15	Dust prevention sheet A	2	
*	M13	Cord holder	1	
	M14	Dust prevention seal	1	
*	M16	Dust prevention sheet B	3	
	M17	Dust prevention sheet C	1	
	M18	Dust prevention string	1	
	N1-01	Eyepiece frame	1	
	N2	Light measuring prism	1	
	N3	Eyepiece light seal frame	1	
	T100-01	P. C. board pattern assy. (I109 x2, I301, I302, I303, I304)	1	
*	T201	Relay P. C. board A	1	
*	T203	Relay P. C. board B	1	
	T210	Cord holder	1	
	T211	Relay P.C. board	1	
	T300	LED P.C. board pattern assembly	1	

* discontinued

LIST OF STANDARD PARTS

Product No. 24100
ASAHI PENTAX auto 110

Small screws:

Description	Surface treatment	Position of use	Quantity
CSS1.4 x 2.2	Black nickel	B25, B35	2
CSS1.4 x 4.5	"	B1, M4, M6	2
		B2, M4, M6	2
CNS1.4 x 1.4	"	A307, A312	2
		B1, I401	2
		C201, I601	2
		B1, E000	1
CNS1.7 x 2.8	Nickel	A102, A103	3
CNS1.7 x 4.5	Black nickel (PB-5)	A101, A102, A401	1
CNM1.4 x 1.4	Black nickel	C1, C18	2
CNL-B1.4 x 1.6	"	B1, E000	1
		B2, E000	2
CNL-B1.4 x 1.6	Nickel	A103, A104	3
CNL-B1.4 x 2.2	Black nickel	B1, M6, M7	1
		B2, M6, M8	1
CNL-B1.4 x 3	"	B50, N1	2
CNL-D1.4 x 1.6	"	C101, C118	1
CNL-D1.4 x 2	"	C29, C30	1
		C102, C105	1
		B50, T100	1
		C203, C204	1
		C1, I200	2
		C205, C206	1
		C1, I500	1
CNL-D1.4 x 2.5	"	A102, E000	4
CNL-D1.7 x 2.2	"	A101, A102	1
CNL-D1.7 x 2.5	Black nickel	A1, A317	1
CNL-E1.7 x 2.2	"	C27, C112, C113	1

Description	Surface treatment	Position of use	Quantity
CNL-E1.7 x 4	"	C11, C14	2
CNL-F1.7 x 2	"	C20, C25	1
		C20, C22	1
Set T1.4 x 4	"	M7, M8	2
T-CSS1.7 x 2	"	A1, C101	1
T-CSM1.7 x 4	"	A1, A2	2
T-CNM1.7 x 2.5	"	A1, C101	1
		A1, C201	3
		A1, I701	2
T-CNM1.7 x 3	"	A1, C1	3
T-CNL-B1.4 x 2	"	N1, T100	2
T-CNL-B1.4 x 2.5	"	N1	1
T-CNL-B1.4 x 3	"	I101, I102	3
		N1, N2	1
T-CNL-D1.7 x 3	"	A1, A8	1
T-CNL-D1.7 x 3.5	"	A1, T100	3
T-CNL-D1.7 x 3.5	Black nickel (PB-5)	A1, A301	3
		A1, A401	2
T-CNL-D1.7 x 4	Black nickel	A1, C16	1
		A1, A102	4
		A1, I101	2
T-CNL-D1.7 x 4.5	"	A1, A201, I101	2
T-CNL-D1.7 x 5	"	A1, A6	3

Washers:

Description	Material	Thickness	Position of use	Quantity
W1	Teflon	0.4mm	B50, T103	1
W1	Brass	0.1	A109	1
			~~A1, A2~~	~~2~~
			C32, C33	2
		0.2	C41	1

Description	Material	Thickness	Position of use	Quantity
W2	Brass	0.1	A1, A2	2
W2	Brass	0.2	T100	1
W6	"	0.03, 0.04	C29	1
W11	"	0.05, 0.1, 0.2	C2	1
W14	"	0.05	C114	1
			C119	1
		0.1	A105	1
			C102	1
			C108	1
			C203, C204	1
			C205	1
W31	"	0.2	C210	1
W75	"	0.05, 0.1, 0.15, 0.2		
			A305	1
			C212	1
			C308	1

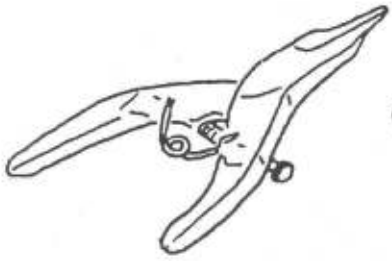
Lock washers:

Description	Position of use	Quantity
LW10	A305	1
	B39	1
	B44	1
	C32	2
	C210	1
	C212	1
	C308	1
LW13	A310	1
	A315	1
	C108	1
	C114	1
	C119	1
LW17	A105	1
GS-1.5	A109	1
	C106	1
	C303	1
GS-2	C218	1

Lead wires:

Lead wire No.	Length	Color	Position of use	Quantity
1	140mm	Black	I100, T201	1
2	110	Yellow	I100, T203	1
3	110	Blue	I100, T203	1
4	35	Green	I400, T203	1
5	65	Black	I400, T201	1
6	50	Yellow	I200, T203	1
7	80	Red	I200, T201	1
8	45	Grey	I200, T203	1
9	45	Brown	I200, T203	1
10	25	Pink	E000, T201	1
11	25	White	E000, T201	1
12	20	Red	E000, T201	1
13	25	Black	E000, T201	1
14	30	Pink	I800, T201	1
15	30	Red	I800, T201	1
16	30	White	I800, T201	1
17	30	Black	I800, T201	1
18	85	Green	I800, T203	1
19	85	Blue	I800, T203	1
20	75	Grey	I800, T203	1
21	70	Brown	I800, T203	1
22	125	Red	0-I501, 0-I701	1
23	160	Yellow	0-I501, 0-I601	1
24	20	Black	0-I601, 0-I701	1

12. C200 Bottom mech. plate B complete assy.
A8 Mirror charge lever retainer
T-CNL-D1.7x3
C200 Bottom mech. plate B complete assy.
T-CNM1.7x2.5x3
GS1.5 GP-51-0A



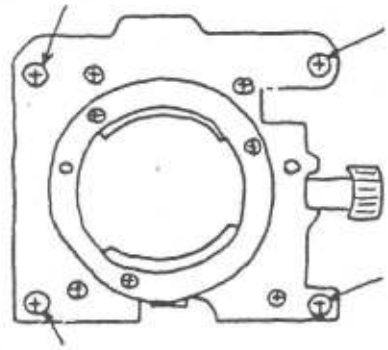
Gripping pliers
GP-51-0A

13. 0-C115 Ratchet assy.
LW13
0-C115 Ratchet assy.
W14 t=0.05mm
C120 Ratchet spring

14. C112 4th wind gear
CNL-F1.7x2.2
C113 Joint
C112 4th wind gear
*Holding Link seat assy. (0-C105), loosen CNL-F1.7x2.2 to prevent Anti-reverse stopper (C118) from bending.

15. 0-C117 Bottom wind stopper assy.
LW13
W14 t=0.05mm
0-C117 Bottom wind stopper assy.
C121 Bottom wind stopper spring

16. B000 and E000 Mirror housing complete assy. and Shutter block
T-CNL-D1.7x4x4



*Pull out a assembled Mirror housing and Shutter block just this side with enough care about lead wires around the back side of Mirror housing and the coupled parts.

17. T300 LED P.C.board pattern assy.
CNL-D1.4x2
W1 t=0.4mm (Teflon, black)

18. C000 Top mech. plate complete assy.
T-CNM1.7x3x3
T-CNL-D1.7x4

19. C100 Bottom mech. plate A complete assy.
T-CSS1.7x2
T-CNM1.7x2.5
C119 Stopper shaft 24100K-C119-A

20. A3 Key
A11 Back cover adjusting seal
T-CSM1.7x4x2
A2 Key cover
A3 Key
A4 Key spring
W2 t=0.2x2

Assembly procedures

1. A3 Key

W2 t=0.1x2

A4 Key spring
A3 Key
A2 Key cover

T-CSM1.7x4x2

Check the function of Key (A3) after installed.

A11 Back cover adjusting seal

2. C100 Bottom mech. plate A complete assy.

Before installing, check if the rotation of gears smooth or not.

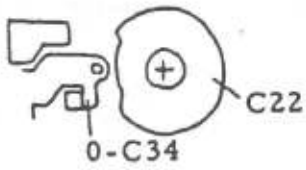
T-CSS1.7x2
T-CNM1.7x2.5

C119 Stopper shaft

3. C000 Top mech. plate complete assy.

1) Before installing to the body, check following points.

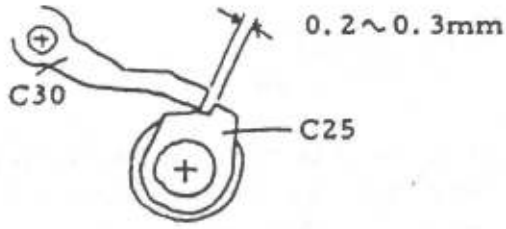
a. While lightly touching Release restriction plate (C22) with a finger, wind Wind lever (C14) once or twice.
Confirm if Release restriction plate (C22) stops at the position, as shown below.



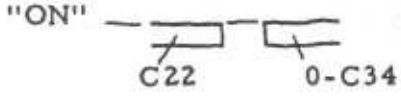
The center of cutaway side must be faced with Release actuating lever assy. (0-C34) just in the middle.

b. Check if Wind restriction lever (C30) moves freely as Release actuating lever assy. (0-C34) is depressed.

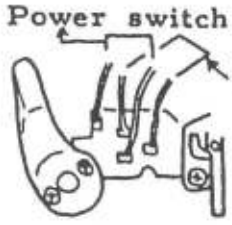
Check if there is a gap, 0.2 0.3mm, between Wind restriction lever (C30) and Wind restriction plate (C25), as shown below.



c. Power switch must close when the top of Release actuating lever assy. (0-C34) comes at the same height as the top of Release restriction plate (C22), as shown below.



Check with a tester, connected with two red lead wires (or a soldering joint) of Power and Memory switch block (I 200)

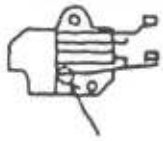


Adjustment can be made by bending at the bace of shorter contact piece.

d. Memory switch must open at the same time when Release actuating plate assy. (0-C37) comes off Hook lever (C40).

Check with a tester, connected with the gray lead wire and the brown lead wire of Power and Memory switch block (I 200).

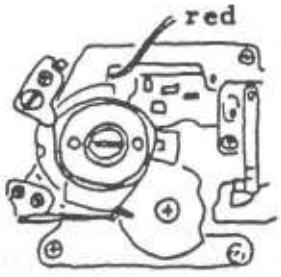
Adjustment can be made by bending at the bace of longer contact piece.



e. Release actuating lever assy. (0-C34) should be back up after depressed, and hook with Hook lever (C40) by the spring tention of Power switch contact piece.

2) If every points mentioned above were good, install Top mech. plate assy. (C000) to the body.

T-CNM1.7x3x3
T-CNL-D1.7x4



*Make sure that the red lead wire coming from Battery case assy. (I 100) is properly placed through the cutout of Top mech. plate assy. (C000).

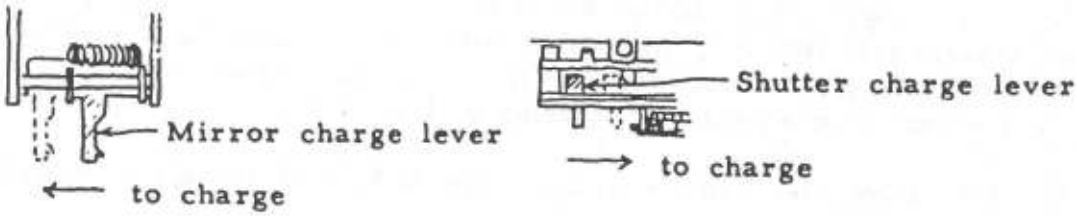
4. T300 LED P.C.board pattern assy.

CNL-D1.4x2.5
W1 t=0.4mm (Teflon, black)

5. B000 and E000 Mirror housing and Shutter block complete assy.

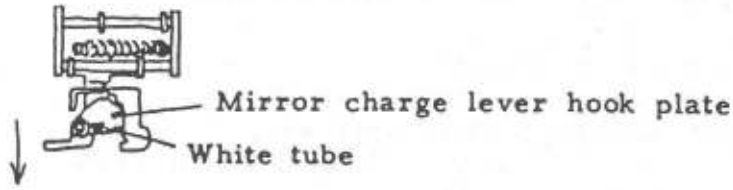
1) Before installing Mirror housing and Shutter block complete assy. (B000 and E000) to the body, check following points and adjust if necessary.

a. Charge Mirror housing and Shutter block.

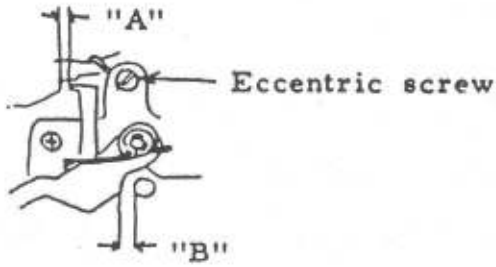


While observing the sectors*, release only Mirror housing by pushing down Mirror charge lever hook plate (white tube part), as shown below.

*Sectors —— Shutter and diaphragm blades of shutter block.



After Mirror housing and Shutter block were released, the gap "A" should be less than the gap "B".
If the gap "A" is more than the gap "B", the sectors may move in checking the point mentioned above.



Adjust the gap "A" by turning the eccentric screw if necessary.

b. Synchro safety switch (0-I 401)

Push the lower contact piece downward, and see if the upper contact piece follows along with the lower contact piece.

Adjust it by bending the contact piece if necessary.

*Synchro safety switch prevents the Auto-flash unit from misfiring due to the operation of the power switch.

c. All moving parts
Check if all moving parts operate properly with the lens mounted on the shutter block.

2) Make sure following points when install Mirror housing and Shutter block complete assy. (B000 and E000) to the body.

a. Make sure that the black lead wire coming from the synchro safety switch is placed underneath the eye-piece frame, not having the wire pinched between Mirror housing and the body.

b. Make sure that Film spacing lever (C307) is properly inserted into the cutout hole of the body.

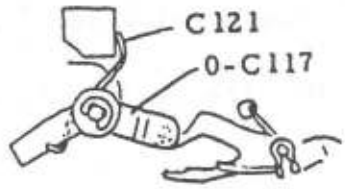
3) Install Mirror housing and Shutter block complete assy. (B000 and E000) to the body.

T-CNL-D1.7x4x4

After installed, check if Film spacing lever (C307) moves smoothly.

6. 0-C117 Bottom wind stopper assy.

C121 Bottom wind stopper spring
0-C117 Bottom wind stopper assy.
W14 t=0.05, 0.07, 0.1mm
LW13



7. C112 4th wind gear

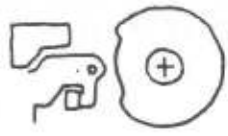
C112 4th wind gear
C113 Joint
CNL-F1.7x3.2

Adjustment of the gap between Wind ring assy. (0-C4) and Wind stopper (C16).

1) Charge the shutter and the mirror housing.

2) Release Film spacing lever (C307), and turn Ratchet wheel (C104) clockwise until it stops.

3) Wind Wind lever (C14) twice while touching slightly Release restriction plate (C22).



*Make sure that Release restriction plate (C22) must stops at the place, as shown left.

*Release restriction plate (C22) must be held with a finger while Wind lever (C14) returning after wound twice.

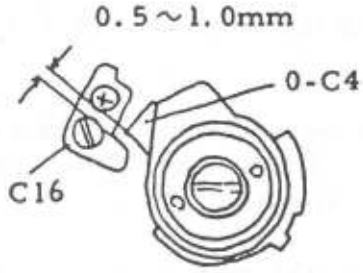
4) Turn Release restriction plate (C22) slightly counterclockwise to make a proper gap between Wind ring assy. (0-C4) and Wind stopper (C16).

5) Install 4th wind gear (C112).

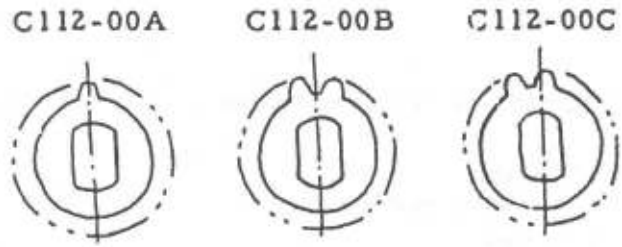
6) Release the shutter (with the lens mounted) by pushing down Release actuating lever assy. (0-C34).

7) Charge again the shutter and the mirror housing, and release Film spacing lever (C307).

8) Slide off Bottom wind stopper assy. (0-C117), and wind Wind lever (C14) twice while observing Wind stopper (C16).
See if there is a gap, 0.5~1.0mm, between Wind ring assy. (0-C4) and Wind stopper (C16), as shown below.



If there is no gap or too much gap, try to use the other gears.
A proper gear should be selected out of the following three kinds.



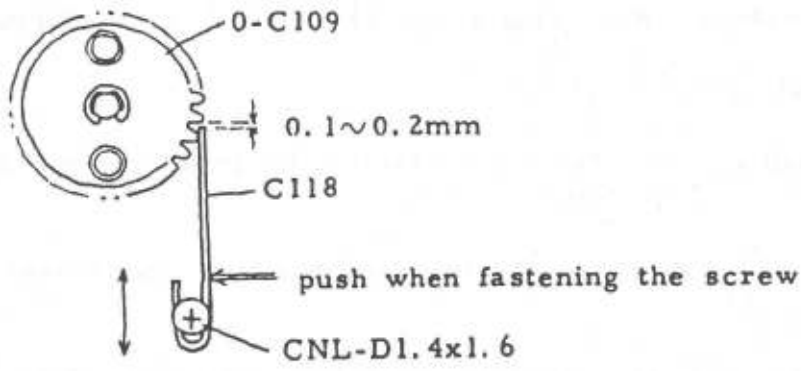
*There are two stoppers in 5th wind gear assy. (0-C109). So that check of the gap must be done with two stoppers.

8. Adjustment of Anti-reverse stopper (C118)

1) Charge the shutter and the mirror housing, and release Film spacing lever (C307).

2) Wind Wind lever (C14) , and hold Wind lever (C14) as it stops at Wind stopper (C16).

3) While holding Wind lever (C14), adjust a gap, 0.1~0.2mm, between the top of Anti-reverse stopper (C118) and the side of the tooth of 5th wind gear assy. (0-C109), as shown in next page.



*When fix Anti-reverse stopper (C118) with CNL-D1.4x1.6, push Anti-reverse stopper (C118) against 5th wind gear assy. (0-C109) by the screw driver.

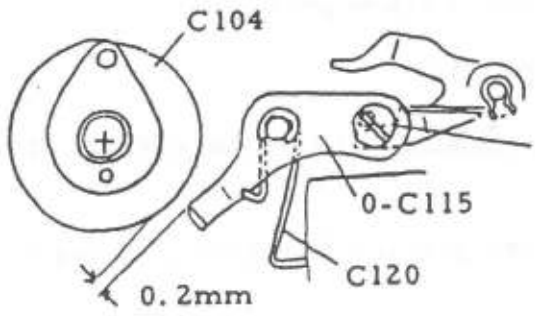
*Anti-reverse stopper (C118) must push 5th wind gear assy. (0-C109) with its spring tention.

4) Check if the top of Anti-reverse stopper (C118) touches the side of the tooth of 5th wind gear assy. (0-C109) after Wind lever (C14) has returned to the pre-advance angle position.

*2/3 diameter of Anti-reverse stopper (C118) must hit with the tooth of 5th wind gear assy. (0-C109) as shown left.

9. 0-C115 Ratchet assy.
Install Ratchet assy. (0-C115) at the condition of the shutter and the mirror housing charged.

C120 Ratchet spring
W14 t=0.05mm
0-C115 Ratchet assy.
LW13



1) Adjust a gap of 0.2mm between Ratchet wheel (C104) and Ratchet assy. (0-C115) by turning the adjusting screw.

2) Check if the claw of Ratchet assy. (0-C115) latches the tooth of Ratchet wheel (C104) when release Film spacing lever (C307).

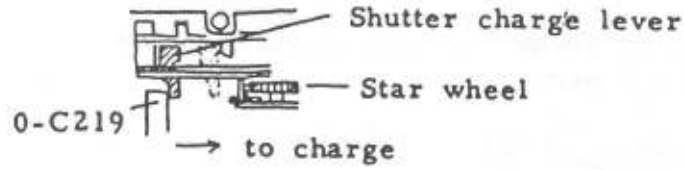
10. C200 Charge lever complete assy.
T-CNM1.7x2.5x3
GS1.5
A8 Mirror charge lever retainer
T-CNL-D1.7x3

Install Charge lever complete assy. (C200) at the charged condition of the shutter and the mirror housing.

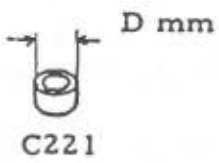
After installed, see if the shutter and the mirror housing are charged properly, having adquate plays in the movement of the charge levers (both the shutter charge lever and the mirror charge lever).

1) The shutter charge lever
   a. Wind Wind lever (C14) twice, while observing the shutter charge lever assy. (0-C219).

   b. Check if the shutter charge lever assy. (0-C219) pushes the shutter charge lever beyond the point where the shutter charged; The star wheel moves 3~6 teeth after the shutter has been charged.



   c. There are three kinds of Shutter charge lever pin collar (C221) for adjustment.

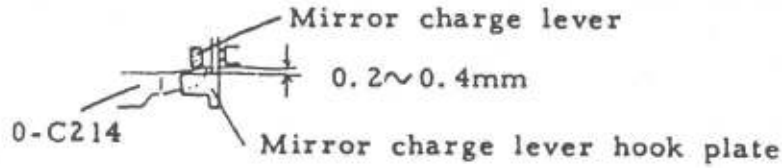


	D mm
C221-00A	2.6
-00B	2.8
-00C	3.0

* Refer to Notice of modification No. 651.

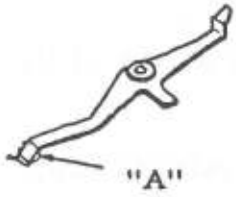
2) The mirror charge lever
   a. Wind Wind lever (C14) twice, while observing the mirror charge lever assy. (0-C214).

   b. Check if the mirror charge lever assy. (0-C214) pushes the mirror charge lever beyond the point where the mirror charge lever is hooked; the mirror charge lever should pass over 0.2mm~0.4mm beyond the point.



c. Adjust it by re-positioning Charge lever complete assy. (C200).

d. If could not adjust by re-positioning, bend Mirror charge lever assy. (0-C214) at the place shown "A".



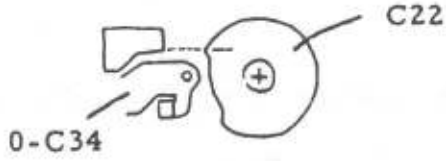
Mirror charge lever assy. (0-C214)

Check all functions several times.

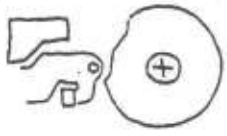
Check if Shutter charge lever assy. (0-C219) and Mirror charge lever assy. (0-C214) should return to the original position after charged.

11. Re-confirm the position of Release restriction plate (C22).
After installed Charge lever complete assy. (C200), re-confirm the position of Release restriction plate (C22) at the conditions mentioned below.

1) At the released condition, the top of cutaway side is not belower than the point as shown below.



2) At the condition of Wind restriction lever (C30) hooked with Wind restriction plate (C25), push down Release actuating lever assy. (0-C34).



Release restriction lever assy. (0-C34) must return to the original position by own tention, without touching on Release restriction plate (C22).

*This check is especially necessary for the proper function of winding when 110 WINDER attached.

12. Positioning of LED

Position the LED part properly, so that the green and the yellow LEDs are seen nicely.

Put Dust prevention sheet B (M16) after finished the positioning.

13. Soldering

3	lead wires	T211 Relay P.C.board
2	"	I 200 Power and Memory switch block
2	"	0-I 501 Winder switch A assy.
3	"	I 100 Battery case assy.

*Do not melt Wind lever (C14) with the hot soldering iron.

14. A200 Back cover

15. I 100 (I 101, 0-I 102) Battery case assy.
T-CNL-D1.7x4.5x2
T-CNL-D1.7x4x2

Make sure that the lead wires are not pinched between the battery case and the body.

Check ASA switching as follows.
Check the continuity between the black lead wire and the blue lead wire with a circuit tester;

ASA320 Continued
The switch pin, located at the left side of the battery case, is not pushed.

ASA80 Discontinued
The switch pin is pushed.

16. T100-01 P.C.board pattern assy.
T-CNL-D1.4x2.5x2
T-CNL-D1.7x3x3

17. 0-I 601 Winder switch B assy.
CNS1.4x1.4x2

Check ON/OFF switching as follows.
a. When charged, the contact pieces should be opened.
b. When released, the contact pieces should be closed.
c. When the 1st wind is made, the contact pieces should be closed.
d. When the 2nd wind is made, the contact pieces should be opened.

18. Soldering

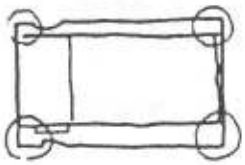
11	lead wires	T100-01 P.C.board pattern assy.
2	"	0-I 601 Winder switch B assy.

*Bundle the lead wires nicely.

Check the function of the auto-shutter several times.

19. Mechanical back focus

Mechanical back focus mesurement 26.90 ± 0.04mm



○= Check part

Adjusting washer (A114)

A114-00A	t=0.4mm
-00B	t=0.3mm
-00C	t=0.2mm
-00D	t=0.1mm
-00E	t=0.05mm
-00F	t=0.03mm

Find the highest point in each check part, as shown above, to get a correct mechanical back focus measurement.

20. Viewfinder

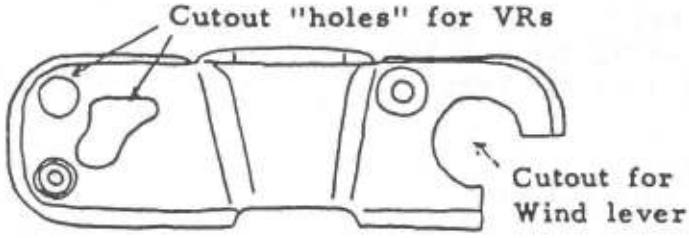
1) clean the viewfinder.

2) Adjust the parallax. (50mm lens is recommended)

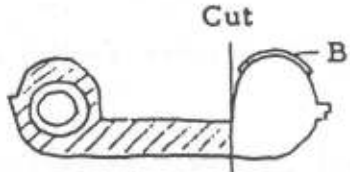
21. Exposure calibration

Prepare the following.

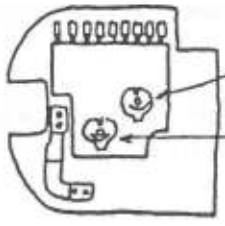
*Temporary top cover	
*Light mesuring master lens	LML-241
*Shutter speed tester	7PE-25A3
*Power source adapter cord for 24100 or Temporary film cartridge	PA-241-01
*Black tape for covering the eye-piece	



Temporary top cover



ASA 100 film cartridge



VR 2	LV12	(ASA80, ASA320)
VR 1	LV6	(ASA80, ASA320)

T100-01 P.C.board pattern assy.

Check points

	ASA	LV window	VR to be adjusted	EV reading
a	80	LV6	VR 1	0~+0.3EV
b	80	LV12	VR 2	0~+0.3EV
c	320	LV6	VR 1	0~-0.3EV
d	320	LV12	VR 2	0~-0.3EV

c: If a reading is greatly off "-0.3EV", adjust with VR 1.

d: If a reading is greatly off "-0.3EV", adjust with VR 2.

*If both errors are the same greatness, it is not necessary to adjust.

*After adjusted with VR 1 and VR 2 at c. and d., re-check a reading of a. and b..

Standard for the servicing.

ASA	LV window	Tolerance
80	LV6	± 1.35EV
80	LV12	± 1.3EV
320	LV6	± 1.45EV
320	LV12	± 1.35EV

*Acceptable uneven exposure within 0.9EV, but also acceptable if uneven exposures more than 0.9EV are detected two times in ten times.

*Battery check
As there is no "battery check adjustment" provided, check if the battery check operates properly.

2.2 volt	LED off
2.7 volt	LED on

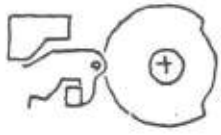
22. Finder focus adjustment with the master lens (ML-241)

Master lens 50mm ML-241
one scale 0.02mm
Tolerance
± 0.04mm

23. Winder switches

1) Winder switch B assy. (0-I 601)
Refer to Page 12-17.

2) Winder switch A assy. (0-I 501)
a. Wind Wind lever (C14) once. Release restriction plate (C22) positioned as shown below.



b. Gradually depress Release actuating lever assy. (0-C34).

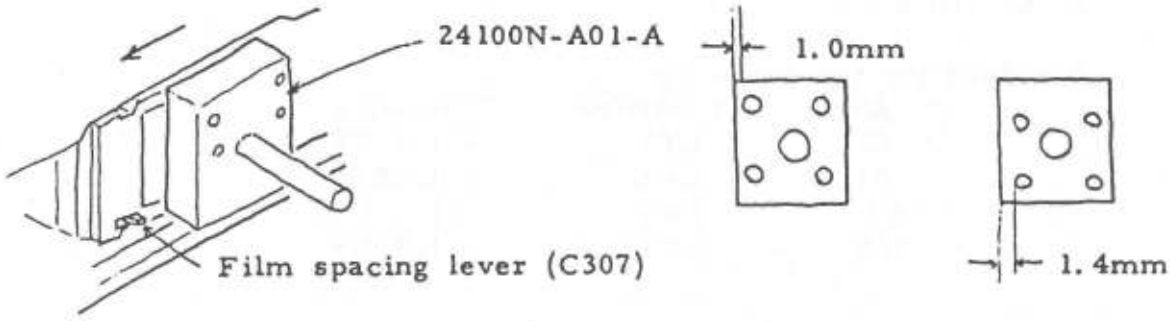
c. At when Release actuating lever assy. (0-C34) touched Release restriction plate (C22), the switch must turn OFF.

d. If necessary, adjust it by bending the upper contact piece of the switch.

e. Confirm that the switch must have a proper contact pressure when turn on. (The lower contact piece must push up the upper contact piece after when the both contact pieces touched.

24. Film spacing lever

Confirm the function of Film spacing lever (C307) at the charged condition.

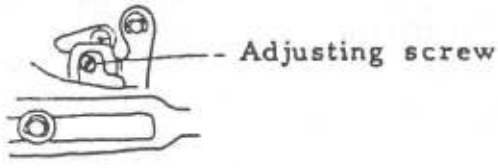


1) Place Film spacing lever jig (24100N-A01-A) on the film aperture.

2) Slowly slide the jig to the left.
   a. Film spacing lever (C307) should not drop in at the distance of 1.0mm from the edge of the film aperture.

   b. Film spacing lever (C307) should drop in at the distance of 1.4mm from the edge of the film aperture.

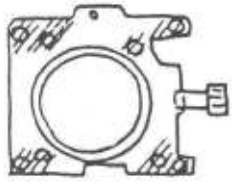
3) Adjust it by the adjusting screw as shown below.



25. A101 Front cover

CNL-D1.7x2.2

*Before install Front cover (A101), apply "dull black paint" to the areas as shown below.



26. I 703 Contact seat

27. 0-I401 Bottom cover assy.
CNS1.7x4.5
T-CNL-D1.7x3.5x2

28. Remove Wind lever (C14)

29. A300 Top cover assy.
A10x2 Top cover retainer screw
T-CNL-D1.7x3.5x2

Install Wind lever (C14) temporary.
CNL-E1.7x4x2

30. Switching stroke of Auto-manual button
Check the auto-manual switching with the jig (24100N-A314-A-1).

"L"	0.8mm	Auto ON
"L"	0.4mm	Manual ON

*If necessary, remove Wind lever (C14) and Top cover assy. (A300). Then adjust the contact pieces of the auto-manual switch on the circuit board to perform switching properly.

31. Synchronization of Auto-flash unit
Check if the auto-flash unit fires properly, synchronizing with the shutter operation.
See the attached explanation of Flash testing jig (FTJ-241).

32. C14 Wind lever
CNL-E1.7x4x2
C15 Wind lever covering 23600K-C135-K

33. Re-confirm the function of Winder switch A assy. (0-I 501).
Although Winder switch A assy. (0-I 501) has been checked, make sure once again that the switch functions properly after installing Top cover assy. (A300); Release actuating lever assy. (0-C34) may be depressed by the shutter button of Top cover assy. (A300).

1) Connect the tester rods with the contacts of the winder contact circuit board assy. (0-I 701).

2) Wind Wind lever (C14) once.

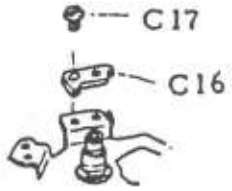
3) Check the continuity between the contacts.
The meter of circuit tester should indicates that the switch remains ON.

4) Depress the shutter release button gradually.
The meter of circuit tester should indicates that the switch turns OFF.

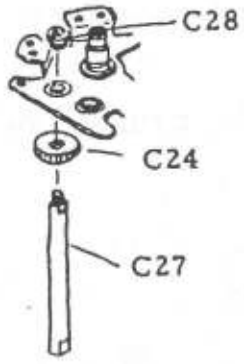
5) If the switch remains ON, remove Top cover assy. (A300) and re-adjust the switch contacts.

Assembly procedure of Top mech. plate complete assy. (C000)

1. C16 Wind stopper
   C17 Wind lever spring hanger



2. C24 3rd wind gear
   C27 Wind shaft
   C28 Wind shaft nut



3. C3-01 1st wind gear
   0-C4 Wind ring assy.
   C9 Wind lever spring
   C10 Friction spring
   0-C11 Wind lever seat assy.
   W11 (Adj.)
   C13 Wind shaft retainer screw = Left handed
   C14 Wind lever
   CNL-E1.7x4

   a. C3-01 1st wind gear
   b. 0-C4 Wind ring assy.
   Install Ratchet spring (C8) to Wind ring assy. (0-C4).
   After installed Wind ring assy. (0-C4) to 1st wind gear (C3),
   Check the function of ratchet by turning Wind ring assy. (0-C4).

   c. C9 Wind lever spring

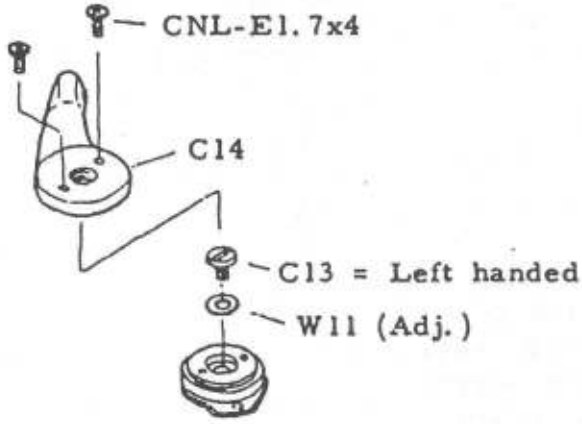
   d. C10 Friction spring

e. 0-C11 Wind lever seat assy.
*Apply a proper quantity of L101 (oil barrier) around the screw holes of CNL-E1.7x4.

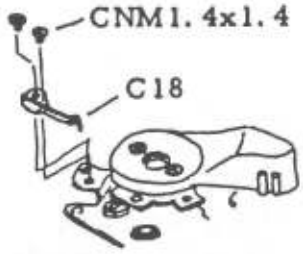
0-C11

f. C13 Wind shaft retainer screw = Left handed
*Apply a proper quantity of SCREW LOCK on the tooth of Wind shaft retainer screw (C13).
W11 t=0.05, 0.1, 0.2mm
Adjust a vertical play of Wind lever seat assy. (0-C11), less than 0.05mm, by W11.

g. C14 Wind lever
CNL-E1.7x4x2

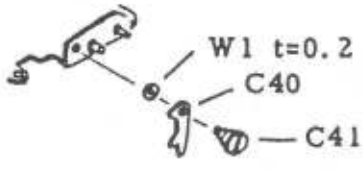


4. C18 Pre-advance angle spring
CNM1.4x1.4

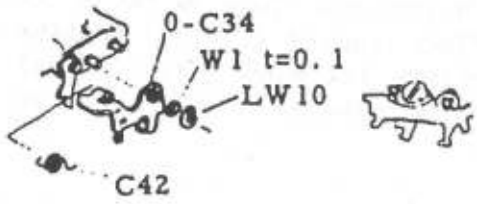


*Pre-advance angle spring (C18) must hit with the outer surface of 0-C11 properly.

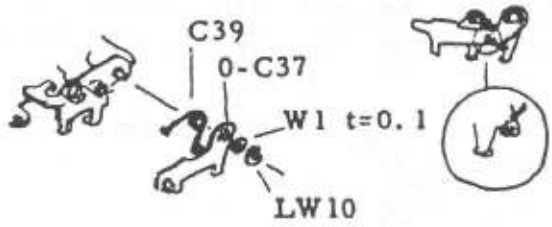
5. C40 Hook lever
C41 Hook lever shaft
W1 t=0.2mm



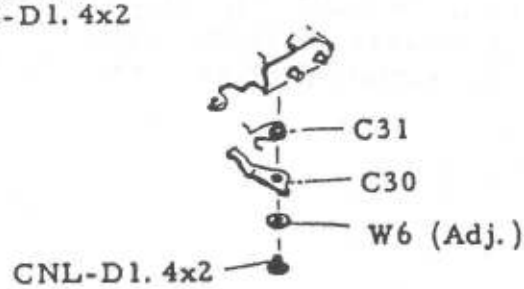
6. 0-C34 Release actuating lever assy.
   W1 t=0.1mm
   LW10
   C42 Hook lever spring



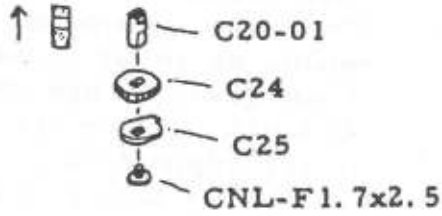
7. C39 Release actuating spring
   0-C37 Release actuating plate assy.
   W1 t=0.1mm
   LW10



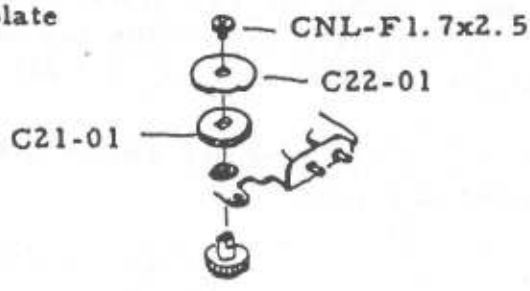
8. C31 Wind restriction lever spring
   C30 Wind restriction lever
   W6 (Adj.)
   CNL-D1.4x2



9. C20-01 2nd wind gear shaft
   C24 3rd wind gear
   C25 Wind restriction plate
   CNL-F1.7x2.5



10. C21-01 2nd wind gear
    C22-01 Release restriction plate
    CNL-F1.7x2.5

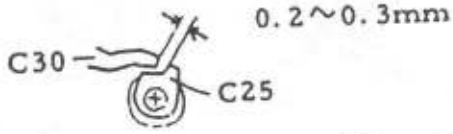


C21

Positioning of Release restriction plate (C22-01)

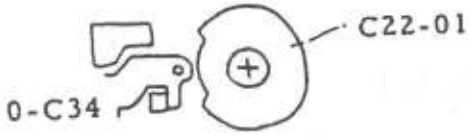
a. Hold Wind lever (C4) at the condition which Wind ring assy. (0-C4) and Wind stopper (C4) hit together.
Or holding 1st wind gear (C3-01), return Wind lever (C14) slowly. —— 1st wind gear (C3-01) does not move back along with Wind lever (C14).

b. Install 2nd wind gear shaft (C20-01), assembled with C24, C25 and CNL-F1.7x2.5, to Top mech. plate assy. (0-C1).
Depress Release actuating lever assy. (0-C34). And make a gap, 0.2~0.3mm, between Wind restriction lever (C30) and Wind restriction plate (C25) by turning Wind restriction plate (C25).



c. At the condition of a. and b., engage 2nd wind gear (C21-01) with 1st wind gear (C3-01).

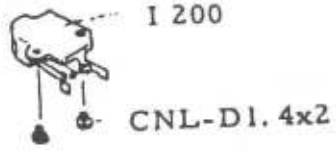
d. Install Release restriction plate (C22-01), and fix with CNL-F1.7x2.5.
*The cutaway side of Release restriction plate (C22-01) must be faced with Release actuating lever assy. (0-C34).



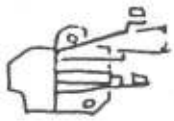
e. While lightly holding Release restriction plate (C22-01) with a finger, wind twice.
Check the position of Release restriction plate (C22-01), just in the middle as shown above.
If not good, change the engagement of gears or replace 2nd wind gear (C21-01). There are four kinds of 2nd wind gear (C21-01) for a proper adjustment.
*Refer to the notice of modification No. 645.

f. After finished the adjustment of e., depress Release actuating lever assy. (0-C34). Check the gap between Wind restriction lever (C30) and Wind restriction plate (C25), mentioned at b..

11. I 200 Power and Memory switch block
CNL-D1.4x2x2



Install Power and Memory switch block (I 200) after bent the longer contact piece of the power switch upward, aprox. 30°, as shown below.

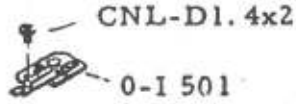


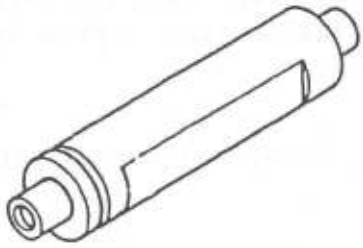
30° —— to return Release actuating lever assy. (0-C34) to the original position properly.

Check the function of Release actuating lever assy. (0-C34) after installed.

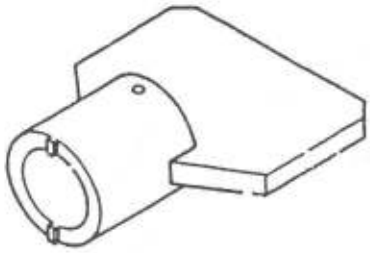
Adjustment of the power and memory switch.
Refer to the page 4 5.

12. 0-I 501 Winder switch A assy.
CNL-D1. 4x2

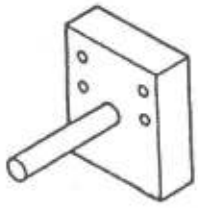




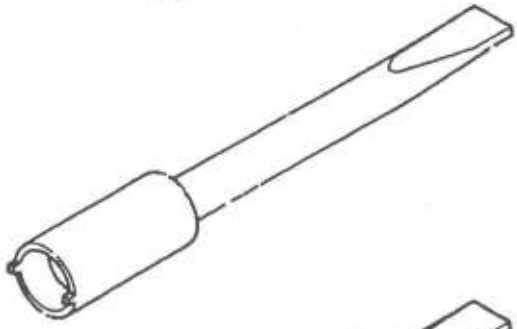
24100N-A314-A-1



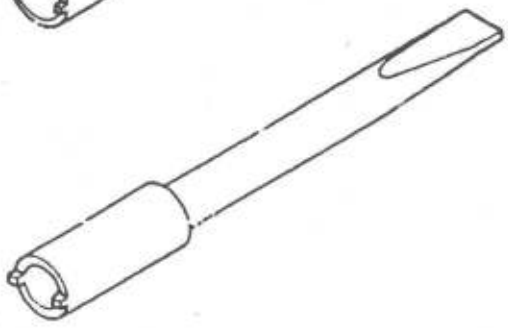
24100K-A308-A-1



24100N-A01-A

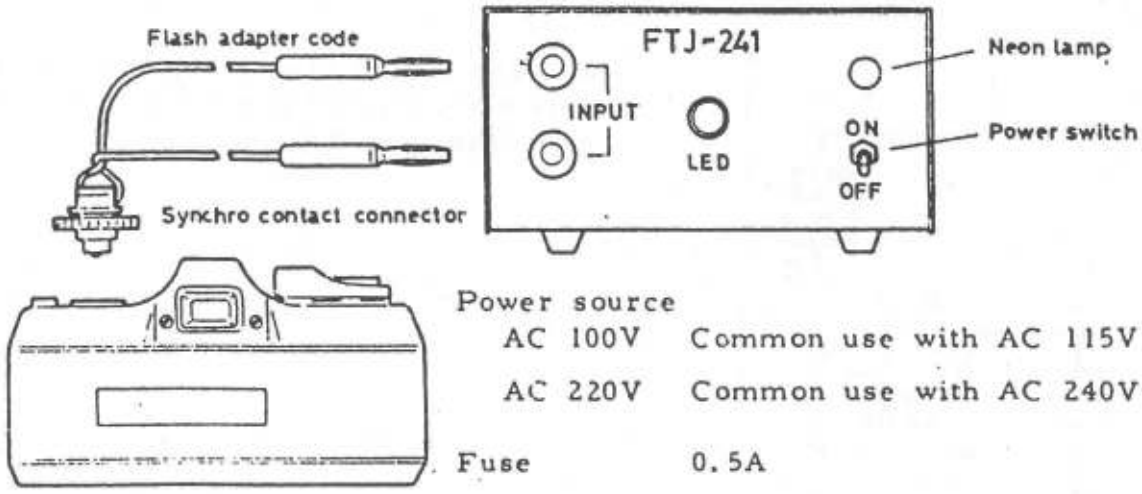


24100K-C[illegible]-A



24100K-C308-A

24100 FLASH TESTING JIG (FTJ-241)



Power source

AC 100V	Common use with AC 115V
AC 220V	Common use with AC 240V
Fuse	0.5A

*Power source voltage must be defined when order this jig.

Contents

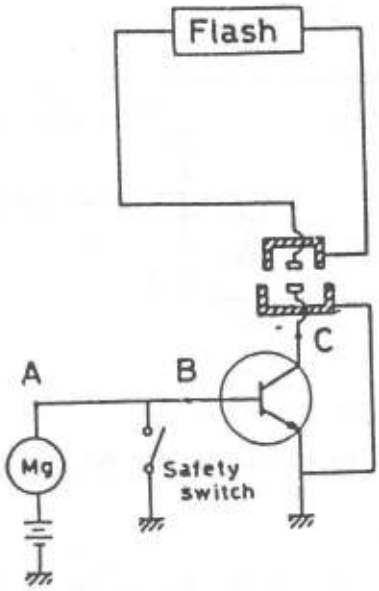
Flash synchronizing circuit in the camera can be checked by using this jig.

Only when the input voltage of 300mV or less exists on the input terminals, LED in the jig lights on. And detect whether the function of flash synchronizing circuit works well or not.

Way of use

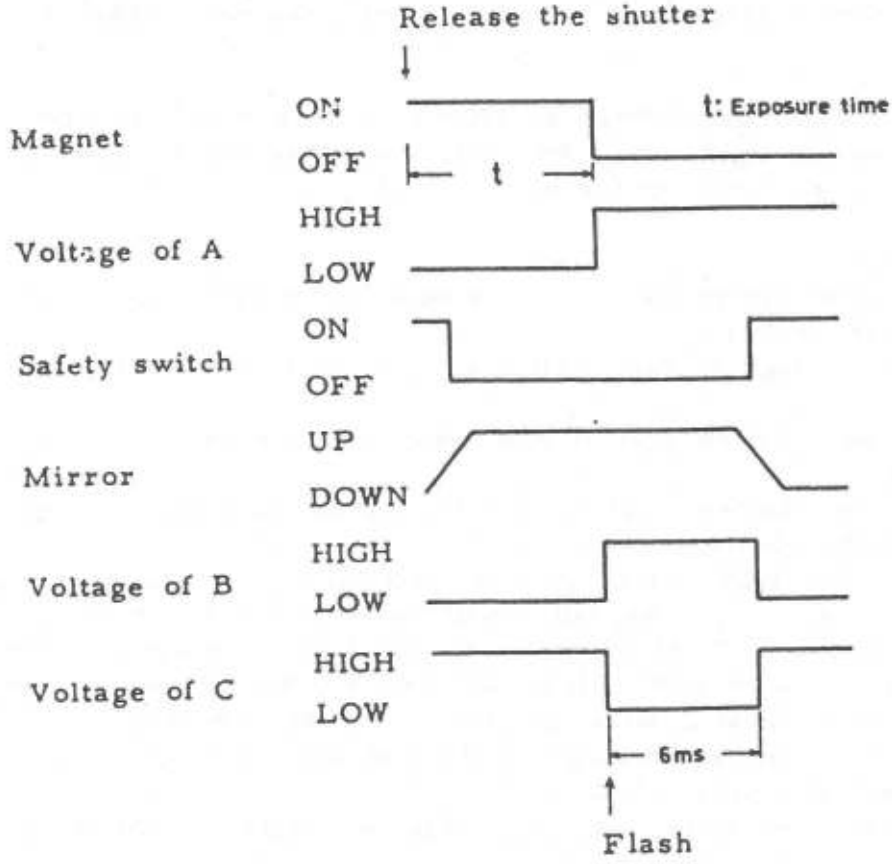
1. Turn on the power switch. The neon lamp lights on by switching the power switch.
2. Insert two plugs of the flash adapter code to the input terminals in the jig.
3. Install the synchro contact connector to the synchro terminal of the camera.
4. Charge the shutter. LED must not lights on while winding.
5. Release the shutter.
6. Confirm that LED must lights on just before the shutter closed. In this case, a long exposure will be facilitate to check, If LED does not light on, it is a defect of flash synchronization. Check all related parts. (Ex. the synchro safety switch, the synchro contact pieces, P.C.board pattern assy. and so on.)
7. During the shutter working, LED must not lights on, except for only the point as mentioned at 6.
8. At the released condition, LED must not lights on when pushed down the shutter button several times. If does, it is a mis-firing. Check the contact pressure of safety switch and related parts.

SYNCHRO SWITCH CIRCUIT

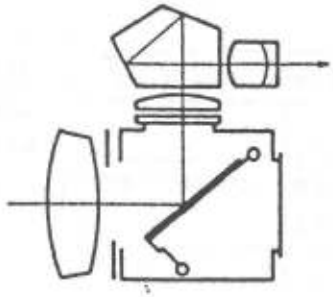


Synchro switch circuit become ON condition only when the voltage of C in the circuit gets less than 300mv.

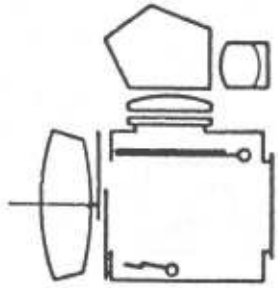
Actuating sequence



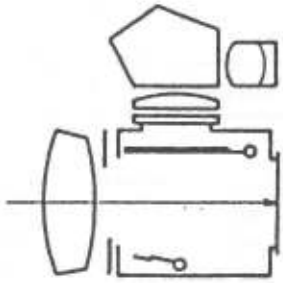
The shutter and the mirror actuating procedure



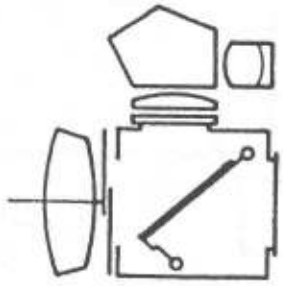
1. Before taking picture (at the charged condition),
the shutter stays open
the mirror stays down.



2. Depress the shutter button,
the shutter close completely first,
and then the mirror goes up.



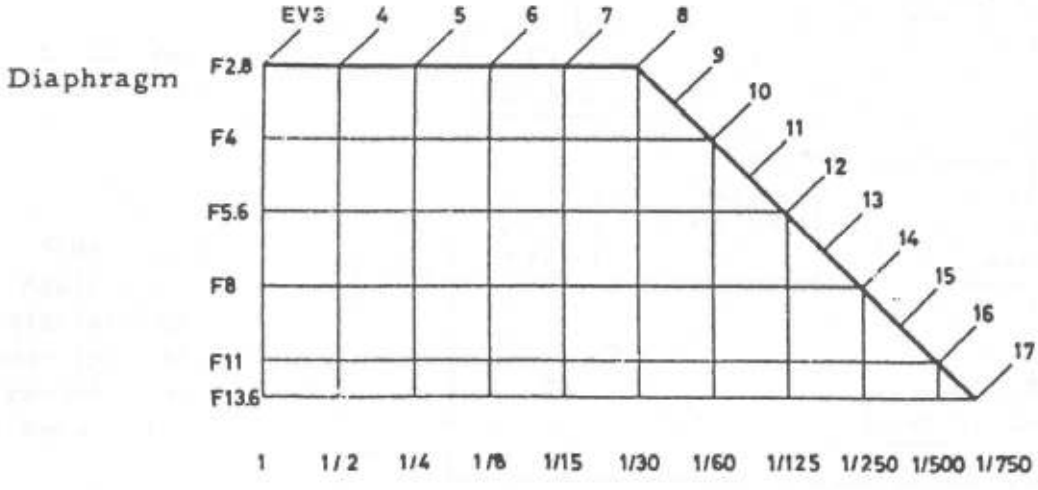
3. During the exposure,
the shutter stays open,
the mirror stays up position.



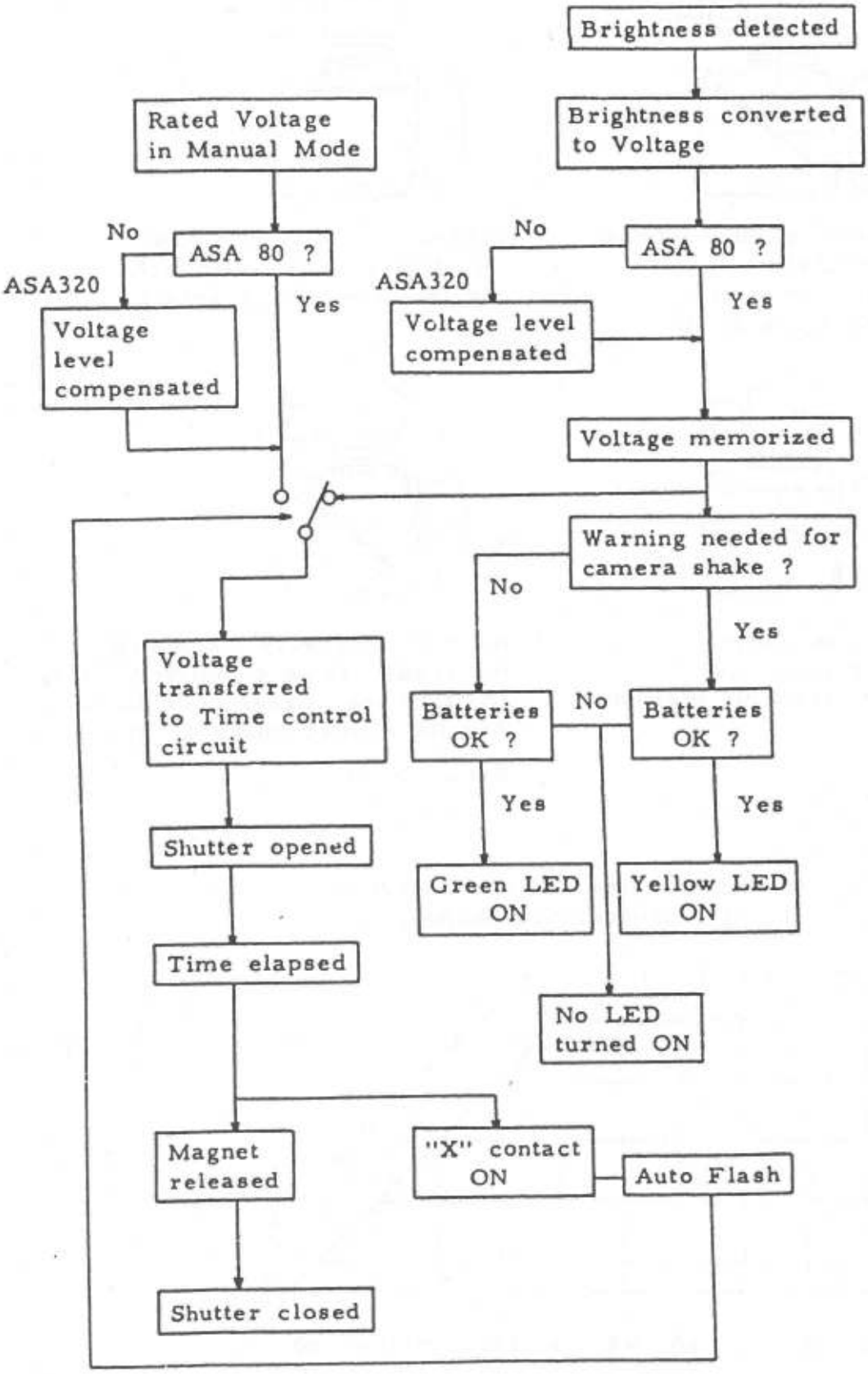
4. After the exposure completed,
the shutter close completely first,
and then the mirror goes down.
And the shutter opens again.

Return to 1.

Combination of the shutter speed and the diaphragm
(the programmed shutter)



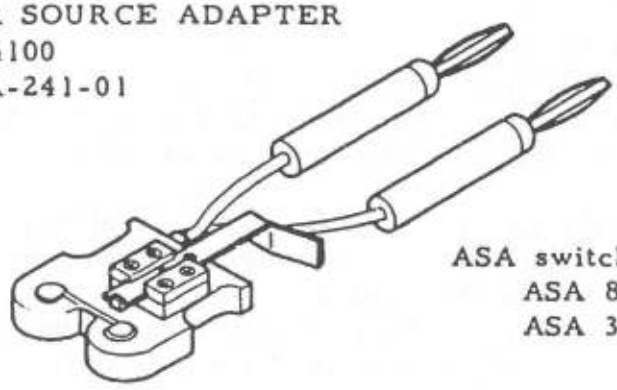
SEQUENCE DIAGRAM OF CONTROL AND PERFORMANCE



The explanation of Power source adapter for 24100 (PA-241-01)

Red plug —To plus (+) terminal
Black plug —To minus (-) terminal

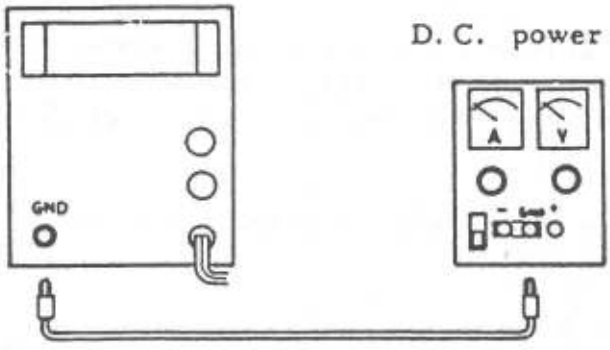
POWER SOURCE ADAPTER
FOR 24100
PA-241-01



ASA switching lever
ASA 80 —— Pushed in.
ASA 320 —— Pulled out.

Caution:
When use PA-241-01 to measure exposure values, be sure to connect the ground between Shutter speed tester (7PE-25A3) and D.C. power supply. If not, it causes becoming eneven exposure values.
Max. capacity of D.C. power supply must be over 0.5A.

Shutter speed tester
7PE-25A3



D.C. power supply

Max. capacity Over 0.5A

To the ground terminal

SHUTTER SPEED TESTER 7PE-25A3

This tester is designed for measuring the shutter speed and the amount of exposures.
By S.S-EV switch, the amount of received light on the surface of the film on any other camera can be measured and the error to the standard amount is to be indicated on EV basis.
It is designed compacted to be used portably.

Items and objects to be measured

1) Shutter speed for 35mm focal plane shutter camera
   a. When the diaphragm is fully opened, the center exposure time to each degree of the brightness (FO) is detected by using F8 set ring.
   b. The center exposure time to each degree of the brightness of a camera installed on diaphragm F8 fixed lens can be measured.
2) The amount of exposures on the film surface
   The errors of the standard amount of exposures to each degree of the brightness on any of the EE camera can be measured.

Correction and Adjustment

1) Correction of the brightness
   a. Connect the voltage meter to the lamp voltage terminal.
   b. Put the power switch ON.
   c. 4 or 5 minutes after the power switch is ON, it is to be adjusted.
   d. Put the EV checker just in front of the brightness surface.
   e. Turn the LV knob at LV16. Adjust the voltage of LV16 by turning VR for LV16 located at the right side of the cover.
      The voltage should be adjusted at 105V.
   f. Adjust the brightness of LV16 by turning the lamp removing screw located underneath the measuring table.
   g. Adjust the brightness of each degree (LV) by turning each VR. And confirm that the voltage of each LV should be in the range between 100V — 110V.
   h. When the lamp voltage exceed or less the above stated range, adjust it by moving the slit of the inner turret.
   i. When low brightness is to be adjusted, be careful not to be influenced by any lights from outside.
2) OFF SET adjustment
   a. 4 or 5 minutes after the power switch is ON, it is to be adjusted.
   b. Set the switches, as follows.

ASA	320
S. SPEED	EV
FUNCTION	CAL

   c. Shade the light perfectly from the light receiving unit.
   d. Adjust the OFF SET VR by turning so that the OFF SET lamp is ON.
3) Correction of EV sensitivity
   a. Install the light receiving unit on the light sensitivity correction standard jig (LSC-241).
      with the light measuring master lens (LML-241)

b. Set the switches and the LV knob, as follows.

ASA	100
S. SPEED	EV
FUNCTION	CAL
LV	10

c. Put the light sensitivity correction standard jig (LSC-241), assembled with the light measuring master lens for 24100 (LML-241), just front of the brightness surface and adjust the SENS VR so that the indicator shows 0EV

Light measuring master lens for 24100 LML-241

Light sensitivity correction standard jig
LSC-241

Measurement of the amount of exposures and the shutter speed

1)Measurement of the amount of exposures for 24100 AUTO 110

a. Install the 110 mask on the light receiving unit.

b. Set the switches, as follows.

ASA	80 or 320
S, SPEED	EV
FUNCTION	MEAS

c. Set the LV to be measured by turning the LV knob.

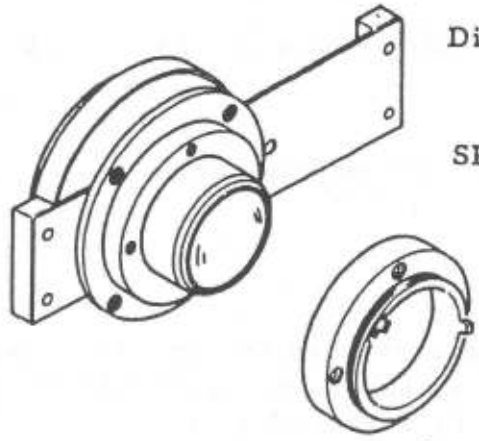
d. The LV to be measured at this time is indicated on the LV lamp.

e. When the camera is released, the amount of exposures will be indicated on the indicator as the error to the rated value.

f. When the camera is released, confirm the AUTO lamp signals ON-OFF signs. This indicates whether the information on the indicator is correct or not.

Measurement of the auto-shutter speed for 35mm focal plane shutter camera

1) Preparations
   a. Dismount F8 set ring from SPF light measuring master lens.
   b. Prepare a dismounted F8 set ring for the screw mount type, and a F8 set ring for the bayonet mount type.
   c. Install the 35mm camera mask on the light receiving unit.
   d. Confirm the OFF SET, adjust if necessary.
   e. Confirm the EV sensitivity, adjust if necessary.



Diaphragm plate

SPF light measuring master lens

F8 set ring for S-series

2) Measurement of the auto-shutter speed for ES and ESII

At the open-aperture mesurement:
   a. Mount F8 set ring to the camera body.
   b. Put SPF light measuring master lens and the camera body with F8 set ring onto the measuring table.
   c. Set the diaphragm plate to the full open aperture.
   d. Set the switches, as follows.

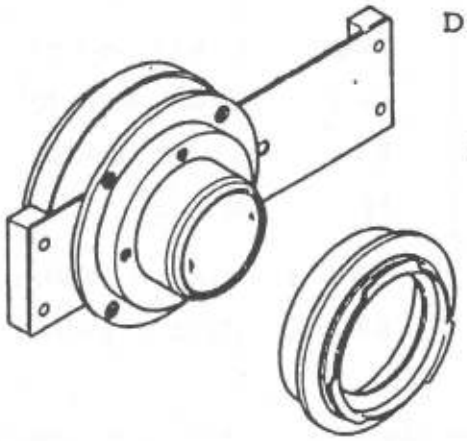
ASA	100
S. SPEED	FO
FUNCTION	MEAS

   As the above mentioned combinations, measure the auto-shutter speed and the meter indication in each LV.

At the stop-down measurement:
   a.
   b. the same as above.
   c. Set the diaphragm plate to the diaphragm F8.
   d. Set the switches, as follows.

ASA	100
S. SPEED	F8
FUNCTION	MEAS

3) Measurement of the auto-shutter speed for K2 and ME



Diaphragm plate

SPF light measuring master lens

F8 set ring for K-series

a. Mount F8 set ring to the camera body.
b. Put SPF light measuring master lens and the camera body with F8 set ring onto the measuring table.
c. Set the diaphragm plate to the full open aperture.
d. Set the switches, as follows.

ASA	100
S. SPEED	FO
FUNCTION	MEAS

As the above mentioned combinations, measure the auto-shutter speed and the meter indication in each LV.

Measurement of the mechanical speed for other cameras.

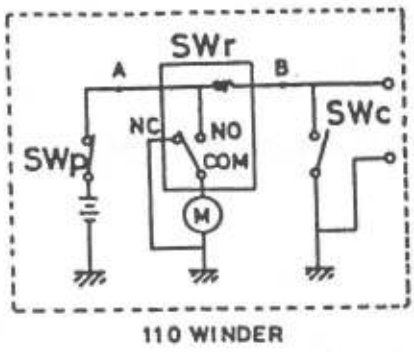
a. Mount F8 set ring to the camera body.
b. Put SPF light measuring master lens and the camera body with F8 set ring onto the measuring table.
c. Set the diaphragm plate to the full open aperture.
d. Set the switches, as follows.

ASA	100
S. SPEED	FO
FUNCTION	MEAS

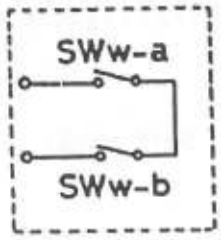
e. Set the LV knob at LV10.

As the above mentioned combinations, measure the mechanical speed.

AUTO 110 AND 110 WINDER
SEQUENCE OF ACTUATING CIRCUIT



110 WINDER

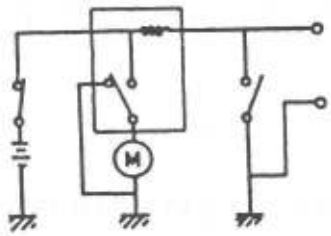


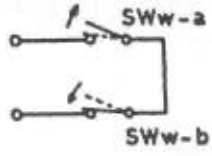
AUTO 110

SWp	Power switch
SWr	Relay switch*
SWc	Clutch switch
M	Motor
SWw-a	Winder switch A
SWw-b	Winder switch B

*Relay switch SWr
The NC-COM circuit switches over to the NO-COM circuit when the current flows between A and B.

1. At the released condition—the shutter button is depressed downward.



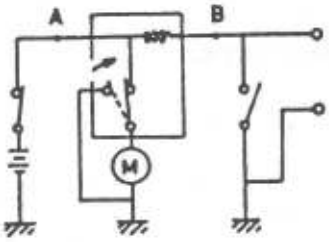


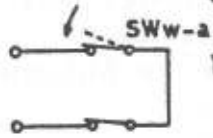
SWw-a ON → OFF

SWw-b OFF → ON

Motor does not rotate.

2. At the released condition—the shutter button is returning to the original position.



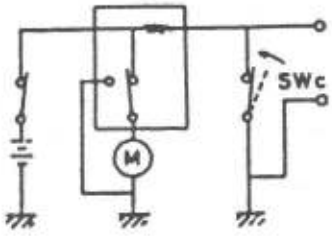


a. SWw-a OFF → ON

b. At the moment of SWw-a becomes ON, the current flows between A and B. Then the NC-COM circuit in SWr switches over to the NO-COM circuit.

Motor rotates from this moment.

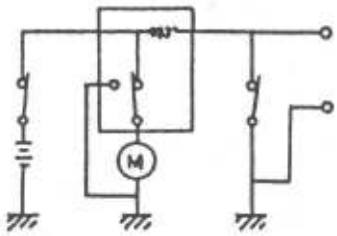
3. On the winding

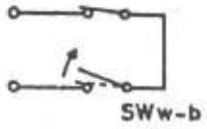


SWc OFF → ON

Refer to "110 WINDER TECHNICAL REPORT".

4. After charged the mirror housing



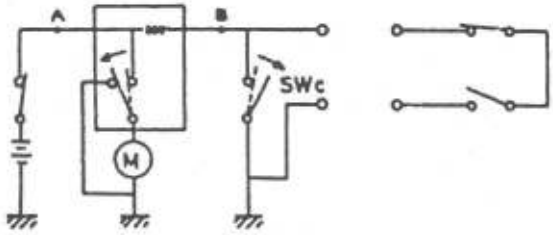


SWw-b ON → OFF

Even if SWw-b becomes OFF, SWc is still ON condition. So that the motor still rotating.

The film transport is still going.

5. After completed the film transport



a. Release the film spacing lever by a film perforation. As a result, the winding stops.
Then SWc is going OFF.

SWc ON → OFF

b. At this moment of SWc become OFF, the circuit of SWr switches from NO-COM to NC-COM because of no current flows between A and B.

Then Motor stops to rotate suddenly.

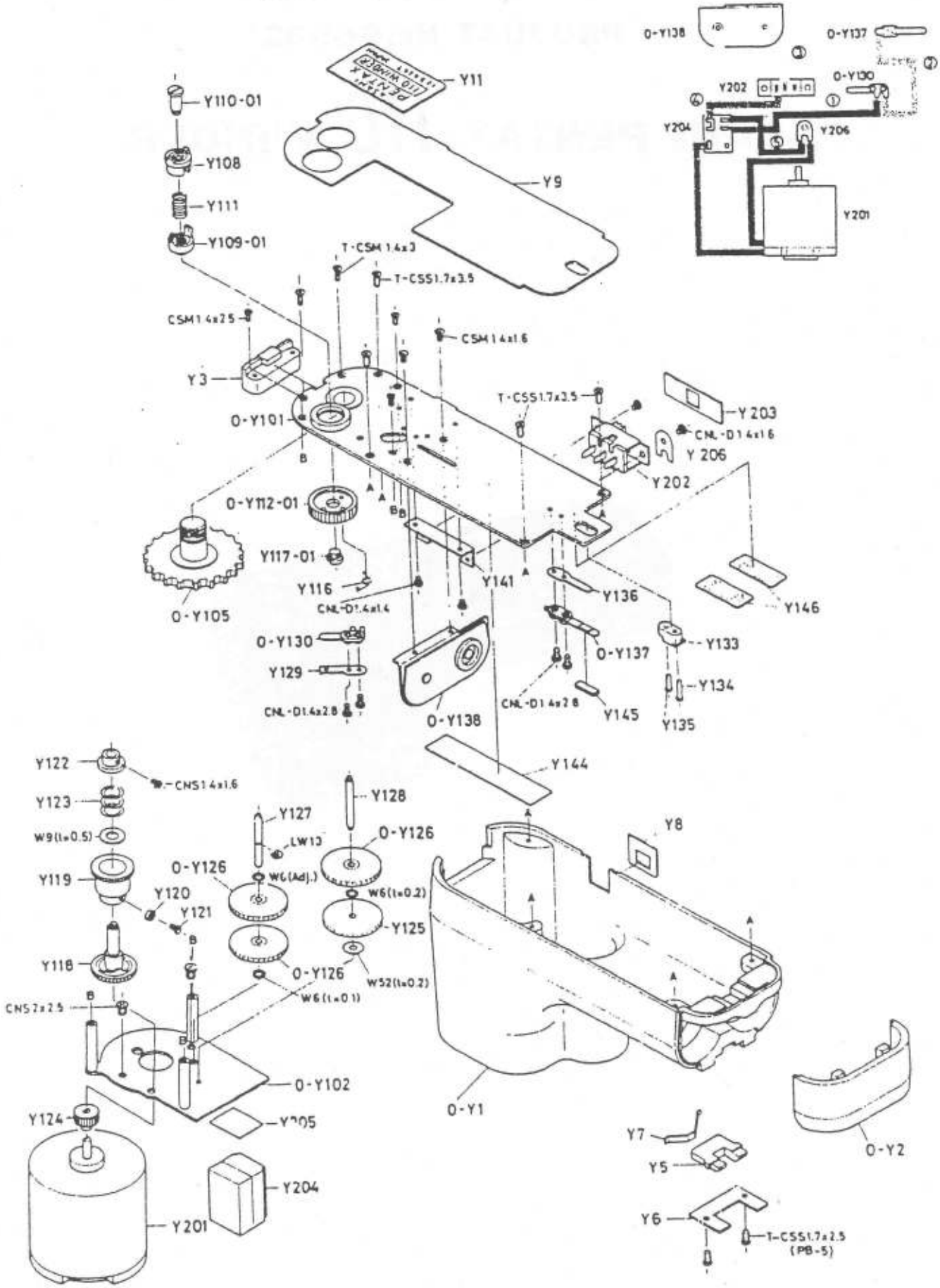
6. Return to 1.

PRODUCT No.66502

ASAHI PENTAX *110* WINDER

09.78 3M

EXPLODED ILLUSTRATION



Product No. 66502

ASAHI PENTAX *110* WINDER

LIST OF SERVICE PARTS

Product No. 66502
ASAHI PENTAX *110* WINDER

Note: 1. The parts with numbers starting '0-' are assemblies.

2. Only available parts are listed below.

Parts No.	Description	Quantity	Interchangeability
0-Y1	Body proper assy. (Y1, Y4)	1	
0-Y2	Battery cover assy. (Y2, Y10)	1	
Y3	Spacer	1	
Y5	Hook plate	1	
Y6	Hook plate cover	1	
Y7	Hook plate spring	1	
Y8	Switch indication plate	1	
Y9	Sheet	1	
Y11	Name plate	1	
0-Y101	Mech. plate A assy. (Y101, Y104, Y107)	1	
0-Y105	Mech. plate B assy. (Y105, Y106)	1	
Y108	Joint	1	
Y109-01	Joint shaft	1	
Y110-01	Joint retainer screw	1	
Y111	Joint spring	1	
0-Y112-01	Joint gear assy. (112-01, Y113, Y114-01, Y115-01)	1	
Y116	Ratchet claw spring	1	
Y117-01	Ratchet	1	

Parts No.	Description	Quantity	Interchangeability
Y118	Cam	1	
Y119	Clutch gear	1	
Y120	Roller	1	
Y121	Roller retainer screw	1	
Y122	Winding torque adjustment nut	1	
Y123	Clutch spring	1	
Y124	Pinion gear	1	
Y125	Reduction gear A	1	
0-Y126	Reduction gear B assy. (Y126, Y148)	3	
Y127	Gear shaft A	1	
Y128	Gear shaft B	1	
Y129	Clutch contact piece A	1	
0-Y130	Clutch contact piece B assy. (Y130, Y131, Y132x2)	1	
Y133	Connector	1	
Y134	Connector pin A	1	
Y135	Connector pin B	1	
Y136	Connector contact piece A	1	
0-Y137	Connector contact piece B assy. (Y137, Y131, Y132x2)	1	
0-Y138	Battery hold plate assy. (Y138, Y139, Y140x2)	1	
Y141	Switch retainer plate	1	
Y144	Wire hold tape	1	
Y145	Insulation seal	1	
Y146	Battery polarity label	2	

Parts No.	Description	Quantity	Interchangeability
Y201	Motor	1	
Y202	Switch	1	
Y203	Switch cover	1	
Y204	Relay switch	1	
Y205	Relay switch hold tape	1	
Y206	Ground contact piece	1	

LIST OF STANDARD PARTS

Product No. 66502
ASAHI PENTAX *110* WINDER

Small screws:

Description	Surface treatment	Position of use	Quantity
CNS1.4x1.6	Black nickel	Y118, Y122	1
CNS2x2.5	"	0-Y101, Y201	2
CSM1.4x1.6	"	0-Y101, Y138	2
CSM1.4x2.5	"	0-Y101, 0-Y102	3
CNL-D1.4x1.4	"	0-Y101, Y141	2
CNL-D1.4x2.8	"	0-Y101, 0-Y130 0-Y101, 0-Y137	2 2
T-CSS1.7x2.5	" (PB-5)	0-Y1, Y6	2
T-CSS1.7x3.5	"	0-Y1, 0-Y101	4
T-CSM1.4x3	"	Y3, 0-Y101	2

Washers:

Description	Material	Thickness	Position of use	Quantity
W6	Brass	0.1mm	Y126	2
W9	"	0.5mm	Y119, Y123	1
W50	"	0.1mm	Y128	1

Lock washer

Description	Surface treatment	Position of use	Quantity
LW13	Steel	Y127	1

Lead wires:

Lead wire No.	Length	Color	Position of use	Quantity
1	40mm	Blue	0-Y130, Y204	1
2	50	Purple	0-Y130, 0-Y137	1
3	15	Yellow	0-Y138, Y202	1
4	40	Orange	Y202, Y204	1
5	25	Black	Y204, Y206	1

TECHNICAL REPORT
テクニカル リポート

ASAHI PENTAX 110 WINDER
(Product No.66502)

A) Adjustment of winding torque

In servicing, adjustment of winding torque may be in good if each picture frame can be transported one by one surely under loaded film.

Tolerance

within 1.5kg-cm at 2.5 volts (Regulated DC power supply)

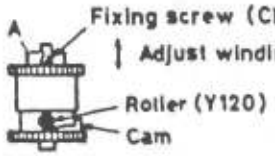
A) 巻上トルク調整

製品修理において、巻上トルク調整はフィルム装填状態において、各フレームが一駒づつ確実に送られれば良しとする。

規格

2.5V供電した時

1.5kg-cm 以内のトルクであること。



Aを上下させることによって巻上トルクを調整すること。

B) Adjustment of clutch switch

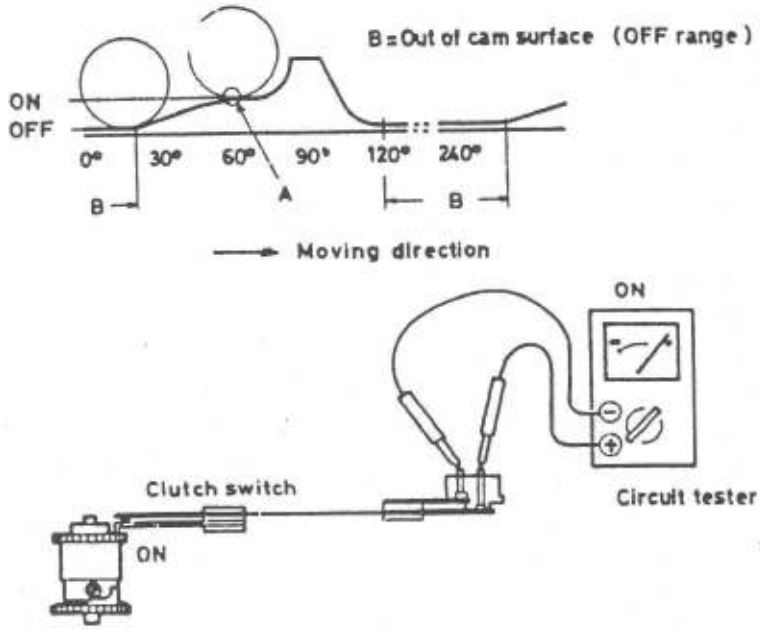
1) Clutch switch must be ON just when roller run up cam surface pointed A. At A point, enough contact pressure should be necessary to be better contact efficency.

2) Clutch switch must be OFF around out of cam surfaces.

B) クラッチスイッチの調整

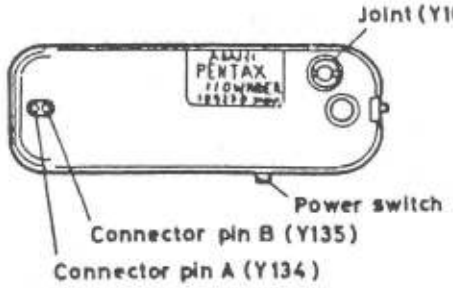
1)ローラーがAで示したカム面に乗り上げた時にONであること。A部分において、クラッチ接片間は十分な接触圧があること。---接触効率を良好にする為。

2)クラッチスイッチはカム面以外では、OFFになっていること。



C) Check

C) 点検



Power switch ON パワスイッチ ON
DC power supply 2.5 volts DC2.5V

1) Joint (Y108) rotates to counterclokwise when shorted between Connector pin A (Y134) and Connector pin B (Y135).

1) コネクターピンA(Y134)とコネクターピンB(Y135)間をショートさせた時にジョイント(Y108)は反時計方向に回転すること。

2) Joint (Y108) starts to rotate to counterclockwise just after Roller (Y120) was located on cam surface by turning Joint (Y108) to clockwise with tweezers or others.
And Joint (Y108) stops the rotation when power switch was OFF.

2) ジョイント(Y108)を時計方向にピンセット等で回し、ローラ(Y120)がカム面に乗り上げた直後にジョイントは反時計方向に回転し始めること
そして、パワースイッチをOFFにした時にジョイント(Y108)は回転を止めること。

3) Power source voltage (2.5 volts) comes up surely between Connector pin A (Y134) and Connector pin B (Y135).

Connector pin A	+ side
Connector pin B	- side

3) コネクターピンA(Y134)とコネクターピンB(Y135)間に 2.5ボルトが検出されること。
コネクターピン A +サイド
コネクターピン B -サイド

4) Under the condition as mentioned below, Joint (Y108) must be rotated and repeats the rotation until power switch is OFF.

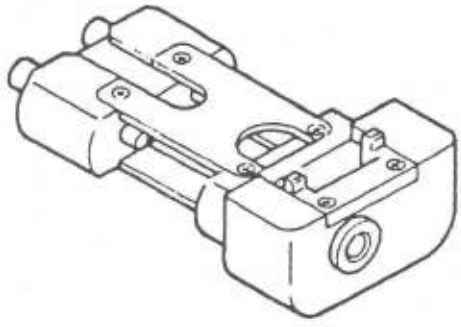
4) 下記に示した状態の時ジョイント(Y108)はパワースイッチをOFFにするまで空送りをくり返すこと。

- ○ Winder unit is attached to camera body.
- ○ Power switch of winder unit is ON.
- ○ Without film cartridge.

- ○ カメラボディにワインダーを取付ける。
- ○ ワインダーのパワースイッチをONにする。
- ○ フィルムカートリッジなし。

D) Special tool

D) 特殊工具
110ワインダー用電源アダプター



Power source adapter for 110 WINDER