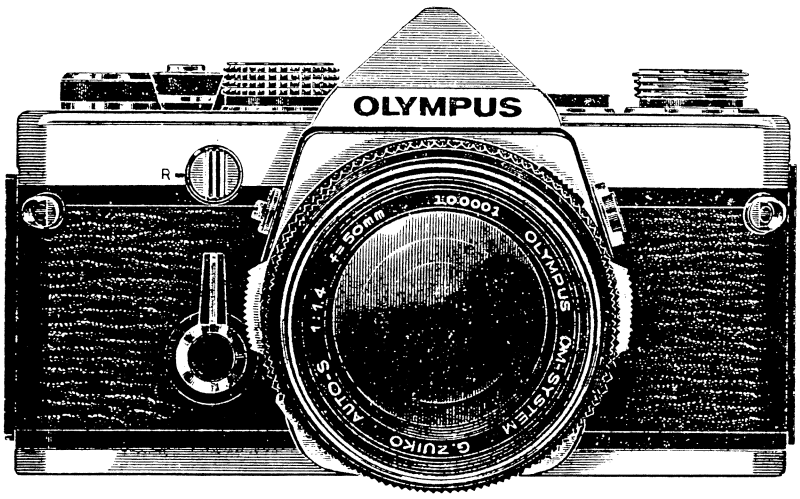
OLYMPUS
OM-1

OLYMPUS
OM-1
REPAIR MANUAL

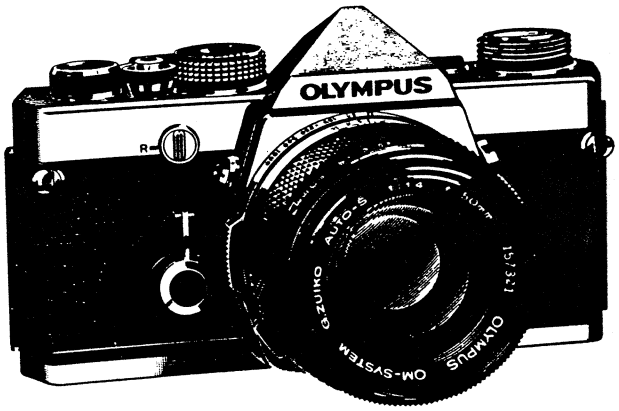


OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN

OLYMPUS
OM-1 OM-1 MD OM-1 N
REPAIR MANUAL

INDEX

OM-1



OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN

A

PARTS LIST AND EXPLODED PARTS DIAGRAM

FOR

OM1,OM1MD,OM1N

A. PARTS LIST AND EXPLODED PARTS DIAGRAM

EXPLANATION OF MARKS

(1) Indicates parts that are supplied both as a single piece and an assembled unit. In the latter case, the single part is incorporated in the assembled unit indicated with the mark (1) .
Exception: Parts in the mark ( ) are not supplied in single pieces.
(Parts that are supplied only in single pieces are not indicated with any mark. While parts that are supplied as an assembled unit are prefixed with "Z" or "U".)

] Several types of parts for the same position are available, from which most suitable one is to be selected.

✻ 3 Parts differ according to different models and types. This mark is used to indicate various combinations in a picture.

Left-handed screw. The mate screw hole is not marked particularly.

Indicates parts that should not be touched directly by bare hand because special surface treatment is applied. Wear fingerstalls or use tweezers.

★ Not supplied as a repair part.

Used exclusively for black finish models.

Indicates original parts. New, modified ones are not indicated with this mark. Both original and modified parts are supplied.

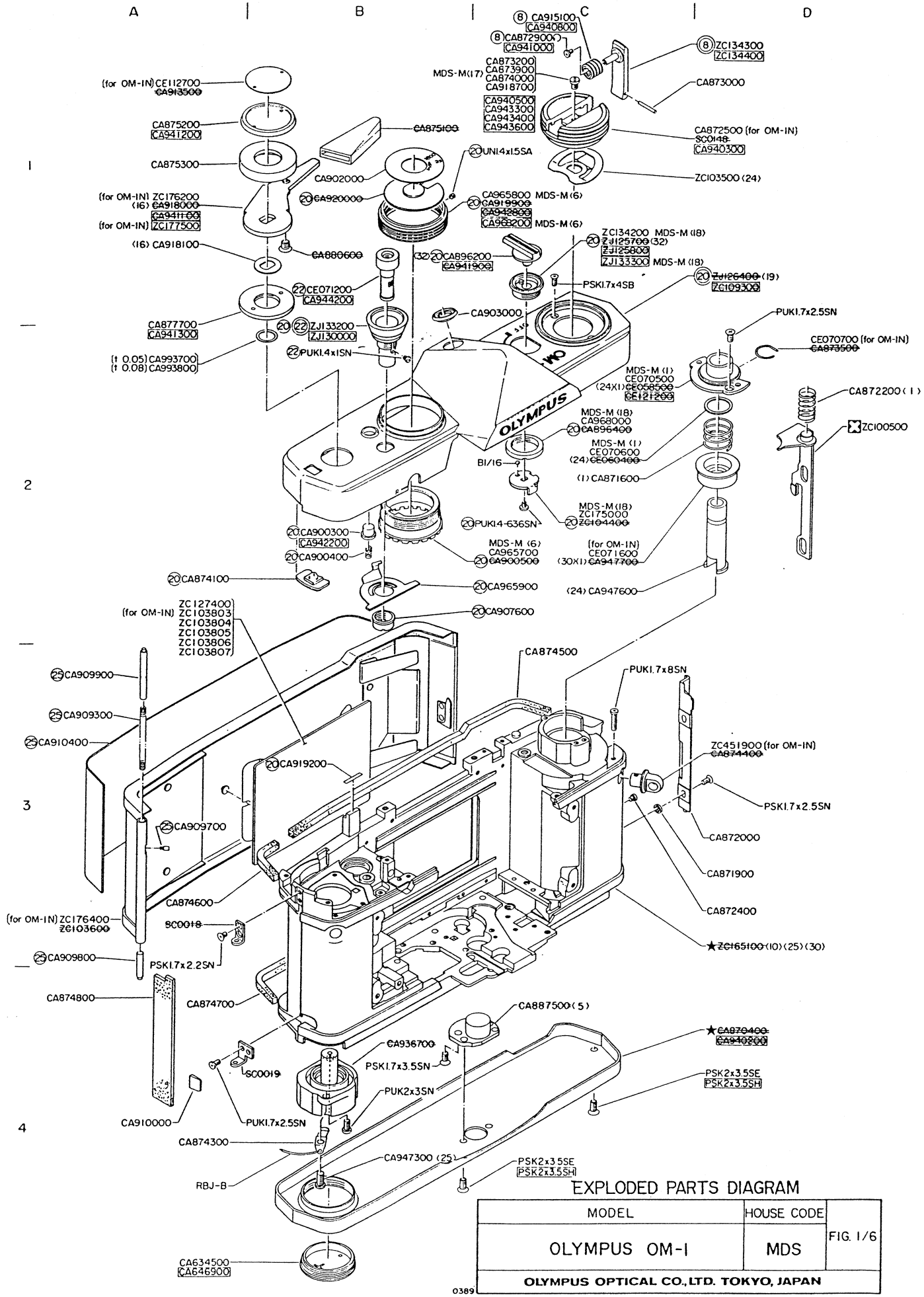
No more available parts due to design change or out of stock.

A correction mark. Parts with this mark are not available.

〈 2 〉 Modified parts that are unable to show in the technical manual. The figure indicates reference page number.

2-A3 This notation is entered in the "Remarks" column of parts list and indicates parts position in the technical manual.

2-A3
- 2 — Indicates page number in which the technical manual appears. However, 1/1 (page 1 of 1) is not indicated particularly.
- A3 — Parts position. The technical manual is divided into 16 equal sections. Each section can be identified by using A, B, C and D from left to right and 1, 2, 3 and 4 from top to bottom.

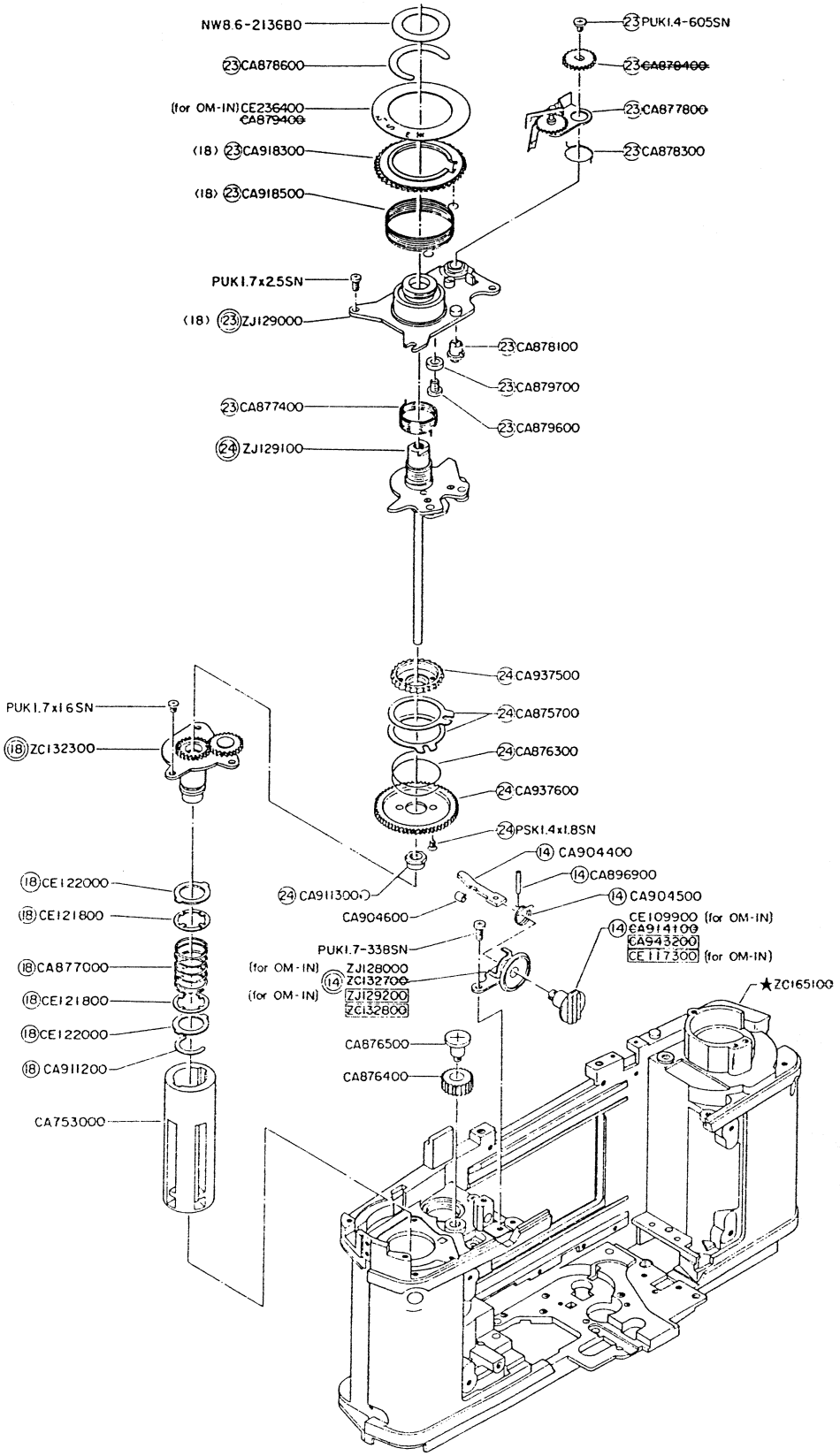


EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE	FIG. 1/6
OLYMPUS OM-1	MDS	
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

0389

NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY

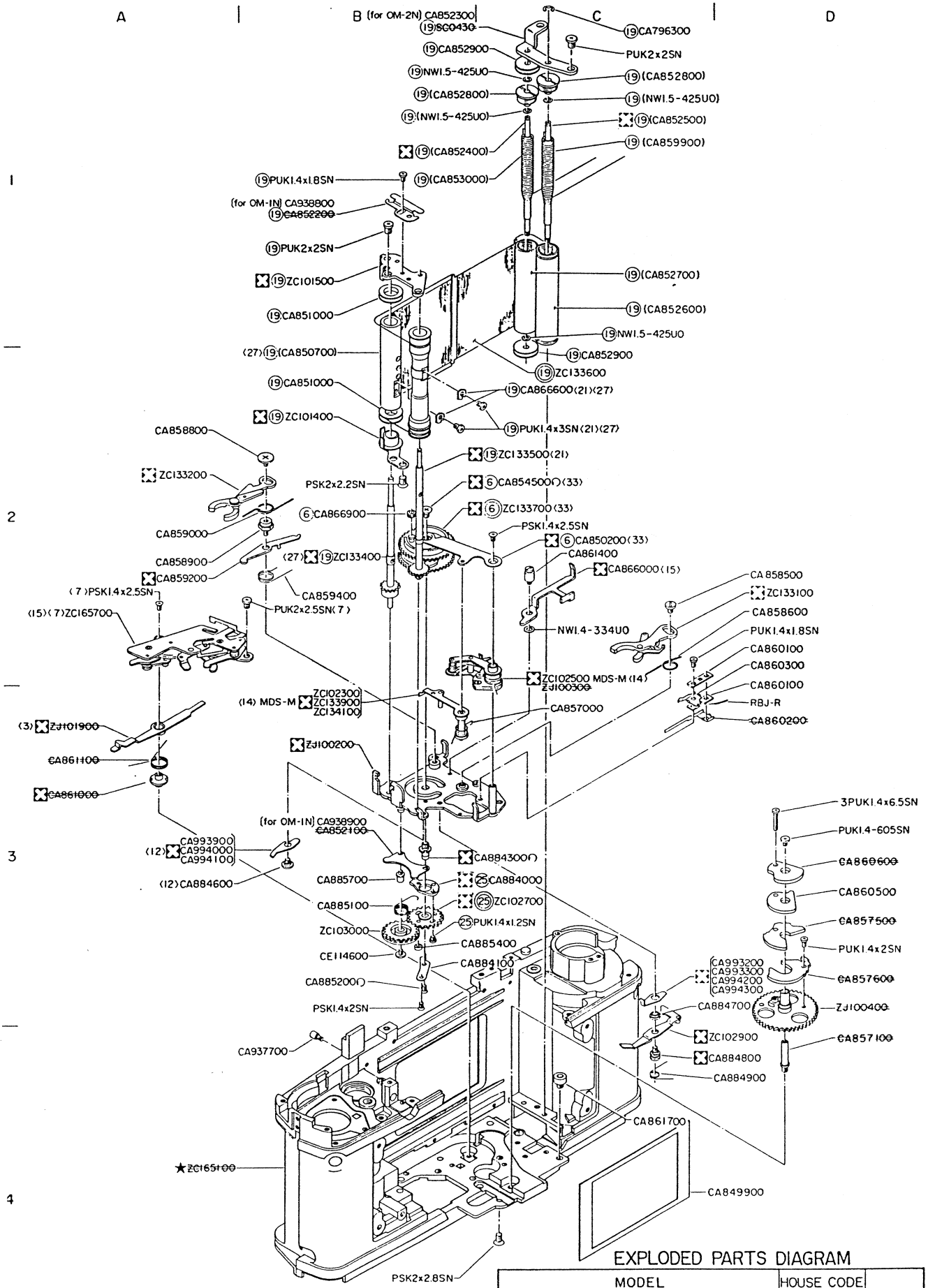


EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE	FIG. 2/6
OLYMPUS OM-1	MDS	
OLYMPUS OPTICAL CO.,LTD. TOKYO, JAPAN		

0389

NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY



EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE	FIG. 3/6
OLYMPUS OM-1	MDS	
OLYMPUS OPTICAL CO.,LTD. TOKYO, JAPAN		

0389

NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY

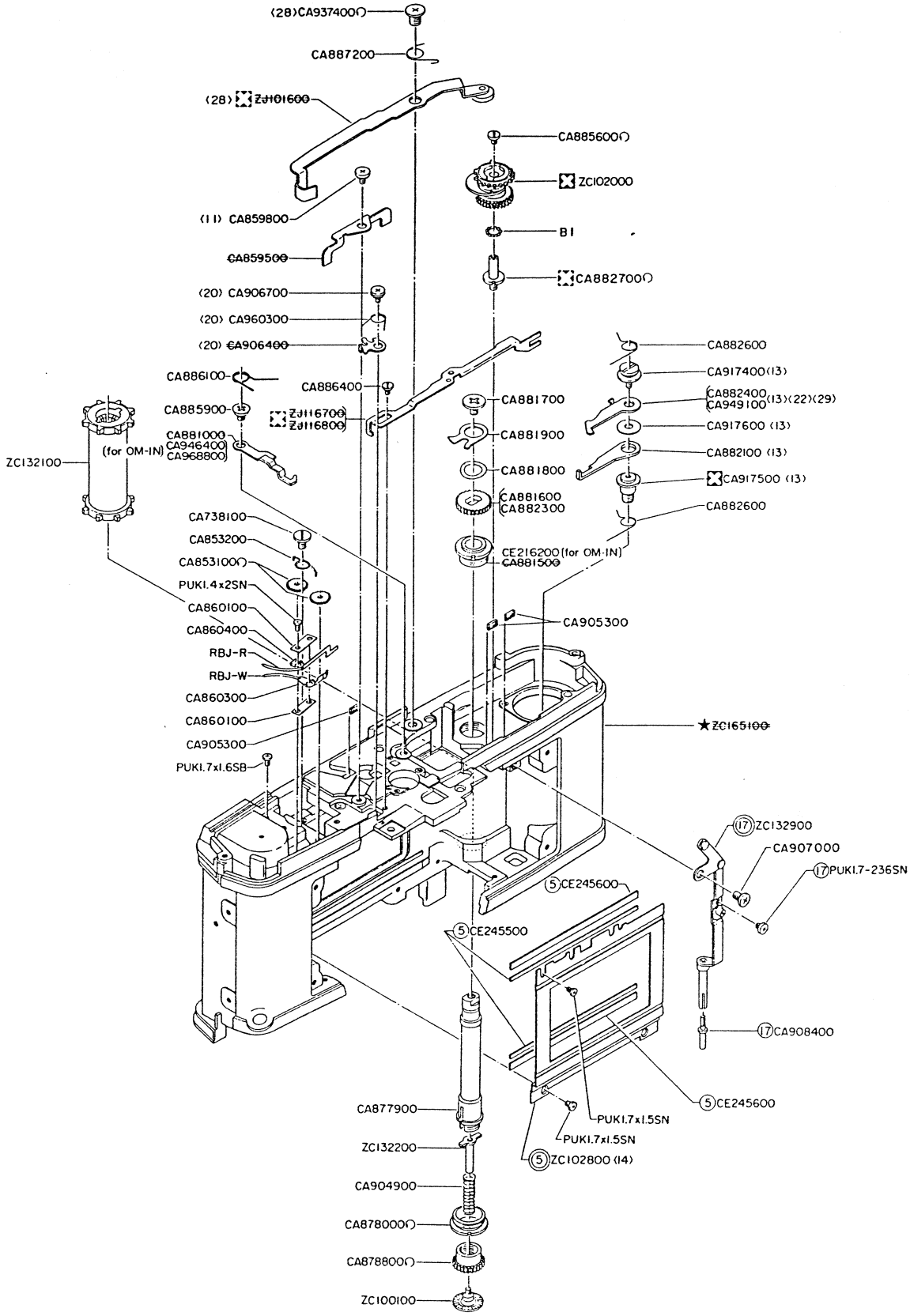
A | B | C | D

1

2

3

4

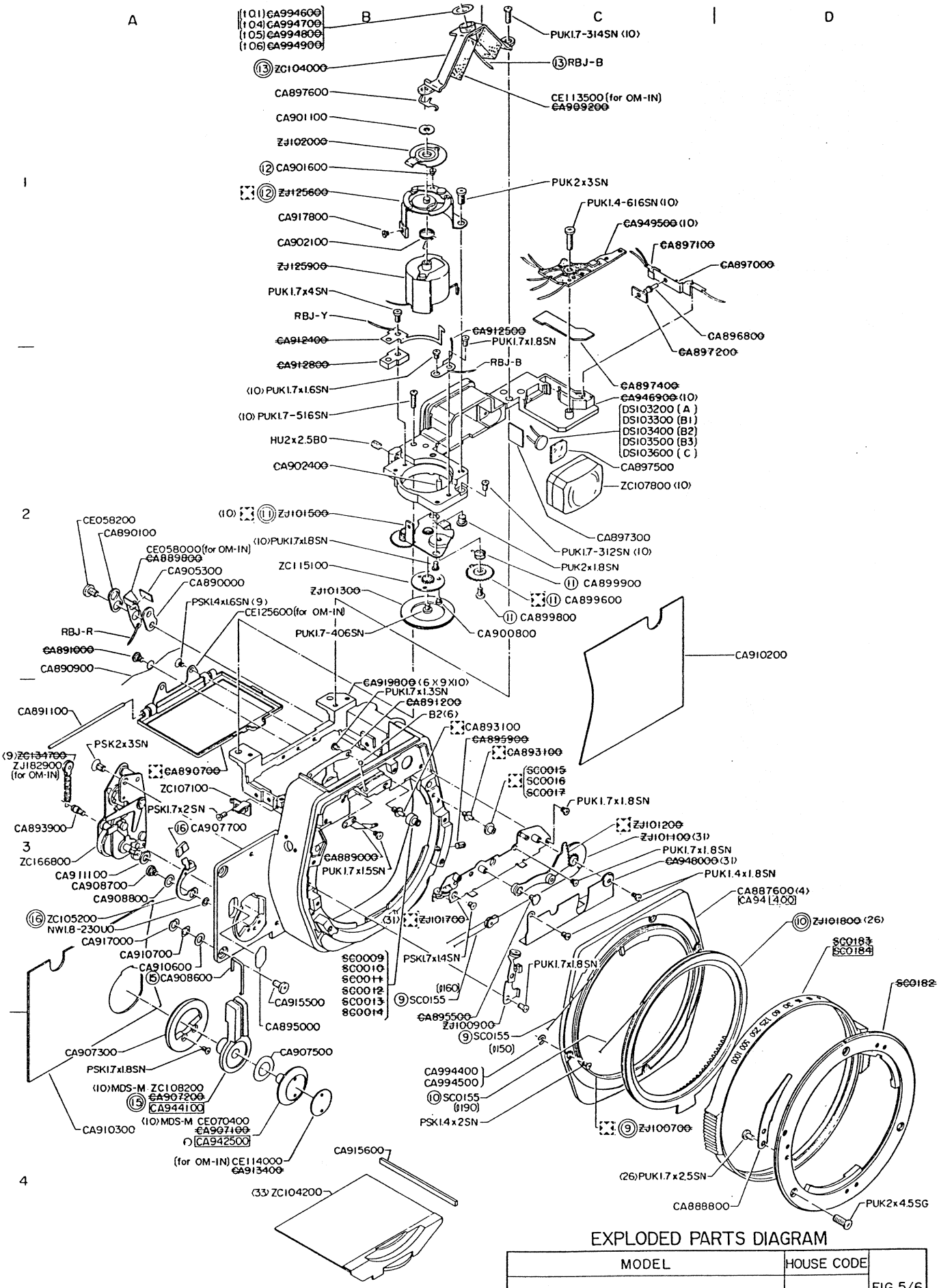


EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE	FIG. 4/6
OLYMPUS OM-1	MDS	
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

0389

NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY

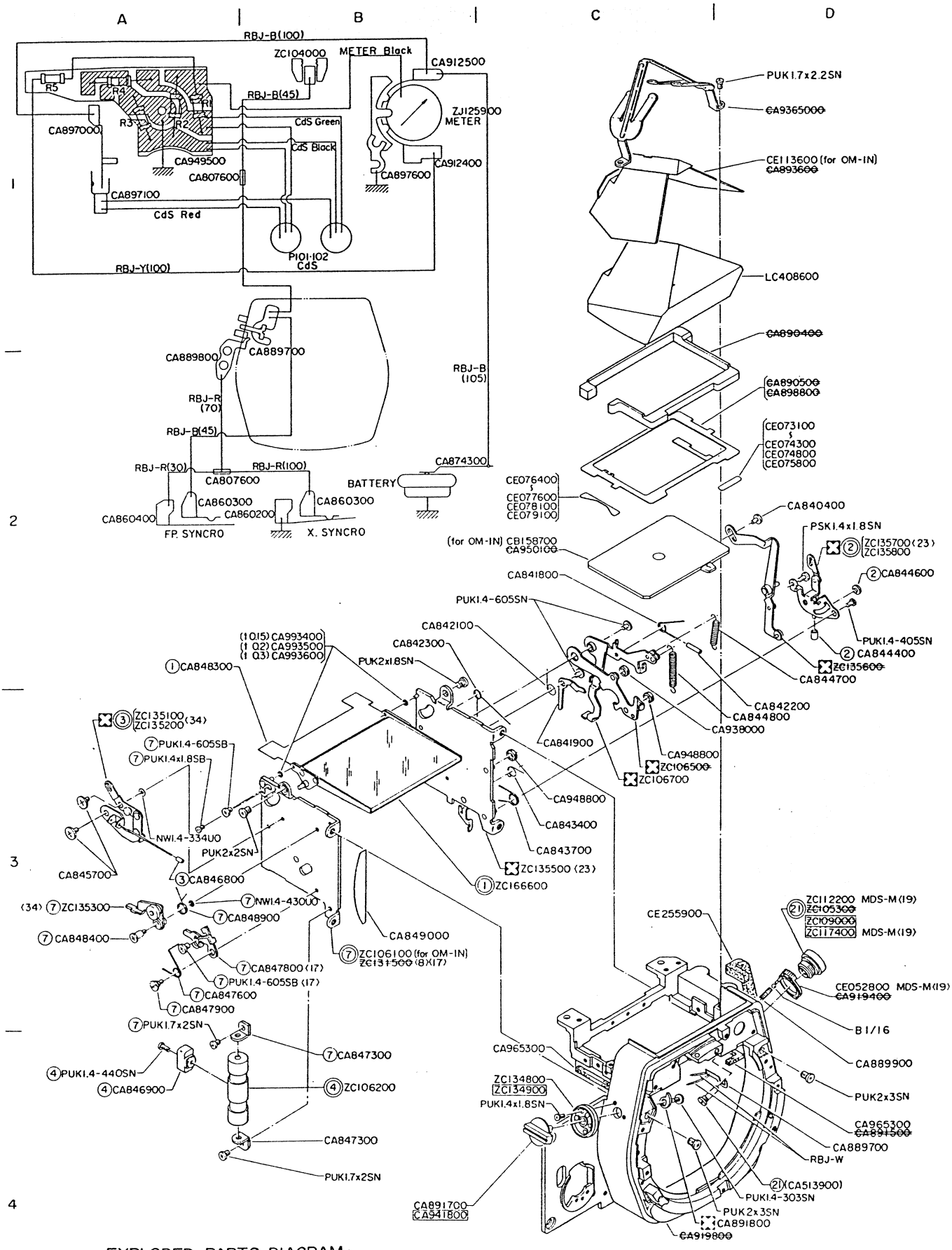


EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE	FIG. 5/6
OLYMPUS OM-1	MDS	
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

0389

NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY



EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE	FIG. 6/6
OLYMPUS OM-1	MDS	
OLYMPUS OPTICAL CO.,LTD. TOKYO, JAPAN		

0389

NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY

変更部品表 IMPROVED PARTS TABLE

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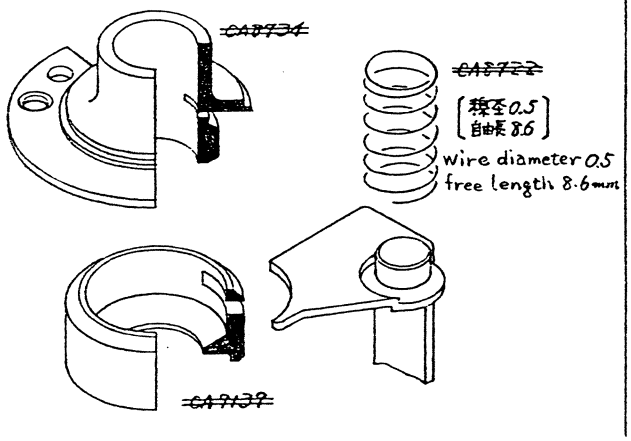

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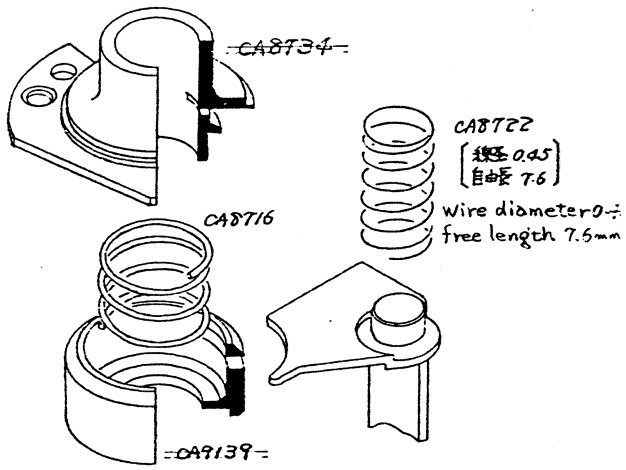

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右図の3部品 ナシ

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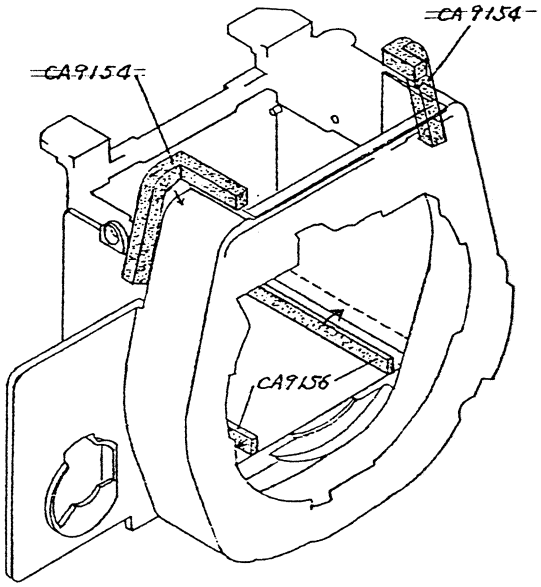

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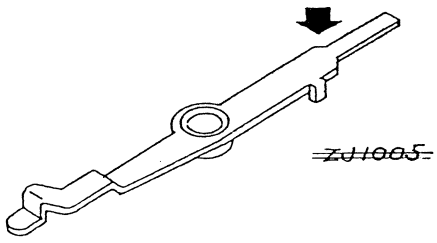

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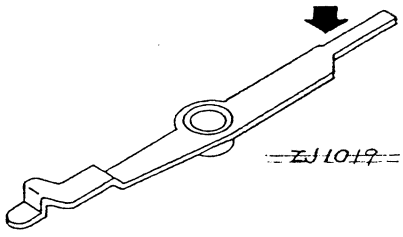

変更部品表 IMPROVED PARTS TABLE

⟨4⟩

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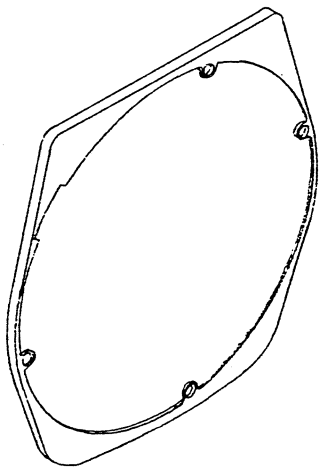

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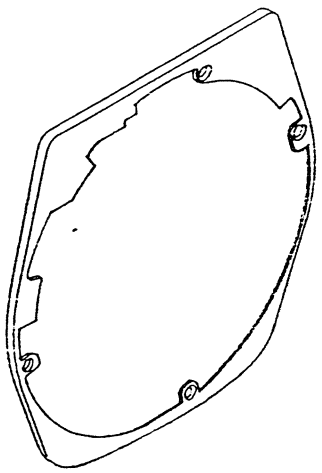

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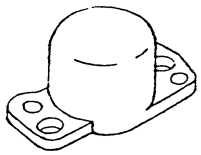

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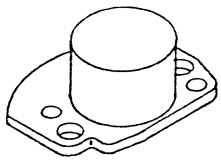

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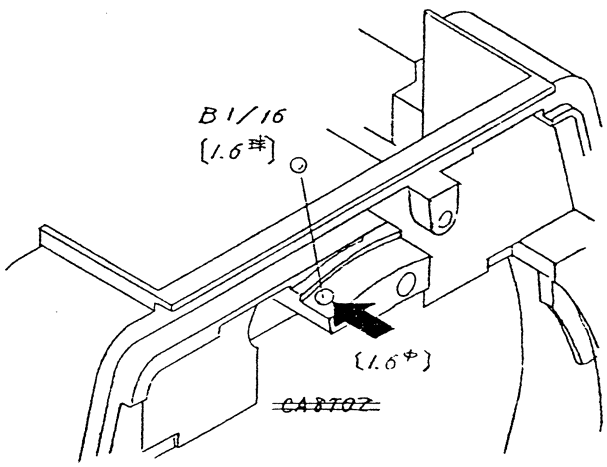

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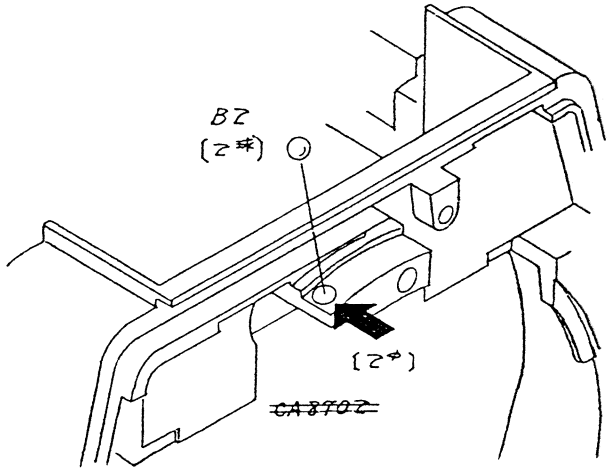

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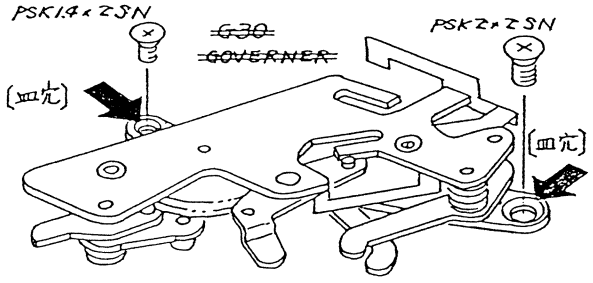

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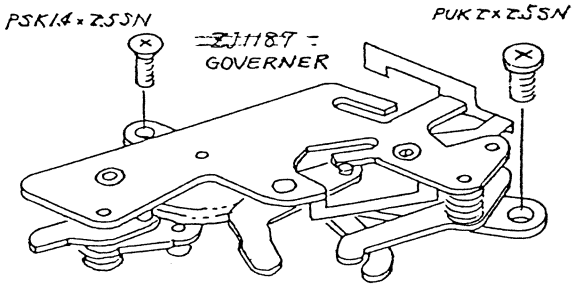

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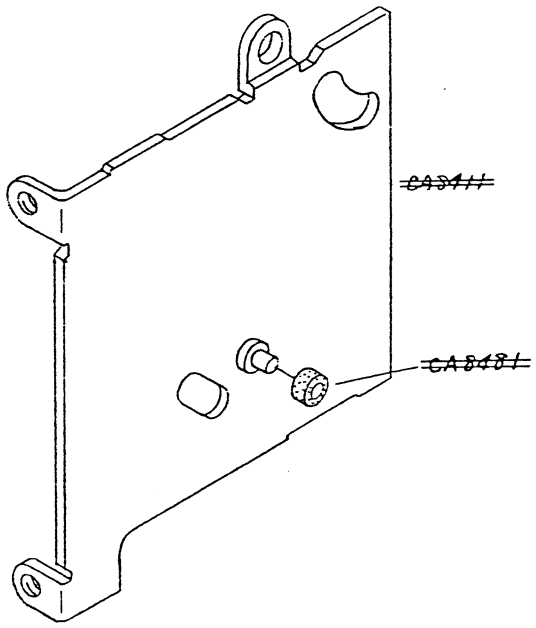

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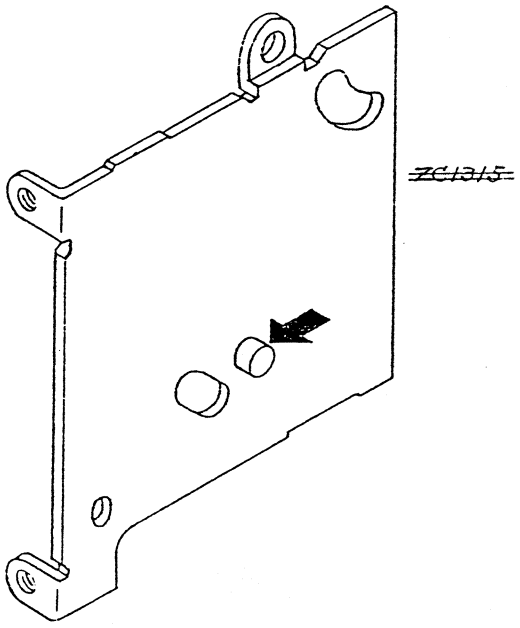

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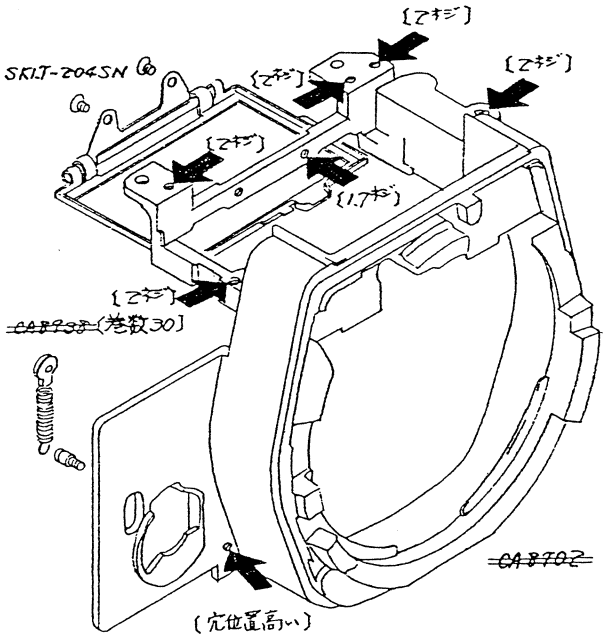

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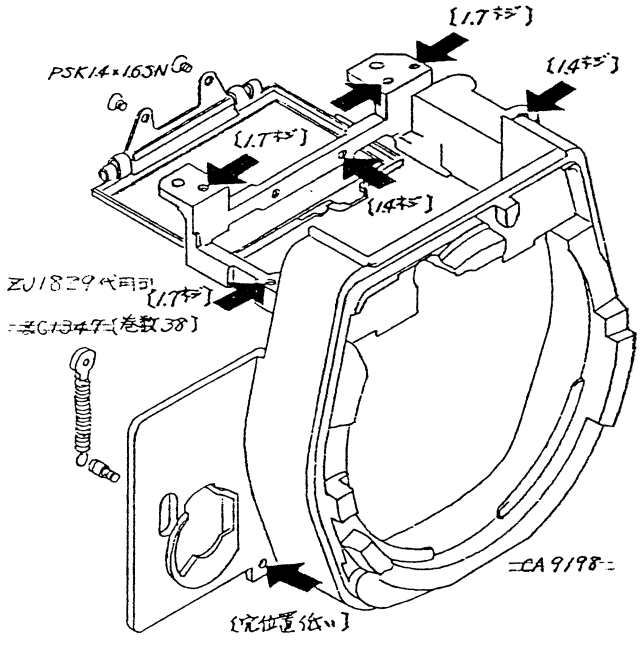

変更部品表 IMPROVED PARTS TABLE

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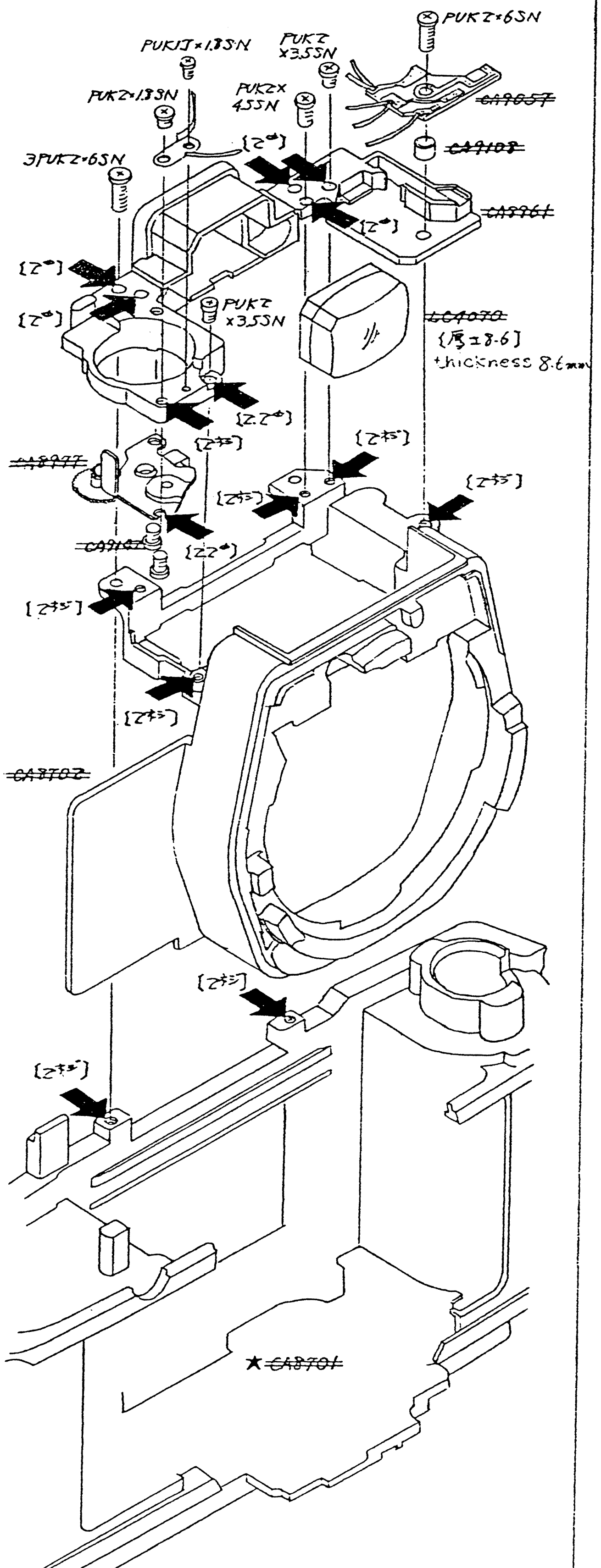

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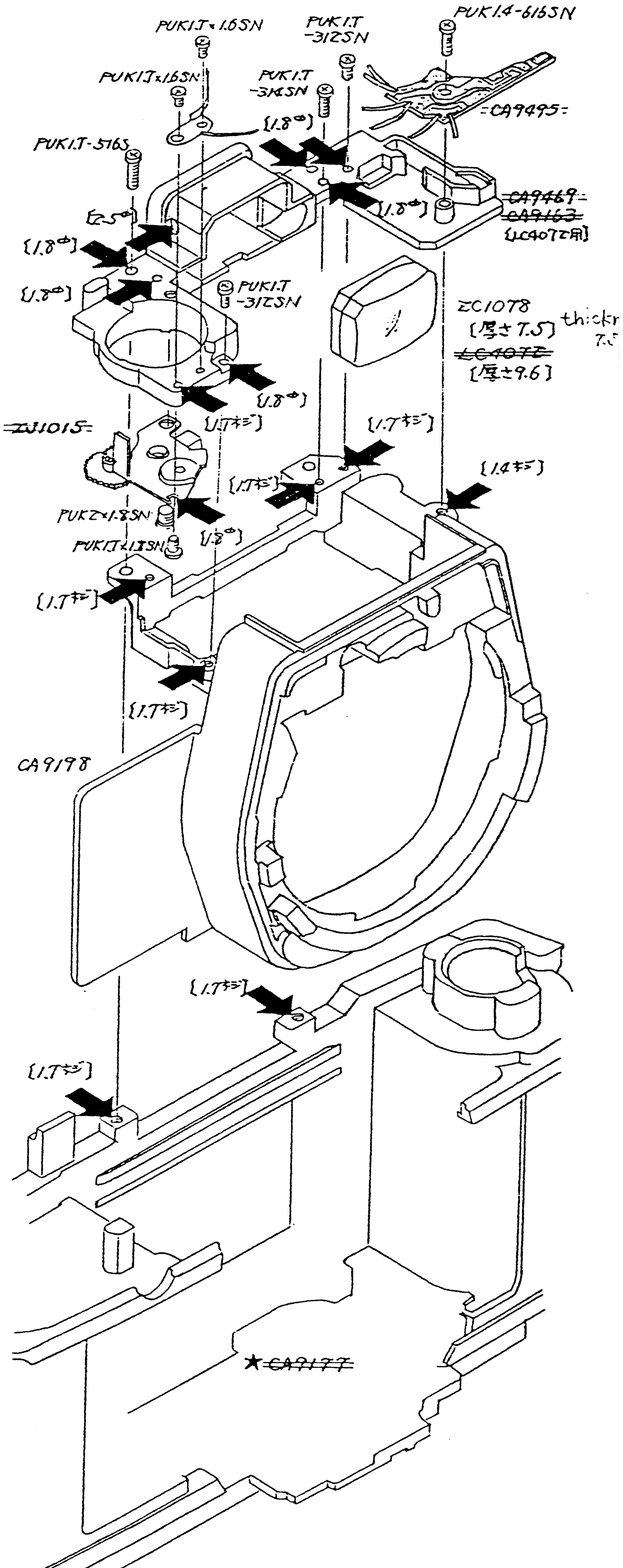

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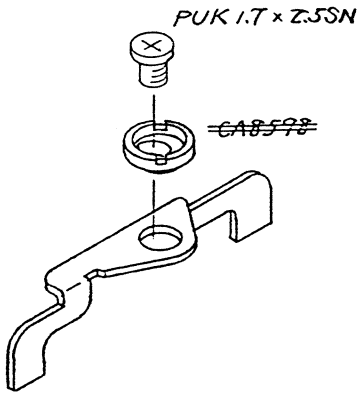

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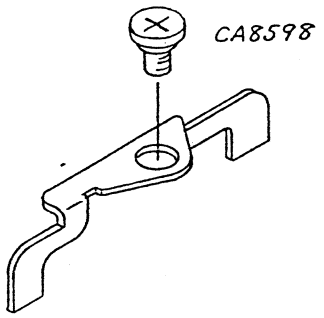

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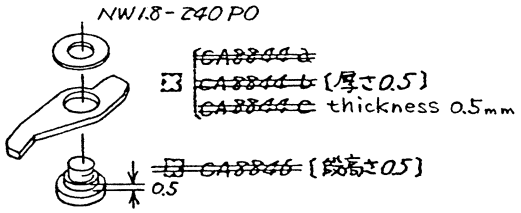

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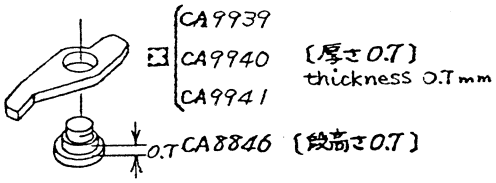

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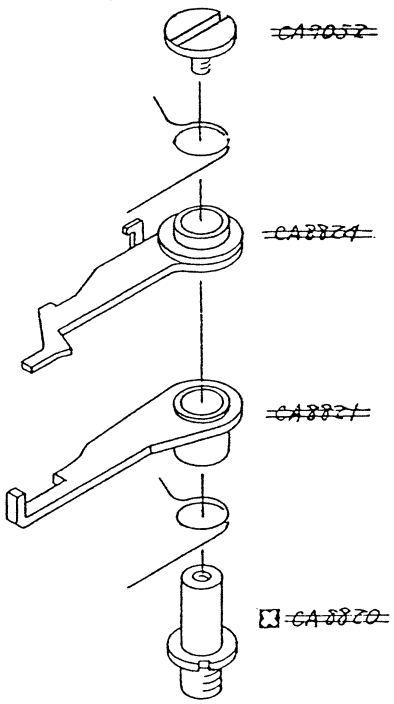

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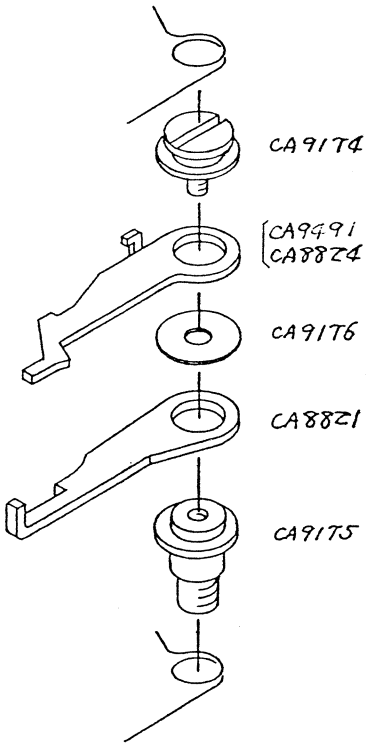

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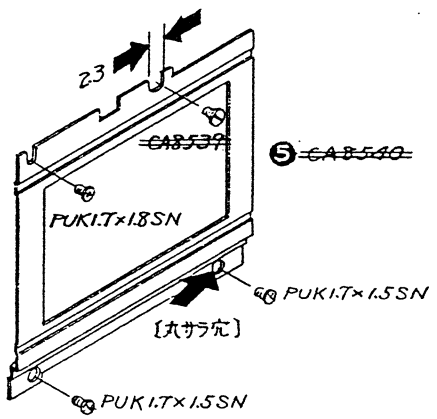

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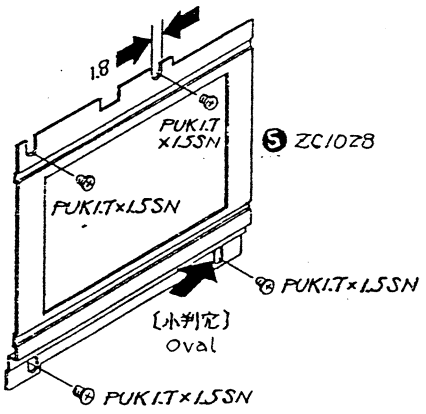

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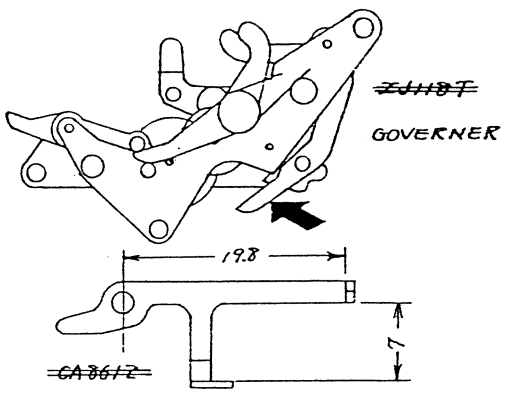

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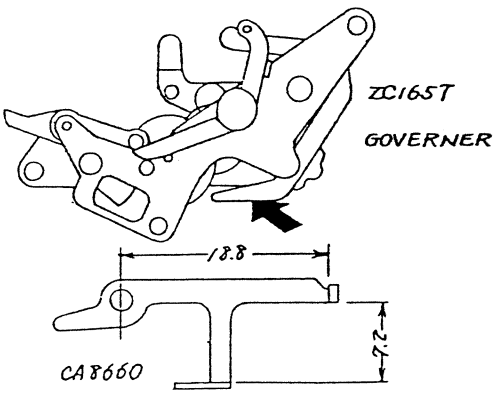

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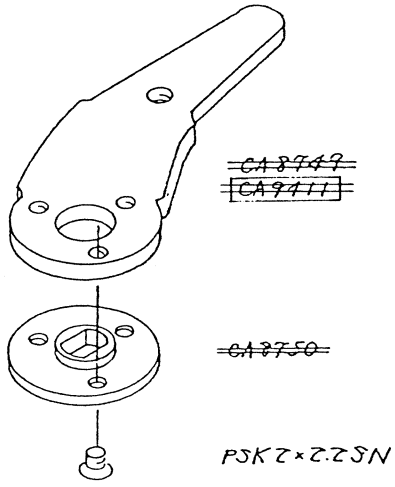

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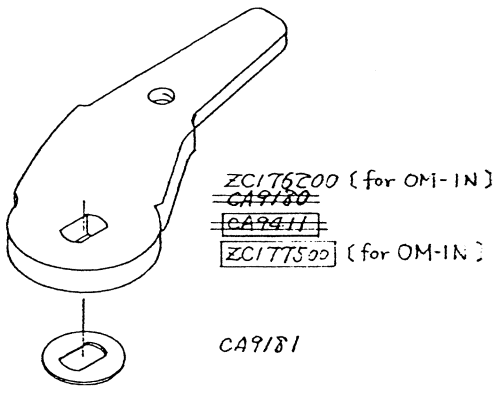

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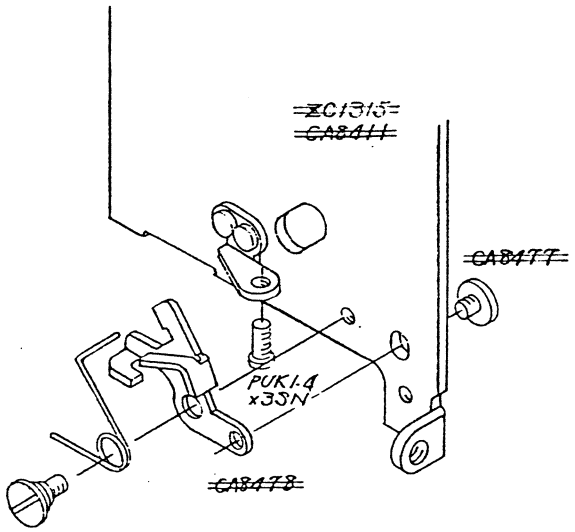

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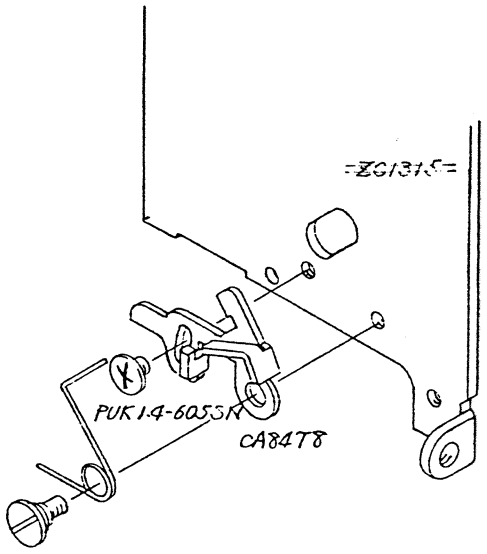

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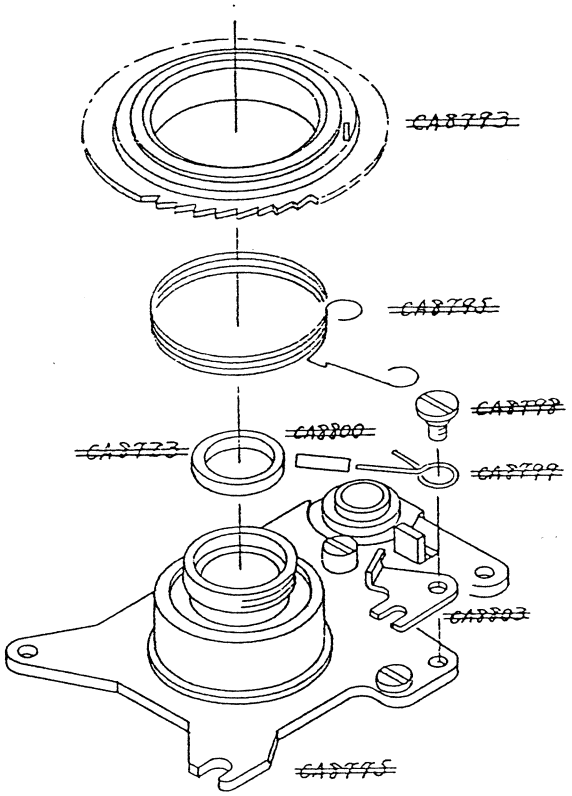

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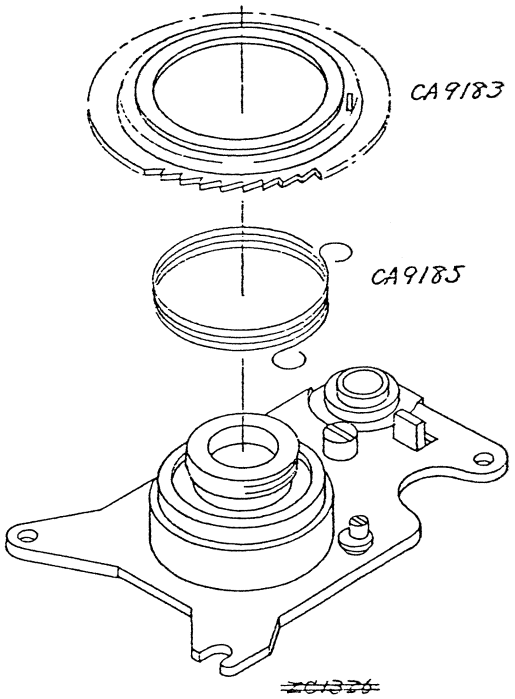

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変更部品表 IMPROVED PARTS TABLE

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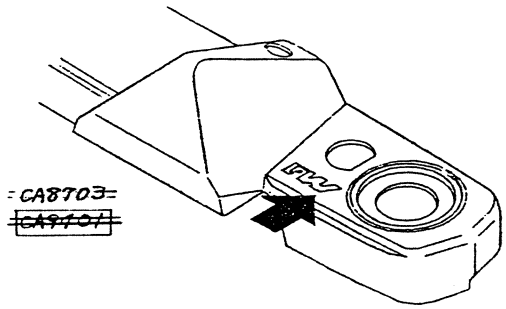

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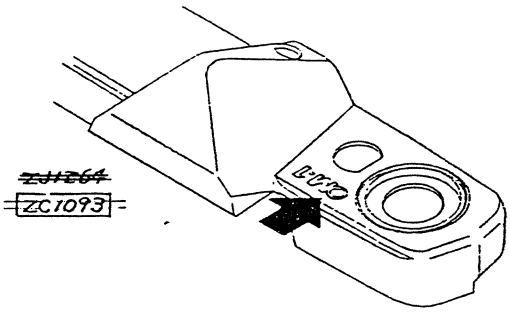

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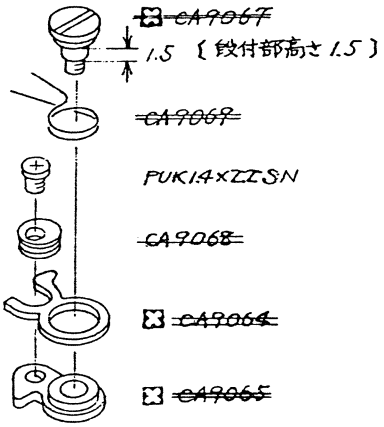

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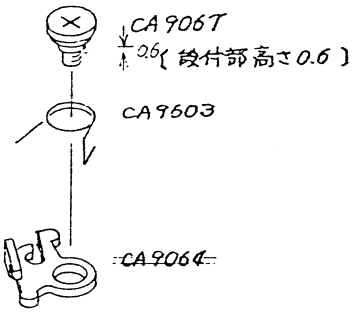

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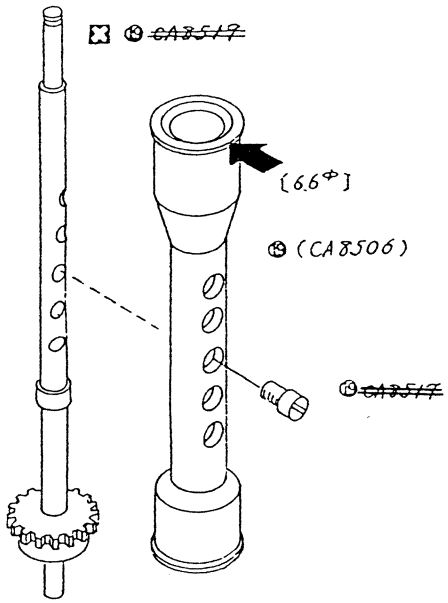

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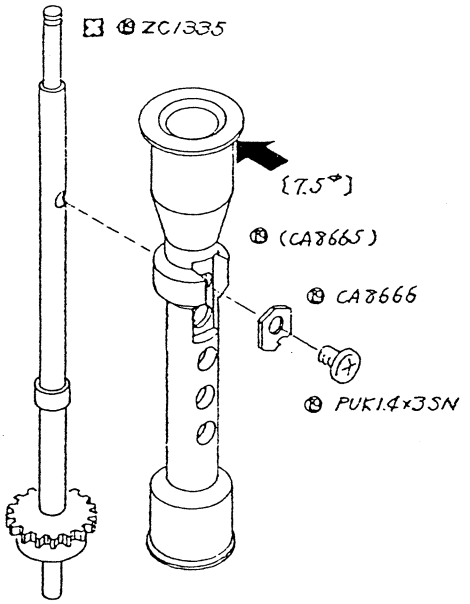

MDS　　変更部品表 IMPROVED PARTS TABLE

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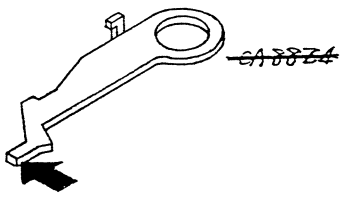

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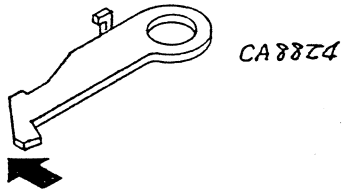

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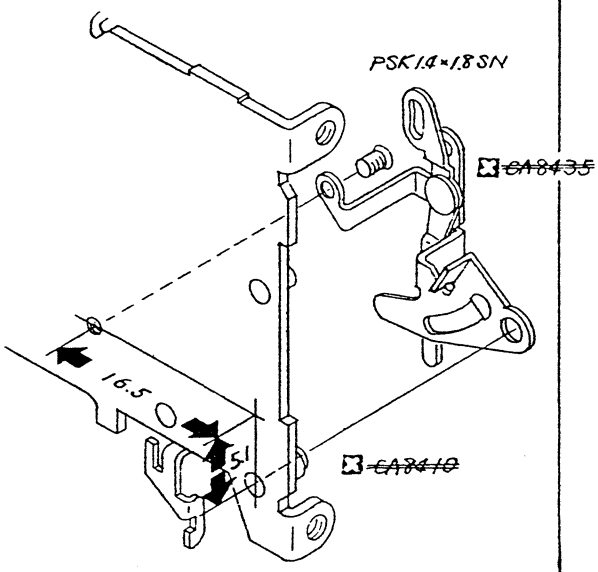

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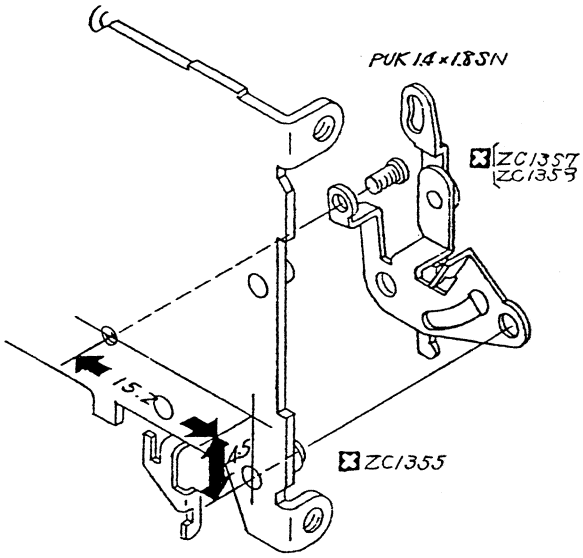
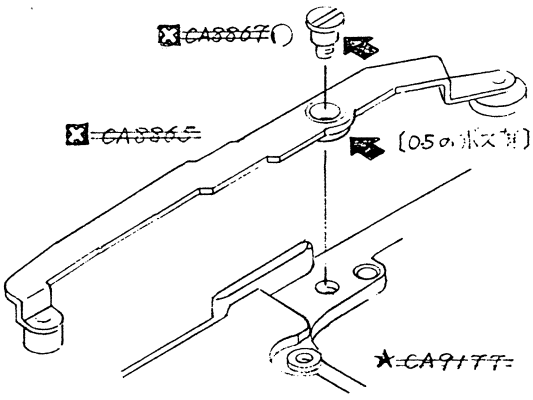


〈28〉

OLD



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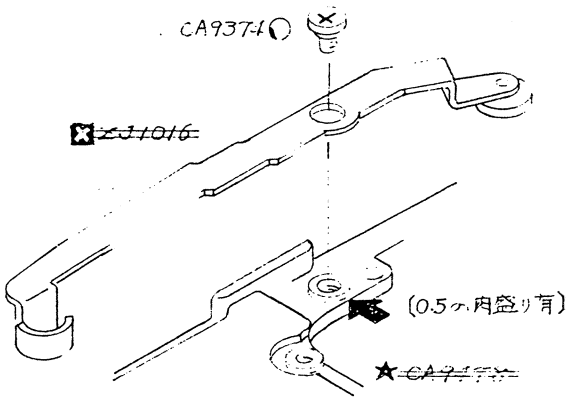
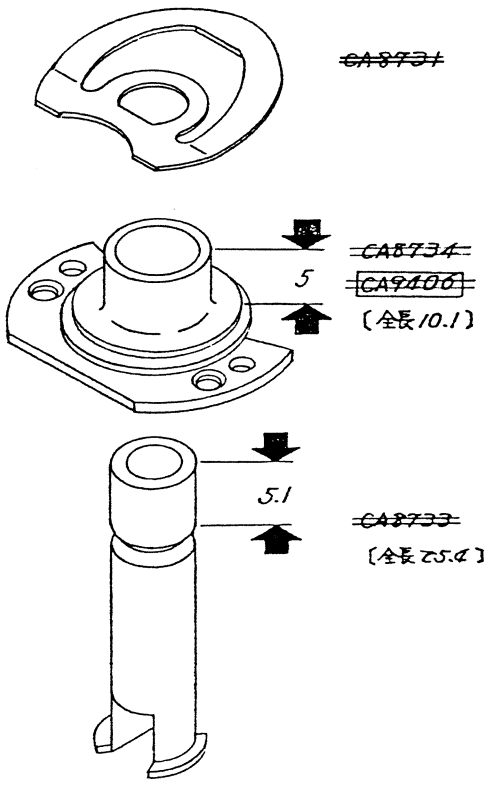


CA886500を交換修理する場合は NEW部品 ZJ101600・CA937400を使用し、
本体の上に 厚さ0.5のワッシャをかうこと。

〈24〉

OLD



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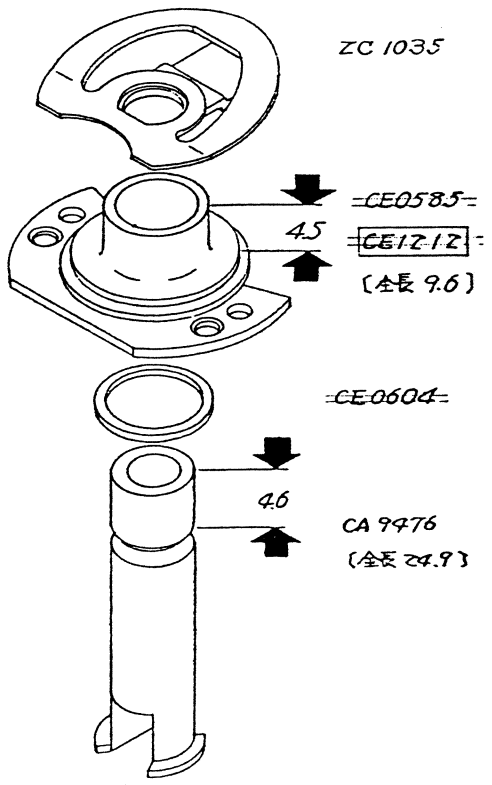
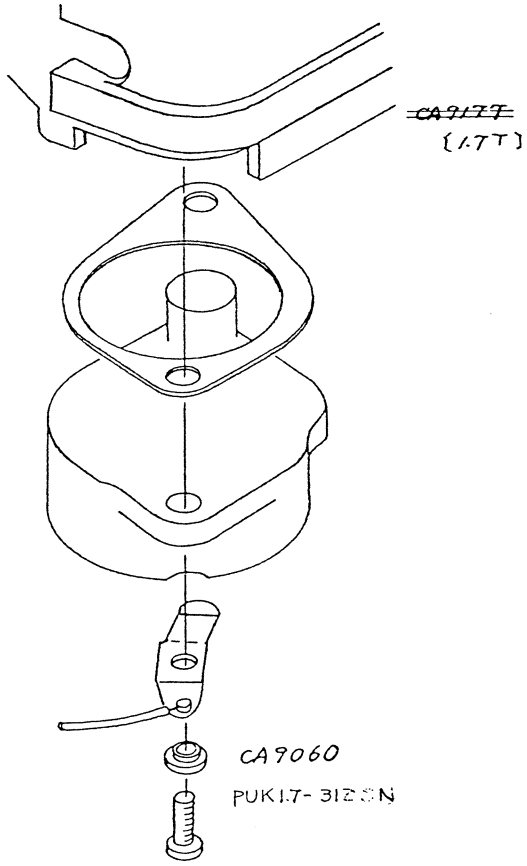
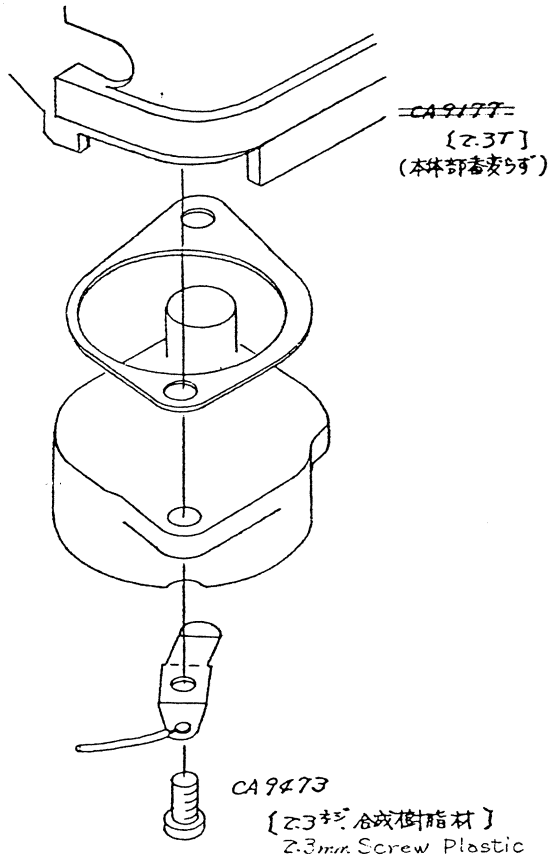


〈25〉

A

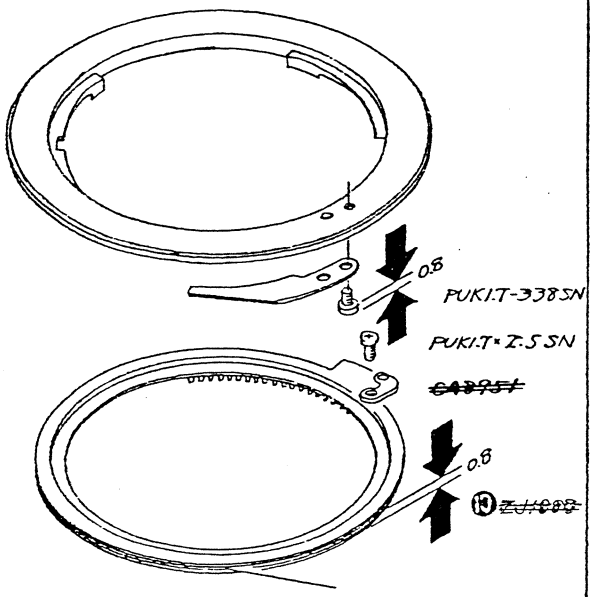


B

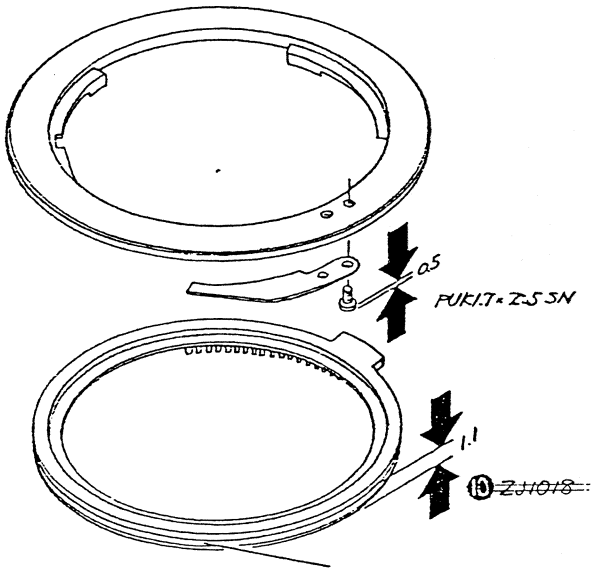


〈26〉

OLD

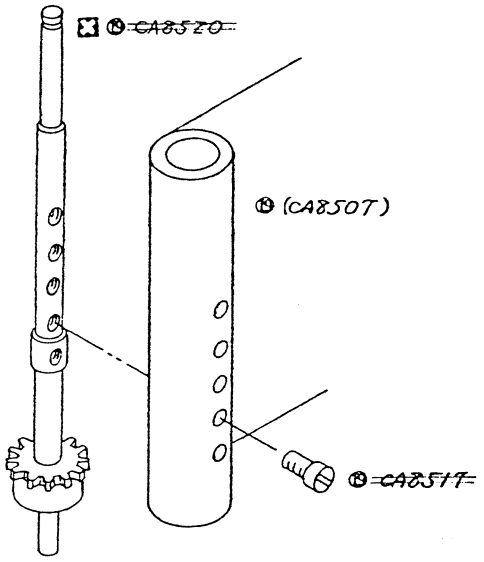


NEW

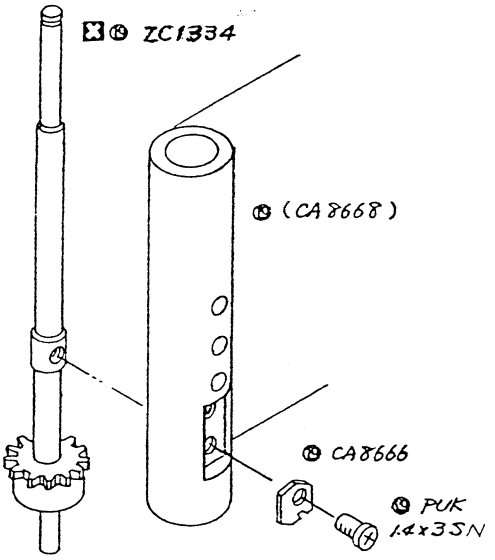


〈27〉

OLD



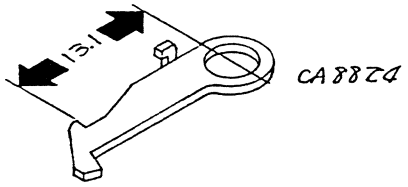
NEW



変更部品表 IMPROVED PARTS TABLE

〈29〉

A



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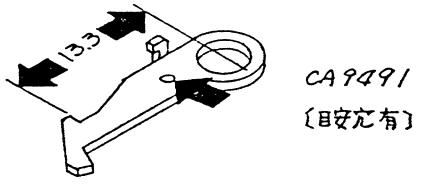
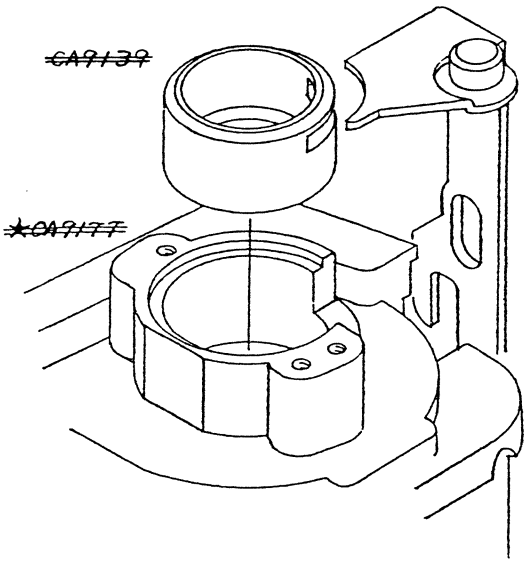


〈30〉

OLD



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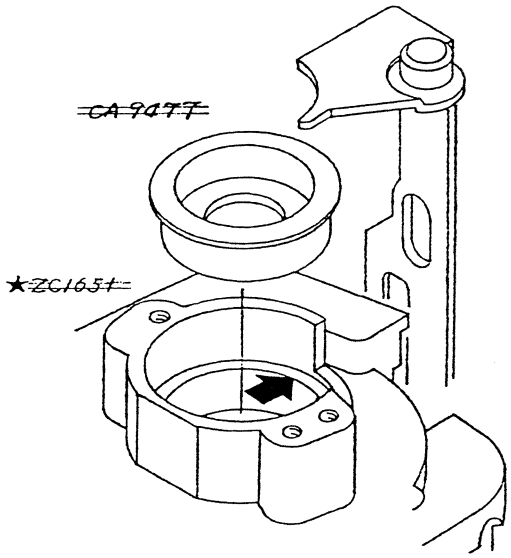
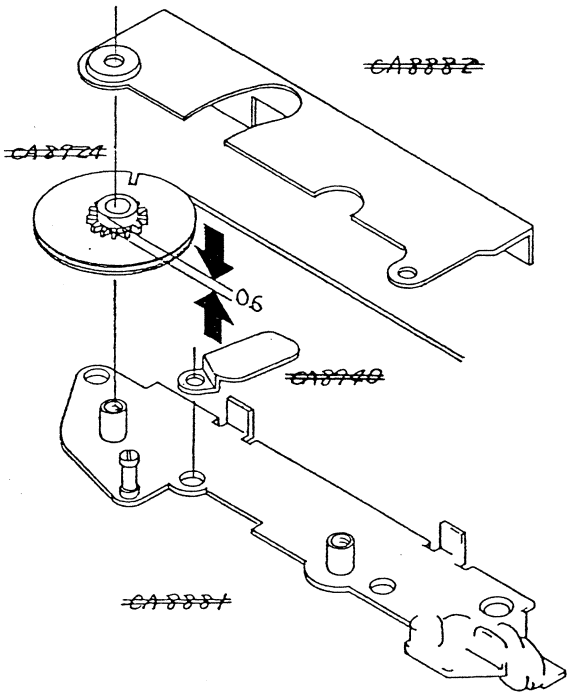
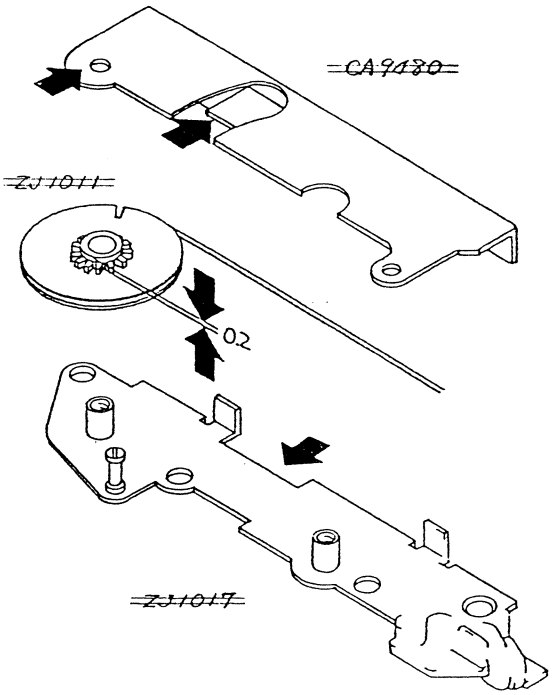


〈31〉

OLD



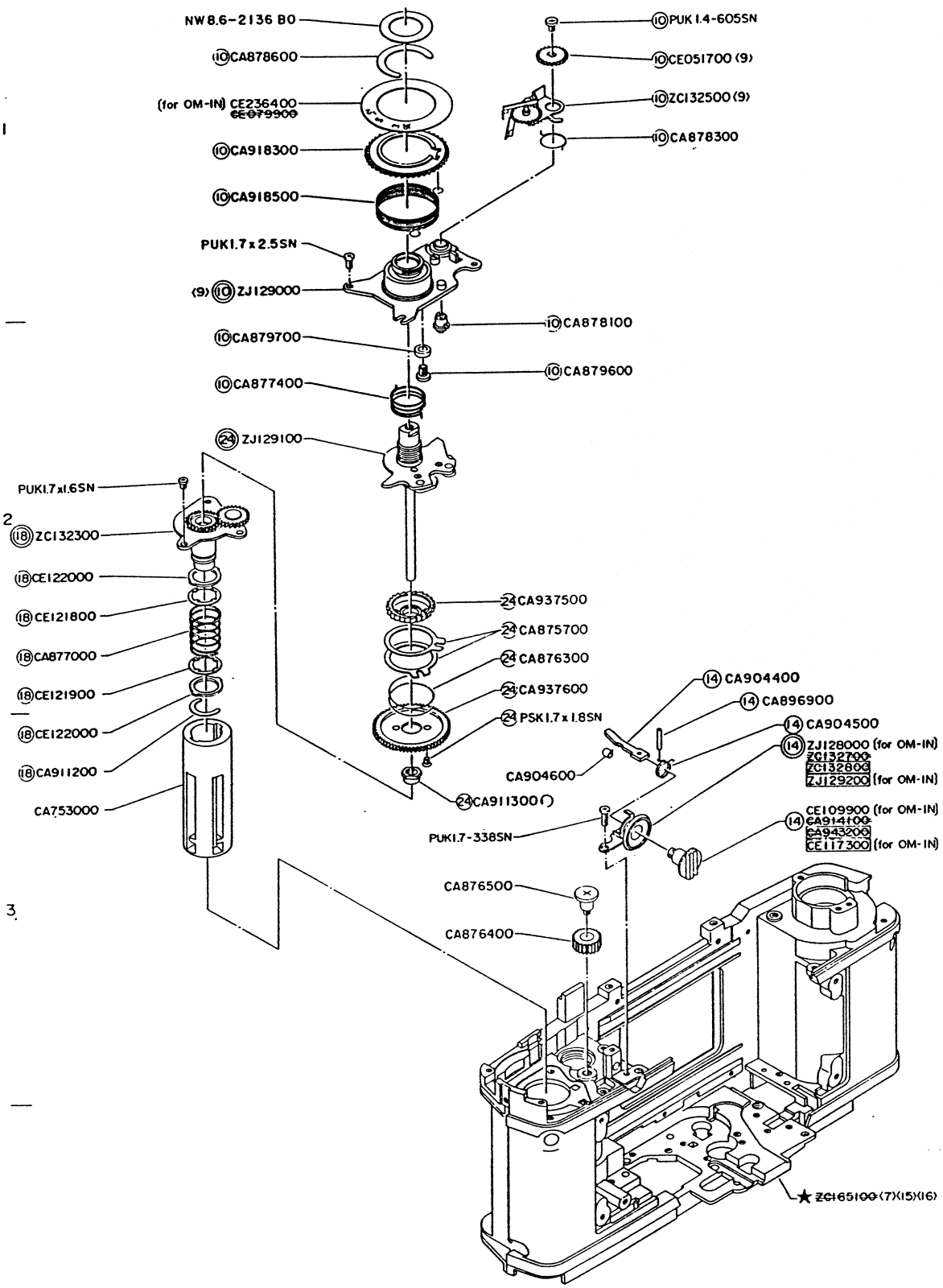
NEW



OM MD

PARTS LIST CURRANT AS OF 3/89

Use this List for ordering.

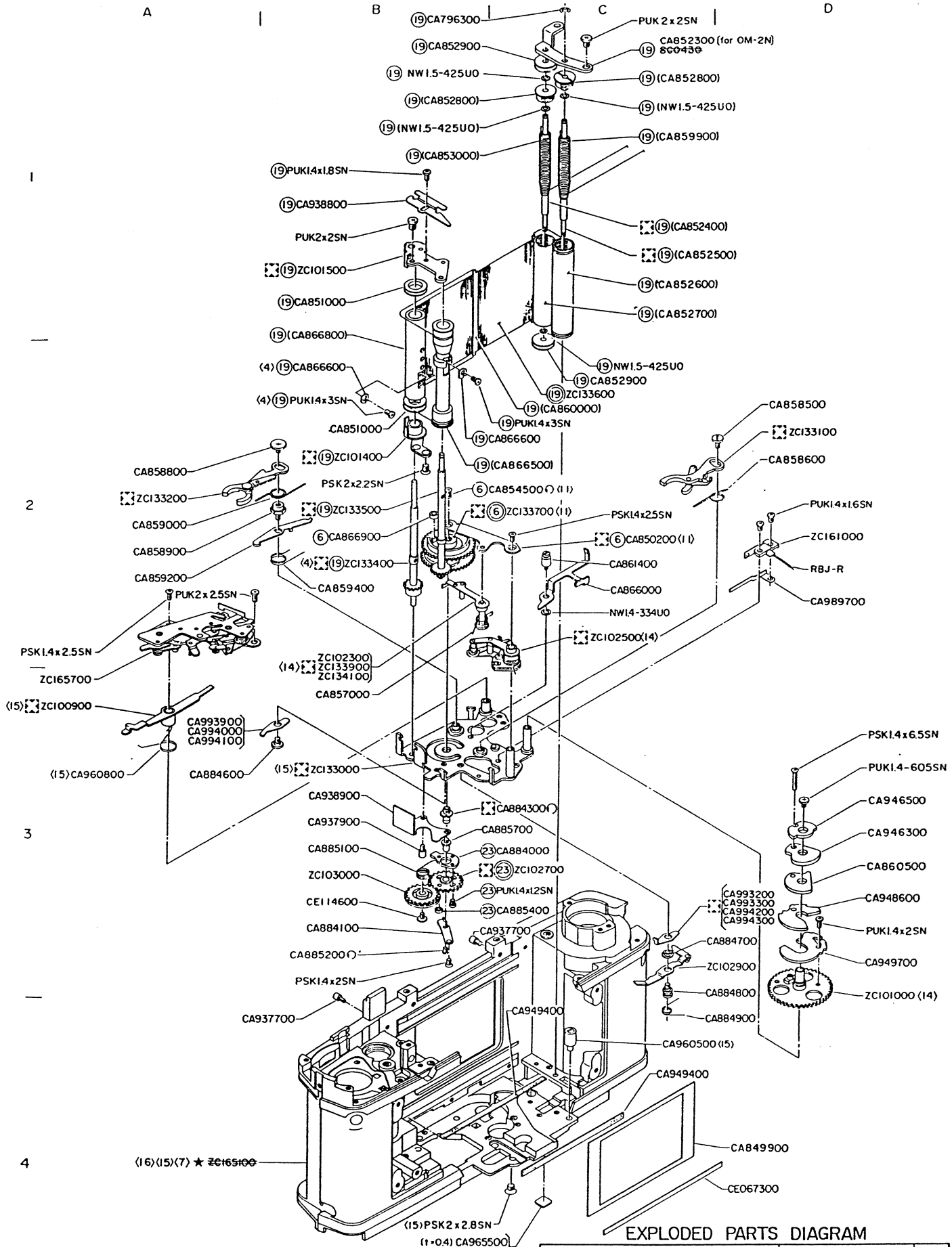


EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE or UNIT	FIG.
OLYMPUS OM-1	MDS-M	2/6
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

0389

NOTE: WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY

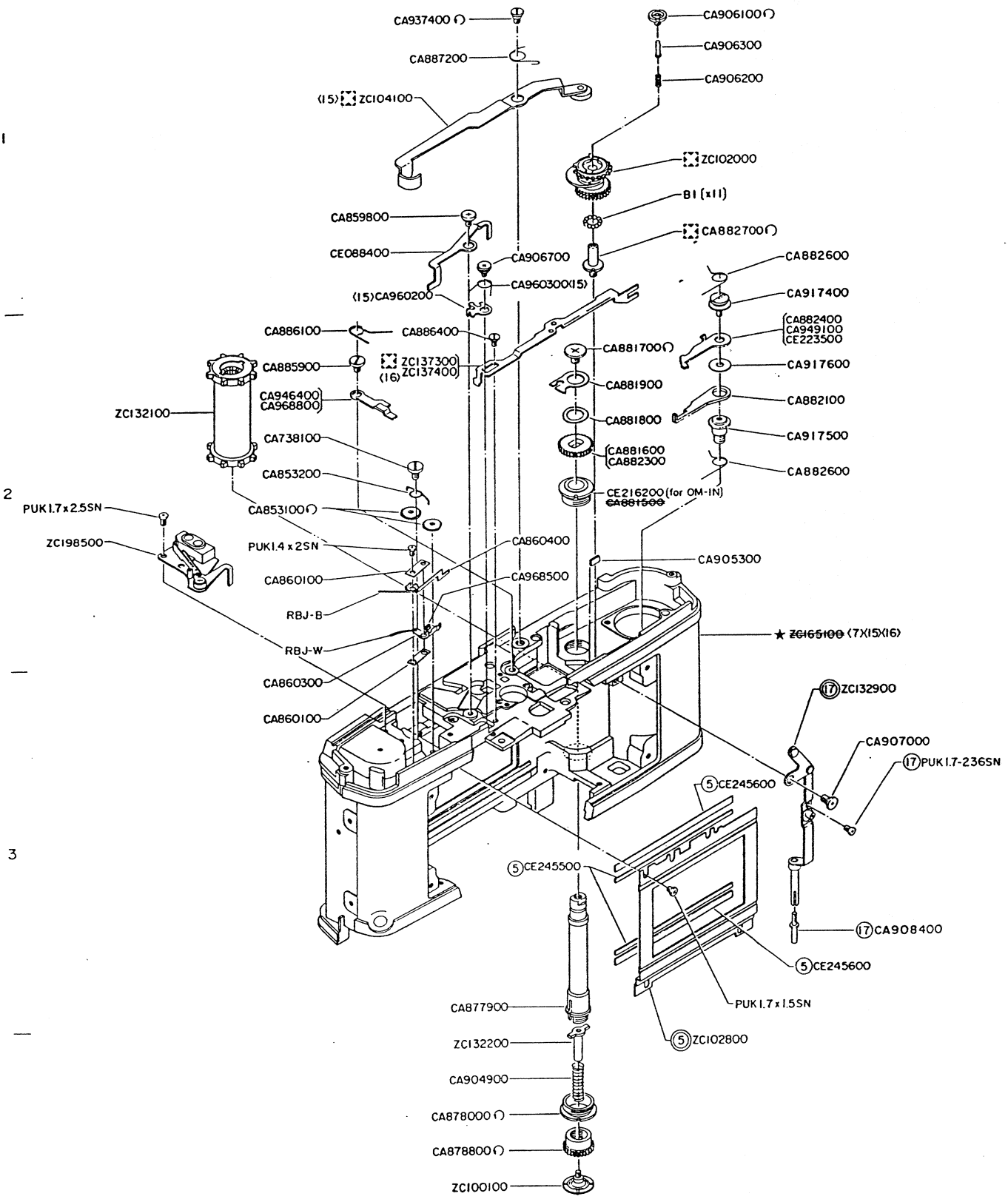


EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE or UNIT	FIG.
OLYMPUS OM-1	MDS-M	3/6
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

0389

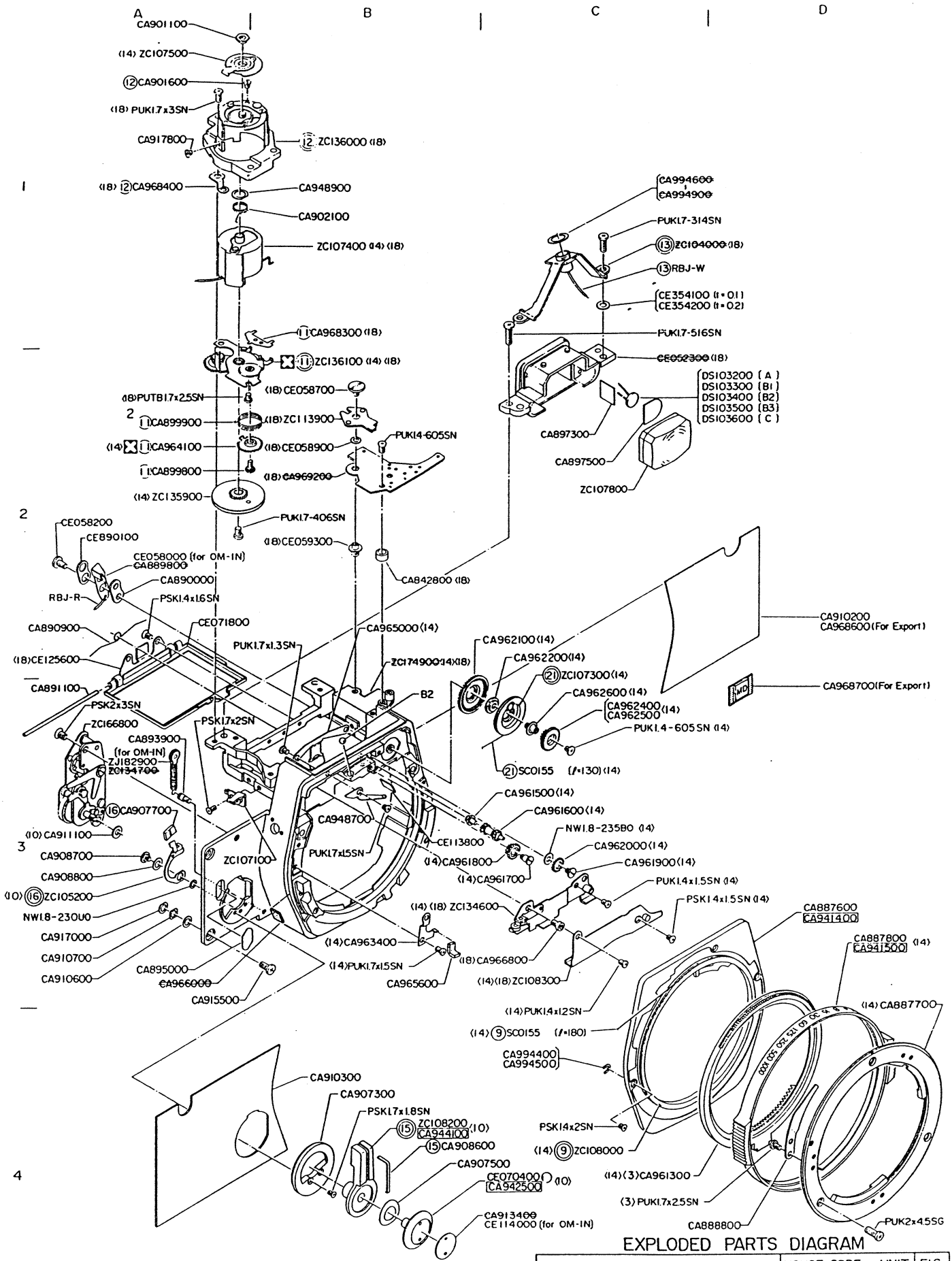
NOTE: WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY



EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE or UNIT	FIG.
OLYMPUS OM-1	MDS-M	4/6
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		0389

NOTE: WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY

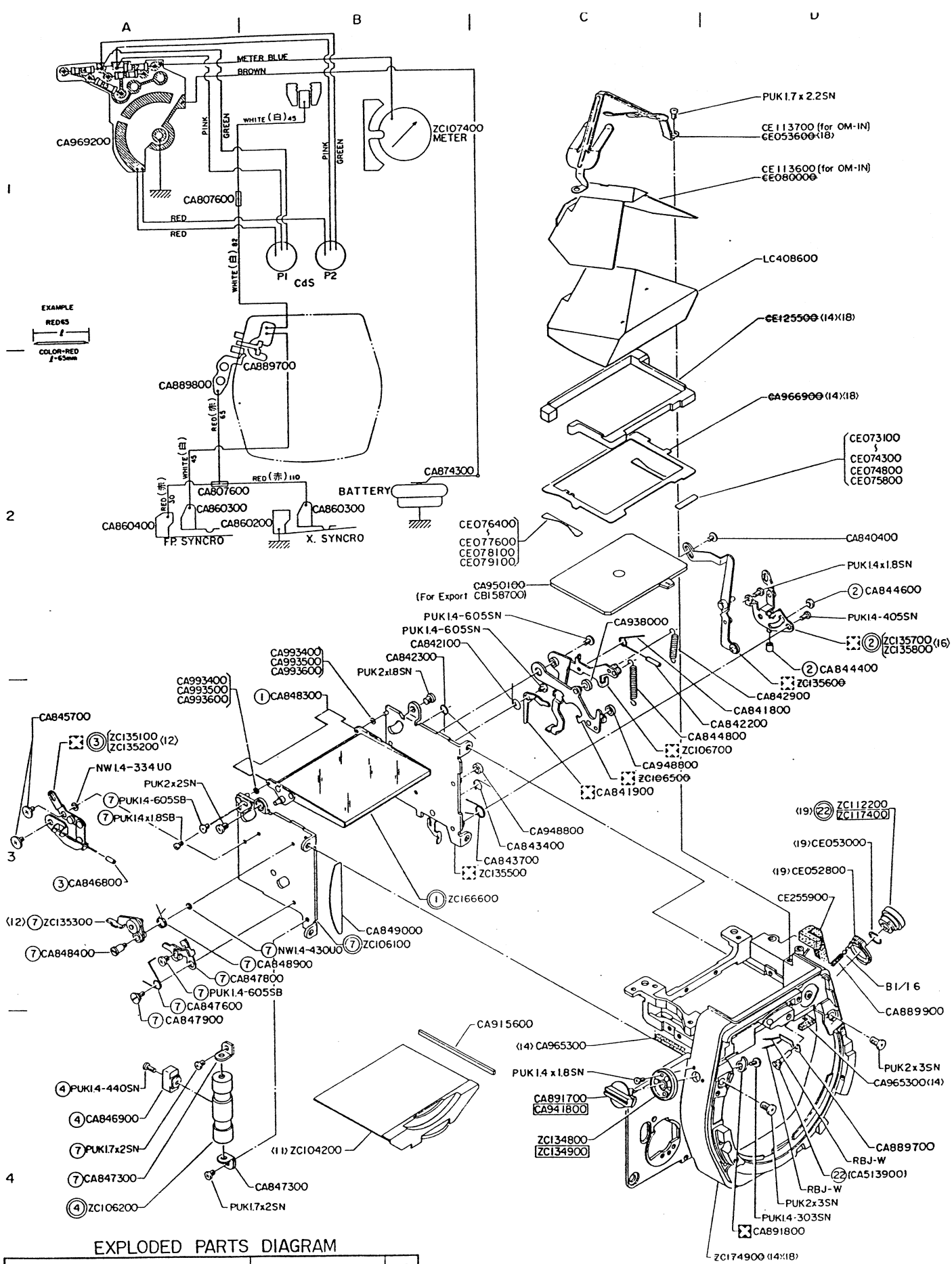


EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE or UNIT	FIG.
OLYMPUS OM-1	MDS-M	5/6
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

0389

NOTE: WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY.



EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE or UNIT	FIG.
OLYMPUS OM-1	MDS-M	6/6
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

0389

NOTE: WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY

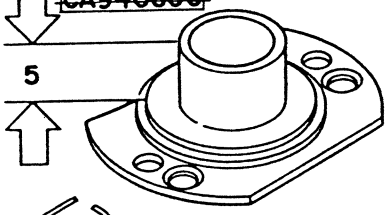
変更部品表 IMPROVED PARTS TABLE

〈1〉

OLD

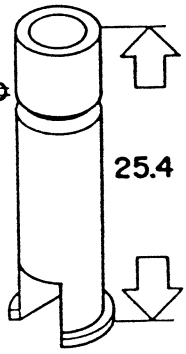
~~CA873100~~

~~CA873400~~
~~CA940600~~



~~CA873500~~

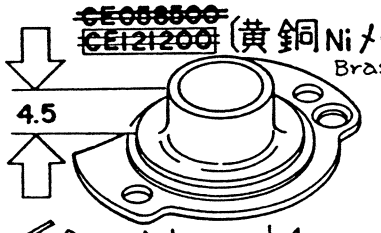
~~CA873300~~



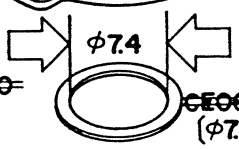
OLD

ZC103500

~~CE058500~~
~~CE121200~~ (黄銅 Ni メッキ)
Brass

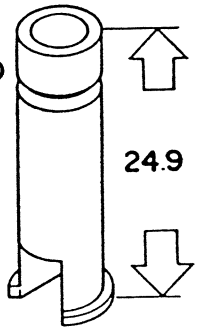


~~CA873500~~
(φ6.8)



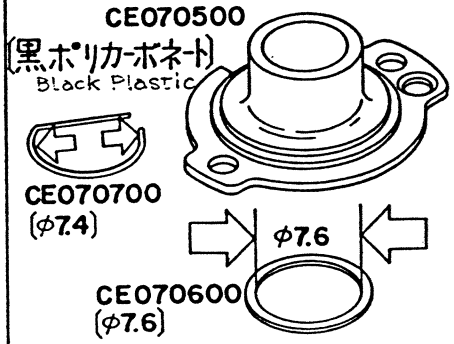
~~CE060400~~
(φ7.4)

CA947600



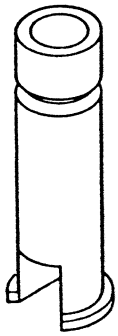
NEW

CE070500
(黒ポリカーボネート)
Black Plastic



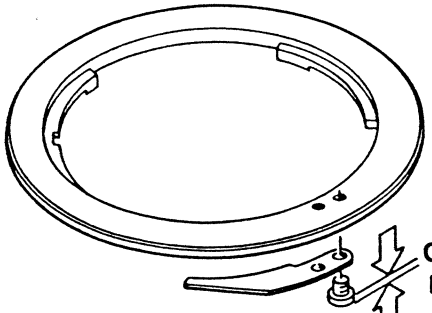
CE070700
(φ7.4)

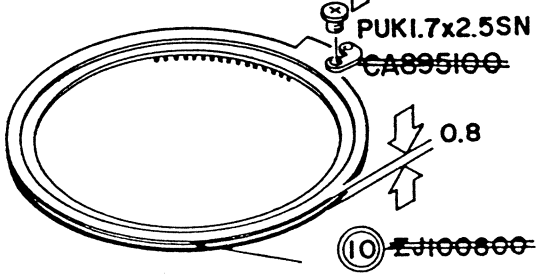
CE070600
(φ7.6)



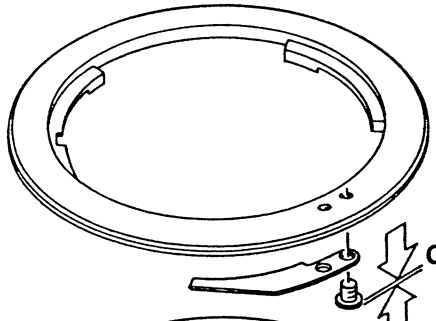
〈3〉

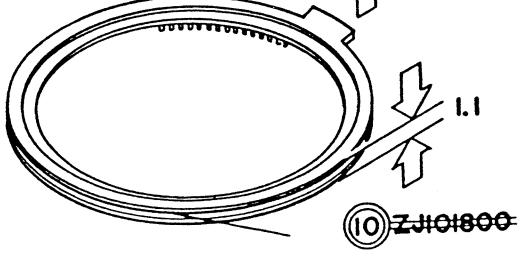
OLD





NEW

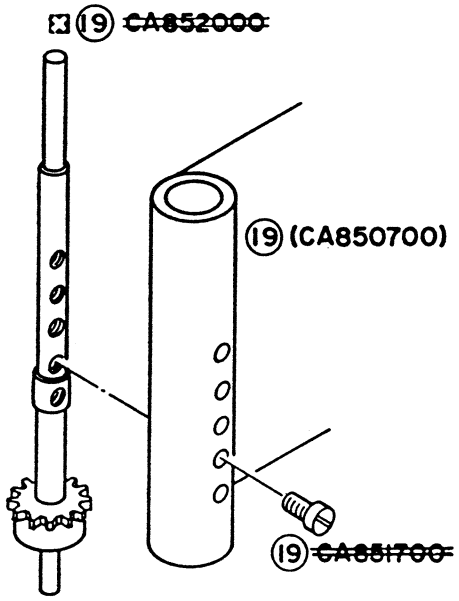




変更部品表 IMPROVED PARTS TABLE

〈4〉

OLD



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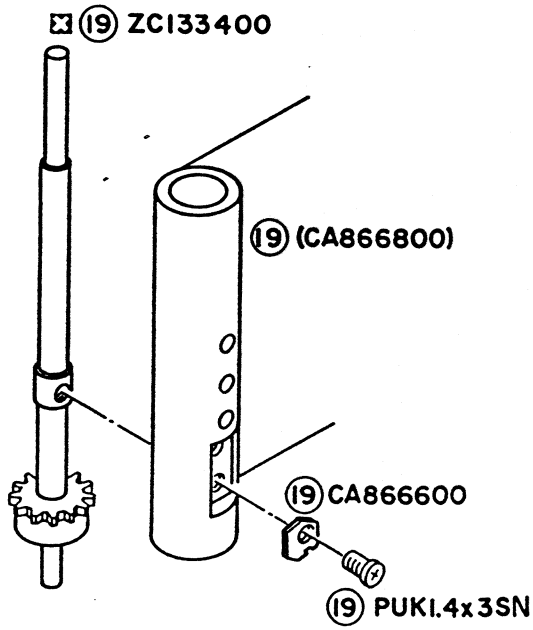
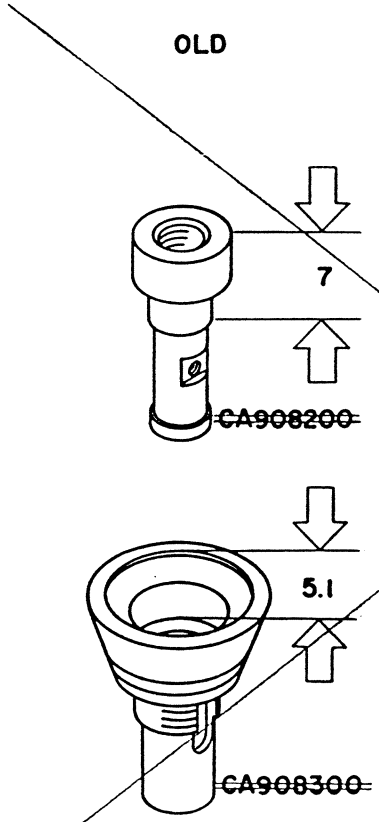


〈5〉

OLD



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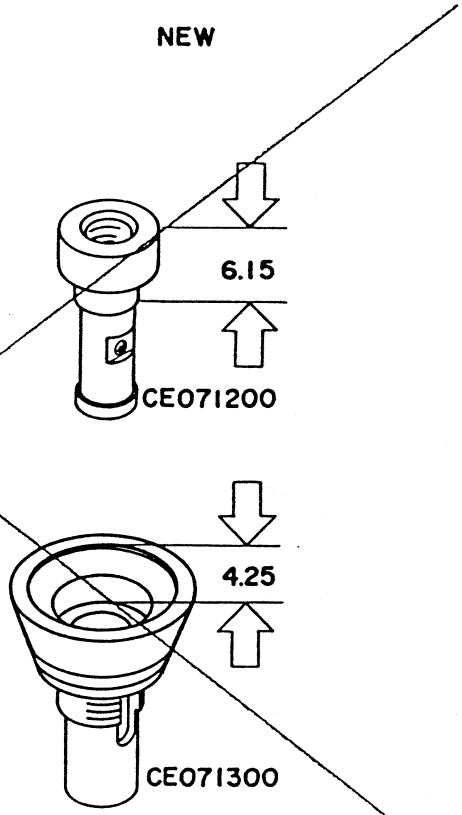
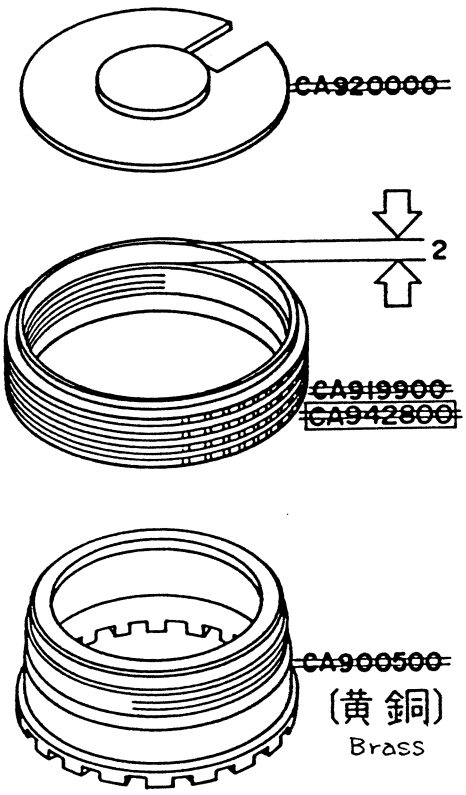


変更部品表 IMPROVED PARTS TABLE

〈6〉

OLD



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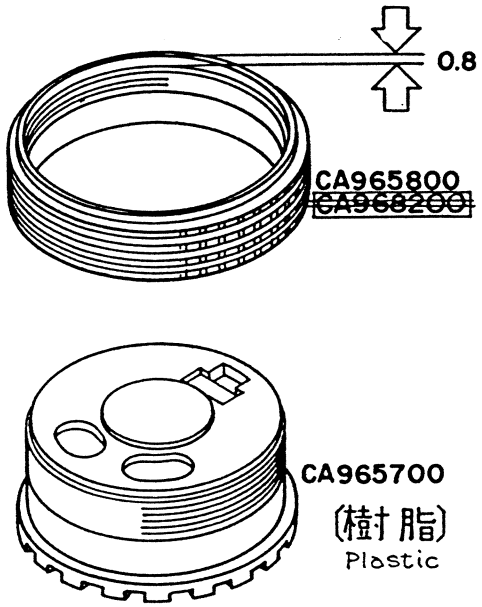
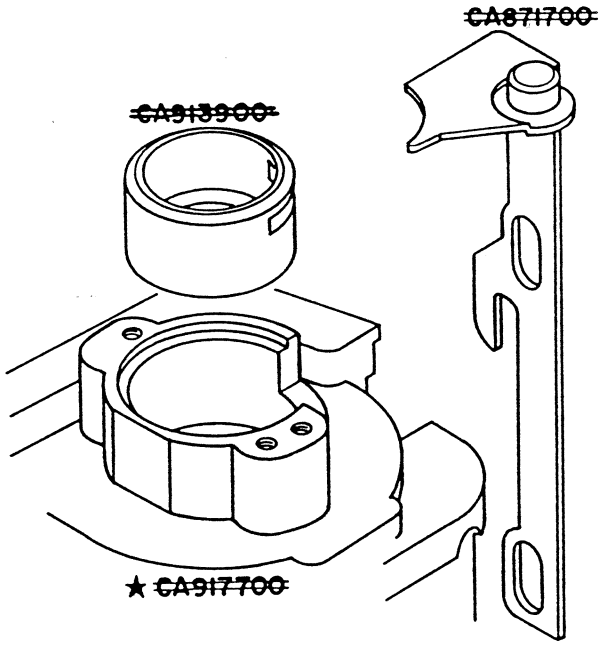


〈7〉

OLD



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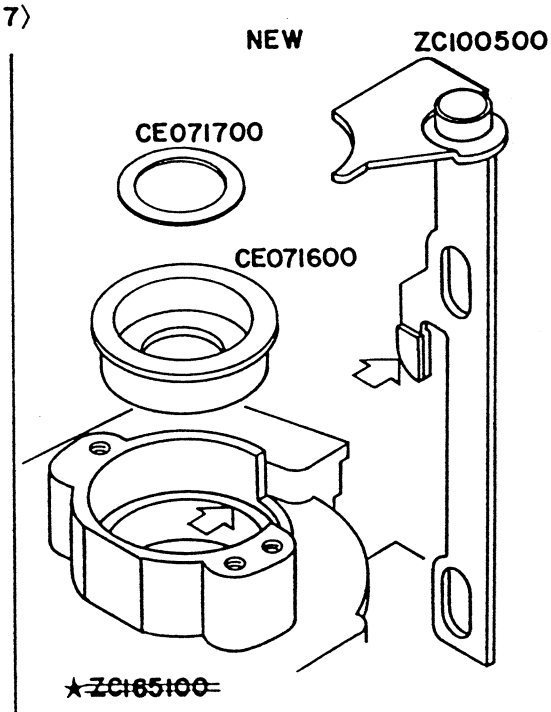
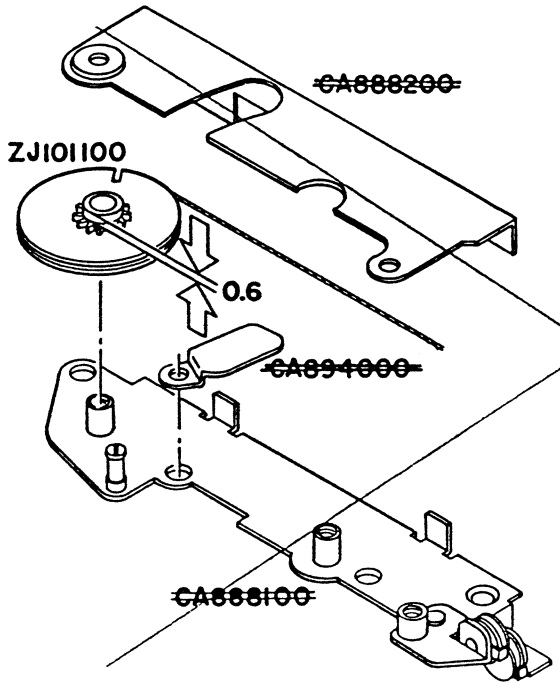


変更部品表 IMPROVED PARTS TABLE

〈8〉

OLD



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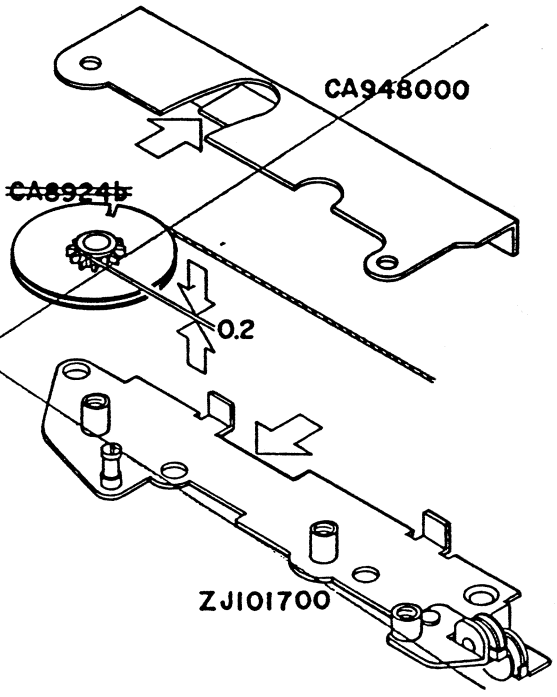
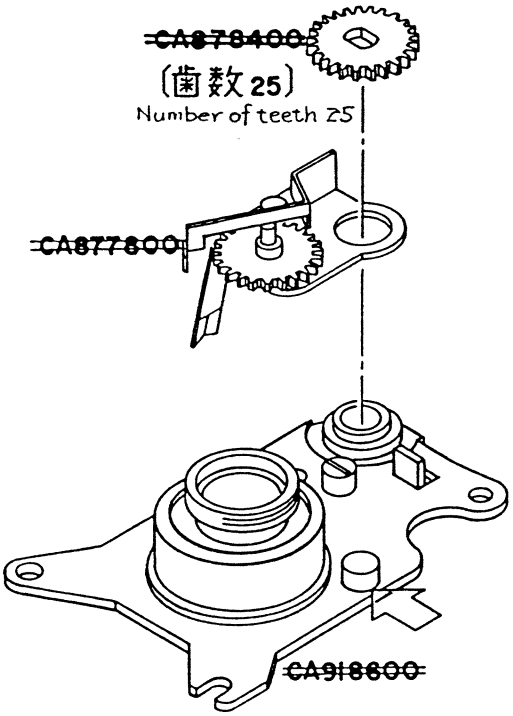


〈9〉

OLD



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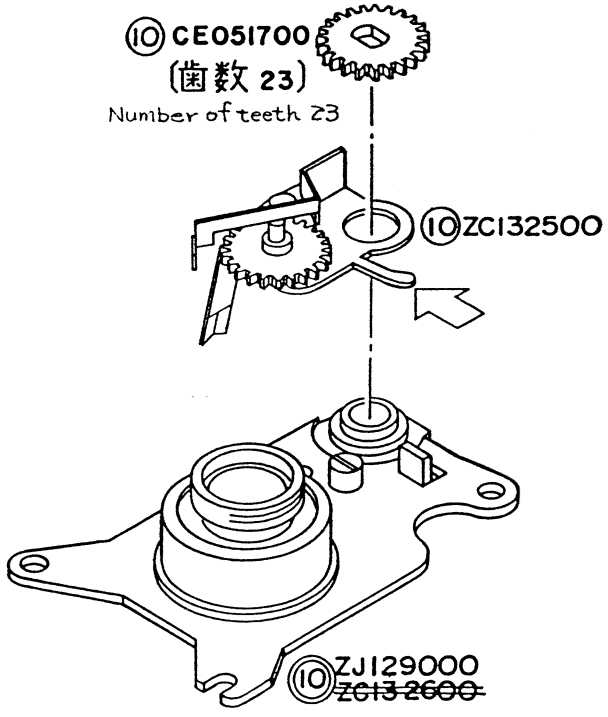
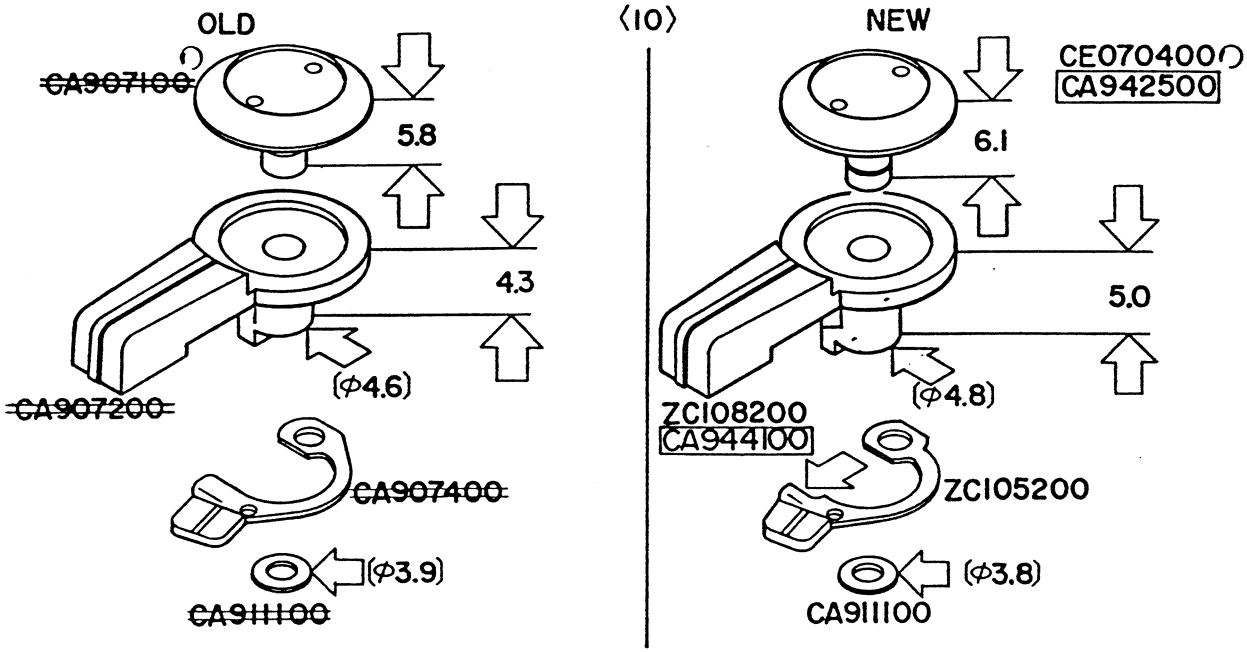
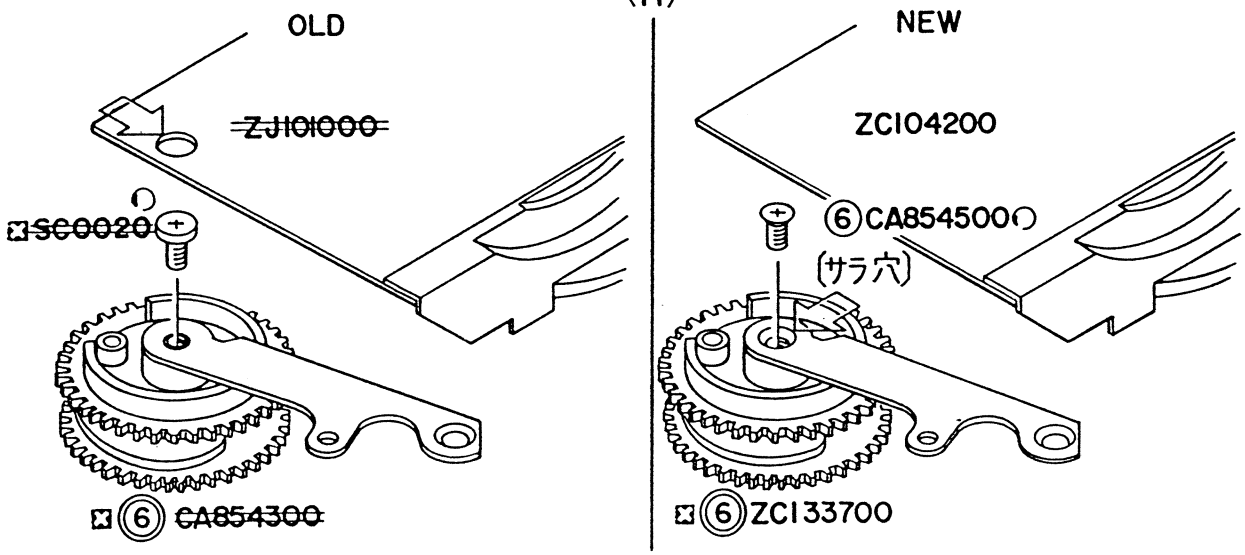


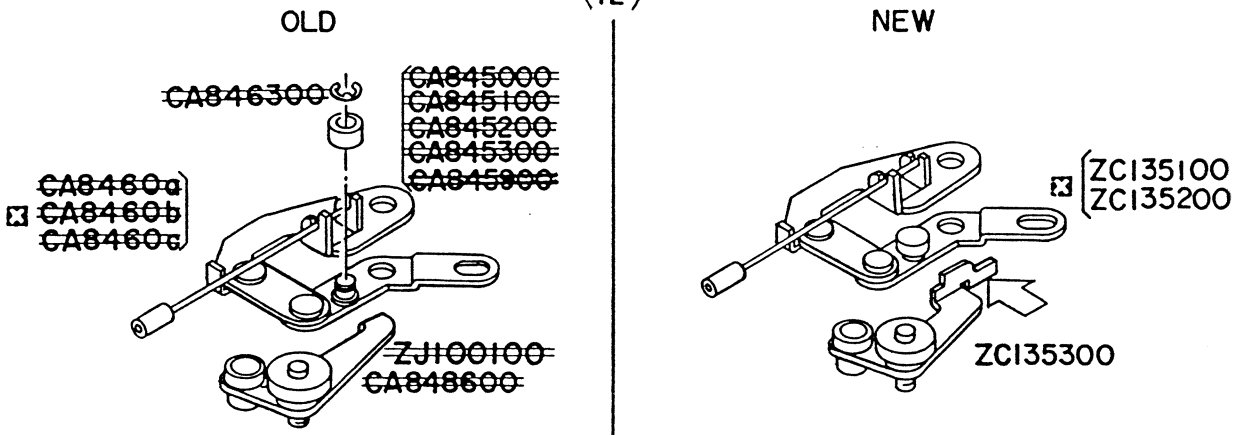
〈10〉


OLD
~~CA907100~~
5.8
4.3
(φ4.6)
~~CA907200~~
~~CA907400~~
(φ3.9)
~~CA911100~~
NEW
CE070400
CA942500
6.1
5.0
(φ4.8)
ZC108200
CA944100
ZC105200
(φ3.8)
CA911100

〈11〉


OLD
~~ZJ101000~~
~~SC0020~~
⑥ ~~CA854300~~
NEW
ZC104200
⑥ CA854500
(サラ穴)
⑥ ZC133700

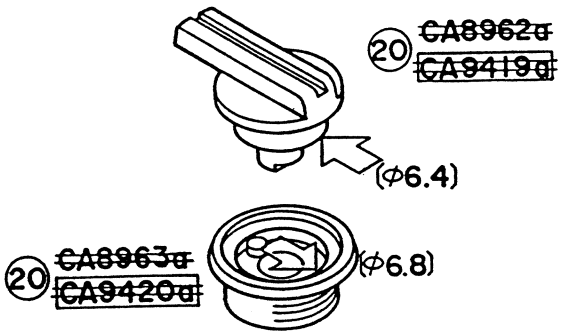
〈12〉


OLD
~~CA846300~~
~~CA845000~~
~~CA845100~~
~~CA845200~~
~~CA845300~~
~~CA845900~~
~~CA8460a~~
~~CA8460b~~
~~CA8460c~~
~~ZJ100100~~
~~CA848600~~
NEW
ZC135100
ZC135200
ZC135300

変更部品表 IMPROVED PARTS TABLE

〈13〉

OLD



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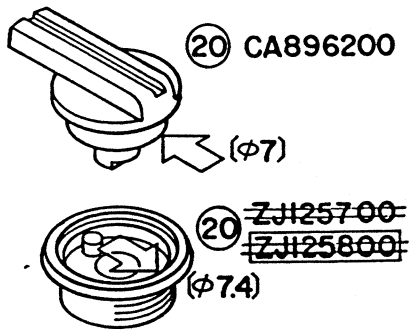

〈15〉

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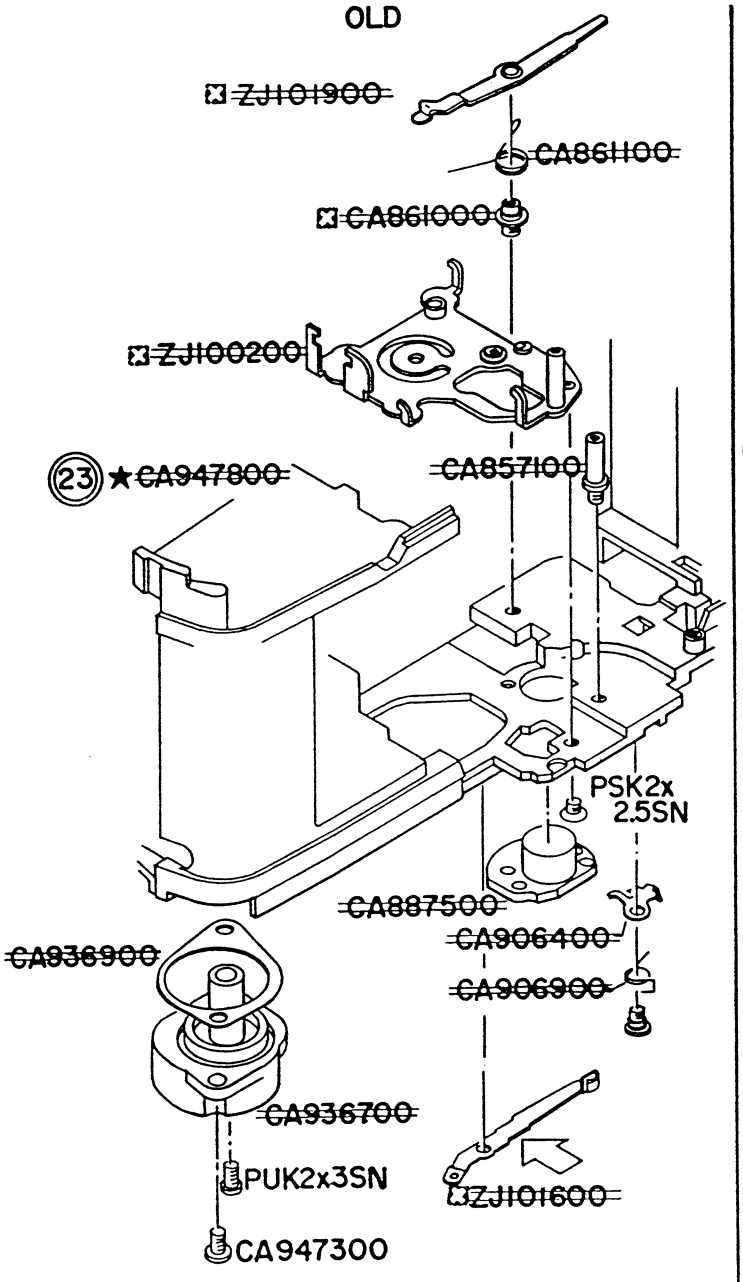

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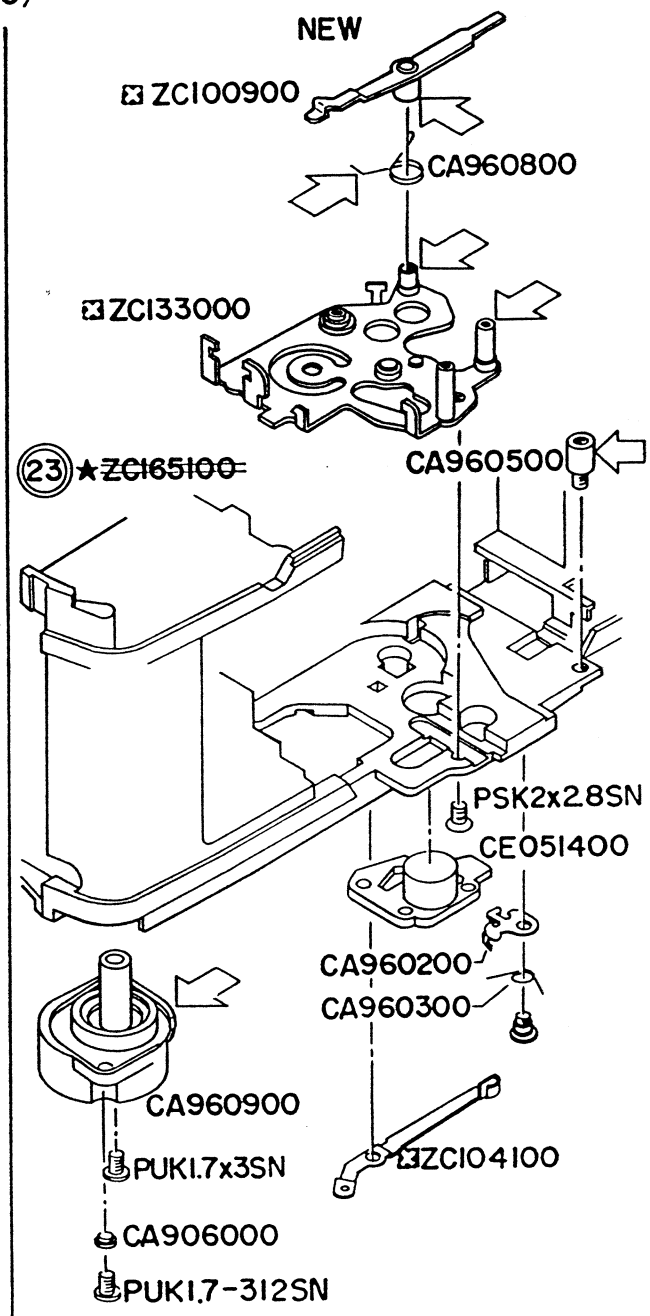
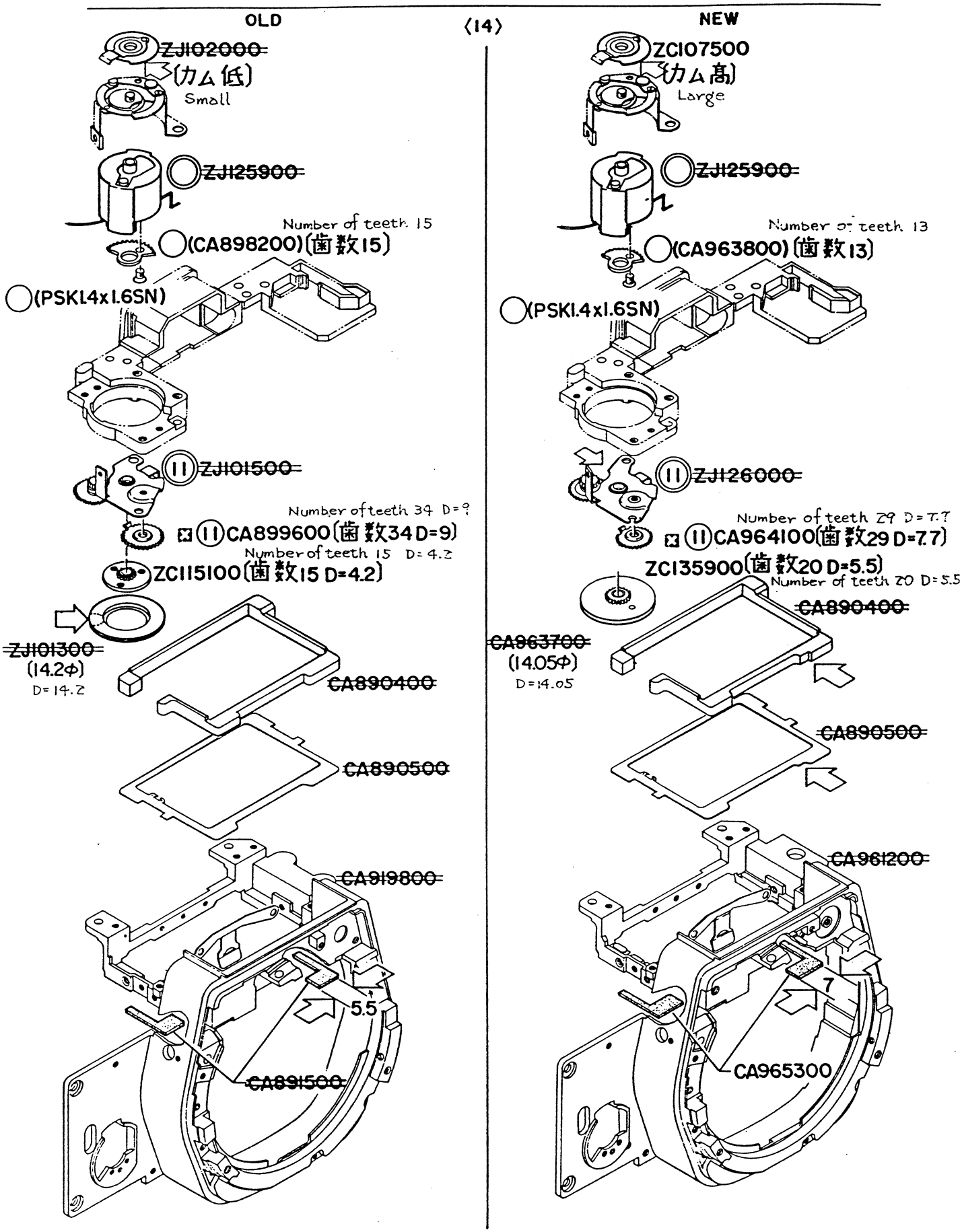
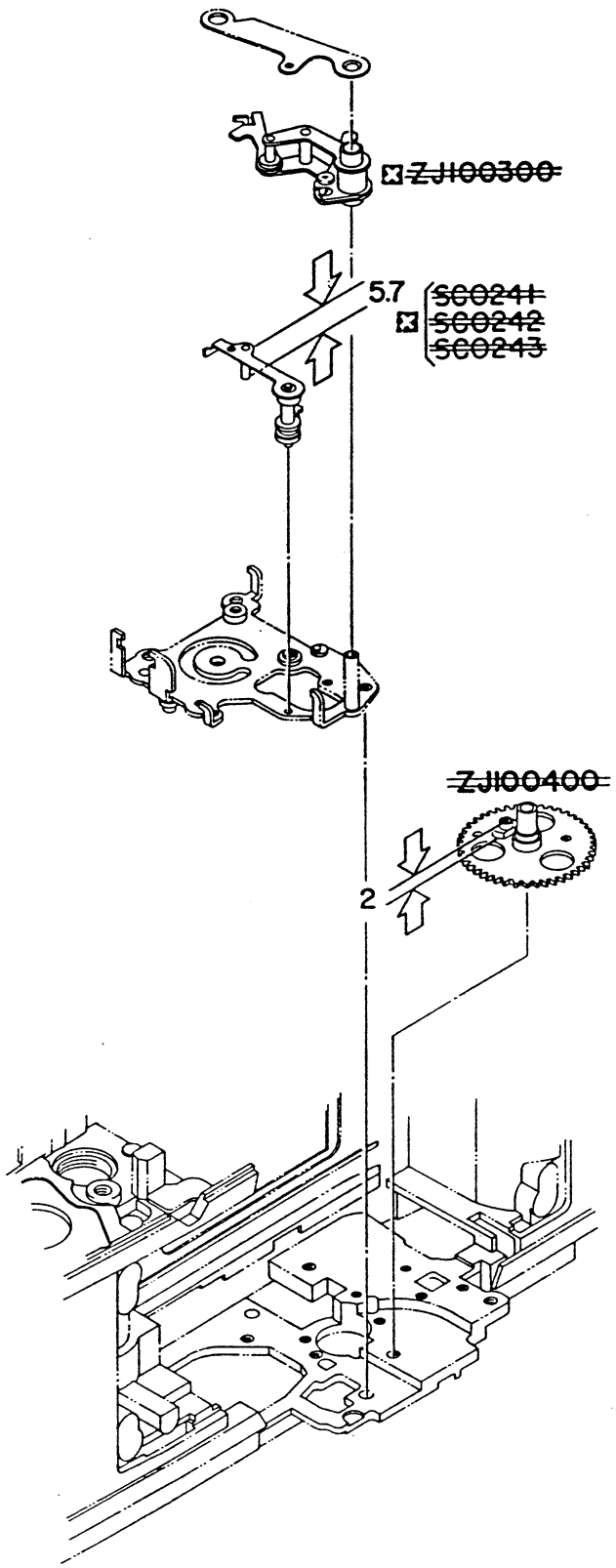


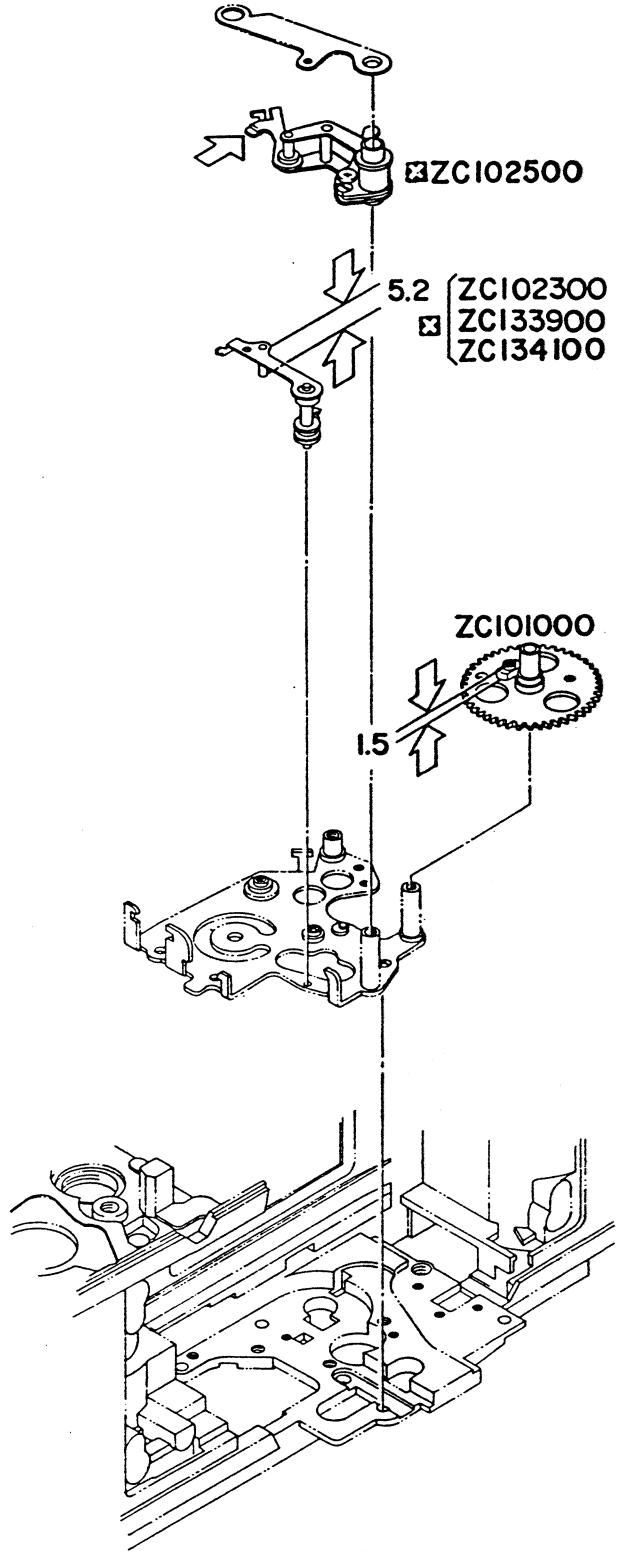

OLD
〈14〉
NEW
~~ZJ102000~~
(カム低)
Small
~~ZJ125900~~
Number of teeth 15
~~(CA898200)(歯数15)~~
~~(PSK1.4x1.6SN)~~
~~ZJ101500~~
Number of teeth 34 D=9
~~CA899600(歯数34 D=9)~~
Number of teeth 15 D=4.2
~~ZC115100(歯数15 D=4.2)~~
~~ZJ101300~~
(14.2φ)
D=14.2
~~CA890400~~
~~CA890500~~
~~CA919800~~
5.5
~~CA891500~~
ZC107500
(カム高)
Large
~~ZJ125900~~
Number of teeth 13
~~(CA963800)(歯数13)~~
~~(PSK1.4x1.6SN)~~
~~ZJ126000~~
Number of teeth 29 D=7.7
~~CA964100(歯数29 D=7.7)~~
ZC135900(歯数20 D=5.5)
Number of teeth 20 D=5.5
~~CA890400~~
~~CA963700~~
(14.05φ)
D=14.05
~~CA890500~~
~~CA961200~~
7
CA965300

〈14〉

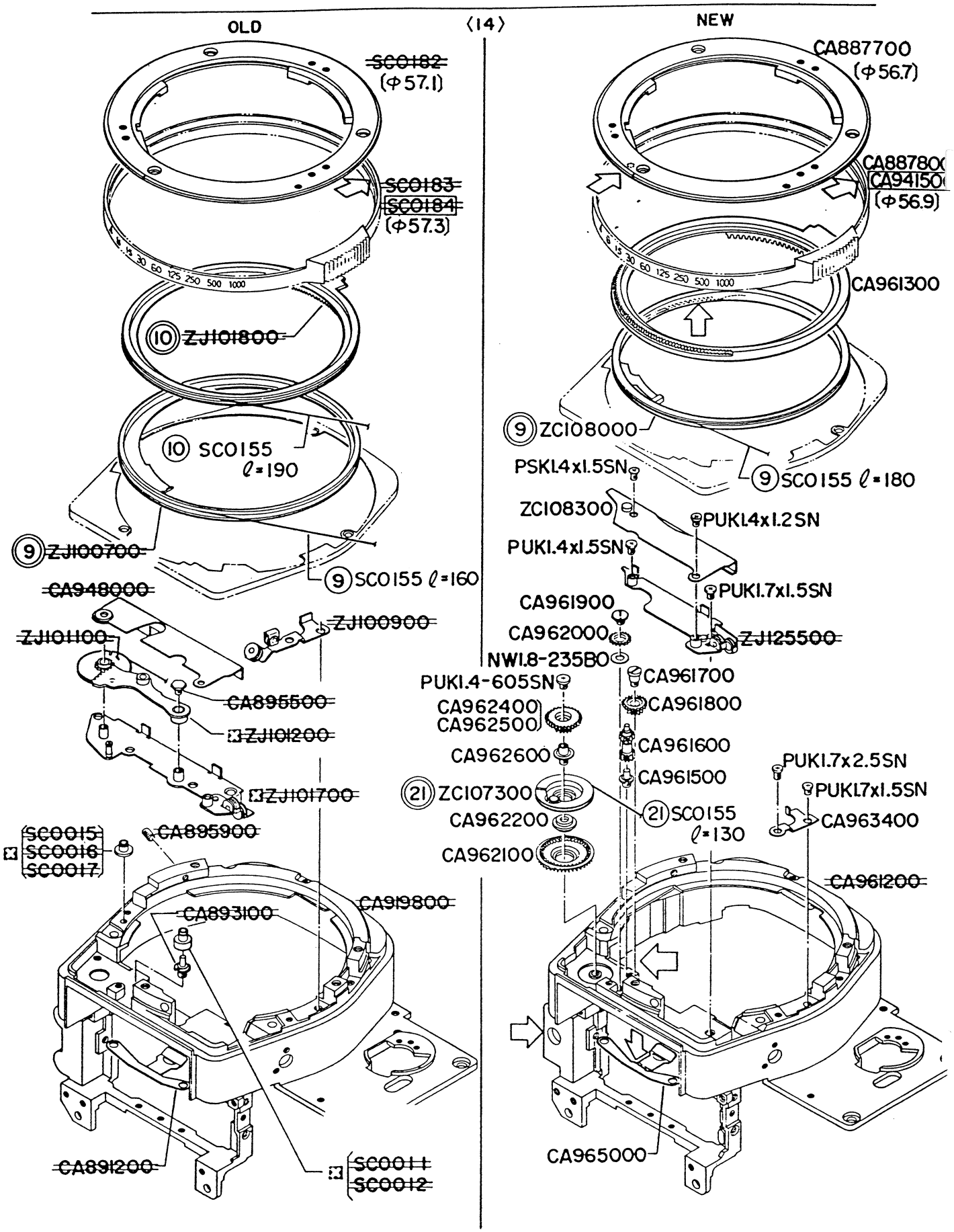
OLD


~~ZJ100300~~
5.7
~~SC0241~~
~~SC0242~~
~~SC0243~~
~~ZJ100400~~
2

NEW

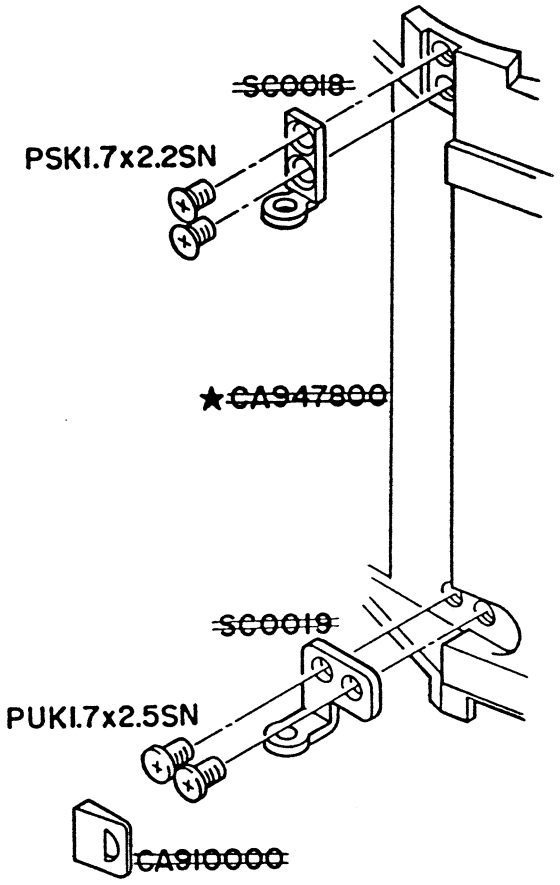

ZC102500
5.2
ZC102300
ZC133900
ZC134100
ZC101000
1.5

変更部品表 IMPROVED PARTS TABLE

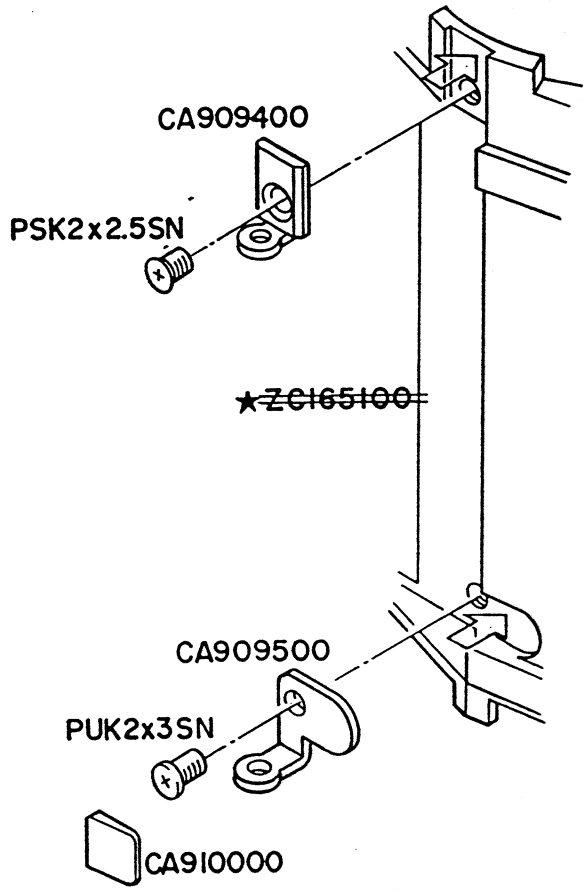


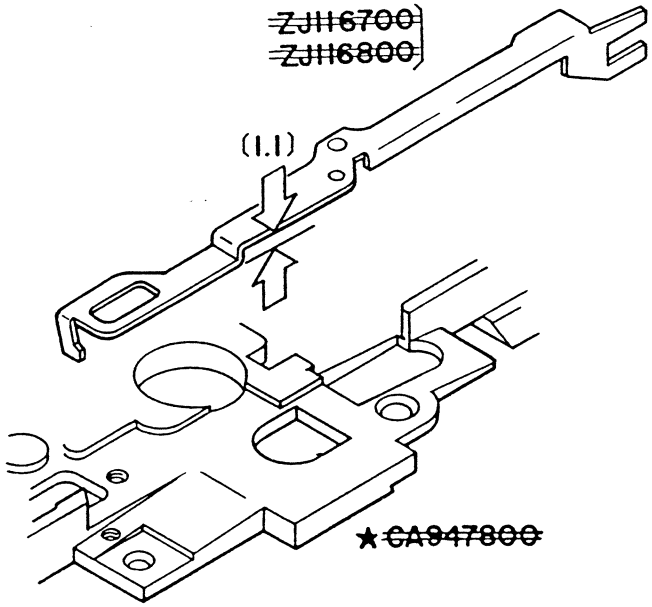
〈16〉

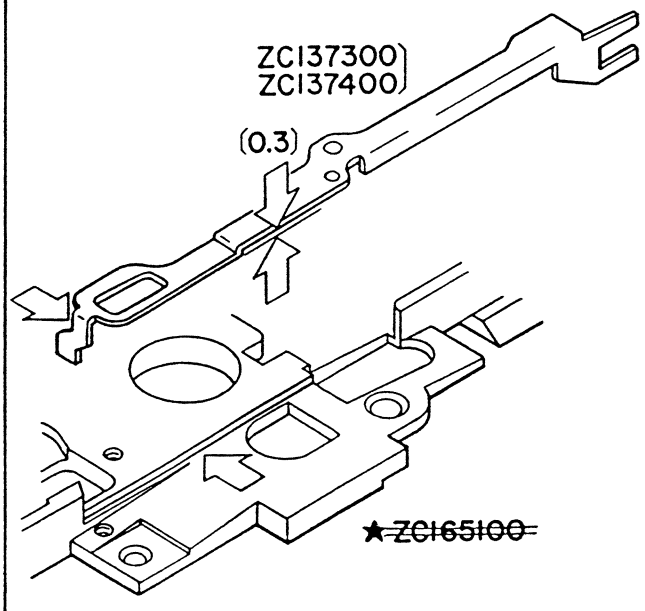
OLD


~~SC0018~~
PSK1.7x2.2SN
★~~CA947800~~
~~SC0019~~
PUK1.7x2.5SN
~~CA910000~~

NEW

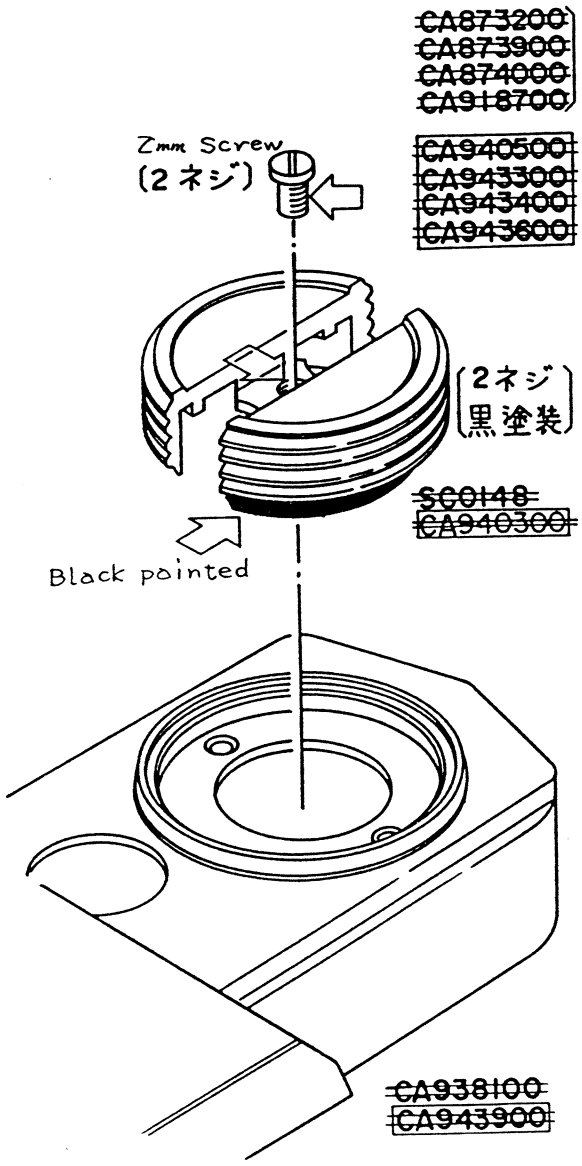

CA909400
PSK2x2.5SN
★~~ZC165100~~
CA909500
PUK2x3SN
CA910000


~~ZJ116700~~
~~ZJ116800~~
(1.1)
★~~CA947800~~


ZC137300
ZC137400
(0.3)
★~~ZC165100~~

〈17〉

OLD



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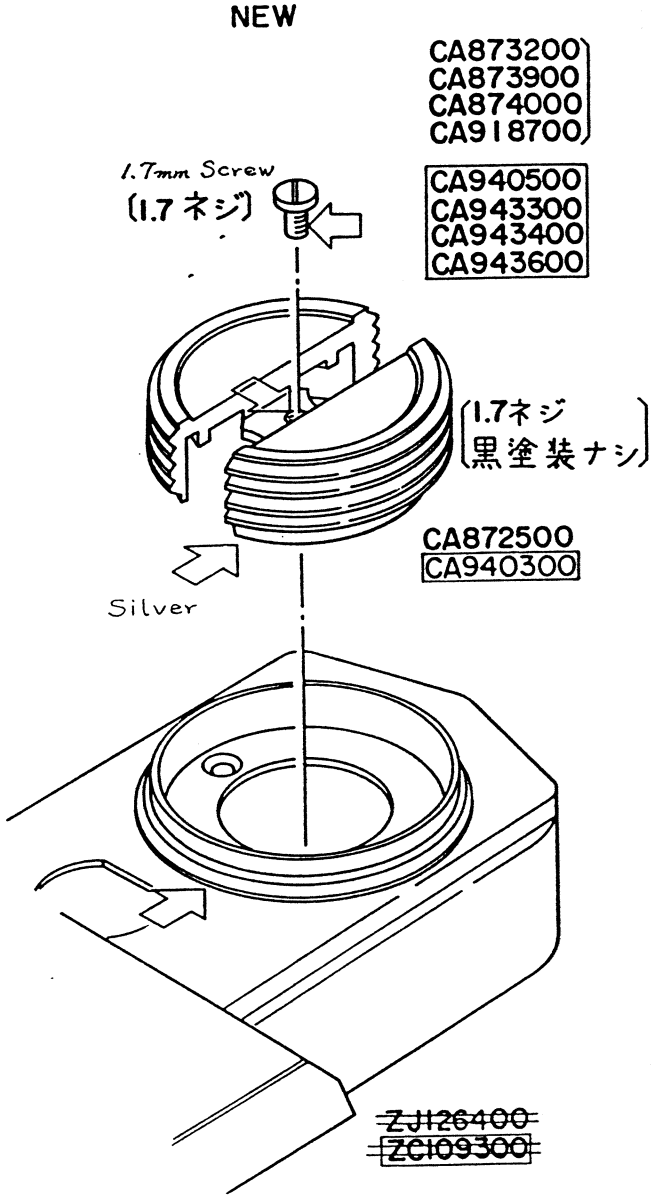
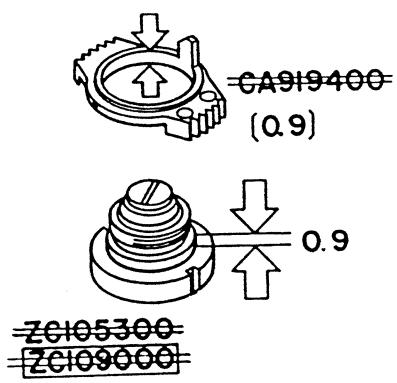
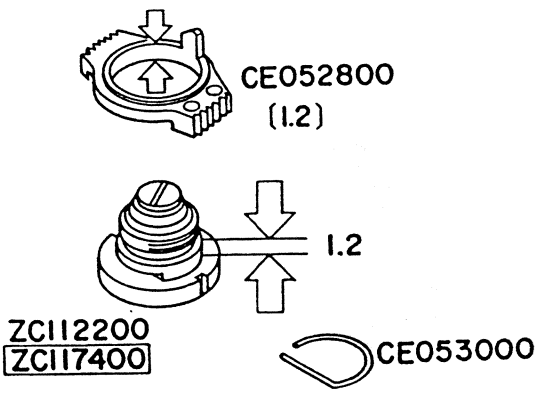


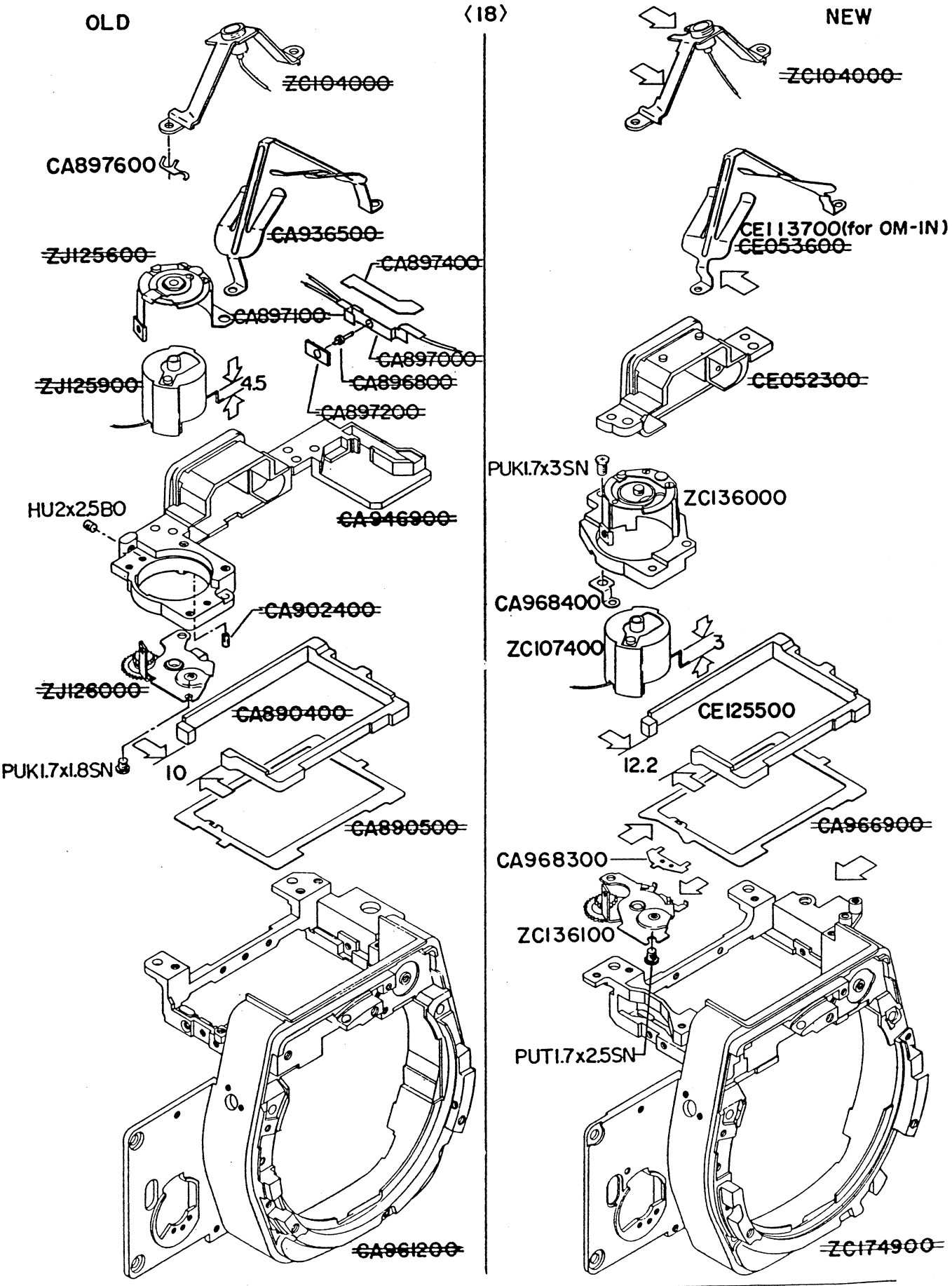
〈19〉

OLD

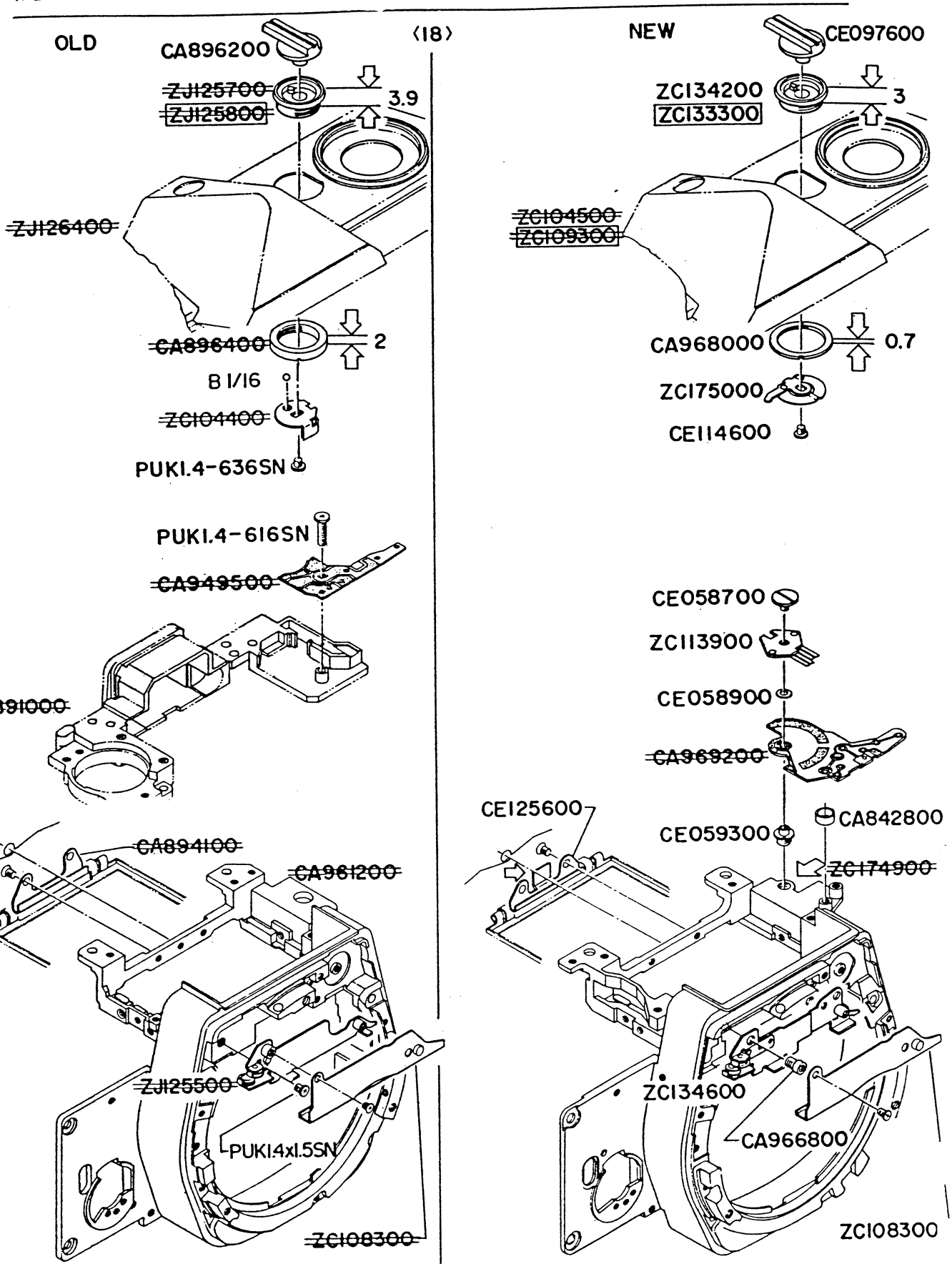


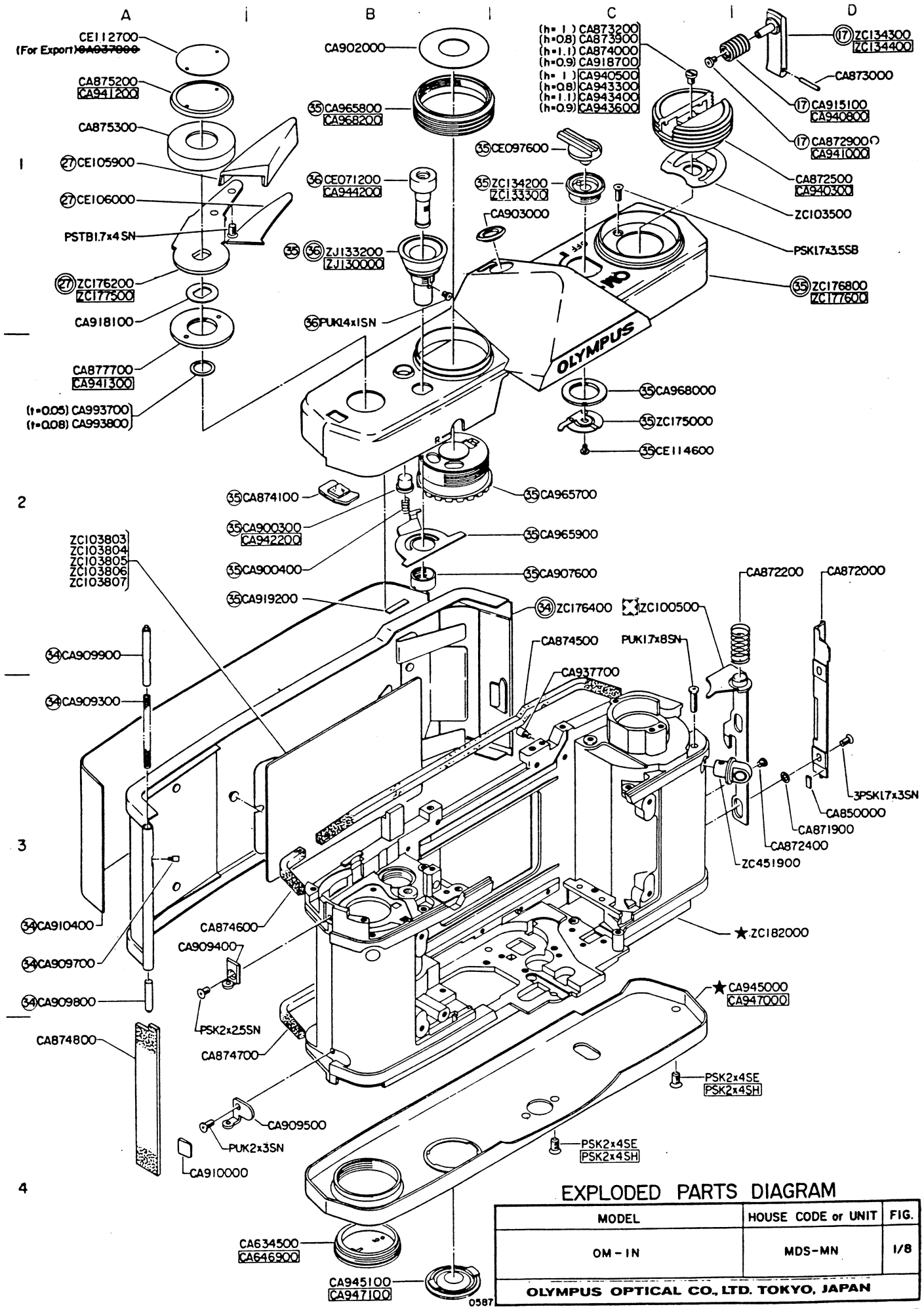
NEW




OLD
〈18〉
NEW
~~ZC104000~~
~~ZC104000~~
CA897600
~~CA936500~~
CE113700(for OM-IN)
~~CE053600~~
~~ZJ125600~~
~~CA897400~~
~~CA897100~~
~~CA897000~~
~~ZJ125900~~
4.5
~~CA896800~~
~~CA897200~~
~~CE052300~~
PUK1.7x3SN
ZC136000
HU2x2.5B0
~~CA946900~~
~~CA902400~~
CA968400
ZC107400
3
~~ZJ126000~~
~~CA890400~~
CE125500
12.2
PUK1.7x1.8SN
10
~~CA890500~~
~~CA966900~~
CA968300
ZC136100
PUT1.7x2.5SN
~~CA961200~~
~~ZC174900~~

IMPROVED PARTS TABLE

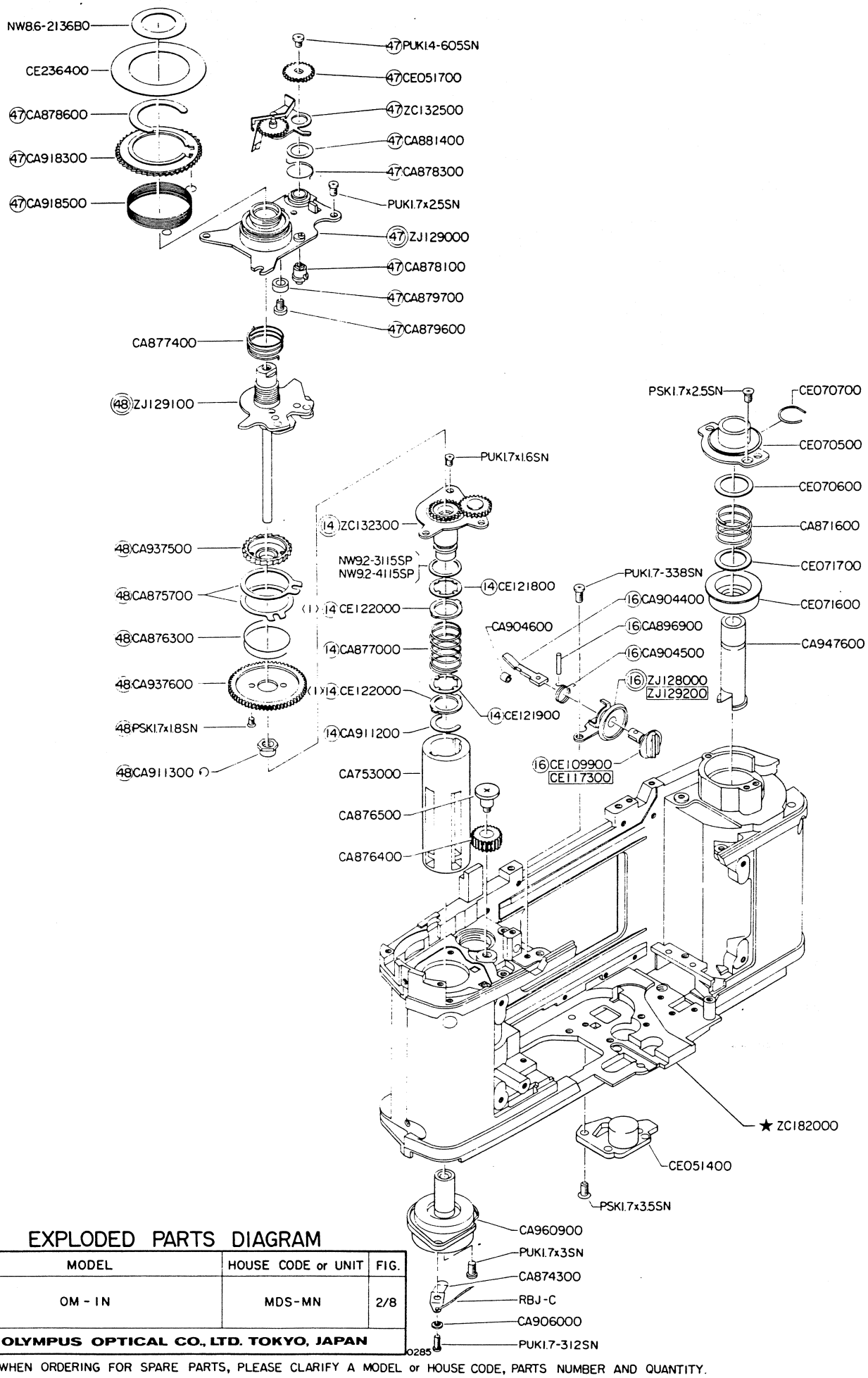




EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE or UNIT	FIG.
OM-IN	MDS-MN	1/8
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

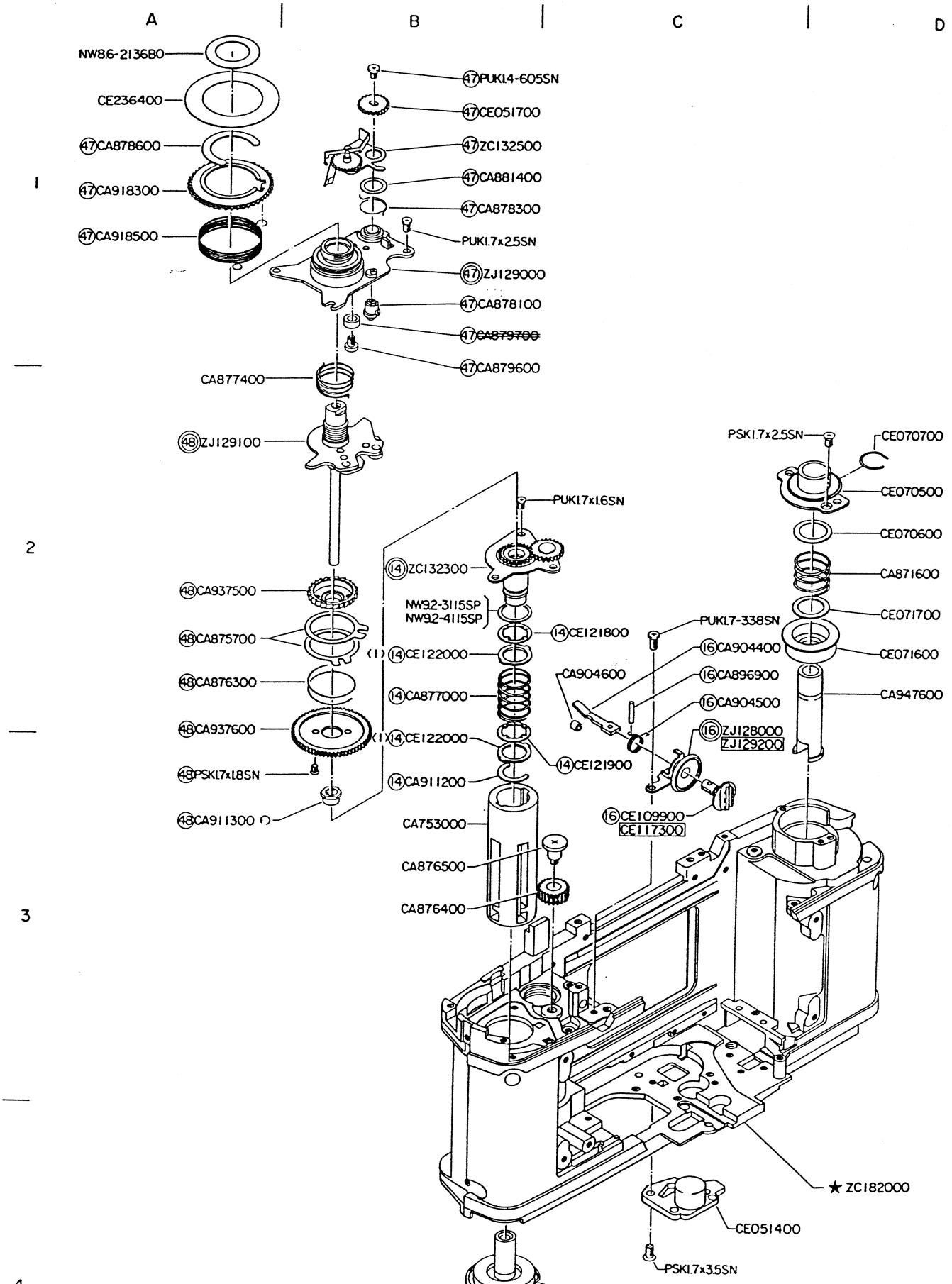
NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL or HOUSE CODE, PARTS NUMBER AND QUANTITY.



EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE or UNIT	FIG.
OM - 1N	MDS-MN	2/8
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL or HOUSE CODE, PARTS NUMBER AND QUANTITY.

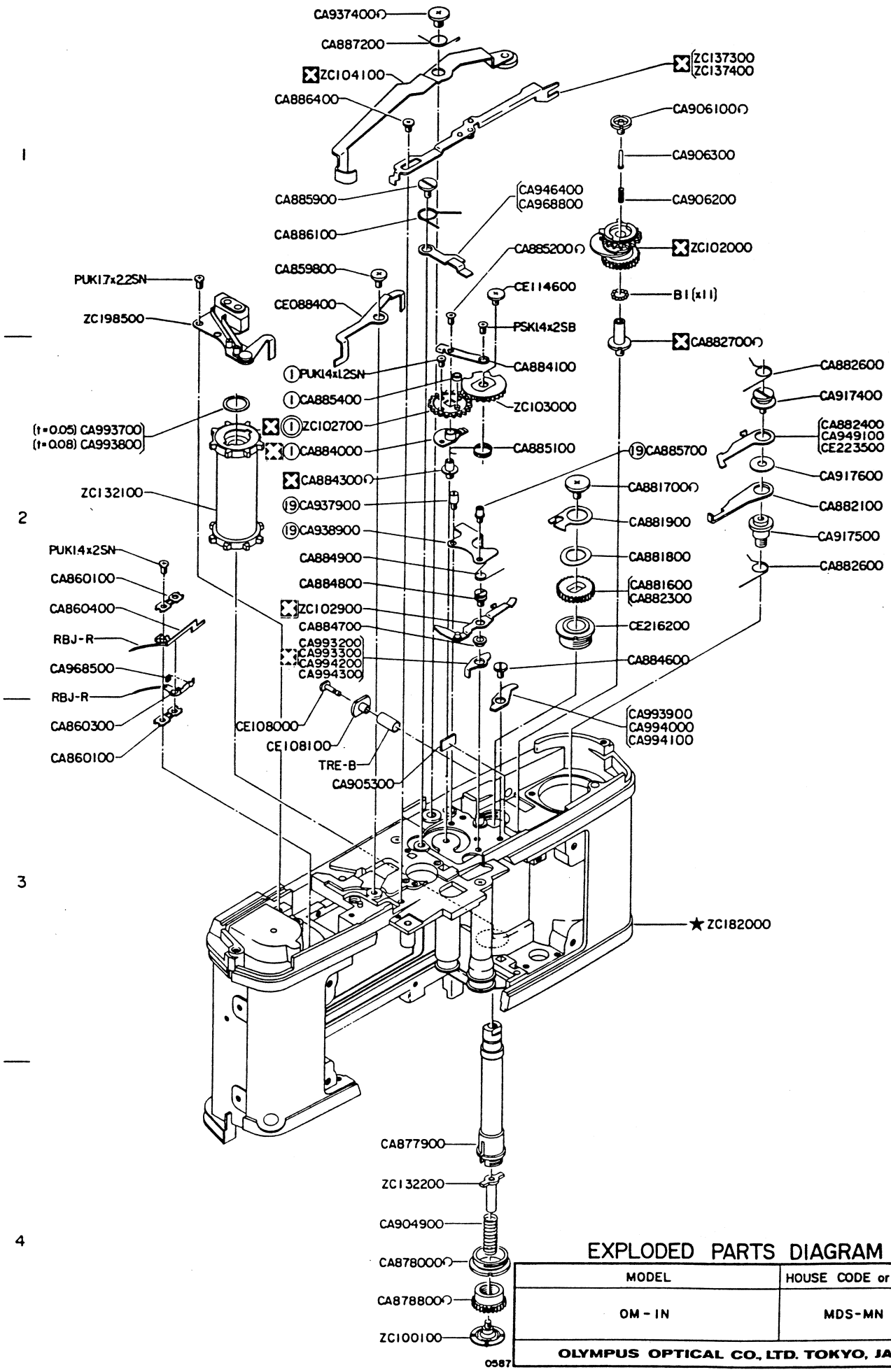


EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE or UNIT	FIG.
OM-1N	MDS-MN	2/8
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

1092

NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL or HOUSE CODE, PARTS NUMBER AND QUANTITY.



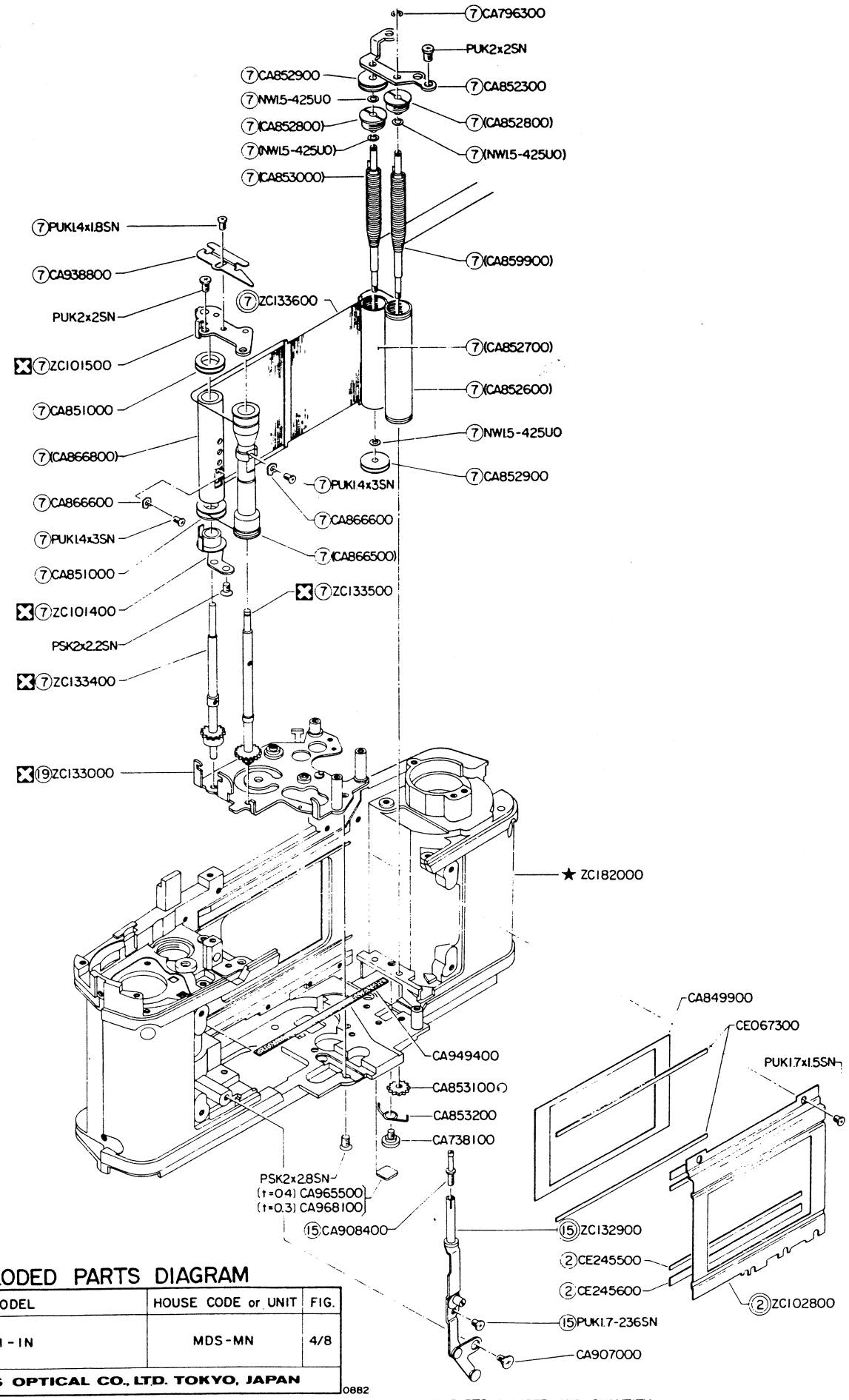
EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE or UNIT	FIG.
OM-IN	MDS-MN	3/8

OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN

0587

NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL or HOUSE CODE, PARTS NUMBER AND QUANTITY



EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE or UNIT	FIG.
OM-1N	MDS-MN	4/8
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

0882

NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL or HOUSE CODE, PARTS NUMBER AND QUANTITY.

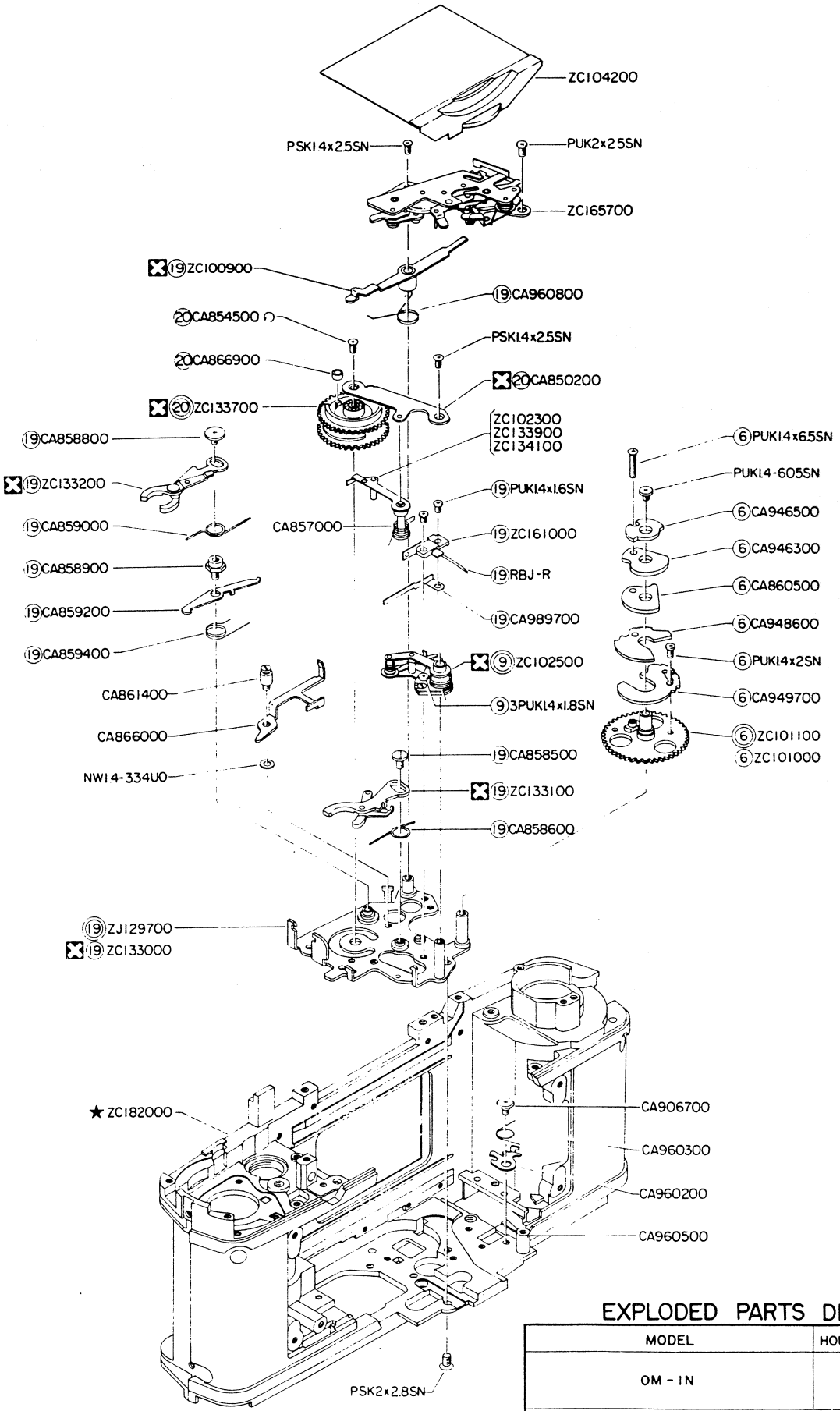
A | B | C | D

1

2

3

4

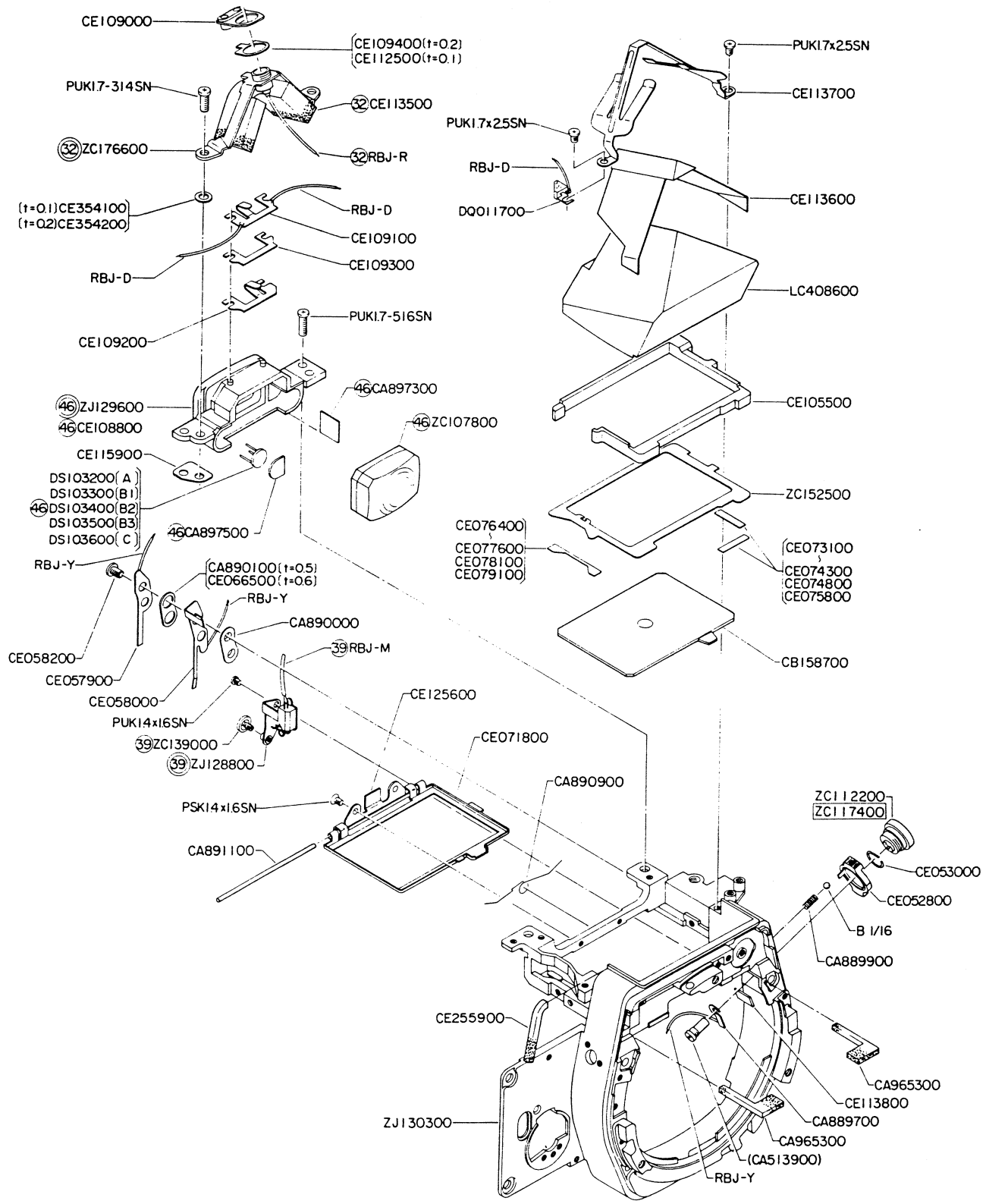


EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE or UNIT	FIG.
OM-1N	MDS-MN	5/8
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

0882

NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL or HOUSE CODE, PARTS NUMBER AND QUANTITY.

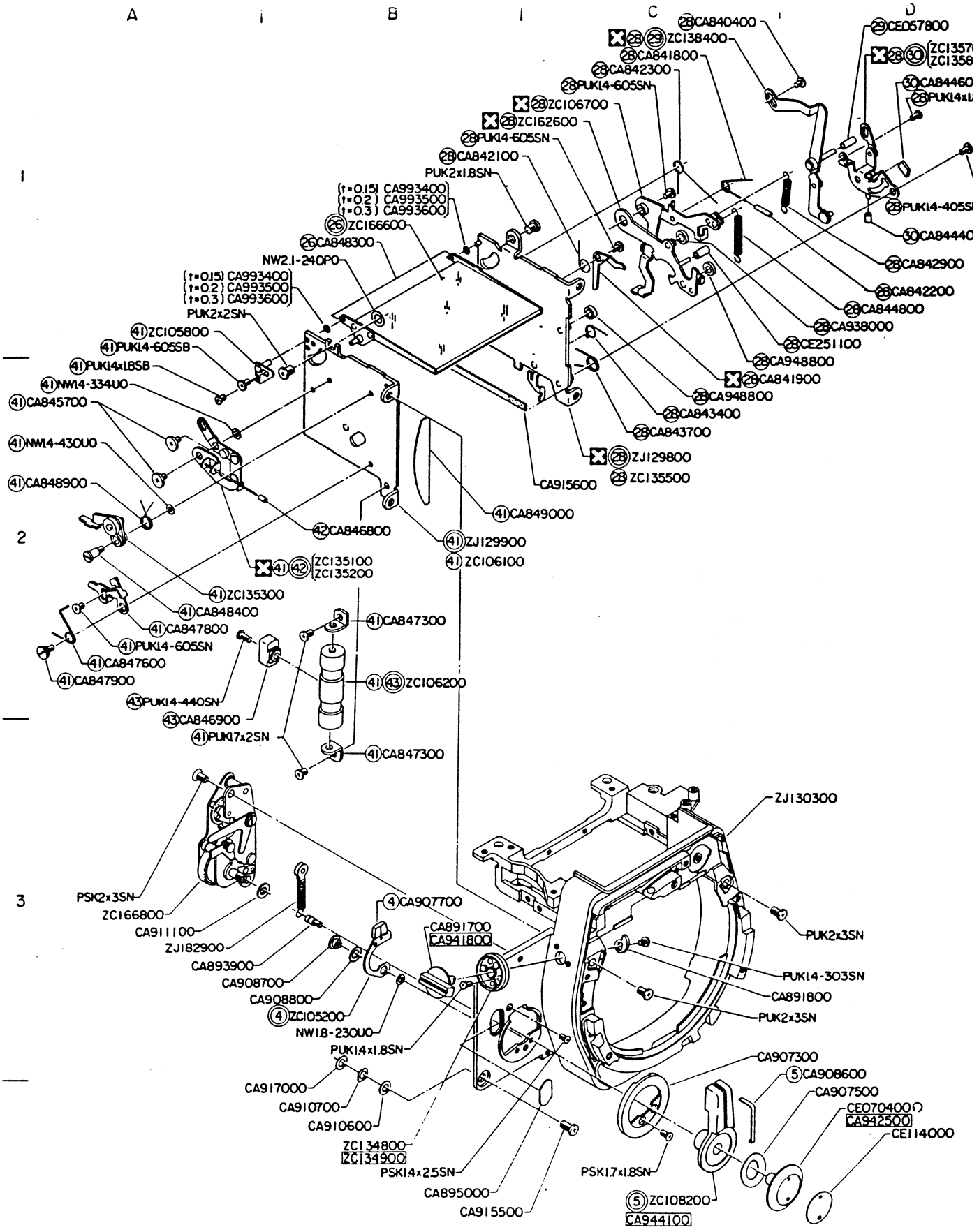


EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE or UNIT	FIG.
OM-1N	MDS-MN	6/8
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

0285

NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL or HOUSE CODE, PARTS NUMBER AND QUANTITY.

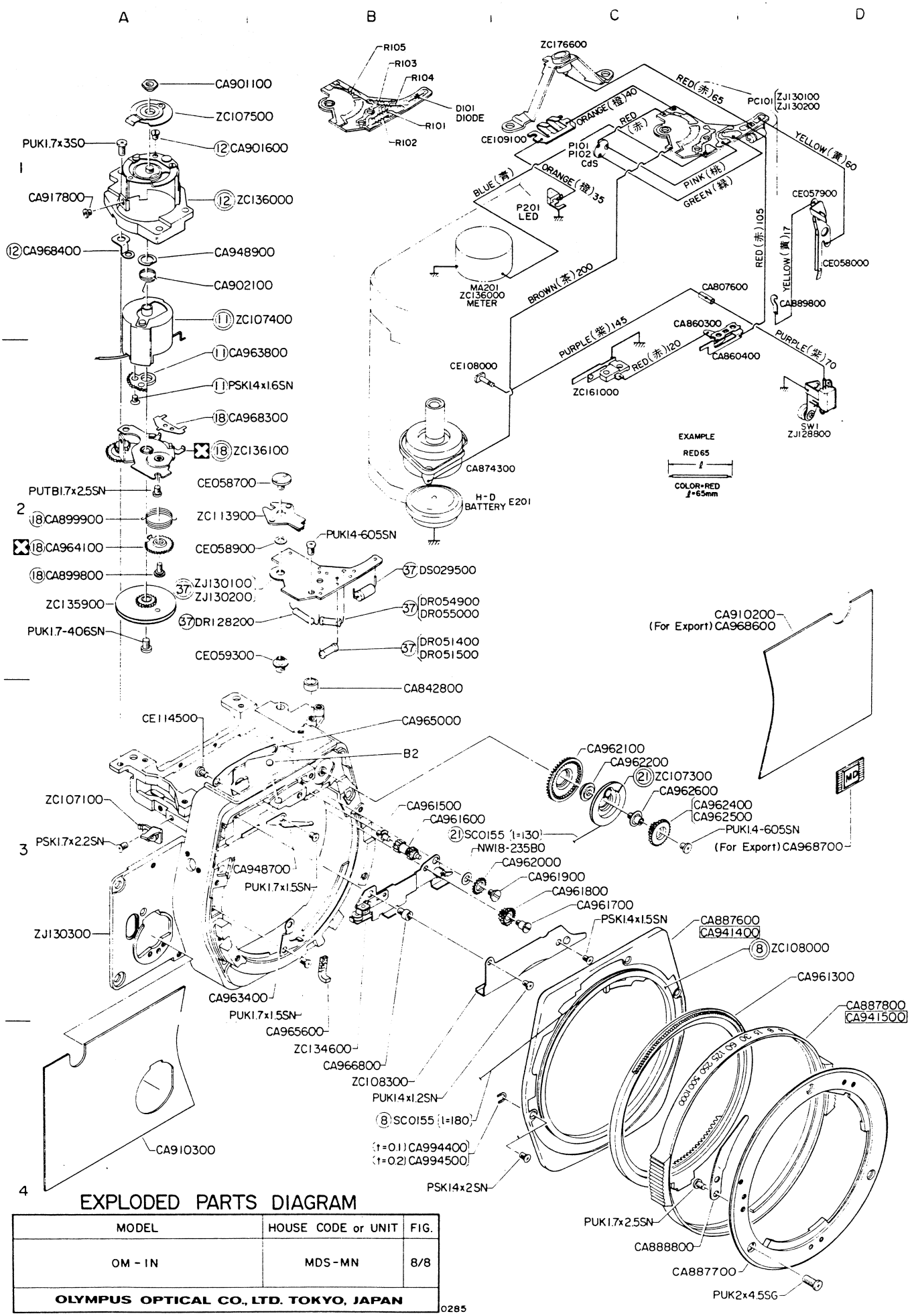


EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE or UNIT	FIG.
OM-1N	MDS-MN	7/8
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

0587

NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL or HOUSE CODE, PARTS NUMBER AND QUANTITY



EXPLODED PARTS DIAGRAM

MODEL	HOUSE CODE or UNIT	FIG.
OM - 1N	MDS-MN	8/8
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

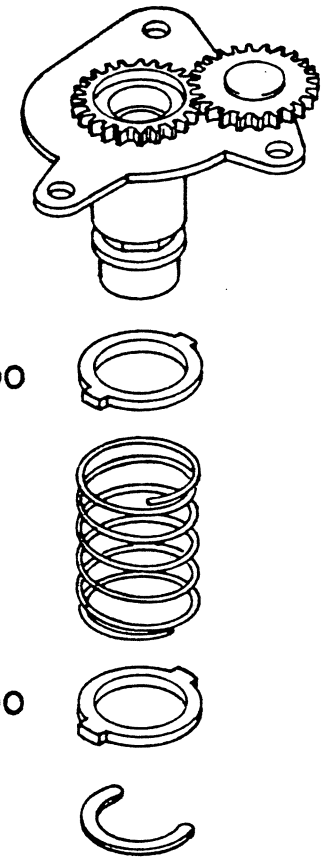
0285

NOTE : WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL or HOUSE CODE, PARTS NUMBER AND QUANTITY.

MDSM-N 変更部品表 IMPROVED PARTS TABLE

〈1〉

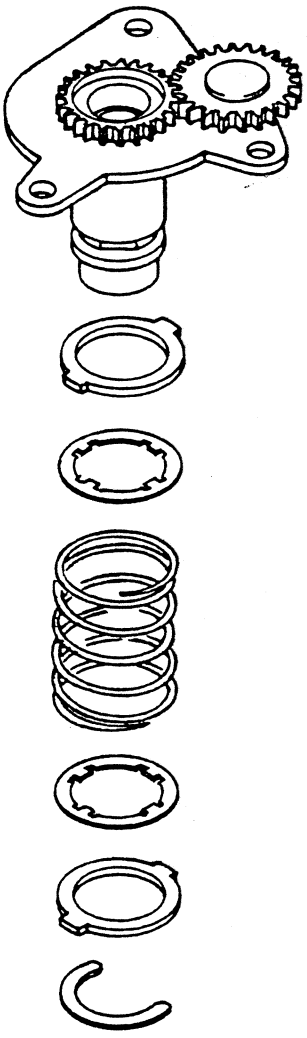
OLD



⑭CA937200
[t0.8]

⑭CA937200

NEW



⑭CE122000
[t0.6]

⑭CE121800

⑭CE121900

⑭CE122000

B

GENERAL OUTLINE AND MECHANICAL FEATURES

B. GENERAL OUTLINE AND MECHANICAL FEATURES

1. GENERAL OUTLINE

OLYMPUS Code Name: MDS
Model Name: Olympus OM-1

MAIN FEATURES

Format:

24 x 36 mm

Lens Mount:

Olympus OM-Mount, bayonet type.
Flange back = 46.0 mm
Bayonet rotation = 70° (clockwise to mount).
Lens release button on the side of the lens.

Shutter

Type:
Focal plane type
Shutter Speed:
B, 1 to 1/1000 of a second.
Dial:
On the lens mount.
Charging:
Self-cocking.
Flash Synchronization:
X and FP with switch
With electronic flash (X) 1 to 1/60 sec.
With Class "M" bulbs (X) 1 to 1/15 sec.
With Class "F" bulbs (X) 1 to 1/15 sec.
With focal plane bulbs (FP) 1/60 to 1/1000 sec.

Viewfinder

Type:
Single reflex type, eye-level viewfinder.
Prism:
Pentagonal roof prism, fixed, silver-coated..
Focusing Screen:
1-1 Microprism-Matte Type provided.
Interchangeable with any of ii additional screens available.
Viewfield:
97% both vertically and horizontally.
Exposure Indicator:
Visible in the viewfield is the exposure measurement indication.
Magnification:
0.92X at infinity with standard 50 mm lens.

Reflex Mirror

Type:
Quick return type.
Mirror-up:
The mirror can be looked up by 90° rotation of the mirrorlock-up lever.
Mirror Cut-Out:
No mirror Cut-Out in the viewfinder regardless of the lens used, from 8 mm fisheye through 800 mm ultra-long telephoto (in case of full open aperture).
Reflection:
Highly reflective special coating is applied on the reflecting surface.

Exposure Meter

Type:
Through-the-lens light measuring meter.
Method of Measurement:
Open-aperture light measuring method, for average light measurement.
Zero-method system
Sensing Cell:
Two CdS (cadmium sulphide) type cells.
Measuring Range:
EV1.2 - EV16.9 with MS5512 at ASA100
EV2 - EV1.7 with MS5014 at ASA100
EV2.35 - EV17.35 with MS5018 at ASA100
Film Type Indication:
Film sensitivity indicator dial with ASA ratings with the locking device.
Insufficient Light Warning:
When switched in, the needle jumps down extremely beyond the lower limit of the range indicator, if light is insufficient.
ASA Ratings:
ASA 25 - 1600
Power Source:
Mercury battery, 1.3V, JIS H-D type.
(e.g. National H-D, Toshiba H-D, Mallory PX-625, Eveready EPX-625, etc.)
On-Off Switch:
Lever type
Calibration:
K = 1.3

Film Loading

Loading Method:

Easy-loading system (EL system) by opening up the rear cover, which is hinged and provided with the magic-lock (opened when the film-rewinding knob is pulled out.)

Film Advance:

The take-up spool rotates in the direction contrary to the lever movement.

Single-stroke rapid winding lever.

(Also capable of film-advancement by several short strokes.)

Winding angle = 150°

Pre-winding angle = 30°

Prevention against double-exposure and double-film-advance.

Exposure Counter:

Progressive and automatic-return type.

Exposure Counter Index:

S . . 1 2 . 4 . 6 . . . . . 34 . 36 . E

Film Rewinding:

Rewind crank.

Film release knob (to be turned 90° toward the "R" mark with a red dot). Automatically reset when film is to be advanced.

Interchangeable Rear Cover:

By the mounting pin.

Shutter Release:

Shutter release button on the body.

Also with a cable release, JIS approved screw in type.

Self-Timer:

Lever system (Rotation angle 180°) with approx. 4 ~ 12 sec. delay.

Action is started by the start-lever.

In the middle of the timer action, the start-lever may be shifted back to stop it. The timer may be reset then.

Accessory Shoe:

Direct contact shoe to be screwed on.

Synchro-socket:

As per JIS standards.

Tripod Screw:

As per JIS standards.

Size & Weight:

Body only = 136w x 83h x 50d	510 gr.
with MS5512 = 136w x 83h x 97d	820 gr.
with MS5014 = 136w x 83h x 86.5d	740 gr.
with MS5018 = 136w x 83h x 81d	680 gr.

2. MECHANICAL FEATURES

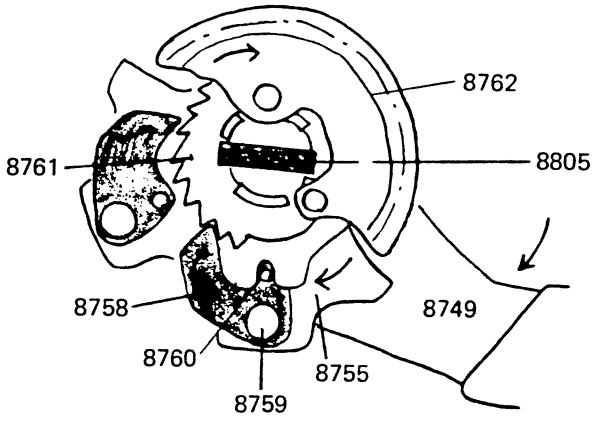
Notes:

1. This section describes the basic mechanism of the OM camera, and you will find some differences from the latest model because of design changes and improvements.
2. Accordingly, some of the part numbers may not identical to those used in the parts list.

(1) Film Advance

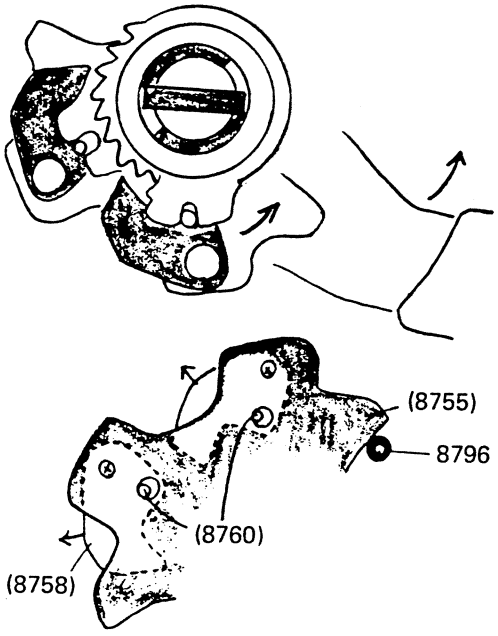
When 8749 is turned, (8755) is driven in the arrowed direction by means of (8805). When (8755) moves, two (8758) pivoted at (8760) is moved in the arrowed direction to engage on (8761) and to turn it.

(8762) is screwed on (8761) which rotates simultaneously to drive gears engaged on it. This starts the film advancing motion. One of the two (8758) will rotate (8761).



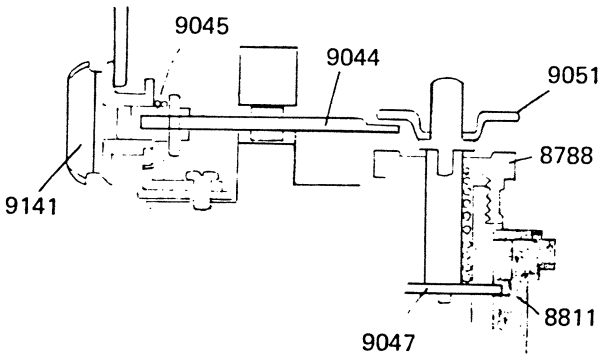
Upon turning (8749) to the fullest extent, and releasing it, (8755) returns to the original position moving in the arrowed direction by means of 8774 hooked on 8755. At this time, since (8758) escapes in the arrowed direction, pivoted at 8760, there is no clicking sound for (8758) going beyond the latchet. Amount of (8758)'s escape is determined by the guiding hole for (8760) on (8755).
moves jointly with 8788. It means that, to the latchet. Amount of (8758)'s escape is determined by the guiding hole for (8760) on (8755).

(8755) stops when it hits 8796. 8796 is covered with rubber to absorb noise. Film advancing motion by engagement and disengagement of (8758), as described at right may be carried out by one single stroke or by several short strokes.



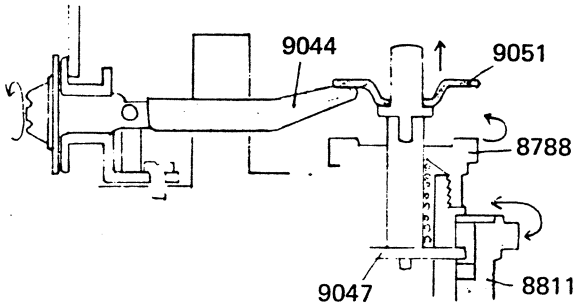
(2) Sprocket Release (Rewinding Mechanism)

Unlike the former push-button system, it adopts such a mechanism where in 9141 located at the joint of CA 8703 (Top-cover) on the left front of the camera and the main body, is turned to release the sprocket. 9047 engaged into the groove of the sprocket moves jointly with 8788. It means that, to release the sprocket, this 9047 should be removed from the groove of the sprocket.



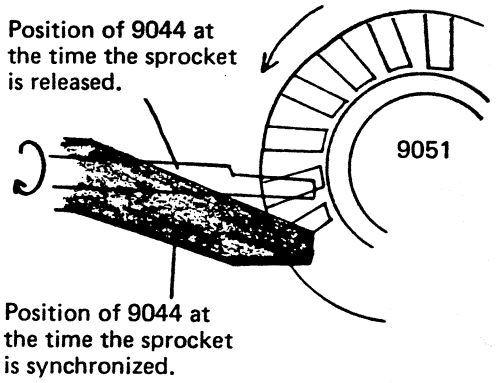
Order of Operation:

1) When 9141 is turned counterclockwise, 9141 adjoining 9044 pushes up 9051 at its tip.
2) Then 9047 connected to 9051 is pulled up simultaneously and comes off from the sprocket groove making the sprocket freely rotatable.



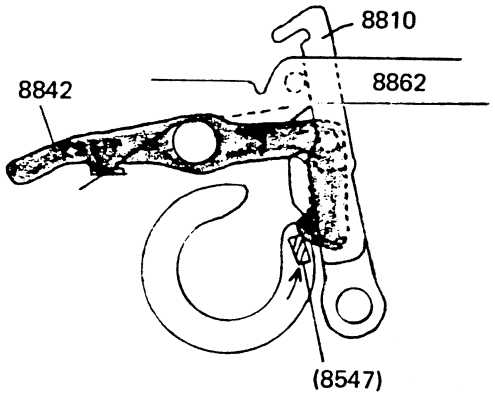
3) At the stage 2 above, if CA 8749 (Lever) is turned up, 8788 rotates in the arrowed direction simultaneously rotating 9051 connected with 8788.
4) On 9051 are 18 grooves which catches 9044 to rotate it, as 9051 rotated.
5) When 9044 is turned until it is released from the groove of 9051, by 9045, 9141 backs to the original position.
6) At the same time, 9047 is pressed down by 9049. If the sprocket groove is in the position corresponding with 9047, the sprocket movement will also be synchronized.

If the groove position does not correspond with 9047, the sprocket will not be synchronized at the moment 9141 is returned to its original position but left released. In this case, winding operation needs to be repeated until 9047 fits into the sprocket groove.



(3) Release for CA 8849 (KS spring) Action

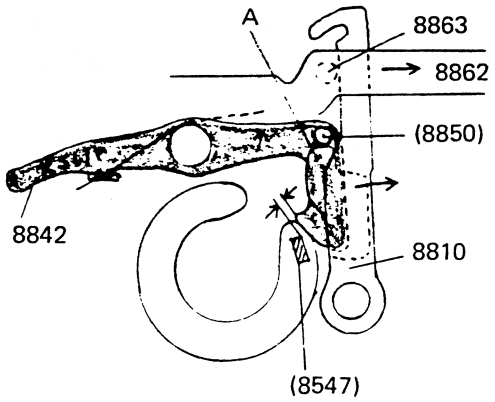
At the time of film advancing motion, the embossed portion of (8847) is rotated in the arrowed direction and hits 8842 immediately prior to completion of shutter charging action. (8847) turns 8842 in the arrowed direction to release the lock. If the shutter is operated while 8842 is in contact with the embossed portion of (8547), the 8849 engaged on 8842 works to push (8847) and the curtain speed is influenced. Therefore, such should be avoided.



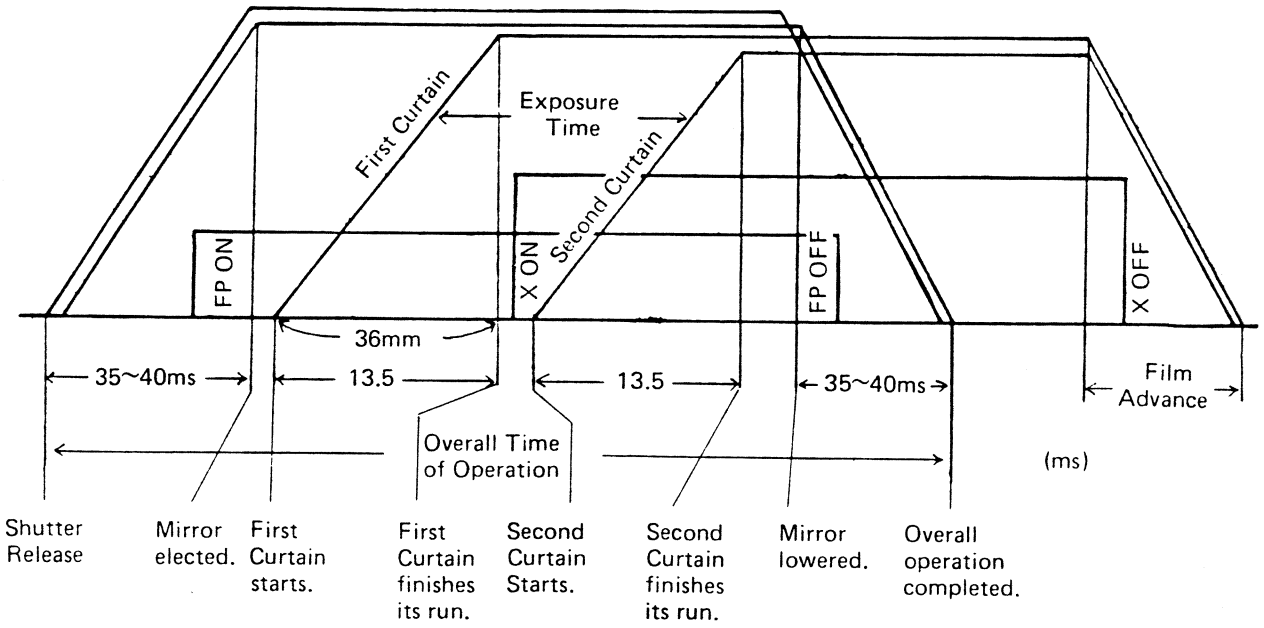
1) When 9082 (button) is pressed, 8862 moves in the arrowed direction and turns, by means of (8863), 8810 in the arrowed direction.

2) When 8810 is moved, it hits (8850) clinched on the KS lever. When it is further moved, it turns the KS lever by (8850) action in the arrowed direction and releases 8842 from the boss on (8547).

3) When the 8862 is moved still further, the mirror commences its operation and the shutter also works.



(4) Shutter Timing



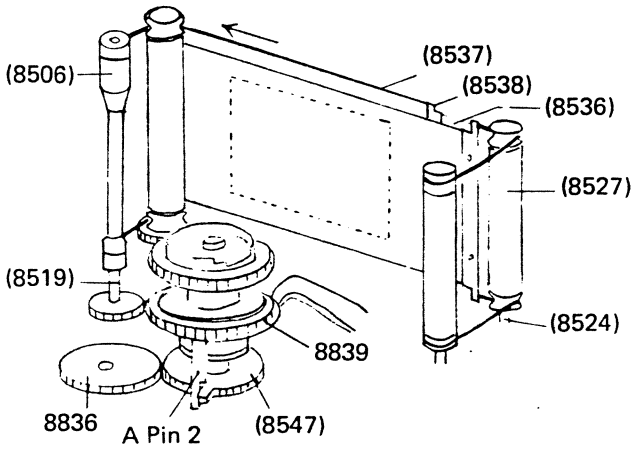
The above timing is based on the curtain movement from one edge to another edge of the mask. Therefore, it does not include the movement of the first and the second curtains before they appear one end of the mask and after they will have reached the other end of the mask.

(5) Shutter Charging

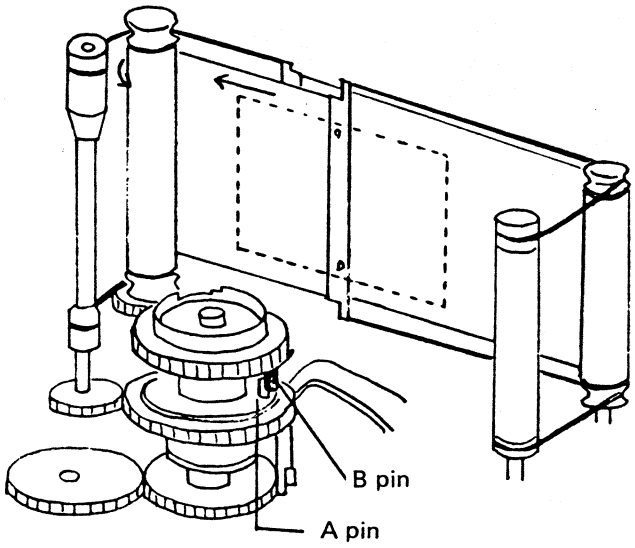
1) When film is advanced, 8836 and 8839 are rotated, which in turn makes the embossed portion of 8840 of 8839 push A pin 2 connected to (8547). Thus (8547) is rotated.

2) When (8547) is rotated, it turns 8506 by means of 8519 connected thereto.

3) At each end of (8506) is glued a string, to which is attached (8538) of the first curtain. When (8506) is rotated, the strings are wound up towards (8506) against the spring force effected on (8524) and (8527), and thus the first curtain moves in the arrowed direction.

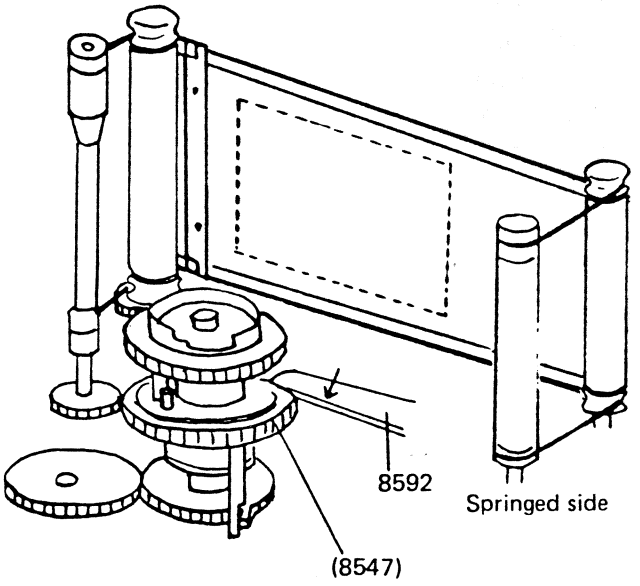


4) When (8547) is rotated, A pin of the (8547) pushes B pin of the (8548), thus moving the second curtain in the arrowed direction. ((8447) and (8548) will move simultaneously.)



5) Upon completion of winding as shown below, CA 8592 is engaged onto the tooth of (8547) and locks (8547) and (8548). The first and second curtains will remain wound up while pooling the returning force towards the spring. This will complete the charging action of the shutter.

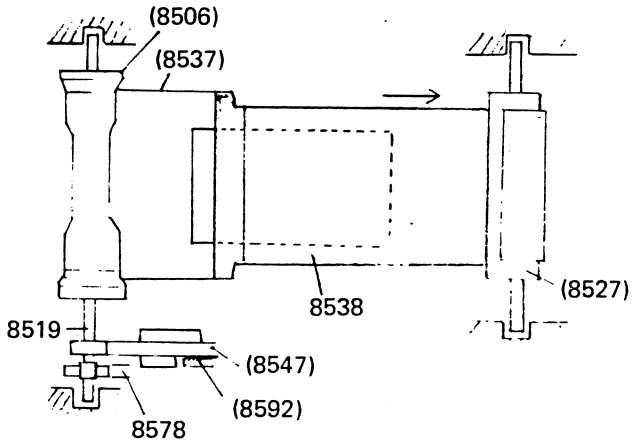
Curtains are wound up towards this side.



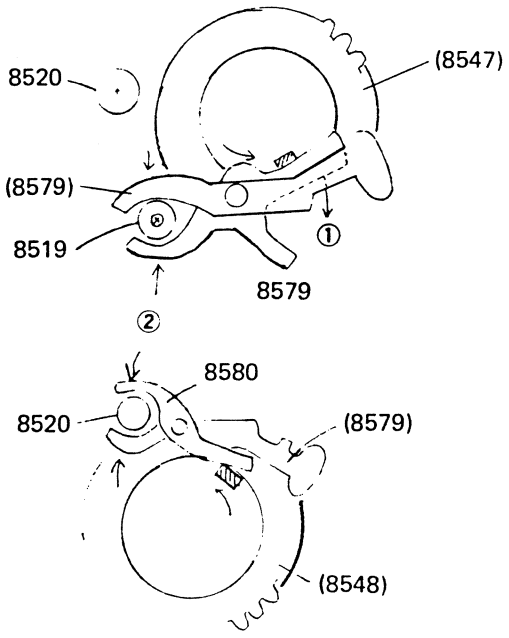
(6) First Curtain Operation

While the shutter is charged, the curtain remains pulled by the Tension Spring equipped within (8527) in the arrowed direction.

When the shutter is released and the mirror is flipped up, 8592 is released from the gear. The first curtain runs as Main Spring in (8527) rolls it up. The rotation speed of (8527) at this time is an important factor determining the exposure time, since it relates to the speed of the first curtain.



For shock and noise absorption, the brake mechanism is provided. At the end of the curtain movement, the boss on (8547) or (8548) presses the tweezer squeezing up 8519 and 8520 to effect brake on shaft rotation.

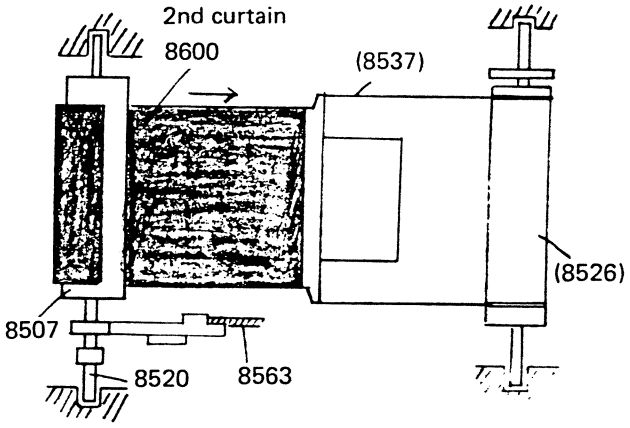


(7) Second Curtain Operation

While the shutter is charged, the curtain remains pulled by the Tension Spring (8599) provided in (8526) in the arrowed direction.

Upon receipt of the signal from the first curtain, (8563) is released and the second curtain string is wound up onto (8526) by means of the Tension Spring (8599) and the curtain runs.

At this time, the rotation speed of (8526) is an important factor determining the exposure time since it relates to the speed of the second curtain.



(8) Shutter Speed Adjustment

The exposure time is determined by the curtain speed and the slit width (interval between the first and the second curtain). When the curtain speed is fixed, the exposure depends on the slit width. In case of MDS, the curtain speed is set at 11.7 ~ 12.1 ms. (for both the first and the second curtains), and the exposure time is adjusted by various slit width.

The major part of the mechanism used for this purpose is:

Low Speed

1/1	1/2	Large ankle on the governor.
1/4	1/8	Small ankle on the governor.
1/15	1/30	Gear only of the governor.

High Speed

1/60 - 1/1000	By the shape of (CA 8549, Cam) not using the governor.

High Speed (1/60 - 1/1000)

There is constantly a force by Tension Spring (8599) trying to make various parts work in such an order as (8527)-8538-(8537)-(8506)-8519-(8547). When 8592 is released as a result of mirror lifting, it releases 8547. Then the first curtain starts moving and (8506) rotating as (8527) is rotated by the force from (8530).

The interval between curtains, i.e. how soon the second curtain should start after the first curtain, is controlled as follows. 8547 clinched on the Gear A rotates in unit with the Gear A, and pushes out 8551 to let the back of 8551 release 8563. It will rotate (8548) and start the second curtain.

The shutter speed adjustment for 1/60 - 1/1000 is made by 8577 engaged on the shutter dial. When it is set at the desired speed between 1/60 - 1/1000, it will determine the position of 8576. Through 8559 connected to 8576 it will further determine the position of 8551. (When released, 8551 returns to its original position.)

Low Speed (1/1 - 1/30)

Since the mechanism of the first curtain operates in a same manner as in case of a high shutter speed, the exposure time is adjusted by controlling the timing after the start of the second curtain until the moment the Patch of the second curtain appears in the wash. The control is performed by the governor.

(1/1, 1/2)

When the shutter dial is set at 1/1 or 1/2, it will determine the position of 8577 engaged onto the shutter dial. It will further set the position of 8605 crewed with 8577. The A lever is dropped into the concave of 8605 and the Large Ankle is engaged. The speed adjustment of 1/1 and 1/2 is made by the Cam lever connected to 8575. The Cam lever will determine the position of the G lever and thus change the angle of operation of the Governor to adjust the speed. (Ref. E-29)

Now the preparation of speed adjustment for 1/1 or 1/2 is completed. After the first curtain run, 8563 is released. When the Gear B (second curtain) starts moving, the boss on the Gear G hits the G lever on the governor. After its operation for appropriate time on the governor, the boss on the Gear B is released from the G lever. This removes the Gear B load and the second curtain runs in a high speed. (The position of 8551 will be the same as in the case of 1/60.)

(1/4, 1/8)

Among the series of the governors for 1/1 and 1/2, a Large Ankle is used in place of the Small Ankle to lessen the load. This controls the operating angle of the governor by 8575 so as to meet the requirement, i.e. 1/4 and 1/8. When the shutter dial is set at 1/4 or 1/8, the S lever of the governor escapes from 8606 and te Small Ankle will be engaged. Then 8605 presses the A lever to release the Large Ankle. The speed adjustment for 1/4 and 1/8 is directed from 8575 to the Cam lever and thus changes the operating angle of the G lever. (Ref. E-30)

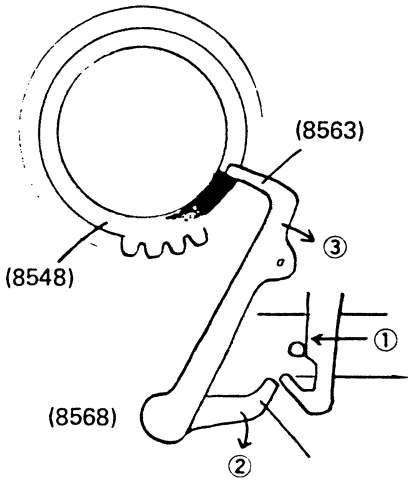
(1/15, 1/30)

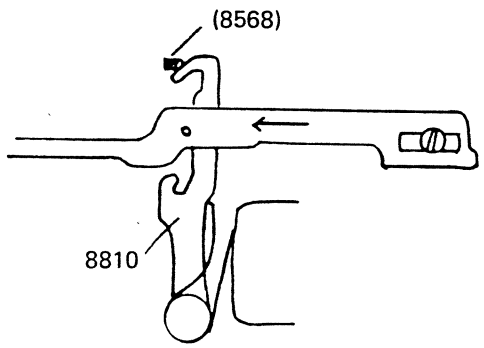
The only difference from the previous speeds, 1/1 -1/8, is that it does not use the ankle of the governor but the gear of the governor alone to apply a load on 8548.

When the shutter dial is set at 1/15 or 1/30, the positions of 8575 and 8605 are determined by the gear. Both Large and Small Ankles are pressed toward outer perimeter of the Governor cam and released. According to the height of 8575, the movement of the Cam lever is governed and further the position of the G lever. Thus, the start of the second curtain's run will be delayed as appropriate.

B (Bulb)

The movement of the first curtain is same as in other cases. By means of 8576, 8551 is placed in the position to escape the action of 8549. Therefore, the second curtain is not released by the operation of 8547. When the release button returns to the original position, 9079 moves in the arrowed direction and its boss hits 8568. When 9078 returns, 8568 rotates in the direction of (2) shown in the illustration below. 8563 in unit with 8568 is released from the embossed portion of the B Gear. It will rotate the Gear B and the second curtain starts running.





Function of CA 8612 (Lever)

In case of snapshot at low shutter speeds (1/1, 1/4), CA 8612 removes ankle from Gear-governor and returns G lever immediately to the appropriate position. This prevents irregularity of low shutter speeds.(Ref. page 83)

(9) Mirror Operation

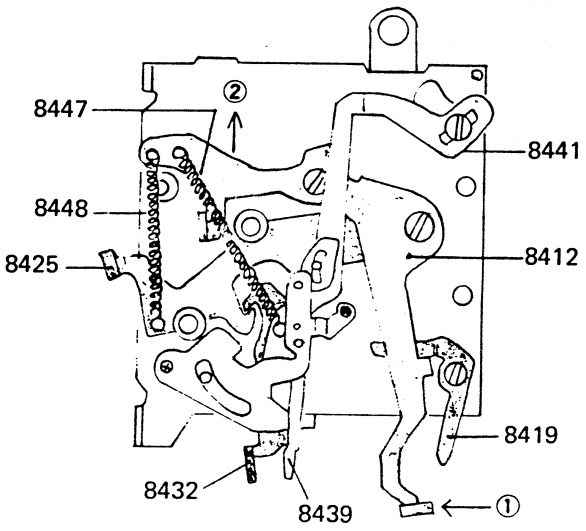


Fig. A Prior to Shutter Charging

Mirror Charging:

1) When the film is advanced, 8412 is pressed in the direction of (1). (Fig. A)
2) Since 8448 is stopped by 8432 and 8441 by 8448, 8448 and 8412 are charged. (Fig. B)
3) 8412 is locked by 8419. (Fig. B)

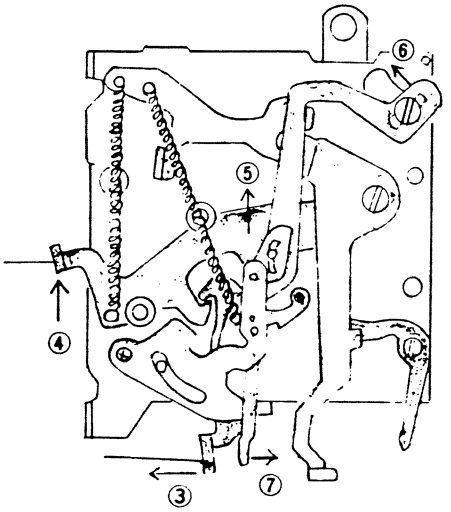


Fig. B Subsequent to Mirror Charging

Mirror Operation:

1) When 9082 (Botton) is pressed, 8432 is pushed in the direction of (3) to be released from 8425.
2) 8425 is pushed by 8448 in the direction of (4). (Fig. B)
3) Along with the movement of 8425, 8441 moves in the direction of (6) to lift the mirror. (Fig. B)
4) When the 8441 moves in the direction of (6), 8439 is moved towards (7) to transmit the mirror-lift up to the shutter.

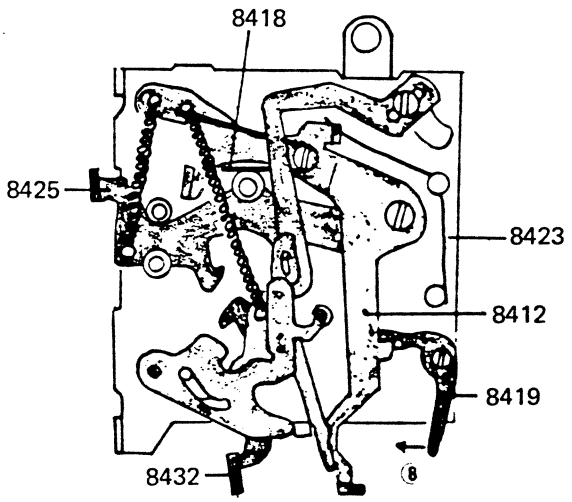


Fig. C Mirror Lifted

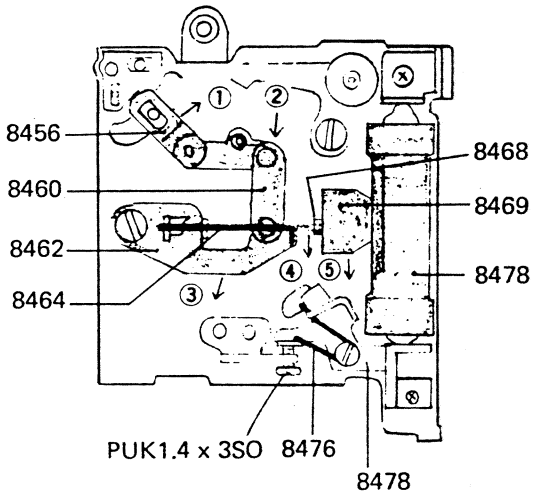
5) 8425 is fixed in position by 8418, which acts as the shock absorber.
6) Upon receipt of the message from the shutter that the second curtain has completed its run, 8419 is pressed in the direction of (8). (Fig. C)
7) When 8419 is released from 8412, 8412 is lowered by 8423.
8) 8425 is pressed down at the same time 8412 is lowered.
9) 8425 is locked by 8432. The mechanism returns to the original state shown in Fig. A.

(10) Mirror Brake Mechanism

To absorb or prevent shocks during the mirror travel, an air brake is provided consisting of a cylinder and a piston, which is effected towards the latter part of the mirror movement vertically.

Steps of Operation

1) When the mirror begins its movement, 8456 moves in the direction of (1) and its other end in the direction of (2).
2) 8456 and 8462 being connected by 8460, 8462 moves in the direction of (3).
3) As 8464 is fixed onto 8462, 8464 moves in the direction (4).
4) When the mirror is raised 20° ~ 22°, 8464 will hit 8469. To absorb the shock at this time, 8464 is used and further a piece of rubber sheet is glued at its tip.



5) 8464, while bending itself, will push down 8469 in the direction of (5).
6) The mirror is completely raised.

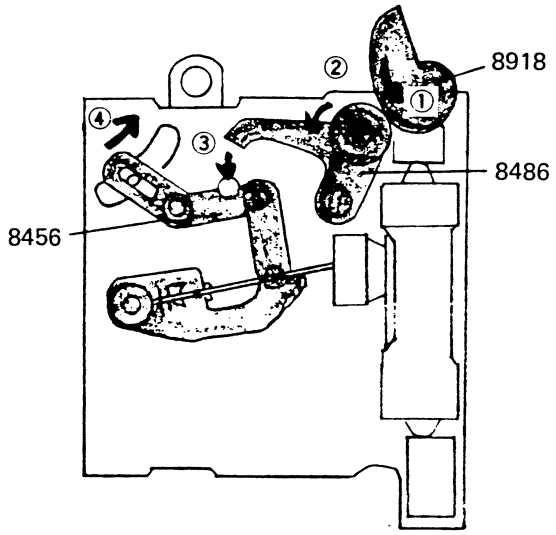
Positioning (45°) of the Mirror:

8401 hits 8476 and the mirror, thereby, is fixed in position of 45°. The necessary adjustment is made by rotating the PUK1.4 x 3SO and changing 8476 position.

(11) Mirror-Up Mechanism

When a short focus lens is used, the lens will hit the mirror. Therefore, it is necessary to lift up the mirror and thus the mirror-up mechanism is provided to meet the requirement.

1) When 8719 is turned, 8918 moves in the arrowed direction.
2) 8486 presses 8456, thus lifting the mirror.
3) Simultaneously with 8456 movement, 8441 pivoted at 8442 rotates counterclockwise. The mirror is up. (Status (6) of Fig. B in the Repair Data B-17)

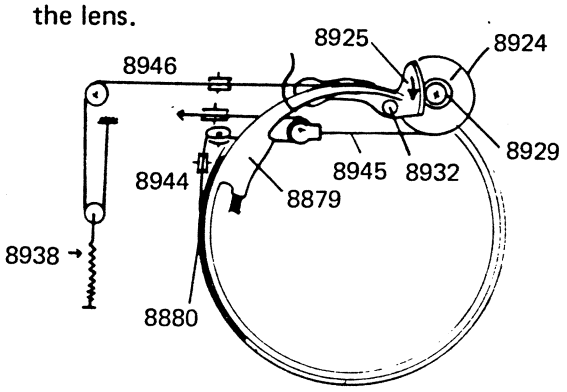


(12) Synchronizing Mechanism for the Exposure Meter

When the shutter dial is turned, this rotates 8880 directly connected thereto. Then the string (8944) adhered to the outer perimeter of 8880 will move to rotate 8980 of the meter using the Moving pulley as a media. Three pulleys (8883) in the route are for converting the string (8944) angle. At this time, the string is given tension by the spring (8999) on the meter side.

When the aperture ring is turned, the Connecting lever on the lens turns 8879. 8932 which is clinched to the 8925 and is in contact with the Cam of 8879, will rotate itself. While doing so, it will turn 8925 in the arrowed direction and further 8929 which is engaged on 8925. Now, 8924 will turn since it is made in unit with (8929). It will roll up 8945 to pull the Moving pulley and 8944 and further to turn the pulley on the exposure meter.

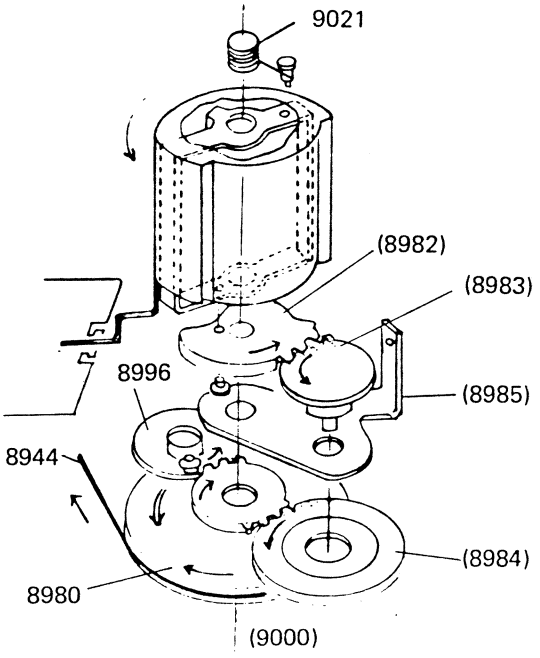
At this time, 8946 adhered to the outer perimeter of 8979 will also move to pull 8938. When the aperture ring is returned to the previous position, this will insure that the boss of 8879 will always hit the Connecting lever of the lens.



The above meter interlocking mechanism was changed to the gear system, starting with the MDS-M (1975).

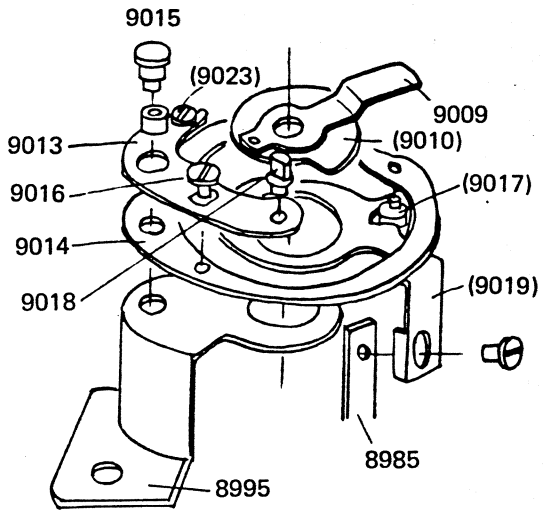
(13) Mechanical Section of Exposure Meter

Changes in Shutter Speed and Lens Opening: When the shutter dial is turned from 1/1000 toward B and the aperture ring from F16 toward open, the string (8944) moves in the arrowed direction as shown in the illustration, next page, to turn 8980. (9000) in unit with 8980 turns 8984 and further 8982 through 8983 which is united with 8984. 8982 is fixed on the meter frame by screws. Thus, the meter is activated. On the pulley M is applied a force in the direction (→) by 8999 and 9021 engaged on 8996, and the string (8944) is given tension constantly.

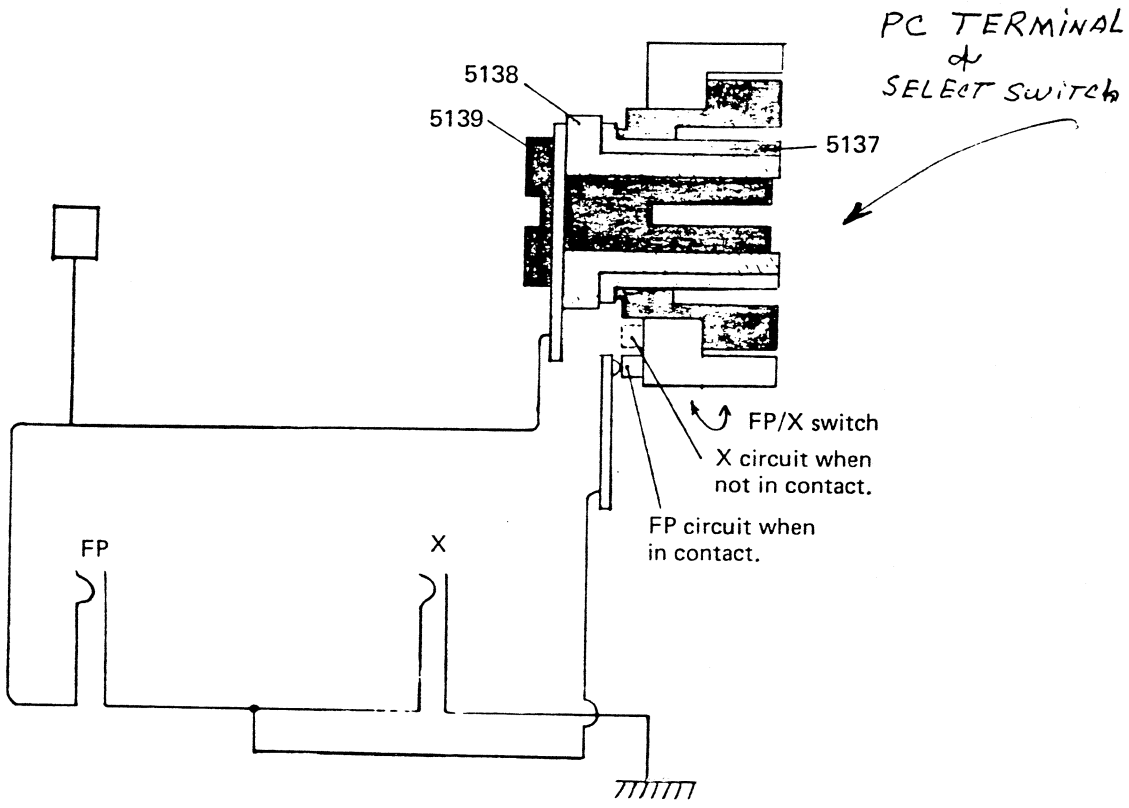


(14) ASA Setting Transmission

When the ASA dial (9007) is turned, (9009) which is engaged onto the groove of the A dial turns 9010. 9010 is in contact with (9018). The lifting force of 9010 is transmitted to turn the (9013) pivoted at (9015). To (9013) is connected (9014) by 9016. On (9014) is clinched 9017 which is fitted into the groove of (9019). Thus (9019) is turned. (9019) is connected to 8985 by a screw. When 8985 is turned, the meter will be activated.



(15) Flash Synchronization Circuit



In a single reflex, normally it takes the mechanism wherein the X contact is always kept ON and/or it is switched on again when the film is advanced. This causes an explosion at the time of the film advance. Therefore, normally the X contact piece is made movable to prevent it. However, because it means unstable positioning of the contact piece, FP and X are connected parallelly in case of MDS.

To check the insulation resistance of the contact piece, in case of X contact, set the shutter dial at 1/1 and release it. While the 1/1 governor is in operation, move the film advance lever for about half a stroke. See if the needle of the Insulation Resistance Meter) shows over 30MΩ. A check can then be carried out.

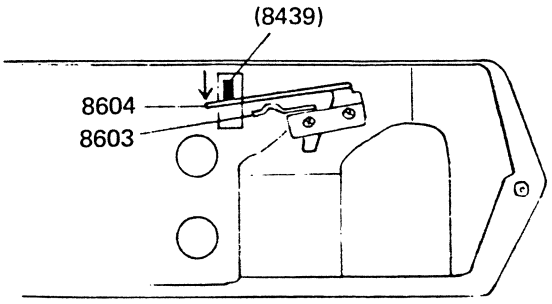
In case of FP turned ON and X being OFF, when the film advance lever is moved for a full stroke, curtains will make their runs and will return to the normal position. A check can then be carried out.

Do not attempt checking too frequently, since it may cause for strings for curtains to come off the pulley.

FP-Contact:

The FP contact has to be switched in within 10 ms. prior to complete opening of the first curtain. Thus, normally, the signal is received from the mirror driving mechanism. In case of MDS, the signal notifying the mirror rising is transmitted to the shutter which in turn makes the switch work by 9439.

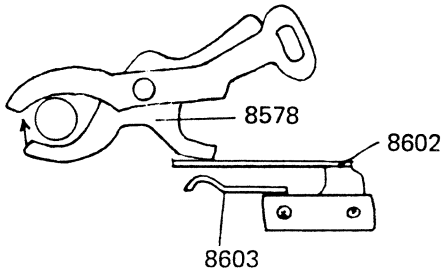
When the mirror rises, 8439 moves in the arrowed direction to switch the EP contact on.



X-Contact:

Since the X contact is to be switched IN immediately upon completion of the first curtain opening, the switching action is carried out by the first curtain cam and the first curtain brake.

In case of MDS, it is switched in by 8578 of the first curtain brake lever.



Immediately prior to completion of the first curtain opening, 8578 starts rotating in the arrowed direction, thus effecting the brake. The X contact is made effective immediately after completion of the first curtain opening.

The brake is kept effective until completion of the film advancement. In the meantime, the X contact is also kept effective.

C

CHECK POINTS

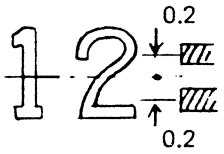
C. CHECK POINTS
(INSPECTION STANDARD)

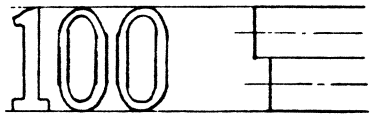
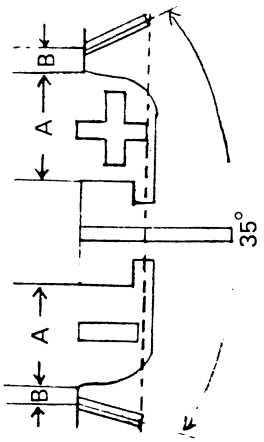
Some of the part numbers used here have been changed.

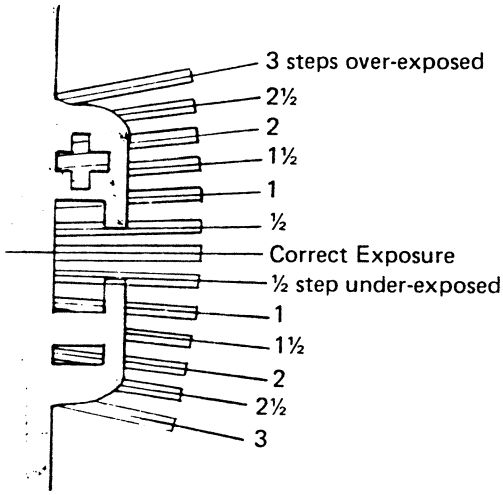
GENERAL FUNCTIONS

Major Check Point	Relative Functions to be checked	Checking Method or Points of Special Attention
1. Viewfinder		1) No dirt or filth on it. 2) No blurring at the rim of the viewfield. 3) The edge of the prism should not be observed conspicuously.
	(1) Focus	1) When focussed at ∞ or at a distance desired, there should be no discrepancy between the reading on the focusing ring and the actual distance from subject to the film surface.
	(2) Eyepiece Frame	1) No deformation, rattling, nor space between the top cover. The magnifier should be mounted onto it firmly.
2. R Knob (CA 8725)		1) No rattling vertically. (Horizontal tolerance, B-F & R-L, should be 0.1 mm or less in the stored position, and 0.3 mm or less at the tip of the knob when pulled out.) 2) Smooth and accurate rotation for rewinding. 3) Can be pulled out or pushed in smoothly and accurately. 4) The knob can be further pulled out (second step) to unlock and open the rear cover, but should automatically return to the original position.
	(1) R Lever (CA 8726)	1) Should be opened or closed smoothly and accurately. 2) CA 8731 (R lever spring) should be functioning effectively. 3) The knob can be rotated smoothly.
	(2) Opening and closing of the rear cover	1) Accurate engagement. No friction against the top and the bottom covers. Should be smoothly operable with self-weight.
	(3) Locking function	1) Should be smoothly operable without an extreme friction, nor a squeak. 2) When the R knob is pulled out for the second step, make sure it unlocks. 3) When the R knob is released, the lock should return to its original position.

Major Check Point	Relative Functions to be checked	Checking Method or Points of Special Attention
3. Film Advance Lever (CA 8749)		1) Tolerance: At the axis, vertically = 0.1 or less ·At the tip of the lever = 0.4 or less Horizontally, back & forth, or right and left = 0.1 or less 2) Film should be advanced smoothly (without difficulty at the start of the lever motion, an extreme friction, uneven movement, or squeaks.) 3) Upon a full stroke or winding motion, film should be advanced by a full frame and the shutter and the mirror should be charged accurately. Further, even with a quick winding action, the shutter should be set accurately. 4) The film advance lever should return to its original position regardless of whether the film is loaded or not. 5) The preadvancing movement of the lever should be smooth. 6) In its still position, the lever should be in contact with the ASA dial or within 0.8 from the dial.
	(1) Room between CA8753 (Cover) and CA 9083 (Holder)	1) During the film advancing motion, CA 8753 and CA 9083 should not hit each other.
	(2) Film advance by short strokes	1) Even with short strokes, the film should be advanced properly and locked in position accurately.
	(3) Prevention for double film-advance	1) Film cannot be advanced consecutively for the second frame without shutter release.
	(4) Film release	1) Upon shutter release, the film can be advanced for the subsequent frame.
	(5) Shutter release prior to or during the film advancing motion	1) It should not allow the shutter release action prior to or during the film advancing motion. Be cautions at the point immediately prior to completion of the film advancing motion, particularly.
	(6) Shutter Release	1) No vertical tolerance, but 0.2 or less at the tip of the lever permissible. 2) Smooth and accurate release action (without friction, unevenness, squeak or other unusual noises). 3) The release button should not rotate. 4) Upon completion of the film advance movement, the shutter can be released. Other than that, the shutter release button may be pressed in only about 0.05 ~ 0.15 but not for the full stroke.

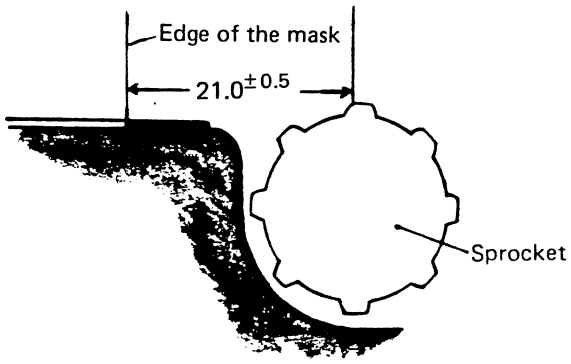
Major Check Point	Relative Functions to be checked	Checking Method or Points of Special Attention
	(7) Film Counter	1) The number should progress by 1 accurately upon completion of the film advancing motion, but not when the rear cover is opened. 2) When the number plate stops at (37), "E" should also be visible. 3) When the rear cover is opened, the number should return, accurately, to the S position. 4) Upon closure of the rear cover and completion of charging (or even without charging) the first figure ("1") should appear in the window after advancement of 3 frames. 5) After opening and closure of the rear cover, the "S" should not be out of position against the index point any more than the figure width.  At "1" and even numbers, the center of the index point should be within 0.2 from the center of the figure width.  At odd numbers other than "1", the center of the index should be as illustrated.
	(8) Sound of the shutter or mirror actions and shocks	1) During the feeling test, it should not give unusual sound or shocks.
4. ASA Dial (CA 9007)		1) When the locking button is pressed, it can be moved in either direction smoothly and accurately to be set at the desired ASA value. 2) When the locking button is not pressed, the A dial would not rotate. 3) The locking button should not go down CA 9083 (Holder) and come off position.

Major Check Point	Relative Functions to be checked	Checking Method or Points of Special Attention
		4) The tip of the index should be in line with the edge of the letters (figure).  5) Upon shifts of the ASA value, the exposure meter should give different values appropriately.
5. Exposure Meter Switch Lever (CA 8962)		1) The S lever should be operated lightly, smoothly and accurately and be click-stopped. (Without extremely uneven movement, or stoppages.) 2) Clicking should be felt. Even if it goes beyond, it should return to the clicking position. 3) When the lever is click-stopped, the ON or OFF letters should be conspicuous and not hidden underneath the lever.
	(1) Exposure Meter Operation	1) By operation of the S lever, the meter should be turned ON or OFF accurately. 2) The needle should not be stuck or tremble. 3) The meter should operate within the range indicated below.  o $A \leqq B$ o The tip of the needle at its lowest position should be in contact with the dotted line.

Major Check Point	Relative Functions to be checked	Checking Method or Points of Special Attention
	(2) Time for Response	1) Of a camera with MS 5014 lens: o Time required for stabilization of the needle at the proper value should be within about 3 seconds, when it is shifted from dark to BV10. (BV10 → ASA100 1/30 F 5.6) o When shifted from BV4 to BV1, the time required for the needle stabilization at BV2 value should be within about 7 seconds. (BV4 ASA100 1/1 F4) (BV2 ASA100 1/1 F2) Refer to Item (4), Exposure Compensation.
	(3) Balance of the mechanical part of the exposure meter	When the camera is inclined 90° in all directions, the needle should be within 0.3 EV or 1.5 times the needle width in comparison with its original position.
	(4) Exposure Compensation	
6. Connecting Ring (CA 8879)		1) With the shutter speed B, CA 8879 should turn as far as the stopper and return to the original position accurately. 2) It should move smoothly (without an extreme unevenness or stoppage).
	(1) Operation of roller of cam gear	1) It should operate smoothly in relation with the movement of CA 8879.
7. Diaphragm Lever (CA 8425)		1) Should work smoothly in relation with the shutter operation. 2) When the lens is mounted and the shutter released, the aperture should be stepped down appropriately.

Major Check Point	Relative Functions to be checked	Checking Method or Points of Special Attention
8. Focusing Screen		1) With CA 8912 (F-key) made effective, the focusing screen should accurately be located at the position of focus. 2) CA 8912 should be released without an extreme friction and the mounting block of the focusing screen should be lowered enabling the screen to be easily removed. 3) CA 8912 should accurate lock the screen frame with clicks.
9. Shutter Dial (CA 8878)		1) Should smoothly operate with accuracy (without an extreme friction, unevenness and squeaks). The only noise is that of the governor. 2) Should be accurately click-stopped. 3) Discrepancy between the center of the index and that of the letter.
	(1) Shutter Speed	1) By ears, the following shutter speeds should give a clear difference in timing properly (without an extreme disorder). 1/1000, 1/60, 1/15, 1/4, 1/1, B.
10. Mirror-up Knob (CA 8917)		1) The MU knob should move smoothly without extreme frictions, unevenness and/or stoppage, and clicks should be felt. 2) By operation of the MU knob, the mirror should be raised and returned to the original position accurately.
	(1) Mirror Movement	1) Upon shutter release, the mirror should be raised accurately, and after shutter opening and closure, it should be lowered. 2) The mirror should make a smooth operation (without hesitation and unusual sound).
	(2) Mirror Position	1) When the mirror is raised by the MU knob, the edge of the mirror should be in contact with the damper and press it. 2) Upon shutter release by B or at any slow speed, the mirror should be completely out of the picture frame during exposure but stay at the upper edge of the frame.
11. FX Knob (CA 8896)		1) The FX knob should operate smoothly and with accuracy.
12. Self-timer		1) There should be no tolerance of the setting lever either in the direction of rotation or back and forth, when it is not in the "set" position. 2) It should be properly set and stay in such a position until released.

Major Check Point	Relative Functions to be checked	Checking Method or Points of Special Attention
		3) Setting should be performed without heavy frictions, extreme uneven feeling or squeaks, but smoothly. 4) Upon setting of the self-timer, the setting lever alone will return to its original position smoothly with proper friction but without staggering by self-weight. 5) Upon setting the timer lever, the start-lever will begin the operation of the self-timer. 6) If the start-lever is pushed to the left during the timer operation, the timer should be stopped. But when the lever is returned to the correct position again, the timer should resume operation accurately. 7) The self-timer should operate smoothly without uneven movement such hesitation or stoppage. 8) The shutter should be released accurately by the self-timer. 9) Upon shutter release by the self-timer, the release button should return to its original position. 10) If the timer is started without the shutter fully charged, it will stop in the middle of its run but will start again when the film-advance motion is completed. It will then release the shutter. 11) The total time of its operation, when fully set, will be 9 ~ 14 sec. 12) After the shutter release, there should be a leeway in the run for less than 5 seconds.
13. Film-rewinding Knob (CA 9141)		1) When turned 90° or beyond, it should be accurately set and should not return to the original position. (Setting can be performed even during the film-advancing motion.) 2) The knob should return to the original position upon commencement of the next film-advancing motion. 3) Without any uneven motion or hesitation, the knob should be operated smoothly and should be stopped in the proper position accurately. 4) When the K knob is set, the sprocket should be released and made free in motion.

Major Check Point	Relative Functions to be checked	Checking Method or Points of Special Attention
	(1) Sprocket teeth position	1) When the sprocket comes closer to the mask at the stage where the film advance mechanism is locked, the sprocket teeth should be within the range shown below.  It is regarded satisfactory if it is located rather towards the left, when viewed from the top. Make measurements as required with sliding calipers.
14. Rear Cover Mounting Pin (CA 9099)		1) The rear cover should be mounted or removed accurately with the mounting pin. 2) The mounting pin is to be pressed down smoothly without squeaks and extreme frictions. 3) The pin, once pressed down, should return to the original position by itself when released.
15. Pressure Plate (CA 8710)		1) It should be properly mounted. 2) When visually inspected, there should be no deformity nor unevenness on the surface (especially no concavity).
16. Spool (CA 7530)		1) Spool force (180 – 400g x 6mm) In the feeling test, it should not be too heavy nor too light.
17. Shutter Curtain		1) Should be of cloth on the side facing the film surface. 2) At any position in the picture frame, the amount of overlap of curtain edges (metal) should be over 2.5mm. 3) The curtains should not be slanted nor loose. 4) Prior or subsequent to film advancement, the edge metal should not appear within the mask. 5) When the shutter is wide open at a slow speed, the second curtain should not appear in the picture frame.

Major Check Point	Relative Functions to be checked	Checking Method or Points of Special Attention
	(1) Shutter Speed	1) At the speed of 1/1000 sec., the film should be completely exposed in any position of the frame. (Visual inspection.) 2) Check the speed by 1/1000, 1/15 and 1/1. (Feeling test.)

FUNCTIONS AND FEATURES
(Items to be checked by measuring instruments)

1. Film Advance Lever

Operating force: 1000 gr. or less at the tip of the lever, when film is loaded.

Returning force: 24 ~ 34 gr. at the beginning of the return stroke or thereabout.

Pre-advancing force: 25 ~ 50 gr. at the tip of the lever.

2. Shutter-releasing Force

200 ~ 300 gr.

3. Release Button

Overall Height: $+1.5^{\pm 0.2}$ (from the tip of CA 9083) (The plus sign (+) means that the button is extruding from CA 9083)

Release Position: $-0.05^{\pm 0.15}$ (from the tip of CA 9083)

Stopping Position: 0.5 or deeper (from the tip of CA9083)

4. CA 9084 (Button Shaft)

Depth of Action: The shutter should be released at 7 ±0.3 from the tip of the button.

5. R-knob

Pulling Force: First Step $350^{\pm 100}$ gr.
Second Step $1200^{\pm 300}$ gr.

6. Self-timer

Setting Force: 600 gr. or below at the tip of the lever.

Operating Force of the Start-Lever:
40 ~ 100 gr. at the tip of the lever.

7. Flange-back

$46.0^{\pm 0.025}$

8. Accuracy of Meter Indications

LSBL7 Light Source Box
K = 1.3 ASA100

BV	SS	F	Discrepancy	Accuracy
15	1/500	8	0.3 EV	±0.75
12	1/125	5.6	—	±0.75
9	1/4	11	—	±0.75
6	1/2	5.6	0.3 EV	±0.75

For BV15 and BV6, check the discrepancy in indications which may occur according to the direction of rotations of the aperture ring and the shutter dial.
In case of BV12 and BV9, the shutter dial is turned and set starting from the 1/1000 side and the aperture ring from the F16 side.

LSBL1 Light Source Box
K = 1.3 ASA100 (90V)

BV	SS	F	Discrepancy	Accuracy
16	1/500	11	0.3 EV	±0.75
14	1/125	11	—	±0.75
12	1/125	5.6	—	±0.75
10	1/125	2.8	—	±0.75
8	1/2	11	—	±0.75
6	1/2	5.6	0.3 EV	±0.75

For BV16 and BV6, check the discrepancy in indications which may occur according to the direction of rotations of the aperture ring and the shutter dial.
In cases of BV14, 12, 10 and 8, the shutter dial is turned and set starting from the 1/1000 side and the aperture ring from the F16 side.

9. Curtain Speed

At the shutter speed of 1/1000, 11.7 ~ 12.1 ms for both the first and the second curtains.

10. Exposure Time

Tolerance limit (JCIA)

1/1	1000 ms	707 ~ 1414
1/2	500	354 ~ 707
1/4	250	177 ~ 354
1/8	125	88.4 ~ 177
1/15	62.5	44.2 ~ 88.4
1/30	31.2	22.1 ~ 44.2
1/60	15.6	11 ~ 22.1
1/125	7.81	4.65 ~ 13.1
1/250	3.91	2.32 ~ 6.57
1/500	1.95	1.16 ~ 3.28
1/1000	0.98	0.58 ~ 1.64

11. Power Consumption

At BV16, 800μA or less

12. Leakage

5μA or less

13. Contact Efficiency

X contact:

70% or above at the interval of 1 ms. in slow speed including 1/60 sec.

FP contact:

70% or above at the interval of 2.5 ms.

14. Insulation Resistance

30 MΩ and above at 500V.

15. Contact Resistance

Ascertain continuity at 3V.

16. Time Lag

X contact:

At 1/60 sec., it should be switched in within 1.5 ms. of the closing action of the second curtain, upon completion of the first curtain opening.

FP contact:

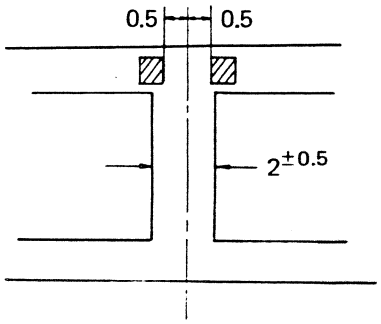
It should be switched in at 8 ~ 14 ms. prior to commencement of the first curtain action.

17. Vertical discrepancy in positioning the actual picture

The frame of the actual picture should not be overlapped with the perforation on the film.

18. Position of perforations

Perforations should be beyond 0.5 mm from the center line between each frame.



19. Interval between picture frames

$2^{\pm 0.5}$mm

D

ORDER OF DISASSEMBLY

D. ORDER OF DISASSEMBLY

- Refer to the part number noted in the illustration of disassembly on the opposite side.
- X mark at the head of the part number shows the part which should not be touched directly by fingers. Be sure to cover fingers with rubber sacks.

GENERAL ORDER OF DISASSEMBLY

DETAILED ORDER OF DISASSEMBLY

1. Removal of CA 8703 (Top-cover)

1) Remove CA 9030 (Nut) — using the tool KC-CA 9030G

2) Remove CA 8752 (Holder) — using the tool KC-CA 8752G
Pay attention not to make scratches on CA 9135 (Plate). If scratched, replacement is required.

Then will come off:

CA 8753	(Ring)	in a unit
CA 8749	(Lever)	
CA 8751	(Cover)	
CA 8750	(Washer)	
CA 8806	(Screw)	

PSK2 x 2.2SB

3) Remove CA 8777 (Fastener)

4) Loosen two NU1.4 x 1.5SA on CA 9007 (Dial) to remove CA 9007.
(CA 9007 is screwed in.)

5) Open CA 8705 (Cover) and remove CA 8725 (Knob)
Use the tool KC-0071M with care not to deform CA 8733 (Shaft).

Then will come off:

CA 8726	(Lever)
CA 8730	(Pin)
CA 8731	(Spring)

6) Remove two PSK1.7 x 4SH on CA 8703 (Cover)
CA 8703 can be taken off with attachments.
For attachment of CA 8703, set the meter at ASA100, turn off the meter switch, and mount the CA 9005 (Ring) at 100.

7) Remove the following parts.

CA 8722	(Spring)
CA 9026 a-c	(Washer)
NW8.6 - 2126BO	

2. Separation of CA 8702 (Front casting) from (Die-cast body)

1) Remove two PSK2 x 3SE and two PSK2 x 4SE on CA 8704 (Plate).
Then CA 8704 and CA 6345 (Cover) can be taken off.

2) Remove CA 9071 (Stopper) using the tool KC-CA 9071G.
Pay attention not to make scratches on CA 9134 (Plate). If scratched, replacement is required.

Then will come off:

CA 9075	(Spring)
CA 9072	(Lever)

3) Peel off CA 9102 (Leather), CA 9103 (Leather).

4) Peel off CA 8894 (Cover) and CA 8893 (Plate), raising the mirror by CA 8917 (Knob). (Gluded with Everstic)

5) Remove two PSK1.7 x 3SO on CA 8734 (Holder) and let CA 8734 turn half way.

6) Take off (Lead wires) CA 9115 (LW 30R), CA 9032 (LW 45B) by removing solder.

7) Remove CA 9036 LW100B from CA 9125 (Contact point).

8) Remove four PUK2 x 3SO on CA 8702 and two PUK2 x 6SO on CA 8961 (Frame) respectively. Then Die-cast body can be separated from CA 8702.

Docking of Die-cast body and CA 8702.

Docking is made in the following manner:

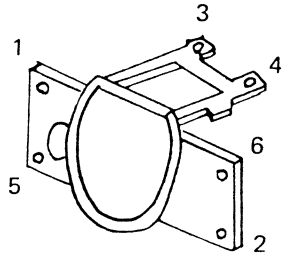
1) Keep the film-advancing mechanism in the state of being charged.

2) Let the small hole on CA 8577 (Gear) face the lens (at the position of 1/1000).

3) CA 8702 is set at shutter dial 1/1000.

4) CA 8702 in the stage of mirror-up.

Setting CA 8412 (Charge lever) and raising the mirror by CA 8432 (Hook lever), you can proceed with docking. Further, at the docking, pay attention to deformation of EP Contact point and Lead-wires as well as the string from the meter. Fasten screws in accordance with the numbers illustrated below.



3. Disassembly of the Shutter

(Lower side of the body)

1) Remove CA 8867 (Shaft).
   Then will come off:
   CA 8872 (Spring)
   XCA 8865 (Lever)

2) Remove CA 8864 (Shaft).
   Then will come off:
   CA 8862 a - b (Plate)
   NW1.8 - 336 PO

3) Remove CA 8826 (Spring) from CA 8824 (Lever) and take off CA 9052 (Screw).
   Then will come off:
   CA 8826 (Spring)
   CA 8824 (Lever)
   CA 8821 (Lever)

   Caution: XCA 8820 (Shaft)

4) Remove CA 8848 (Shaft).
   Then will come off:
   CA 8849 (Spring)
   CA 8842 (Lever)
   CA 8847 (Holder)
   XCA8845 (Lever)
   NW1.8 - 240PO

5) Remove CA 8846 (Shaft).
   Then will come off:
   CA 8844 a - c (Lever)
   NW1.8 - 240PO

6) Remove HK1.4 - 602SN of CA 8836 (Gear).
   The will come off:
   CA 8836 (Gear)
   CA 8851 (Spring)

   (Refer to the illustration shown how to CA 8851)

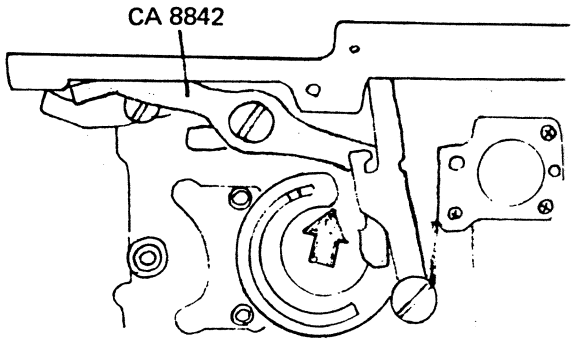
7) Remove two PSK1.4 x 1.8SO of CA 8841 (Base plate) and CA 8852 (Screw).
   Then will come off:
   CA 8839 (Gear)

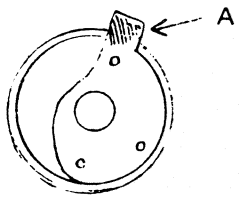
8) Remove CA 8856 (Screw)
   XCA 8828 (Shaft)
   B1 (Ball bearing) can be taken off.

   Caution: XCA 8827 (Shaft)

How to reassemble CA 8839 (Gear):

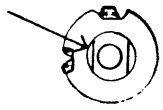
After releasing shutter, reassemble CA 8839 (Gear) so that the protrudent part of CA 8840 (Plate) may be inserted between the boss of CA 8547 (Gear) and CA 8842 (Lever). (Insert A to the arrowed part as illustrated below)



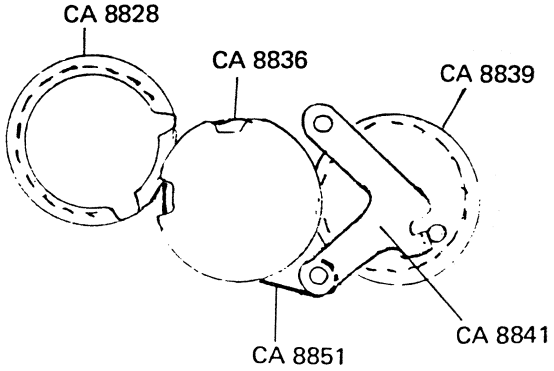


How to reassemble CA 8836 (Gear):

Let one end of CA 8851 (Spring) engage on to the tooth of CA 8836 (Gear) on the side indicated by the arrow.



With film winding mechanism locked, release the shutter by CA 8595 (Lever), reassemble it as shown below.

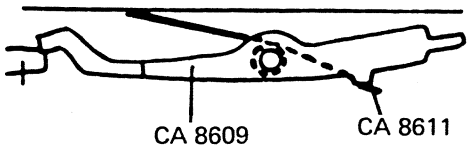


(Removal of Governor)

9) Remove PSK2 x 2SO and PSK1.4 x 2SO on (the governor).
Then will come off:
G 30 (Governor)
XCA 8609 (Lever)
CA 8611 (Spring)

Caution: Pay attention to XCA 8610 (Shaft). Assemble CA 8609 while the film advance mechanism is charged.

Engage CA 8611 (Spring) as shown in the illustration below.



10) Remove XCA 8404 (Screw)
Then will come off in a unit.
CA 8606 (Cam)
CA 8605 (Cam)
CA 8575 (Cam)
CA 8576 (Cam)
CA 8577 (Gear)
3PUK1.4 x 5.5SO
PUK1.4 x 2SO

11) Take off PSK1.4 x 2SO which fastens CA 8543 (Shaft) and loosen XCA 8545 (Screw) to remove the following parts.
XCA 8567 S.M.L. (Shaft)
XCA 8556 (Lever)

Caution: Simply loosen XCA 8545 (Screw) alone, because if it is completely removed, CA 8543 (Shaft) is separated.

After removing XCA 8567 (Shaft), and XCA 8556, XCA 8545 should be always fastened again.

12) Remove XCA 8843 (Shaft) using the tool KC-CA 8843G.
Then comes off CA 8543.

(Removal of the Curtains)

13) Remove two PSK1.7 x 18SO on CA 8540 (Frame) and loosen PUK1.7 x 1.8SO and CA 8539 (Screw). Then comes off CA 8540.

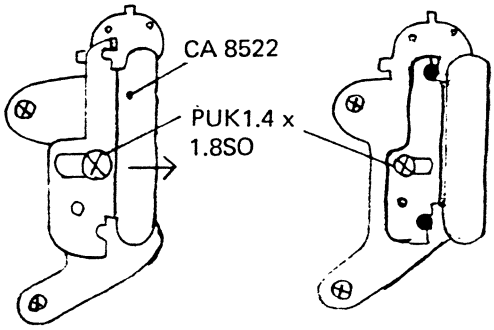
14) Remove CA 7381 (Shaft). Then comes off CA 8532 (Stopper).

15) Remove two CA 8531 (Nut). (Adjustment of the tension and speed of the curtains.)

16) Remove two PUK2 x 2SO on CA 8513 (Washer).

17) Remove two PUK2 x 2SO on CA 8523 (Plate).

18) Remove HK1.4 - 101BO on CA 8522 (Stopper) and loosen PUK1.4 x 1.8SO. Move CA 8522 in the arrowed direction, let it tweeze the CA 8519 (Shaft), CA 8520 (Shaft) at their upper ends, and then tighten PUK1.4 x 1.8SO.



19) Remove two PUK2 x 2SO on CA 8508 (Plate).
Then will come off CA 8538 (Curtain), CA 8600 (Curtain), and the following parts at the same time.
XCA 8519 (Shaft)
XCA 8520 (Shaft)
CA 8517 (Stopper)
CA 8510 (Roller)
CA 8522 (Stopper)
CA 8523 (Plate)
CA 8529 (Roller)
CA 7963 (Ring)
PUK1.4 x 1.8SO
NW1.5 - 425UO

Caution: Pay careful attention to CA 8538 (Curtain)'s assembly parts XCA 8524 (Shaft), and to CA 8600 (Curtain)'s assembly parts SCA 8525 (Shaft).

(Removal of CA 8501 Base Plate)

20) Remove three PSK2 x 2.5SO which fastens XCA 8501 under the main body. Then comes off XCA 8501 with the following parts in a units.

CA 8601	(Plate)
CA 8602	(Contact point)
CA 8603	(Contact point)
CA 8586	(Spring)
XCA 8578	(Lever)
XCA 8585	(Screw)
CA 8594	(Spring)
XCA 8592	(Claw)
XCA 8589	(Shaft)
CA 8590	(Spring)
XCA 8580	(Lever)
XCA 8588	(Screw)
CA 8612	(Lever)
CA 8614	(Screw)
CA 8615	(Spring)

NW1.4 - 334UO

CA 8612 (Lever) should be reassembled with the shutter released.

4. Disassembly of the Film Advance Mechanism

1) Remove CA 8786 (Washer).
Then will come off in a unit:

CA 8793	(Gear)
CA 8794	(Index)
CA 8795	(Spring)

2) Mount CA 8749 (Lever) and tighten CA 8752 (Fastener).

3) Remove PUK2 x 3SO and 3PUK1.7 x 4SO on CA 8742 (Case).
Then will come off:

CA 8742	(Case)
CA 8743	(Plate)
CA 9060	(Collar)

4) Remove CA8801 (Nut)

5) Remove three PUK1.7 x 2.5SO on XCA 8775 (Base plate).
Then will come off in a unit:

CA 8754	(Shaft)
CA 8775	(Base plate)
CA 8774	(Spring)
CA 8796	(Stopper)
CA 8797	(Washer)
CA 8781	(Shaft)
CA 8803	(Stopper)
CA 8799	(Stopper) and
CA 8800	(Stopper)
CA 8798	(Shaft)
CA 8723	(Bush)
CA 8783	(Spring)
CA 8778	(Lever)
CA 8784	(Gear)

HK1.4 - 604BO

Disassembly of the part removed in a unit:
Remove CA 8752 (Fastener) and then CA 8749 (Lever). CA 8775 (Base plate) can be separated from CA 8754 (Shaft) and further CA 8774 (Spring) and CA 8723 (Bush) can be removed.

6) Remove two PUK1.7 x 1.8SO on CA 9146 (Shaft) and CA 8808 (Screw).
Then comes off CA 9146 (Shaft).

The steps 1) through 6) shown above may be followed without separating CA 8702 (Body front part) from the Die-cast body.

7) Remove 3PUK1.7 x 3SO on CA 9041 Base plate.
Then comes off CA 9041.

8) Pressing CA 8811 (Sprocket), remove CA 8817 (Screw).
Then will come off:

CA 8819	(Claw)
CA 8818	(Spring)
CA 8816	(Gear)

9) Pressing CA 8811 (Sprocket), remove CA 8788 (Gear) using the tool KC-CA 8788G.

10) Remove CA 8780 (Holder)
Then will come off:

CA 9049	(Spring)
CA 9047	(Claw)
CA 8779	(Shaft)
CA 8811	(Sprocket)

5. Disassembly of CA 8702 (Foront Casting)

1) Remove two PSK2 x 3SO on V40 (Self-timer)
(For the new model, an extra piece is used fixing the self-timer from the front.)
Then comes off V40.

2) Remove two PUK2 x 4.5SO on CA 9025 (Plate).
Then comes off CA 9025.
Remove solder from the lead wire at the tube.

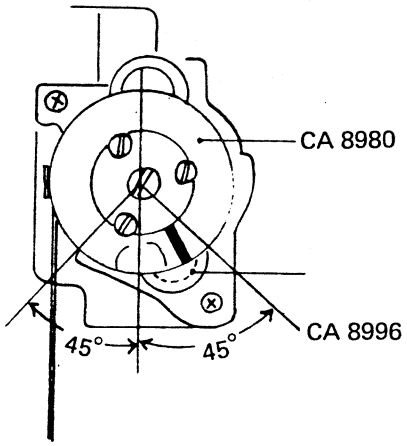
3) Pressing CA 9130 (Holder) by fingers, remove CA 9131 (Holder) and PUK1.7 x 2.2SO on CA 9132 (Holder).
Care must be taken in handling it because of strong tension.
Then will come off:

CA 9130	(Holder)
CA 9131	(Holder)
CA 9132	(Holder)
CA 9133	(Spring)
CA 8936	(Cover)
LC 4073	(Prism)
CA 8904	(Washer)
CA 8905	(Mask)

4) Remove two PUK2 x 3.5SO and PUK2 x 6SO on CA 8961 (Frame).
Then come off CA 8961 and the exposure meter mechanism in a unit.

5) Remove three CA 9008 (Screw) to separate CA 8980 (Pulley) from CA 8961 (Frame). The position of the exposure meter mechanism may be adjusted by loosening CA 9008 (Screw).
(Coarse adjustment)

The position of CA 8980:
The groove of CA 8980 is to be positioned at the shutter speed 1/1000.
It should be positioned within the range shown below when CA 8879 (Ring) is at the stopper.



6) Remove three CA 8947 (Screw).
Then will come off:

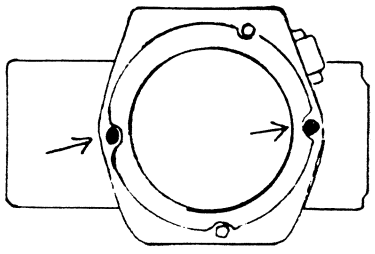
CA 8877	(Mount)
CA 8888	(Spring)
CA 9114	(Screw)
CA 8878	(Dial)

CA 8947 is to be tightened from the top in order.

7) Remove two PUK1.7 x 2.5SO on CA 8951 (Fastener).
Then comes off CA 8591.

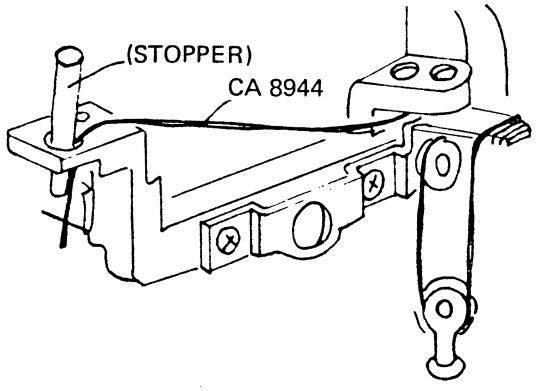
8) Remove four PSK1.4 x 2SO on CA 8876 (Cover).
Then comes off CA 8876.

Caution: Two to four pieces of CA 8960 (Lever) is used for room adjustment.
CA 8960 is to be placed as shown below by arrows. A number of them may be set as necessary to adjust the room between CA 8876 (Cover) and CA 8878.

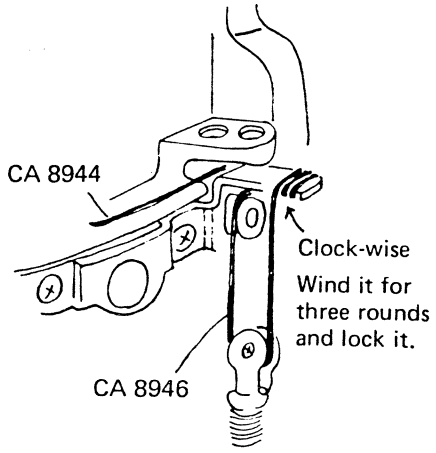


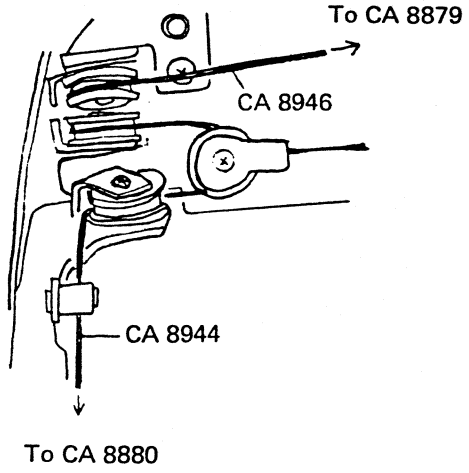
9) Remove CA 8944 String from adhered part of CA 8980 (Pulley). Then comes off CA 8880 (Gear). In case of such a type of repair that will require removal of CA 8944 adhered to CA 8980 (Pulley) only and not that of CA 8877, CA 8878, and CA 8880, it is advisable to take following measures so as to insure that the CA 8944 will not be entangled or become off position.

Set the shutter at the speed of "B" and do not move it. Stick one end of the CA 8944 into the CA 8702 (Plate). Be careful not to cut the string at where it is stuck in.



10) Remove adhesive, adhering CA 8946 String with CA 8949 (Plate), to separate them from each other.
Then will come off:
CA 8879 (Ring)
CA 8938 (Spring)
XCA 8957 a - c (Roller) a - c
XCA 8933 a - f (Roller) a - f
CA 8946 and CA 8944 are to be connected as follows.

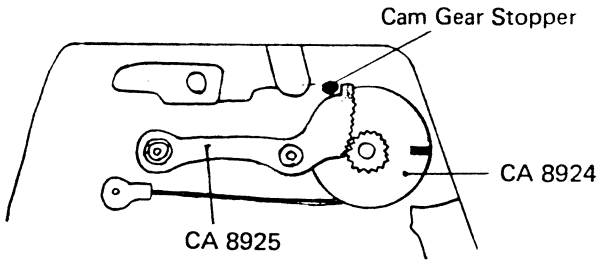




11) Remove PUK1.4 x 1.8SO and three PUK 1.4 x 1.8SO on CA 8882 (Plate).
With care not to damage CA 8914 (Damper) and CA 8915 (Damper), remove CA 8882.

12) Remove CA 8955 (Screw).
Then will come off:
XCA 8925 (Gear)
CA 8924 (Pulley)

Positioning of CA 8925 and CA 8924:
When the groove of CA 8924 comes to the position almost horizontal at the rignt hand side, the CA 8925 should be in contact with Cam gear stopper.



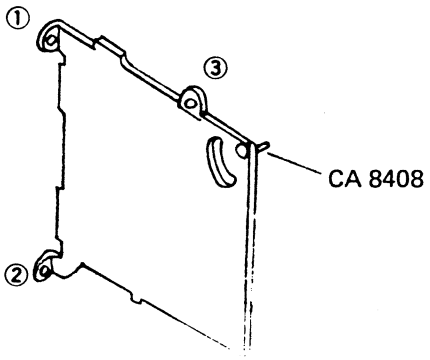
(Removal of CA 8410 Plate, CA 8411 Plate)

13) Remove two PUK1.7 x 1.8SO on CA 8889 (Stopper).
Then comes off CA 8889.
Positioning of CA 8889 may be performed with a jig.

14) Remove XCA 8404 (Screw) on CA 8410.

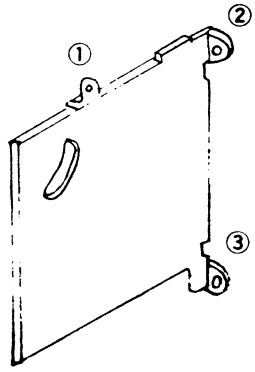
15) Remove two PUK2 x 3SO and PUK2 x 2 SO which fastens CA 8410.
Then will come off:
CA 8410 (Plate) and (Relative parts)
CA 8401 (Frame)
CA 8409 a - c (Washer) a - c

When assembling CA 8410, tighten screws in the following order:



CA 8408G (Pin) should be at 5.53 ± 0.05 from surface of the flesnel lens. Use the measuring tool KC-CA 8408G. If the appropriate value is not obtained, adjust tightness of screws.

16) Remove two PUK2 x 3SO and a PUK2 x SO which fix CA 8411 in the position.
Then CA 8411 and its attachments (parts) will come off. When assembling CA 8411, tighten screws in the following order:



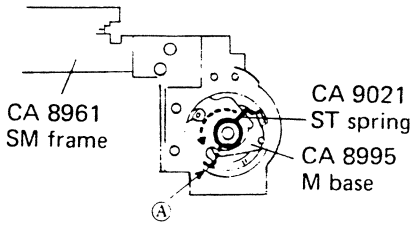
The space (interval) between CA 8410 and CA 8411 should be $39.6^{+0.2}_{-0.1}$.
Check it with the sliding calipers. If an appropriate value is not obtained, adjust tightness of screws.

6. Disassembly of CA 8961 SM frame and Exposuremeter

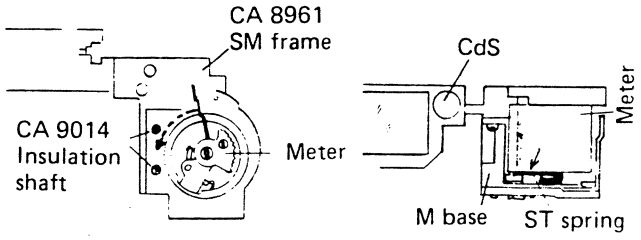
1) Remove HK1.7 - 405SN of CA 8981 M PULLEY HOLDER.
Now CA 8981 M PULLEY HOLDER can be removed.
2) Remove CA 9011 CAM HOLDER.
Now CA 9010 A CAM can be removed.
3) Remove KH1.4 - 101SN of CA 8995 M BASE.
4) Remove two CA 9142 M set screws.
The following parts can be removed as an assembly.
CA 8977 Bottom Plate M assembly
CA 8996 Spring gear
CA 8998 Gear shaft
CA 8999 Gear spring
5) Remove CA 9021 ST spring from CA 8999 M BASE.
#951 meter moving parts can be removed, together with CA 8982 M gear.
6) Remove two PUK2 x 3SO of CA 8995 M BASE assembly.
Now CA 8995 M BASE assembly can be removed.

Hooking the CA 9021 ST spring (Meter installation)

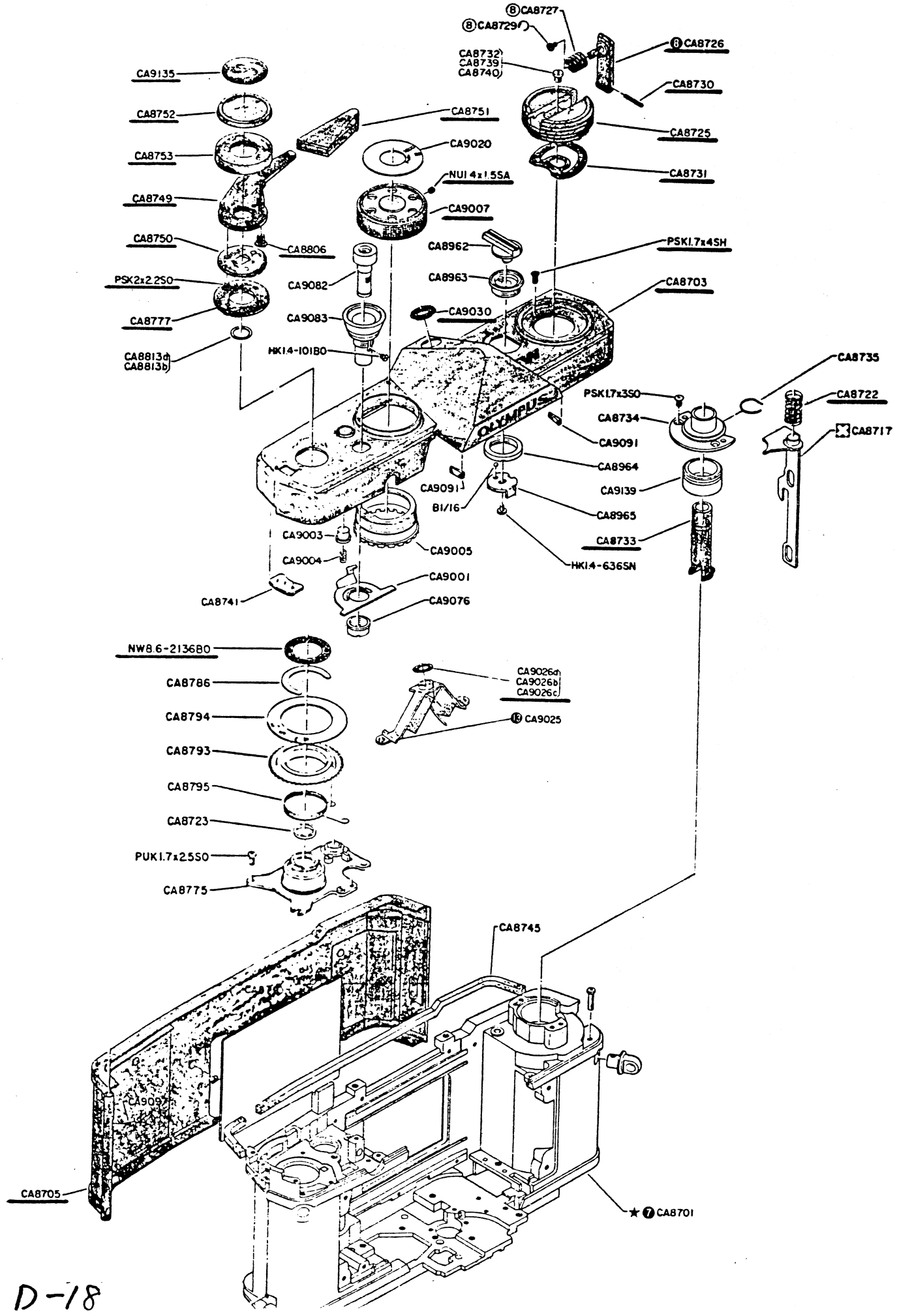
1) Hook ST spring onto the cut on CA 8995 M base and install the ST spring.



2) Give tension to CA 9021 ST spring and hook it onto the "A" position (as illustrated above) of M base.
3) As illustrated, install the meter in CA 8961 SM frame and hook ST spring onto the meter.

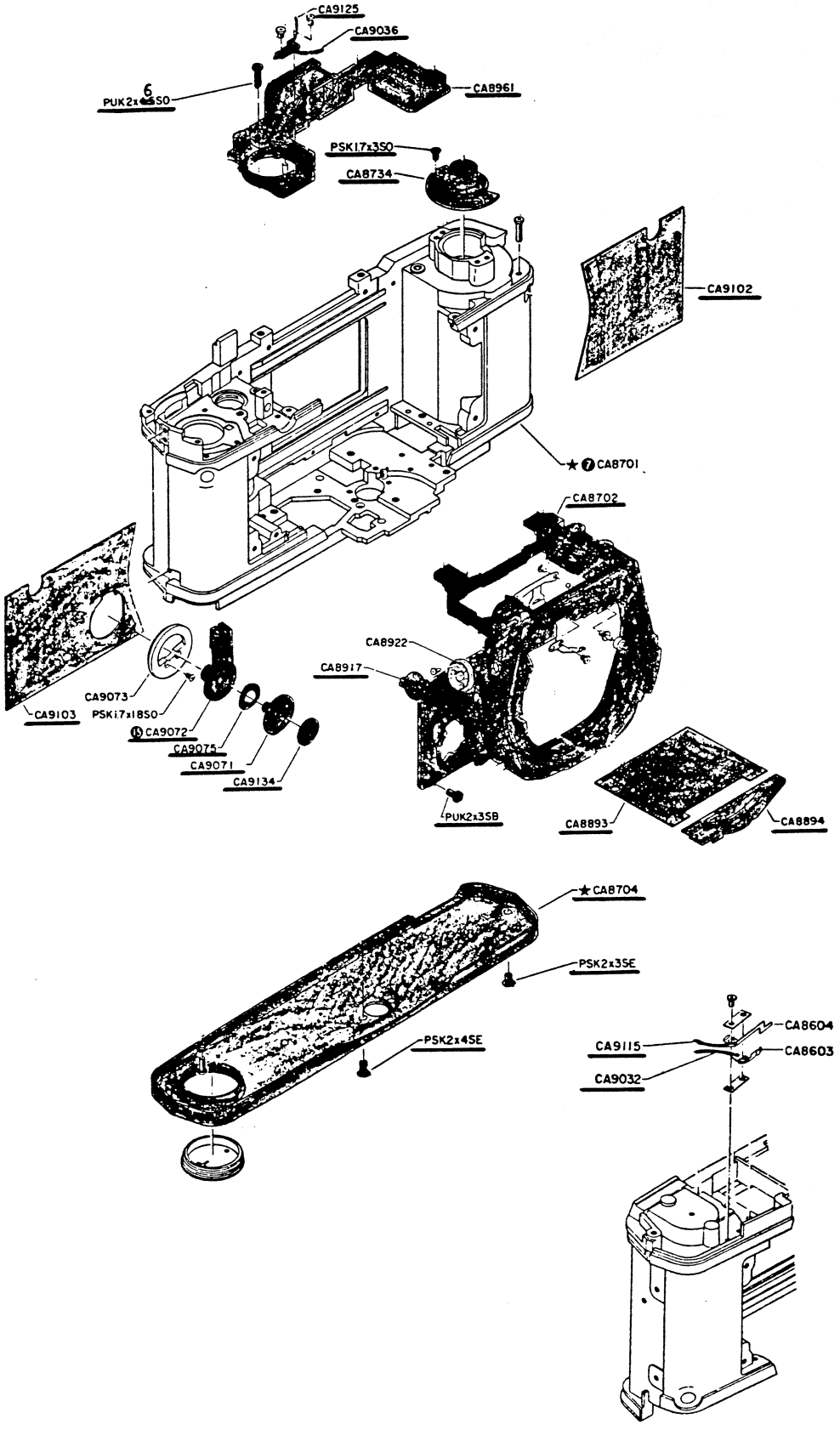


4) While taking care not to bend the meter needle, turn the meter to the left so that the needle moves in between CA 9024 insulation shafts and set the meter in position.

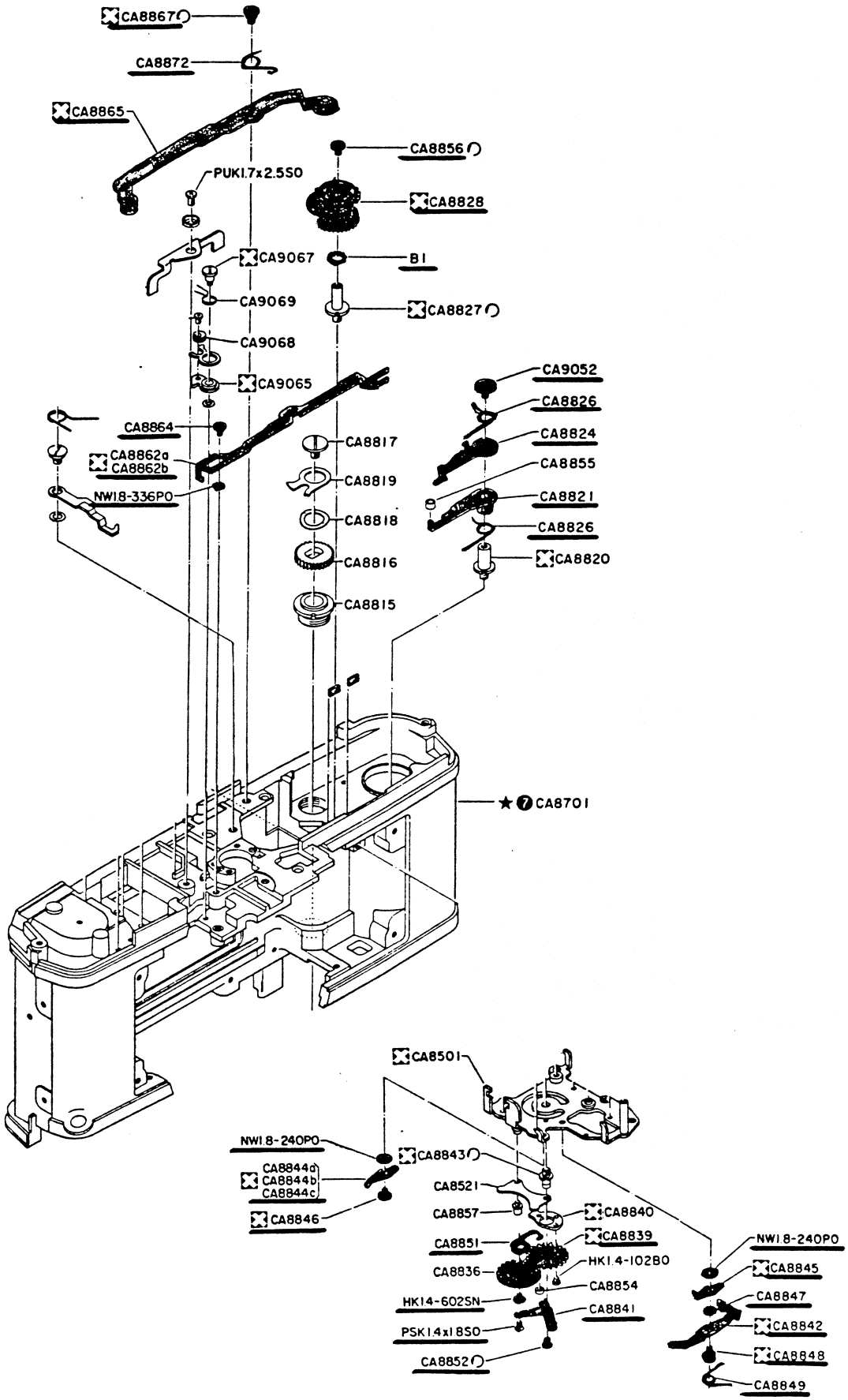

⑧CA8727
⑧CA8729
CA8732
CA8739
CA8740
⑧CA8726
CA8730
CA8725
CA8731
CA8751
CA9020
NUI 4x1.5SA
CA9007
CA8962
PSKI.7x4SH
CA8963
CA8703
CA9030
CA9135
CA8752
CA8753
CA8749
CA8750
CA8806
PSK2x2.2S0
CA8777
CA8813d
CA8813b
CA9082
CA9083
HKI.4-10180
CA8735
CA8722
CA8717
PSKI.7x3S0
CA8734
CA9091
CA8964
CA9139
CA8965
CA8733
HKI.4-636SN
CA9091
BI/16
CA9003
CA9004
CA9005
CA9001
CA9076
CA8741
NW8.6-213680
CA8786
CA8794
CA8793
CA8795
CA8723
PUKI.7x2.5S0
CA8775
CA9026d
CA9026b
CA9026c
⑱CA9025
CA8745
CA9092
CA8705
★⑦CA8701

D-18

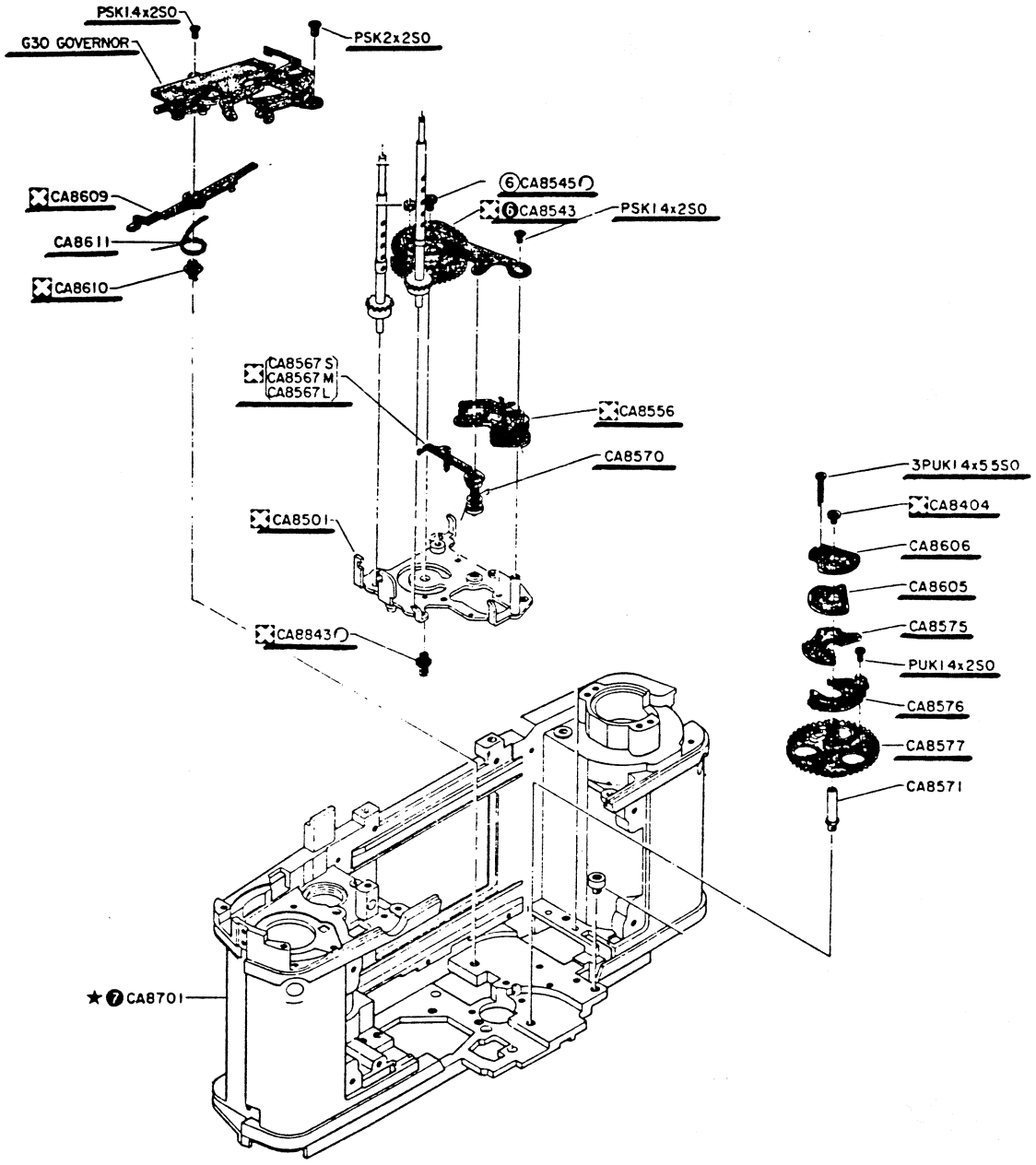
2. Separation of CA 8703 (Front casting) from (Dei-cast body)



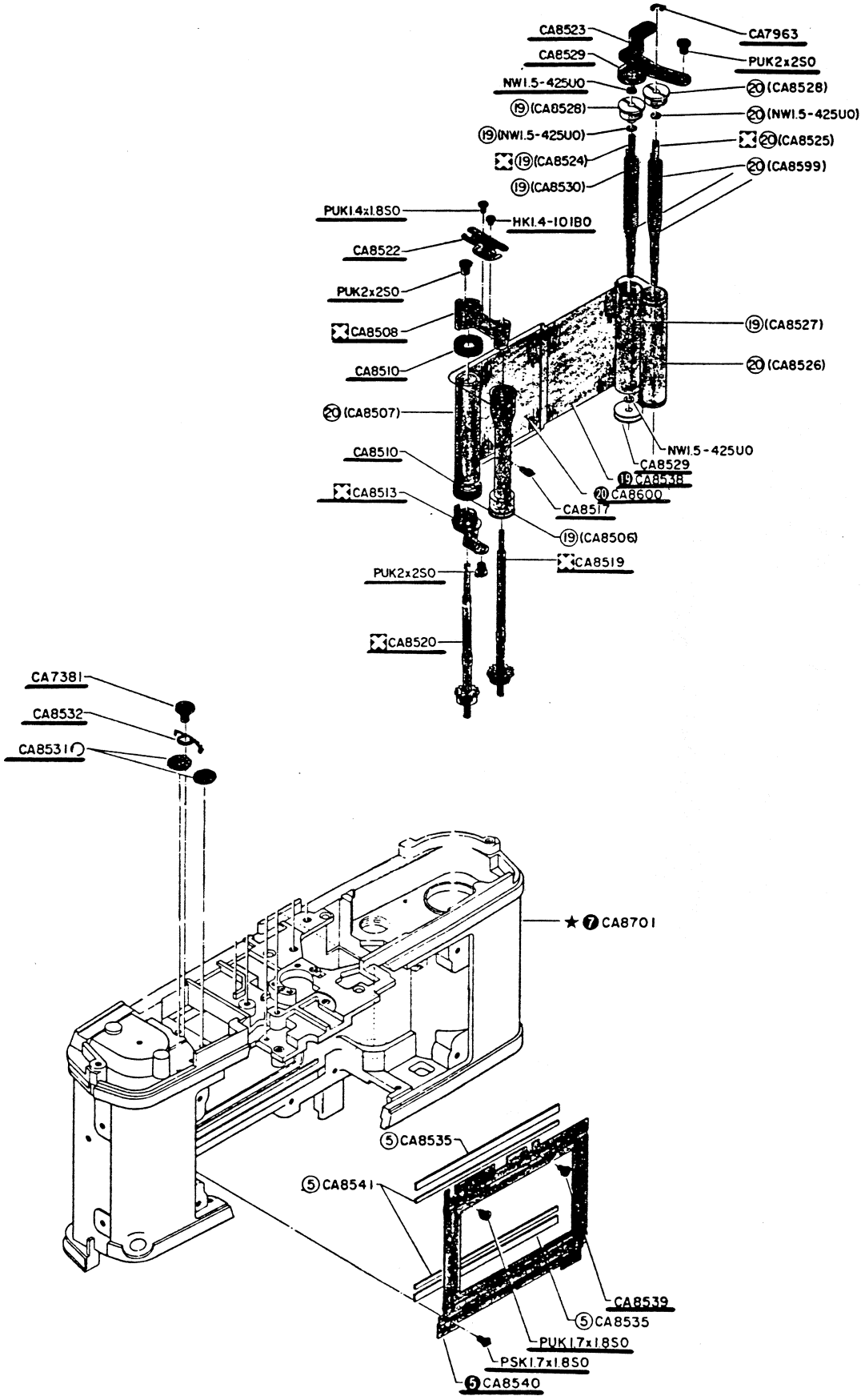
3. Disassembly of the shutter (Lower side of the body)



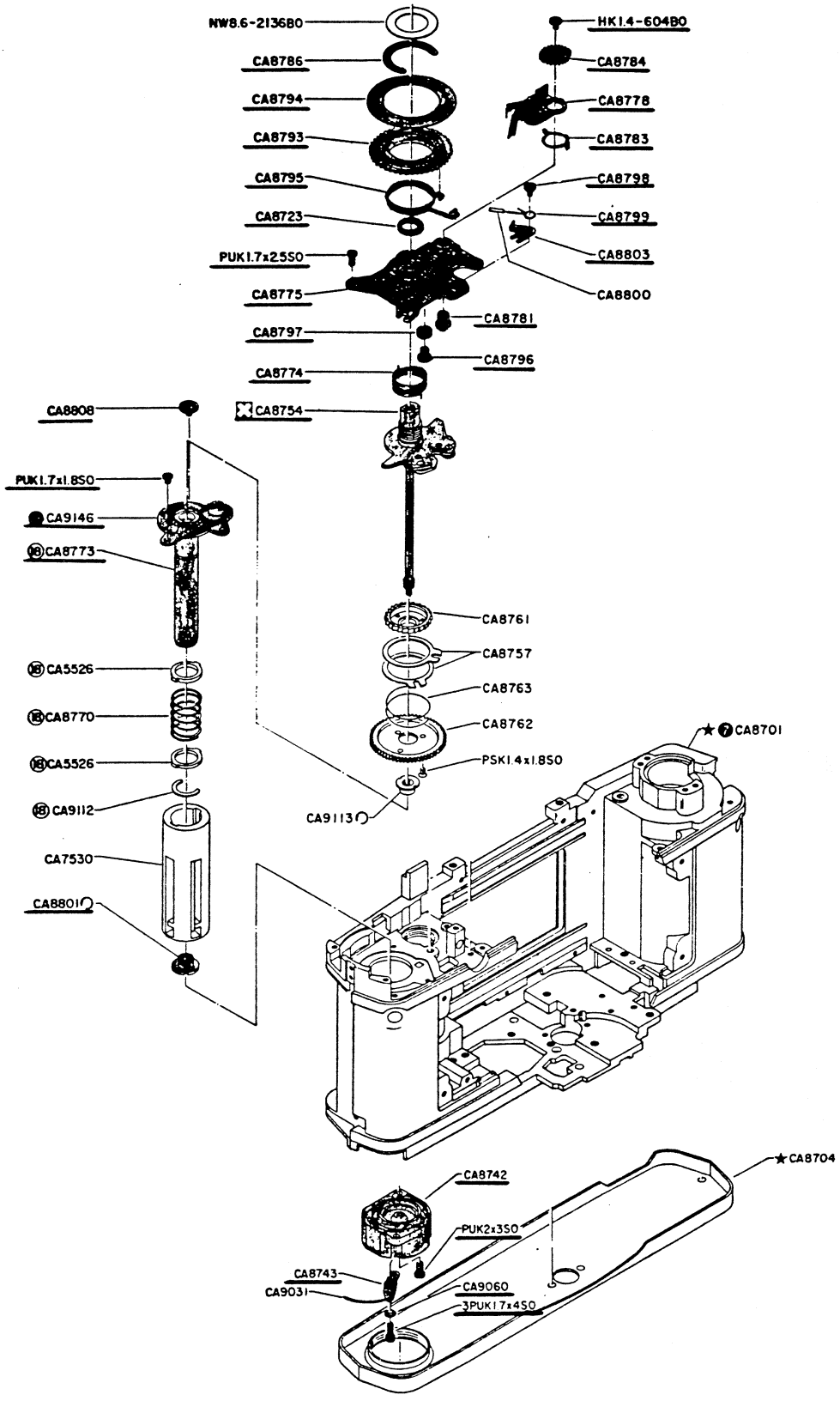
3. Disassembly of the shutter (Removal of Governor and CA 8501 Base plate)



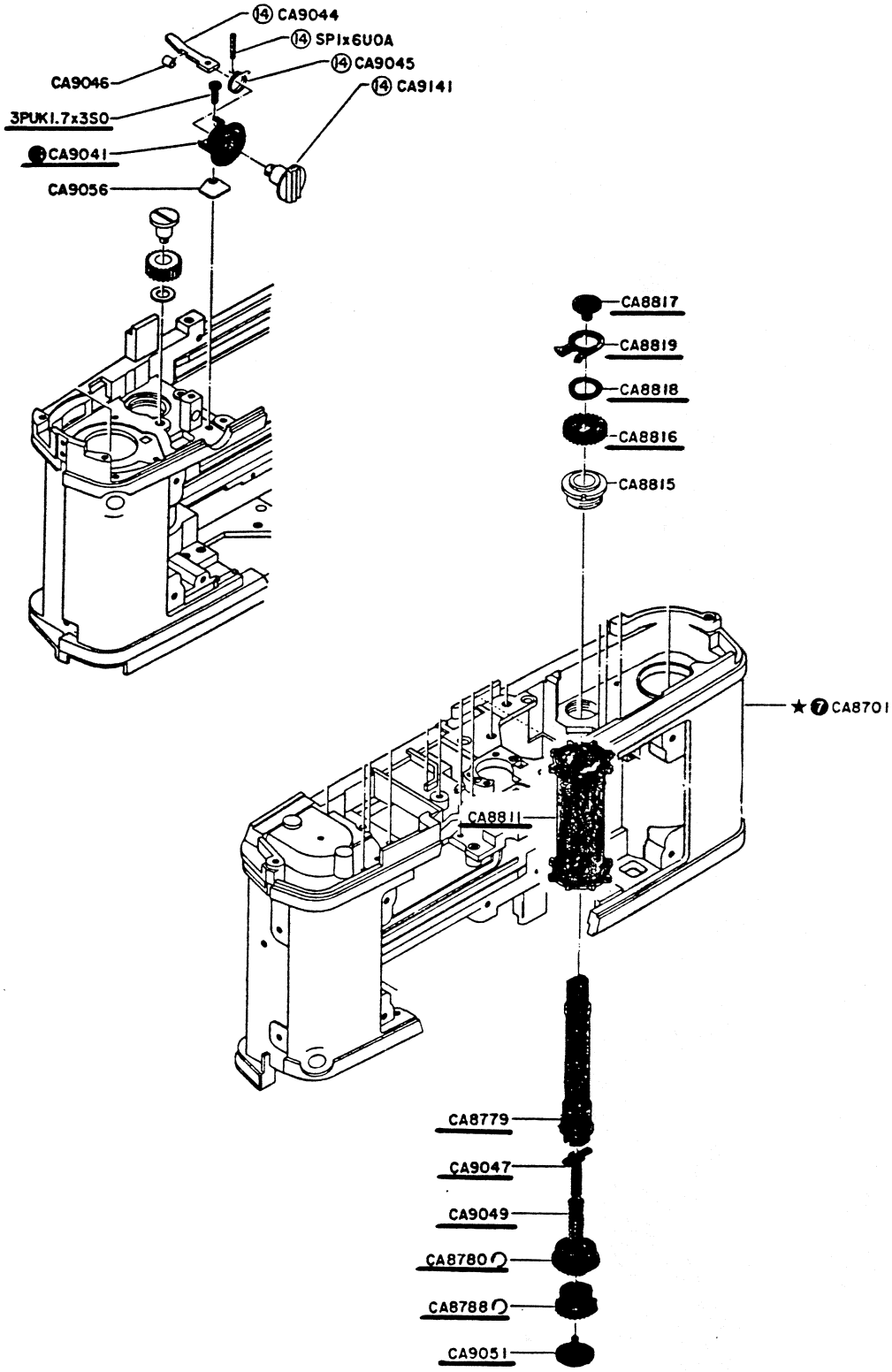
3. Disassembly of the shutter (Removal of the Curtaines)



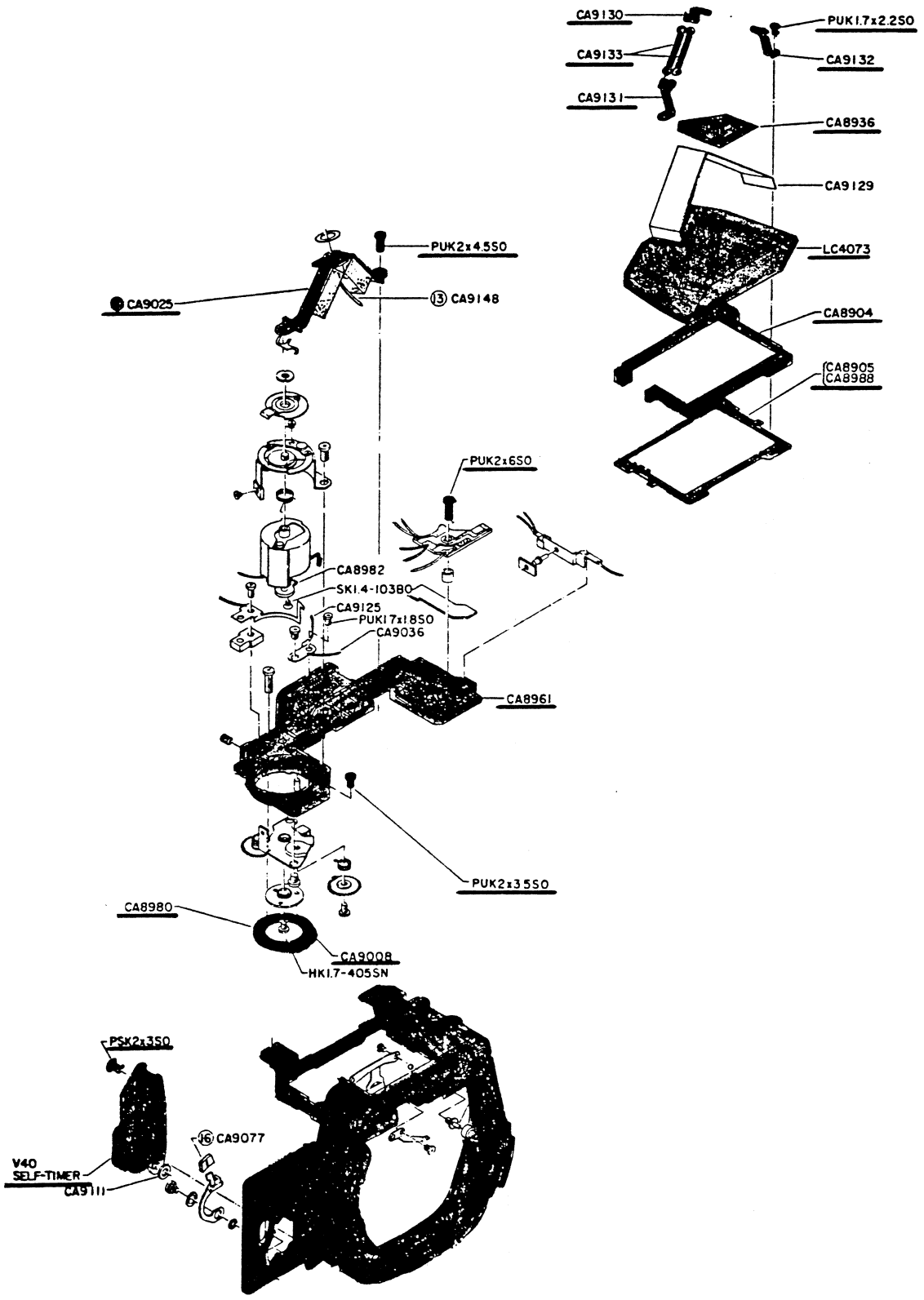
4. Disassembly of the film advance mechanism (1)



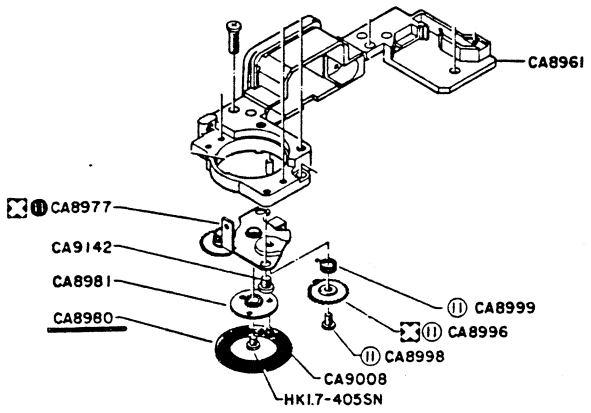
4. Disassembly of the film advance mechanism (2)

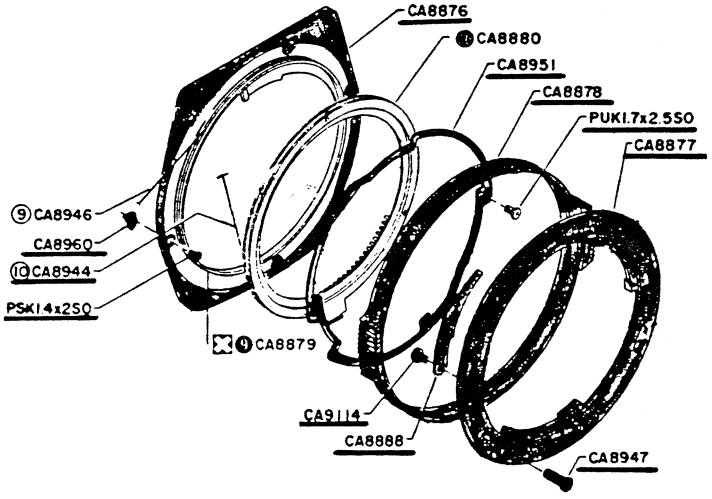


5. Disassembly of CA 8702 (Front casting) (1)

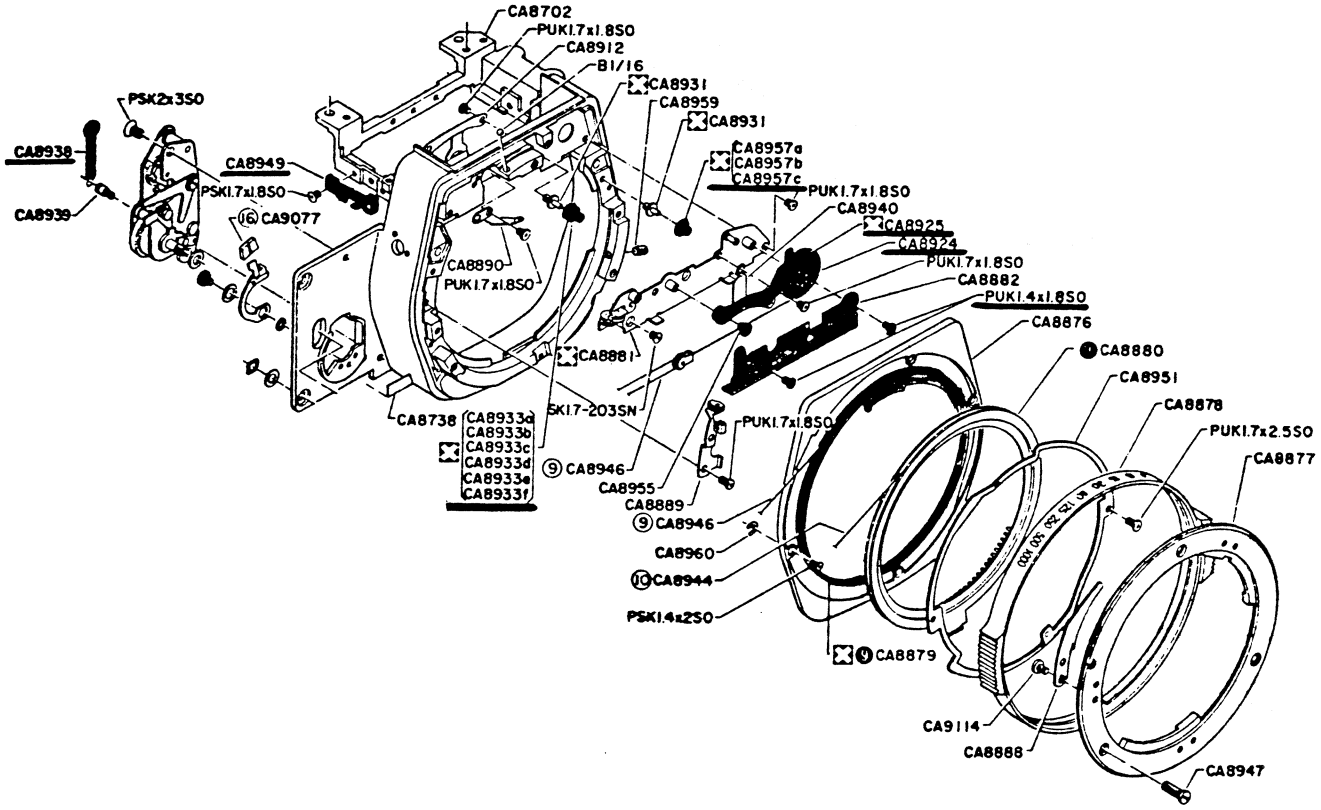


5. Disassembly of CA 8702 (Front casting) (2)

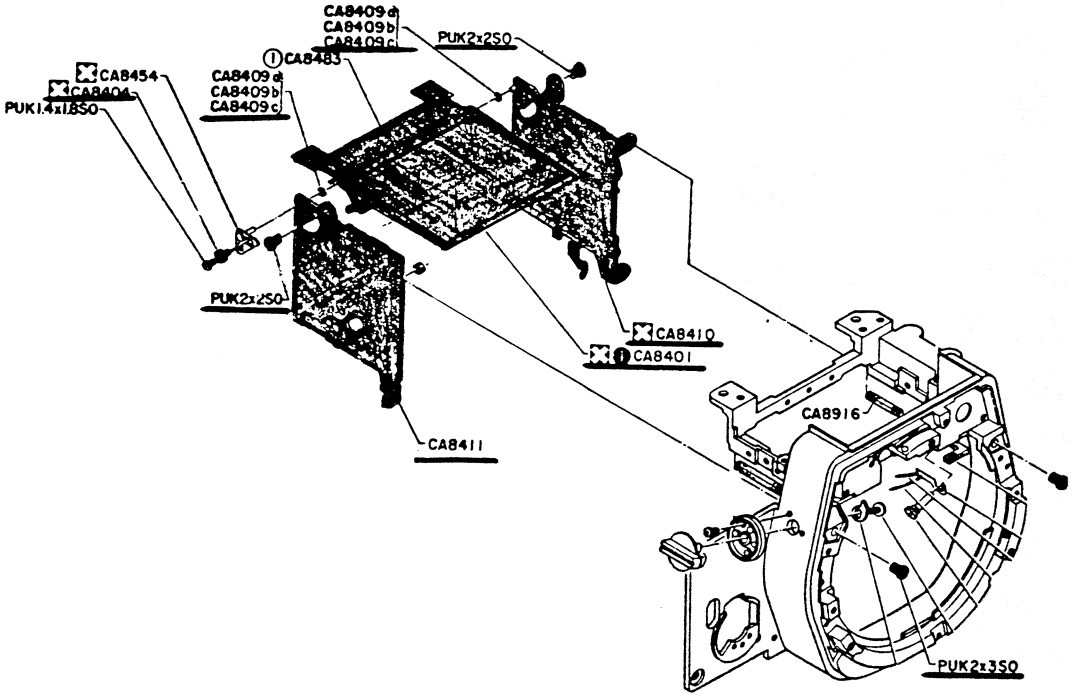




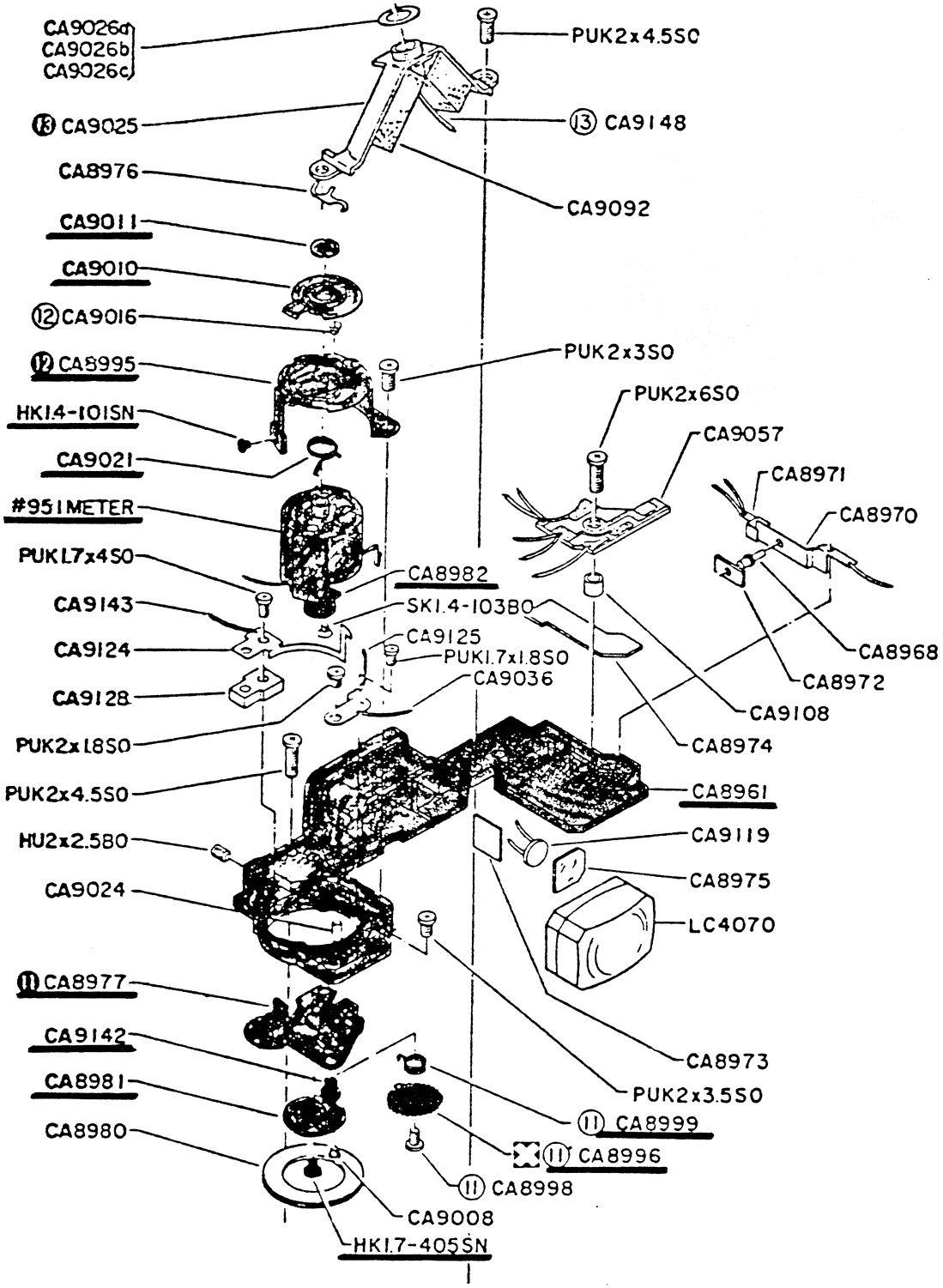
5. Disassembly of CA 8702 (Front casting) (3)



5. Disassembly of CA 8702 (Front casting) (4)



6. Disassembly of CA 8961 (Frame) and the exposure meter



E

OUTLINE OF REPAIRS

E. OUTLINE OF REPAIRS

Note: This section was based on the model marketed in 1972 and therefore, you may find some differences in the description and part numbers because of design changes and improvements made up to the present.

TABLE OF CONTENTS

II. SHUTTER AND MIRROR:

III. EXPOSURE METER:

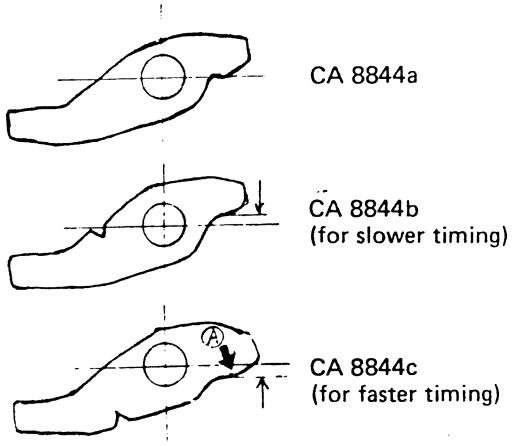
IV. MAJOR FUNCTIONS:

I. FILM ADVANCE & SHUTTER RELEASE MECHANISMS

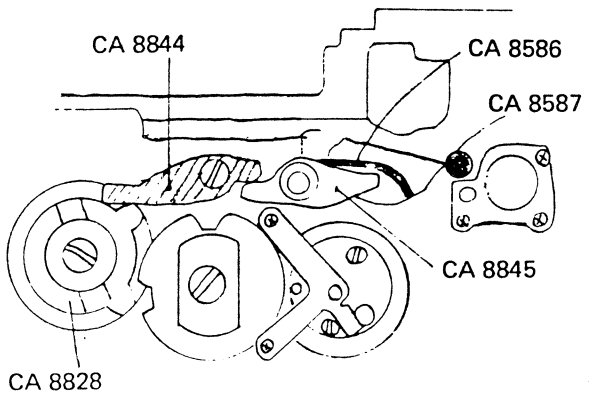
1. Film Advancement not Performed Smoothly:

(1) Improper selection of CA 8844 (Lever)
8844 is available in following 3 types. Adjustment should be made on the timing of brake release by replacement of 8844 with a proper type.

Caution:
Some of 8844 are bent for adjustment of engagement between 8828 (Shaft) and 8833 (Plate). This should be checked at the time of replacement.



If, even upon replacement with 8844C, the film advance motion is not smooth yet, the portion marked A may be slightly hammered out. (Do not work excessively, as it will cause the spring to be readily pressed from the beginning of the motion.)



(2) Adjustment required of brake force
Strengthen the force of 8586 (Spring) with 8587 (Eccentric screw). After this adjustment, be sure to check the bouncing effect.

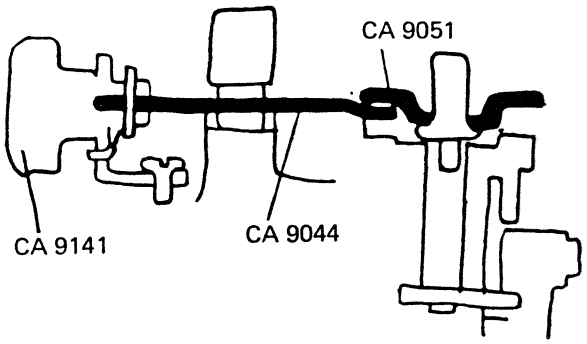
2. Film cannot be Advanced.

(1) Parts coming loose or fallen off.

1) Check all parts relative to the film advance mechanism.
2) Check if any parts of the shutter mechanism have fallen off.
3) Check for any springs and screws of the Front Die-Casting either coming loose or falling off.

Make necessary repairs.

(2) CA 9051 (Plate) stuck with CA 9044 (Plate)
When 9051 is extremely deformed, replacement is required. Clean the sliding portion of both 9051 and 9044, and apply small amount of Molicote (Grease) Type U.

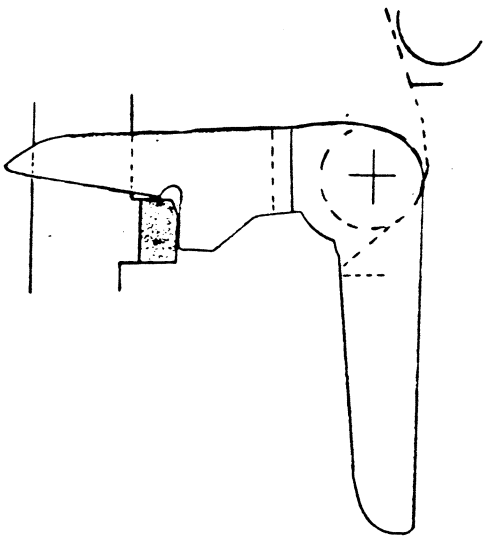


(3) CA 8419 M Hooking lever is faulty
Confirmation of the symptom:
While pushing the preview button, operate the shutter. The mirror alone turns up and down, but film winding is impossible. In this case, remove the lens and push the release button. While keeping the release button in this position, push up the camera's diaphragm connecting lever, the shutter opens and closes. In this case, CA 8419 M hooking lever is faulty.

Repair procedure:

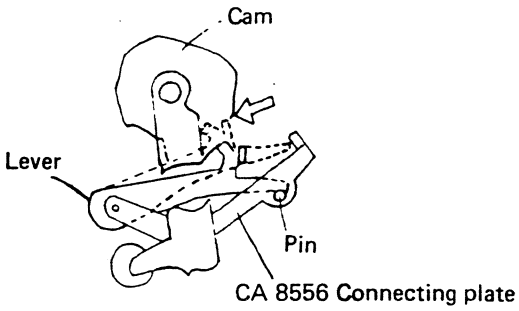
1) Replace CA 8421 hooking lever spring. An improved spring, which is larger in wire diameter and stronger in tension, is available.

2) Replace CA 8419 M hooking lever.
3) If the steps in 1) and 2) above do not cure the trouble, file down the "A" portion of CA 8419 in the figure below so that the hooking lever is hard to come off CA 8425 connecting lever.
If filed too much, the mirror will not return to its set position after turning up.

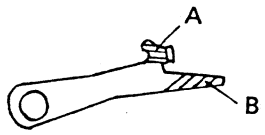


Some of the part numbers listed in this parts list are changed to design changes.

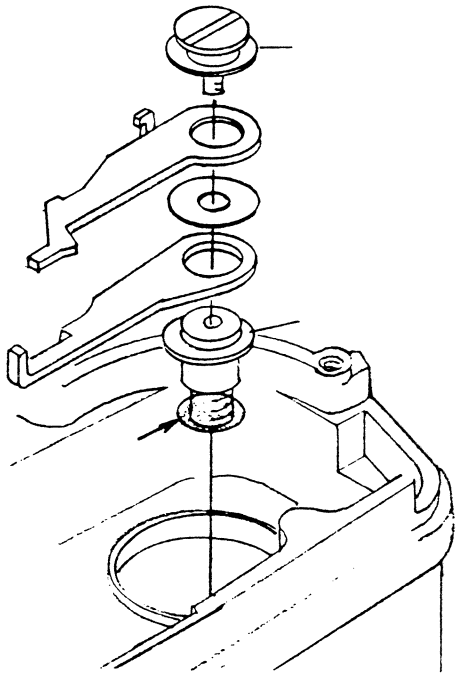
(4) Relative positions between parts are incorrect.
Check the positions of the cam and lever in the figure below. If the lever rides on the cam, bend the lever for adjustment.



To adjust, bend the "A" portion of the lever downward. Take care so that the "B" portion of the lever does not move up too much and pass over the pin.



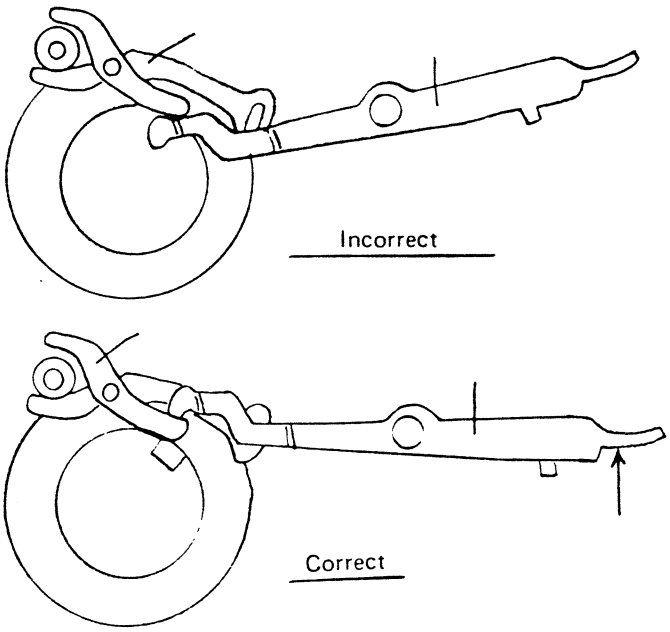
(5) CA 9174 lever shaft is loose.
Check CA 9174 lever shaft, and if it is loose:
1) Bond CA 9175 M holder to the body.
2) Completely tighten CA 9174 lever shaft.



3. Shutter Automatically Released, Immediately upon Completion of the Film Advance Motion:

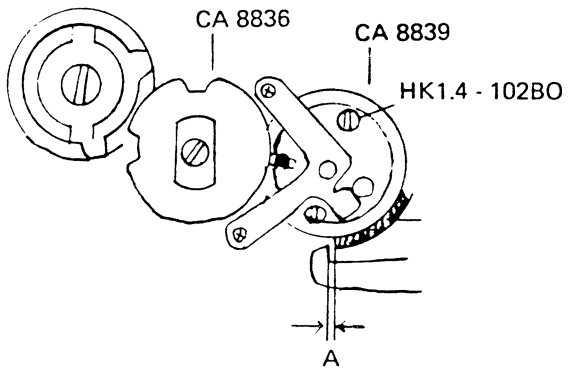
(1) Insufficient engagement between CA 8592 (Claw) and the Gear A.
1) If insufficiency is in the horizontal direction, replace either 8592 or the Gear A (the whole assembly of 8543, Shaft) with a new one.
2) If insufficient engagement is found in the vertical direction.
- o Bend 8592 and adjust
- o Adjust tolerance on 8592
- o Replace 8592
- o Replace the Gear A (the whole assembly of 8543)

(2) CA 8609 M lever is not in proper mesh with CA 8580 B lever. If CA 8609 M lever is loose and thus it is off CA 8580 B lever, bend CA 8609 M lever or make it tight.
When CA 8600 M lever is pushed in the direction of the arrow in the figure below after film winding is complete, both levers should be meshed 2/3 of the thickness of the M lever.



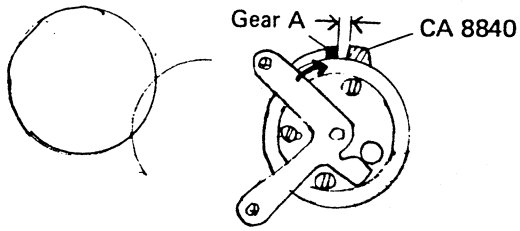
4. Excessive or Insufficient Film Advancement for Shutter-Charging

(1) Improper adjustment of Eccentric Screw (8809)
In case of insufficient film advancement, loosen two HK1.4 - 102BO to widen the distance at A by adjusting (8809).
In case of excessive film advancement, narrow the distance at A by adjustment of (8809).
Care must be taken not to make an over adjustment casuing the mechanism unchargeable.



Prior to film advancement, when the Gear A is pressed in the arrowed direction, the distance between 8840 and the Gear A should be −0.10 ~ +0.3. (−0.10 means the state where the Gear A comes in contact with 8840 and further moves by 0.1.)

Adjustment is similarly made by (8809).

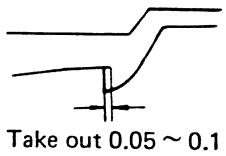


Checkup:
Gently wind up the film and see if the Gear A turns 0.3 mm or more when 8592 (Claw) gets engaged on to it.

(2) Delayed release of CA 8824
Even upon film advancement, the shutter release button cannot be pressed down.

Refer to the checkup cloumn below.
Take out the lower part of 8824 (Lever) (shown below) by 0.05 ~ 0.1 mm.

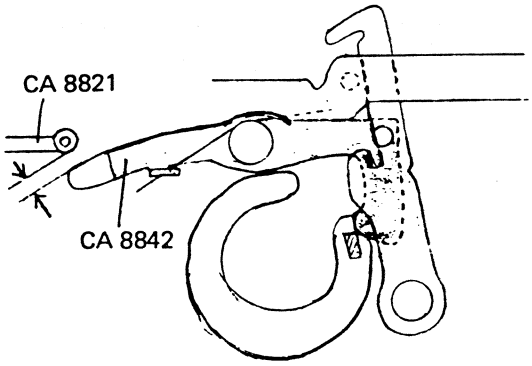
Checkup:
The Lock Lever should be released only after 2G and 3G are disengaged.



5. Locking Device for the Film-Advancing not Operating Properly

(1) Improper operation of related parts
Refer to the following checkup cloumn, and check the operation of related parts.

1) If the shutter cannot be released upon film advancement, check if 8842 (Lever) and the Stopper Ring of 8821 (Lever) are in contact with each other. They should not.

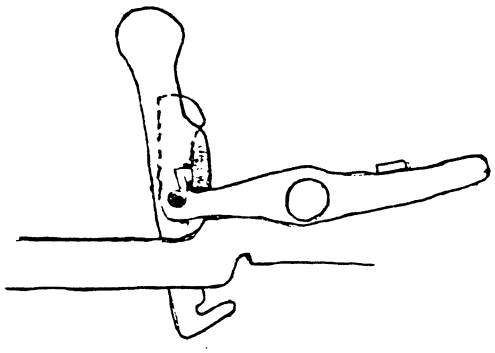


2) When the release button returns to its original position after the shutter release, 8862 (Plate) should return until its oblong hole hits 8864 (Shaft).

3) The operation should be accurately carried out from 8842 → 8821 → 8824 until CA 8824 hits the CA 9053 of the body. (Release of Locking-device for the Film-Advancing)

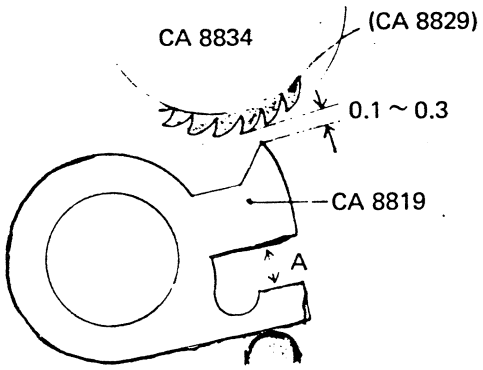
6. The Shutter can be Released During or Prior to Film Advancement.

(1) Improper operation of related parts
Check the operation of related parts. If the shutter cannot be released even upon film advancement, make sure 8850 (Pin) is not hitting 8810 (Plate).



7. Spool turns in both directions

(1) Improper operation and/or adjustment of CA 8819 (claw).
Refer to the checkup column. Adjust the distance A on CA 8819.
CA 8819 (claw) which is thin and not hardened should be replaced as a set with CA 8817 1 gear screw.



Checkup:

- o When the film advance lever is returned to its original position during the film advancing operation, 8819 should engage onto (8829) to prevent reversion of 8834. (Apply force on the sprocket.)
- o During the film advancing motion, 8819 should stay away from the (8829) with a distance of 0.1 ~ 0.3.
- o 8819 should be in engagement with 8829 for more than its own (8819) thickness in the vertical direction.

8. Film Advancing Operation is not Smoothly Carried Out.

(1) CA 8828 (Shaft) and CA 8836 (Gear) stuck together.
Adjust the position of 8501 (Plate).

(2) Delayed release action of CA 8586 (Spring)

(3) CA 8578 (Lever) stuck.
Check the appropriate parts and make necessary repairs or adjustments.

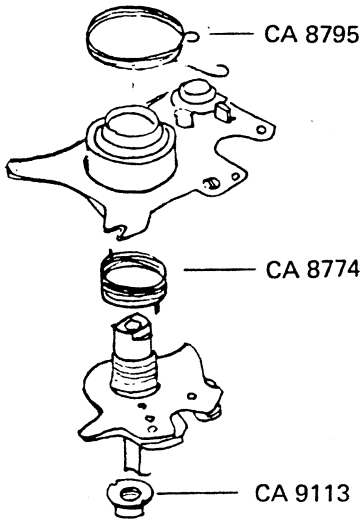
(4) Excessive charging force CA 8412 (Lever).
Check the operation of the related parts and make necessary repairs or adjustments.

Checkup:
The charging force of 8412 should be:
430 ~ 500 gr.

9. CA 8749 (Lever) does not Return Completely and/or Smoothly to the Original Position.

(1) Top-cover mounted slightly off position.
When 8703 (Top-cover) is mounted off position, it will cause 8753 (Decoration) and 9083 (Washer) to rub each other.
The position of the 8703 should be adjusted.

(2) CA 8774 (Spring) and CA 8795 (Spring) worn out, broken or entagled.

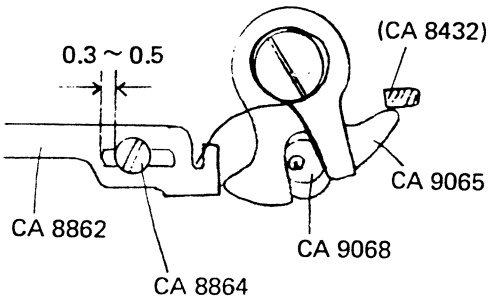


(3) CA 9113 gear holder is loose.
Retighten CA 9113 gear holder.
For details of CA 9113 gear holder, refer to the figure in 2).

(4) CA 8754 winding shaft is mounted not squarely. Adjust the mounting positions of CA 8754 winding shaft and CA 8742 battery case.

10. The shutter releasing position of the button too deep or too shallow. Excessive or insufficient leeway in the button motion after the shutter release.

(1) Improper adjustment of CA 9068 (Collar).
9068 should be adjusted so that the mirror commences its operation when the distance between the oblong hole of 8862 and 8864 at their edges is 0.3 ~ 0.5.



Checkup:
- o Make sure 9065 does not hit 8432 (Hook) prior to or during the film advancing motion.
- o Taking the upper edge surface of 9083 as the basis, the shutter should be released within $0^{+0.1}_{-0.2}$

11. Heavy touch of the Shutter Release Button

(1) Operation of CA 9078 (Plate)

(2) Releasing force of the CA 8432 (Hook) too heavy.

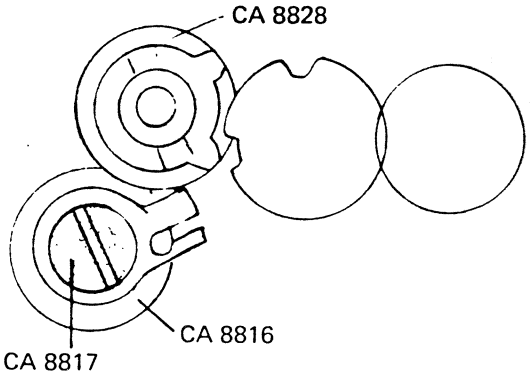
(3) CA 8862 (KL plate) does not operate satisfactorily.

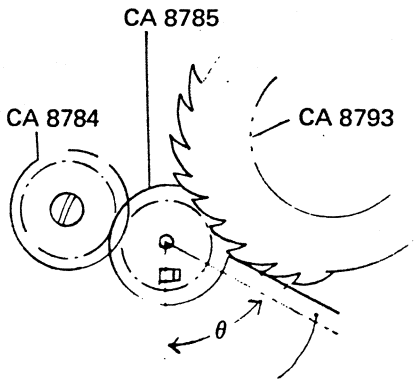
Checkup:
- o The releasing force of (8432) should be 50 gr. or below.

12. Uneven intervals between Picture Frames.

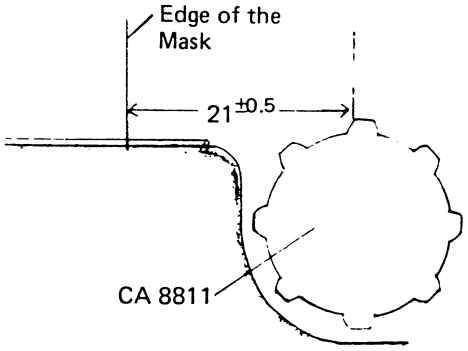
(1) Improper positioning of Sprocket Teeth
After the film is advanced and locked, bring 8785 (Gear) to rise within the range θ, and make following adjustments:

Loosen 8817 (Screw) and change the position of engagement between 8816 (Gear) and 8834 (Gear).
The Sprocket will turn 1.66 mm more, or less, when the engagement is changed by a tooth on 8816 (Gear). → (The lowest gear is 8834.)





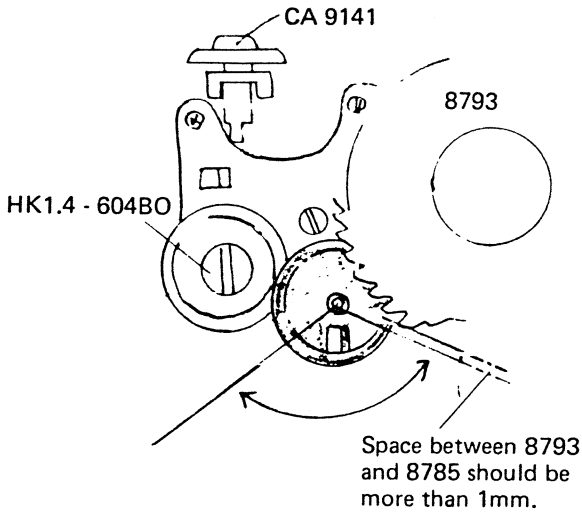
The spece between 8793 and 8785 should be I mm or above. The clearance between boss of 8785 and 8793 should be over than I mm.



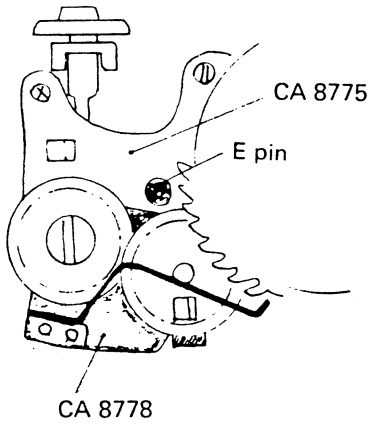
Checkup:
When the Sprocket is pressed toward the Mask, the distance between the edge of the Mask and the Sprocket Teeth should be $21.0^{\pm 0.5}$

13. Film Counter Plate not Moving Properly.

(1) Improper positioning of CA 8785 (Gear).
Set 9141 and loosen HK7.4 - 604BO on 8784 to let it rise and adjust 8785 position. Upon completion of film advancement, 8785 should be positioned as follows (within the range shown by arrows.)

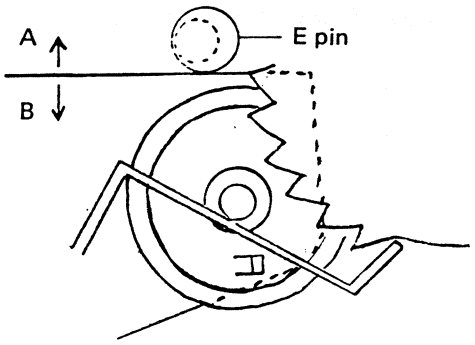


(2) Improper positioning of CA 8778 (Lever)
Keeping the E pin of 8775 at the neutral position of it eccentric motion, bend the Plate (A) so that 8778 will hit the E pin when the Rear Cover is closed.



(3) Improper material used for CA 8786 (Ring)
If the material for 8786 is soft and is deformed, replacement will be required.

(4) Improper position of CA 8790 (Stopper)
When the Rear Cover is closed, the tip of (8790) should hit the bottom of the teeth of (8793). If it does not, an adjustment should be made by bending (8790) at the S position. Some room may be permissible between (8787) and (8790).

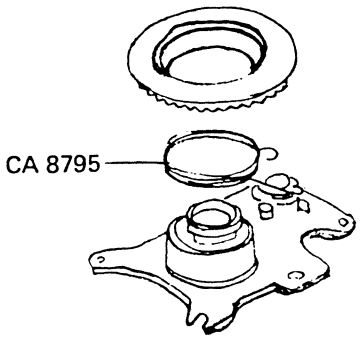


Checkup:

- o When the Rear Cover is closed, (8790) should not supple.
- o Even is 8793 is shaken vertically, 8793 should be engaged with (8790) at least for its own thickness.
- o The tip of (8790) should be lower than the upper surface of 8793.
- o At the commence of motion, (8785) should work on the 4th tooth of 8793.

(5) Adjustment of CA 8802 (Pin)
Adjust the E pin like that 8793 will be travelled by 1.2 ~ 1.8 teeth space by means of (8785).
When there is insufficient travel, adjust (8802) in the A direction shown above, and when excessive in the B direction.
Upon adjustment of (8802) realign 8778 and (8790).
The three points explained above, i.e. the positions of 8778, (8790), and (8802), are all related to the movement of the Film Counter Plate.

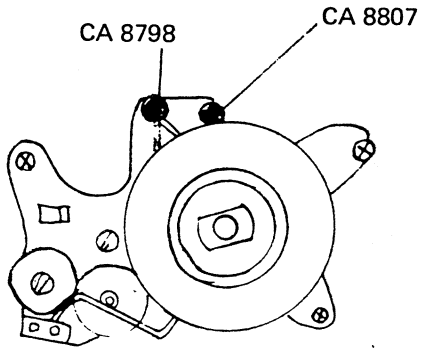
(6) CA 8795 (Spring) entangled
Check the relative part and adjust.



(7) CA 8794 film counter interfers with the film counter cover of top cover. Check and repair.

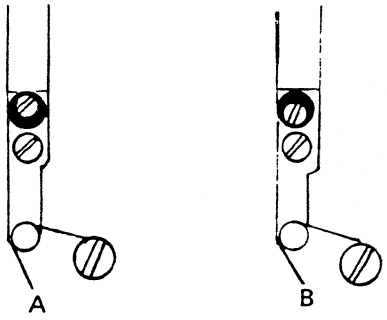
14. S Point of the Film Counter Plate out of Position.

(1) Adjustment of CA 8807 (Pin)
Loosen 8798 and adjust eccentricity of 8807 so that the tip of (8790) touches the bottom of the first tooth of 8793.



15. Little Leeway Stroke After the Shutter Release by the Self-Timer.

(1) Adjustment of CA 9089 (Screw)
Refer to the checkup column on the next page and make following adjustments.



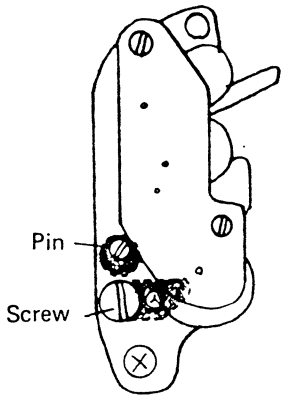
A: Bigger leeway stroke after the shutter release and shorter self-timer operation.

B: Little stroke after the shutter release and longer self-timer operation.

Checkup:
The duration of operation of the self-timer is to be 9 ~ 14 seconds when it is fully set. The leeway stroke after the shutter release should be 0.2 mm or above.

16. ST Lever not Pointing Straight Up.

(1) S stopper pin of the self-timer not peroperly adjusted.
Loosen the screw and adjust the S stopper pin (eccentric).
After adjustment, tighten the screw fully and bond it with Aron Alpha.

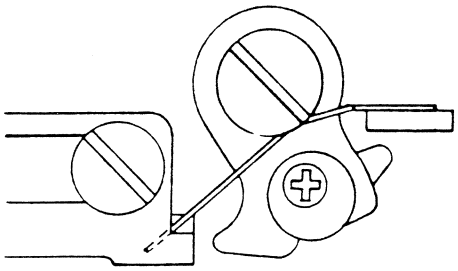


Check up:
The slant at tip of the ST lever should be 0.3 mm or less.

17. When the preview button is pushed while the release button is pushed halfway, the shutter closes.

(1) This is caused by the weak tension of CA 9069 MR spring.
Replace CA 9069 with CA 9603.

Check up:
Push the release button to a point immediately before the end of the shutter stroke and clank the preview button. If the shutter does not operate, the spring tension is correct.
In addition, the mirror should turn up and the subsequent film winding should be possible.



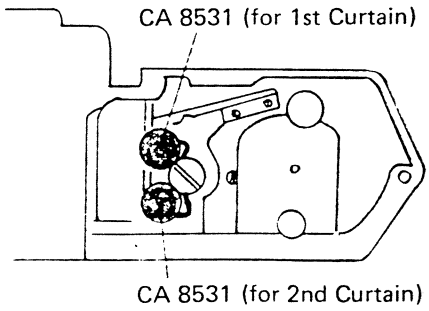
II. SHUTTER AND MIRROR

1. Excessive or Insufficient Speed of the Curtains.

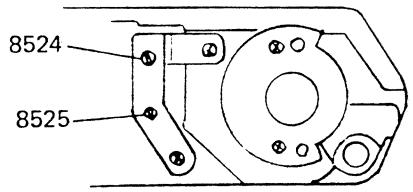
(1) Improper adjustment of CA 8531 (Nut)
The curtain speed is adjusted by 8531. Refer to the checkup column and make adjustment.

Turn 8531 to the right to weaken the curtain tension and thus slow down the speed.

Turn 8531 to the left to increase the tension and thus speed up the curtain run.



Adjustments may be made by 8525 (Shaft) and 8524 (Shaft). Turn them to the right for stronger tension and faster speed, and to the left for weaker tension and slower speed.
Care must be taken not to deform the driver groove at the upper end of 8525 and 8524, as it will cause poor operation of the curtains.



Checkup:
Use the shutter tester 7F7L1 and/or 7F7L3. The speed should be 11.7 ~ 12.1 ms. at 1/1000 sec.

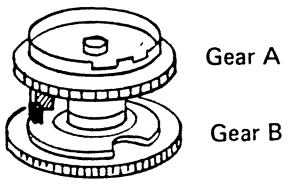
2. 1st curtain bounces.

(1) Adjustment of the curtain position. (Patch inclined.)

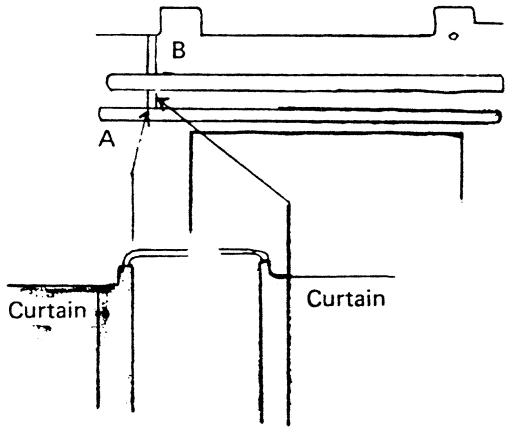
1) Turn 8519 (Shaft) to let 8592 (Claw) engage on to the Gear A and lock it. Do not directly touch the metal part of (8519) with fingers.

2) Remove 8857 (Shaft) on the lens side, turn 8521 (Stopper), lower 8520 (Shaft), and disengage 8520 from the Gear B.

3) Rotate the Gear B to bring its boss to the position coincident with that of the Gear A as shown below.



4) Do not change the position of the Gear B but turn 8520 until the Patch of 8600 (Curtain) reaches closest to the Scratched line (Ⓐ below) on the Die-cast Body. Then raise (8520) and let it engage onto the Gear B.



Make fine adjustment on the alignment of the Patch of 8600 and the Scratched-Line on the die-cast by adjusting the 5 holes' positions.

Tolerance: 0 ~ 0.3 mm

(From the point of perfect coincidence with the Scratched-Line up to 0.3 mm passing it.)

5) Return 8521 to the original position and tighten 8857 (Shaft).

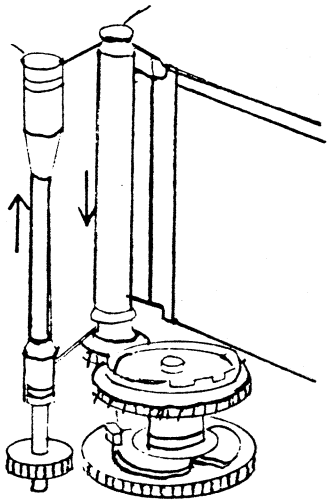
6) Loosen PUK1.4 x 1.8SO of 8522 (Stopper), slide aside the 8522, and raise 8519 (Shaft) to release its engagement with the Gear A.

7) While keeping the proper relationship between the Gears A and B (items 1) through 3) above), rotate (8519) until 8538 (Curtain) reaches closest to the Scratched-Line on the Die-Cast (see Ⓑ in the illustration in the above), and lower (8519) until it gets engaged with the Gear A.

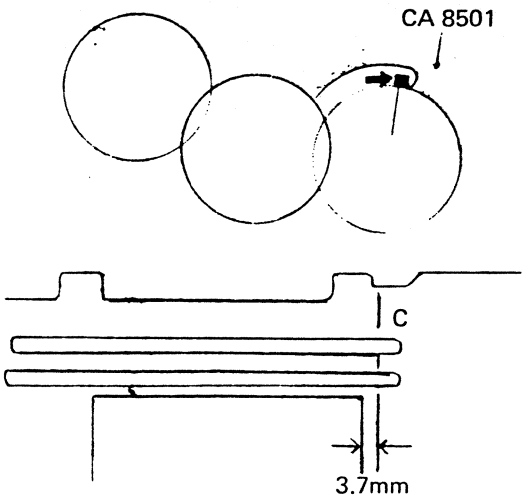
Make fine adjustment on the alignment of the Patch of 8538 and Scratched-Line on the die-cast by adjusting the 5 holes' positions.

Tolerance: $0^{\pm 0.15}$ mm

8) Return 8522 (Stopper) to the original position and tighten PUK1.4 x 1.8SO.



(2) 1st curtain stops at the improper position.
After the shutter is released, when the boss of the Gear A is pressed against 8501 (Base Plate), the edge of 8538 (Curtain) should almost reach te Scratched-Line (see C below.)
If it does not, an adjustment may be made by moving vertically the mounting position of 8517 (Stopper) assembled in 8519 (Shaft).

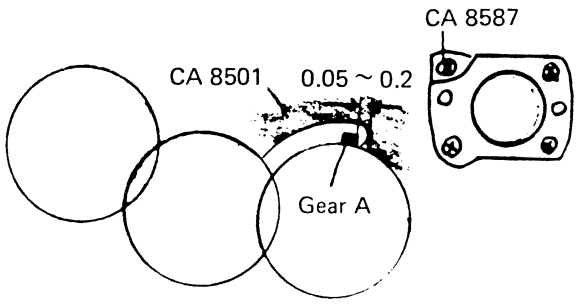


Reference:
(Stopping point of the second curtain)
At 1/1000 sec. the boss of the Gear B (covered with a rubber ring) should hit (8502) but not at the speed of 1/1.

Checkup:
The first curtain should stop at $3.7^{\pm 0.5}$ from the edge of the mask. Also, the overlapping with the Patch of second curtain should be 2.5 mm or above.

Note:
The die cast bodies produced in and after 1972 are not provided with the scratched-line (C). The shutter curtain assembly can be installed without problem.

(3) Brake adjustment unsatisfactory.
Upon adjustment of the curtain speed, when the shutter is released at 1/1000 or B, there should be a room of 0.05 ~ 0.2 mm between 8501 (Base Plate) and the Gear A. If not, it should be adjusted to be within that range by 8587 (Screw). (It will change the spring tension of 8586 (Spring).)

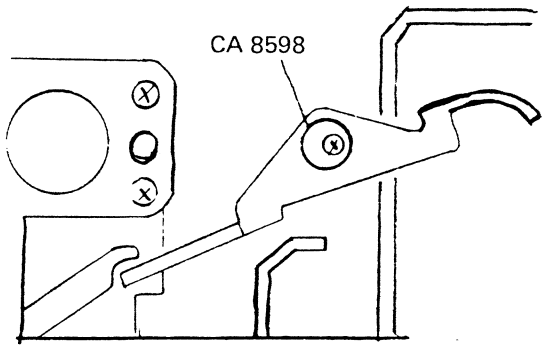


(4) Spring tension of CA 8586 (Spring) weak.
If 8586 itself is worn out, make a replacement. Upon replacement, check the space between 8501 and the Gear A.

(5) CA 8578 (Lever) not operating properly.
Looseness of 8585 (Screw) is to be checked. It should be tightened if loose. On the way of the film advancement, remove 8586 (Spring) from 8587 to check the operation of 8578. If it does not work properly, adjust or replace it.

(6) Inaccuracy in surface finish of the sliding part of 8519.
To be cleaned, adjusted or replaced (in total assembly).

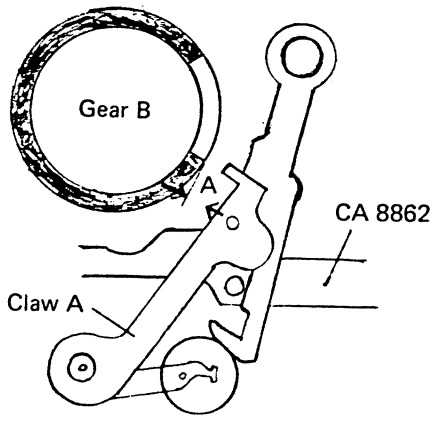
(7) CA 8595 (Lever) and CA 8592 (Claw) stuck together.
8598 (Washer) is to be mounted in the manner shown below.

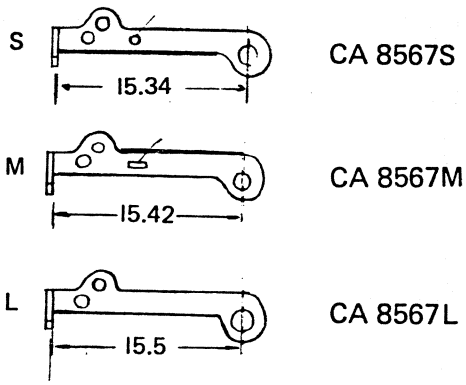


3. Adjustment of "B" Shutter Speed (Irregularity of B Stop, Immediate Closing or Remaining Open)

(1) Adjustment of "Bulb"

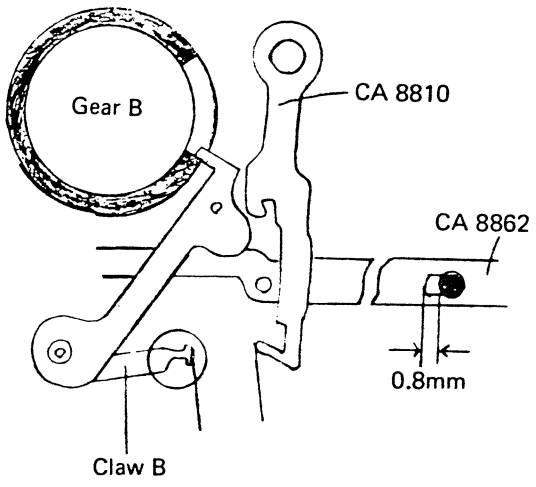
1) Upon completion of shutter charging, 8862 (plate) should return to the original position accurately. At this time there should be a space between Claw A of 8567 (Shaft) and the Gear B of 0.5 mm or above. (See below, the portion marked A) If there is not, an adjustment must be made by bending the portion marked with a circle in the picture below.





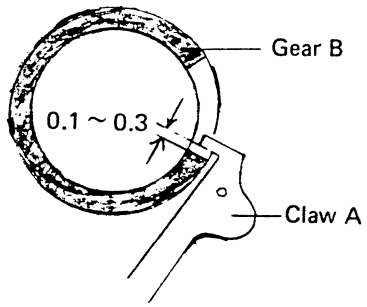
2) Press 9078, let Claw A of 8567 engage onto the Gear B, and see if there is a space of 0.2 mm or above between 8810 (Plate) and Claw B when the spece between the oblong hole of 8862 (Plate) and 8864 (Shaft) gets to 0.8 mm. If there is not, an adjustment should be made by bending the portion marked with a circle in the picture below.

Upon such an adjustment, check the point 1) above, again.

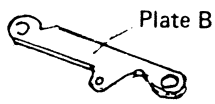


(2) The spece between Claw A and the Gear B.
Depending on the size of Claw A, there are three types of 8567 (Shaft). A proper selection should be made out of the three shown below, so that the spece between Claw A and the Gear B would be 0.1 ~ 0.3 (as shown below).

An adjustment may be made by bending the tip of Claw A.



When Claw A is shaken if its lower edge hits the Gear B, an adjustment may be made by bending the Plate (B).



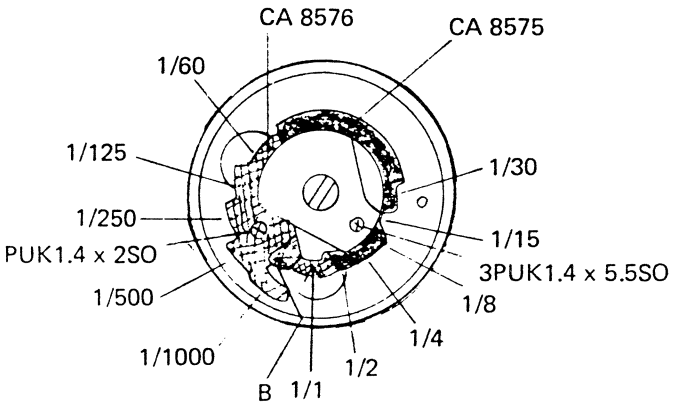
Checkup:
Vertically, Claw A and the Gear B should be engaged with each other for more than 2/3 of their thickness.

(3) Shifts in releasing force of Claw A.
Where there is an extreme shifting in the releasing force, the portion of 8567 (Shaft), 8501 (Plate) and the Plate B where they fit with each other, should be cleaned. Then rub Claw A several times.

Checkup:
While the release button remains depressed at the shutter speed "B", release the shutter with 8595. Releasing Claw A with a tension gauge, measure it. It should show the valve of 5 ~ 15 gr.

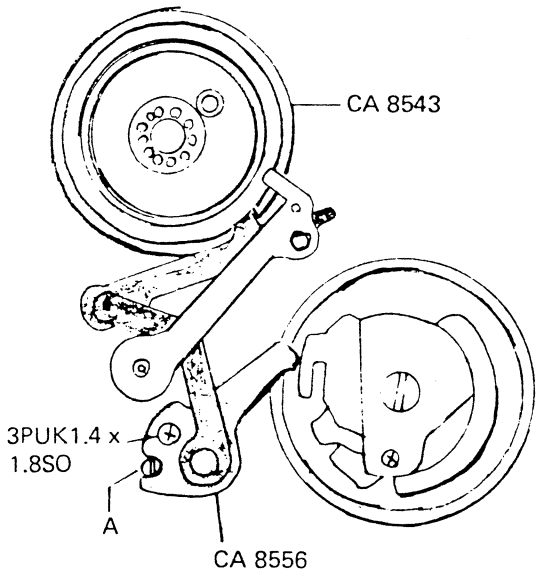
4. Shutter Timing

(1) Positions of CA 8575 (Cam) and CA 8576 (Cam) at each speed:



5. Improper Timing at High Shutter Speeds:

(1) Adjustment of the Eccentric Screw
If the speed at 1/1000 ~ 1/60 sec. is in average longer (or shorter) than the proper timing, and adjustment is to be made with A of 8556 (Lever).



Checkup:
Refer to the Inspection Standard for the proper timing and make measurements with the shutter tester.

(For reference)

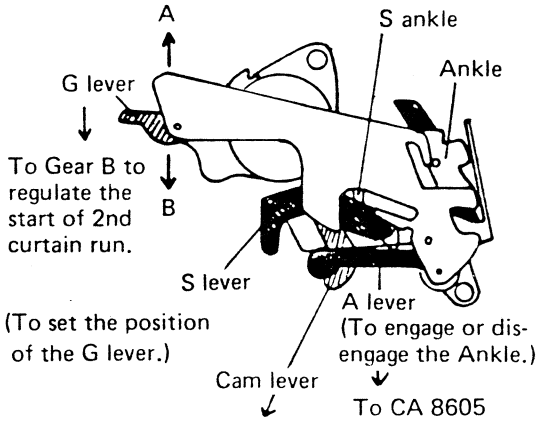
Shutter Release
↓
8592 releases the Gear A.
↓
1st curtain starts the run.
↓
The Cam of the Gear A is pressed.
↓
The Lever of 8556 is worked.
↓
The Claw of 8567 engages the Gear B.
↓
2nd curtain starts the run.

(2) Adjustment of CA 8576 (High Cam)
When a certain shutter speed takes longer than the proper timing, hammer out the appropriate portion of 8576, and when shorter shave it. In case of 1/1000 sec. widen or narrow the appropriate section.

For adjustment of 8576, remove PUK1.4 x 2SO, then 8576 will come off singly.

6. Improper Timing at Low Shutter Speeds:

(1) Adjustment required for proper positioning of the Governor.
If the speed at 1/30 ~ 1/1 sec. is in average longer (or shorter) than the proper timing, an adjustment is made by moving the governor. When it is longer, the governor is to be positioned rather towards the direction A, and when shorter towards B.



Checkup:
Refer to the Inspection Standard for the proper timing and make measurements with the shutter tester.

(For reference: See the picture above for functions of the individual levers for the Governor.)

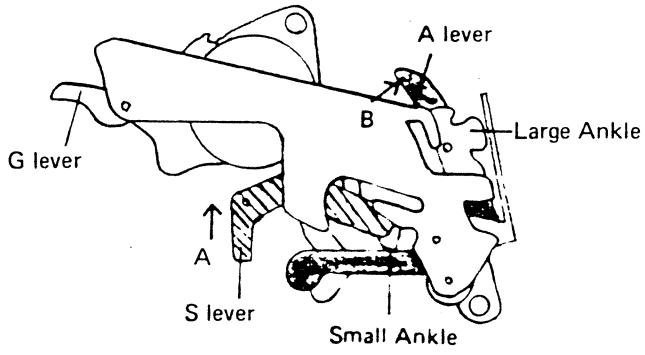
(2) Adjustment required for the Low Cam.
When a certain shutter speed takes longer than the proper timing, hammer out the appropriate portion of 8575, and when shorter shave it.

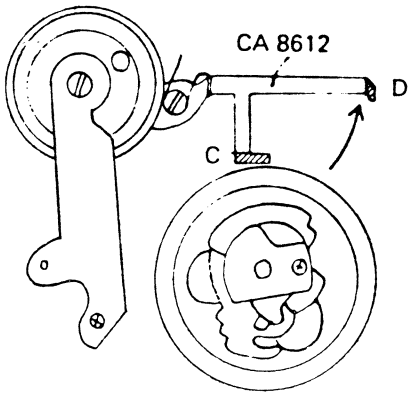
For adjustment of 8575 remove 3PUK1.4 x 5.5SO, then 8575 will come off singly.

7. Irregular Shutter Timing at the Low Speeds.

(1) Little operation of CA 8612 and large shaking.
Adjust by bending portions C and D of 8612 like that relative parts work as follows.

When 8575 is set at 1/1 ~ 1/8, immediately prior to the shutter charging action 8612 starts working and portions A and B of the governor should move in the directions indicated by arrows to release the Large Ankle and Small Ankle of the governor.



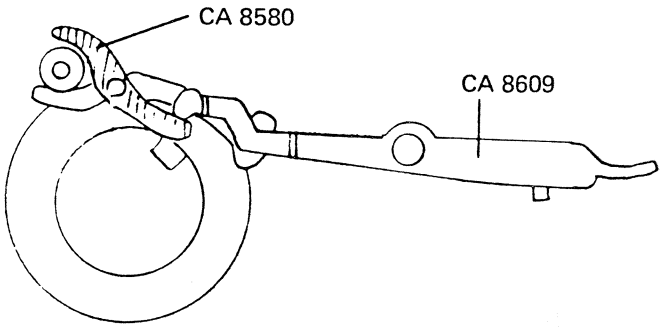


Checkup:
With 8575 set at 1/1 ~ 1/8, when the G lever of the Governor is worked upon completion of film advancement, the Ankle should not be engaged.

(For reference):

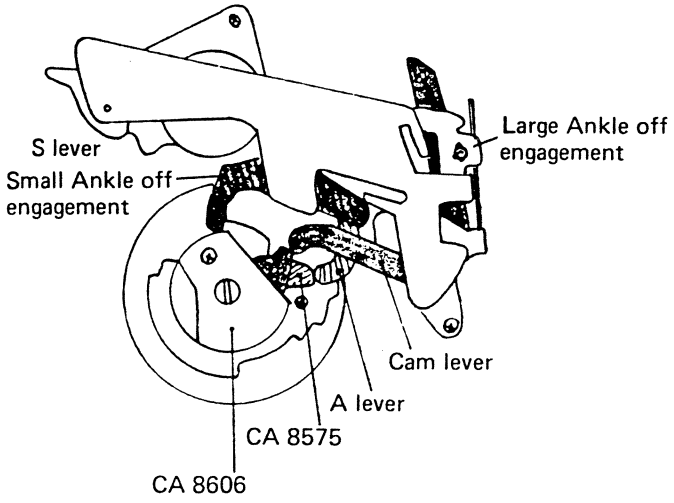
Prior to the shutter charging action
↓
The boss on the Gear A
↓ presses
8612
↓ presses
A lever of the Governor (in case of 1/1 & 1/2)
or
S lever of the Governor (in case of 1/4 & 1/8)
↓
And just immediately prior to the shutter charging action, engagement between the Ankle and the Gear is released and the G lever gets in contact with the tooth of the Gear B.
↓
The shutter is released.
The Gear A is rotated and 8612 is spring back to the original position.

(2) CA 8580 lever rattling
Prior to film advancement, check the engagement between 8580 and 8609 by shaking vertically 8609. If such engagement is for less than 2/3 the thickness of 8609, adjust the room at the rivet of 8580 to be within 0.3.



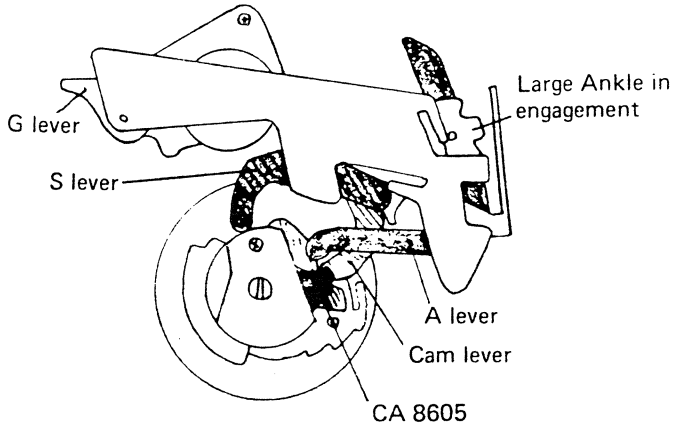
Relationship between the Governor and the Cam in CA 8577 (Gear):

At the shutter speed "B":



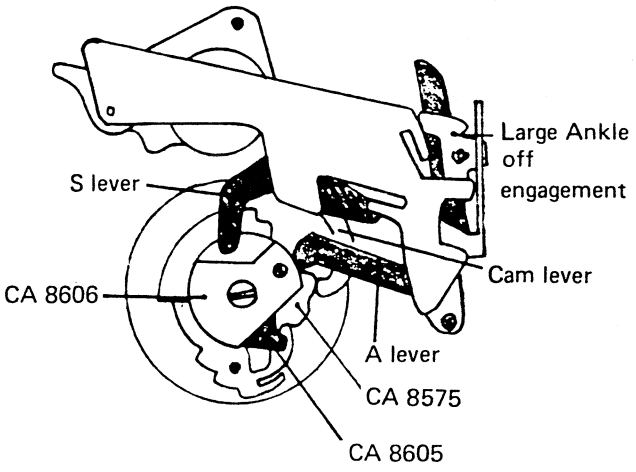
Both the S ankle and the L ankle are released from engagement by the S lever and the A lever.

At the shutter speed 1/1 and 1/2:



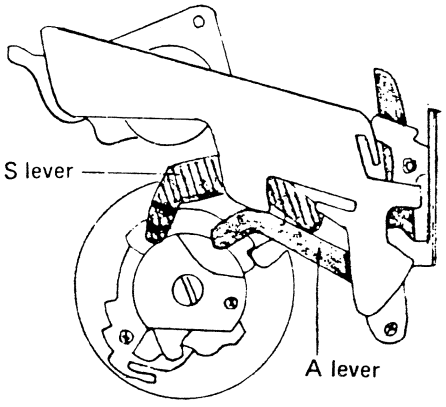
The A lever is released from 8605 and the L ankle is engaged. The S ankle remains off engagement by the S lever. To differentiate shutter timing for 1/1 and 1/2, the message is transmitted from 8575 to the Cam lever and the operating angle of the G lever will be changed.

At the shutter speeds, 1/4 and 1/8:



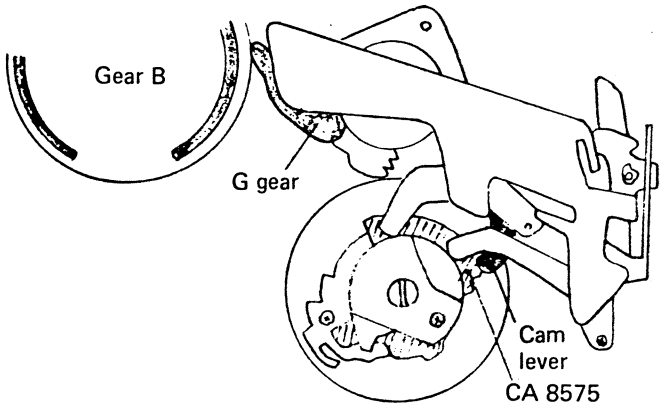
The S lever escapes from 8606 and the S ankle is engaged. 8605 pushes the A lever and the L ankle remains unengaged. To differentiate the shutter speeds of 1/4 and 1/8 from each other, the message is transmitted from 8575 to the Cam lever to change the operating angle of the G lever.

At the shutter speeds, 1/15 and 1/30:



Action is transmitted from 8606 to the S lever and from 8605 to the A lever, while both the L ankle and the S ankle remain off the engagement. Without the use of the Ankle, the load is given only by the gears. Differentiation between 1/15 and 1/30 will be in the same manner as in the case of 1/1 ~ 1/8.

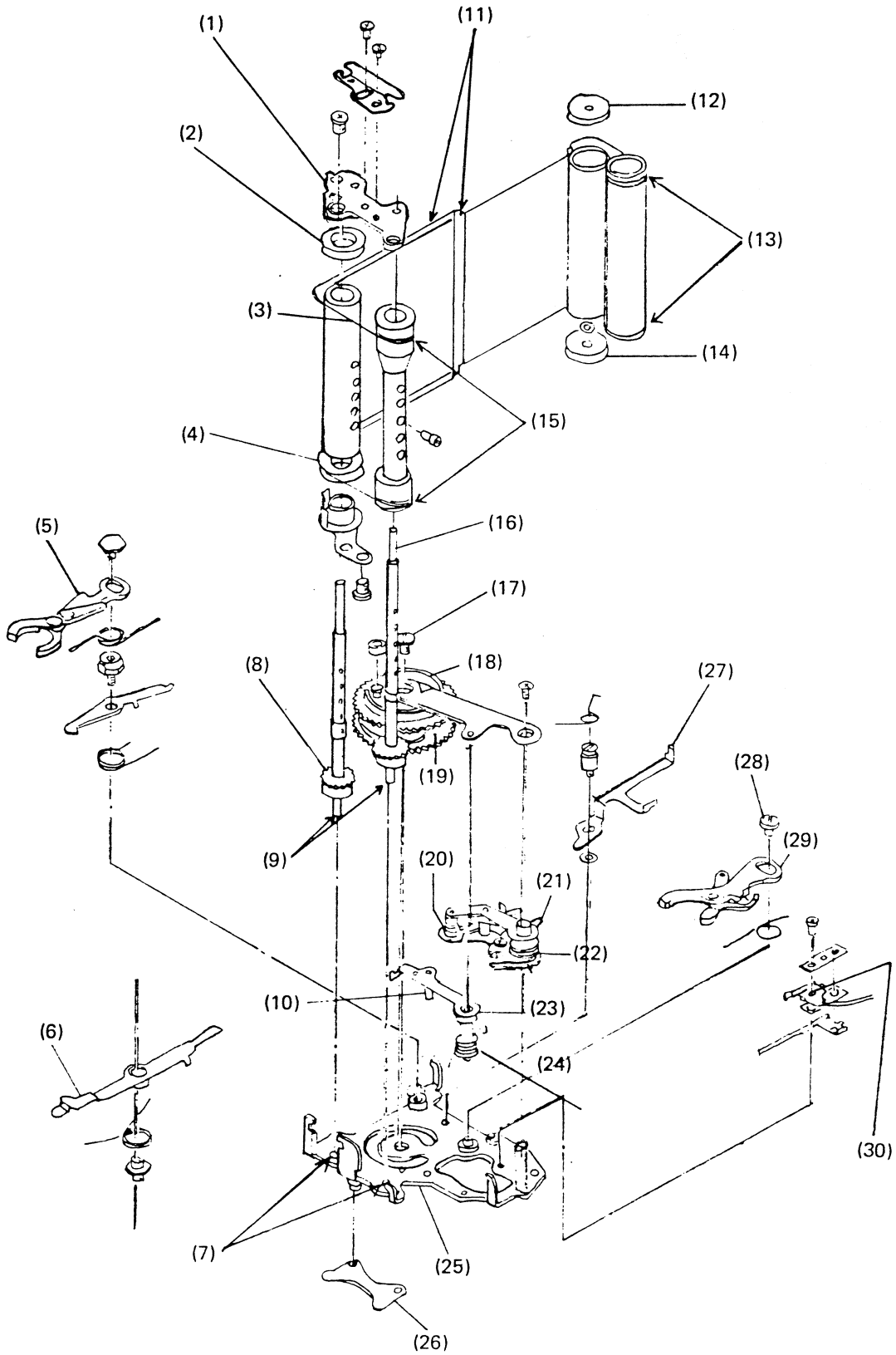
At the shutter speeds, 1/60 ~ 1/1000:



In cases of 1/60 ~ 1/1000, the action is transmitted from 8575 to the Cam lever of the Governor then to the G gear, and the arrowed portion of the Gear B is disengaged from the G gear. The governor will not be activated in this case.

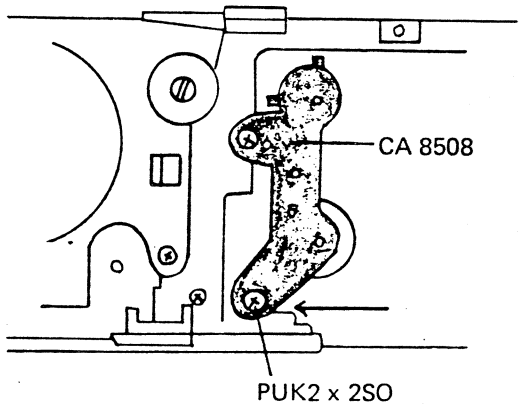
8. Irregularity in Curtain Speeds:

(1) Check the following items and make necessary repairs or adjustments.



(1) Mounting position of 8508.
(2) Rotation of 8510. However, do not lubricate.
(3) Whether 8537 (4 pieces) are off the roller.
(4) Rotation of 8510. However, do not lubricate.
(5) 8580. Check whether it with the Ring of the Shaft B.
(6) 8609. Whether it is properly engaged on the lever.
(7) 8501. Dirt or inaccuracy in surface finish at the guide holes for the Shaft A and B.
(8) 8520. Check the engagement with the Gear B, any deformity or bent.
(9) Shortage of lubricant and any scratches.
(10) Pin.
(11) 8537. Check for any rubbing with 8540, also relation the string and the Patch.
(12) 8529. Rotation to be checked, however no lubrication.
(13) Check the manner in which the strings are bonded.
(14) 8529. Check the rotation, but no lubrication.
(15) Check the manner in which the strings are bonded.
(16) 8519. Check its engagement with the Gear A, any deformity or bent.
(17) 8545. Check if loose.
(18) Gear B.
(19) Gear A.
(20) Lever off engagement.
(21) Lever. Check the relationship with the position of 8576.
(22) Lever. Check it is off position or whether it is efficiently working.
(23) Claw. Check it is off position. Also check for the proper space between the Gear B.
(24) 8570. Check if off position.
(25) 8501. Check for deformity.
(26) 8521. Check for deformity.
(27) 8612. Check if it is stuck with the Gear A.
(28) 8585. Check if loose.
(29) 8578. Check for with the Ring of the Shaft A.
(30) 8603. Check for the proper room between the Lever.

(2) CA 8508 (Plate) mounted off position.
Loosen two PUK2 x 2SO of 8508 and adjust the position of 8508. Check for inclination of 8519 and 8520 and make necessary adjustment.



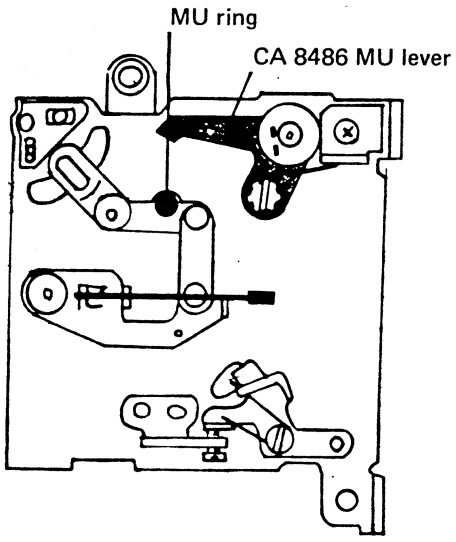
In case where the Shaft rattles vertically due to deformation of 8508, insert a U washer (0.1 ~ 0.2) underneath the Plate R on the arrowed side.

Checkup:
Vertical tolerance of the Shaft should be 0.05 ~ 0.2 mm.

9. **Even when the mirror is raised, it does not reach the topmost position. During mirror-up operation, the MU knob gets heavy toward the end of its motion.**

(1) Improper selection of the MU ring
Make a proper selection of the MU ring to satisfy the requirement cited in the Checkup column below.

CA 8451	MU ring (outer diameter 2.8ϕ)
CA 8452	MU ring (outer diameter 3.1ϕ)
CA 8453	MU ring (outer diameter 3.4ϕ)
CA 8549	MU ring (outer diameter 3.7ϕ)



Checkup:

1) While the mirror is at the original lowered position, there should be a space of 0.2 or above between the tip of 8486 and the MU ring.
2) During the mirror-up operation, the mirror should be in such a position that its tip touches the damper and presses it accurately.
3) The MU knob should operate smoothly and should not get heavy toward the end of its motion.

10. Mirror Bounds While Being Raised.

(1) Improper selection of CA 8464 (Spring), 8466, 8467
If the mirror bounds for more than 4 mm while being raised, the Spring should be replaced with a thicker one.

8464	0.4 ϕ
8466	0.45ϕ
8467	0.55ϕ

In case that the mirror-rising time is more than 3.2 ms., 8464 should be replaced with a thinner one.

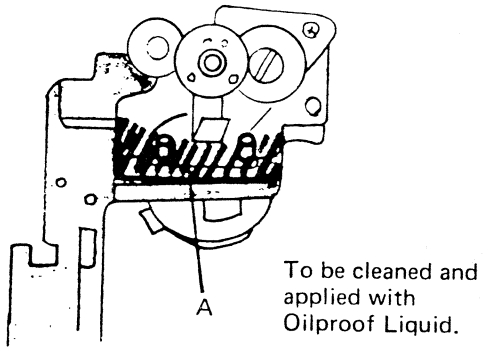
III. EXPOSURE METER

1. The Meter Needle Gets Stuck.

(1) Filth or oil on CA 9024 (Shaft)
Replace 9024.

Checkup:
No more sticking after the repair.

1) Remove 9025 (Base) and 4073 and take out 9024 positioned at the low luminosity. If it cannot be removed because of adherance by Araldite take off 8961.
(However, avoid removal of 8961 as much as possible.)
2) Clean the following parts with the ether alcohol and apply the oil Oilproof Liquid: 9025, around the area where 9024 is mounted, 8977 (Plate), and 9142.
3) Apply a little Araldite in the hole where the A fits in 9025 and set 9024.



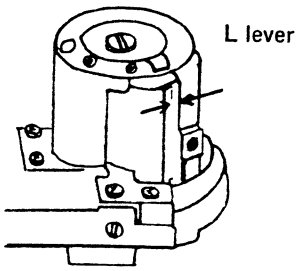
4) Before mounting the Top cover, check the operation of CA 8995. Upon mounting the Top cover, check the indicator accuracy. Ref.: E-39

Checkup:
8955 follows 9010 in its operation.

2. Inaccurate Indications

(1) The zero point of the meter off-positioned.

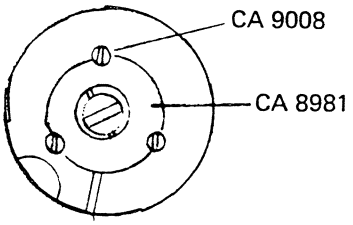
As a reference, when the staged clearance between the P lever (CA 8985) and the M cap is 0.5 ~ 1mm, the correct zero point is obtained.



If the zero point is extremely out of position, adjust the position of CA 8981 referring to the right "Checkup" column.

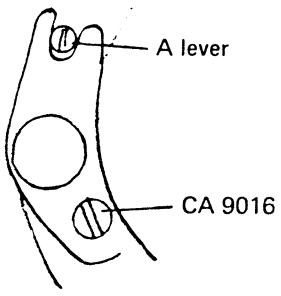
1) In case of + (an excessive swing), loosen CA 9008 and turn CA 8981 to the right.
2) In case of – (An insufficient swing), turn it to the left.

Upon the adjustments of either 1) or 2) turn the shutter dial to adjust the loosened string.



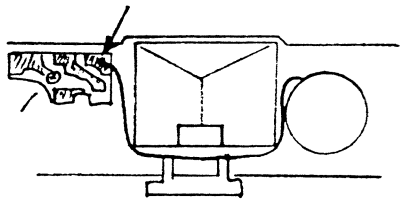
Make the fine adjustment with the A lever (assembly part of CA 8995).

Upon the fine adjustment, the CA 9016 is preferably not loosened. If the A lever is tightened excessively, the L lever (assembly part of CA 8995) may operates improperly. So, make sure that it operate in normal.



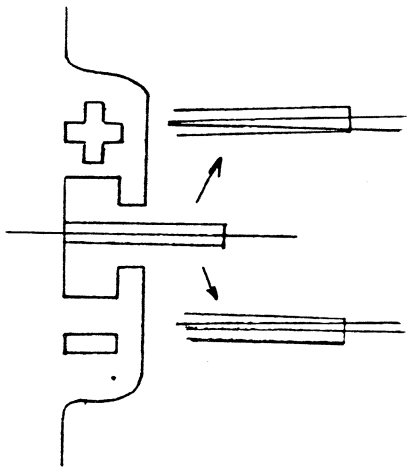
Checkup:

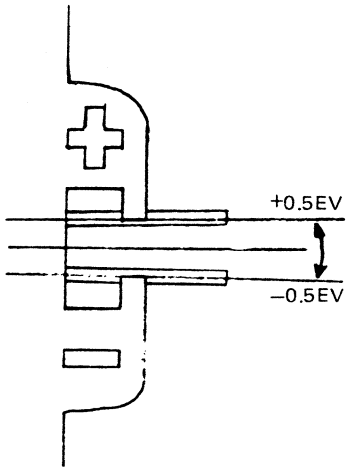
1) Check of Variable Resistor Box.
Adjust the variable resistor box so that the current of 33μA flows when a F1.8 standard lens is used for a master lens and the current of 35μA flows when a F1.4 lens is used. (See the reference document "MEASURING INSTRUMENT" for the operation and adjustment of the variable resistor box.)
2) Disconnect the green and blue (or black) lead wire of the movable section from the printed circuit board soldered portion.



3) Set the camera in the following order.
   1. ASA100 (turn from the ASA25 side)
   2. f/stop F4
   3. Shutter speed 1/1 (from the 1/1000 side)
4) Connect the blue lead wire of the variable resistor box to the blue (or black) lead wire of the meter movable section. The meter needle should be positioned to the center of the reference mark ±0.1EV when the white lead wire of the variable resistor box is earthed to the camera die-cast body.

   0.07 mm = 0.1 EV
   Width of one needle
   (0.2 mm) = Approx. 0.3 EV



Cause	Remedy	Remarks
(2) Meter reading characteristics	Check the meter readings in the following way, and if the needle swings off extensively or if the line connecting the check points shows a wavy curve, replace the moving section of the meter. (For the meter reading characteristics, refer to the graph.) 1) Disconnect the green (or black) lead wire of the meter's moving section from the printed circuit board. 2) When a specified current is applied to the moving section using combinations of exposure and shutter speed given in the chart below, the meter needle should stay at the center (±0.5EV) of the making.	 When the shutter speed and exposure are combined as shown in the chart on the left, the meter needle should stay in the range shown below:

ASA 100

EV	6	8	11	14	16
Combination	1/2 F5.6	1/2 F11	1/15 F11	1/125 F11	1/500 F11
Amperage	53μA	73μA	103μA	133μA	153μA

Note that F1.8 lens is used.

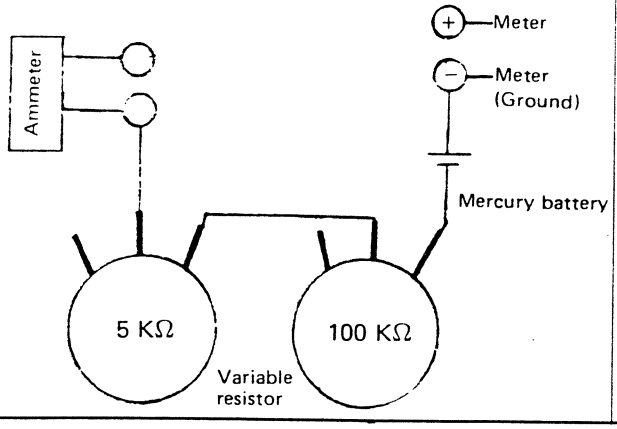
Referring to the Meter reading characteristics on the next page, checking can also be executed as undermentioned.

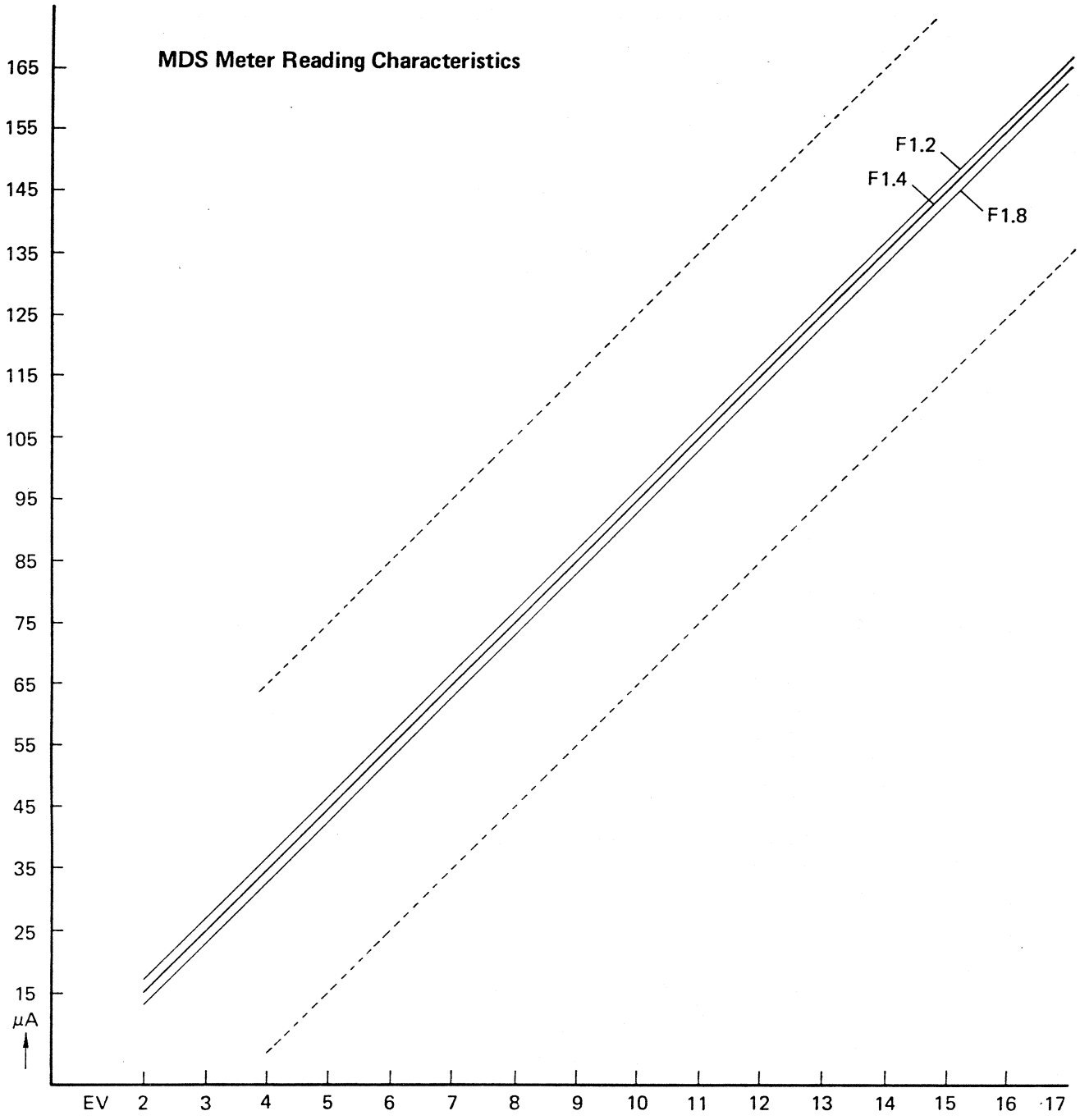
3) Change the amperage using the above combinations so that the meter needle points to the center of the marking. In this case, the amperage should be within 30μA more or less than the specification.

If the amperage is within the range in 2) and 3) above, adjustment is possible by matching the resistors.

Reference

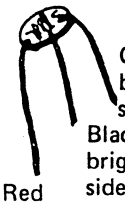
When the resistors are connected as shown below, the amperage can be produced as in the above table.





EV Combinations - Example

EV	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
S.S	1/2	1/2	1/2	1/2	1/2	1/4	1/8	1/15	1/15	1/15	1/30	1/60	1/125	1/250	1/500
F	F1.4	F2	F2.8	F4	F5.6	F5.6	F5.6	F5.6	F8	F11	F11	F11	F11	F11	F11

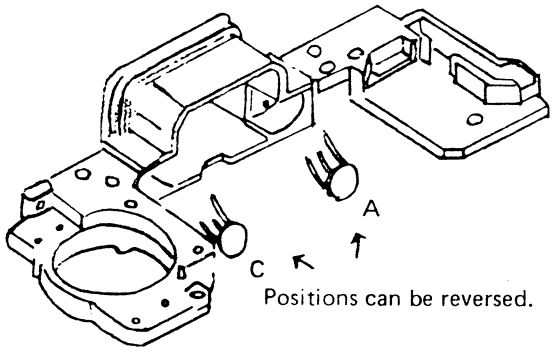
Cause	Remedy	Remarks
(3) CdS characteristic variations  Green (Low brightness side) Black (High brightness side) Red (Earth)	**CdS diagnosis** 1) Desolder two green and two black lead wires of CdS from CA 9173 circuit board. 2) Mount the F1.8 jig lens and set the light source box at BV6. 3) Connect two green and two red lead wires of CdS to a tester (resistance range). If resistance is 8 ~ 20 KΩ, the low brightness side of CdS is in good condition. If resistance is below 8 KΩ, the needle stays on the + side under dark light conditions. If over 20 KΩ, the needle stays on the – side under dark light conditions. 4) Set the light source box at BV16 and connect two black and two red lead wires of CdS to the tester (resistance range). If resistance is 0.75 ~ 3 KΩ, the high brightness side of CdS is in good condition. If resistance is below 0.75 KΩ, the needle stays on the + side under bright light conditions. If over 3.0 KΩ, the needle stays on the – side under bright light conditions. 5) If resistance is infinite, CdS has a broken lead wire. If within the respective ranges in 3) and 4) above, adjustment is possible by matching the resistors. If far off the range when the box is bright or dark, replace CdS cells in pair.	The condition of CdS can be determined by checking the bright and dark sides of CdS with the combined resistance of CdS in pair. This check is not intended to determined CdS cells one by one. For MDS CdS combined resistance characteristics, refer to the graph.
Resistor replacement (Matching)	If adjustment is possible with resistor matching after CdS diagnosis, resistors, R1 to R4, should be matched properly. Standard resistance of resistors R1 12.4 KΩ When dark and normally R2 9.6 KΩ High brightness side R3 3.5 KΩ High brightness side R4 ∞ Low brightness side **Reference:** As of October 1973, the resistance of R1, R3 and R4 is fixed at the following values, and matching is made by means of R2. R1 14.6 KΩ R2 (10.0 KΩ) R3 7.0 KΩ R4 30 KΩ	

Cause	Remedy	Remarks
	Matching procedure Light source box LSBL1 Resistance box MS 5014	

Order	BV	ASA	S.S	F	Range	Adjustment
1)	6	100	1/2	5.6	±0.6 EV	When needle points to +, decrease R4 resistance. o If matching is impossible by setting R4 at ∞, make adjustment using A eccentric. o Normal R4 resistance is 30 KΩ.
2)	8	100	1/2	11	±0.6 EV	When needle points to +, increase R1 resistance. o Normal R1 resistance is 14.6 KΩ. o When R1 is replaced, proceed as specified in 1) above.
3)	14	100	1/125	11	±0.6 EV	When needle points +, decrease R3 resistance. o Normal R3 resistance is 7.0 KΩ. o Don't use R3 whose resistance is 2.0 KΩ or below. If matching is impossible even when R3 is 2.0 Ω, proceed matching at R2. o R3 affects BV8, and therefore when R3 is replaced, make a check again according to 2) above.
4)	16	100	1/500	11	±0.6 EV	When needle points to +, increase R2 resistance. o R2 resistance should be 10 KΩ or so. o R2 affects BV14, and therefore when R2 is replaced, make a check again according to 3) above.
5)	12	100	1/125	5.6	±0.6 EV	When needle points to +, decrease R1 resistance. o R1 standard resistance is 14.6 KΩ. o When R1 is replaced, make a check again according to 1) above.

Variations in EV according to resistance

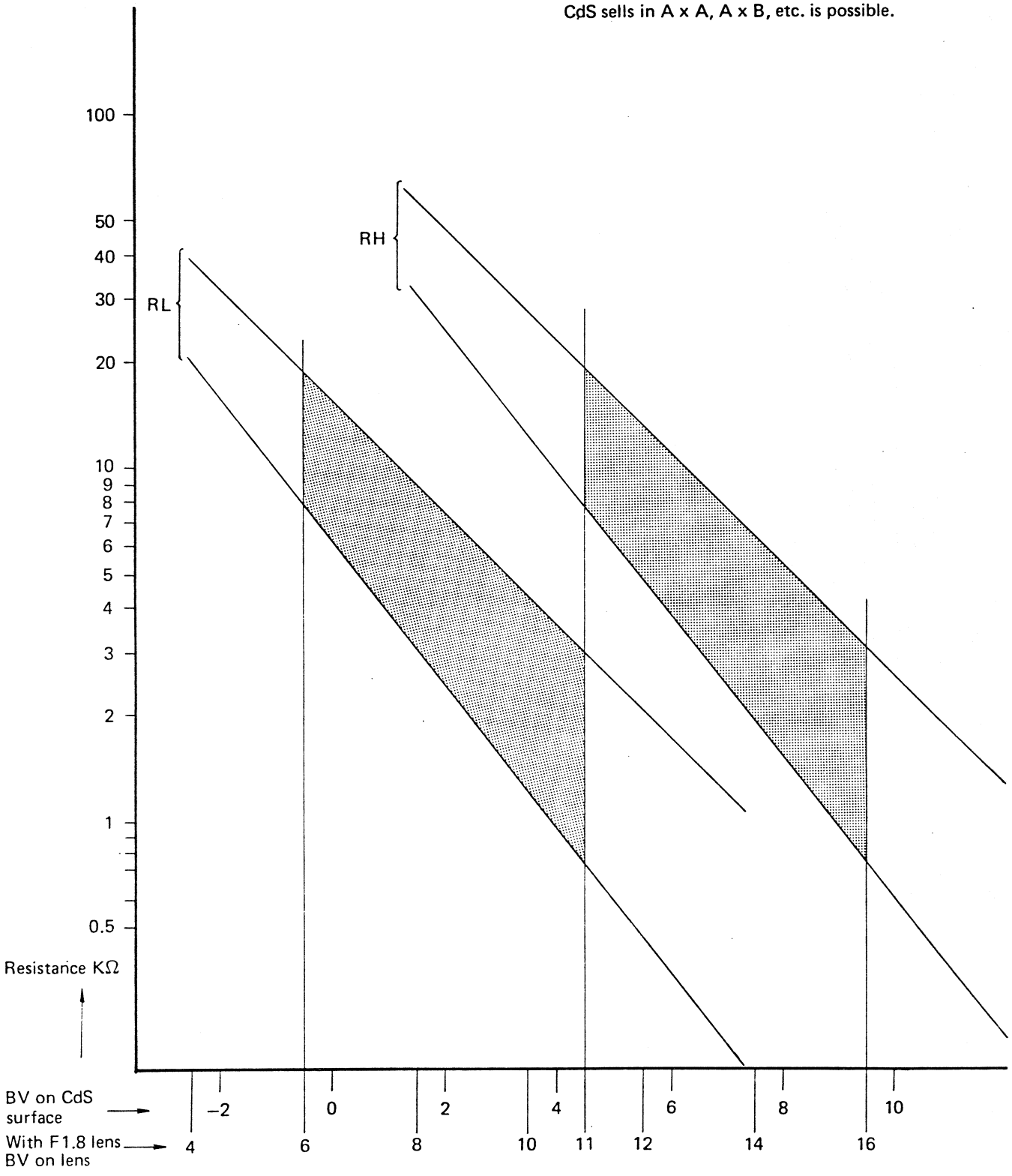
R1	About 0.1 EV changes per	0.1 KΩ
R2	"	0.2 KΩ
R3	"	0.1 KΩ
R4	"	5.0 KΩ

Cause	Remedy	Remarks
CdS is faulty or has broken wire. (CdS replacement)	CA 9119 CdS can be classified in the following five types by characteristics: A (CdS not mounted: 25 $\overset{*}{\sim}$ 37 KΩ at BV4) B1 (CdS not mounted: 35 ~ 45 KΩ at BV4) B2 (CdS not mounted: 41 ~ 50 KΩ at BV4) B3 (CdS not mounted: 45.1 ~ 56 KΩ at BV4) C (CdS not mounted: 52 ~ 75 KΩ at BV4) CdS replacement, if necessary, must be made in pairs, and re-matching is required. A x C B1 x B3 B2 x B2 (Example) If the A CdS is attached to the one side, be sure to attache the C CdS to the other side.  Positions can be reversed. (Note) CdS itself is not marked with A, B1, B2, etc. It must be identified when it is in the bag. The light source box has no setting of BV4. Even if the voltage is reduced with the light source box set at BV6, the color temperature changes greatly and therefore, it is impossible to identify as A, B1 . . . . . or C. Accordingly, if either one of the pair is faulty (e.g., it is unknow which one is faulty due to a broken wire, short, etc.), be sure to replace both CdS cells and perform matching again.	Note: * Resistance measured with CdS placed directly against the light source box. o The resistance measured on CdS which is not mounted is approximately 8 KΩ lower than when measured through F1.8 lens. Accordingly, if the light source box brightness is BV4 and measured through the lens, the "A" CdS should measure 33 ~ 45 KΩ.

MDS
CdS combined resistance characteristics

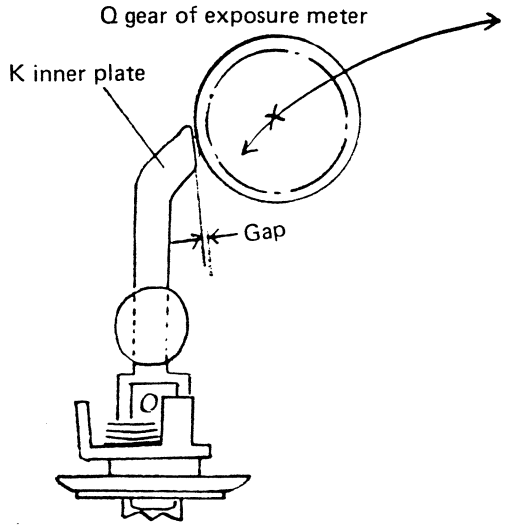
Based on test data at factory

Upper and lower limits of range where matching of CdS sells in A x A, A x B, etc. is possible.

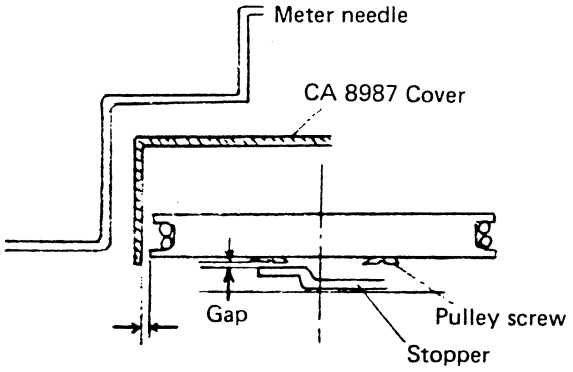


(4) Moving parts of exposure meter are slow in response.

Interference of Q gear with K inner plate.
Set the Zero-position on the + side and conduct maching again, or loosen three CA 9008 pulley screws and place the Zero-position on the – side by turning CA 8981 M pulley holder clockwise so that the Zero-position can be set on the + side by turning A lever eccentric.

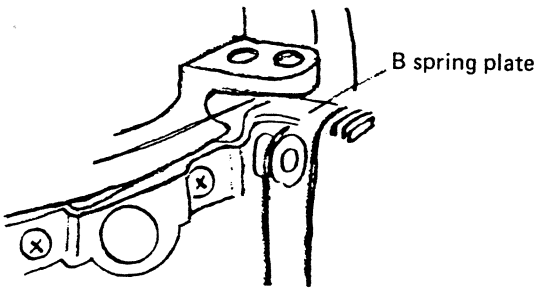


(5) Interference of pulley screw with stopper
Tighten CA 9008 pulley screw or chamfer the bore of pulley M.



(6) Interference of pulley M with cover
Refer to the above figure.
Adjust by bending CA 8987 cover.

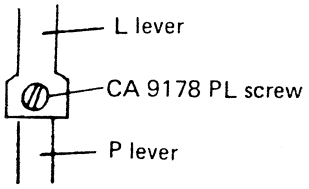
(7) Interference of spring gear with B spring plate
Adjust by bending B spring plate.



Remarks:
Making sure of the cause
When the ASA dial is set at 100, the meter does not response to change in the shutter speed or exposure.
Set the ASA dial at 25, back out CA 9141 rewinding release lever. If the meter needle swings in quick response to change in the shutter speed or exposure, Q gear is considered to be interfered with K inner plate.

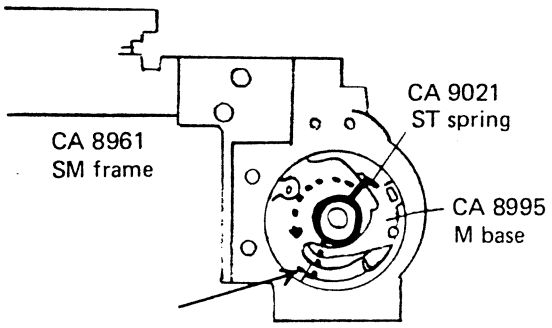
(8) Interlocked with ASA dial unsatisfactorily.

L lever and P lever are mounted incorrectly.
Install L lever so it is parallel to R lever, fully tighten CA 9178 PI screw, back it off 90°, and lock it with Araldight.

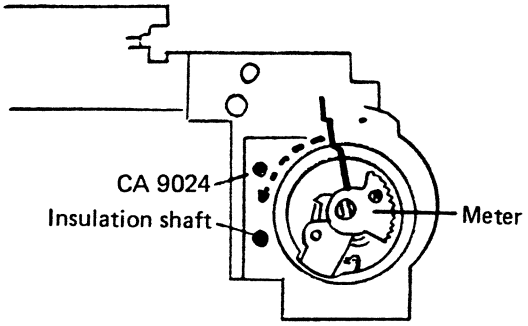


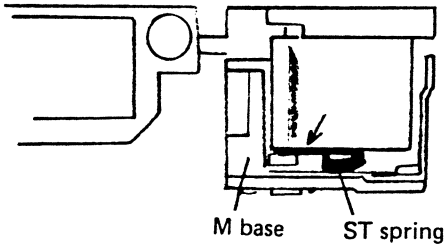
(9) CA 9021 ST spring is out of place.
How to hook up CA 9021 ST spring.
(Procedure for installation of SM frame on the meter)

1) Hook ST spring on to cut in CA 8995 M base.



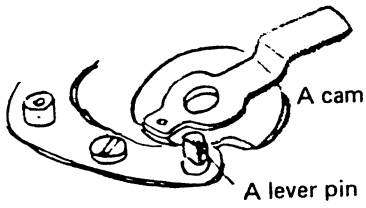
2) Give tension to CA 9021 ST spring and hook it on to A position of M base (in the above figure).
3) Install the meter in CA 8961 SM frame as shown below, and hook up ST spring.





4) While taking care not to bend the meter needle, turn the meter to the left so that the meter needle moves in between the insulating shafts.

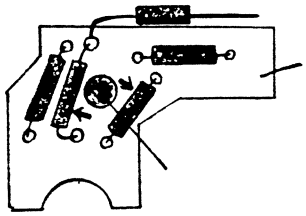
Remarks:
When the ASA dial is set in the range from 25 to 1600, the A lever pin should move responsing to the A cam.



(10) Poor soldering
Check 9057 (Plate), various resisters, and lead wires for poor soldering or short-circuit, and make necessary repairs or adjustments.

(11) Position of resisters
Check the following points and make necessary repairs or adjustments:

- o Is the resister soldered onto the printed board as tightly as possible?
- o Isn't the register in contact with 9108?
- o Is the printed board fixed closer toward the surface of the rails on the camera body?



(12) Disconnection of Wire in the Mechanical Part (No needle Swing)
Remove the lead wire by unsoldering and check the conductivity of the mechanical part. If disconnection is found, replace the whole meter assembly.

3. Improper Operation of CA 8879 (Ring)

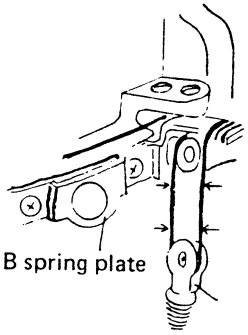
(1) Deformity or rough edge of CA 8879 and protrusion at the string adhesion.

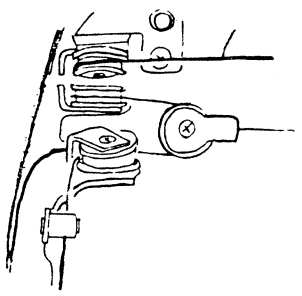
Replace 8879.

Method of Replacement:

- o With Cemedine 3000RS, bond the tips of the strings on 8879 as they were. (If they are bonded at the same position, it will give no problem in their functions.)
- o Do not allow the adhesive to protrude or heap up.

(2) Adjustment of CA 8946 (String) (dislocation and entanglement) 8946 is to be threaded as follows:

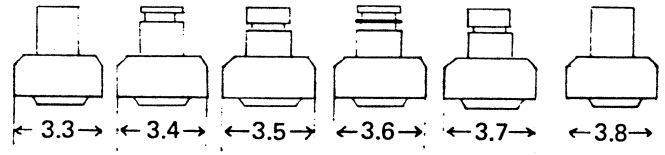




Remarks:

- o The string should not be dislocated from the pulley.
- o The width at A and B should be approximately the same.
- o When 8879 is turned until it hits the Cam Roller, there should be a space of less 1 mm between pulleys of the B spring and the B spring plate.

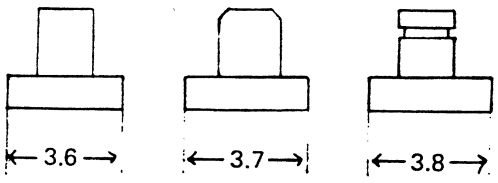
(3) Improper selection of CA 8933 (Roller) (diameter)
8933 comes in 6 types (see next page).
Referring to the checkup column on the right, make a proper selection and check the operation.



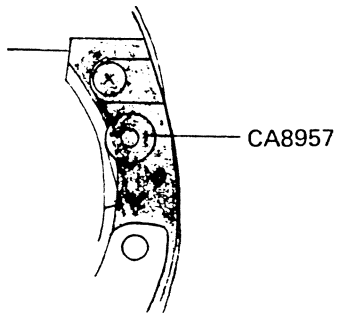
CA8933a CA8933b CA8933c CA8933d CA8933e CA8933f

Checkup:
8933 should turn smoothly and accurately without an extreme difficulty such as stoppage and uneven movement.

(4) Improper diameter of CA 8957 (Roller)
8957 comes in three types. Referring to the checkup column make a proper selection and check the operation.



CA8957a CA8957b CA8957c



Do not touch 8957 directly with bare fingers.

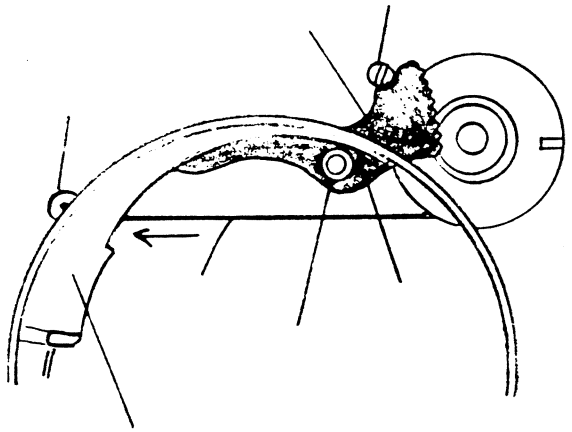
Checkup:
8957 should always be protrusive from the surface where 8879 is joined with 8702.

A little space may be permissible between 8957 and 8879. (If the roller selection is made allowing no space between them, it sometimes causes poor returns of 8879.)

(5) Spring pressure of CA 8951 (Holder) too strong.
8951 should be checked for filth or deformity. Make necessary repairs or adjustments.

4. Improper Adjustment of the Cam Gear Positioning Screw:

(1) Adjustment of the Cam gear positioning screw.
When 8945 is pulled fully toward the arrowed direction, the space between 8879 and 8925 should be with 0.3 mm. An adjustment should be made to fulfill this requirement by the Positioning screw.

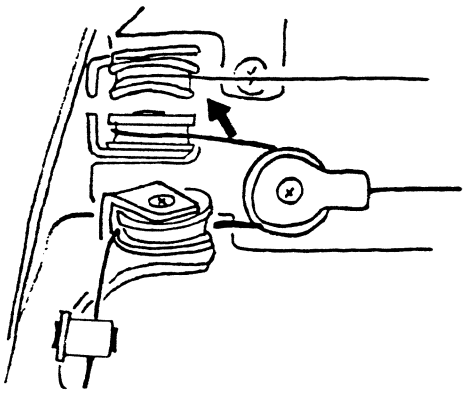


Checkup:

- o Upon adjustment, there should be a space between the A and the stopper pulley.
- o When 8879 is turned to its fullest extent, the A should not hit 8925.

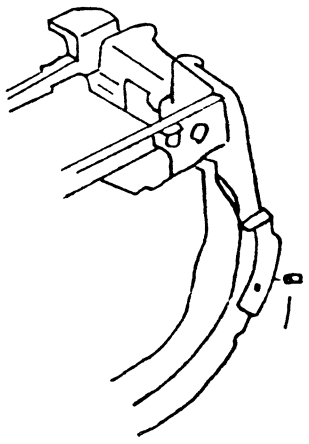
5. Dial Gear Operation:

(1) Adjustment of CA 8944 (String)
8944 (the string for the dial gear) should be threaded as follows. When threading, it should be started from the arrowed ↖ direction to avoid crossing with the String.



Checkup:

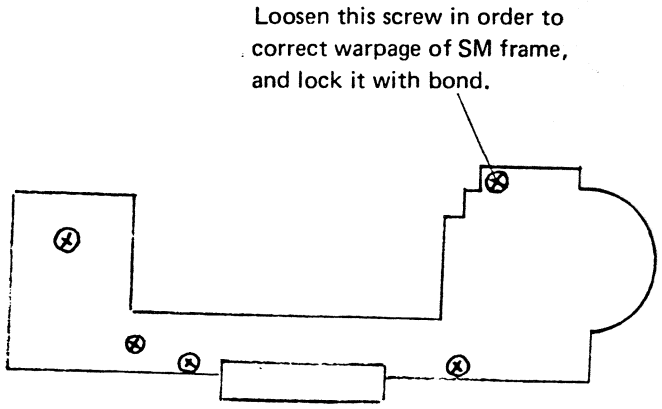
- o If the meter is not mounted onto the Front Die-Casting, attach a 12 gr. weight at the tip of the string and check the operation.
- o Each pulley is to turn smoothly and accurately.
- o Tolerance on the dial gear should be 0.1 or less.
- o When the dial gear is rotates, 8924 should not move.



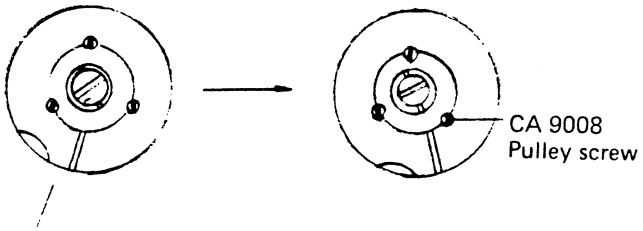
(2) Tolerance adjustment on the dial gear (8880)
An adjustment is made with 8959 to bring the tolerance on 8880 to 0.1 or less.

6. SM Frame Replacement

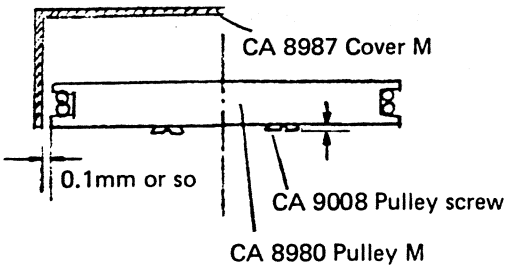
(1) SM frame cracks
Meter moving parts are fualty.
1) Set the shutter speed are fualty.
2) Desolder the meter switch lead wire.
3) Remove the S base and prism stopper, and remove five SM frame mounting screws.



4) Memorize the position of pulley M when it is free from tension and the shutter speed is set at 1/1000.
   - o Install pulley M in the original position on the new SM frame.
   - o When the string of pulley M is cut and replaced, rotate it a little to the left as shown below and install.



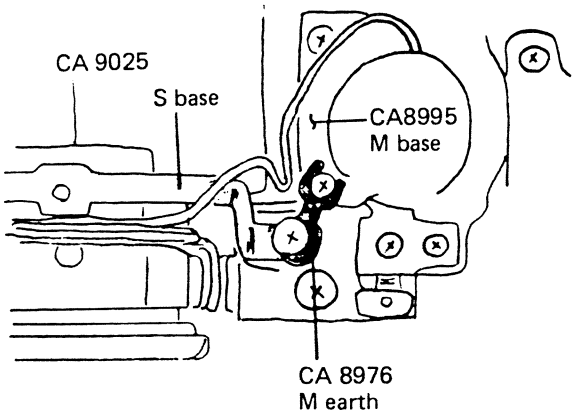
5) Remove three CA 9008 pulley screws.
6) Remove CA 9057 printed circuit lead wires, and SM frame can now be removed.
7) Install CA 9880 pulley M in the original position on the SM frame.
   Projection of CA 9008 pulley screw should be 0.1 or less.
   CA 9008 pulley screw should be locked with pliobond.
   The gap between CA 8987 cover and pulley M should 0.1 mm.



8) Pulley M string should be wound 2 turns to give tension.
9) To install SM frame, hold the camera in the normal photographing position and pull it toward your left-hand side.
This is required to prevent CA 8984 Q gear from contacting CA 8788 ST gear.
When CA 8701 front casting interferes with meter needle, place a washer under the SM frame.
After installing the SM frame, check the play of connecting pipe. The play should be 0.3 mm or less with the shutter set at 1/1000.

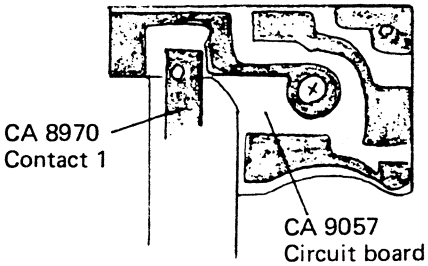
7. With the main switch turned on, the meter needle does not swing.

(1) M earth does not conduct.
Check for Moltpren pinched between CA 9025 S base, CA 8995 M base and CA 8976 M earth which causes interruption of conductivity.



(2) Lead wire is broken.
Check for desoldered or broken portion of black lead wire coming from meter moving parts. Repair as required, or replace lead wire.

(3) Short in circuit
Using a tester, check the following parts and repair as required.
1) Short between battery contact and die cast body.
2) Short between CA 8970 contact 1 and CA 9057 circuit board CA 8970 contact 1.



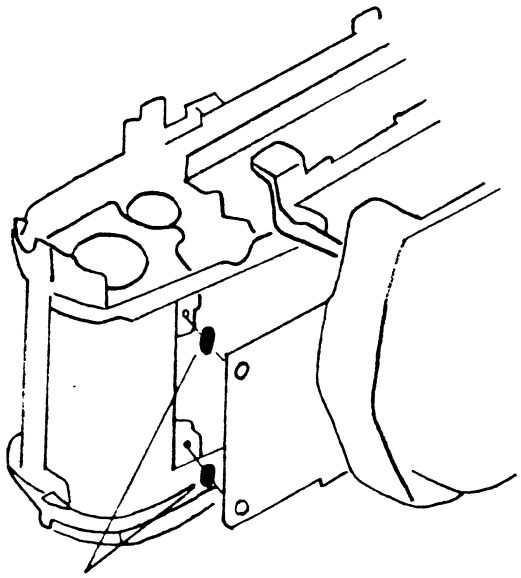
IV. MAJOR FUNCTIONS

1. Poor Focus

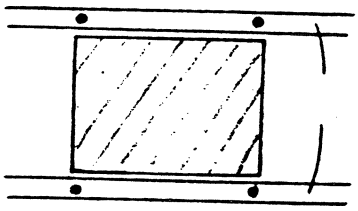
(1) Adjustment of flange back

$fc = 46.00^{\pm 0.02}$

For adjustment, 9106 Washer (t = 0.01 round) or 9107 Washer (t = 0.02 ◎) or CA 9170 Washer 3 (t = 0.08 ◎) is to be placed between the camera body and the Front Die-Casting.



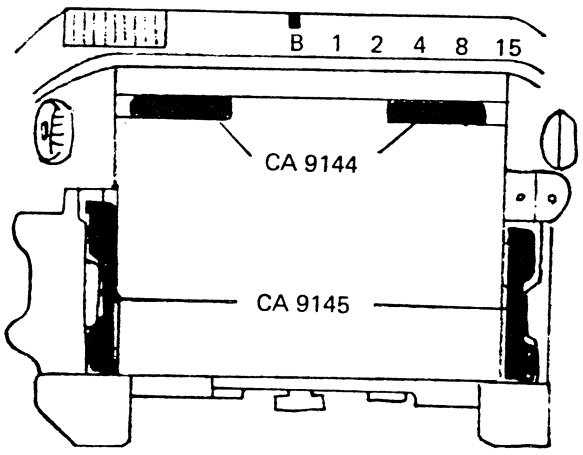
Checkup:
KC-0070G #01 Olympus M Mount U and KC-0070G #3 46.00 gauge are to be used to measure the four points on the rails.



Parallelism (the difference between measureed points) should be less than 0.02.

(2) Focus adjustment for the viewfinder.
A proper type of 9144 (Washer) and 9145 (Washer) is to be selected out of 8 types available for each. Pick the type with the same thickness and use them in a pair.

CA 9144 a	t = 0.04	CA 9145 a	t = 0.04
CA 9144 b	t = 0.06	CA 9145 b	t = 0.06
CA 9144 c	t = 0.10	CA 9145 c	t = 0.10
CA 9144 d	t = 0.15	CA 9145 d	t = 0.15
CA 9144 e	t = 0.20	CA 9145 e	t = 0.20
CA 9144 f	t = 0.25	CA 9145 f	t = 0.25
CA 9144 g	t = 0.30	CA 9145 g	t = 0.30
CA 9144 h	t = 0.35	CA 9145 h	t = 0.35

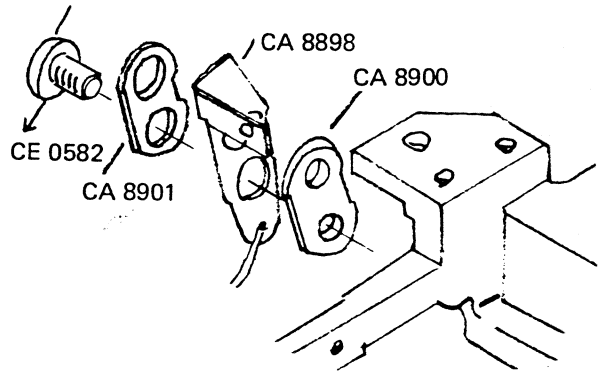


2. Strobe flash does not operate.

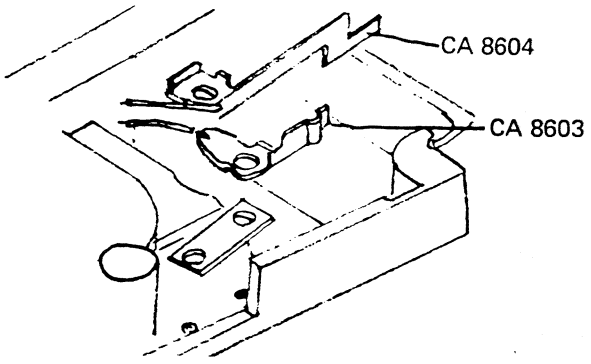
CA 8598 FX synchro contact plate insulation is faulty.

(1) Remove front casting ass'y.

(2) Remove two PUK2 - 310SO on CA 8898 FX synchro contact plate in CA 8895 socket.
- o Clean CA 8898 FX synchro contact plate.
- o Replace CA 8900 insulating plate.
- o Replace CA 8901 insulating plate.
- o Replace PUK2 - 310SO with CE 0582 F screw and lock with Pliobond.



(3) Clean contact surfaces of CA 8603 FX synchro contact plate and CA 8604 F synchro contact plate.



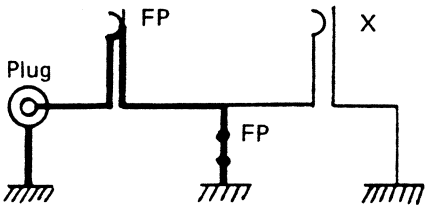
Checking defective parts

In many cases, it is impossible to find the cause of trouble even if ohmmeter is used for checking, after the film is wound up or the shutted is clicked.
In this case, proceed as follows:
Set the shutter speed at 1/1.
Push the release button.
Wind the film about half of the roll with the shutter set at 1/1.
In this case, insulation resistance should measure 30 MΩ or more at 500 V.

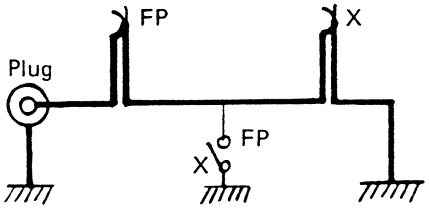
Commentary on symptom of defect

When the X contact and FP contact are in good condition, the circuit is formed as follows:

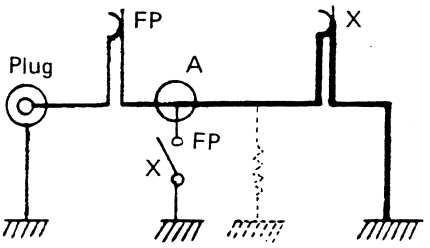
In the case of FP contact



In the case of X contact



When CA 8898 FX synchro contact point insultation is faulty with X contacts being closed.



Insulation is faulty at the A portion and therefore, it can be said that a resistor is inserted in the circuit. As a result, the strobo trigger condenser is not charged, thus causing strobo failures.

Even after the trigger condenser is charged, the strobo does not give light because current does not flow quickly; that is, current flows gradually due to poor insulation (likened to the insertion of resistor).

Remarks:

Using an insulation efficiency meter check insulation resistance. The meter should read 30 MΩ or more at 500 V.

Contact efficiency

X: 70% or more when measured with shutter set at 1/60 at intervals of 1 ms.

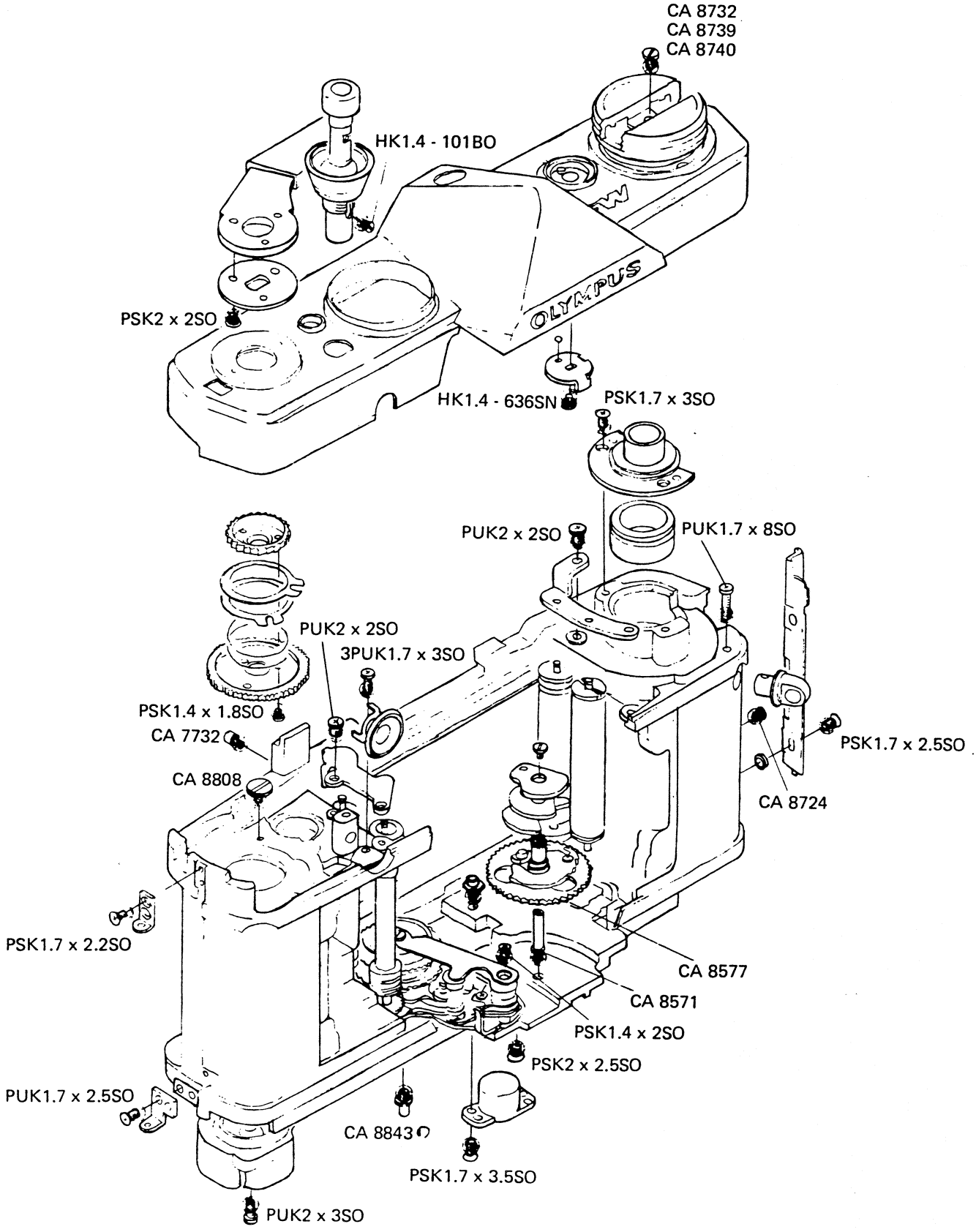
FP: 70% or more at intervals of 2.5 ms.

F

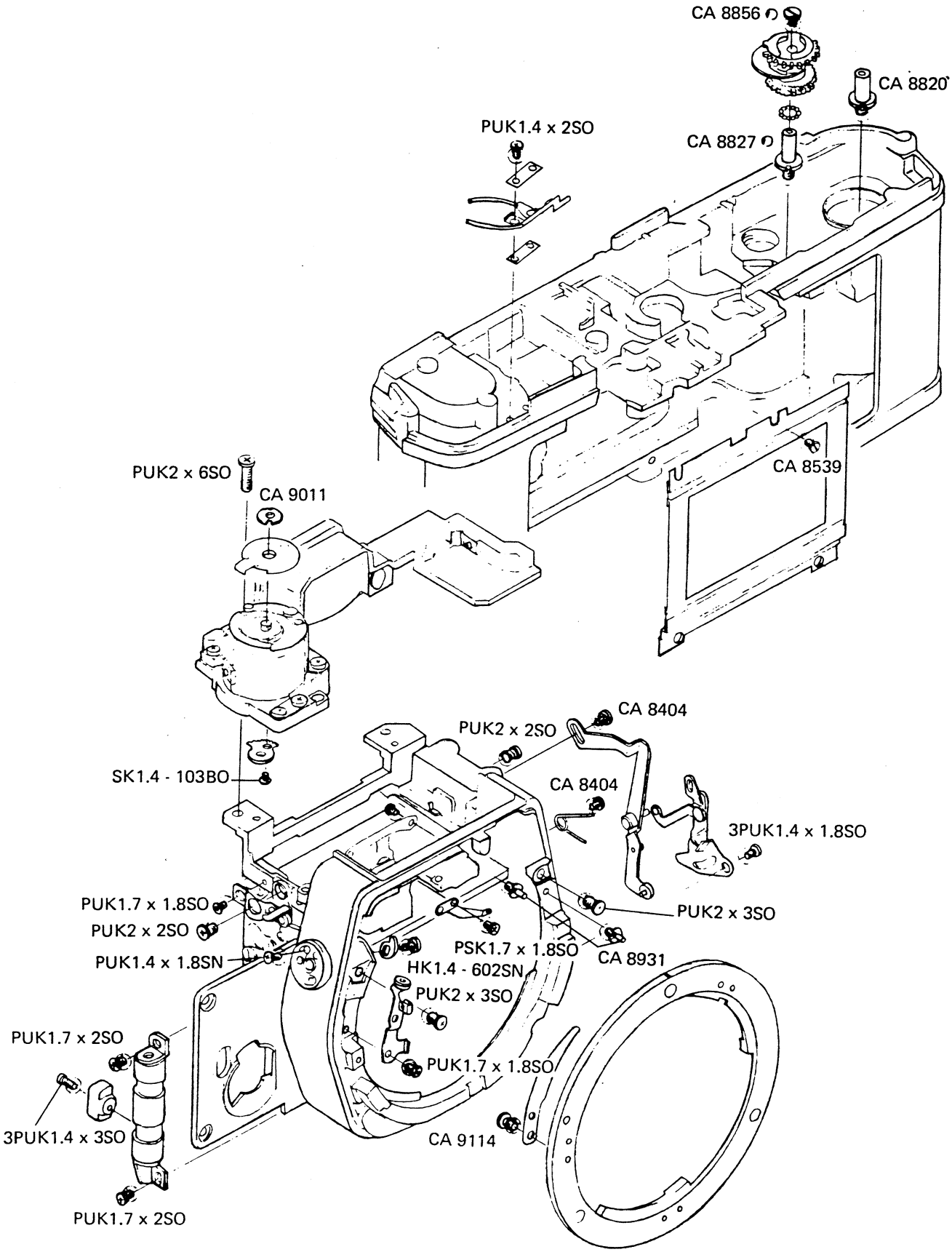
PARTS WHERE OIL, GREASE, ETC. SHALL BE USED

F. PARTS WHERE OIL, GREASE, ETC. SHALL BE USED

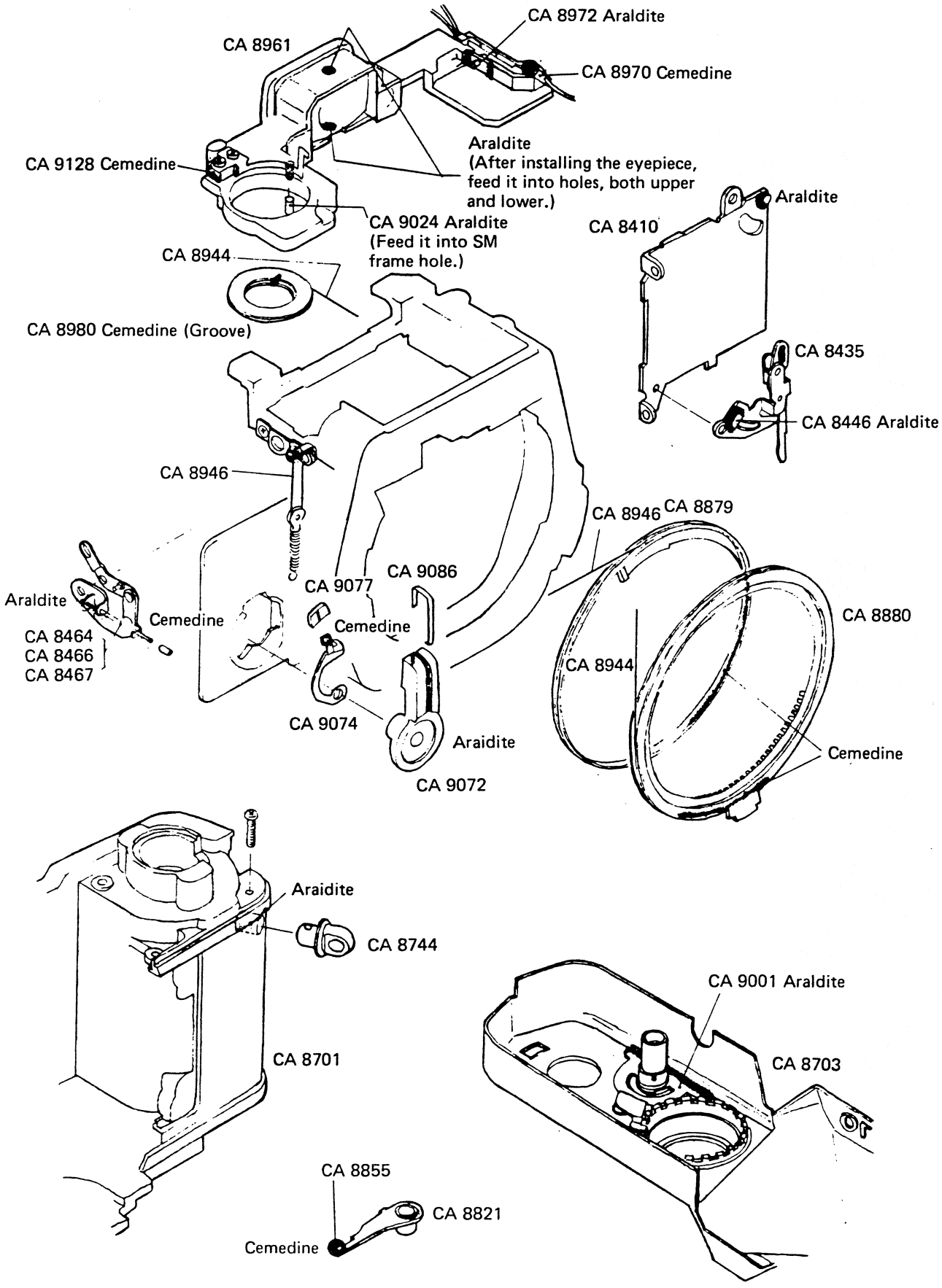
LOCKTITE (Cement)



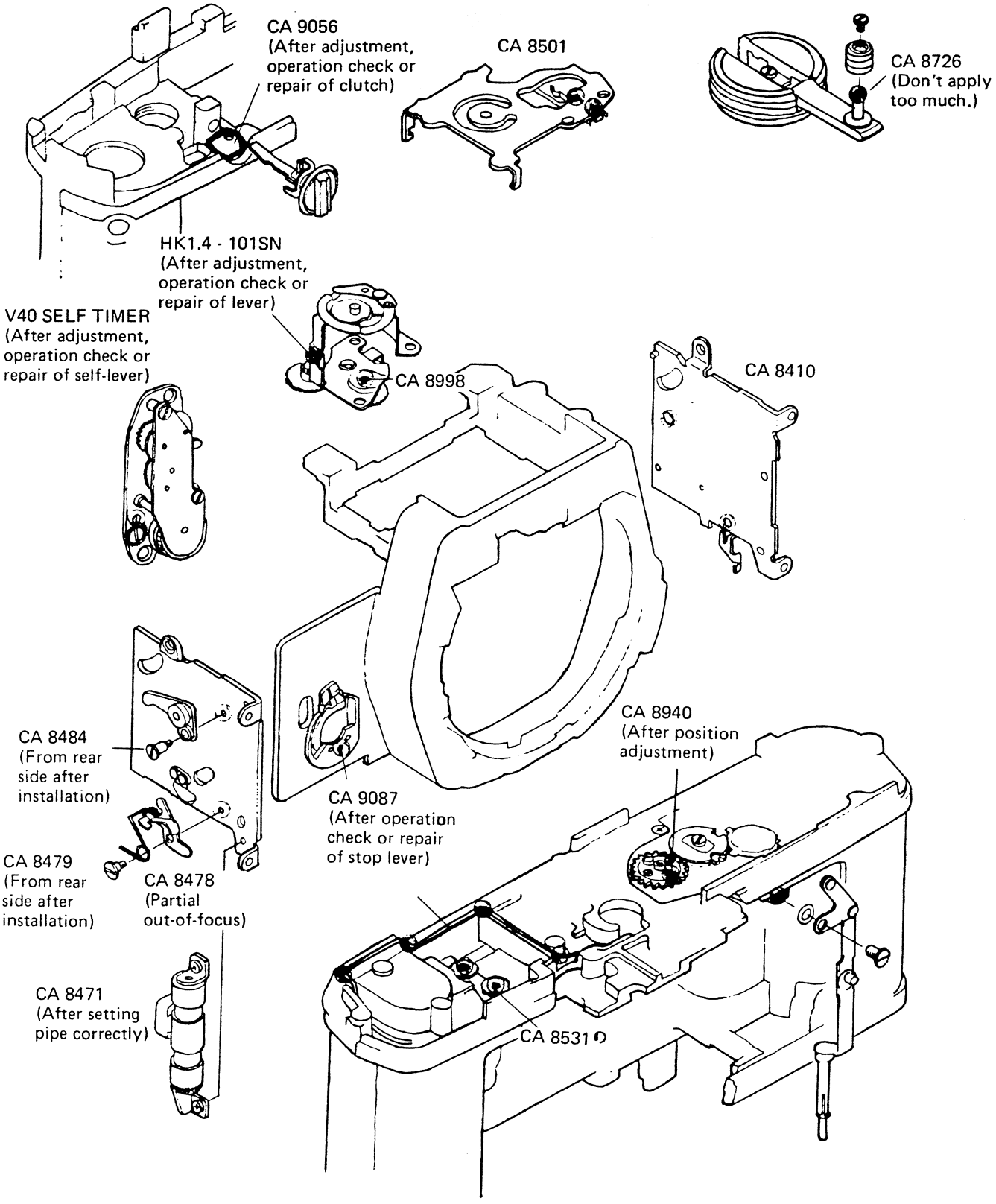
LOCKTITE (Cement)



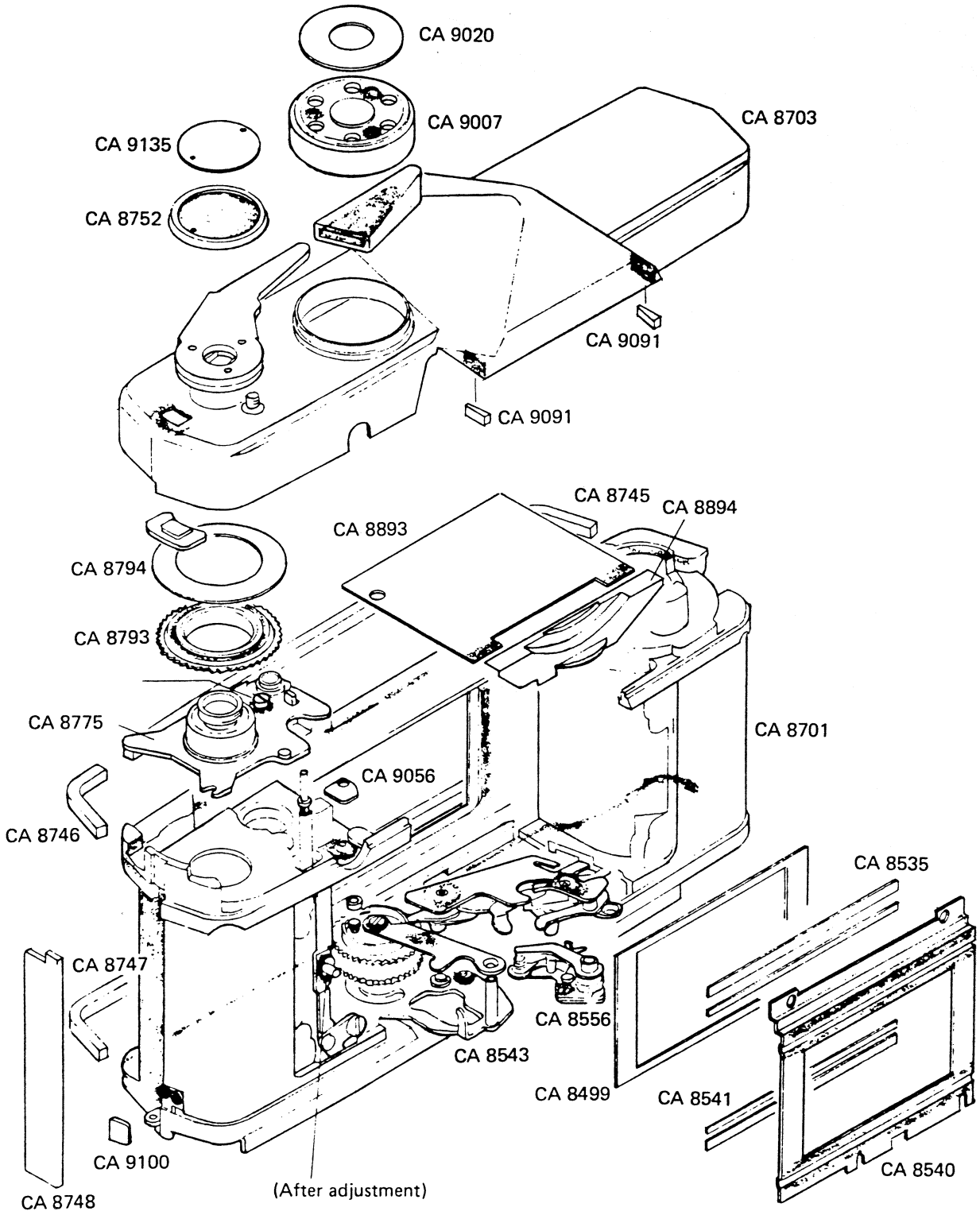
ARALDITE (Cement)
CEMEDINE

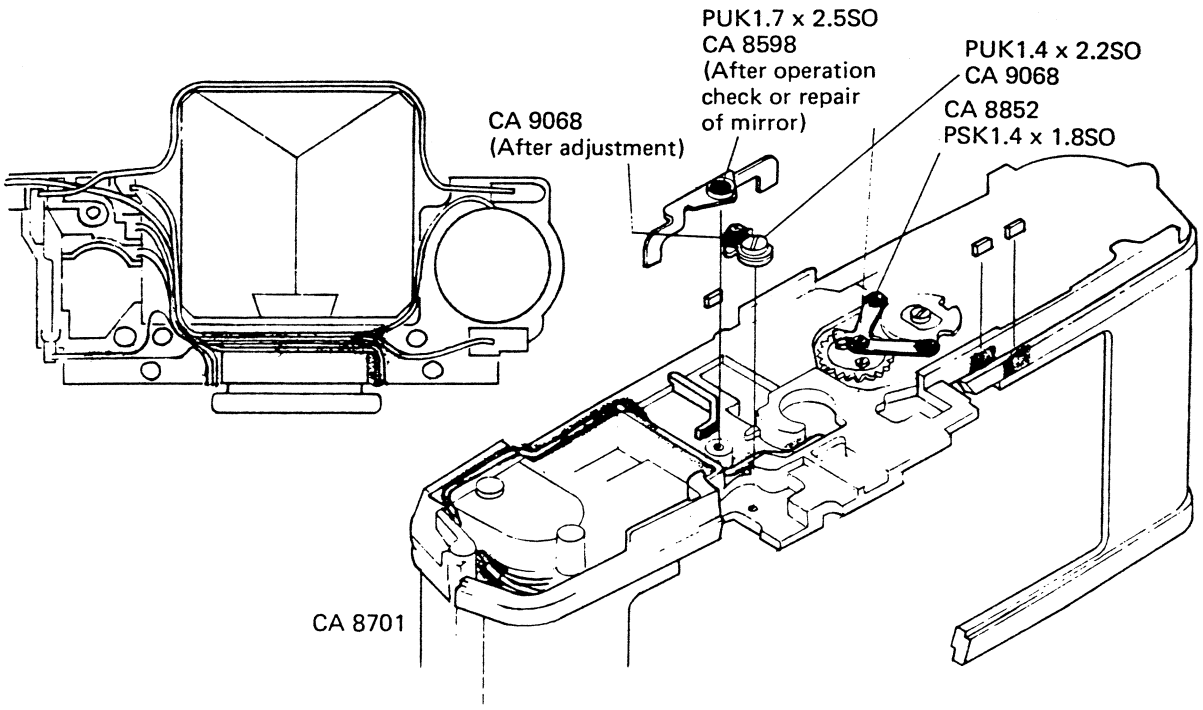


ALON ALPHA (Cement)

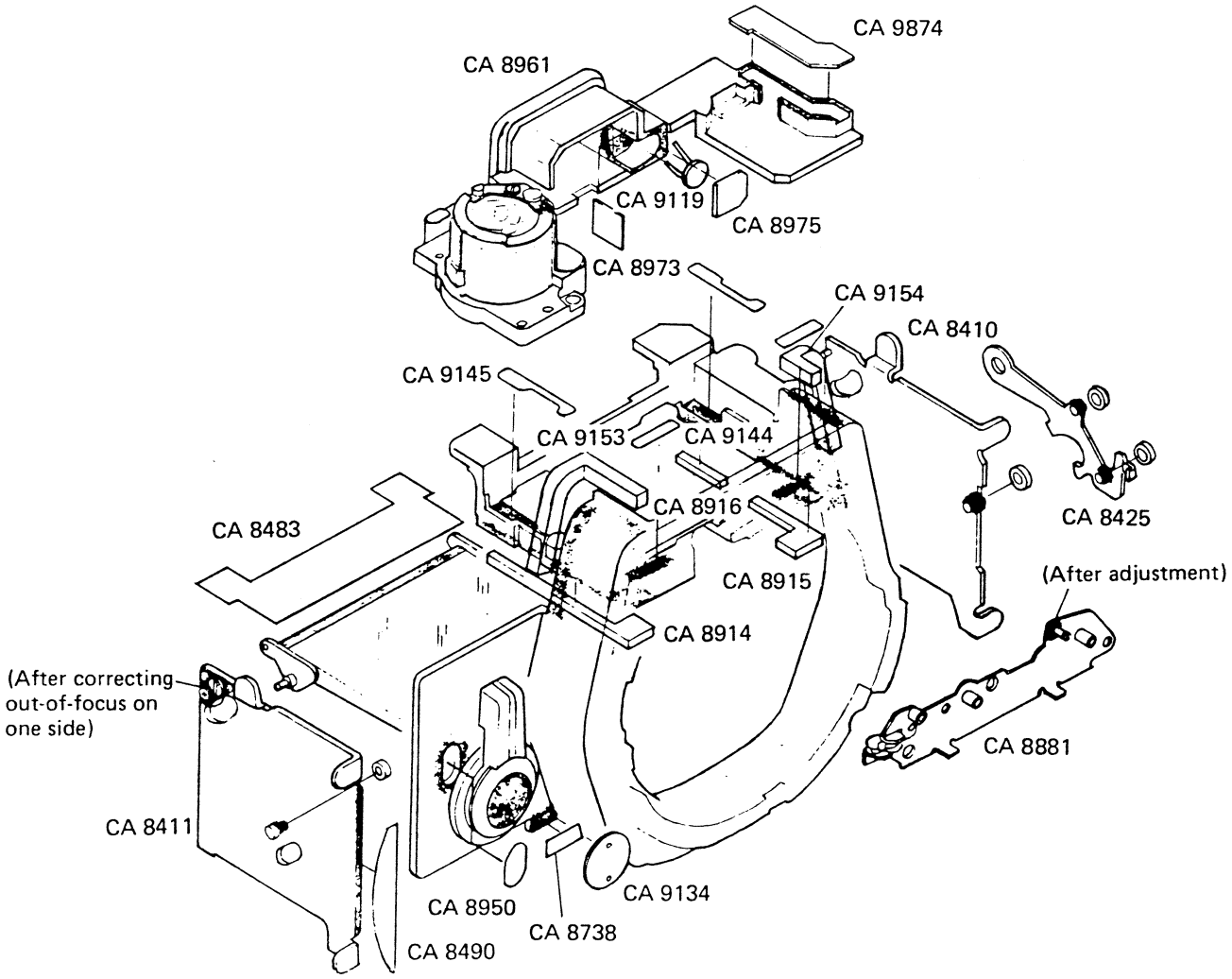


PLIOBOND (Cement)



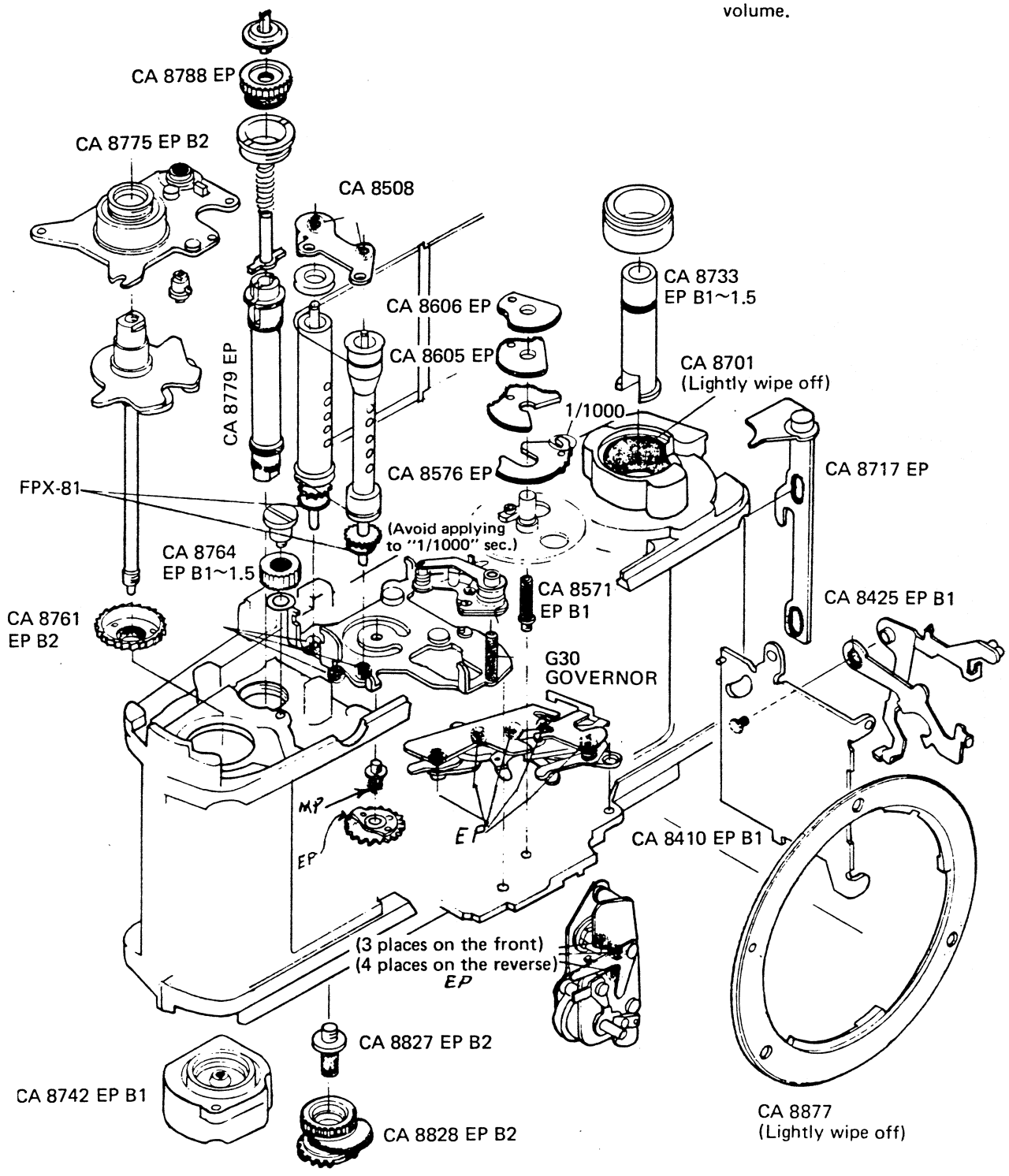


PLIOBOND (Cement)

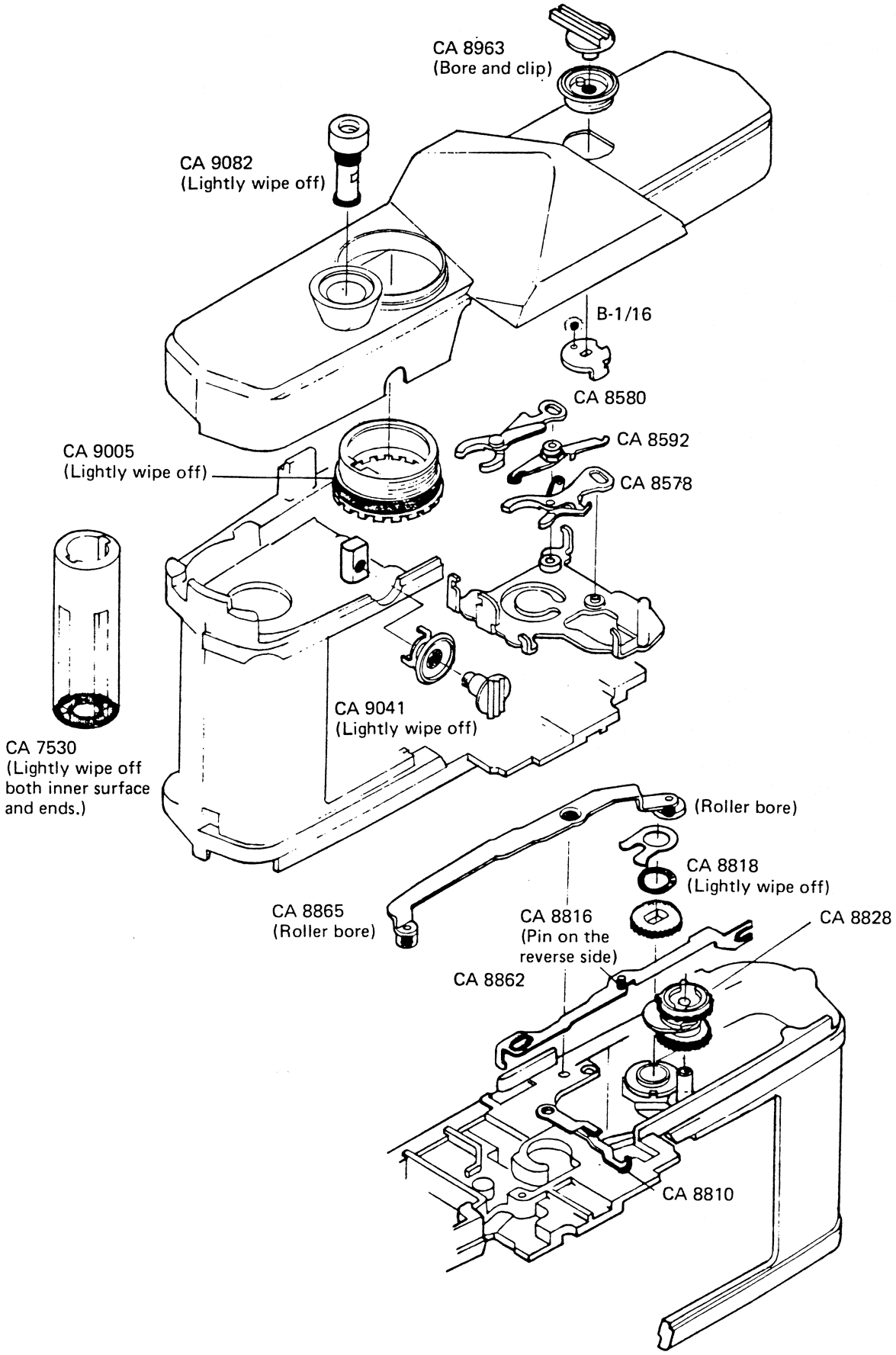


COSMORUBLIC 270A (Oil)
PLASTILUBE EP (Grease)
FPX-81 (Oilproof fluid)
MP - MOLLY POWDER

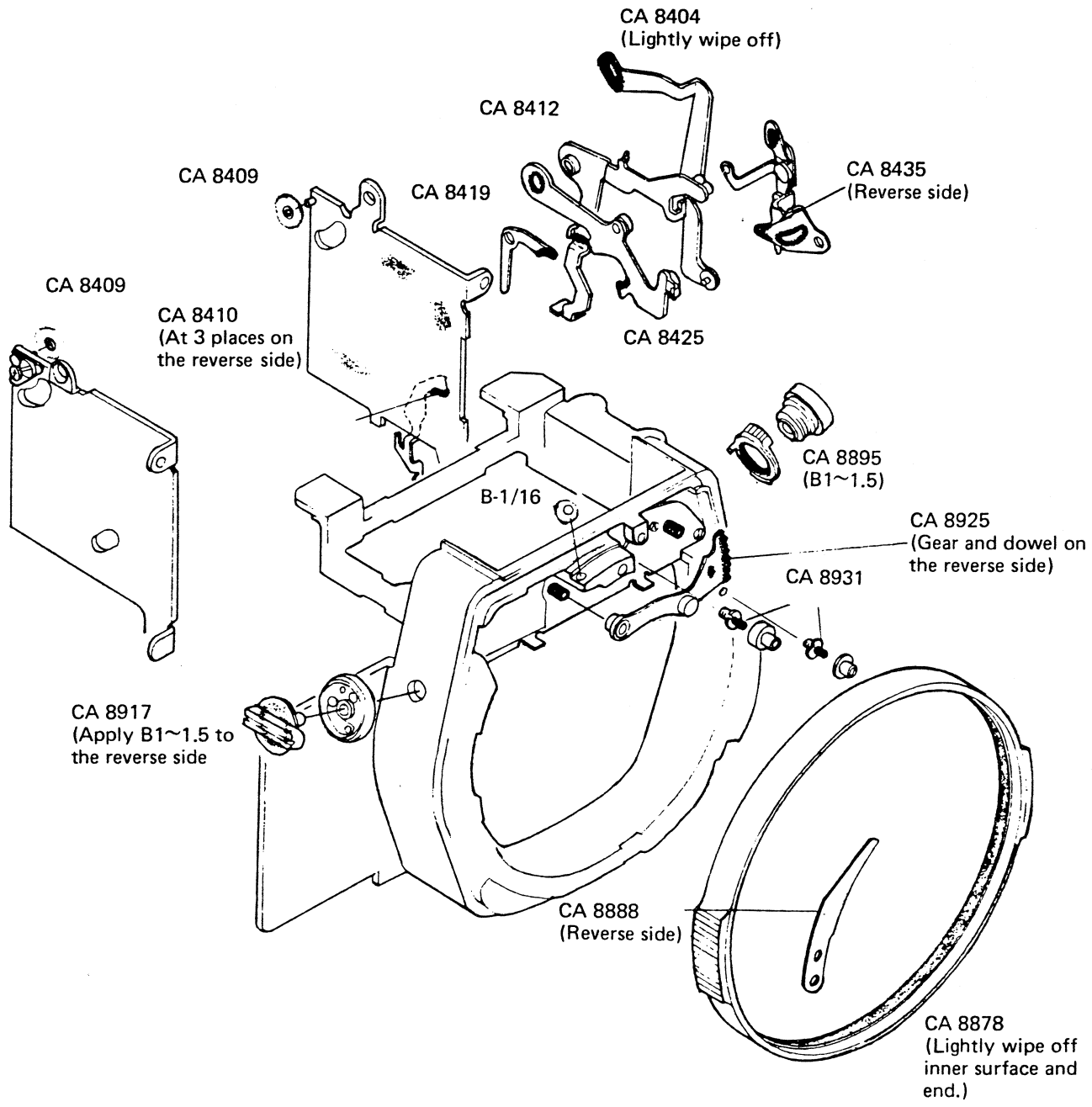
Note:
"EP B1" means the quantity of grease equivalent to a 1-mm diameter ball in volume.



PHOTOLUB 023P
MOLYKOTE GREASE



PHOTOLUB
MOLYKOTE (Grease)



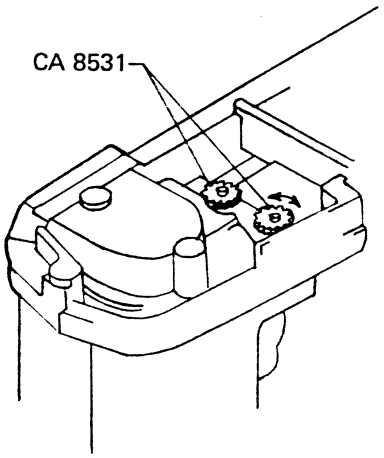
G

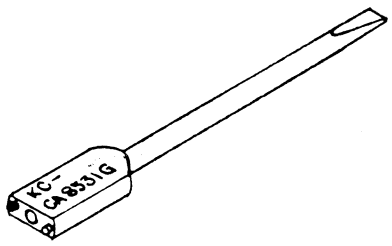
SPECIAL TOOLS

G. SPECIAL TOOLS

KCCA 8531 Wrench 3m #OT0023

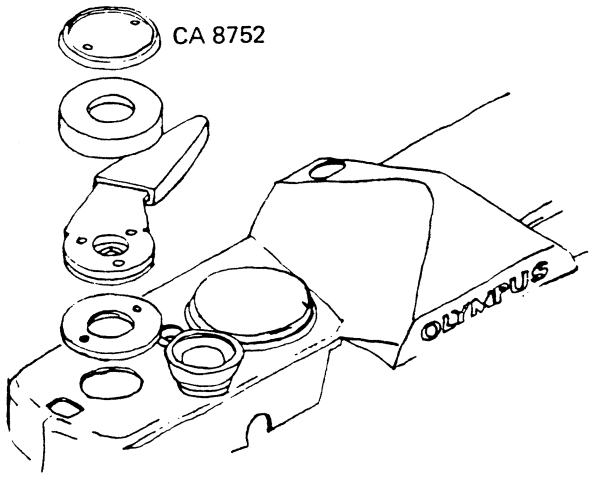
To be mounted onto (Diam. 3mm, Holder) for use. Fit its end in between teeth and adjust tension by turning the tensioner nut.

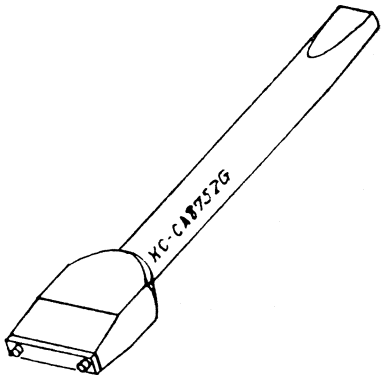




KCCA 8752 Wrench OT0025

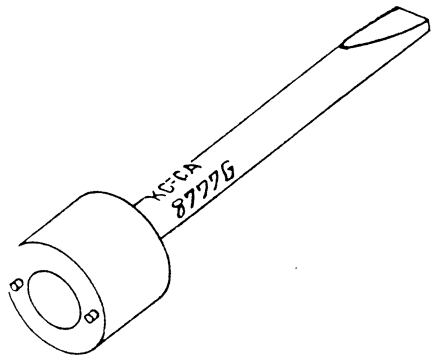
To be mounted onto (Diam. 6mm, Holder) for use. To be used in dismantling CA 8752 (Cap) and CA 9135 (Plate).

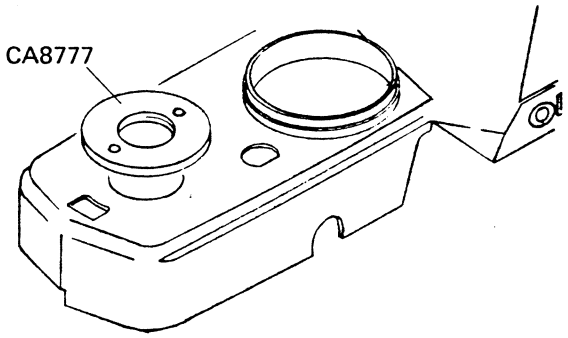




KCCA 8777 Wrench OT0025

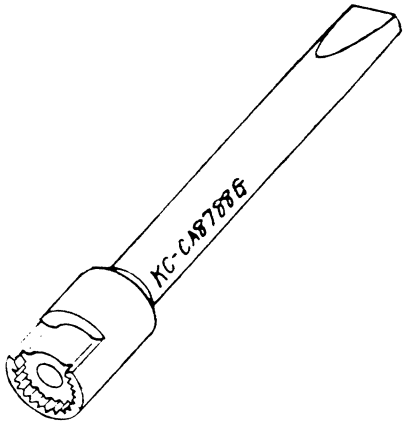
To be mounted onto (Diam. 6mm, Holder) and insert it into holes in CA 8777, and remove CA 8777 by turning it.

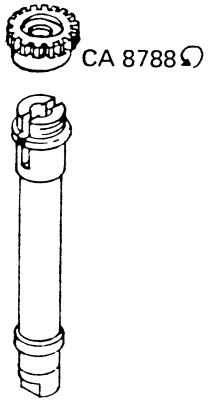




KCCA 8788 Wrench OT0025

To be mounted onto Diam. 6mm Holder) and used for mounting or dismounting CA 8788 (Gear).

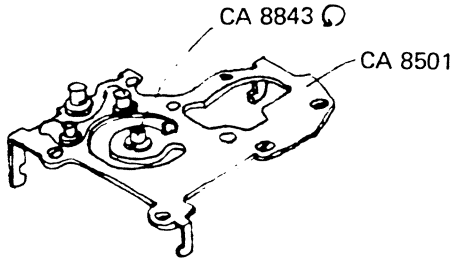




KCCA 8843 Wrench OT0025

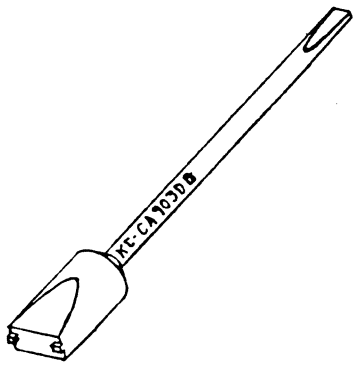
To be mounted onto , (Holder) and used for mounting (or dismounting) CA 8843 (Shaft) onto CA 8501 (Plate).

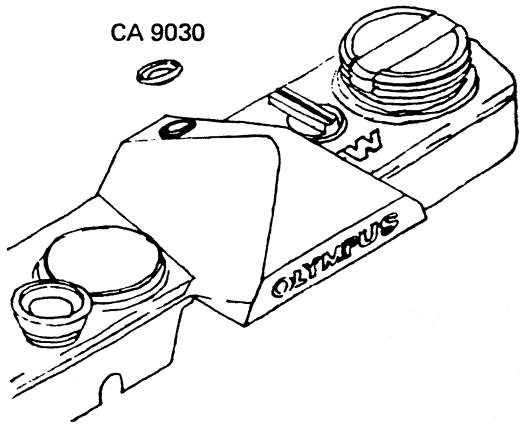
Remarks: Do not touch both CA 8843 and CA 8501 with bare hands.



KCCA 9030 Wrench OT0023

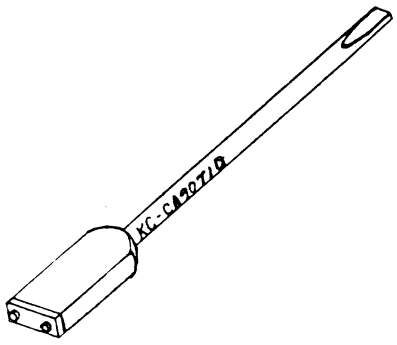
To be mounted onto (Diam. 3.2mm Holder) and to be used for mounting or removing CA 9030 (Nut).

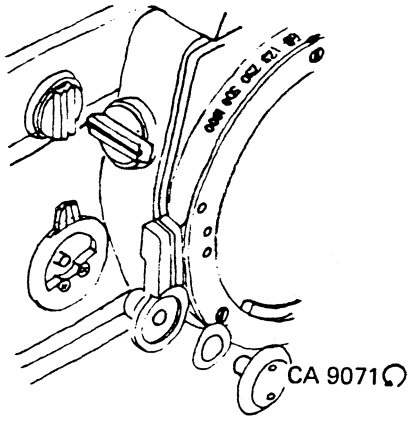




KCCA 9071 Wrench OT0023

To be mounted onto (Diam. 3.2mm Holder) and used for mounting or dismounting CA9071 (Stopper).





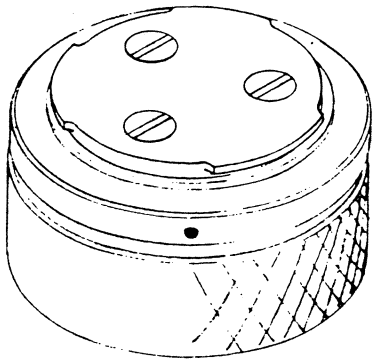
KC 0070 #01 Mount Stage

For measurement of flange-back 46.00 for OM-1, in the same manner as for Models FTL and FT.

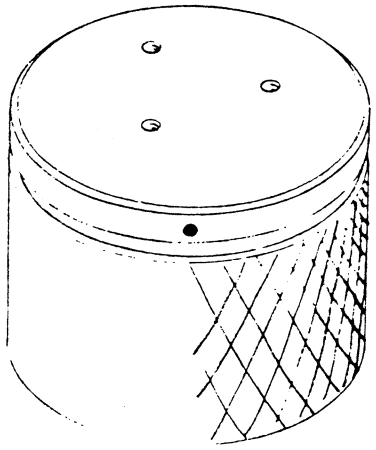
KC 0070 #03 Measurement Gauge

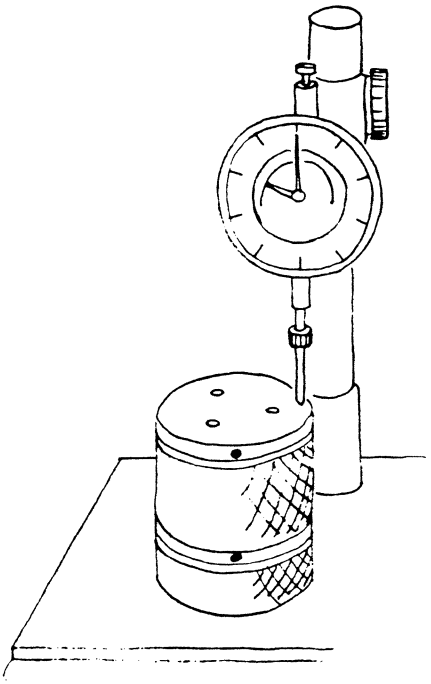
(1) Place KC-0070G #3 on top of #1, and set the 0 (Zero) position.
(2) Remove #3 and mount the camera body onto #1.
(3) Measure the rail surface by the dial gauge. The discrepancy between the 0 (Zero) position should be within $0^{\pm 0.02}$. ($46.00^{\pm 0.02}$)

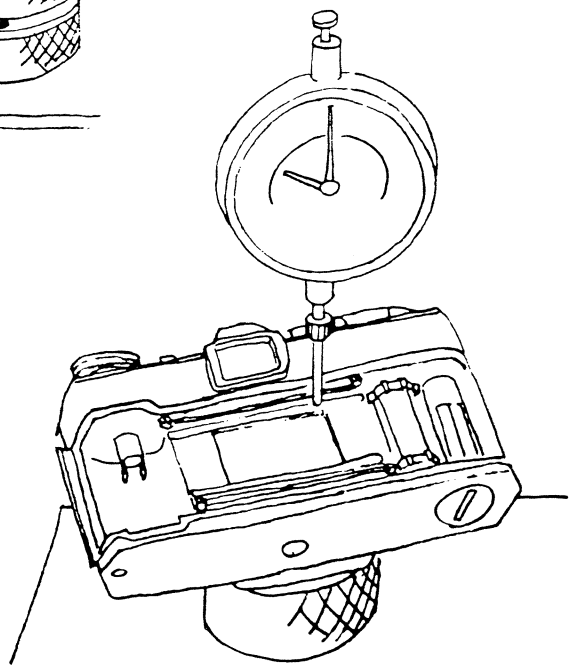
KC0070 #01



KC0070 #03

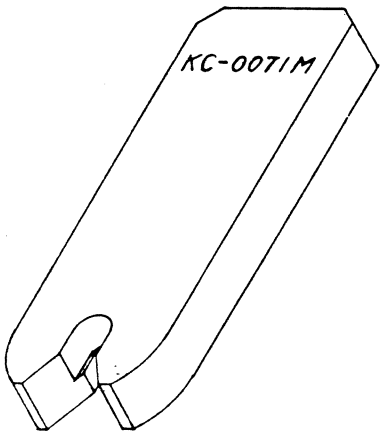


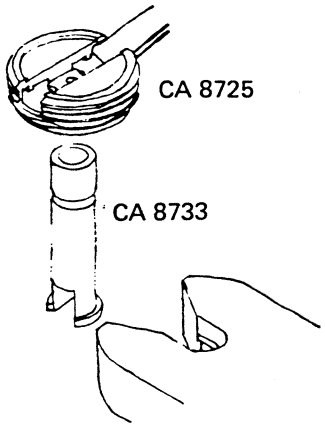




KC 0071 Wrench

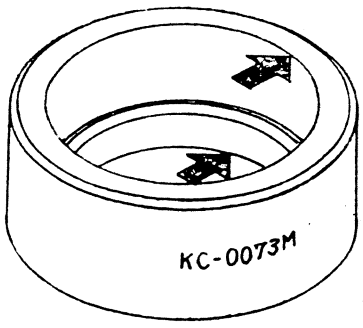
To be used in removing CA 8733 (Shaft) and CA 8725 (Knob). Pinch-holding the R. Shaft from outside, turn the R. Knob.





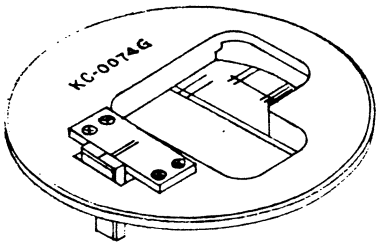
KC 0073 Lens Mount

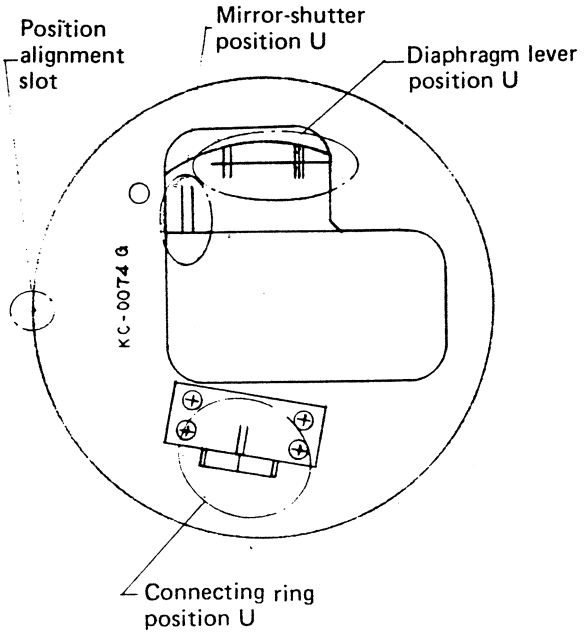
Place the OM lens on the larger diameter side of the lens mount.
Place the Pen F and FTL lens on the smaller diameter side of the lens mount.



KC 0074 Connecting Ring, diaphragm lever, and mirror-shutter positioning jig

Fit this tool in B mount, and check the position of connecting ring, diaphragm lever and mirror-shutter in operation.



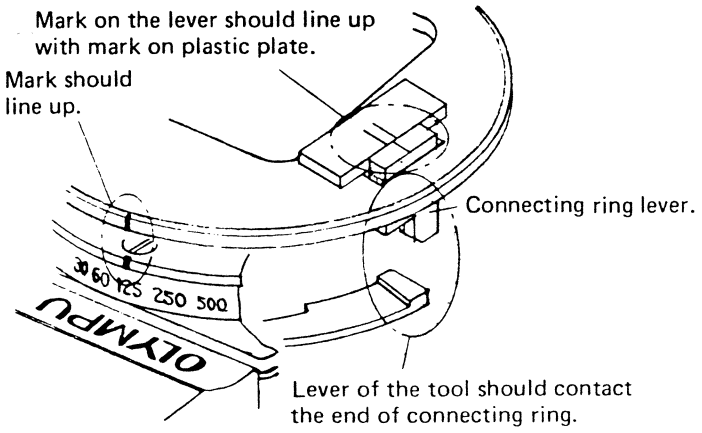


Usage:

(1) Bring the mark (Zero position on shutter dial) on the outer surface of B mount of the body to align with the mark on the outer surface of this tool, and fit it in place.
— The pin of this tool must fit in the key way on B mount. —

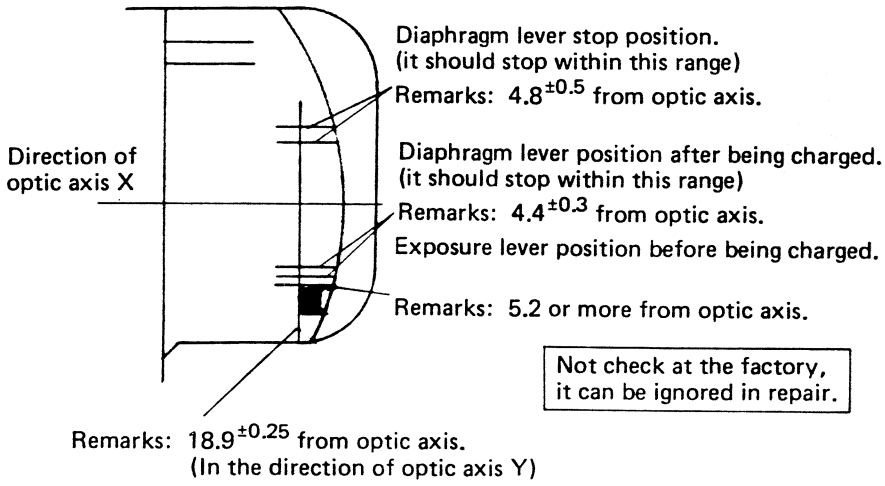
(2) Connecting ring position measurement
Fit the tool as described in (1) above, lightly snap the connecting ring lever with your finger and check to see that the mark on the ring is aligned with the mark on the plastic plate.

Remarks: If the pin fits loosely in the key way, move the tool to the right so the pin comes in tight contact and make measurements. (The same applies to the following.)
The angle from the key way center to the connecting ring end should be $122°30' {}^{+2°}_{0°}$.
The four screws securing the alignment plate are locked with LOCKTITE. When the alignment plate does not move smoothly, remove four screws from the stopper plate on the back of the alignment plate.
Do not loosen the two screws securing the connecting ring lever.
Three screws securing the acrylic a plastic plate are locked with LOCKTITE. If it has cracks, it should be sent out, together with the tool.



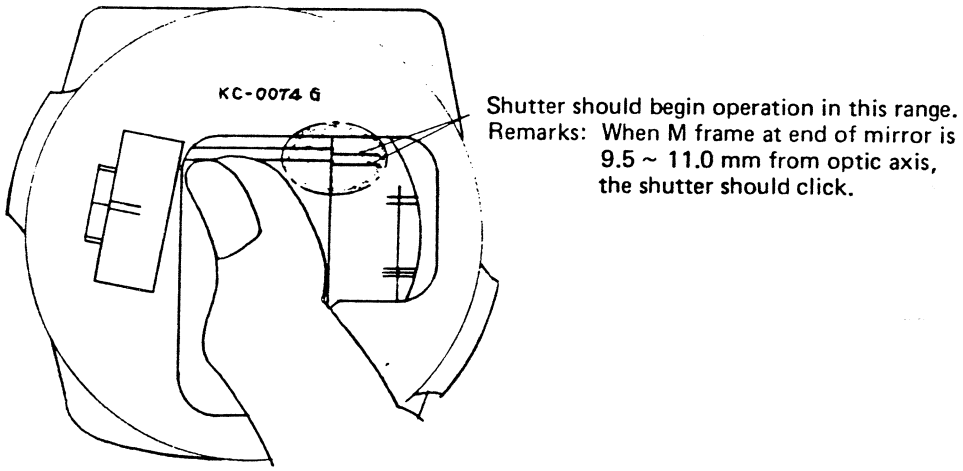
(3) Connecting ring position measurement

Fit the tool as described in (1) above, check to see that the diaphragm lever position (top end) should as follows:



(4) Mirror-shutter position measurement (Measurement of shutter timing)

- o Set the shutter at 1/4 sec.
  Note: Be sure to set shutter at 1/4.
- o Turn up the mirror slowly by turning the MU knob, and push the release button while supporting the M frame with your right thumb.
  Note: Take care not to leave your fingerprints on the mirror.
- o Move up the M frame slowly, and when the bottom end of the M frame comes in the range in the figure below, the shutter should begin operation.
  Note: Observe right from above because gap exists between the mark on tool and M frame.



KC 0075 4.5-mm-dia. drilling jig

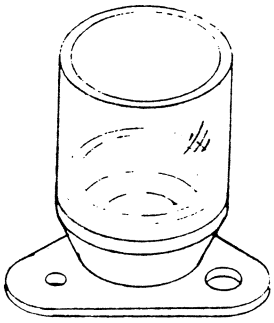
When modifying the body for motor drive use, this jig is used.

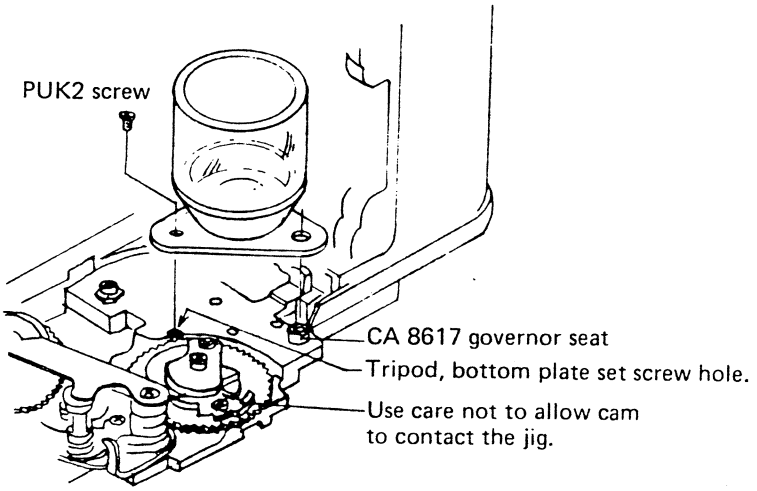
(1) Set the shutter speed at 1/2 or 1/4.
— Take care so shutter cam does not contact the jig. —

(2) Remove the front plate, governor, KL plate (CA 8862) and M release (9065).

(3) As shown below, fit "A" hole over the governor seat, align "B" hole with tripod seat-bottom plate set screw holes, and screw in PUK2 screw.
— PUK2 screw can be installed if jig is raised and tilted. —

(4) Make a hole with a 4.5-mm-dia. drill.
— 4.6-mm-dia. drill be used. Take care so metal dust does not fly outward. —





KC 0076 Shutter speed adjusting jig

Used to measure the shutter speed measurement (adjustment) after removing the front plate.

(1) Hold CA 8577 speed gear so its guide mark is on your side (on the B mount side). (Set the high cam at 1/1000.)

(2) Set the shutter dial (jig) at 1/1000.

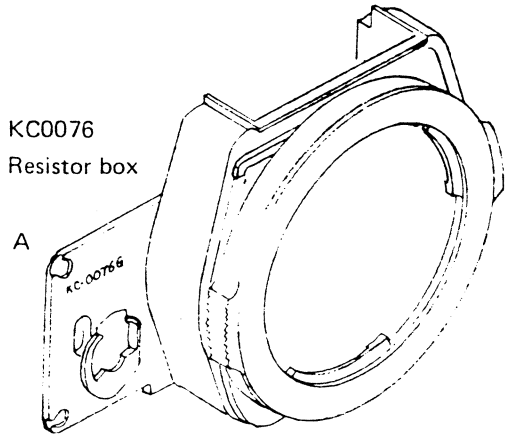
(3) Install the jig on the body. (The jig dial can be turned the amount of one tooth after installed.)

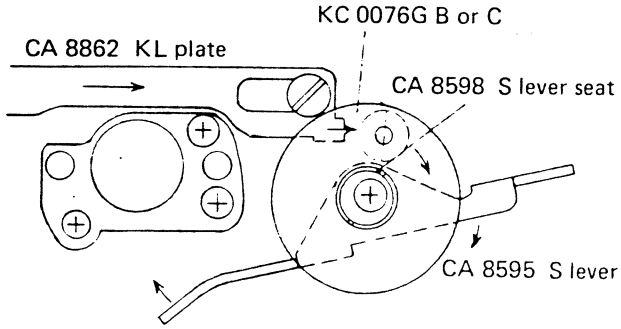
(4) Secure with screws.

(5) As illustrated below, place jig B or C on CA 8595 S lever.

(6) Place the bottom cover.

(7) Place it on the test machine and measure the shutter speed.



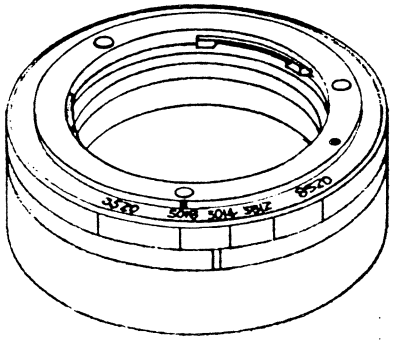


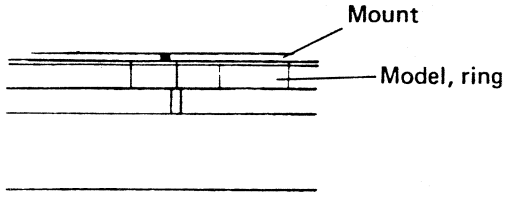
KC 0077 OM lens interlocking lever T

Used to check that the exposure interlocking lever for OM system interchangeable lens is positioned within the specified range.

(1) Install the test lens on the mount.
(2) By turning the model ring, align the mark on the ring with the engraved mark indicating the camera model in which the test lens is used. (Click stop)
(3) Set the lens at F11.
(4) If the engrave mark on the outer surface of model is between the two engraved mark lines on the outer surface of lever ring.

Remarks: Each lens should be in the F value ±50'.
However, the tolerance for F1.2 (MS 5512) is $^{+50'}_{-30'}$.

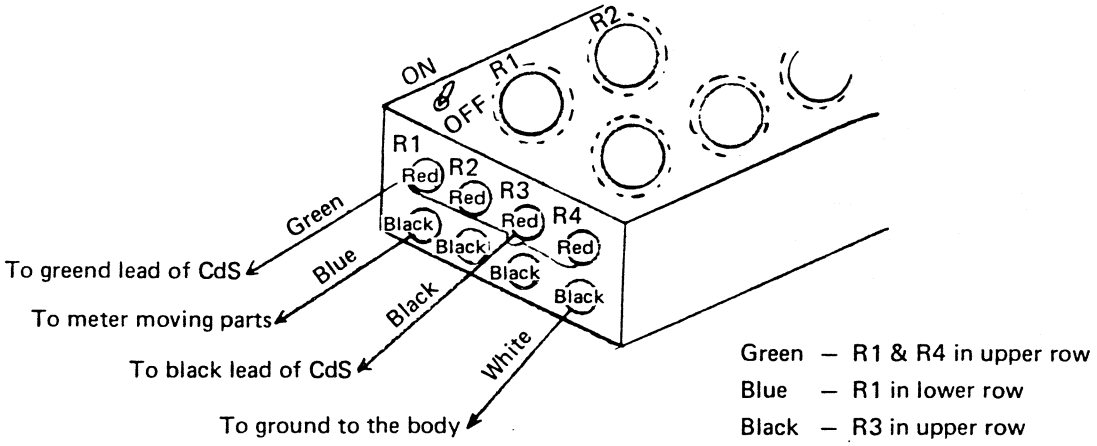




Resistor Box

Used for matching of MDS body meter.

(1) Connect lead wires as shown below.



(2) Connect all lead wires to the camera and also connect as follows:
(See the figure above.)

Green from R1 (R4) in upper row .....2 green lead wires of CdS
Blue from R1 in lower row .....Meter moving parts
Black from R3 in upper row .....2 black lead wires of CdS
White from R4 in lower row .....Ground to camera body

Solder the camera light source lead wire to CA 8970 contact 1 and 2 red lead wires of CdS to CA 8971 contact 1.

(3) Turn off the 0-adjustor switch, and set all resistors at the following standard values (guide).

R1	14.6 KΩ
R2	(10.0 KΩ)
R3	7.0 KΩ
R4	30.0 KΩ

The resistance of resistors in the upper row indicates a fine reading, and that in the lower row a rough reading and thus, the resistance of each resistor is the sum of resistance readings in both upper and lower rows.

Example: R1 in upper row is 200 and the same in the lower row in 13 K. In this case,
200 Ω x 13 KΩ = 13.2 KΩ

(4) Turn on the camera meter switch, set the camera in the light source box (LSBL1, LSBL7, LB-6), and proceed with matching of resistors according to "Service Information."
After matching, it is advisable to check the resistance of each resistor.

(5) Check the meter Zero-adjustor
Turn the Zero-adjustor switch from OFF to 0.ADJ, and connect the green lead wire of R1 in the lower row to the meter moving parts and the white lead wire of R4 in the lower row to the meter earth.
Mount MS 5018 standard lens and check the meter Zero-adjustment. For procedure, refer to "Service Information."

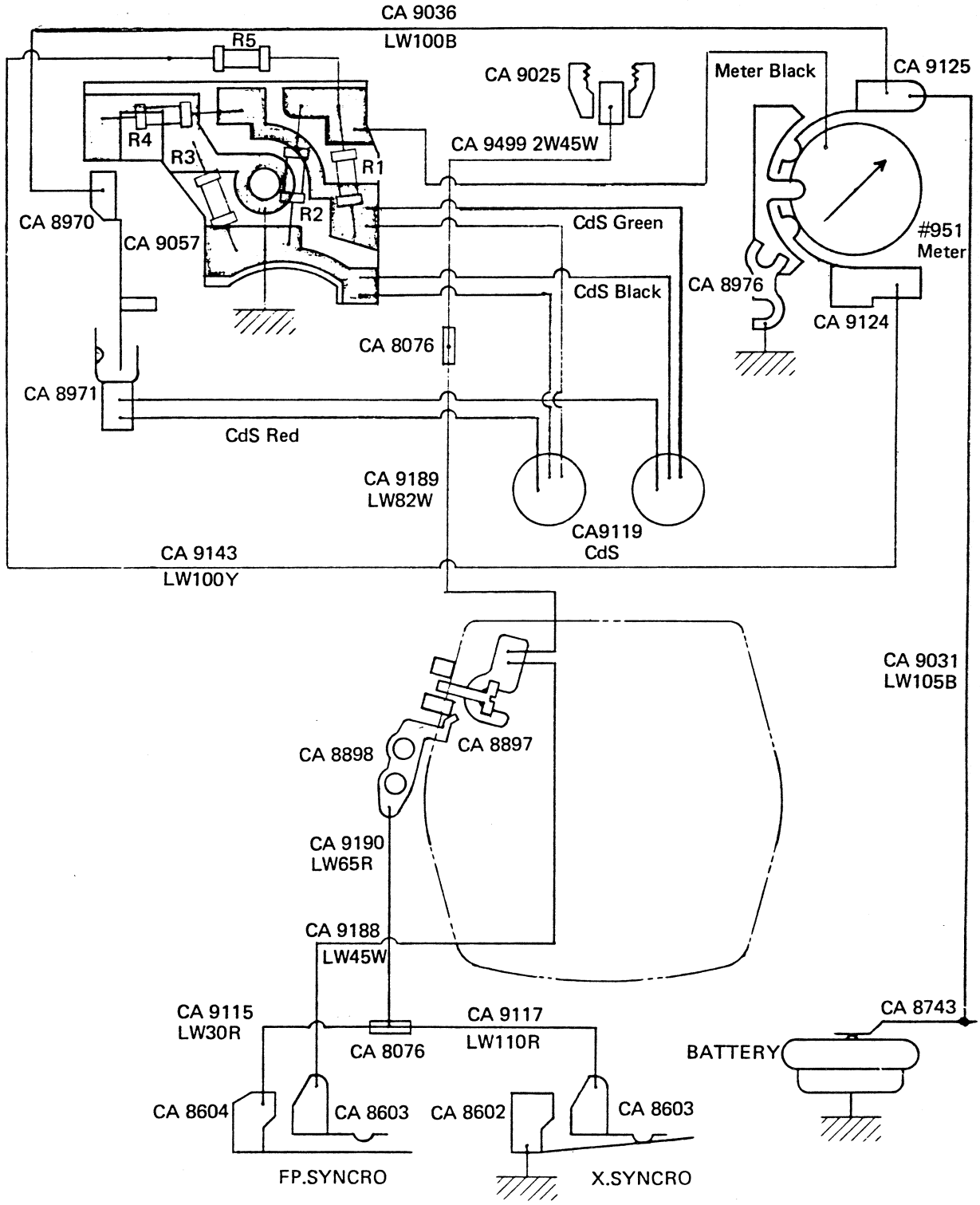
Note 1: * When the Zero-adjustor is set to 0.ADJ, amperage is set at 33 μA. To check the Zero-adjustment, be sure to use MS 5018. If MS 5014 has to be used, make an adjustment by turning "VR" on the side of the Resistor box so that a current of 35 μA flows to Blue lead wire of R1 and white lead wire of R4.
* To adjust the Zero-adjustment amperage, a micro-ammeter is required. Never attempt to touch the "VR" carelessly.

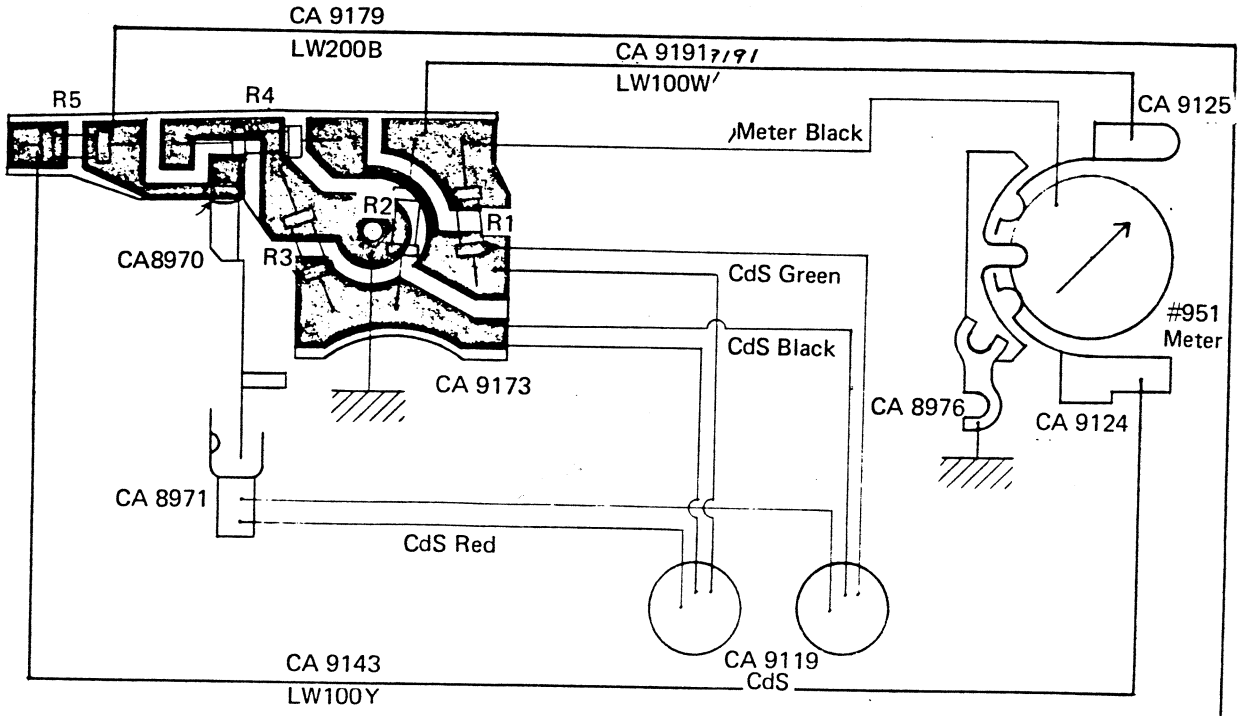
Note 2: The Zero-adjustor switch must always be placed in OFF; otherwise, the battery will be discharged, and also matching cannot be done correctly with the switch set to "0.ADJ."

H

OTHERS

H. OTHERS

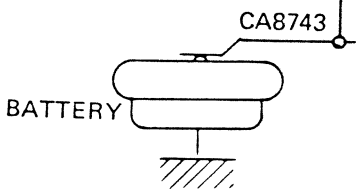

CA 9036
LW100B
R5
CA 9025
Meter Black
CA 9125
R4
R3
R1
CA 9499 2W45W
R2
CA 8970
CA 9057
CdS Green
CdS Black
CA 8976
#951
Meter
CA 9124
CA 8076
CA 8971
CdS Red
CA 9189
LW82W
CA9119
CdS
CA 9143
LW100Y
CA 9031
LW105B
CA 8898
CA 8897
CA 9190
LW65R
CA 9188
LW45W
CA 9115
LW30R
CA 9117
LW110R
CA 8076
CA 8743
BATTERY
CA 8604
CA 8603
CA 8602
CA 8603
FP.SYNCRO
X.SYNCRO

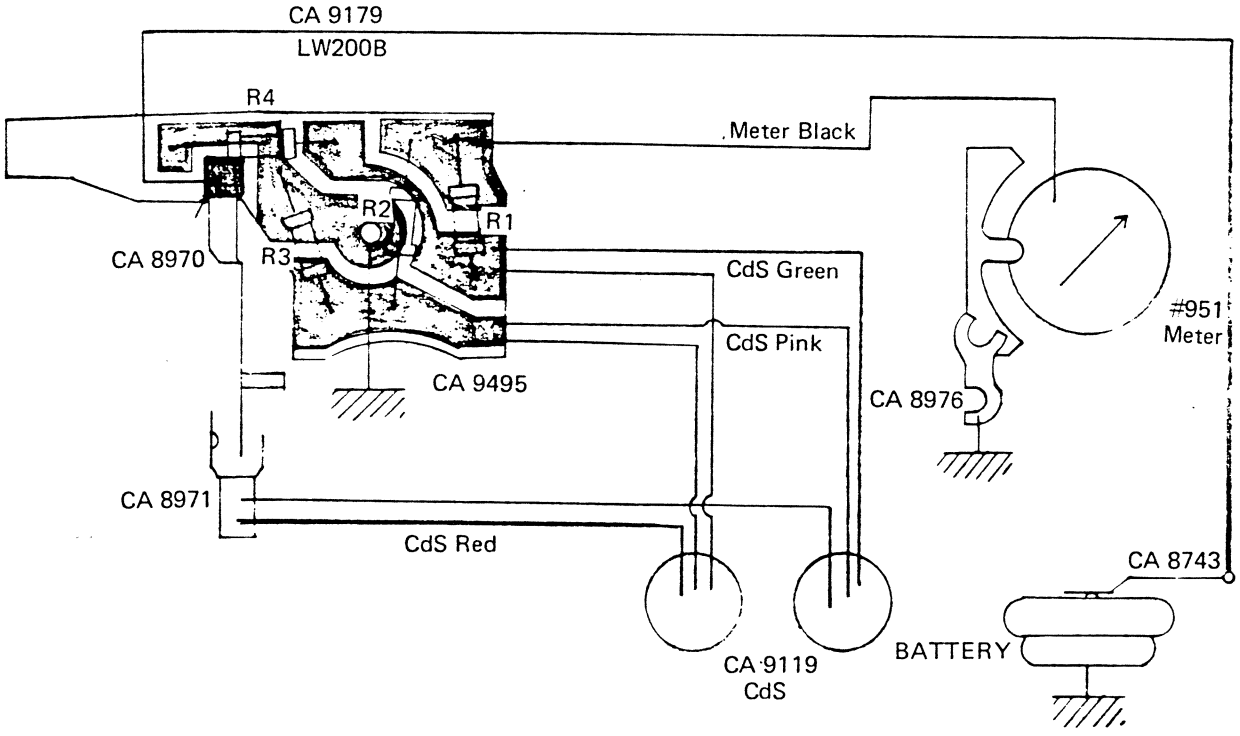


Note: Meter wiring is changed ..... Synchronization circuit is the same as before.
(No change is made to the circuit diagram.)

(Thick line) represents the changed circuit.

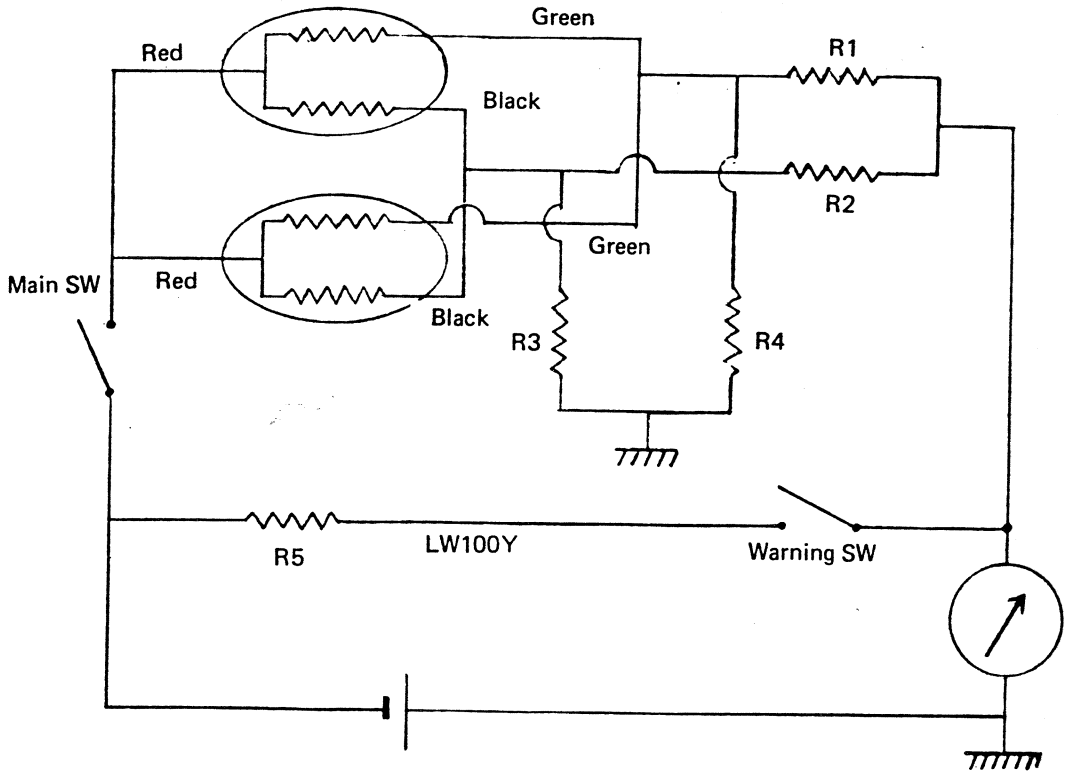
(Thin line) represents the circuit not changed.



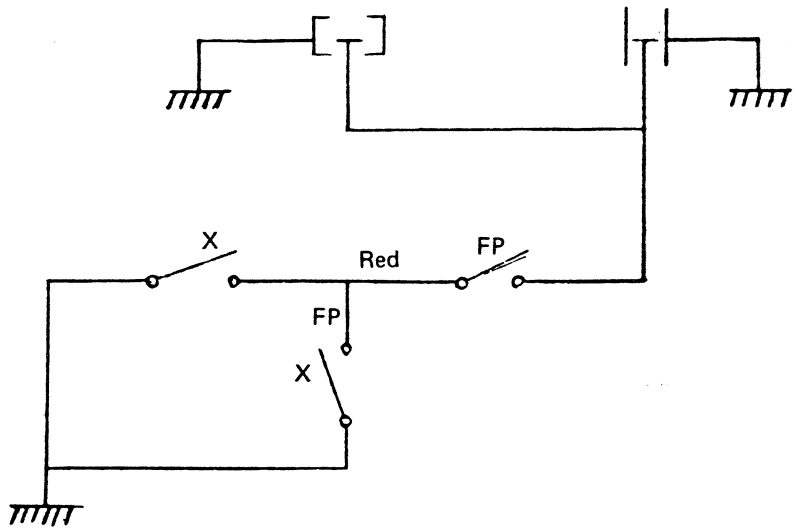


Note: Actual wiring diagram after warning switch is excluded.
CA 9124, CA 9125, CA 9143, CA 9191, R5 are excluded.
CA 9173 → Changed to CA 9495
CA 9173 is still in use.
On a camera with warning switch, when the meter is replaced, follow this wiring diagram.

Meter circuit diagram

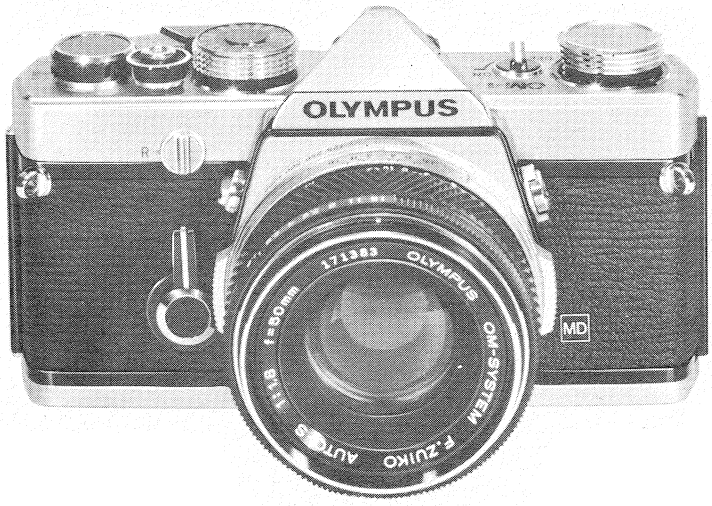


Synchro-circuit diagram



OM-1 MD

CONTENTS



IMPROVED PARTS TABLE

OM-MD

PARTS LIST ORIGINAL

Many part numbers used descriptively in the text have been superceeded. This original Part List has been provided for reference only. Please DO NOT use it to order parts.

THIS PARTS LIST HAS BEEN SUPERSEDED. IT IS INCLUDED HERE BECAUSE MANY PROCEDURES AND DESCRIPTIONS IN THE FOLLOWING TEXT REFER TO THESE NUMBERS.

IT HAS BEEN PROVIDED AS REFERENCE ONLY. PLEASE DO NOT USE IT TO ORDER PARTS.

EXPLANATORY NOTES ON VARIOUS MARKS & NUMBERS USED IN IMPROVED PARTS TABLE

★ Only Body Die-Cast is not available in case of overseas.

❶ An assembled parts is supplied including parts marked with ①

① Single parts is supplied.

( ) Not to be supplied in single parts, but as an assembled parts.

Left-handed screw, (the mate screw hole is not marked particularly). All right-handed screws have no special indication.

< > Improved parts. Number shows INDEX in IMPROVED PARTS TABLE where more details are explained.

═══ No more available parts.

The place where parts have been improved.

[ ] Dimensions of improved parts and improved points.

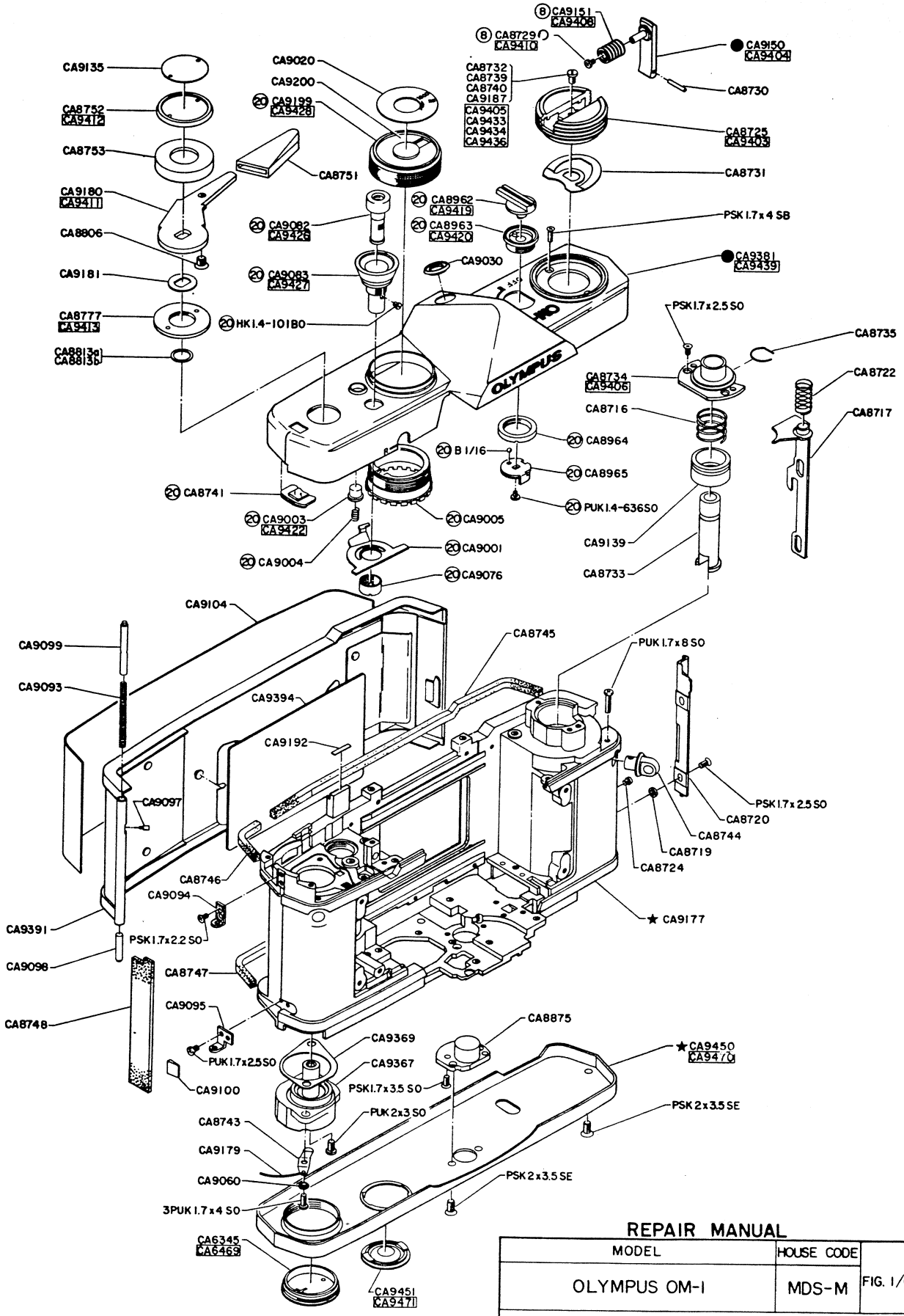
♡♤◇♧ Replacing parts of no more available parts marked with ═

※ How to replace parts or how to repair.

—— Original parts are also usable instead of improved parts.

Printing error. No parts are built-in cameras.

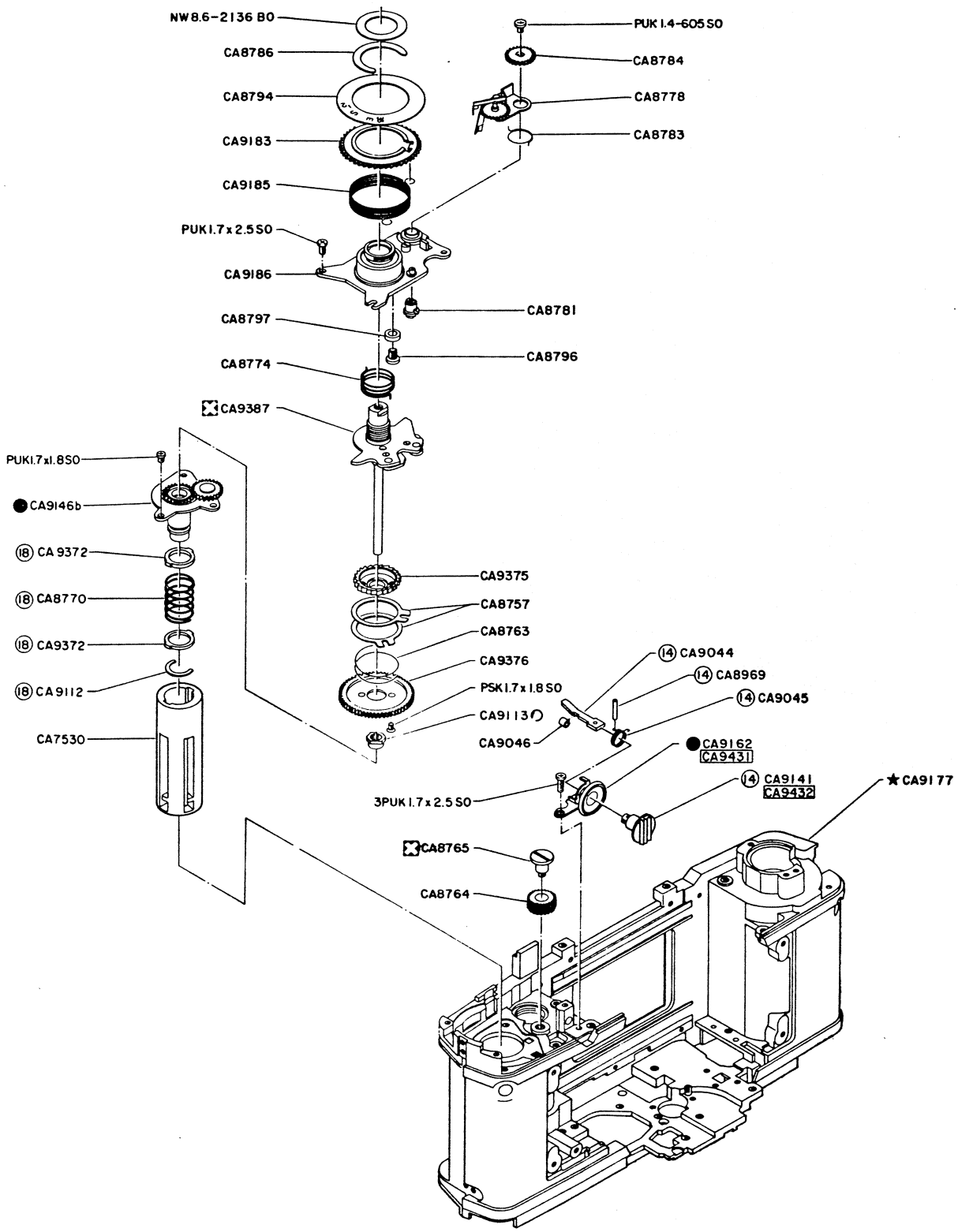
Clarify HOUSE CODE, PARTS NUMBER and QUANTITY in your ORDER SHEETS.



REPAIR MANUAL

MODEL	HOUSE CODE	FIG. 1/6
OLYMPUS OM-1	MDS-M	
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

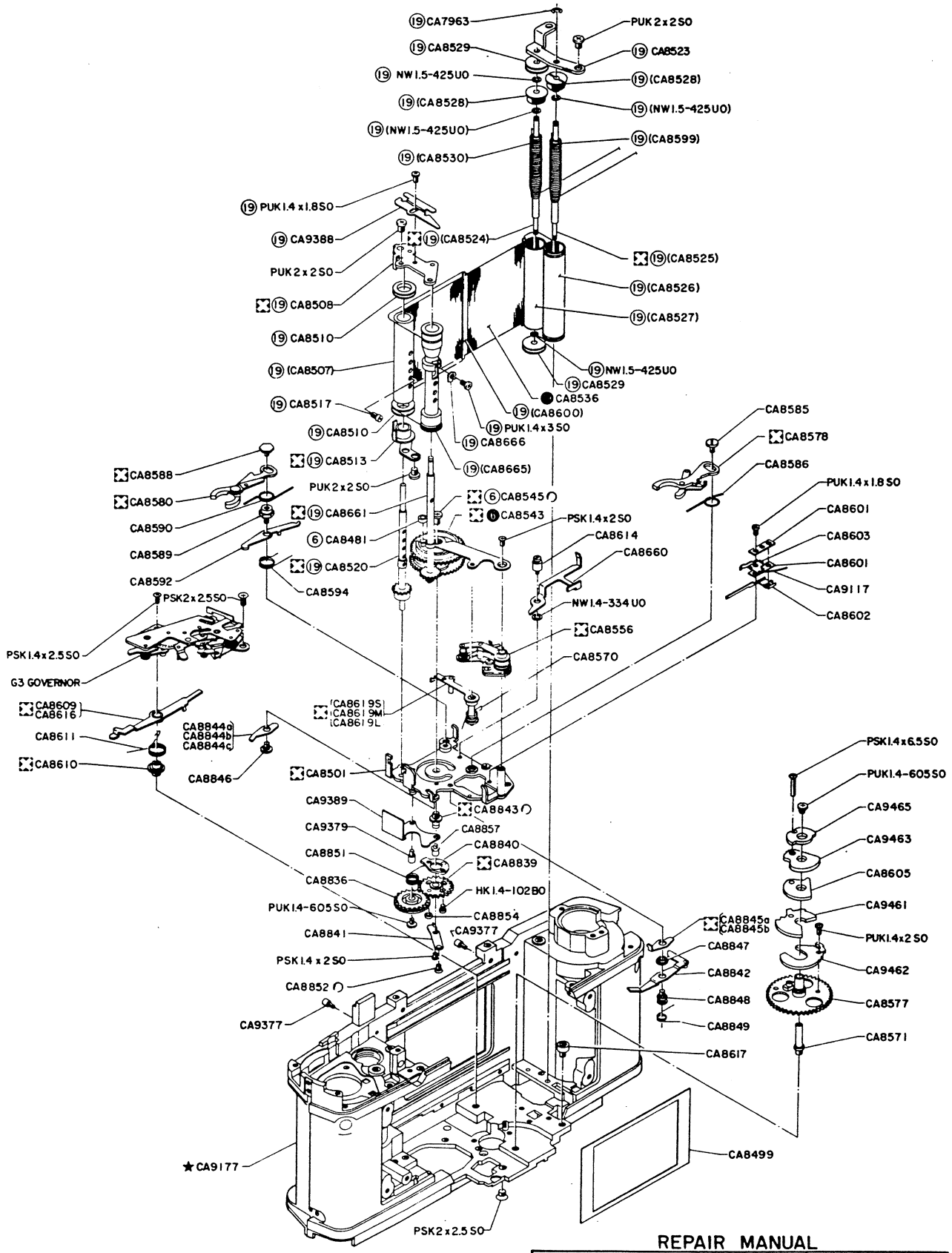
NOTE: WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY



REPAIR MANUAL

MODEL	HOUSE CODE	FIG. 2/6
OLYMPUS OM-1	MDS-M	
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

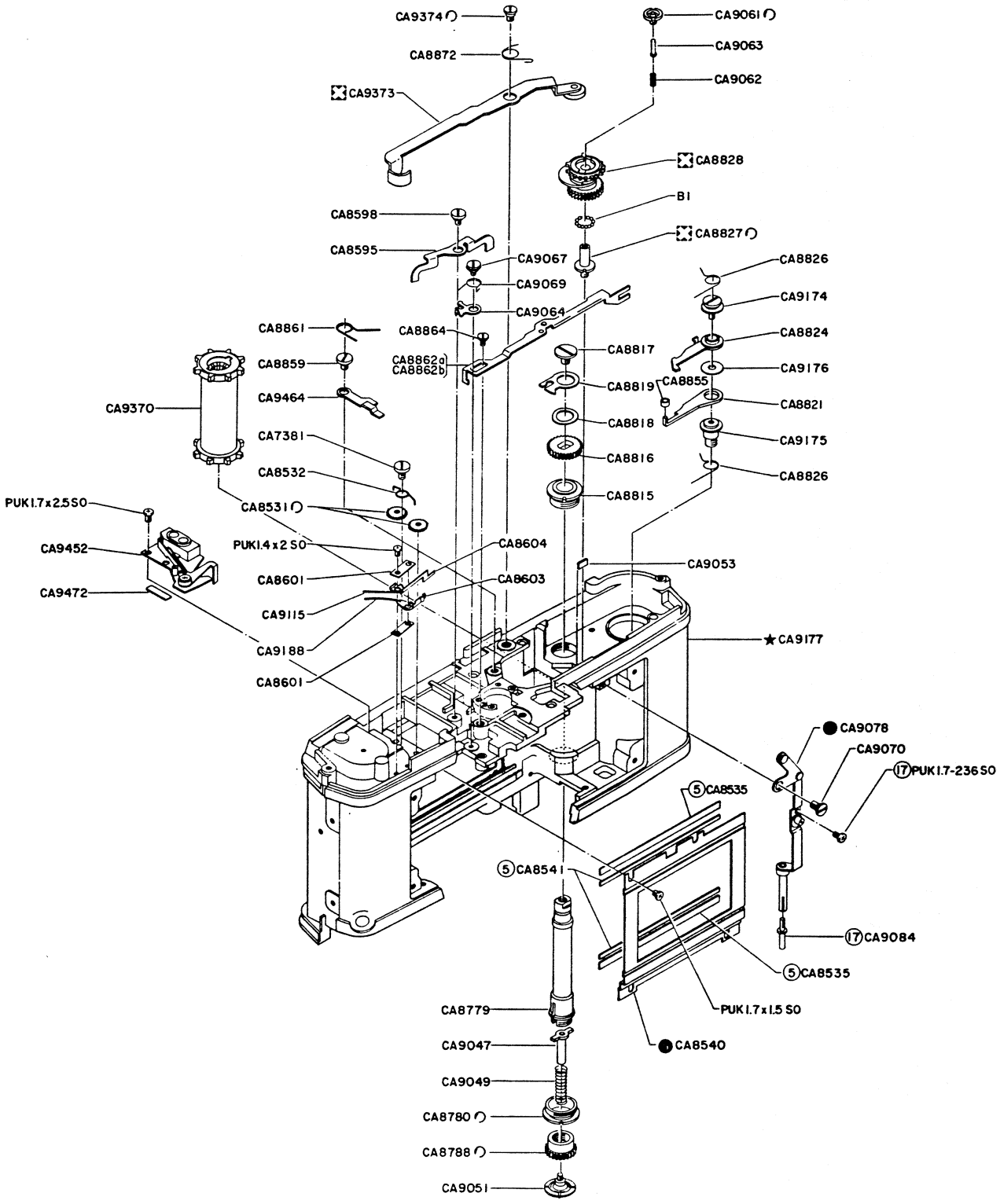
NOTE: WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY



REPAIR MANUAL

MODEL	HOUSE CODE	FIG. 3/6
OLYMPUS OM-1	MDS-M	
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

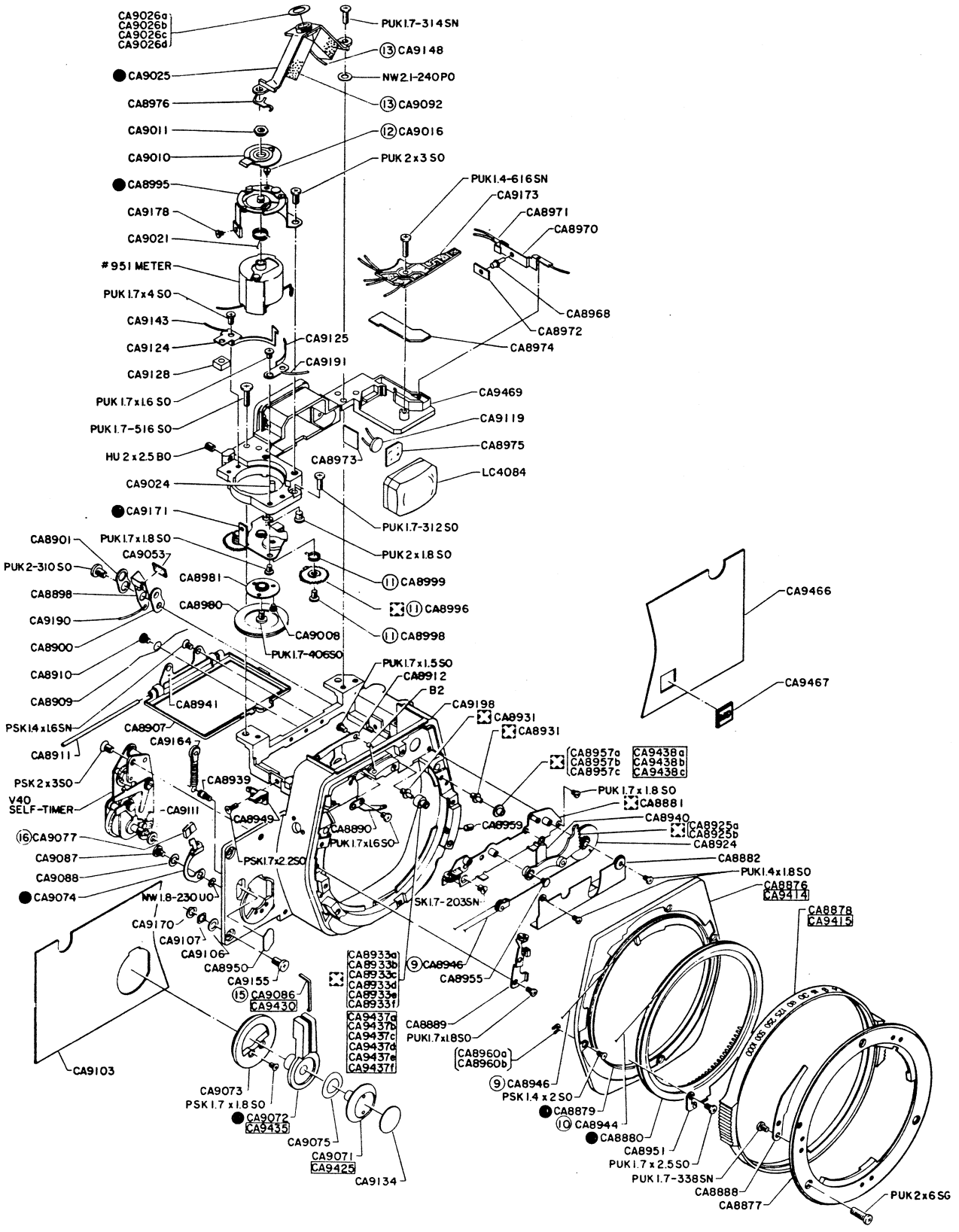
NOTE: WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY



REPAIR MANUAL

MODEL	HOUSE CODE	FIG. 4/6
OLYMPUS OM-1	MDS-M	
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

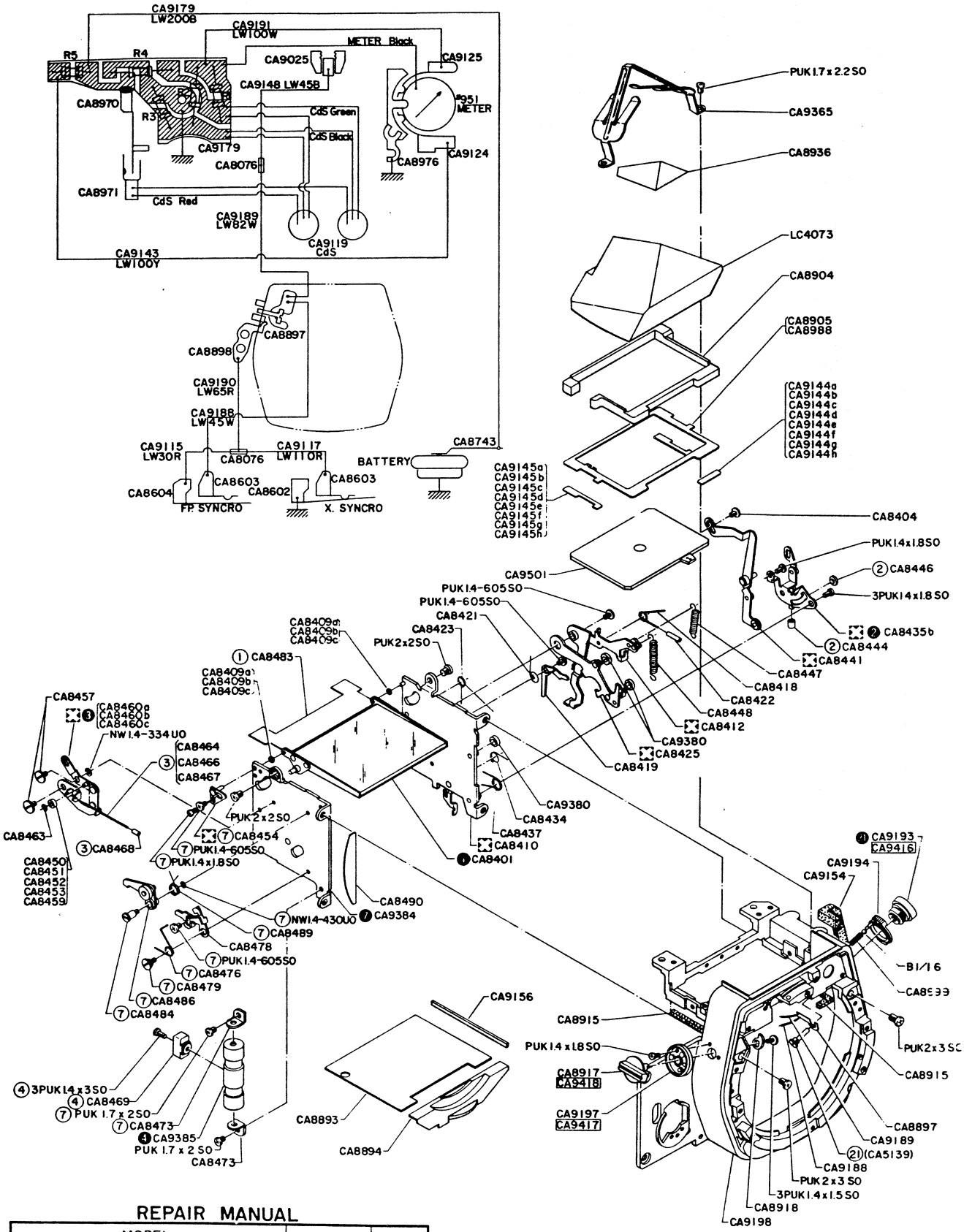
NOTE: WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY



REPAIR MANUAL

MODEL	HOUSE CODE	FIG. 5/6
OLYMPUS OM-1	MDS-M	
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

NOTE. WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY



REPAIR MANUAL

MODEL	HOUSE CODE	FIG. 6/6
OLYMPUS OM-1	MDS-M	
OLYMPUS OPTICAL CO., LTD. TOKYO, JAPAN		

NOTE: WHEN ORDERING FOR SPARE PARTS, PLEASE CLARIFY A MODEL, PARTS NUMBER AND QUANTITY

PARTS NO.	NAME OF PARTS	NOTE
CA 6345	BATTERY COMPARTMENT LID	
7381	STOPPER SCREW	
7530	SPOOL B	
7963	RING E	
8076	TUBE	
8401	M FRAME	11 parts 8 kinds
8404	M LEVER SCREW	
8409a	ADJUSTING WASHER a	t: 0.15
8409b	ADJUSTING WASHER b	t: 0.20
8409c	ADJUSTING WASHER c	t: 0.30
8410	LEFT SIDE PLATE	11 parts 10 kinds
8412	M CHARGING LEVER	5 parts 5 kinds
8418	STOPPER SPRING	
8419	M HOOKING LEVER	
8421	HOOKING LEVER SPRING	
8422	TUBE 2	
8423	RETURNING SPRING	
8425	CONNECTING LEVER	4 parts 3 kinds
8434	HOOK SPRING	
8435	M BASE PLATE	5 parts 5 kinds
8437	MS SPRING	
8441	M LEVER	6 parts 6 kinds
8444	TUBE 3	
8446	M RING	
8447	M SPRING	
8448	CONNECTING LEVER SPRING	
8450	MU RING 0	2.5mm diam.
8451	MU RING 1	2.8mm diam.
8452	MU RING 2	3.1mm diam.
8453	MU RING 3	3.4mm diam.
8454	M PIVOT	2 parts 2 kinds
8457	LEVER SHAFT	
8459	MU RING 4	3.7mm diam.
8460a	LINK a	8 parts 7 kinds
8460b	LINK b	8 parts 7 kinds
8460c	LINK c	8 parts 7 kinds
8463	E RING 08	
8464	SPRING 1	0.4mm diam.
8466	SPRING 2	0.45mm diam.
8467	SPRING 3	0.55mm diam.
8468	SPRING COVER	
8469	PIPE CONNECTOR	
8473	PIPE HOLDER (UPPER)	
8476	M POSITIONING SPRING	
8478	M POSITIONING PLATE	
8479	M POSITIONING SHAFT	
8481	S WASHER (RUBBER)	
8483	LIGHT PROOF PLATE	
8484	MU SHAFT	
8486	MU LEVER	5 parts 5 kinds
8489	MU SPRING	
8490	RIGHT COVERING PLATE	
8499	B MASK	

PARTS NO.	NAME OF PARTS	NOTE	
CA 8501	S BASE PLATE	6 parts	6 kinds
8508	CURTAIN BASE R	2 parts	2 kinds
8510	ROLLER A		
8513	ROLLER HOLDER	2 parts	2 kinds
8517	TUBE STOPPER SCREW		
8520	TUBE SHAFT B	2 parts	2 kinds
8523	TUBE SHAFT HOLDER		
8529	ROLLER B		
8531	TENSION NUT		
8532	TENSION NUT STOPPER		
8535	FELT B		
8536	2nd. CURTAIN	39 parts	32 kinds
8540	FRAME	5 parts	3 kinds
8541	FELT A		
8543	GEAR SHAFT A	53 parts	10 kings
8545	GEAR SCREW		
8556	CONNECTING PLATE	11 parts	11 kinds
8570	SPRING (REAR)		
8571	G CAM SHAFT		
8577	SPEED GEAR	3 parts	3 kinds
8578a	A LEVER 1a	3 parts	3 kinds
8578b	A LEVER 1b	3 parts	3 kinds
8580a	B LEVER 1a	3 parts	3 kinds
8580b	B LEVER 1b	3 parts	3 kinds
8585	A LEVER SCREW		
8586	A LEVER SPRING		
8588	B LEVER SCREW		
8589	SHAFT FOR CA8592		
8590	B LEVER SPRING		
8592	RELEASING CLAW		
8594	RELEASING CLAW SPRING		
8595	S LEVER		
8598	S LEVER WASHER		
8601	STOPPER PLATE		
8602	"X" SYNCHRO CONTACT POINT		
8603	"FX" SYNCHRO CONTACT POINT		
8604	"F" SYNCHRO CONTACT POINT		
8605	L CAM		
8609	M LEVER	2 parts	2 kinds
8610	M LEVER SHAFT		
8611	M LEVER SPRING		
8614	A LEVER 2 SCREW		
8616	M LEVER 2	2 parts	2 kinds
8617	GOVERNOR BASE		
8619S	LEVER S	4 parts	4 kinds
8619M	LEVER M	4 parts	4 kinds
8619L	LEVER L	4 parts	4 kinds
8660	A LEVER 2		
8661	TUBE SHAFT A	3 parts	3 kinds
8666	ADJUSTING WASHER		
8716	R COLLAR SPRING		
8717	KEY A	2 parts	2 kinds
8719	KEY COLLAR		

PARTS NO.	NAME OF PARTS	NOTE
CA 8720	KEY COVER	
8722	KEY SPRING	
8724	KEY POSITIONING SCREW	
8725	R KNOB	
8729	R PINCH SET SCREW	
8730	R LEVER PIN	
8731	R LEVER SPRING	
8732	R LEVER WASHER	h: 1
8734	R SHAFT HOLDER	
8735	R SPRING	
8739	R LEVER WASHER 2	h: 0.8
8740	R LEVER STOPPER 3	h: 1.1
8741	FILM COUNTER COVER	
8743	BATTERY CONTACT POINT	
8744	STRAP EYELET	
8745	LIGHT PROOF L	
8746	LIGHT PROOF R	
8747	LIGHT PROOF (LOWER)	
8748	LIGHT PROOF (SIDE)	
8751	FW LEVER COVER	
8752	FW LEVER HOLDER	
8753	FW LEVER DECORATION	
8757	F PLATE	
8763	F SPRING	
8764	ST IDLE	
8765	IDLE SHAFT	
8770	SPOOL SPRING	
8774	FW SPRING	
8777	FASTENING RING	
8778	FC RETURNING LEVER	8 parts 7 kinds
8779	ST SHAFT	
8780	SPROCKET HOLDER (UPPER)	
8781	FC GEAR SHAFT	
8783	FC RETURNING SPRING	
8784	FC GEAR	
8786	C RING	
8788	ST GEAR	
8794	FC PLATE	
8796	L STOPPER	
8797	WASHER (RUBBER)	
8806	FW LEVER COVER STOPPER	
8813a	WASHER 1a	t: 0.05
8813b	WASHER 1b	t: 0.08
8815	SPROCKET HOLDER (LOWER)	
8816	GEAR #1	
8817	GEAR #1 SCREW	
8818	GEAR #1 SPRING	
8819	K CLAW	
8821	CHECKING LEVER	
8824	LOCK LEVER	
8826	LOCK SPRING	
8827	SHAFT #2	
8828	GEAR #2 SHAFT	8 parts 8 kinds
8836	GEAR #3	2 parts 2 kinds

PARTS NO.	NAME OF PARTS	NOTE
CA 8839	GEAR #4	2 parts 2 kinds
8840	S WINDING PLATE	
8841	GEAR #4 BASE	
8842	KS LEVER	2 parts 2 kinds
8843	SHAFT #4	
8844a	LEVER 1a	0
8844b	LEVER 1b	+0.1
8844c	LEVER 1c	-0.1
8845a	LEVER #2a	
8845b	LEVER #2b	
8846	LEVER STOPPER	
8847	KS HOLDER	
8848	KS SHAFT	
8849	KS SPRING	
8851	GEAR #3 SPRING	
8852	SHAFT #4 SCREW	
8854	S RING	
8856	SHAFT #2 SCREW	
8857	BASE PLATE SHAFT	
8859	BULB PLATE SCREW	
8861	RETURNING SPRING	
8862a	KL PLATE a	2 parts 2 kinds 1.4mm diam.
8862b	KL PLATE b	2 parts 2 kinds 1.8mm diam.
8864	KL SHAFT	
8872	KM SPRING	
8875	TRIPOD SOCKET	
8876	FRONT COVERING PLATE	
8877	B MOUNT	
8878	S DIAL	
8879	CONNECTING RING	2 parts 2 kinds
8880	DIAL GEAR	2 parts 2 kinds
8881	B BASE PLATE	13 parts 11 kinds
8882	COVERING PLATE	
8888	B MOUNT SPRING	
8889	CONNECTING RING STOPPER	6 parts 6 kinds
8890	CLICK SPRING	
8893	COVERING PLATE	
8894	LOWER COVER	
8897	FP SYNCHRO CONTACT POINT	
8898	FX SYNCHRO CONTACT PLATE	
8899	FX SYNCHRO CONTACT SPRING	
8900	INSULATING PLATE	
8901	INSULATING PLATE	
8904	PENTAPRISM BASE	2 parts 2 kinds
8905	VIEW FIELD MASK	
8907	F FRAME	2 parts 2 kinds
8909	F SPRING	
8910	F SPRING SHAFT	
8911	F SHAFT	
8912	F LOCK SCREW	
8915	DAMPER #2	
8917	MU KNOB	

PARTS NO.	NAME OF PARTS	NOTE
CA 8918	MU CAM	
8924	F PULLEY	6 parts 6 kinds
8925a	CAM GEAR a	5 parts 5 kinds
8925b	CAM GEAR B	5 parts 5 kinds
8931	PULLEY SHAFT	
8933a	RETURNING ROLLER a	3.3mm diam.
8933b	RETURNING ROLLER b	3.4mm diam.
8933c	RETURNING ROLLER c	3.5mm diam.
8933d	RETURNING ROLLER d	3.6mm diam.
8933e	RETURNING ROLLER e	3.7mm diam.
8933f	RETURNING ROLLER f	3.8mm diam.
8936	P COVER	
8939	B SPRING SHAFT	
8940	COVERING PLATE B	
8941	F HINGE	
8944	B STRING M	
8946	B STRING R	
8949	B SPRING PLATE	4 parts 4 kinds
8950	COVERING PLATE	
8951	D FASTENING RING	
8955	F PULLEY SCREW	
8957a	R ROLLER a	3.6mm diam.
8957b	R ROLLER b	3.7mm diam.
8957c	R ROLLER c	3.8mm diam.
8959	DIAL STOPPER	
8960a	COVERING PLATE WASHER a	t: 0.1
8960b	COVERING PLATE WASHER b	t: 0.2
8962	S LEVER	
8963	S LEVER BASE	2 parts 2 kinds
8964	S LEVER BASE NUT	
8965	S LEVER CONNECTING PLATE	2 parts 2 kinds
8968	PIN FOR CA8970	
8969	STOPPER 61	
8970	CONTACT POINT 1	
8971	CONTACT POINT 2	
8972	PIN HOLDING PLATE	
8973	C LIGHT PROOF	
8974	S COVER	
8975	C COVER	
8976	M EARTH	
8980	M PULLEY	2 parts 2 kinds
8981	M PULLEY HOLDER	2 parts 2 kinds
8988	VIEW FIELD MASK 2	
8995	M BASE	11 parts 11 kinds
8996	M LOWER PLATE GEAR	
8998	GEAR SHAFT	
8999	GEAR SPRING	
9001	LOCK SPRING	
9003	L BUTTON	
9004	BUTTON SPRING	
9005	LOCK RING	
9008	PULLEY SCREW	
9010	A CAM	2 parts 2 kinds
9011	CAM HOLDER	

PARTS NO.	NAME OF PARTS	NOTE
CA 9016	A LEVER SCREW	
9020	ASA PLATE	
9021	ST SPRING	
9024	INSULATION SHAFT	
9025	S BASE	6 parts 6 kinds
9026a	T. WASHER a	t: 0.1
9026b	T WASHER b	t: 0.4
9026c	T WASHER c	t: 0.5
9026d	T WASHER d	t: 0.6
9030	T NUT	
9044	K INNER PLATE	
9045	K LEVER SPRING	
9046	K PLATE HOLDER	
9047	ST CLAW	2 parts 2 kinds
9049	ST SPRING	
9051	ST SCREW	2 parts 2 kinds
9053	LEVER CUSHION	
9060	CONTACT POINT COLLER	
9061	ME GUIDE	
9062	COVER SPRING	
9063	COVER PIN	
9064	M RELEASE NO.1	
9067	MR SHAFT	
9069	MR SPRING	
9070	C SCREW	
9071	S LEVER STOPPER	
9072	ST LEVER	2 parts 2 kinds
9073	S COVERING PLATE	
9074	START LEVER	2 parts 2 kinds
9075	F SPRING	
9076	RELEASE BASE NUT	
9077	START LEVER CAP	
9078	S RELEASE PLATE	9 parts 9 kinds
9082	S RELEASE BUTTON	
9083	SR BUTTON WASHER	
9084	SR BUTTON SHAFT	
9086	S LEVER PLATE	
9087	D SCREW	
9088	W SPRING	
9092	SM COVER	
9093	SR BUTTON WASHER	
9094	HINGE PIN HOLDER (UPPER)	
9095	HINGE PIN HOLDER (LOWER)	
9097	HINGE PIN SCREW	
9098	HINGE PIN A	
9099	HINGE PIN B	
9100	COVERING PLATE	
9103	RIGHT SIDE LEATHER	
9104	REAR COVER LEATHER	
9106	ADJUSTING WASHER NO.1	t: 0.01
9107	ADJUSTING WASHER NO.2	t: 0.03
9111	ST WASHER	
9112	C WASHER	
9115	LEAD WIRE (30mm long, BLACK)	

PARTS NO.	NAME OF PARTS	NOTE
CA 9117	LEAD WIRE (110mm long, RED)	
9119	CdS CELL	
9124	L CONTACT POINT	2 parts 2 kinds
9125	M CONTACT POINT	
9128	LS GUIDE	
9134	COVERING PLATE NO.1	
9135	COVERING PLATE NO.2	
9136	R SHAFT	
9139	R COLLER	
9141	K PINCH	
9143	LEAD WIRE (100mm long, YELLOW)	
9144a	FRONT ADJUSTING PLATE a	t: 0.04
9144b	FRONT ADJUSTING PLATE b	t: 0.06
9144c	FRONT ADJUSTING PLATE c	t: 0.10
9144d	FRONT ADJUSTING PLATE d	t: 0.15
9144e	FRONT ADJUSTING PLATE e	t: 0.20
9144f	FRONT ADJUSTING PLATE f	t: 0.25
9144g	FRONT ADJUSTING PLATE g	t: 0.30
9144h	FRONT ADJUSTING PLATE h	t: 0.35
9145a	REAR ADJUSTING PLATE a	t: 0.04
9145b	REAR ADJUSTING PLATE b	t: 0.06
9145c	REAR ADJUSTING PLATE c	t: 0.10
9145d	REAR ADJUSTING PLATE d	t: 0.15
9145e	REAR ADJUSTING PLATE e	t: 0.20
9145f	REAR ADJUSTING PLATE f	t: 0.25
9145g	REAR ADJUSTING PLATE g	t: 0.30
9145h	REAR ADJUSTING PLATE h	t: 0.35
9146	SPOOL SHAFT	10 parts 9 kinds
9148	LEAD WIRE (45mm long, BLACK)	
9150	R LEVER	4 parts 4 kinds
9151	R PINCH	
9154	LIGHT PROOF PADDING (UPPER)	
9155	FRONT CASTING SET SCREW	
9156	LIGHT PROOF PADDING M	
9162	K BASE PLATE	6 parts 6 kinds
9164	B SPRING	4 parts 4 kinds
9170	ADJUSTING WASHER 3	t: 0.08
9171	M LOWER PLATE	10 parts 10 kinds
9173	CIRCUIT BORD	
9174	LEVER SHAFT	
9175	M HOLDER	
9176	LEVER SHAFT WASHER	
9177	(CAMERA BODY)	3 parts 3 kinds (NOT AVAILABLE)
9178	PL SCREW	
9179	LEAD WIRE (200mm long, BLACK)	
9180	FILM WINDING LEVER	
9181	LEVER WASHER	
9183	FILM COUNTER GEAR	
9185	COUNTER SPRING	
9186	FC BASE PLATE	5 parts 5 kinds
9187	R LEVER WASHER	
9188	LEAD WIRE (45mm long, WHITE)	
9189	LEAD WIRE (82mm long, WHITE)	

PARTS NO.	NAME OF PARTS	NOTE
CA 9190	LEAD WIRE (65mm long, RED)	
9191	LEAD WIRE (100mm long, WHITE)	
9192	ADJUSTING PLATE	
9193	SYNCHRO SOCKET	4 parts 4 kinds
9194	FX SYNCHRO LEVER	
9197	MU WASHER	4 parts 4 kinds
9198	FRONT CASTING	
9199	ASA DIAL	
9200	ASA PLATE (UPPER)	
9365	PRISM STOPPER	
9367	BATTERY CASE	
9369	BATTERY CASE WASHER	
9370	SPROCKET	3 parts 3 kinds
9372	SPOOL HOLDER	
9373	KM LEVER	3 parts 3 kinds
9374	M LEVER SHAFT	
9375	FW LC	
9376	FW GEAR	
9377	FILM GUIDE SCREW	
9378	(COVERING PLATE NO.3)	
9379	3G HOOK SCREW	
9380	LEVER COLLAR (RUBBER)	
9381	TOP COVER	22 parts 22 kinds
9384	MB RIGHT SIDE PLATE	20 parts 19 kinds
9385	A PIPE	6 parts 5 kinds
9387	FW SHAFT	7 parts 7 kinds
9388	STOPPER PLATE (UPPER)	
9389	STOPPER PLATE (LOWER)	
9391	REAR COVER	12 parts 9 kinds
9394	PRESSURE PLATE	3 parts 3 kinds
9450	BOTTOM PLATE	
9451	M COVER	
9452	SW BASE PLATE	11 parts 11 kinds
9461	LOW CAM	
9462	HIGH CAM	
9463	S CAM	
9464	B PLATE	
9465	B CAM	
9466	RIGHT SIDE LEATHER	
9467	M MARK	
9469	SM FRAME	
9472	SW WASHER	
9501	FOCUSING SCREEN	
LC 4073	PENTAPRISM	
4084	EYEPIECE LENS	2 parts 2 kinds
G 3	GOVERNOR	
V 40	SELF TIMER	
NO.951	EXPOSURE METER	

PARTS NO.	NAME OF PARTS	NOTE
	FOR BLACK FINISH	
CA 6469	BATTERY COMPARTMENT LID	
9403	R KNOB	
9404	R LEVER	4 parts 4 kinds
9405	R LEVER WASHER	
9406	R SHAFT HOLDER	
9408	R PINCH	
9410	R SCREW	
9411	FILM WINDING LEVER	
9412	FILM WINDING LEVER HOLDER	
9413	FASTENING RING	
9414	FRONT COVERING PLATE	
9415	SHUTTER DIAL	
9416	SYNCHRO SOCKET	4 parts 4 kinds
9417	MU WASHER	4 parts 4 kinds
9418	MU PINCH	
9419	S LEVER	
9420	S LEVER BASE	2 parts 2 kinds
9422	L BUTTON	
9425	S LEVER STOPPER	
9426	SHUTTER RELEASE BUTTON	
9427	BUTTON WASHER	
9428	ASA DIAL	
9430	S LEVER PLATE	
9431	K BASE PLATE	
9432	K PINCH	
9433	R LEVER WASHER 2	
9434	R LEVER WASHER 3	
9435	ST LEVER	2 parts 2 kinds
9436	R LEVER WASHER 4	
9437a-f	RETURNING ROLLER a-f	
9438a-c	R ROLLER a-c	
9439	TOP COVER	22 parts 22 kinds
9470	BOTTOM PLATE	
9471	M COVER	
	SET SCREW	
	PUK 1.4 X 1.8 SO	7 19
	1.4 X 2 SO	
	1.4 X 3 SO	19
	1.4 - 605 SO	7
	1.4 - 616 SN	
	1.4 - 636 SO	20
	PUK 1.7 X 1.5 SO	
	1.7 X 1.6 SO	
	1.7 X 1.8 SO	
	1.7 X 2 SO	7
	1.7 X 2.2 SO	
	1.7 X 2.5 SO	
	1.7 X 4 SO	
	1.7 X 8 SO	
	1.7 - 236 SO	17

PARTS NO.	NAME OF PARTS	NOTE
	PUK 1.7 - 312 SO	
	1.7 - 314 SN	
	1.7 - 338 SN	
	1.7 - 406 SO	
	1.7 - 516 SO	
	PUK 2 X 1.8 SO	
	2 X 2 SO	
	2 X 2.2 SO	
	2 X 3 SO	
	2 X 6 SO	
	2 - 310 SO	
	3PUK 1.4 X 1.5 SO	
	1.4 X 1.8 SO	
	1.4 X 3 SO	4
	3PUK 1.7 X 2.5 SO	
	1.7 X 4 SO	
	PSK 1.4 X 1.6 SO	
	1.4 X 2 SO	
	1.4 X 2.5 SO	
	1.4 X 6.5 SO	
	PSK 1.7 X 1.8 SO	
	1.7 X 2.2 SO	
	1.7 X 2.5 SO	
	1.7 X 3.5 SO	
	1.7 X 4 SB	
	PSK 2 X 2.5 SO	
	2 X 3 SO	
	2 X 3.5 SE	
	HK 1.4 - 101 BO	20
	1.4 - 102 BO	
	SK 1.7 - 203 SN	
	HU 2 X 2.5 BO	
	BALL	
	B 1	
	1/16	20
	2	
	WASHER	
	NW 1.4 - 334 UO	
	1.4 - 430 UO	7
	1.5 - 425 UO	19
	2.1 - 240 PO	
	8.6 - 216 BO	

B. FEATURE OF MECHANISM

1. Outline of the Product

Product Name OLYMPUS OM-1 MD

Model Name MDS-M

Construction and Performance of the Product

Motor Drive Mounting Method: Bottom mounting with a tripod screw. Bayonet system, the MDS-M baseplate is provided with a motor drive socket, a motor coupling terminal and a guide pin hole in addition to the battery chamber and the tripod socket.

Rear Cover Replacement Method: The standard rear cover is demountable with the hinge pin (Recordata Back and 250 Film Back mountable)

The specifications for the following items are the same as those of the MDS (OLYMPUS OM-1).

- Picture Size
- Lens Replacement System
- Shutter
- Finder
- Mirror
- Exposure Meter
- Film Loading System
- Shutter Release Type
- Self-timer
- Accessory Shoe
- Synchronization Socket
- Tripod Screw
- Dimensions and Weight

2. Description and Feature of the Mechanism

Each part and mechanism are constructed and adjusted suitable for the high-speed continuous shooting by the use of the motor drive. However, the function is basically the same as that of OM-1 except the mechanism indicated below.

(Caution)

Accordingly, the order of parts, repair and replacement of parts of the MDS-M (OLYMPUS OM-1 MD) must be done according to the disassembly drawing of the MDS-M.

(1) Timing of the shutter/mirror operation and the motor drive operation

Operation of CA9452 (switch)

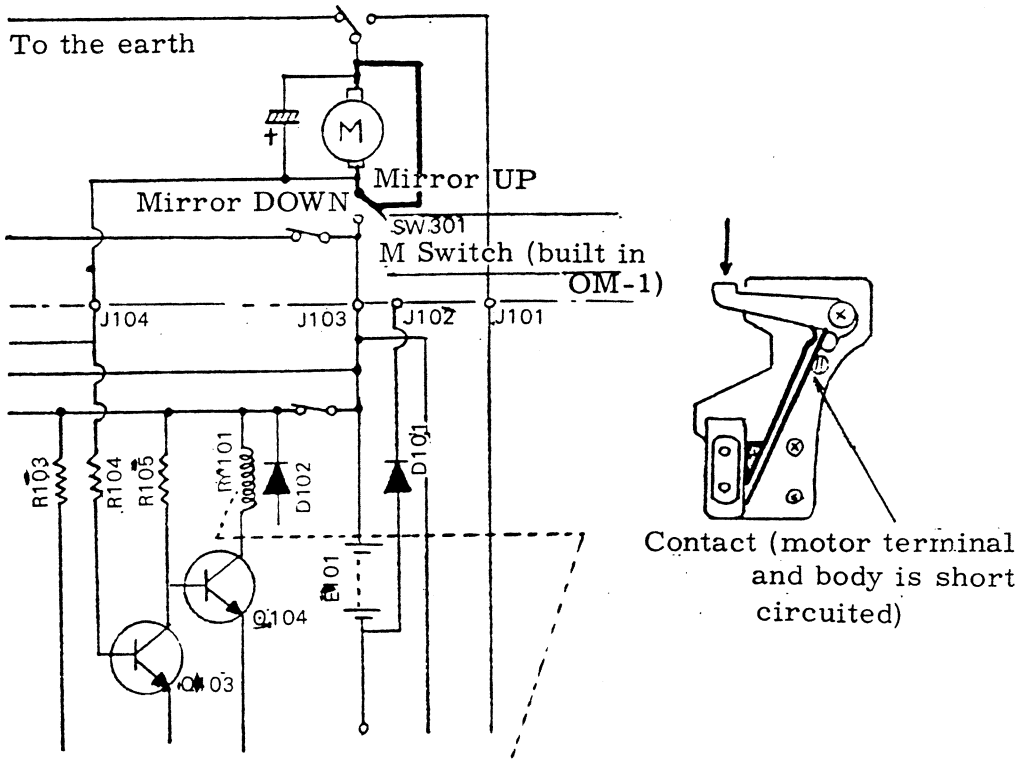
1. When the shutter is released:

   The release CE0054 (lever) of the motor drive pushes the CA8862 (plate).

2. Mirror is set up and M switch connects to the Mirror-UP side.

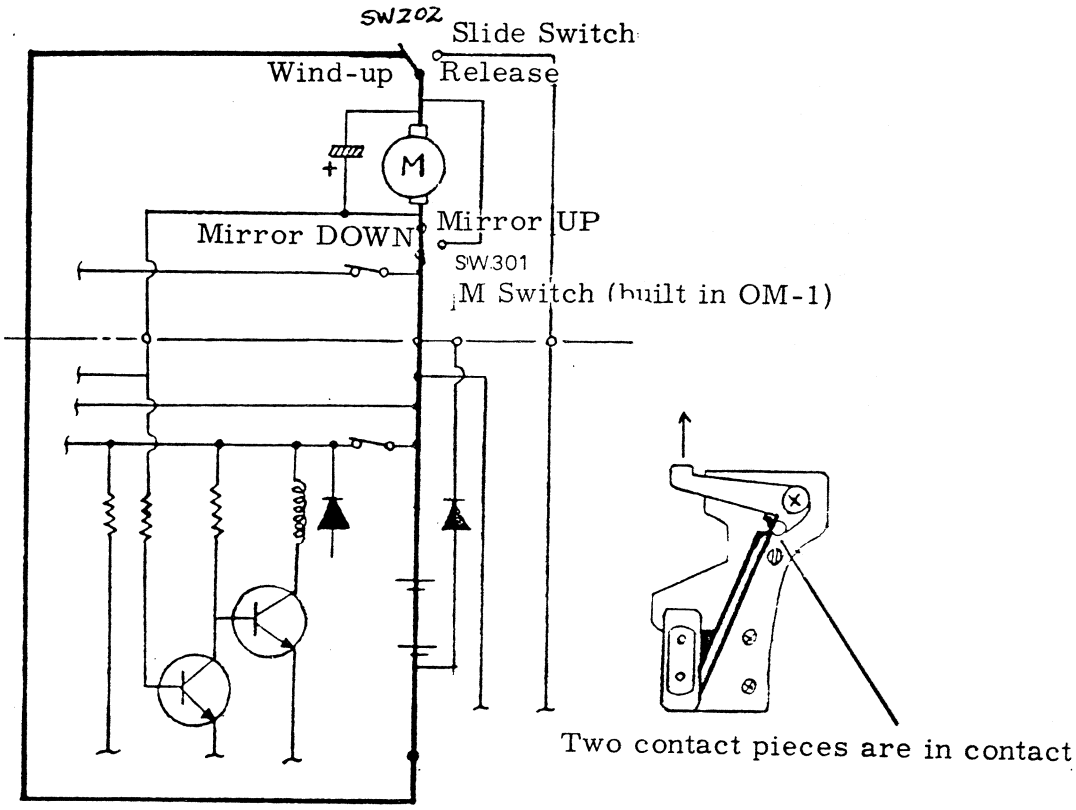
   When the M switch is connected to the Mirror-UP side, the power supply for the motor is interrupted and further, the motor terminal is shortcircuited, and thus the electric brake is effected to promptly stop the motor.

   While the shutter operation, since the mirror is being set up, the M switch is on the Mirror-UP side and the motor is being stopped. Accordingly. the M switch is also called a short circuit.



3. Mirror DOWN

When the shutters have completely run across, the mirror is set down, the M switch is returned to the Mirror-DOWN side (Illustration below), the motor is supplied with current and the film is wound up.

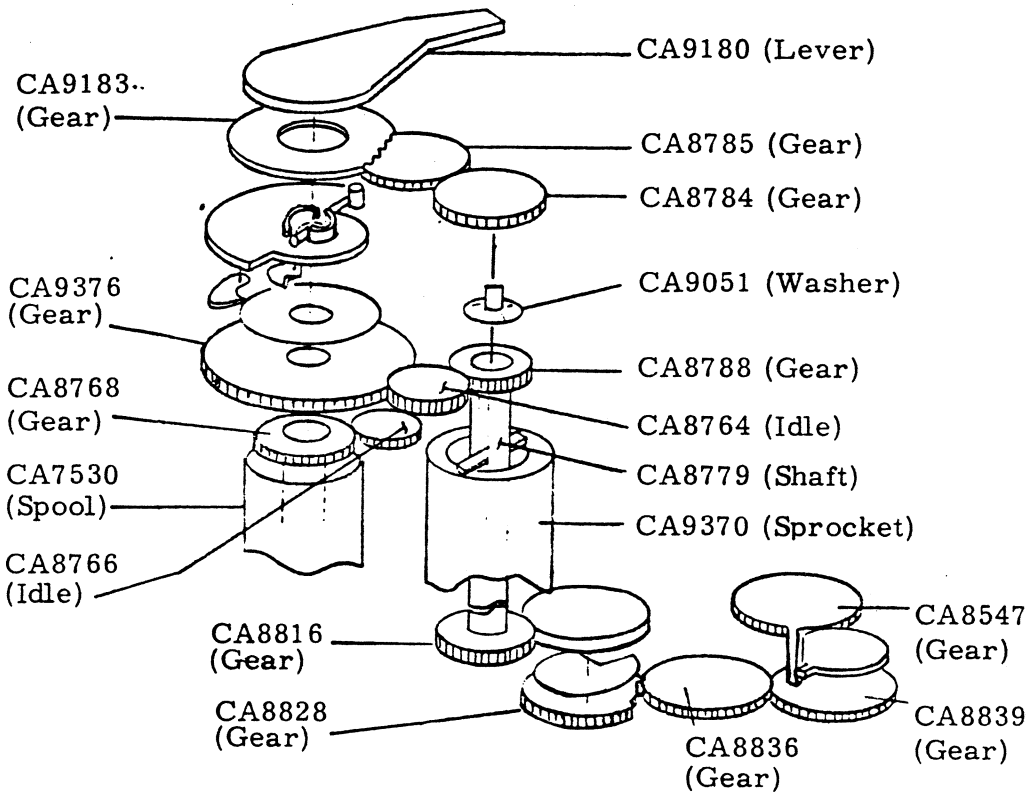


The MDS-M is incorporated with the CA9452 (switch) for the timing adjustment of the shutter/mirror operation and the motor drive operation.

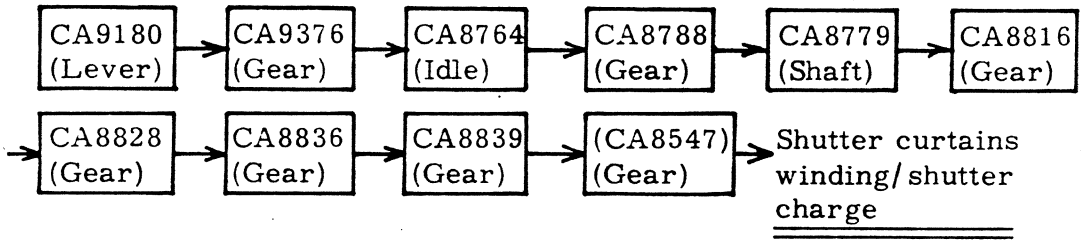
See the "TROUBLESHOOTING" for the switch ON and OFF timing adjustment.

This M switch is directly connected to the motor when the MMS (Motor Drive 1) is mounted on the camera bottom with the tripod screw.

(2) Wind-up combining mechanism upon the motor drive used

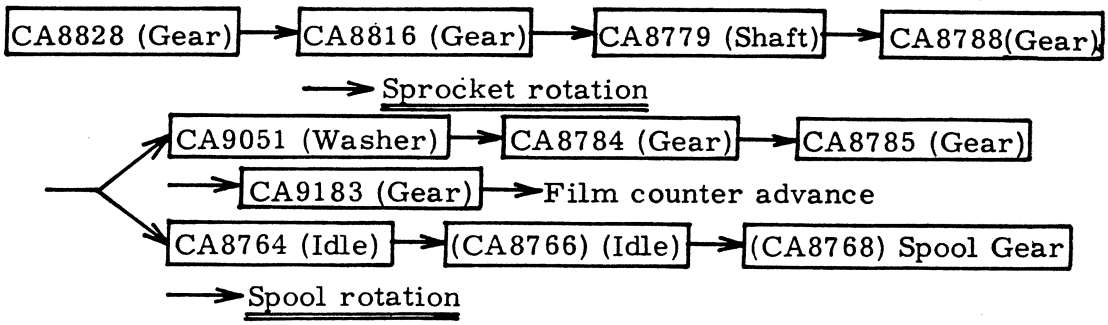


1. Winding with the wind-up lever (manual)

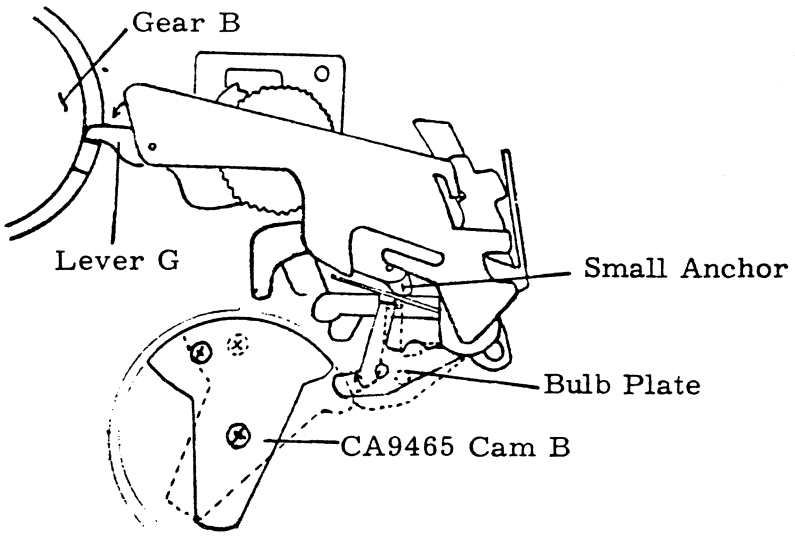


2. Winding with the motor

The CE0032 (claw) of the motor drive is directly connected to the CA8828 (gear), and the gear 2, gear 3, gear 4 and gear A are connected, and the shutter curtain winding and the shutter charge are performed. (As for the operation following to the gear A, see the OM-1 Repair Manual Page B-11, 12.) At the same time:



(3) G3 Governor



At "Bulb" setting, same as at shutter speeds of 1/15 - 1/1 sec., the lever G of the governor is engaged with the gear B as soon as the completion of the winding. As for the CA9465 (cam) since the bulb plate is escaped so as to apply to the small anchor, the bulb plate interrupts the small anchor (stop of the governor gear). So that the shutter is opened until the shutter button is freed and the CA8862 (plate) forcibly releases the bulb plate to effect the bulb operation. Excluding at the "bulb" setting, the bulb plate of the governor is escaped from the small anchor by means of the CA9465 (cam).
In this way, since the bulb operation is done with the bulb plate of the governor, the front end of the CA8810 (plate) of the OM-1 is not required to be connected to the claw escape of the rear claw, and the

rear claw is engaged with the gear B immediately after the winding, and the high-speed continuous shooting can be correctly performed. In the manual operation with the OM-1, the rear claw engages with the gear B when the release button is pushed by some extent. See the OM-1 Repair Manual Page B-16 and E-22, 23.

MDS-M C. CHECK POINT (INSPECTION STANDARD)

The standard not common with the MDS is as follow.

1. Attaching and detaching of the motor drive socket cap should be assured.
   - CA9451, 9471 (Cover)

2. Winding-up by motor clutch
   Assurance: One rotation surely winds up one frame, and then stops.
   Load Weight: 0.7 - 1.1kg-cm when the film is loaded
   0 - 0.5kg-cm when the film is unloaded

3. Electric Contacts
   Step of the contact from the contact base: 0 ± 0.05
   Concavity from the lower plate of the contact base: 0.1 ± 0.2
   Selection of the contact: Two contacts should be conductive except while the shutter operation.
   After the start of the shutter operation, the two contacts should be insulated therebetween and the terminal on the film plane side and the body should be shortcircuited.
   Position of the contact selection: The body-motor terminal should be shortcircuited at 5 - 7mm position where the lower surface of the mirror base plate rises from the mirror stop position.
   Check for the conductive position of the two contacts by disassembling the lower plate.
   See the OM-1 Repair Manual Page E (Outline of Repairs)
   Insulation Resistance: More than (500V) 50MΩ in the insulative condition
   Conduction: The internal resistance between the two terminals is less than 0.2Ω in the conductive condition.

4. Release Plate-CA8862 (Plate)
   Assurance of Operation: Surely operates and releases.
   Operation Load Weight: 180g (±20g)
   Stroke: 2 ±0.4mm up to the working position
   Longer than 2.5mm up to the stop position

5. Light Leakage: No leakage when the motor drive or motor drive socket cap is attached.

The procedure is basically the same as that of the MDS except the followings. (See the OM-1 Repair Manual Page D, Order of Disassembly)

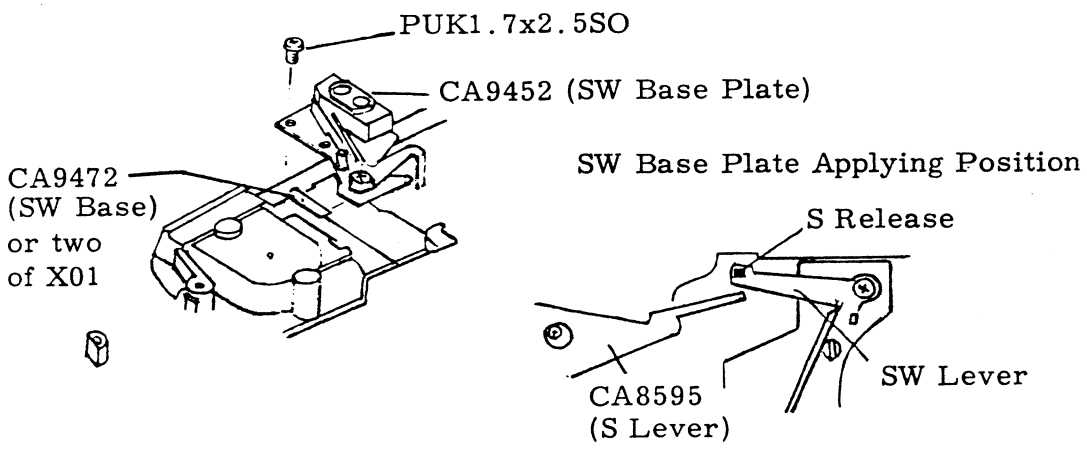
1. Removal of CA9452 (SW base Plate)

   Remove two PUK1.7x2.5SO of the CA9452 (SW base plate).

   Then, CA9452 (SW base plate) will be taken off in one set.

   Take care that some camera uses CA9472 (SW base) or X01 (washer) under the SW base plate.

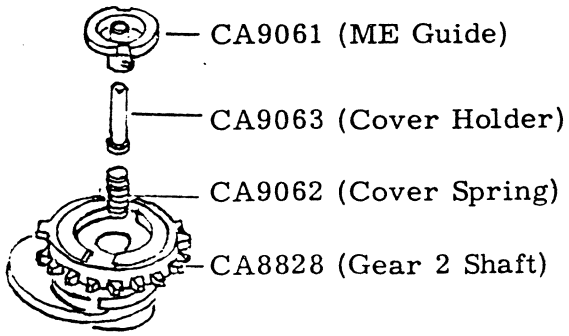
   The mounting of the SW base plate is recommendably done in the mirror up condition with "B" setting (see the illustration below).



2. CA9061 ME Guide Part

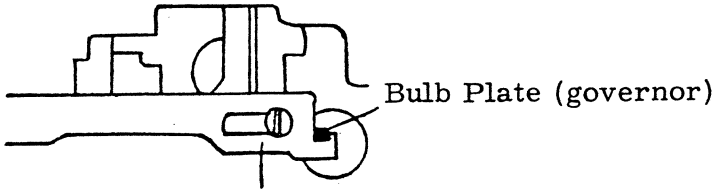
   Remove the ME guide CA9061 (left screw).

   Then, the CA9063 (cover holder) and the CA9062 (cover spring) will be taken off.

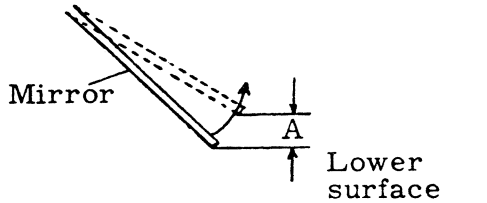
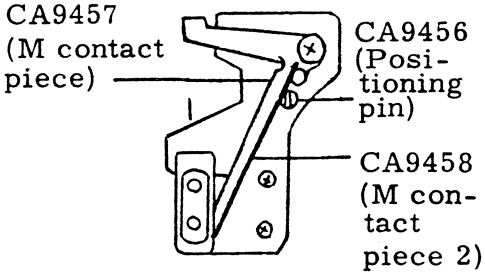
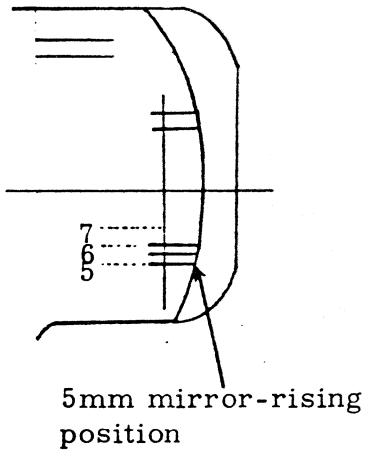


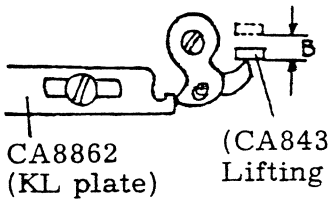
3. G3 Governor Mounting Position

The locative relation between the CA8862 (KL plate) and the G3 governor is as illustrated below. The others are the same as in case of MDS.



Fails to operate with the motor drive.

Cause	Remedy	Confirmation
1) Improper adjustment of M contact piece	1. Do the timing adjustment of the short circuit SW. Adjust with the positioning pin (eccentric) so that the M contact piece 2 and the positioning pin is short-circuited at 5 - 7mm dimension of the part A in the illustration below where the mirror arises from the stop position. Check it by a tester.   2. Do the timing adjustment of the winding circuit. a. Apply the CA8865 (KM lever) to the CA8412 (M charge) in the winding-completed condition.	Use KC-0074G for the position of 5 - 7mm. 1. Release the shutter with the finger applied to the mirror tip exercising care not to smudge it. 2. Confirm by quietly raising the mirror with tester probes applied to the contact point of M contact 2 side and the body. 

Cause	Remedy	Confirmation
	b. Release the shutter in the above "a" condition and detach the finger from the release button. c. Gradually return the M lever to the original position and bend the M contact piece 1 to adjust so that the M contact pieces 1 and 2 are connected in 1 - 2mm dimension of the B in the illustration below from the lifting hook stop position (actual line).  CA8862 (KL plate) (CA8432) Lifting hook	
2) Contact failure of the contact points	Check the following points and rectify any defective point. 1. Concavity of the contact base from the lower plate: 0.1 ±0.2 If the concavity is excessive, apply the CA9472 (SW base) between the SW base plate and the main body, or correct the concavity by bending the base plate. 2. Deflection of the contact difference and the lower plate: Less than 0.3	Winding and releasing with the motor should be performed when the motor drive is normally mounted with the tripod screw and operated.

Cause	Remedy	Confirmation
	If it is excessively deflected, correct it by adjusting the lower plate mounting position and the SW base plate mounting position. 3. Check the contacts on the motor side.	

MDS-M F. PARTS WHERE OIL. GREASE, ETC. SHALL BE USED

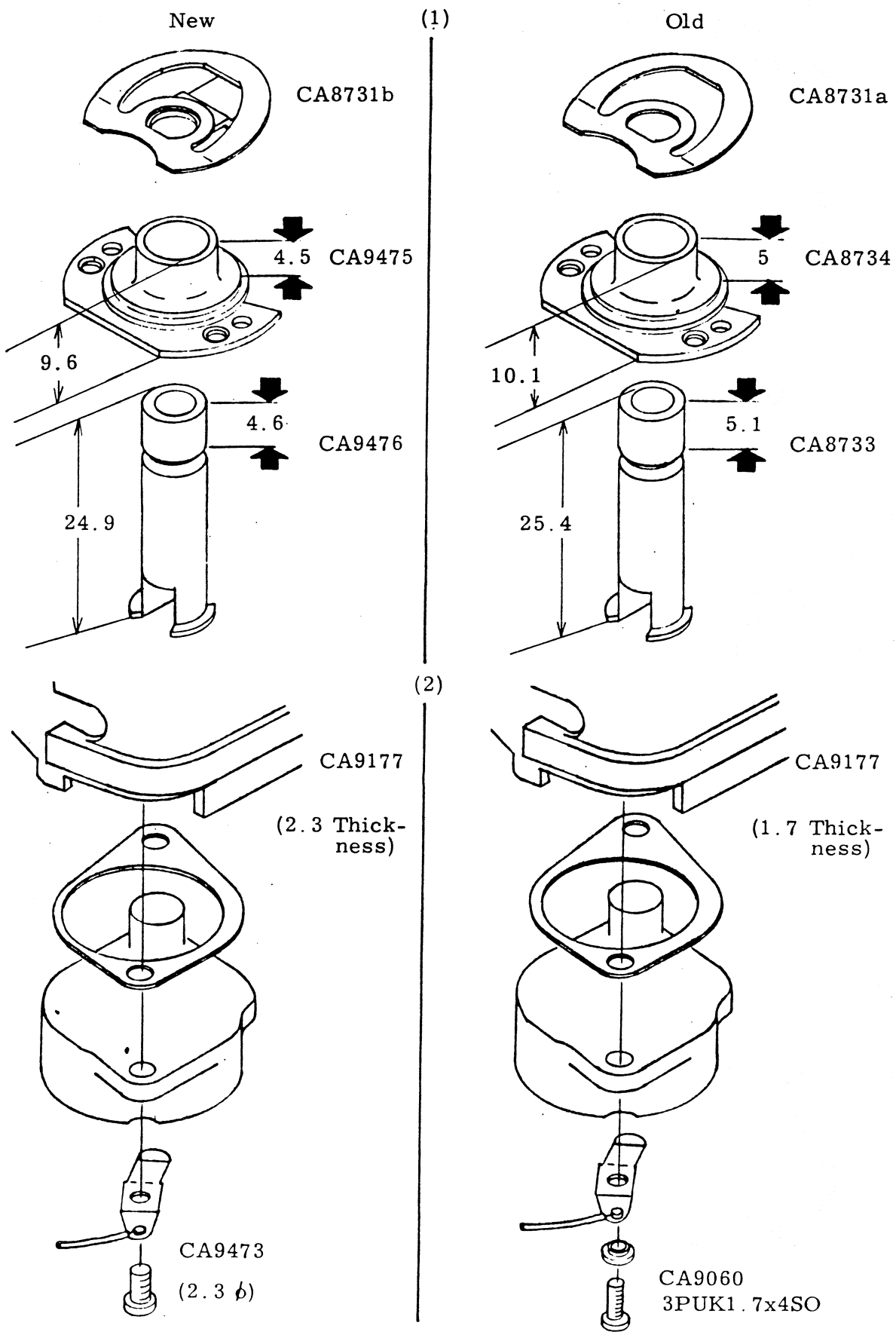
The used lubricant and chemicals are common with the MDS.

MDS-M G. SPECIAL TOOLS

The used special tools are all common with those of the MDS.

However, the 4.5ϕ hole punching jig KC-0075G is unnecessary, because the MDS-M body CA9177 (Main Body) is already punched with the hole.

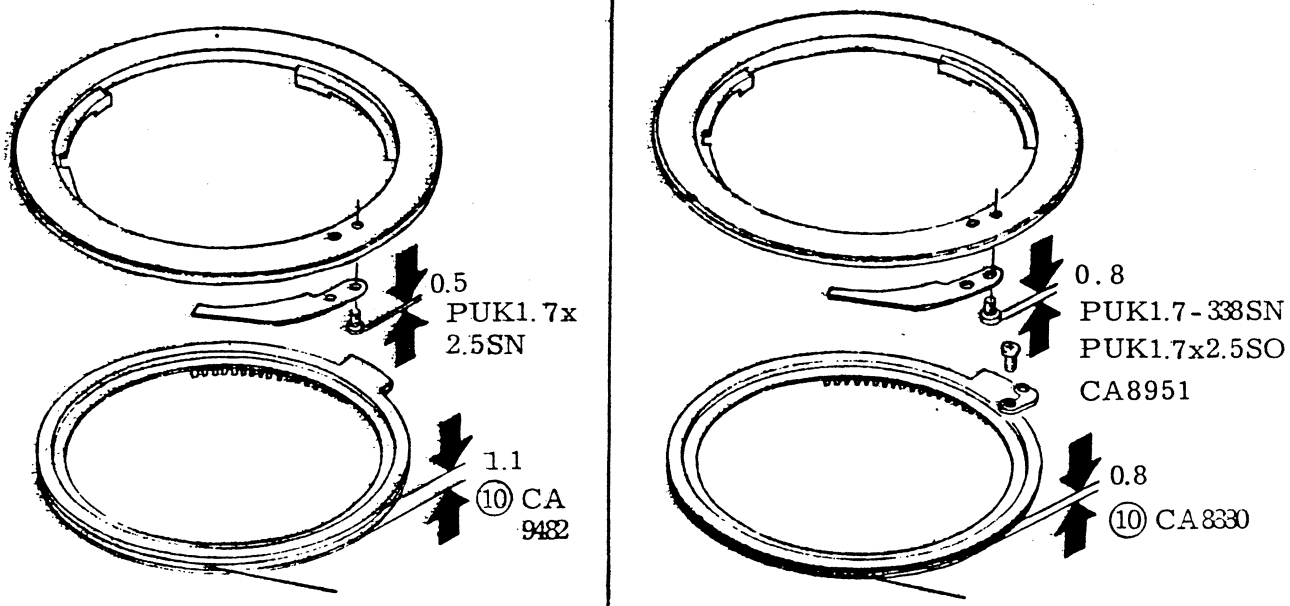
OM-1 MD IMPROVED PARTS TABLE



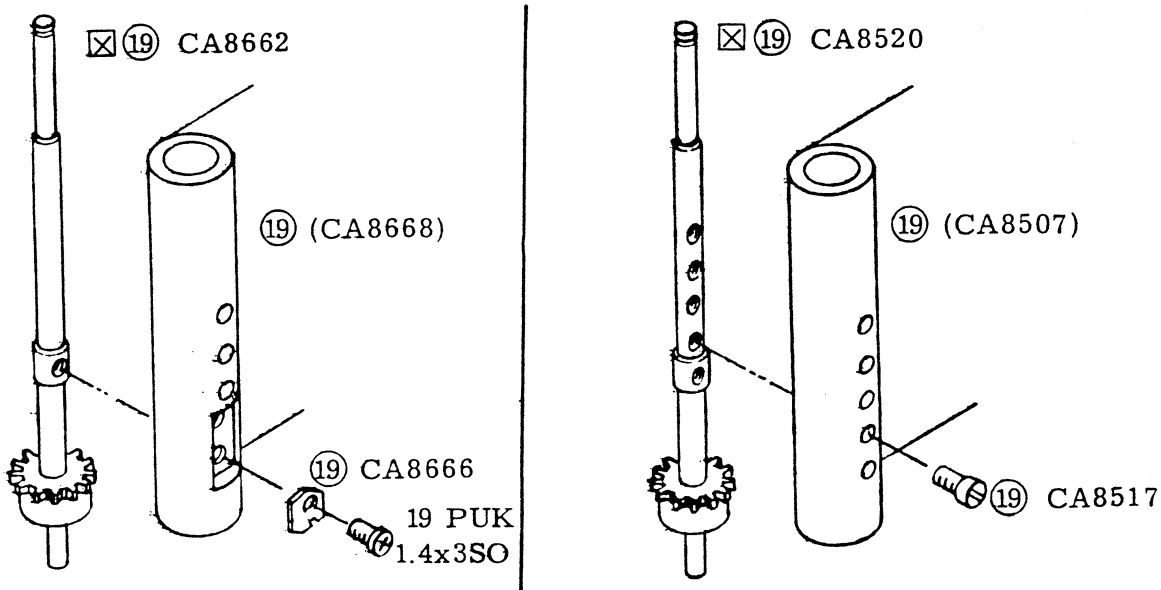
New

(3)

Old

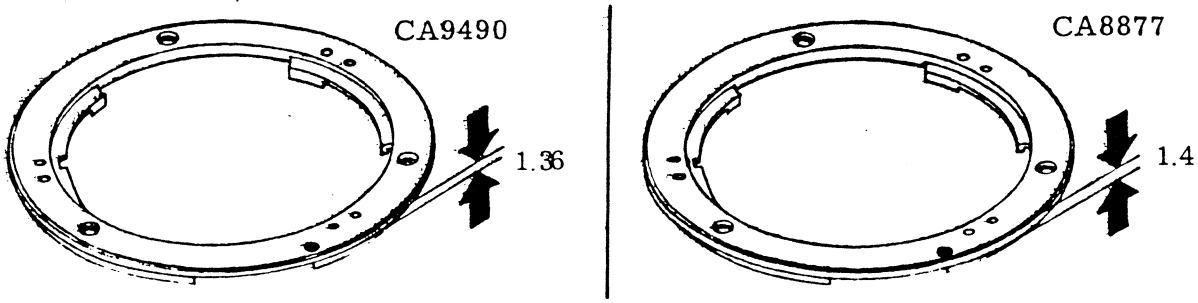


(4)



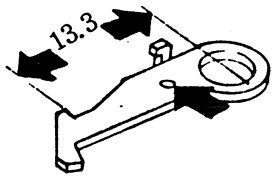
(5)

(Both Parts can be used)

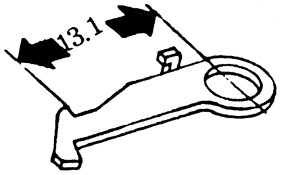


New (6) Old

(Both Parts can be used)



CA9491

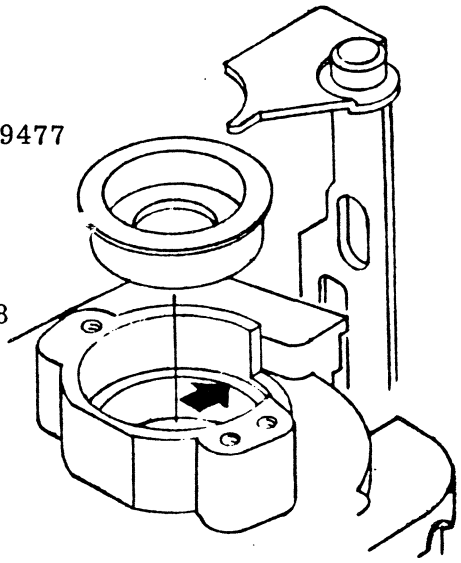


CA8824b

(7)

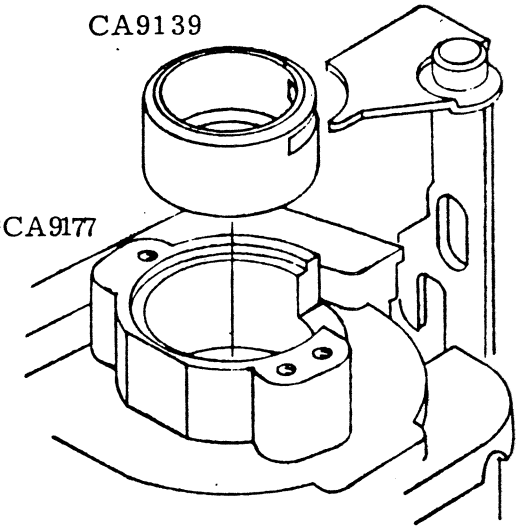
CA9477

*CA9478



CA9139

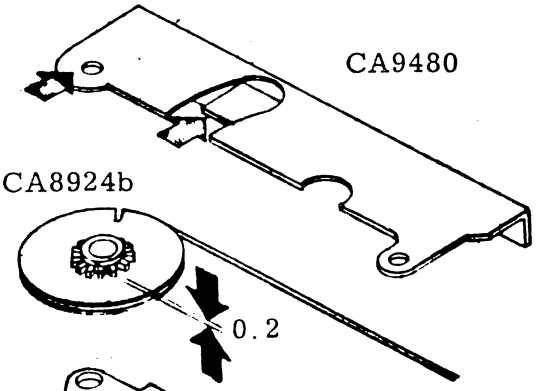
*CA9177



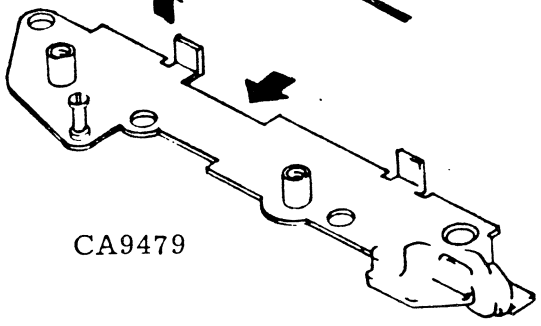
(8)

CA9480

CA8924b

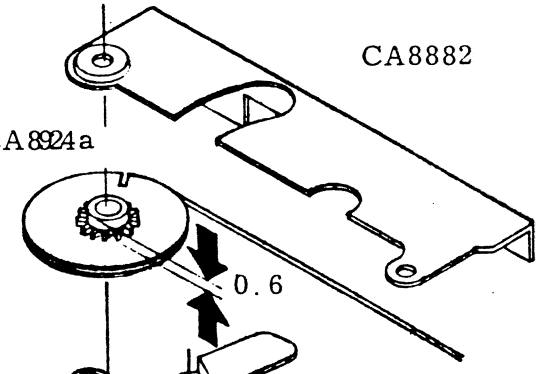


CA9479



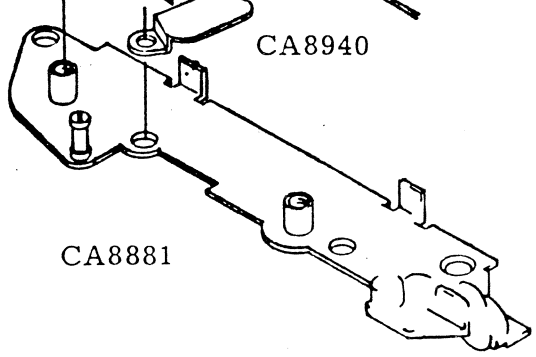
CA8882

CA8924a



CA8940

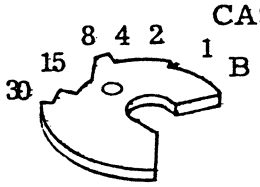
CA8881



New (9) Old

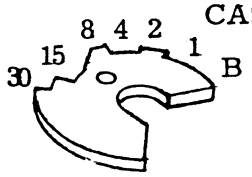
(Both Parts can be used)

CA9486



Size from the center	
B 1/1	4.99
1/2	5.72
1/4	5.72
1/8	6.21

CA9461



Size from the center	
B 1/1	5.09
1/2	5.77
1/4	5.65
1/8	6.12

DATA MODIFICATION NOTICE

Tokyo, May 11, 1981
Our Ref. CTM-065

DATA MODIFICATION NOTICE

MODEL	M D S - M	SUBJECT	Change of felt A and B

DESCRIPTION

MDS-M PL	CA854100	→	CE245500 ~~CA854100~~
	CA853500	→	CE245600 ~~CA853500~~
MDS-M EPD 4-C3	⑱ CA854100	→	⑱ CE245500 ~~CA854100~~
	⑱ CA853500	→	⑱ CE245600 ~~CA853500~~

P.L.: PARTS LIST
E.P.D.: EXPLODED PARTS DIAGRAM

REASON OF MODIFICATION

Standardization with MDJ (OM10)

CA854100 = 46 x 1.2 → CE245500 = 45.8 x 1.2
CA853500 = 46 x 2.2 → CE245600 = 45.8 x 2.2

PARTS MANAGEMENT

Use the old parts so far as they are stocked.
The new parts have already been adopted for MDJ.

REMARKS

OLYMPUS OPTICAL CO., LTD.

Tokyo, May 11, 1981
Our Ref. CTM-066

DATA MODIFICATION NOTICE

MODEL	M D S - M N	SUBJECT	Change of F key setscrew

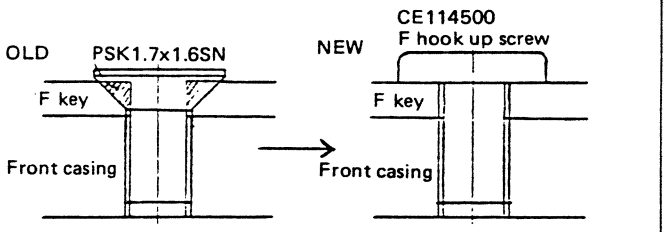
DESCRIPTION

MDS-MN EPD8-A3 PSK1.7 x 1.6SN → CE114500 ~~PSK1.7 x 1.6SN~~

P.L.: PARTS LIST
E.P.D.: EXPLODED PARTS DIAGRAM

REASON OF MODIFICATION

Countersunk facing is unnecessary in assembling F key.



The countersunk screw for F key has been replaced with a flat head screw.

PARTS MANAGEMENT

CA965000 F key in stock is not faced.
Request shipment of CE114500 F key plate.

REMARKS

Modification has been made in the parts list.

Tokyo, May 11, 1981
Our Ref. CTM-067

DATA MODIFICATION NOTICE

MODEL	M D S - M N	SUBJECT	Prevention of upward mirror deviation

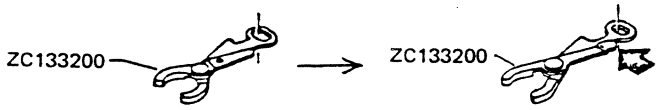
DESCRIPTION

No data modification.

P.L.: PARTS LIST
E.P.D.: EXPLODED PARTS DIAGRAM

REASON OF MODIFICATION

For preventing the mirror from deviating upward, the rising portion of V pinch 1 has been extended.



PARTS MANAGEMENT

Use the old B pinch 1 so far as it is stocked. (The part No. remains unchanged.)

REMARKS

OM10 also employs B pinch 1. However, the old part must not be used for OM10.

Tokyo, May 11, 1981
Our Ref. CTM-068

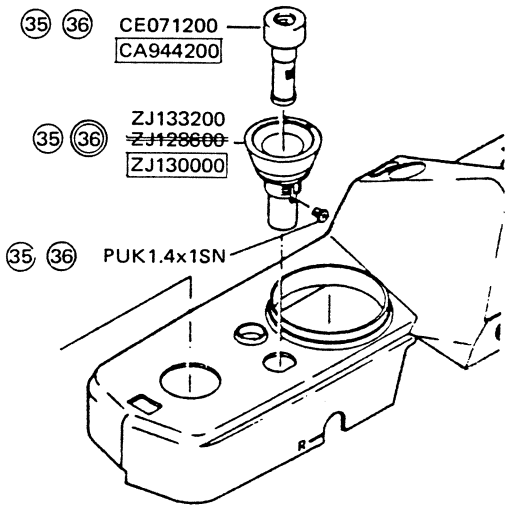
DATA MODIFICATION NOTICE

MODEL	M D S - M N	SUBJECT	Correction of part No. for button washer

DESCRIPTION

MDS-MN PL ZJ128600 Button washer → ZJ133200 ~~ZJ128600~~

MDS-MN EPD 1-B1 ㉟ ㊱ ZJ128600 → ㉟ ㊱ ZJ133200 ~~ZJ128600~~



P.L.: PARTS LIST
E.P.D.: EXPLODED PARTS DIAGRAM

REASON OF MODIFICATION

PL and EPD list the same part No. of the button washers for both OM-1N and OM-2N. However, the button washer for OM-1N has an ASA index line, whereas that for OM-2N has no index line. Correct part No. of the button washer for OM-1N to ZJ133200 for convenience of parts management.

PARTS MANAGEMENT

Check stocked ZJ128600 Button washer to make sure that it has no index line.
Request shipment of ZJ133200 button washer ass'y (having index line).

REMARKS

The button and button washer have hitherto been delivered as independent parts for the preceding models (MDS, MDS-M and MDE). However, they will hereafter be shipped as an assembly for standardization with the current models (MDS-MN and MDE-N).

Tokyo, May 11, 1981
Our Ref. CTM- 069

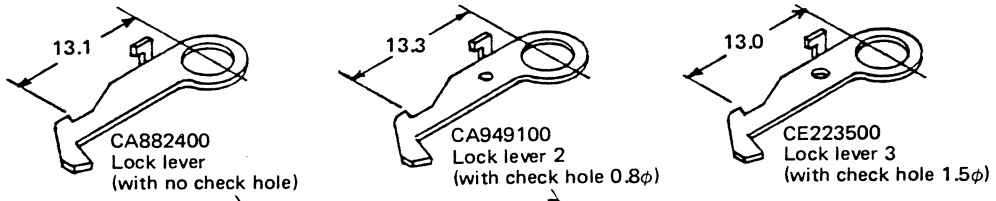
DATA MODIFICATION NOTICE

MODEL	M D S - M N	SUBJECT	Measure for proper engagement between 2 and 3 gear assemblies

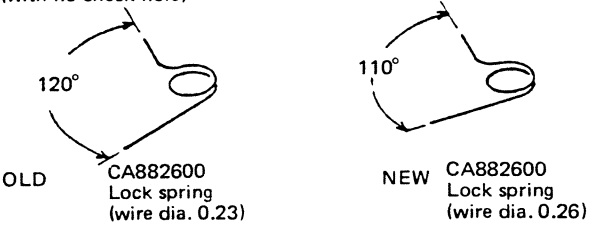
DESCRIPTION

MDS-MN PL	None	→	CE114600	3G screw	3-C2	1	Described below.
	None	→	CE223500	Lock lever 3	short, with large reference hole	1/3	Described below.
MDS-MN EPD 3-C1	PUK1.4-605SN	→	CE114600 ~~PUK1.4-605SN~~				
	CA882400 CA949100	→	CA882400 CA949100 CE223500				

(1)



(2)



(3)

P.L.: PARTS LIST
E.P.D.: EXPLODED PARTS DIAGRAM

REASON OF MODIFICATION

(1) For preventing friction between the 2 and 3 gear assemblies, CE223500 Lock lever 3 having short interval between claws has been added for permitting slection from among three types (as already practiced for OM-10).
(2) Spring force has been increased to prevent deviation between the 2 and 3 gear assemblies.
(3) The screw heads have been enlarged to prevent vertical play of the 3 gear ass'y.

PARTS MANAGEMENT

- Drawing No. of the lock lever remains uncharged . . . The old part is to be used so far as it is stocked.
- Request shipment of the lock lever 3 and 3G screw.
- PUK1.4 x 605SN is used in another location and should be managed in the conventional manner.

REMARKS

Tokyo, May 11, 1981
Our Ref. CTM-070

DATA MODIFICATION NOTICE

MODEL	M D S - M N	SUBJECT	Durability improvement of SW base plate and spool holder

DESCRIPTION

MDS-MN PL		CA937200 Spool holder	→	CE122000 ~~CA937200~~ Spool holder		
		None	→	CE121800 Plate A	<1>	1
		None	→	CE121900 Plate B	<1>	1
		ZC182400 SW base plate	→	ZC198500 ~~ZC182400~~ SW base plate		
MDS-MN EPD	3-A1	ZC182400	→	ZC198500 ~~ZC182400~~		
	2-B3	⑭ CA937200	→	<1> ⑭ CE122000 ~~CA937200~~		

Improved parts table <1> to be newly prepared.

P.L.: PARTS LIST
E.P.D.: EXPLODED PARTS DIAGRAM

REASON OF MODIFICATION

- UPI parts have been adopted as standard for improving durability

PARTS MANAGEMENT

- The new SW base plate is interchangeable with the old one as an assembly. . . . (Use the new plate ass'y after the old one has been consumed.)
- Plates A and B have been added in conjunction with the improvement.
- Request shipment of both the plates.

REMARKS

The SW base plate, spool holder, plates A and B are usable with the preceding models (MDS, MDS-M and MDE.)

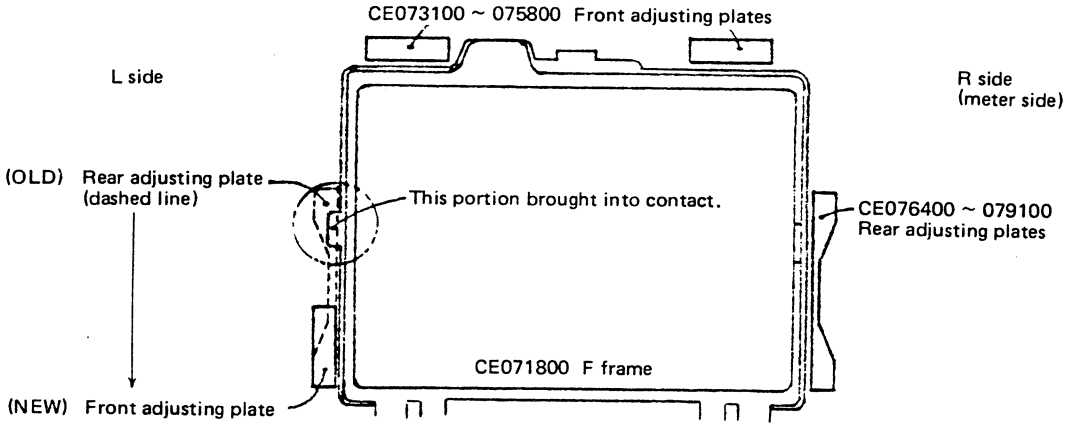
Tokyo, May 11, 1981
Our Ref. CTM-071

DATA MODIFICATION NOTICE

MODEL	M D S - M N	SUBJECT	Replacement of rear adjusting plate with front adjusting plate on L side

DESCRIPTION

MDS-MN PL MDS-M PL	CE073100	Front adjusting plate 60	t 0.03	2/15 →	3 ~~2~~/15
	≀ CE075800	" "	t 0.30	2/15 →	3 ~~2~~/15
	CE076400	Rear adjusting plate 80	t 0.03	2/15 →	1 ~~2~~/15
	≀ CE079100	" "	t 0.30	2/15 →	1 ~~2~~/15



P.L.: PARTS LIST
E.P.D.: EXPLODED PARTS DIAGRAM

REASON OF MODIFICATION

○ When a rear adjusting plate thicker than 0.25 mm is selected for focusing, Fresnel lens (viewfinder screen) may have play due to contact between bending of the F frame and adjusting plate. For correcting this defect, the rear adjusting screw has been replaced with a front adjusting plate on the left side.

PARTS MANAGEMENT

○ Manage the adjusting plates in the conventional manner. (since modification has been made only on the number of required adjusting plates.)

REMARKS

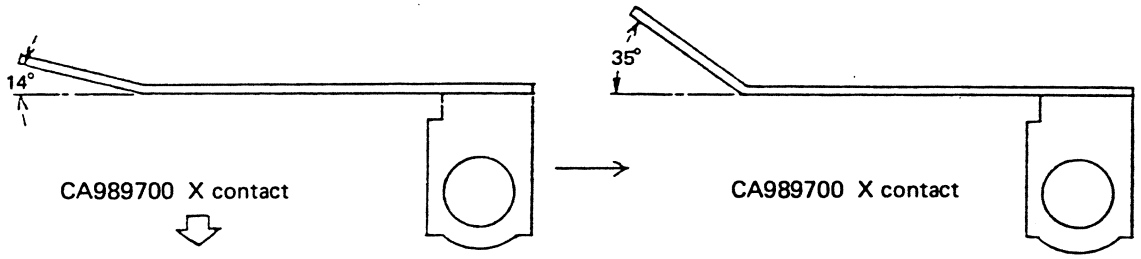
Tokyo, JAN. 20, 1982
Our Ref. CTM- 157

DATA MODIFICATION NOTICE

MODEL	M D S - M N	SUBJECT	Measure to assure good contact on synchronous X contact (increase of bending angle of X contact)

DESCRIPTION

No data modification.



CA989700 X contact

MDJ and MDQ use this contact.
It is named CE248100 X Contact for distinguishment from CA989700 (having bending angle of 35°).

CA989700 X contact

CA989700 X Contact used for MDS-MN and MDE-N.

P.L. PARTS LIST
E.P.D. EXPLODED PARTS DIAGRAM

REASON OF MODIFICATION

The bending angle has been increased to assure good frictional contact on the X contact.
This is effective to correct chattering due to poor contact on X contact (especially on OM-2).
The X contact having bending angle of 14° is generally usable in the camera body. (MDJ and MDQ adopt X contact having bending angle of 14°.)

PARTS MANAGEMENT

- Request the new X contact having bending angle of 35° whose part No. remains unchanged (CA989700).
- CA989700 X contact having bending angle of 14° should be stored under a part No. CE248100.

REMARKS

- When the X contact having bending angle of 35° is required emergently, use the X contact having bending angle of 14° after increasing the bending angle to 35°.

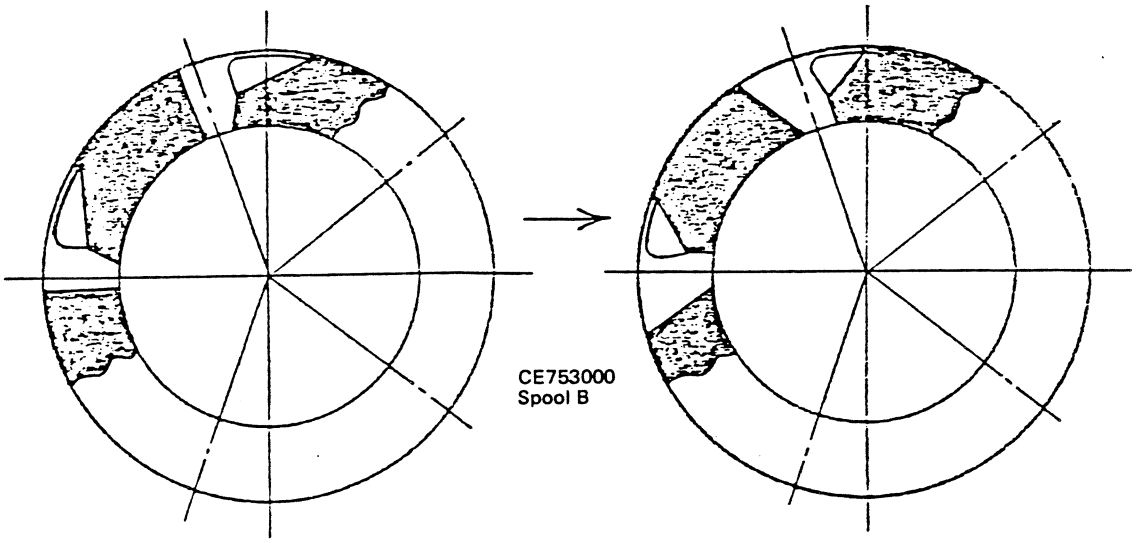
Tokyo, JAN. 20, 1982
Our Ref. CTM- 158

DATA MODIFICATION NOTICE

MODEL	M D S - M N	SUBJECT	Prevention of film from protruding from spool (improvement of the spool craw)

DESCRIPTION

No data modification.



P.L.: PARTS LIST
E.P.D.: EXPLODED PARTS DIAGRAM

REASON OF MODIFICATION

- In order to prevent film from protruding from the spool, the angles of the claws and grooves have been improved in the spool as illustrated above.

PARTS MANAGEMENT

- Part No. of spool B remains unchanged (CA753000).
- Use the old parts so far as it is stocked.

REMARKS

The modification has been effected since the end of October, 1981.

Tokyo, JAN. 20, 1982

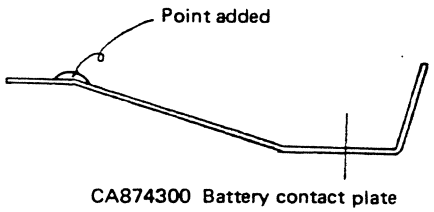
Our Ref. CTM- 159

DATA MODIFICATION NOTICE

MODEL	M D S - M N	SUBJECT	Improvement of contact on battery contact (addition of a point on battery contact plate)

DESCRIPTION

No data modification.



P.L.: PARTS LIST
E.P.D.: EXPLODED PARTS DIAGRAM

REASON OF MODIFICATION

- In order to improve contact on CA874300 Battery contact plate, a point has been added as shown above.
  When the battery contact plate is deformed by a battery in setting it, the point slides and refreshes the contact portion.
  Further, even when the battery contact plate is fatigued, the point serves to maintain required contact pressure.

PARTS MANAGEMENT

- The new battery contact plate will be adopted in the convenience of the next model change intended some while later.
- Use the old battery contact plate so far as it is stocked.

REMARKS

Tokyo, APR. 30, 1982
Our Ref. CTM- 191

DATA MODIFICATION NOTICE

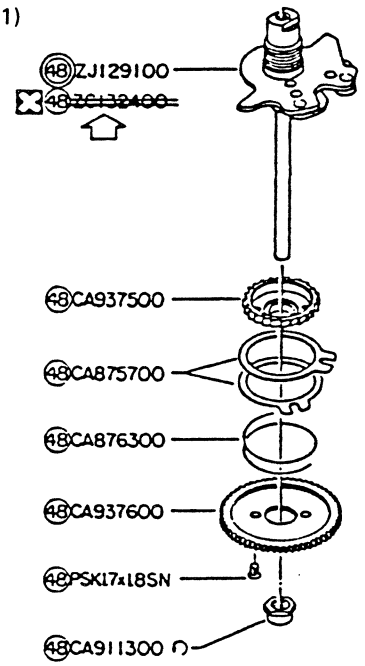
F. 11

MODEL	M D S - M N	SUBJECT	Omission of winding shaft sub ass'y and link ass'y

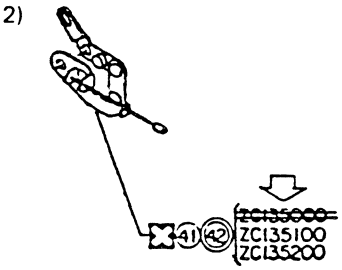
DESCRIPTION

1) ZC132400 Winding shaft ass'y → Omitted
2) ZC135000 Link ass'y → Omitted

1)



2)



P.L.: PARTS LIST
E.P.D.: EXPLODED PARTS DIAGRAM

REASON OF MODIFICATION

1) Due to modification of manufacturing processes, ZC132400 Winding shaft sub ass'y will not be stocked hereafter at the factory or repair shops. ZJ129100 Winding shaft ass.y will hereafter be used instead.
2) ZC135000 Link ass'y has not been used at the factory for these days. Since it is judged that the link ass'y will be unnecessary hereafter, it will not be stocked as a repair part at the shops.
ZK135100 and ZC135200 should be used selectively instead of the ling ass'y.

PARTS MANAGEMENT

ZC132400 and ZC135000 will not be shipped hereafter.

REMARKS

Tokyo, APR. 30, 1982
Our Ref. CTM- 192

DATA MODIFICATION NOTICE

F. 12

MODEL	M D S - M N	SUBJECT	Adoption of MDJ part (sprocket lower holder)

DESCRIPTION

CA881500 Sprocket lower holder → CE216200 Sprocket lower holder

CA881500
(metal)

CE216200
(molding)

P.L.: PARTS LIST
E.P.D.: EXPLODED PARTS DIAGRAM

REASON OF MODIFICATION

The sprocket lower holder has been replaced with the molded part already used in Model OM-10.

CA881500 (made of metal) → CE216200 (molding) (Shape of the sprocket lower holder remains unchanged.)

PARTS MANAGEMENT

No particular request of part shipment required.
CA881500 should be managed in the conventional manner.

REMARKS

CA881500 (made of metal) should be used in Model MDE (OM-2), MDS and MDS-M (OM-1).
CE216200 (modling) should be adopted after CE881500 has been used.

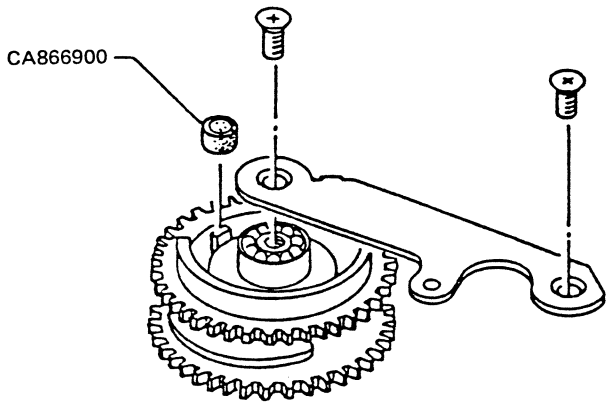
Tokyo, APR. 30, 1982
Our Ref. CTM- 193

DATA MODIFICATION NOTICE

MODEL	M D S - M N	SUBJECT	Improvement in material of rubber band S2 (to prevent cracks)

DESCRIPTION

No data modification.



P.L.: PARTS LIST
E.P.D.: EXPLODED PARTS DIAGRAM

REASON OF MODIFICATION

Material of CA866900 Rubber band has been changed from black neoprene rubber to polyurethane rubber to prevent crack which deviates shutter speed and makes the rear curtain upopenable. Strength of the new material has already been confirmed through use in Model OM-10.

PARTS MANAGEMENT

The old part should be discarded. Rubber band made of polyurethane will hereafter be delivered.

REMARKS

This modification applies also to Model MDS and Model MDS-M.

Tokyo, APR. 30, 1982
Our Ref. CTM- 194

DATA MODIFICATION NOTICE

MODEL	M D S - M N	SUBJECT	Standardization of parts (screws)

DESCRIPTION

3PUK1.4 x 1.5SN	→	PUK1.4 - 303SN
3PUK1.4 x 1.8SN	→	PUK1.4 - 405SN
3PUK1.4 x 3SN	→	PUK1.4 - 440SN
3PUK1.7 x 2.5SN	→	PUK1.7 - 338SN
3PUK1.7 x 4SN	→	PUK1.7 - 312SN

P.L.: PARTS LIST
E.P.D.: EXPLODED PARTS DIAGRAM

REASON OF MODIFICATION

Screws of similar types have been standardized to facilitate parts management.

PARTS MANAGEMENT

REMARKS

The above-mentioned parts also of Model MDS and Model MDS-M have been standardized.

Tokyo, Dec. 20, 1982
Our Ref. CTM- 208

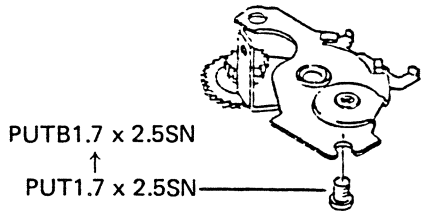
DATA MODIFICATION NOTICE

MODEL	MDS-MN	SUBJECT	Correction of tapping screw symbol

DESCRIPTION

PUT1.7 x 2.5SN → PUTB1.7 x 2.5SN

ZC136100



P.L.: PARTS LIST
E.P.D.: EXPLODED PARTS DIAGRAM

REASON OF MODIFICATION

Correction of error

- "B" is to be added to "PUT".
- "T" is always followed by "S" or "B".
  "S" type: Screw having the same thread pitch as that of PSK, PUK or HK.
  "B" type: Screw having thread pitch wider than that of "S" type (Most tapping screws are of this type.)

PARTS MANAGEMENT

PUT1.7 x 2.5SN used for part management should be corrected into PUTB1.7 x 2.5SN.

REMARKS

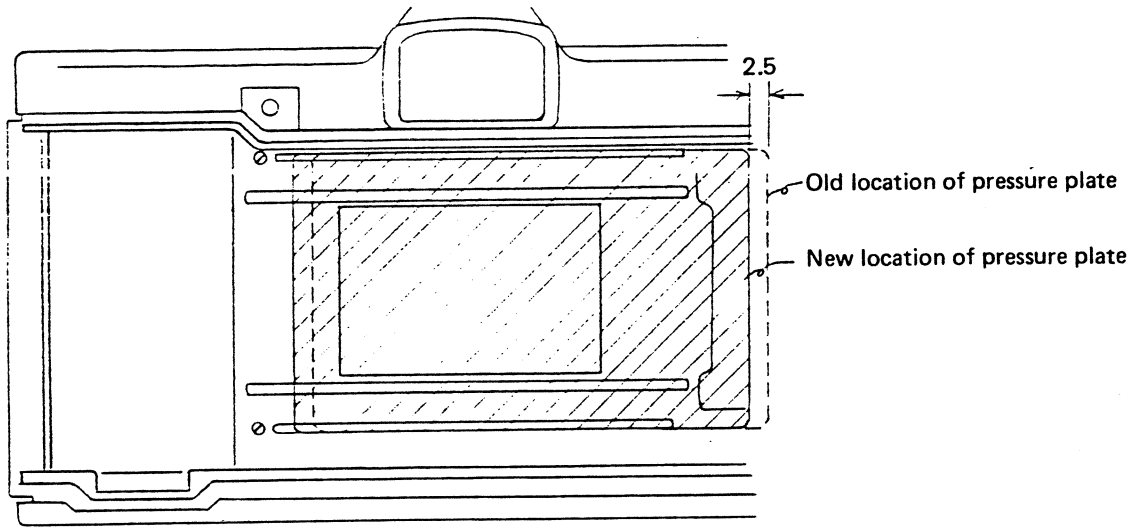
Tokyo, Sept. 24, 1983
Our Ref. CTM- 235

DATA MODIFICATION NOTICE

F. 16

MODEL	OM-1N (MDS-MN)	SUBJECT	Stabilization of film surface (displacement of pressure plate)

DESCRIPTION



P.L.: PARTS LIST
E.P.D.: EXPLODED PARTS DIAGRAM

REASON OF MODIFICATION

Inorder to enhance positioning precision of film surface (improve resolution), the pressure plate has been shifted 2.5 mm toward the film magazine.
All the spot welding points on the spring holder of the rear cover have been shifted 2.5 mm toward the film magazine (the pressure plate remains unchanged). By these modifications, symmetry in the right-left direction of the pressure plate with regard to the mask surface of the camera body (optical axis) has been improved, thereby stabilizing the film surface.
(The perforations may be disengaged from the sprocket if the pressure plate is shifted for a long distance.)

PARTS MANAGEMENT

The old parts should be used so far as it is stocked.

REMARKS