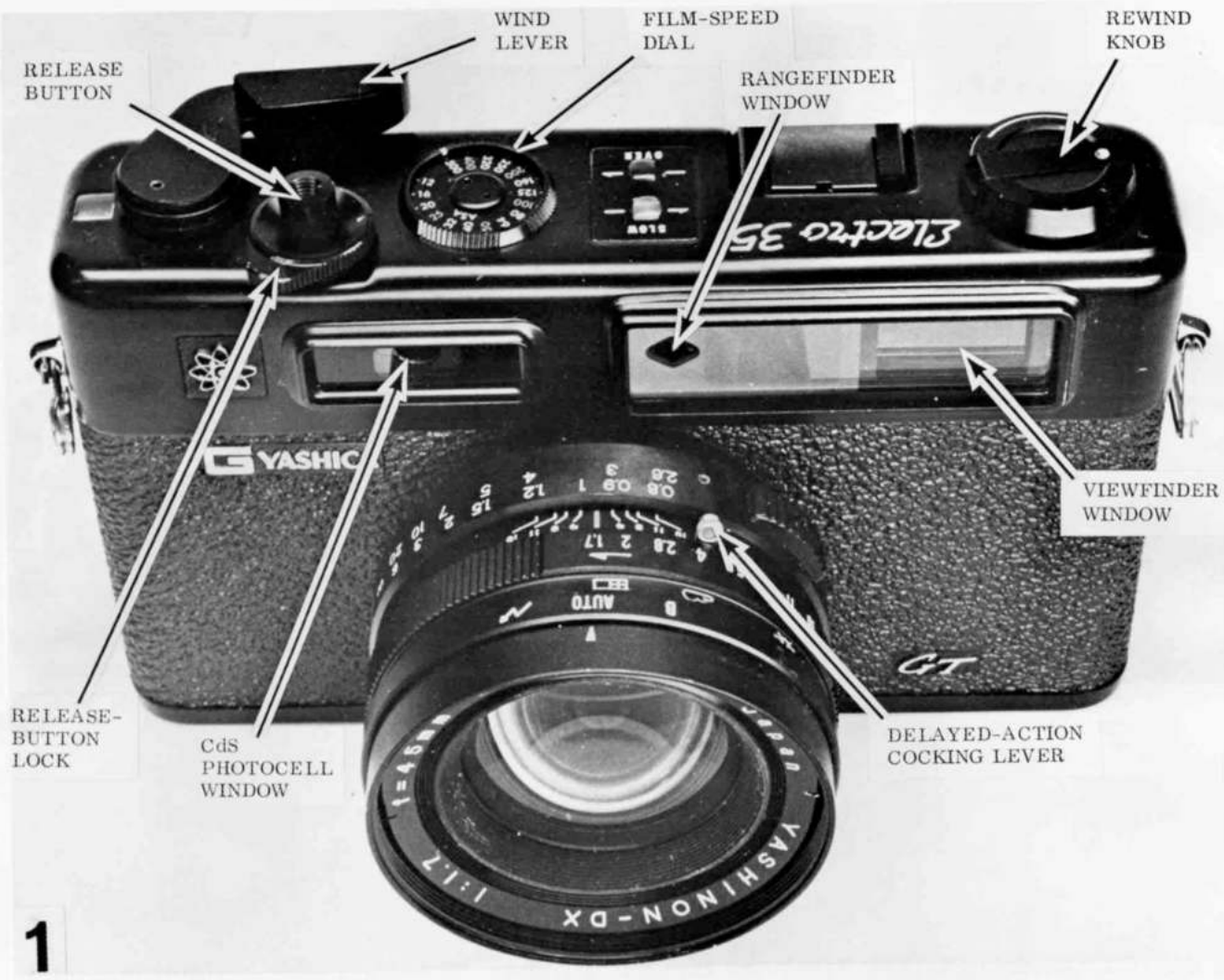
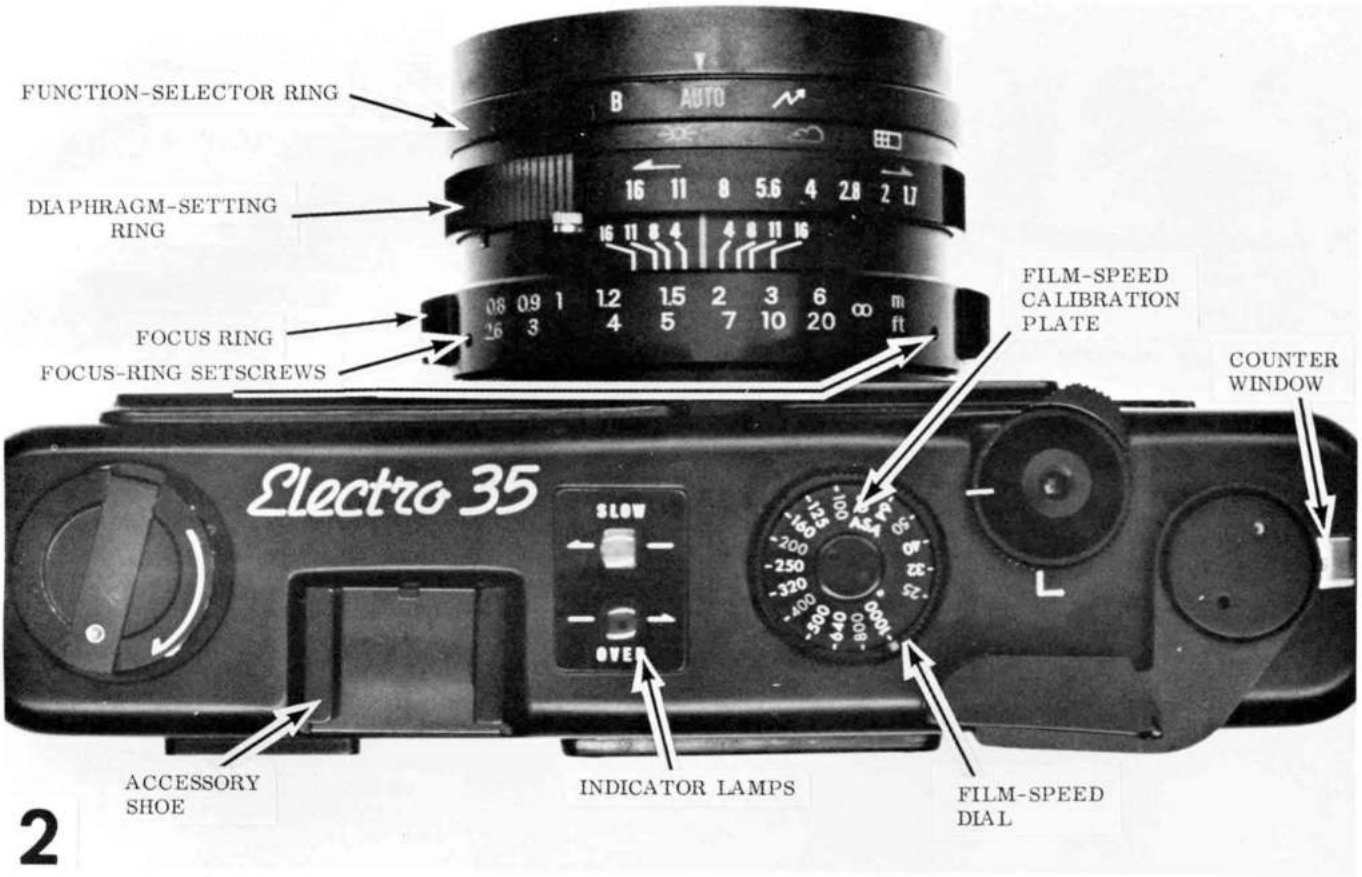
YASHICA

Electro 35



Select the film speed by turning the FILM-SPEED DIAL. Notice that this moves a pair of masks in front of the CdS photocell. The faster the film speed selected, the larger the aperture between the masks.



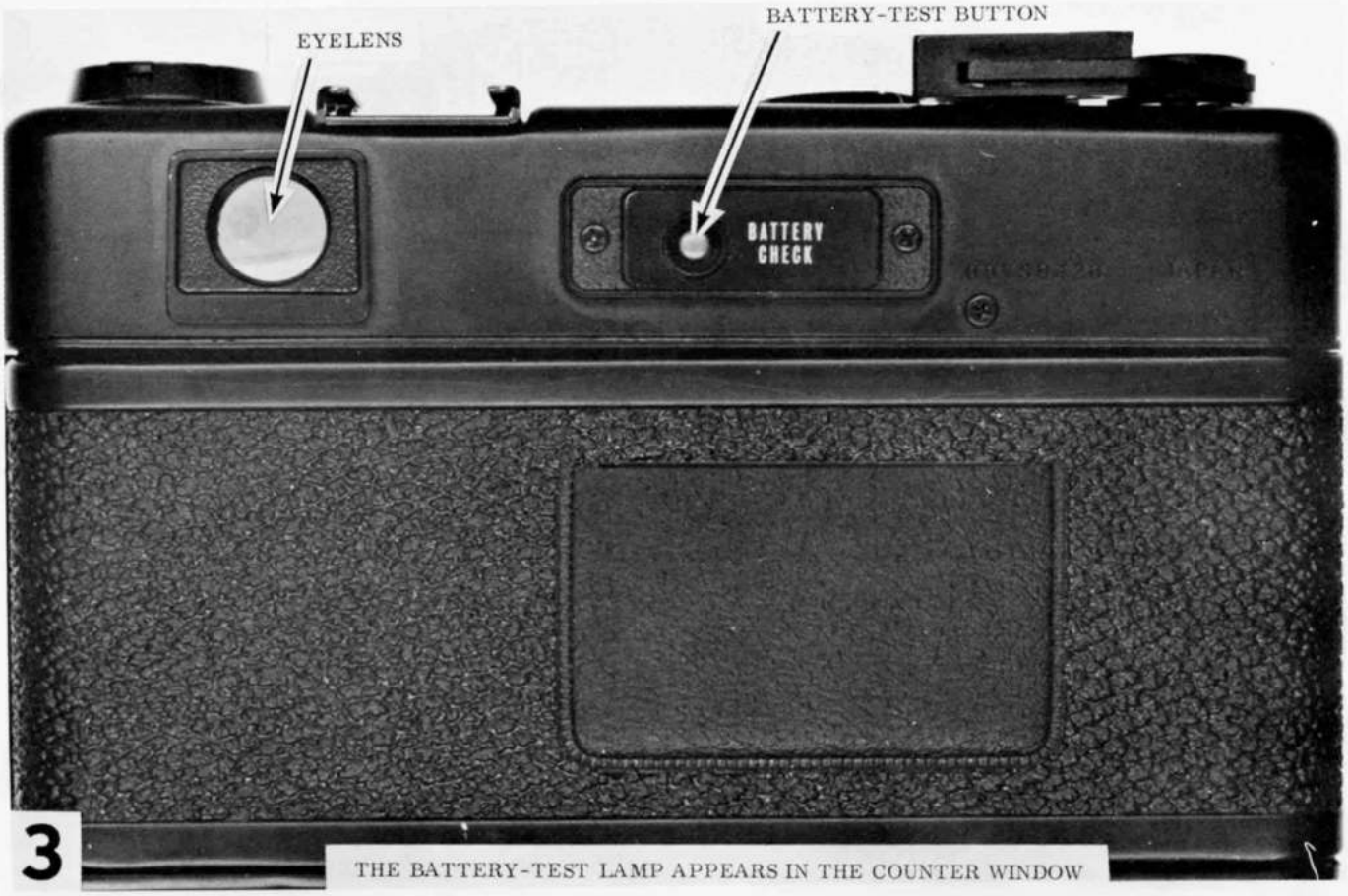
2

The FUNCTION-SELECTOR RING has three positions: "B" (for bulb), a lightning-flash symbol (for using flash), and "AUTO." At the "AUTO" position, the shutter-speed control is fully automatic.

Selecting the diaphragm setting moves the diaphragm leaves to the desired f/stop. At the same time, the diaphragm-setting ring selects a value of resistance for the exposure-control circuit. The shutter then automatically programs the shutter speed according to the amount of light striking the CdS cell, the diaphragm setting, and the film-speed setting.

The fastest speed the camera can deliver is 1/500 second. As you start depressing the release button, watch the indicator lamps on the top cover. If the red (overexposure) lamp comes on, you know that the fastest shutter speed of 1/500 second is too slow for the proper exposure. You must then set a smaller f/stop.

If the yellow (slow) lamp comes on, the required shutter speed is too slow for a hand-held exposure (slower than 1/30 second). The yellow-lamp warning tells you to use a larger f/stop, a flash attachment, or a tripod.

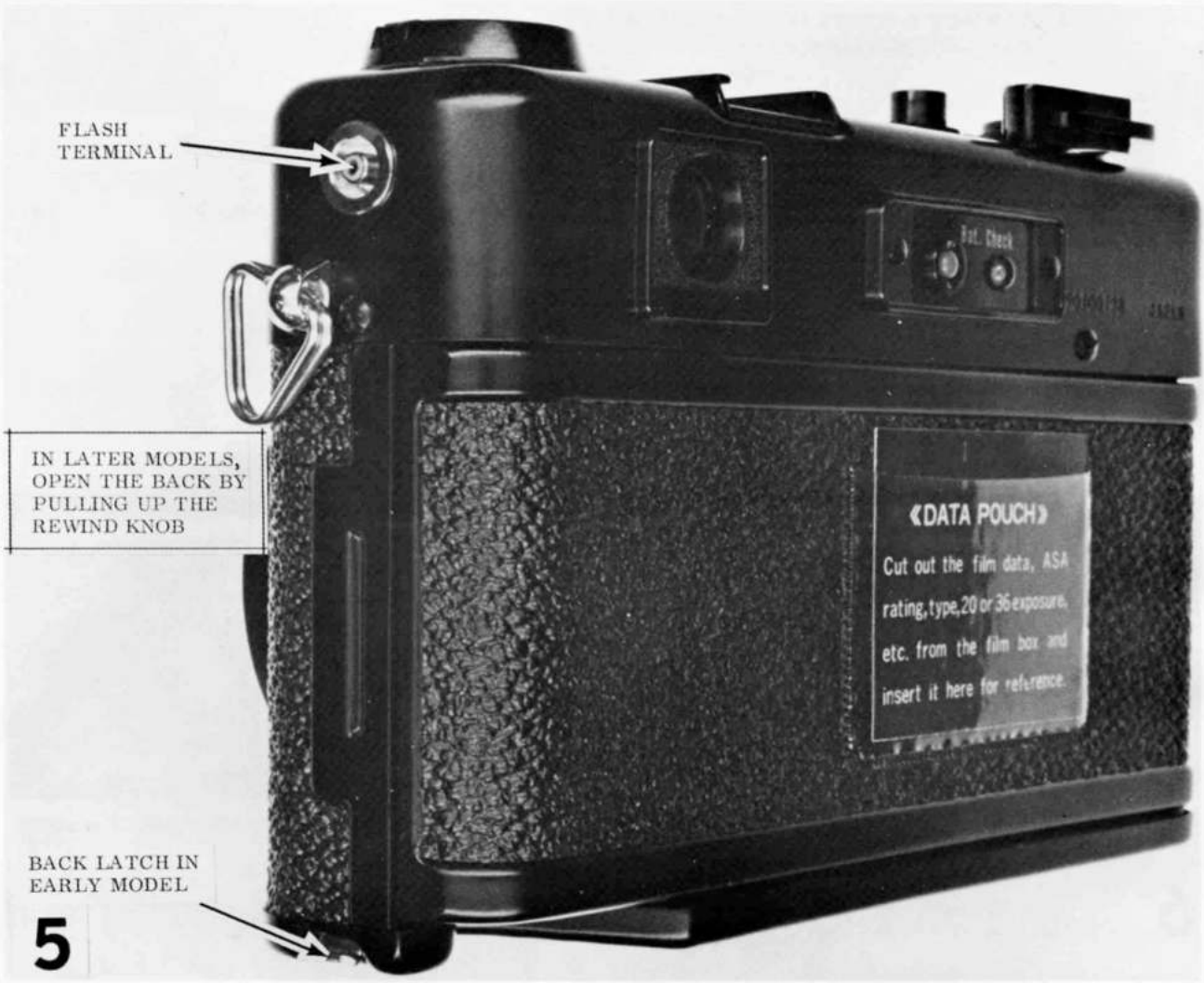


3 THE BATTERY-TEST LAMP APPEARS IN THE COUNTER WINDOW

You'll find the battery-test lamp in one of two positions, according to the camera model. In current models, the battery-test lamp appears in the counter window when you depress the battery-test button. Here, the battery-test lamp serves a second function -- it illuminates the counter dial, making the calibrations visible at night. In earlier models, the battery-test lamp is next to the battery-test button, Fig. 4.

VARIATION (EARLIER MODEL)

4



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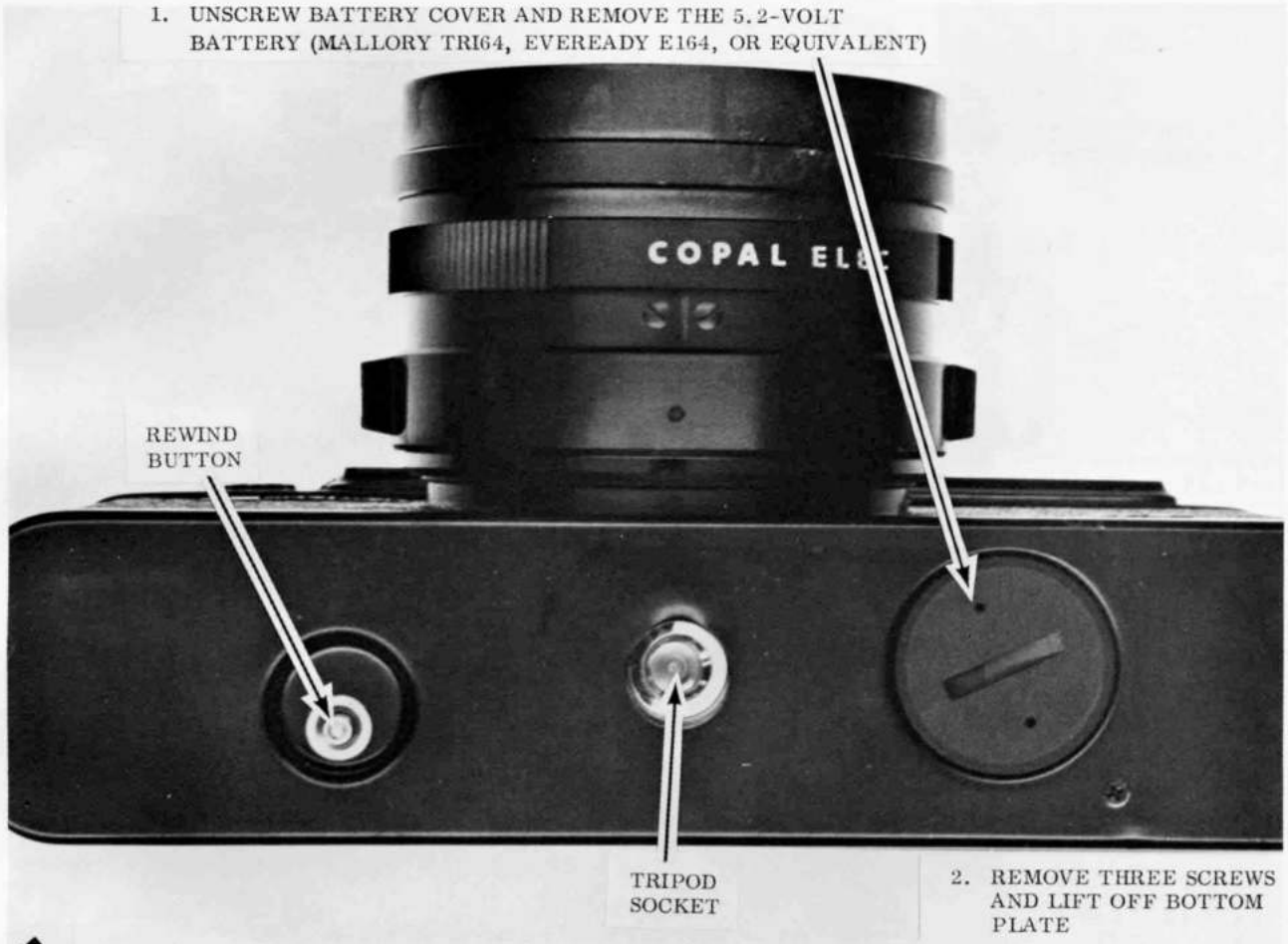
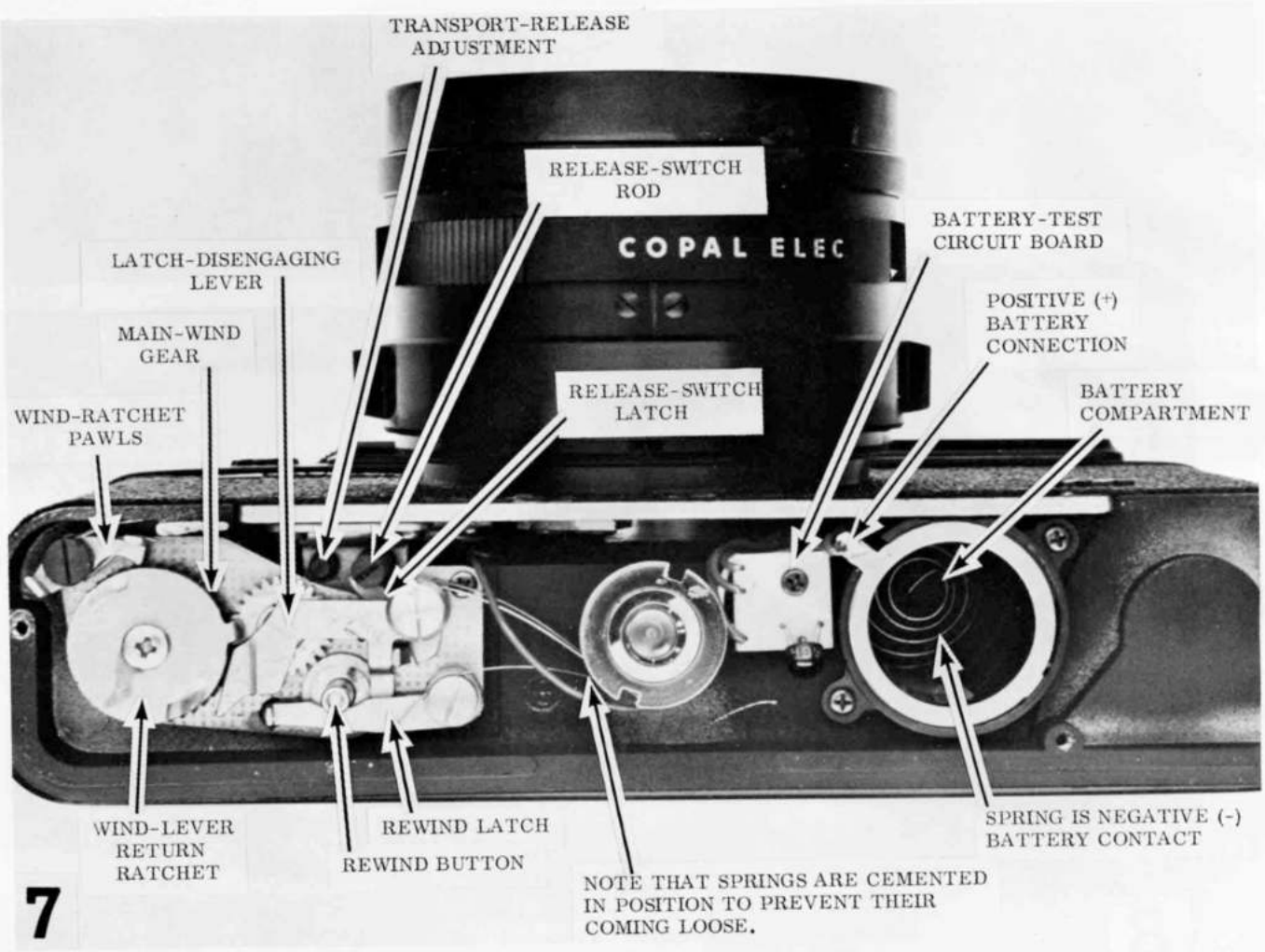
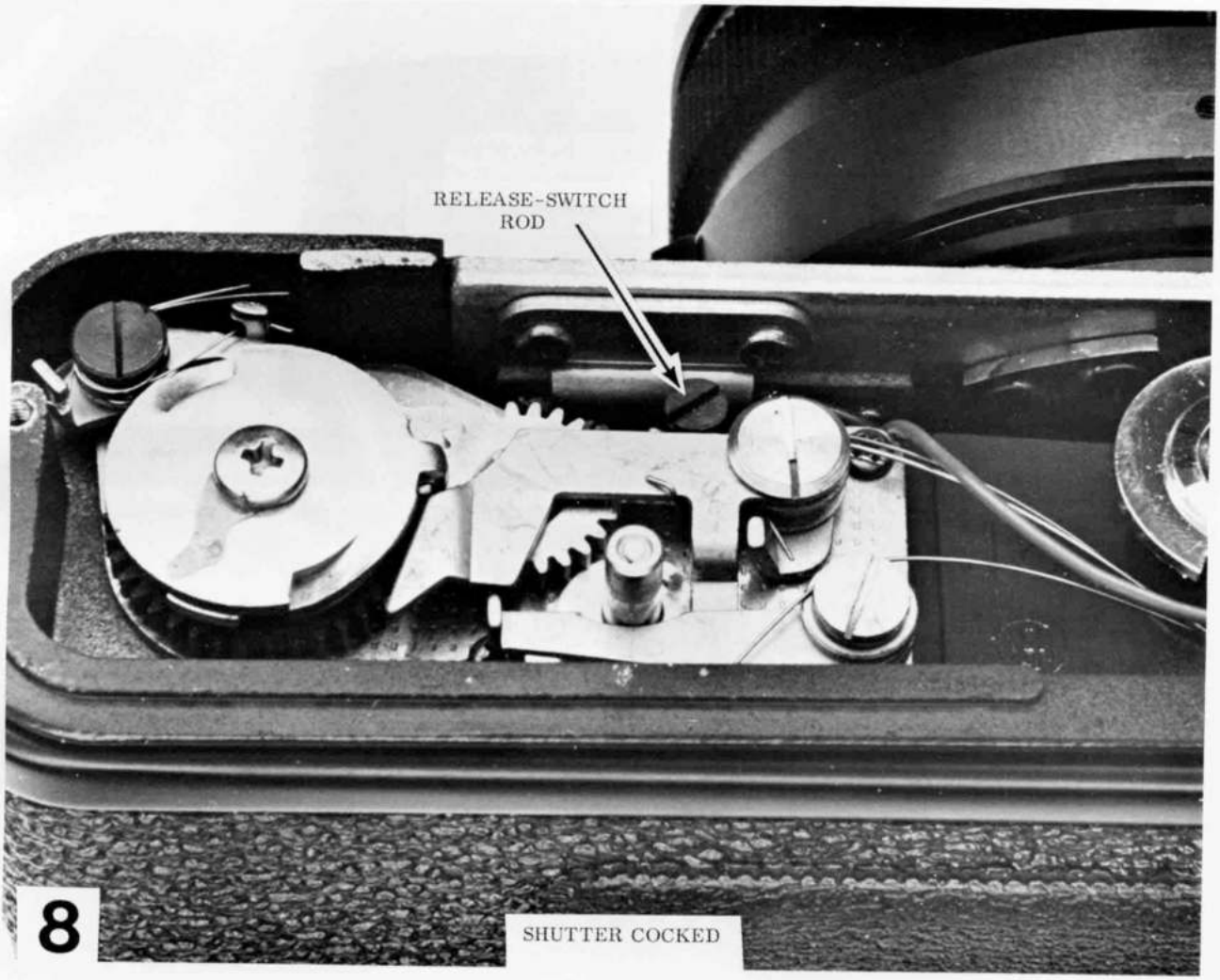


6

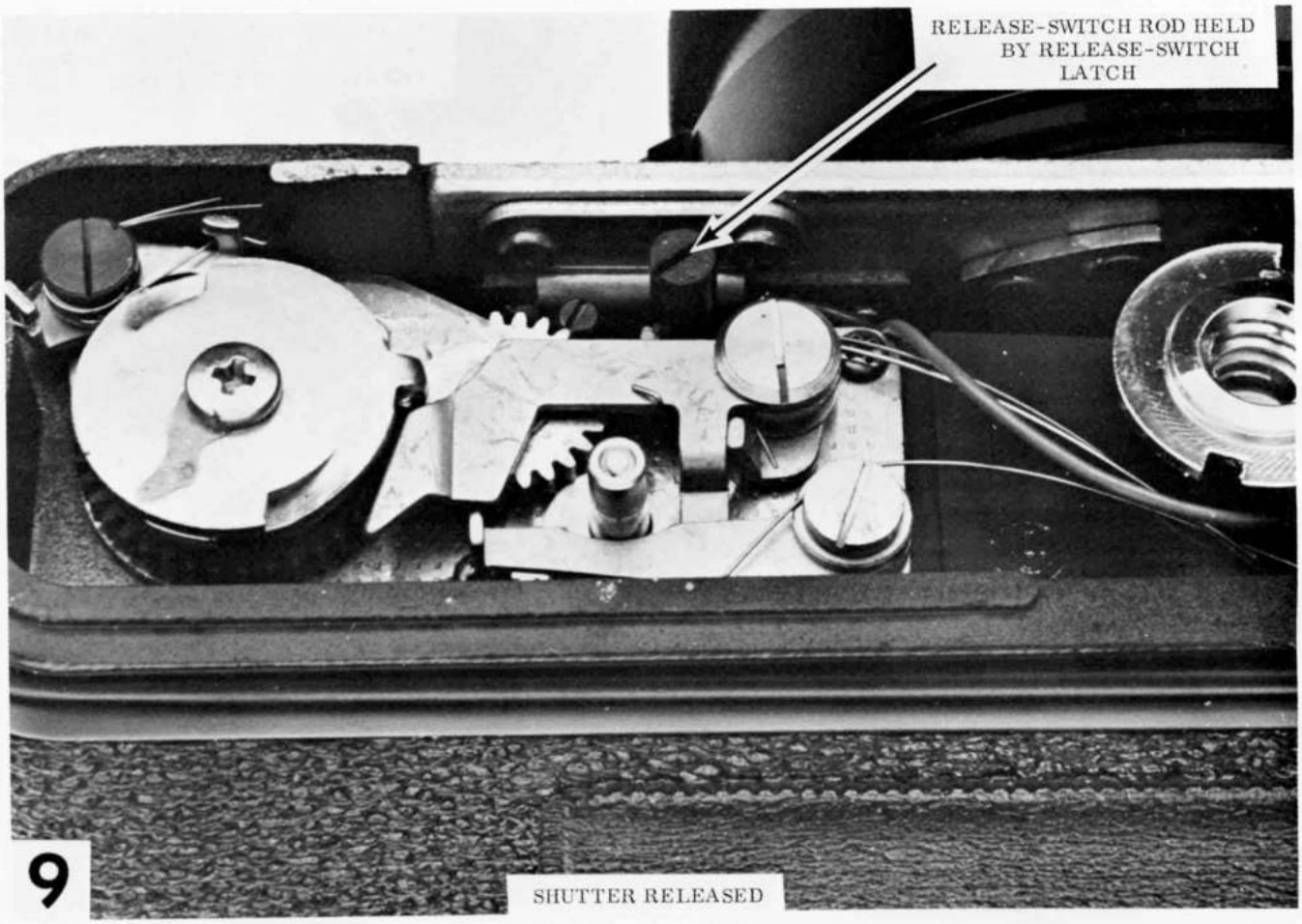
Removing the bottom plate in earlier models requires some manipulation to clear the back latch.



The transport-release adjustment is accessible from the bottom of the camera. Yet you can make the same adjustment from the top of the camera after removing the top cover plate. This adjustment will be described later, when the parts controlled by the adjustment are visible.

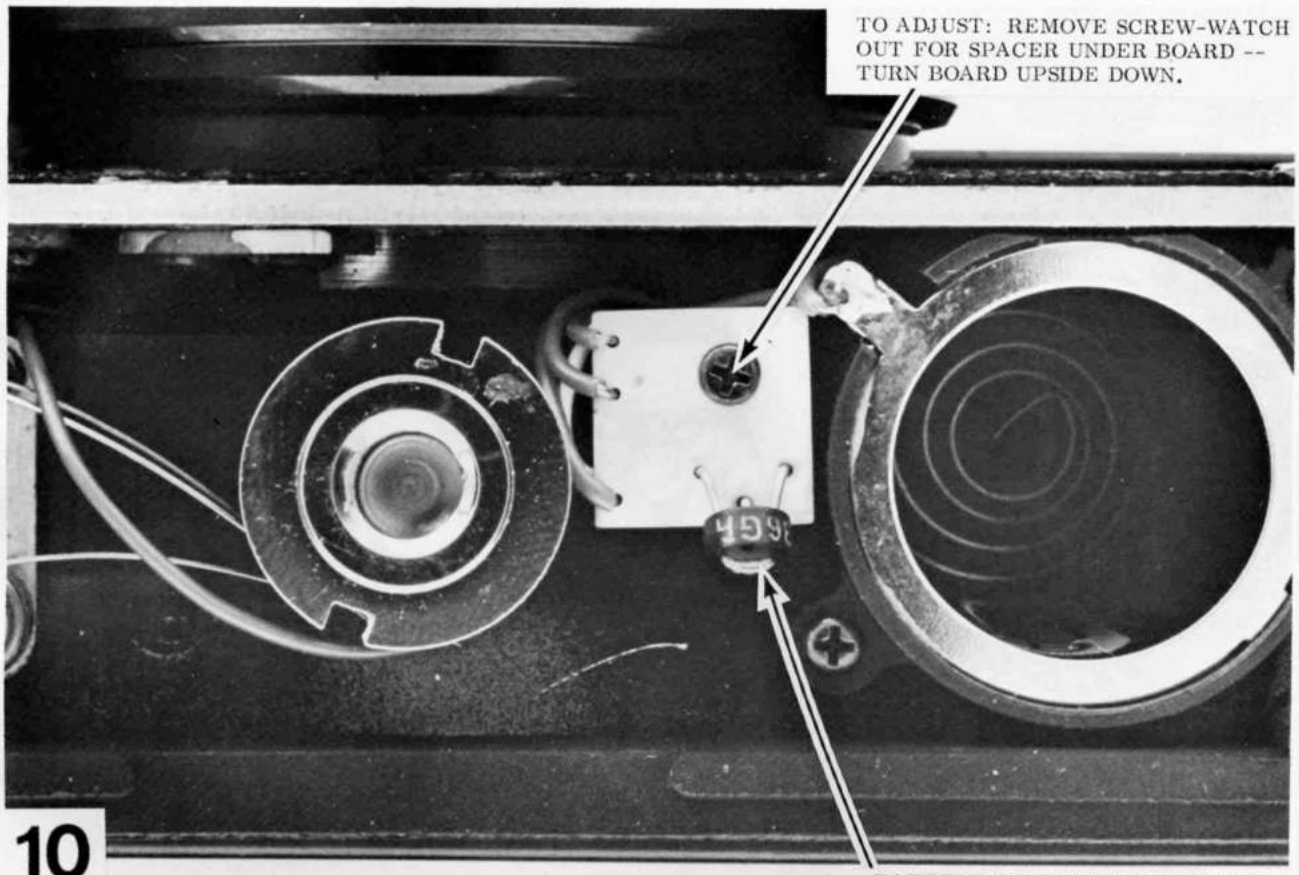


8 SHUTTER COCKED



Notice that the end of the release-switch rod moves toward the bottom of the camera as you depress the release button. The release-switch latch then drops into a groove in the release-switch rod -- that holds the release-switch rod in the depressed position until you cock the shutter for the next exposure. This latching arrangement assures that the exposure-control circuit remains connected -- even though you allow the release button to return to its rest position.

Turning the screwdriver-slotted end of the release-switch rod controls the point at which the release-switch latch drops into engagement. Check to see that the release-switch latch engages the slot in the release-switch rod at the same moment that the shutter releases. The adjustment may be disturbed when you replace the front plate of the camera.



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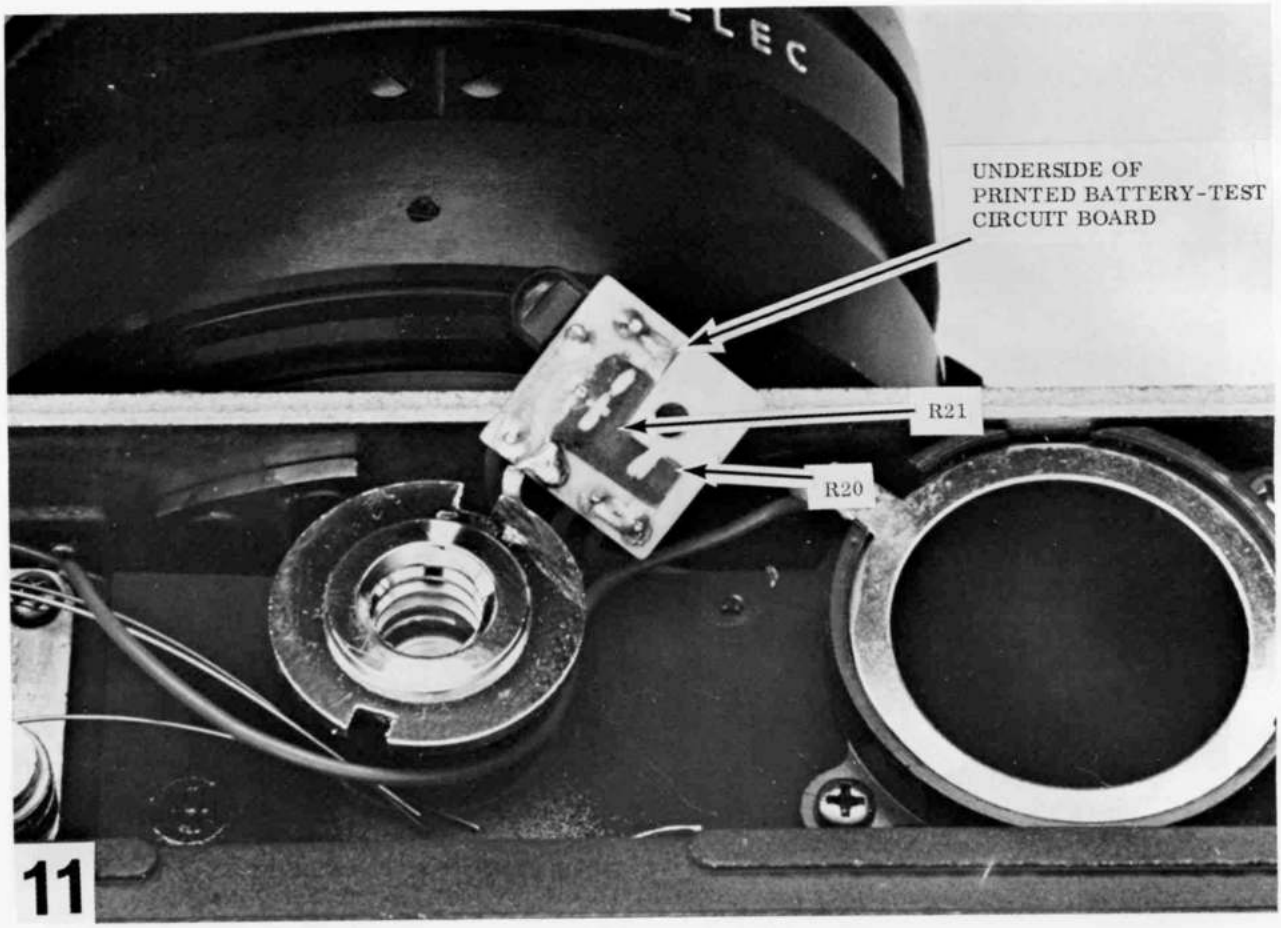
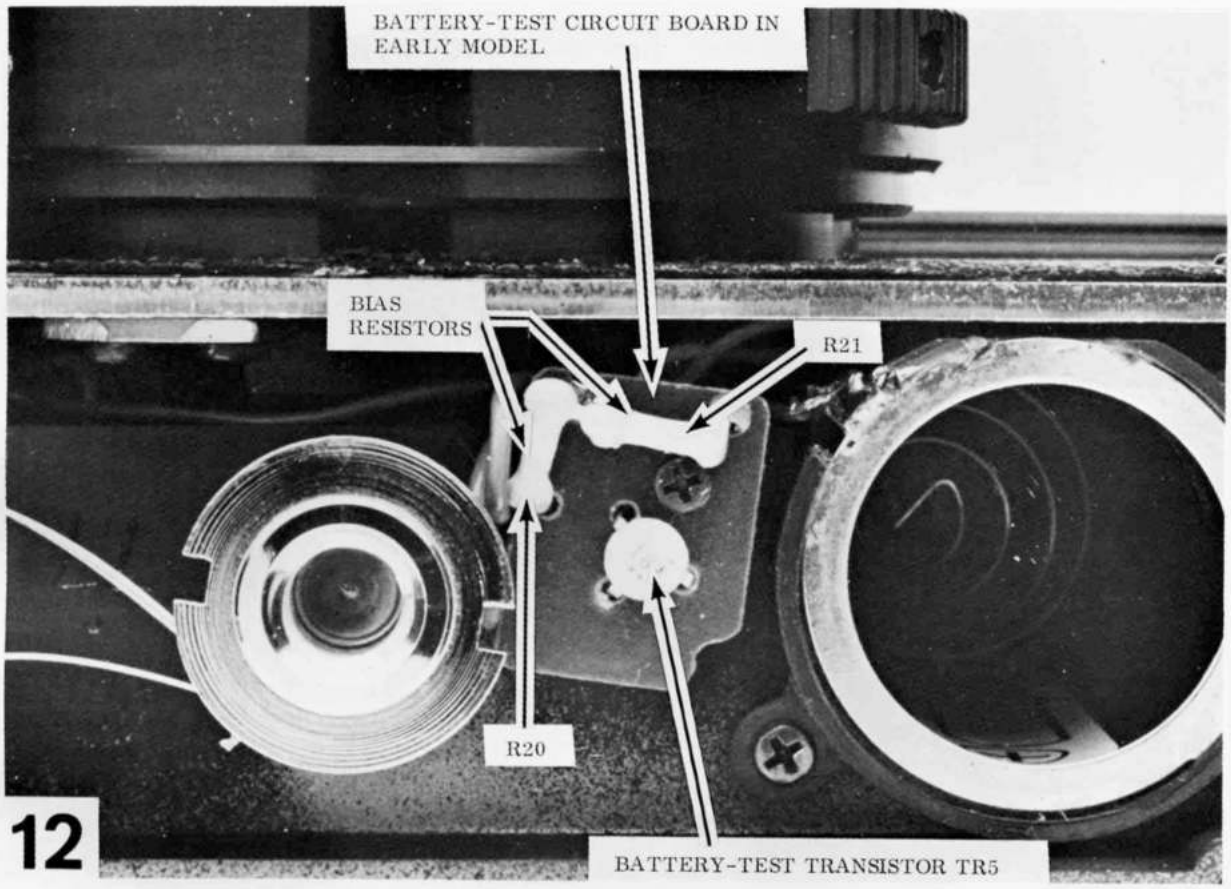


The battery-test lamp should turn on with 3.9 volts supplied to the battery terminals; it should turn off with 3.5 volts supplied. Adjustment in the earlier models (figure 12) is by changing the values of the fixed resistors; adjustment in the current models is by scratching the surface of the printed resistors to increase the resistance.



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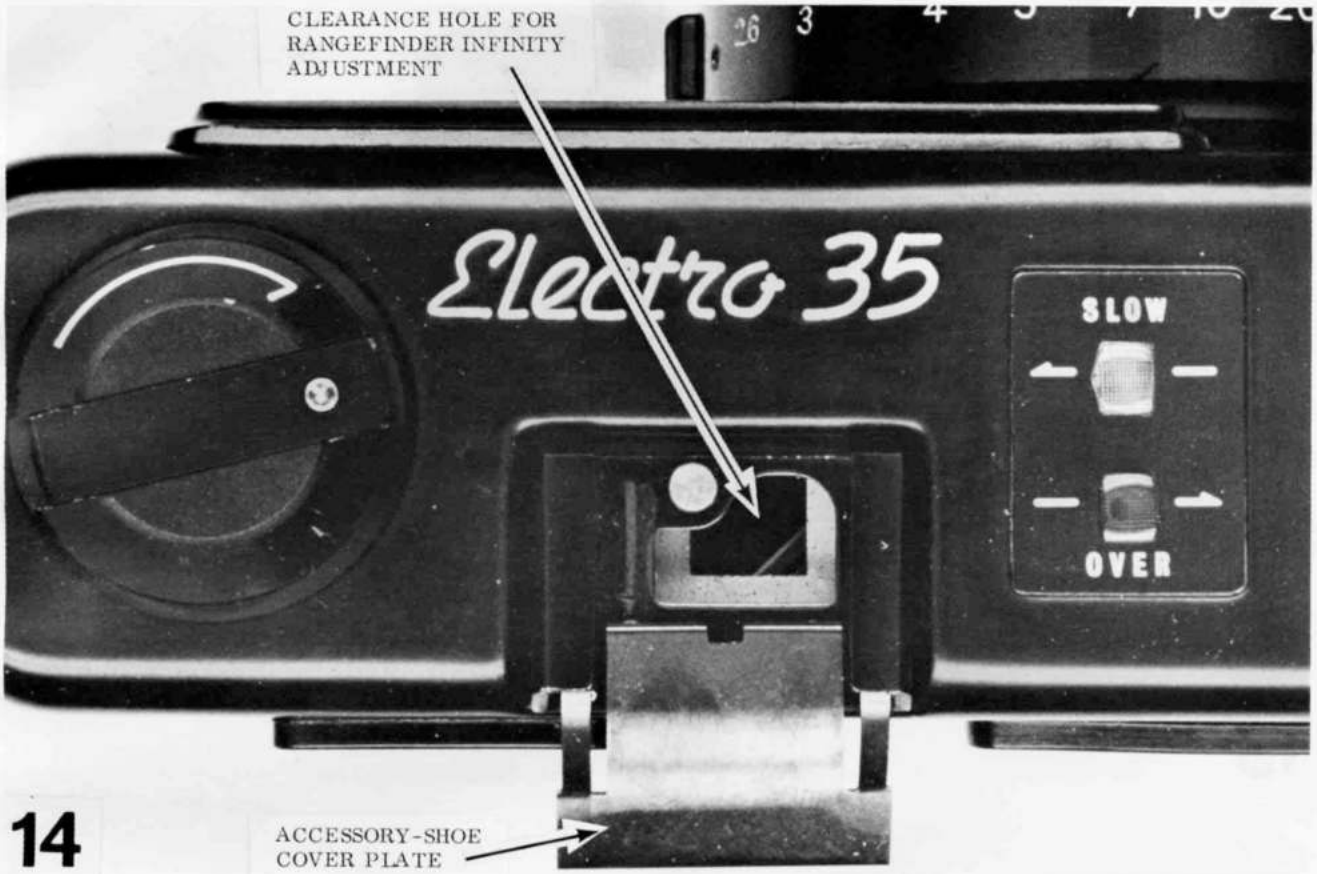
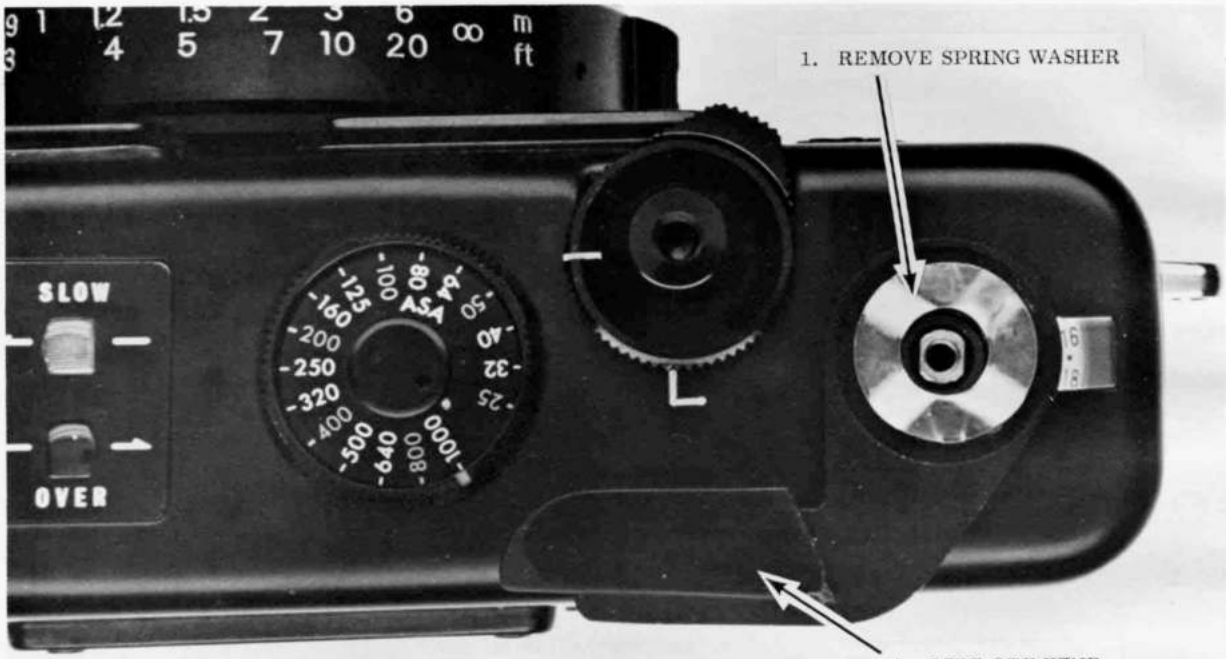


14

You can reach the rangefinder infinity adjustment without removing the top cover plate. Just lift the edge of the accessory-shoe cover plate that faces the front of the camera -- then, slide the accessory-shoe cover plate toward the back of the camera. You can now see the clearance hole for the infinity adjustment.



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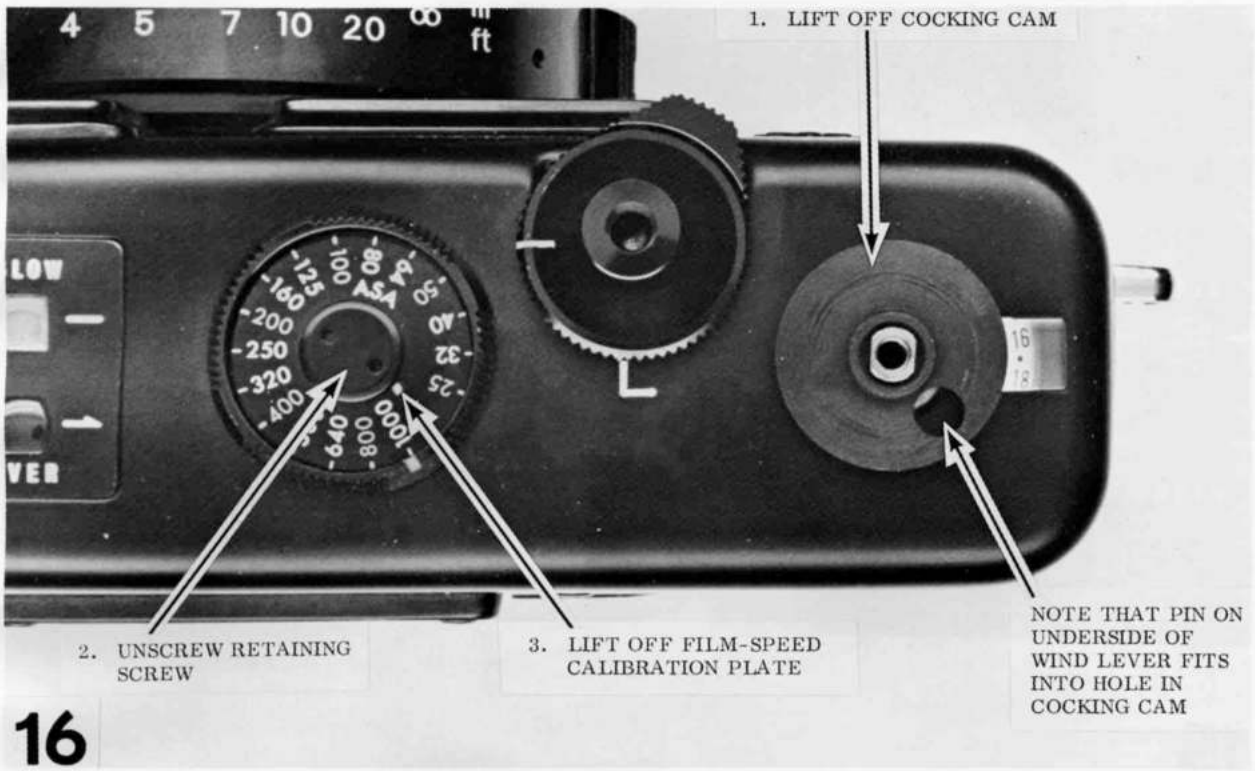

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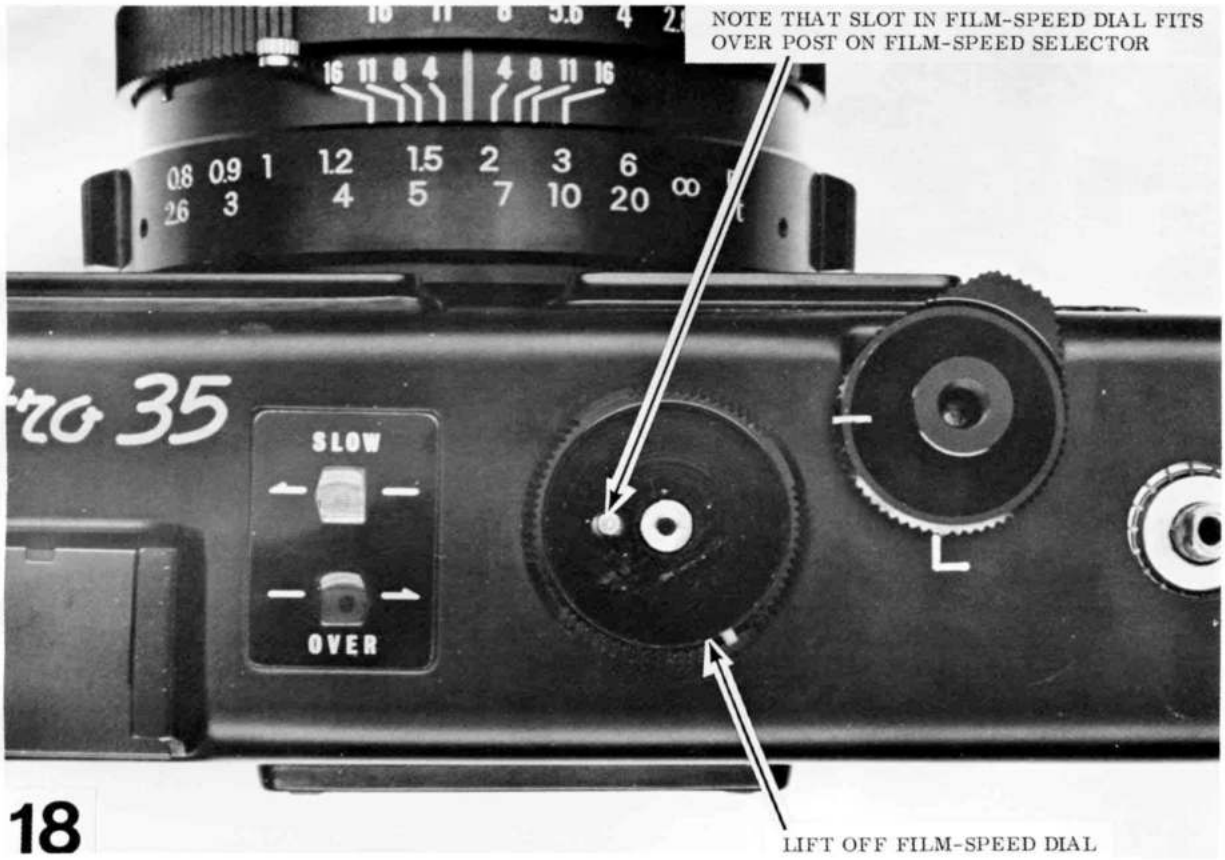
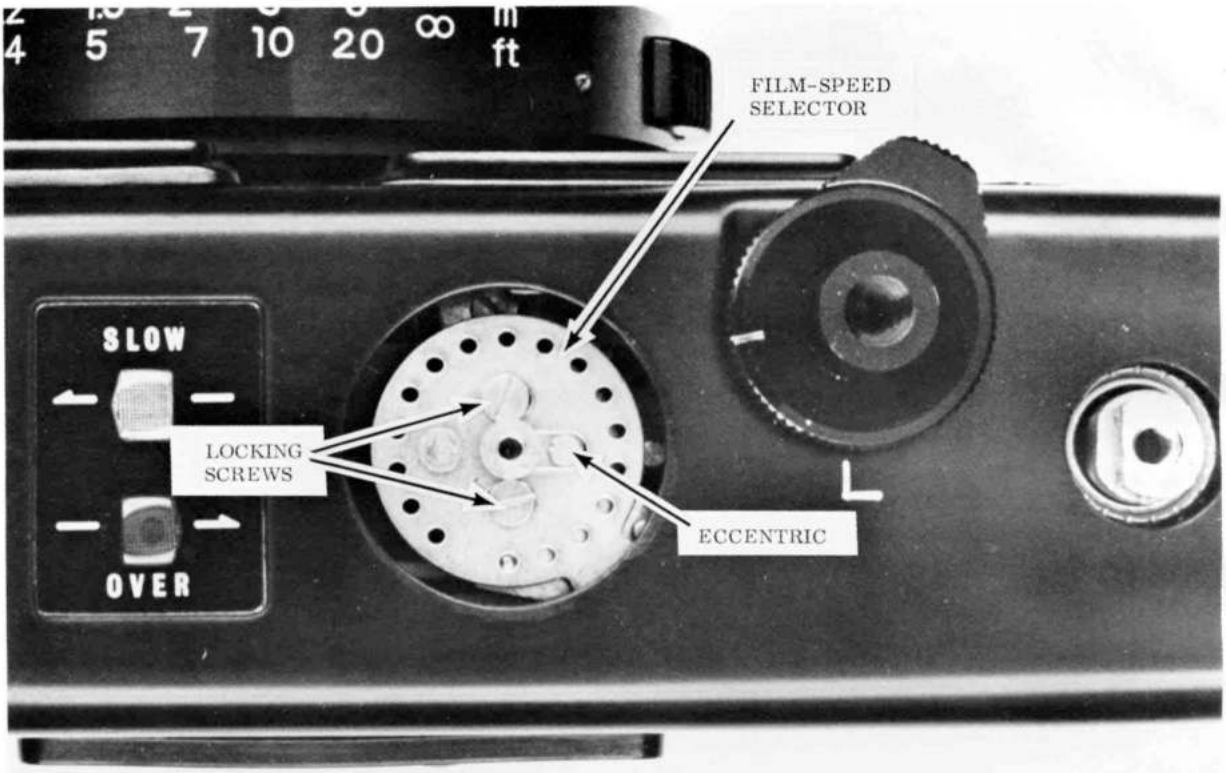
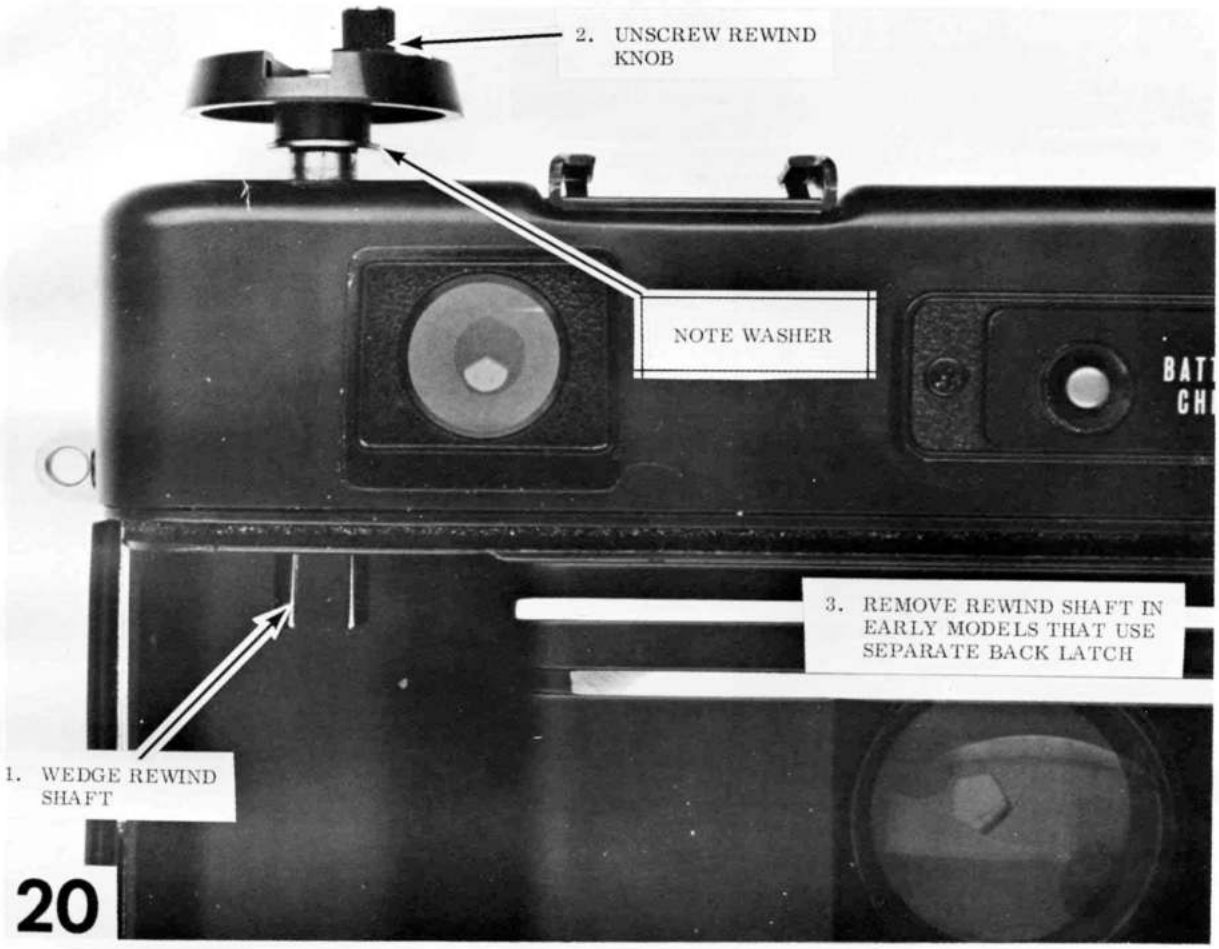
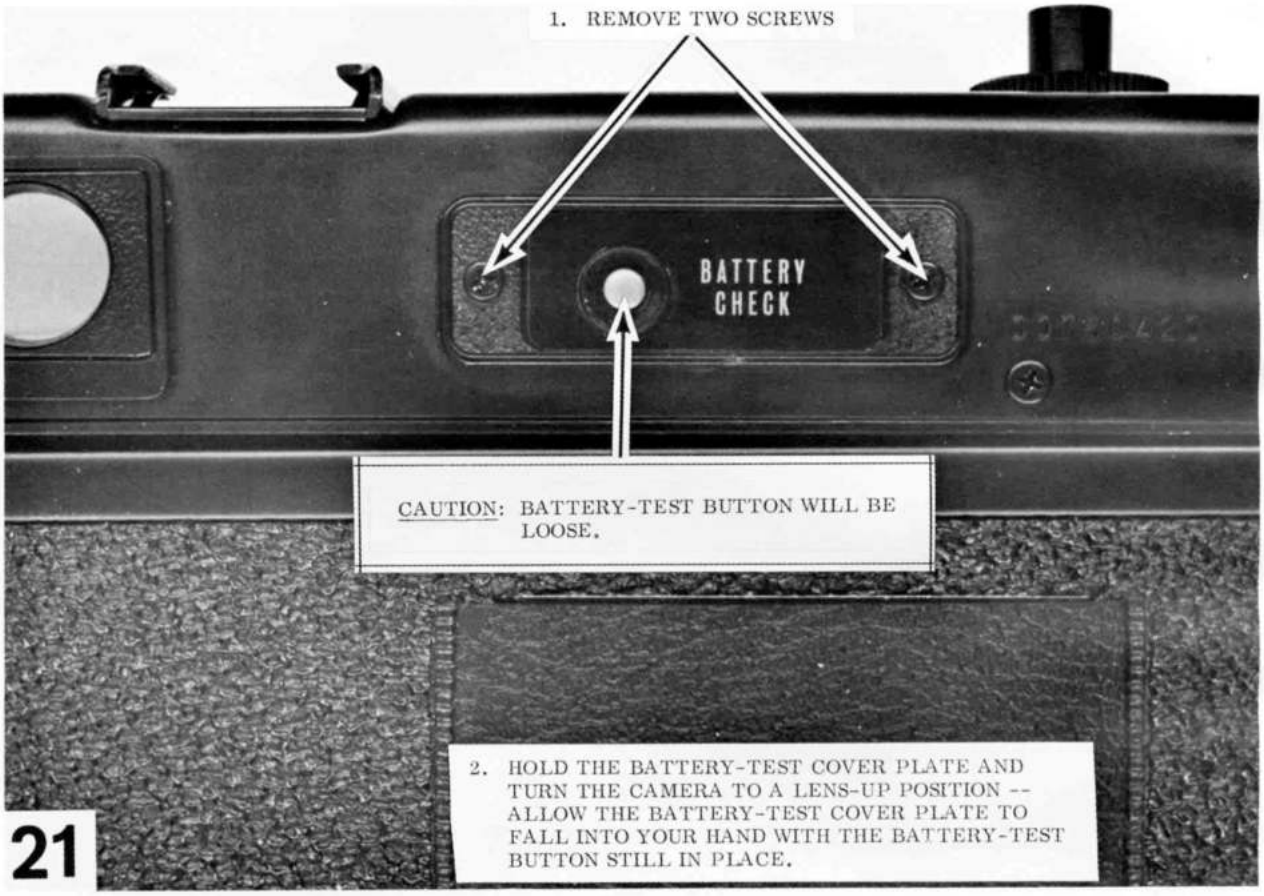




19

Removing the film-speed dial exposes one of the exposure adjustment points. By loosening the two locking screws on the film-speed selector, you can turn the eccentric. This adjustment changes the size of the opening between the two masks over the photocell. The range of adjustment possible is around 1/3 f/stop.





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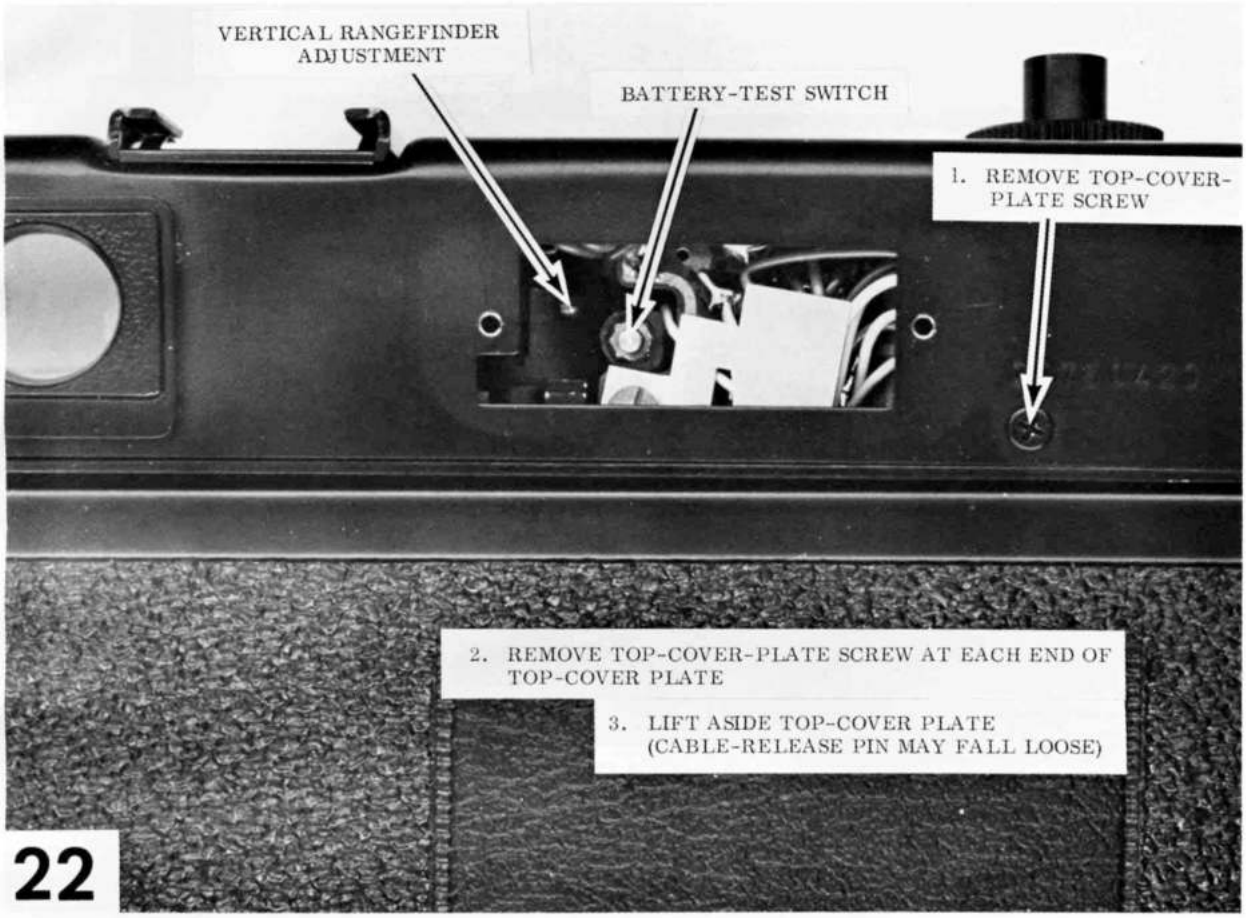

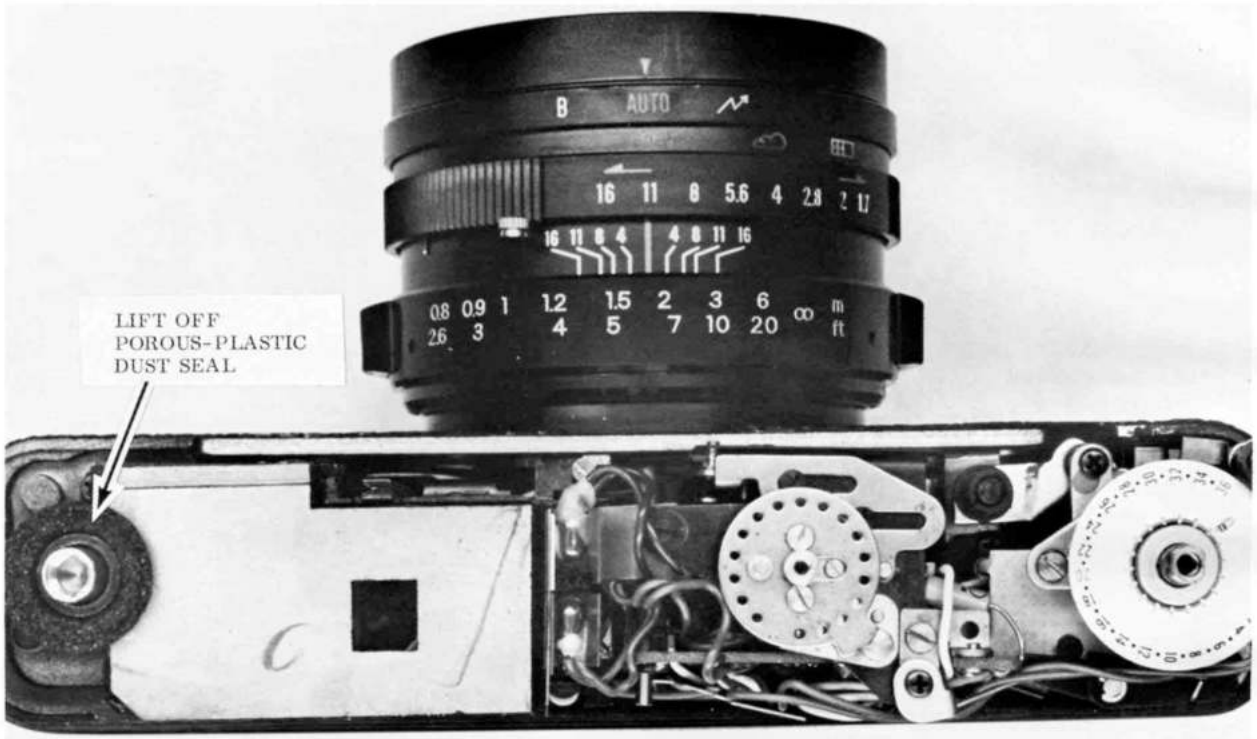

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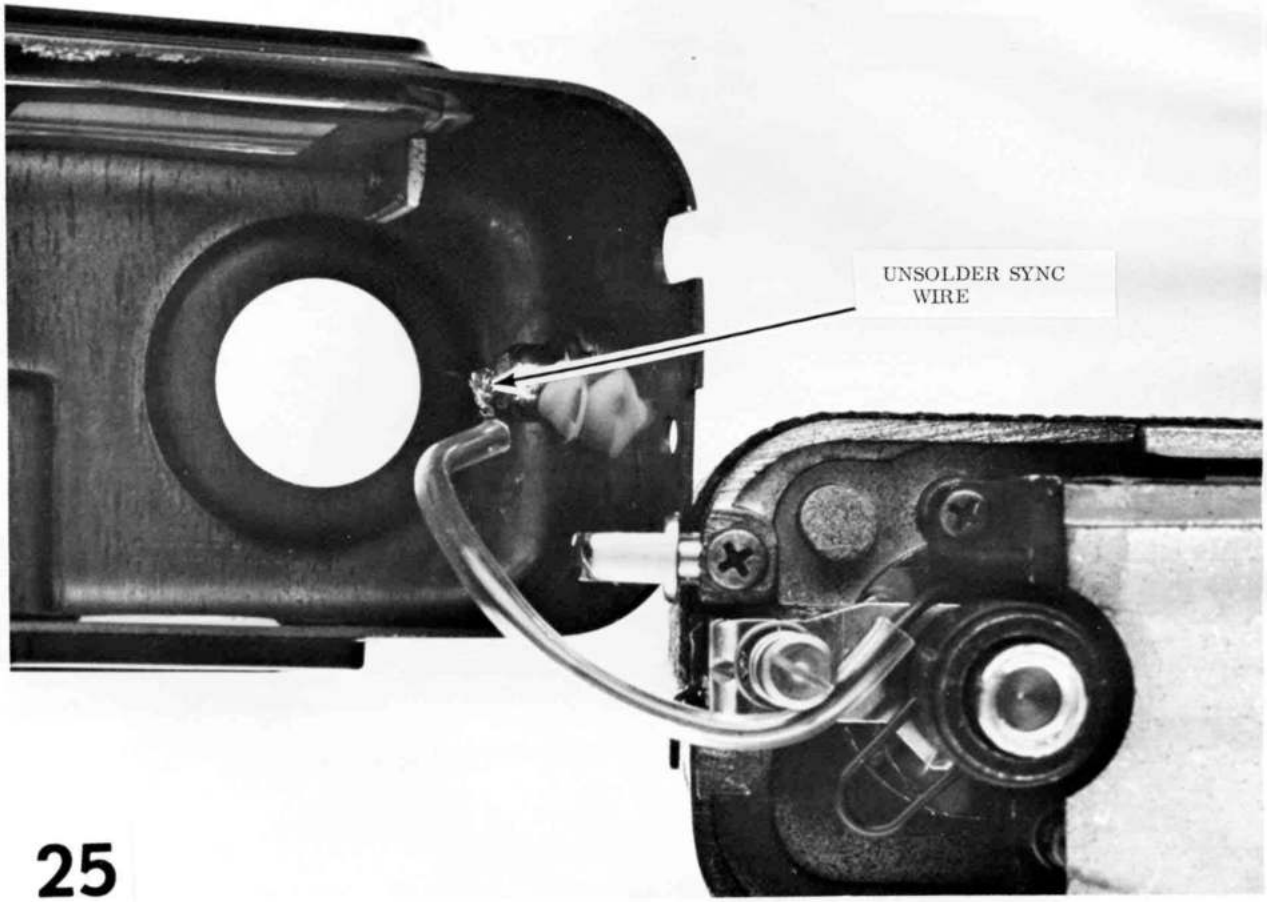

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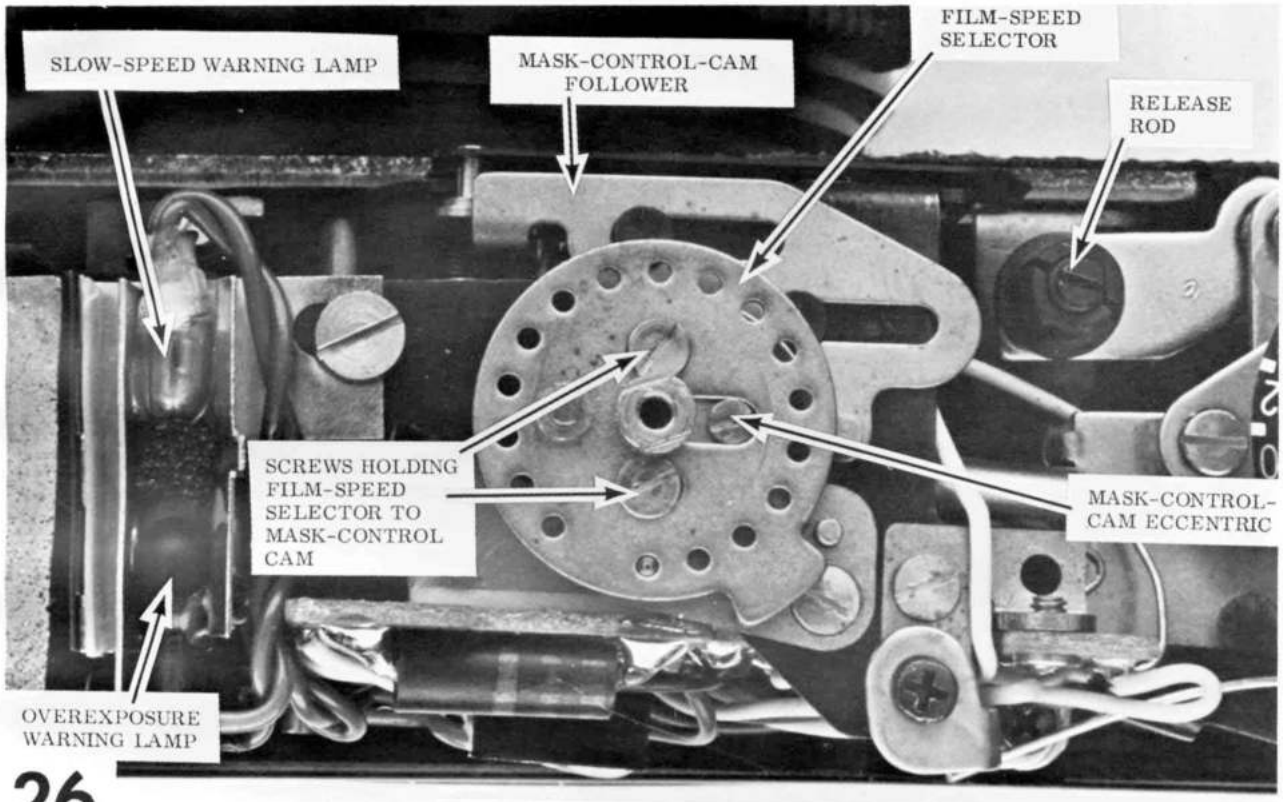
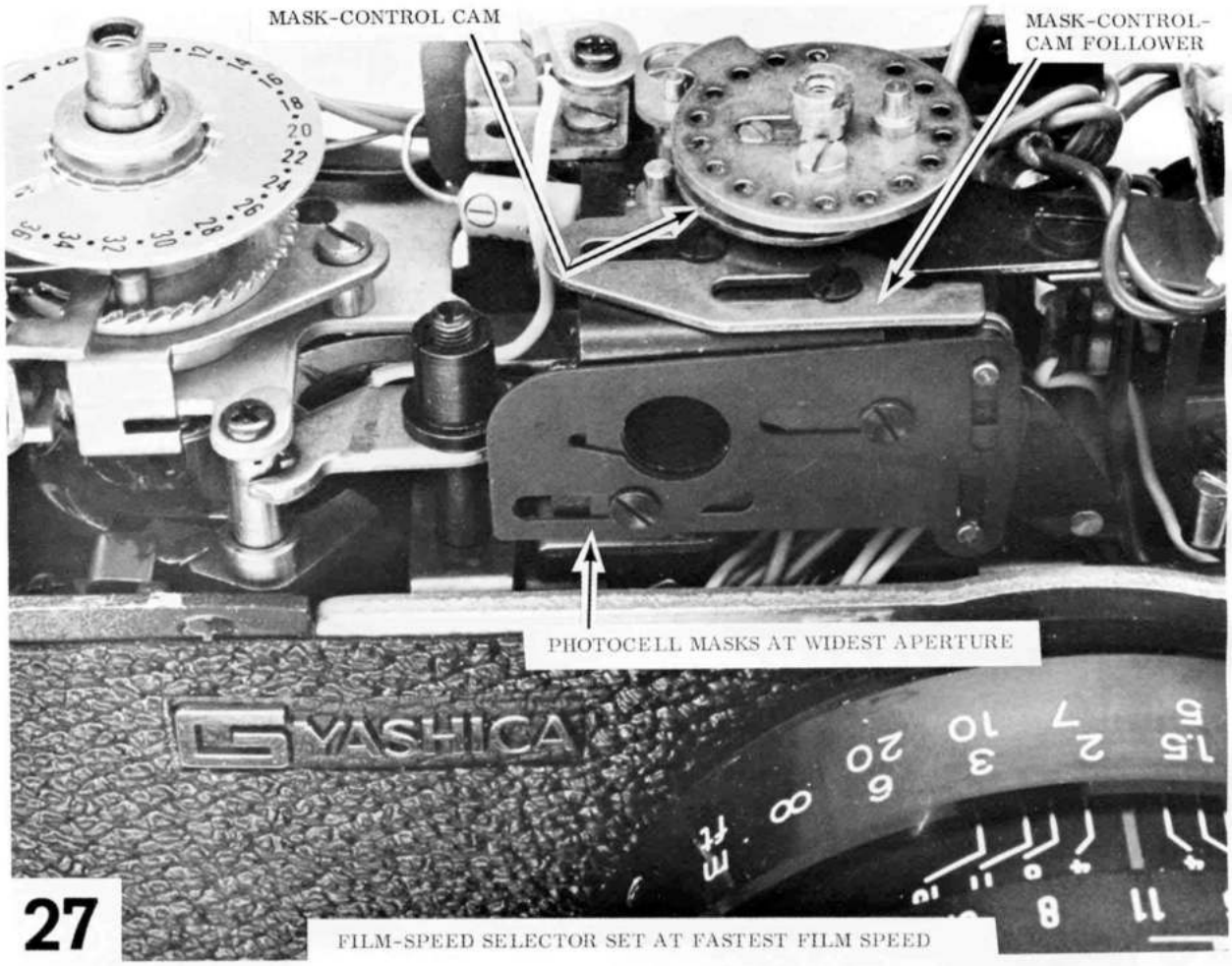


FILM-SPEED SELECTOR SET AT FASTEST FILM SPEED



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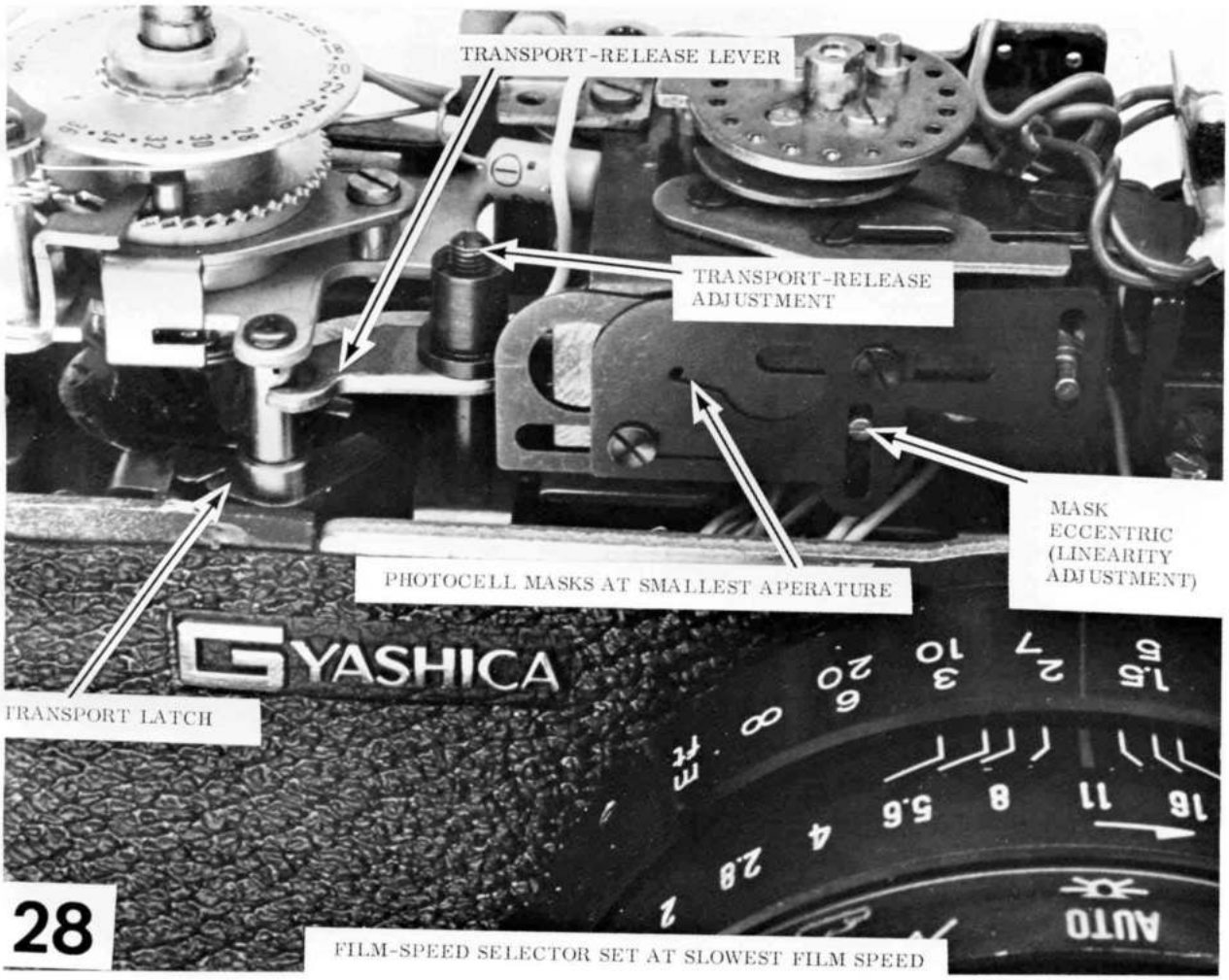
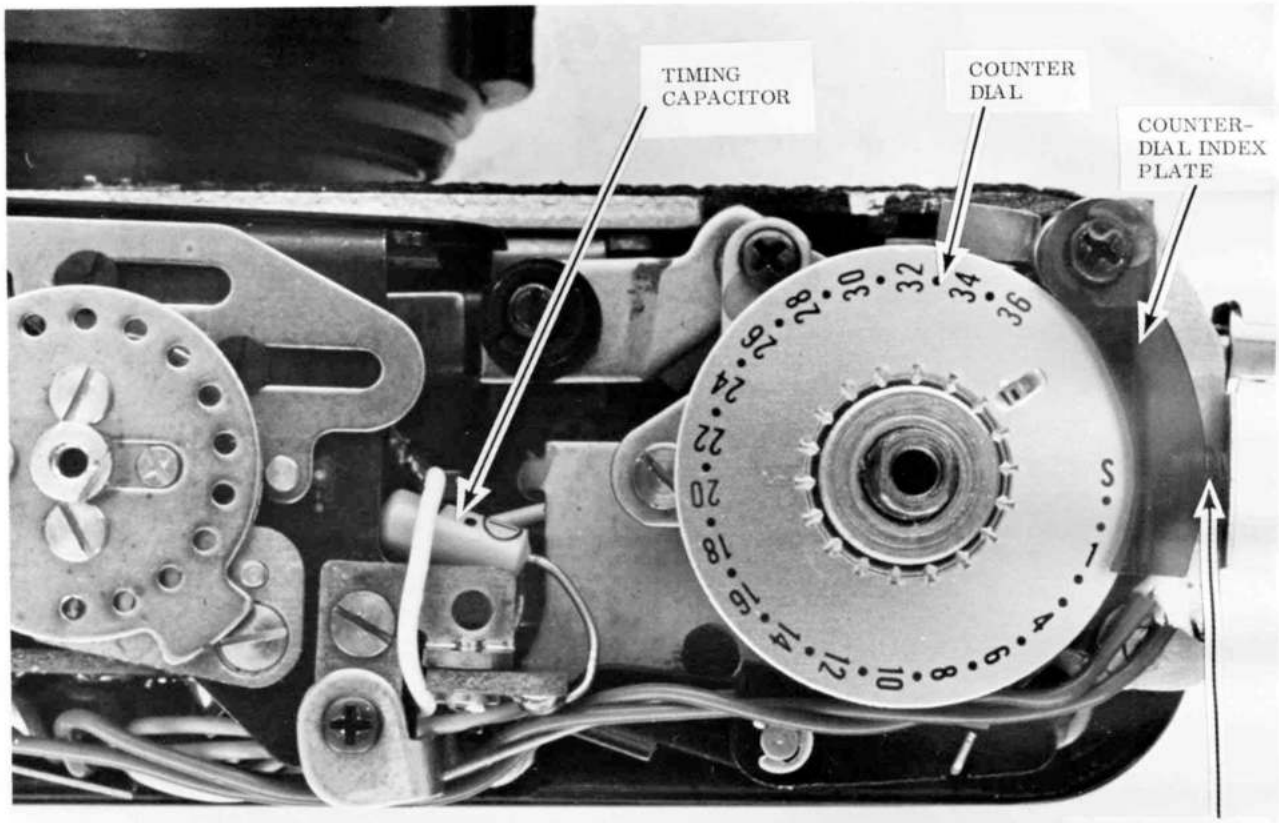
FILM-SPEED SELECTOR SET AT FASTEST FILM SPEED



28

As you depress the release button, the transport-release lever pushes down the transport latch. The transport-release lever should push the transport latch out of engagement with the transport cam just before the shutter releases.

You can make the transport-release adjustment at either one of two places -- at the top of the release rod or at the bottom. (Figure 28 or Figure 7.) Both screwdriver-slotted adjustments affect the position of the transport-release lever. And the position of the transport-release lever determines the point at which the transport latch disengages during the downward stroke of the release rod.



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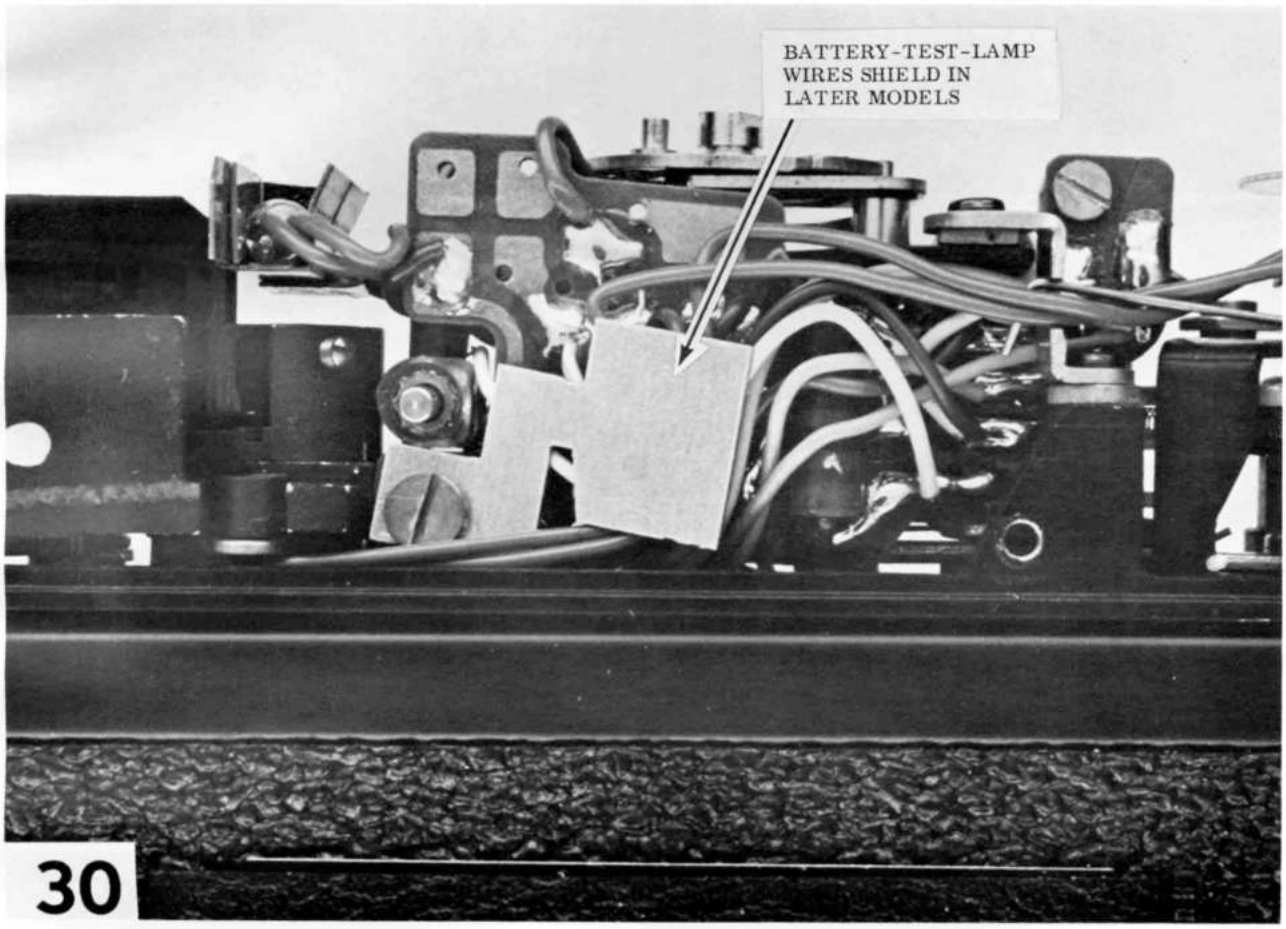

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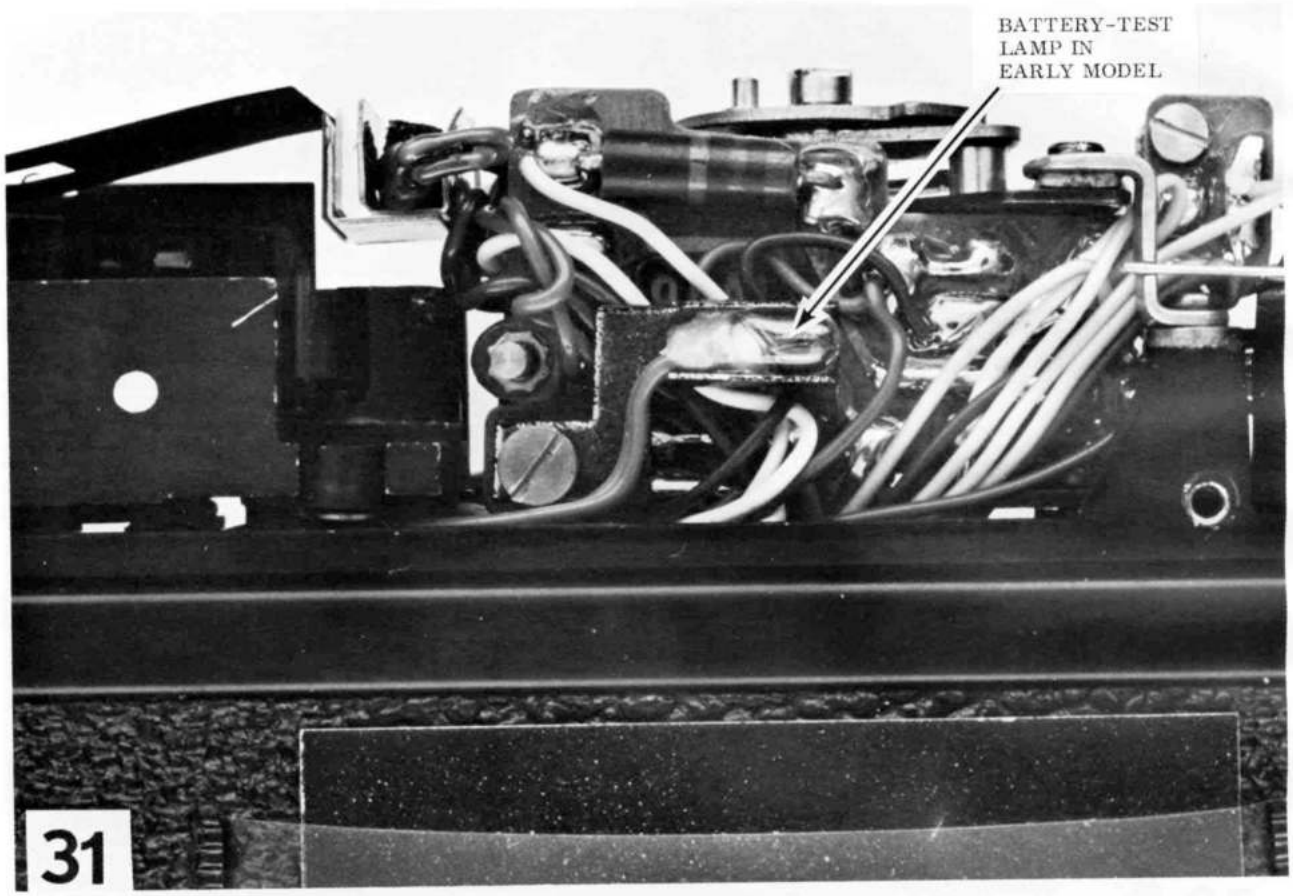

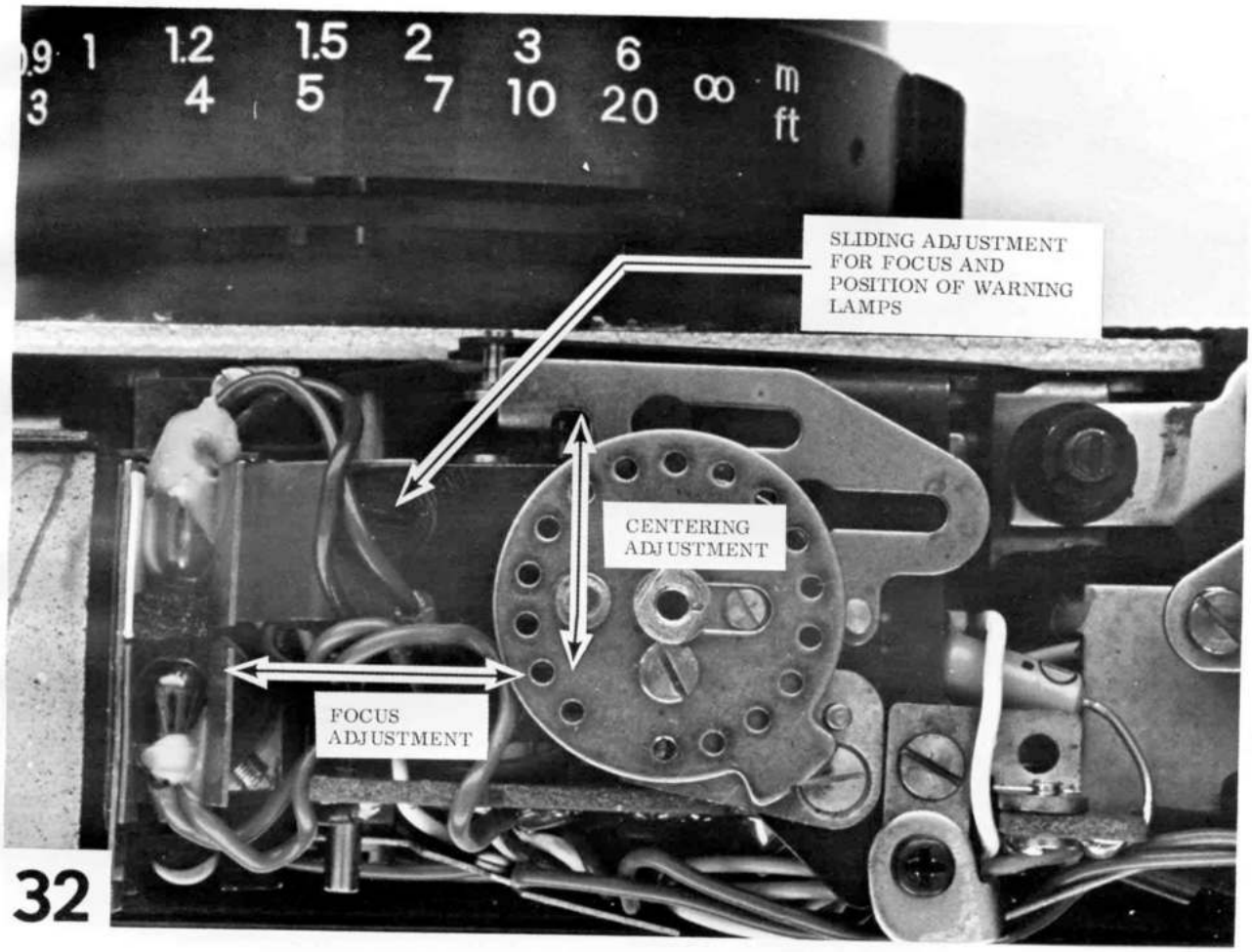

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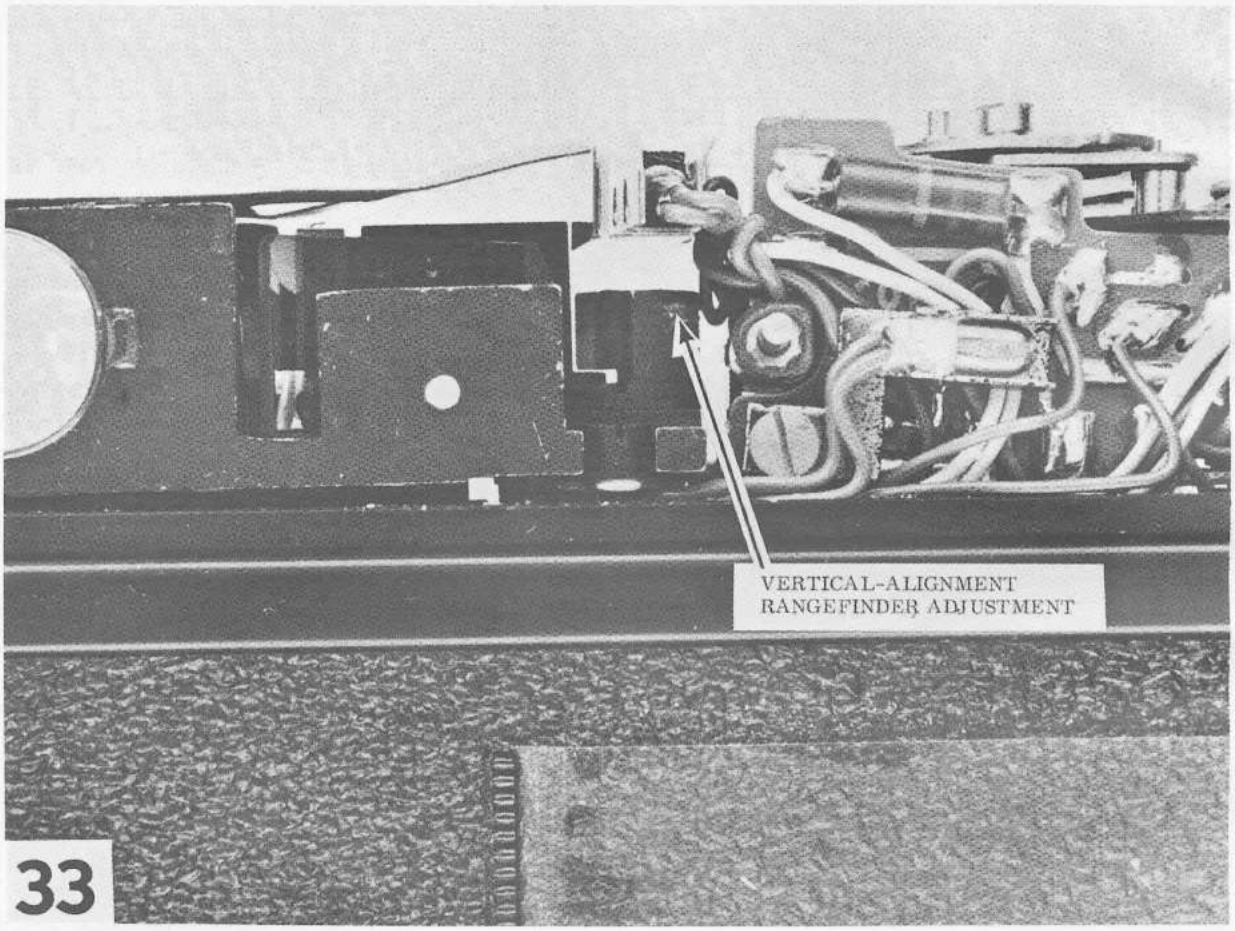

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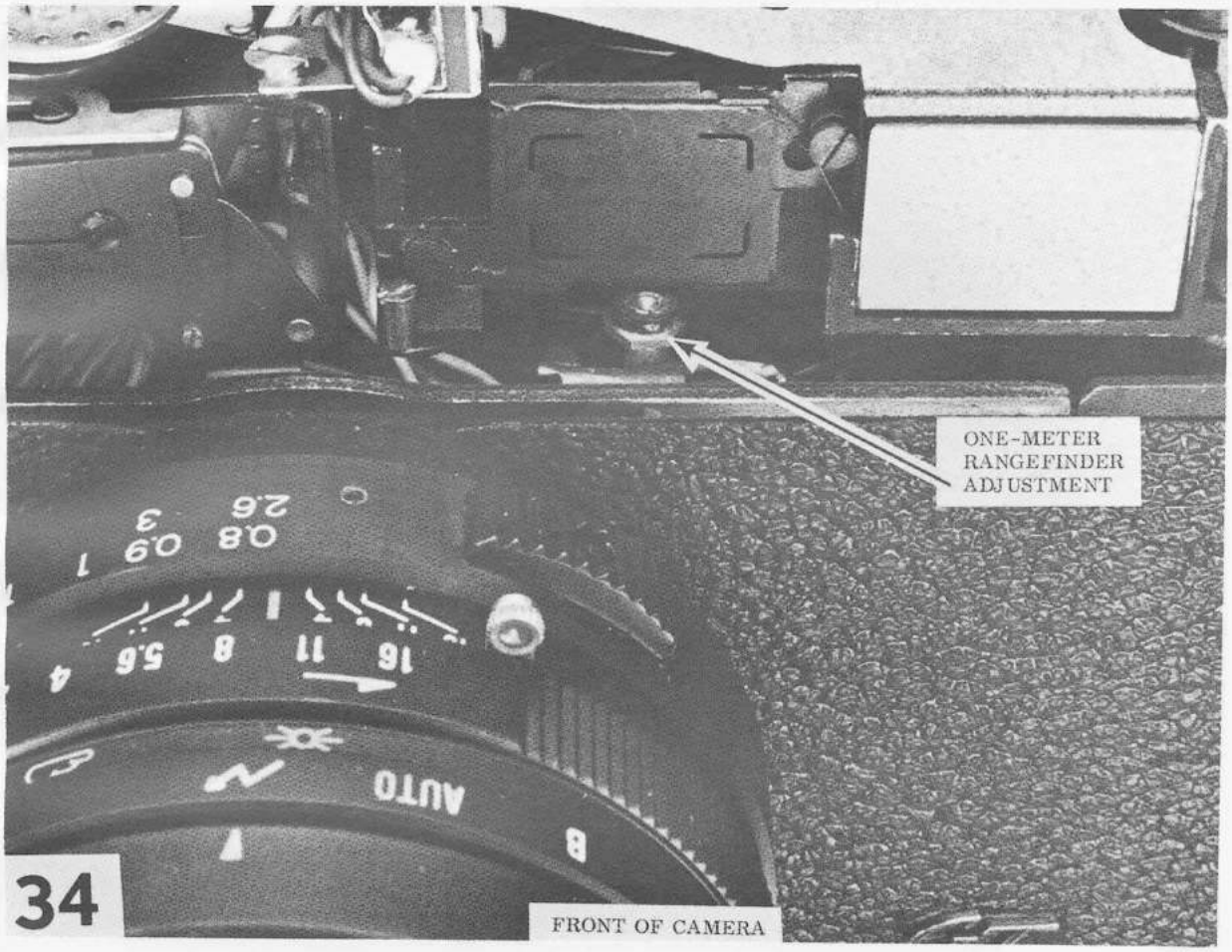

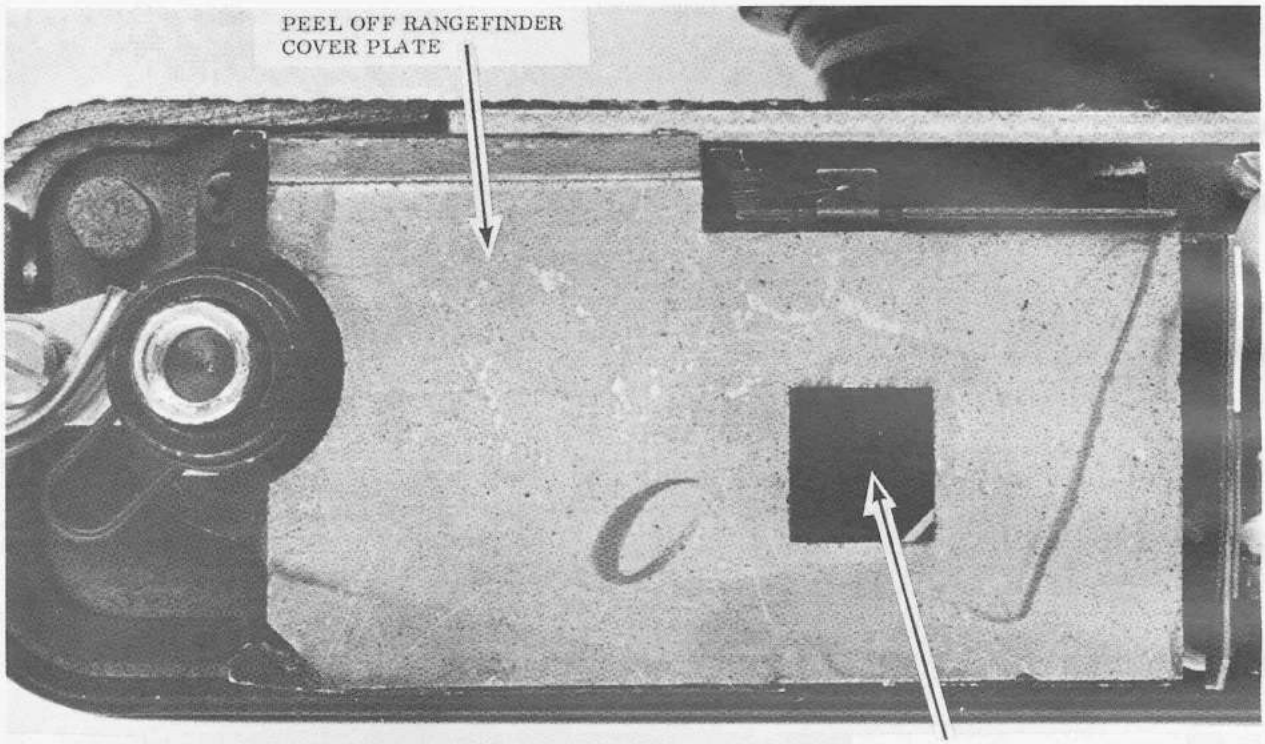

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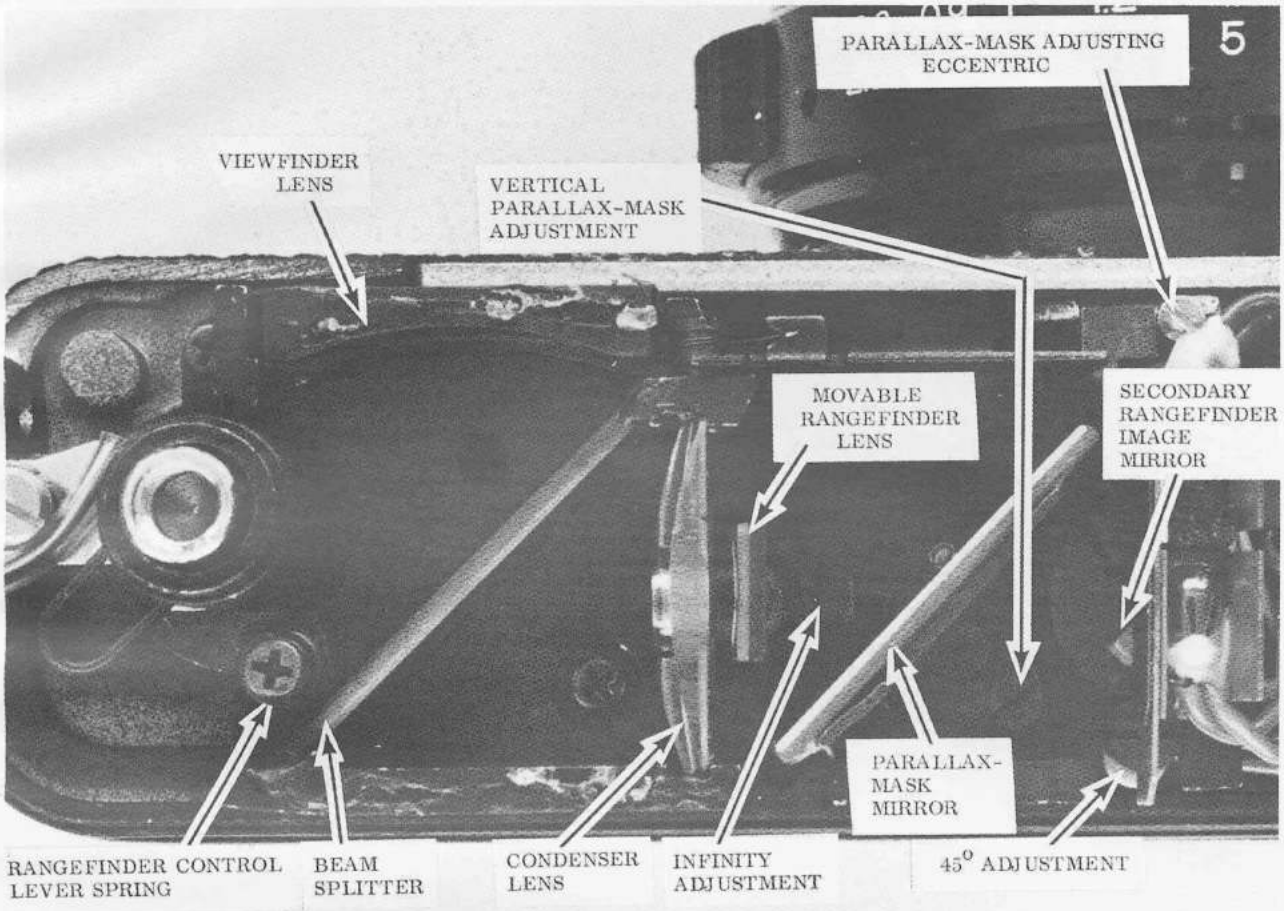

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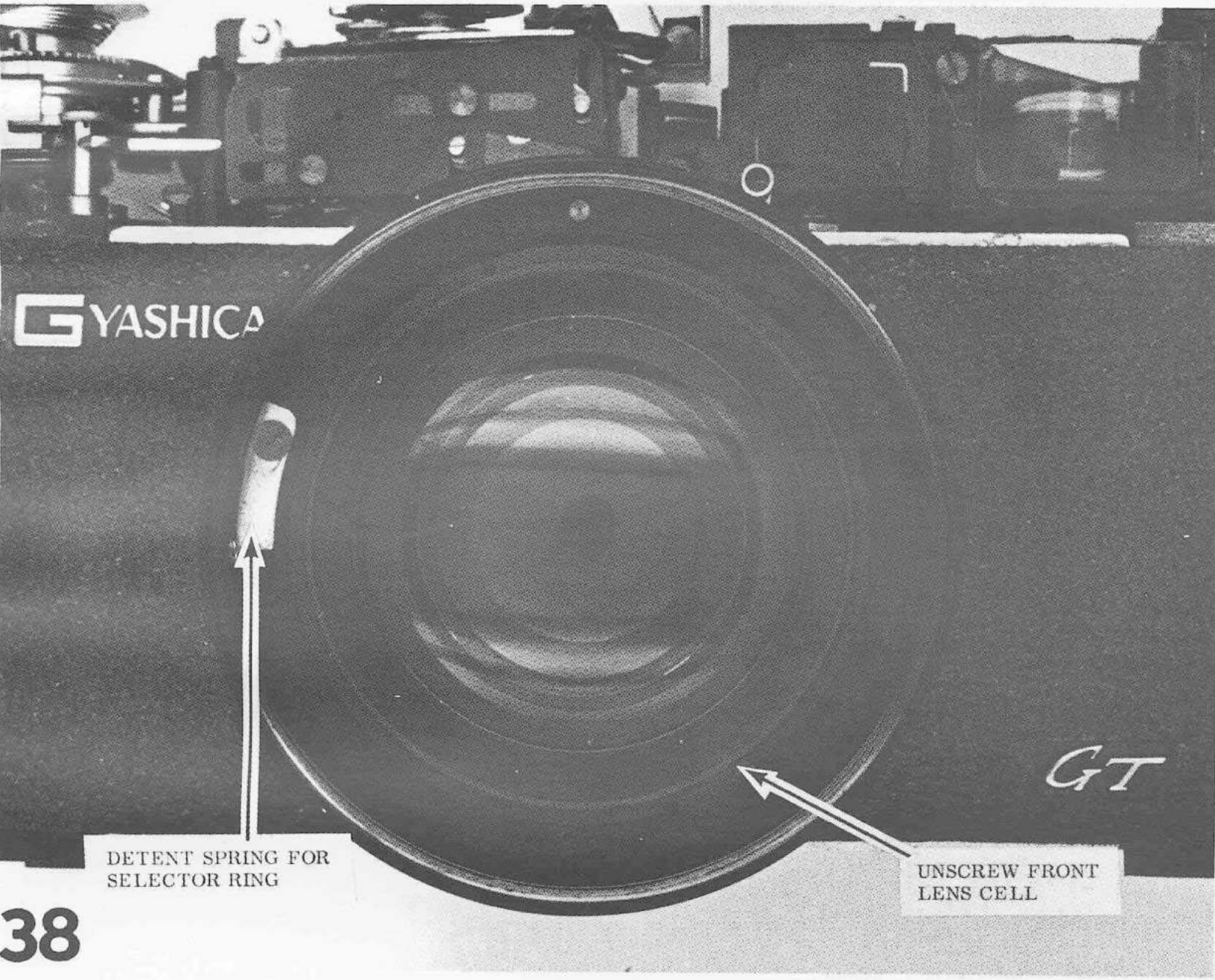
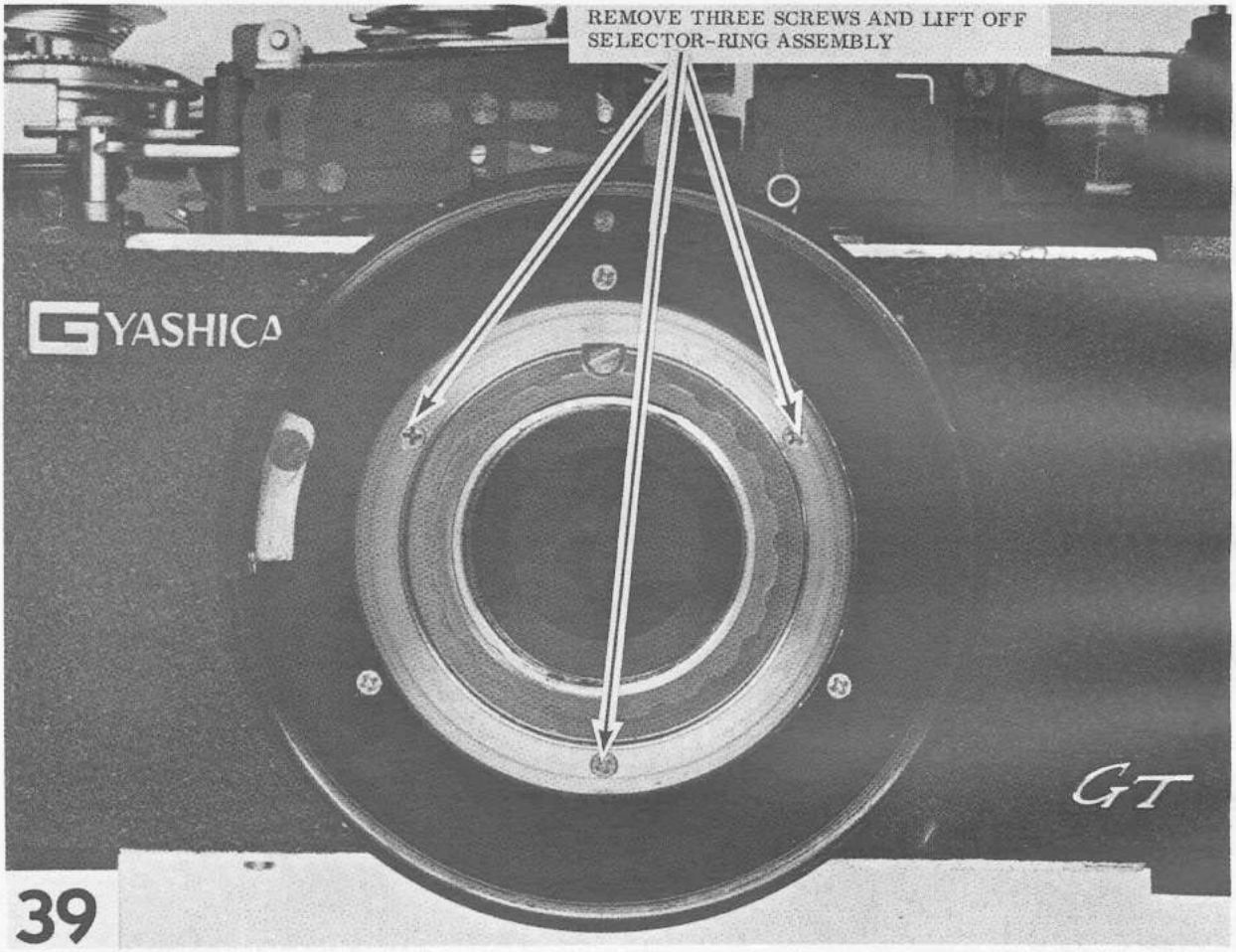
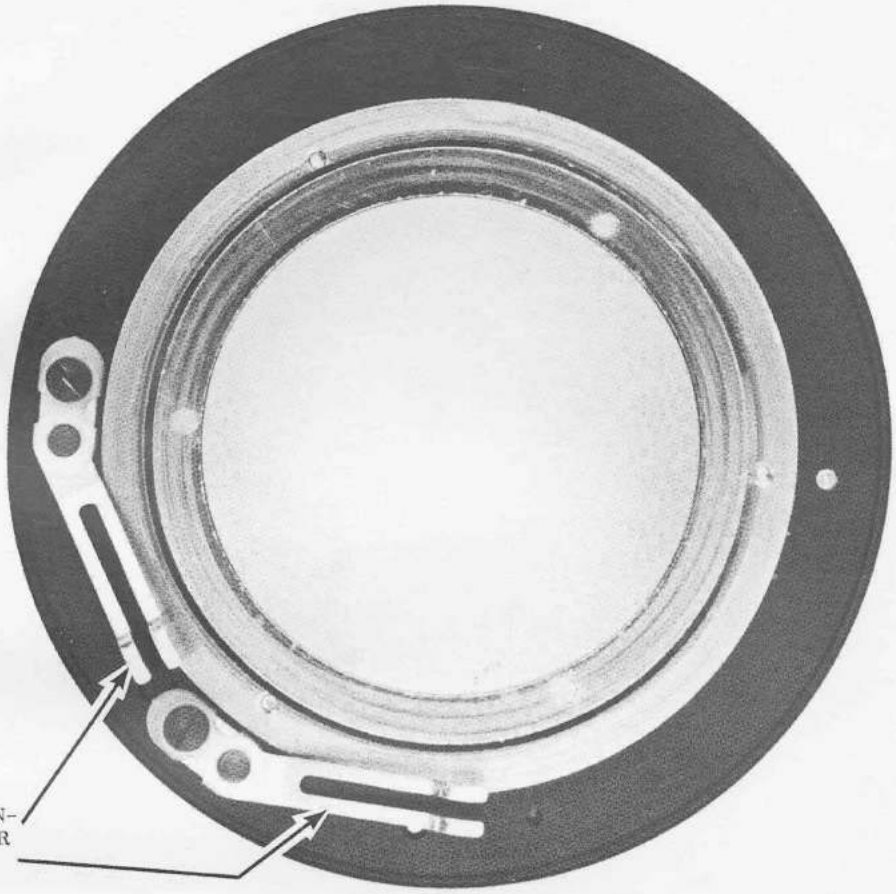
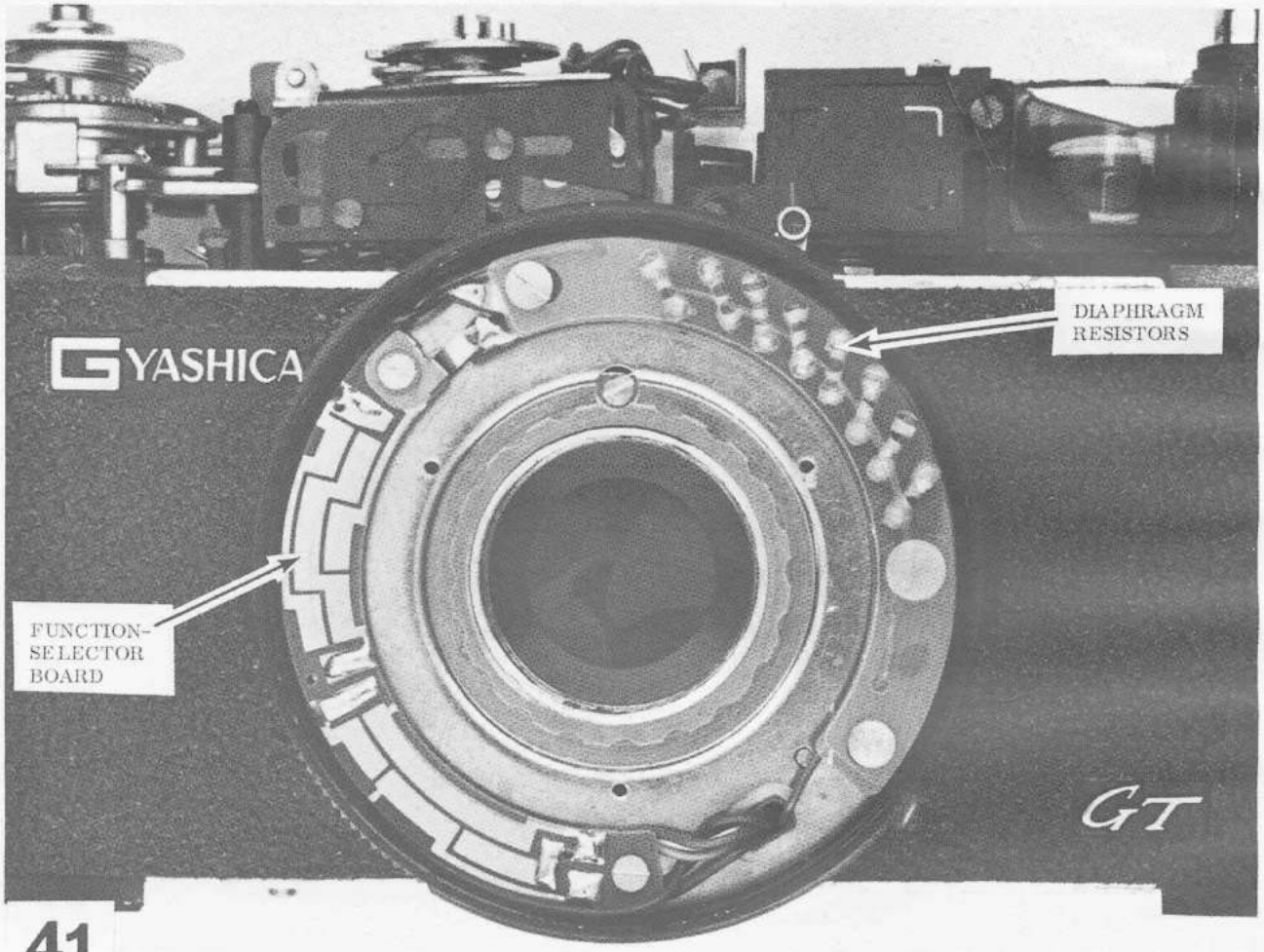






40

BACK OF SELECTOR-RING ASSEMBLY



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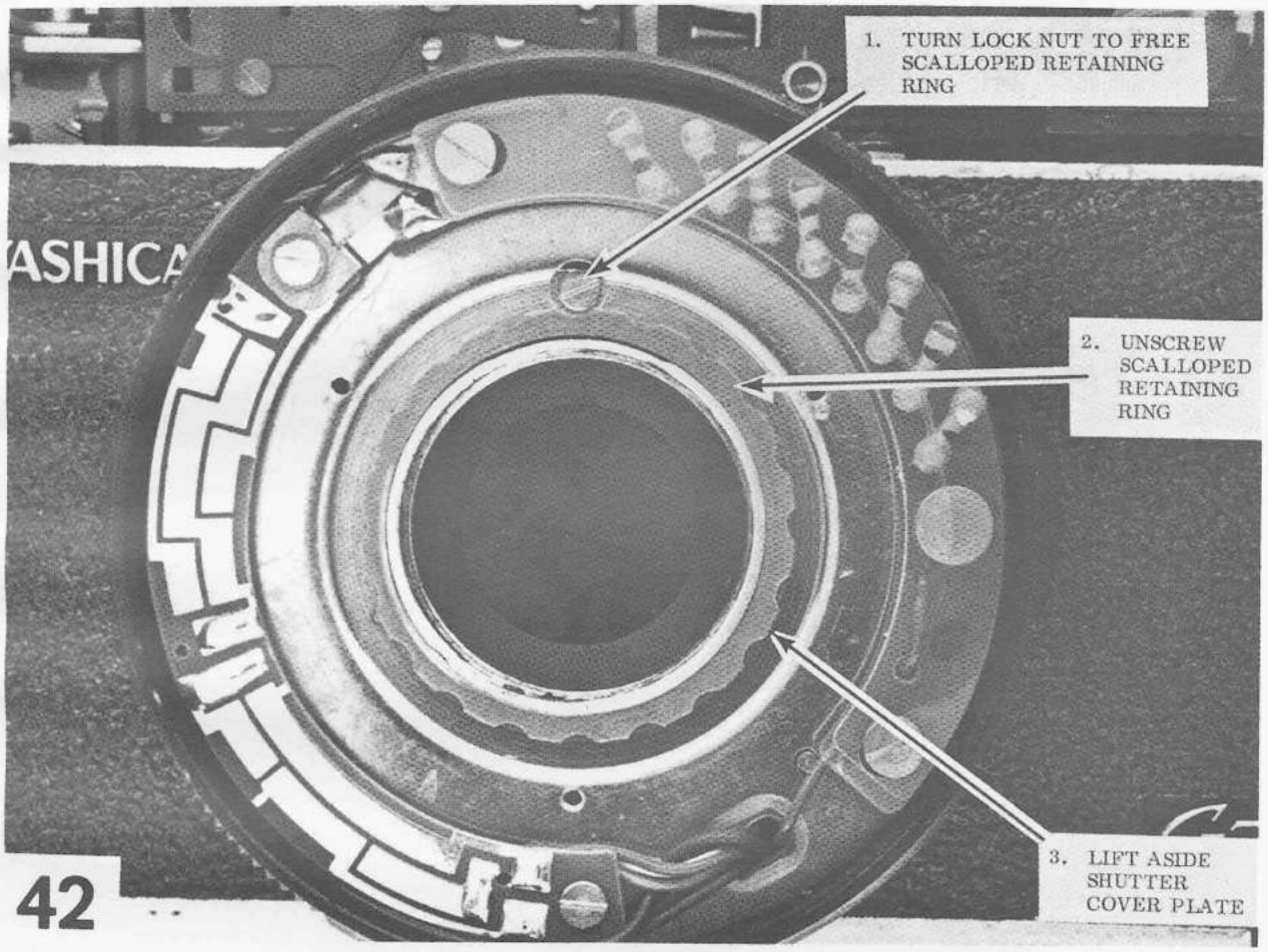
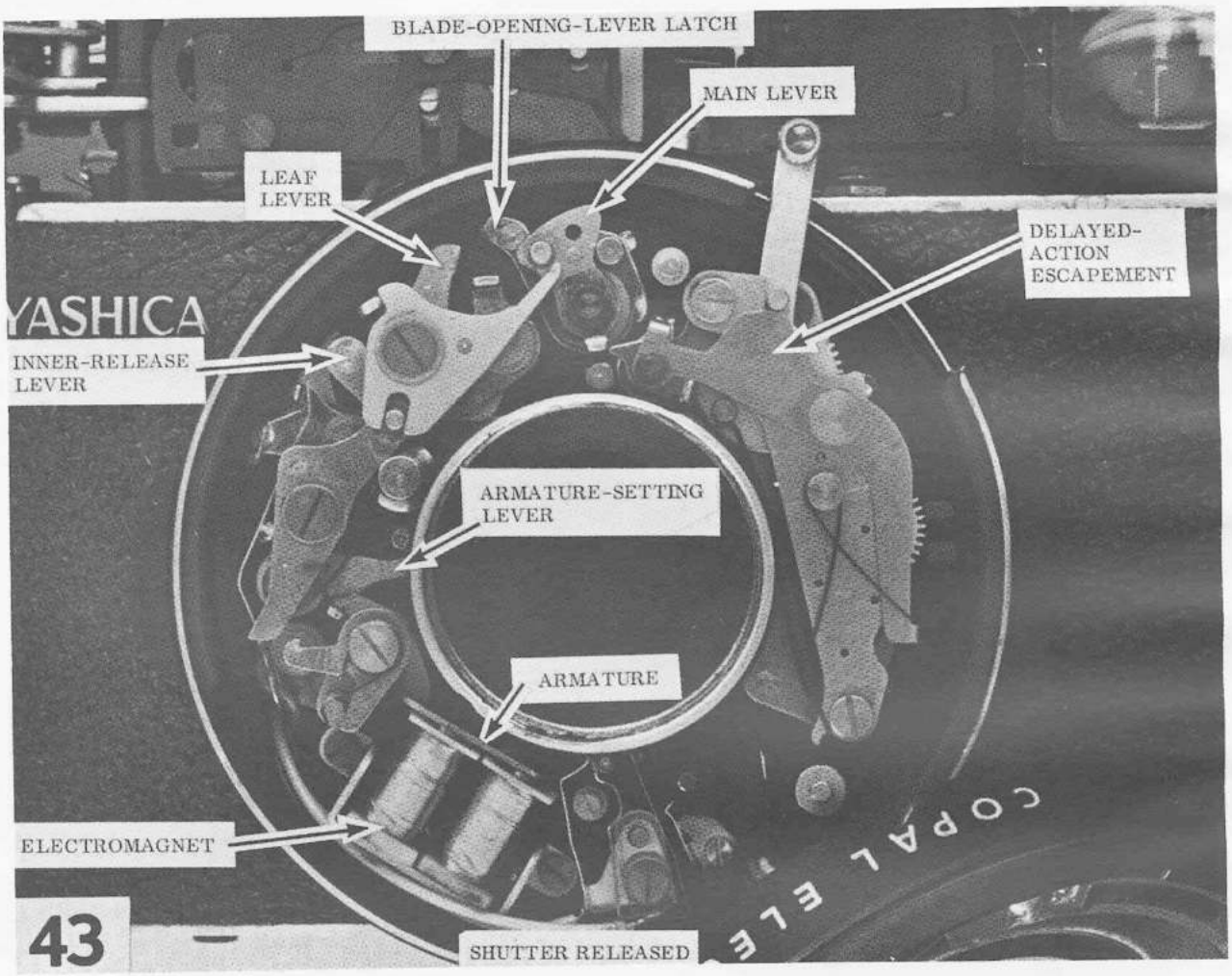
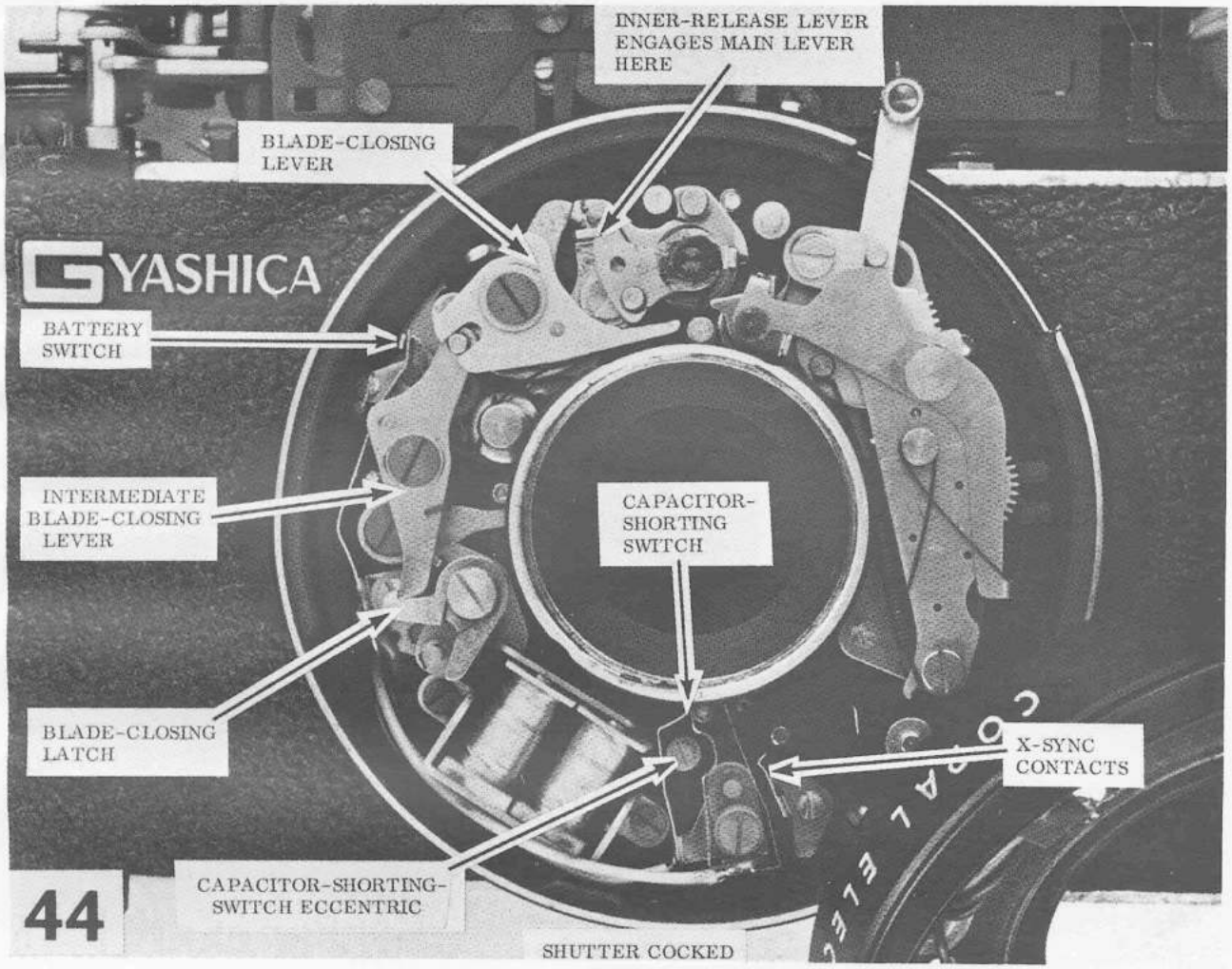
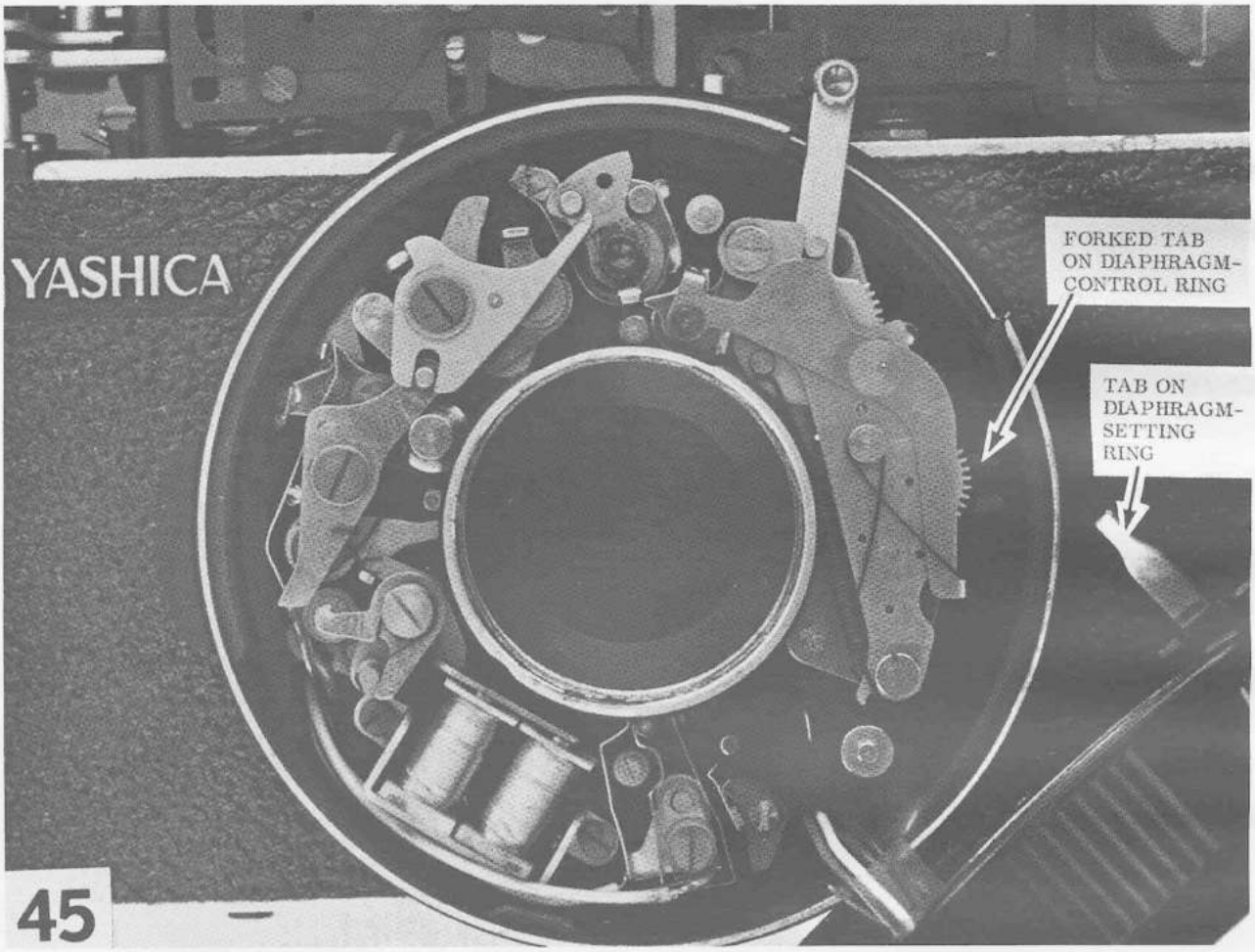
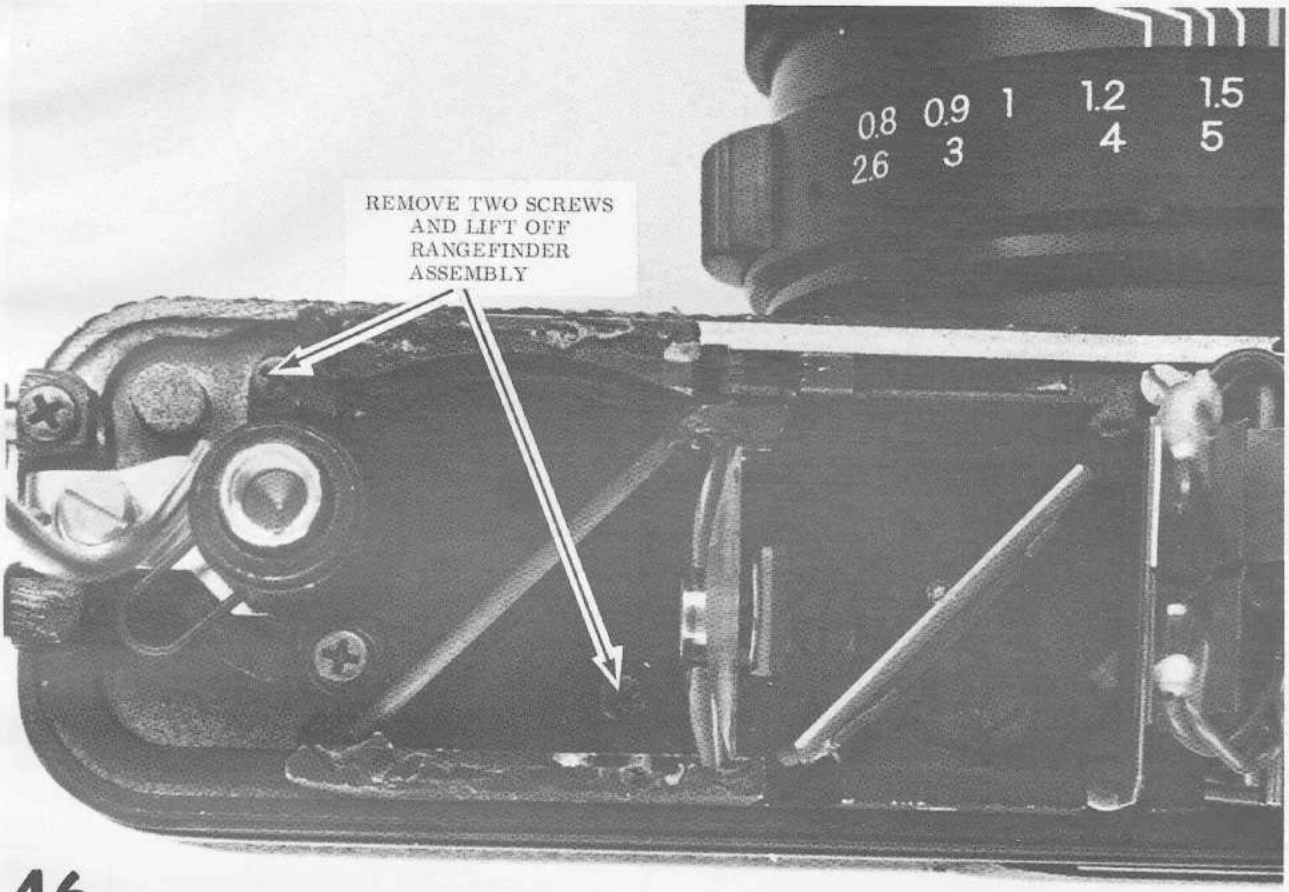








On reassembly, the tab on the diaphragm-setting ring must pass through the fork in the diaphragm-control ring. Turn both the diaphragm-setting ring and the diaphragm-control ring to one of their two extreme positions -- the smallest aperture or the largest aperture. To set the diaphragm-control ring to the largest aperture, turn its forked tab all the way clockwise.



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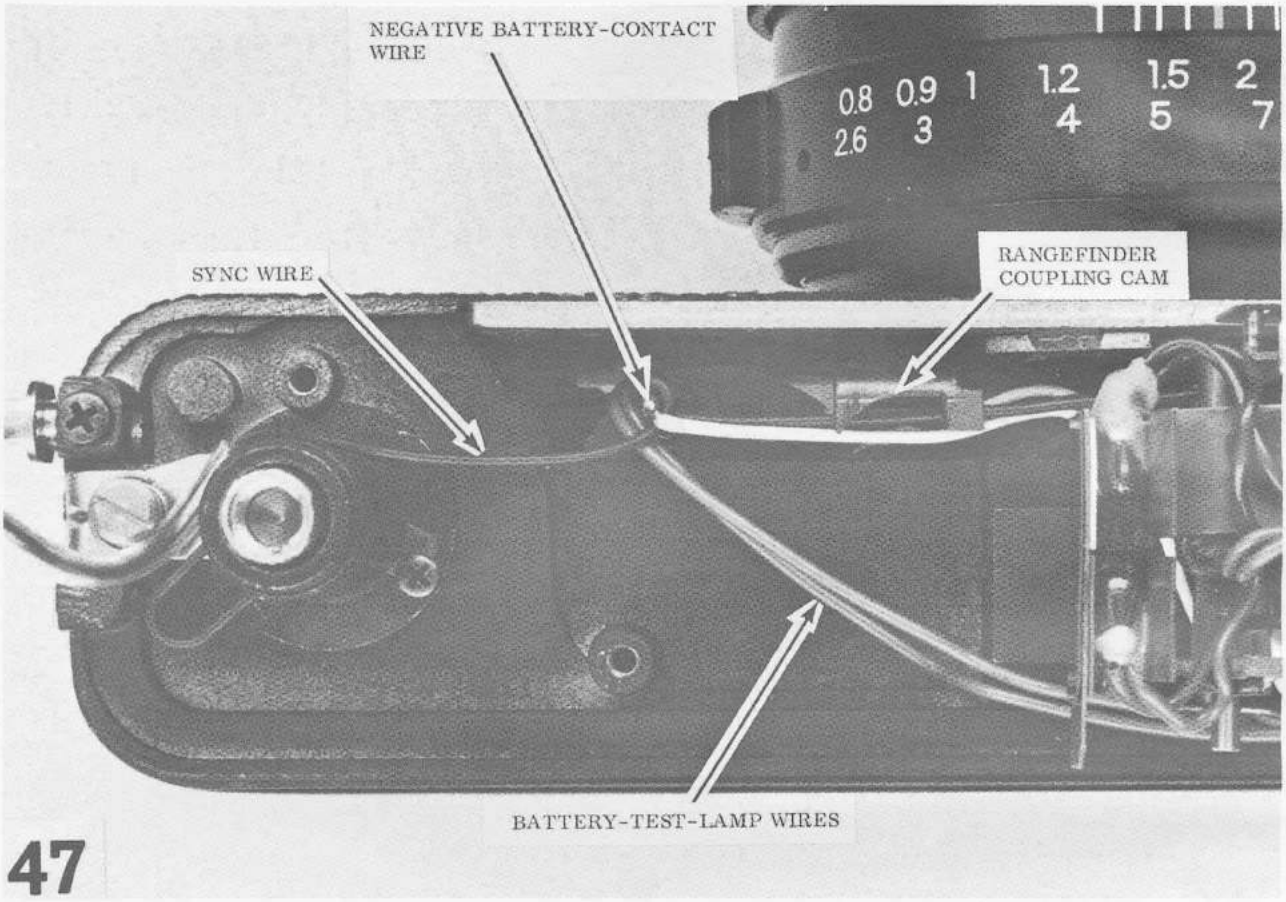

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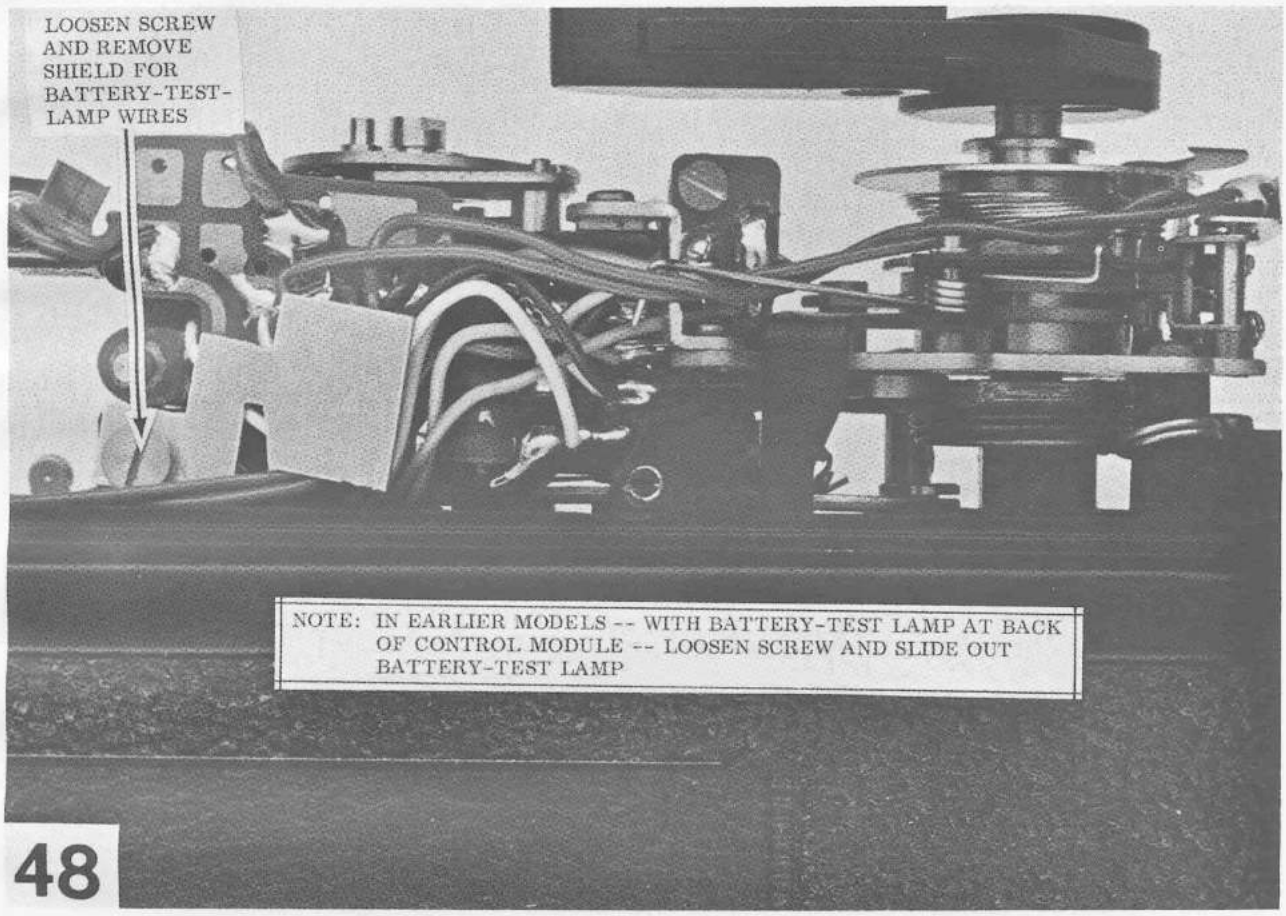

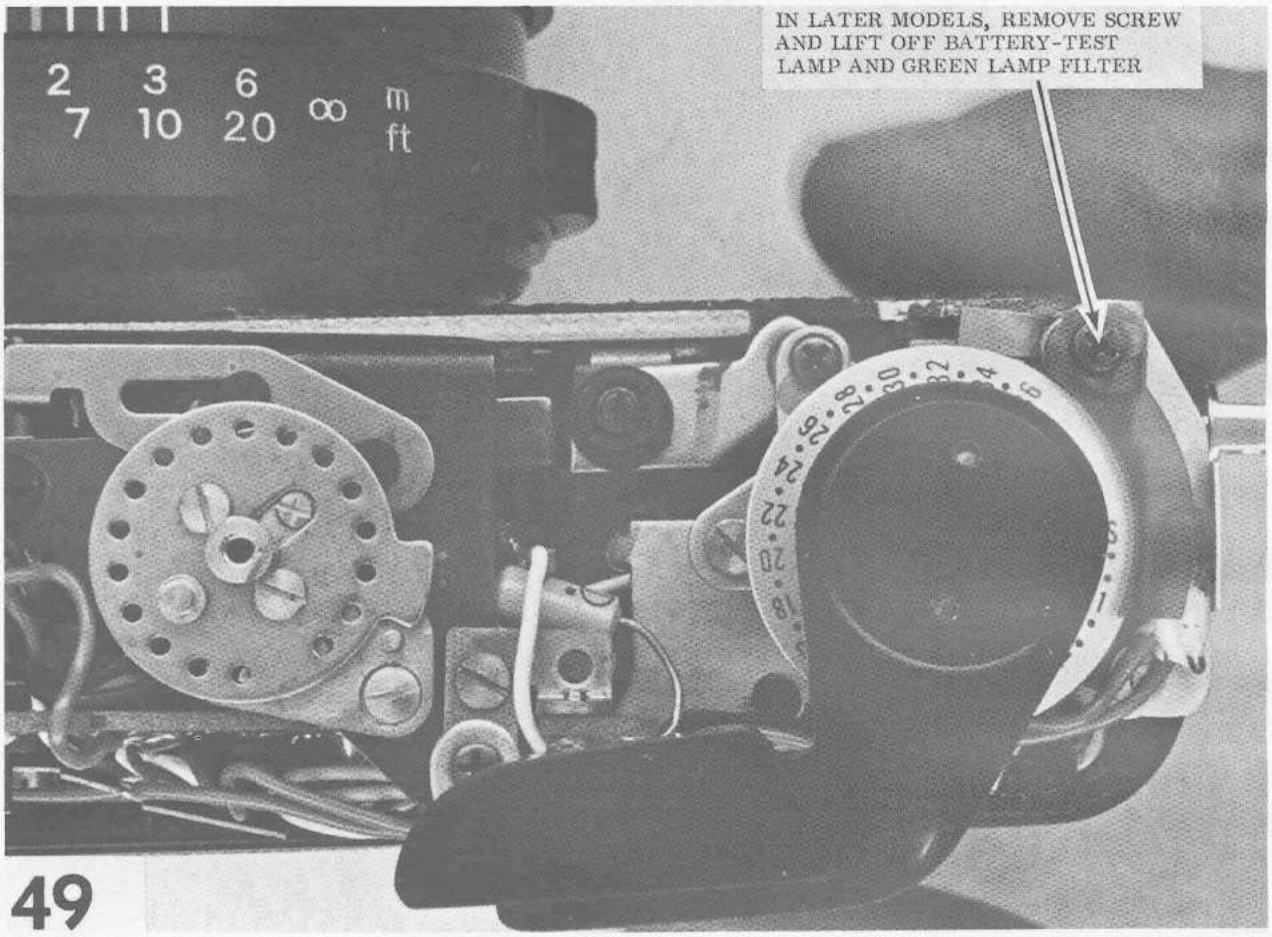

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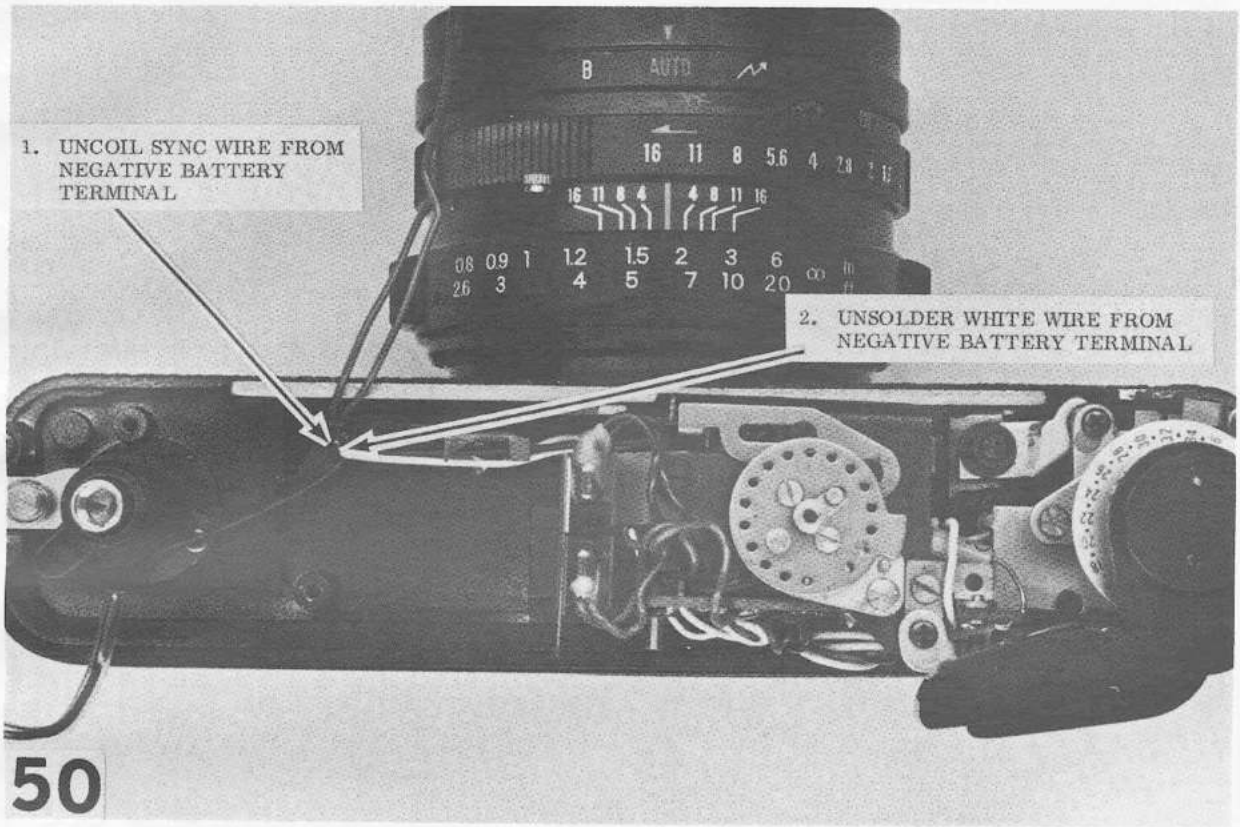

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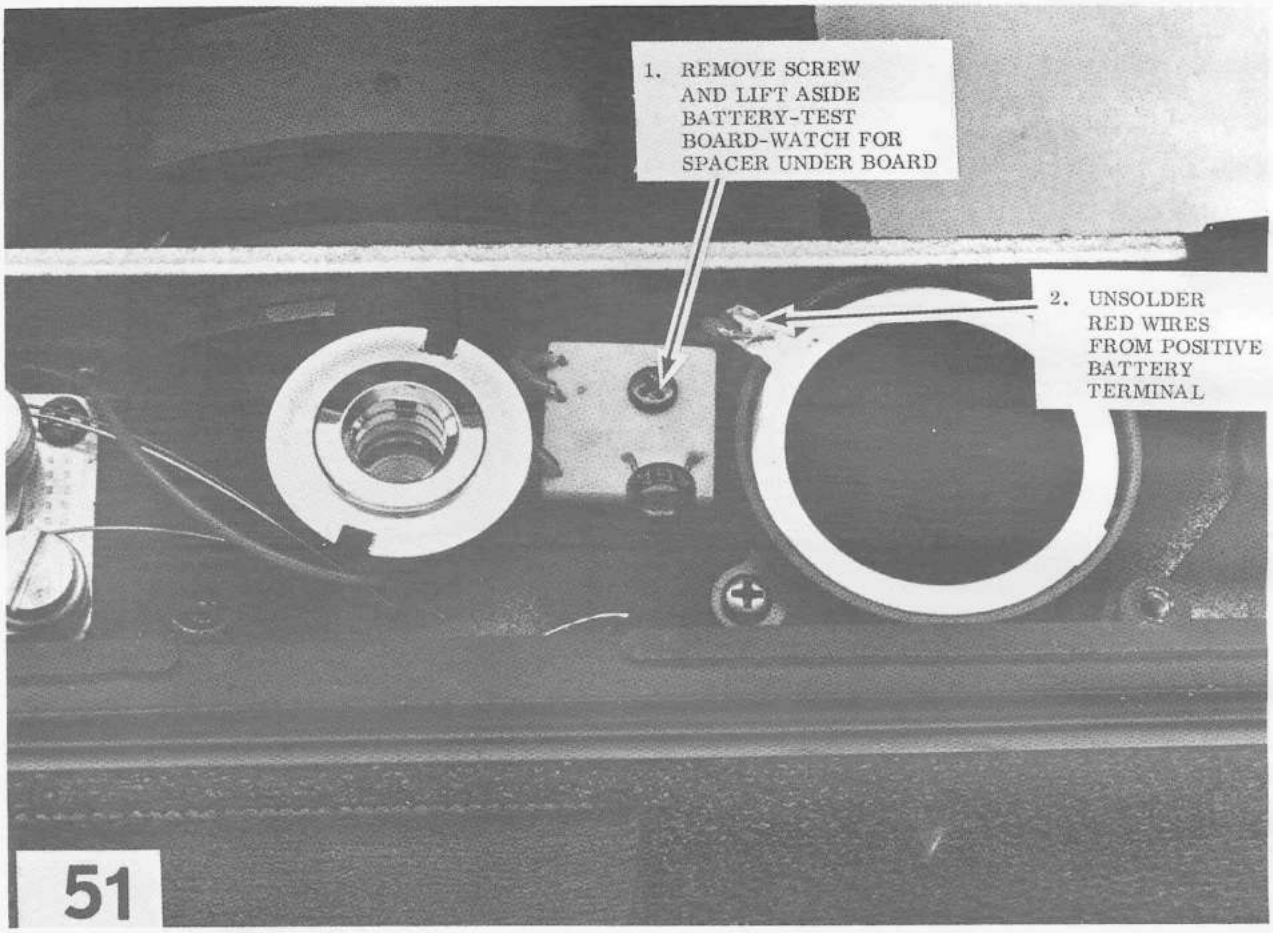
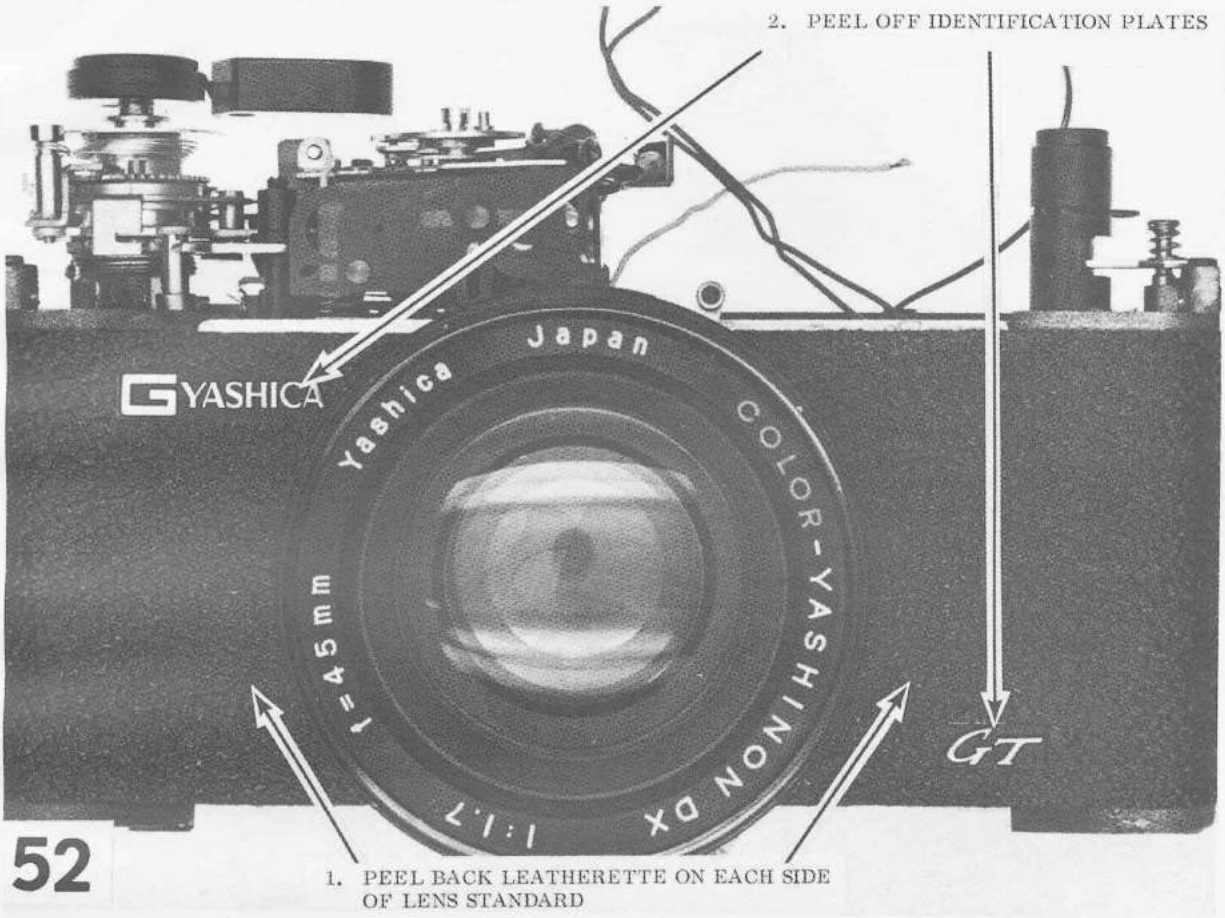
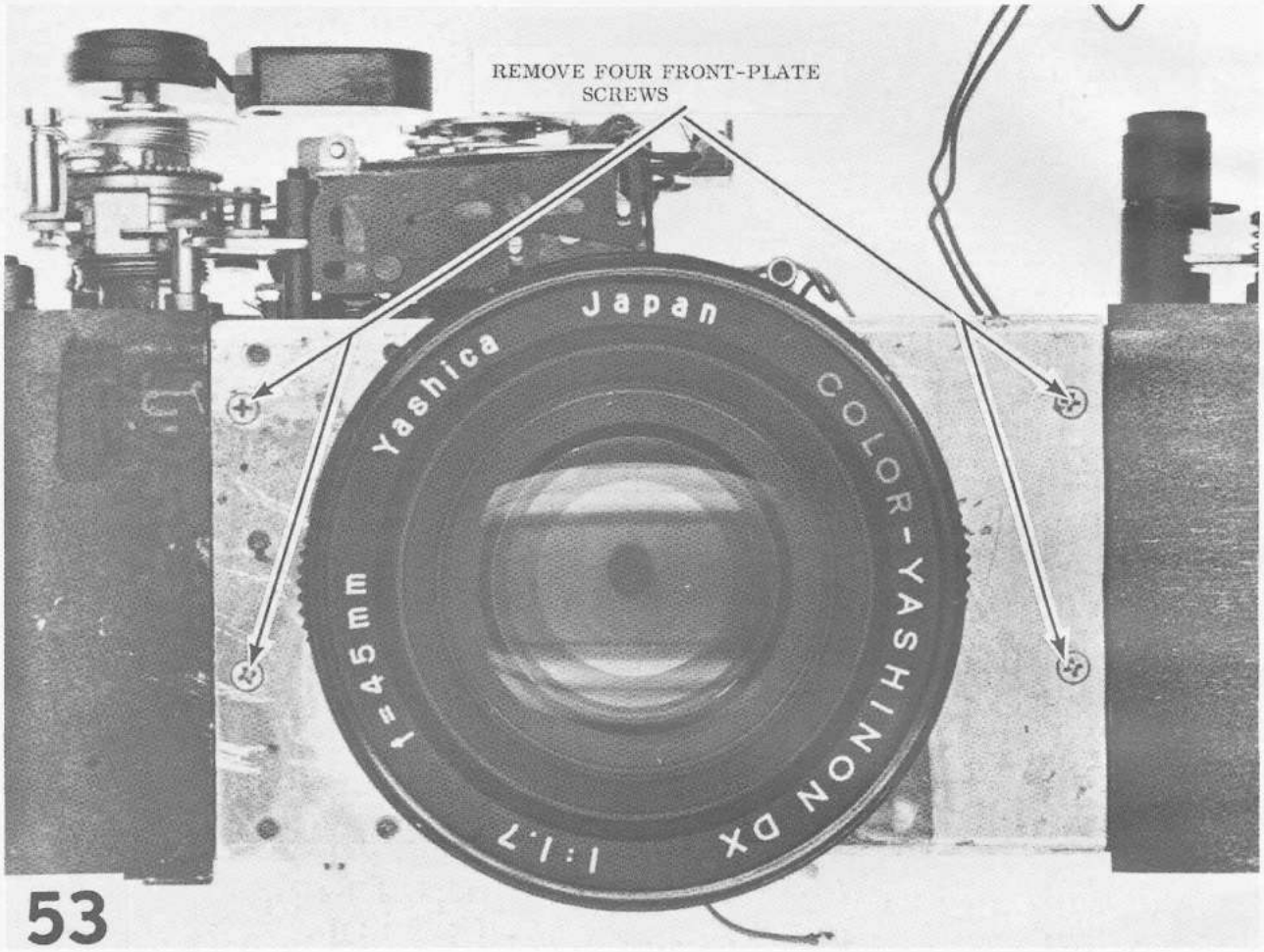




1. PEEL BACK LEATHERETTE ON EACH SIDE OF LENS STANDARD



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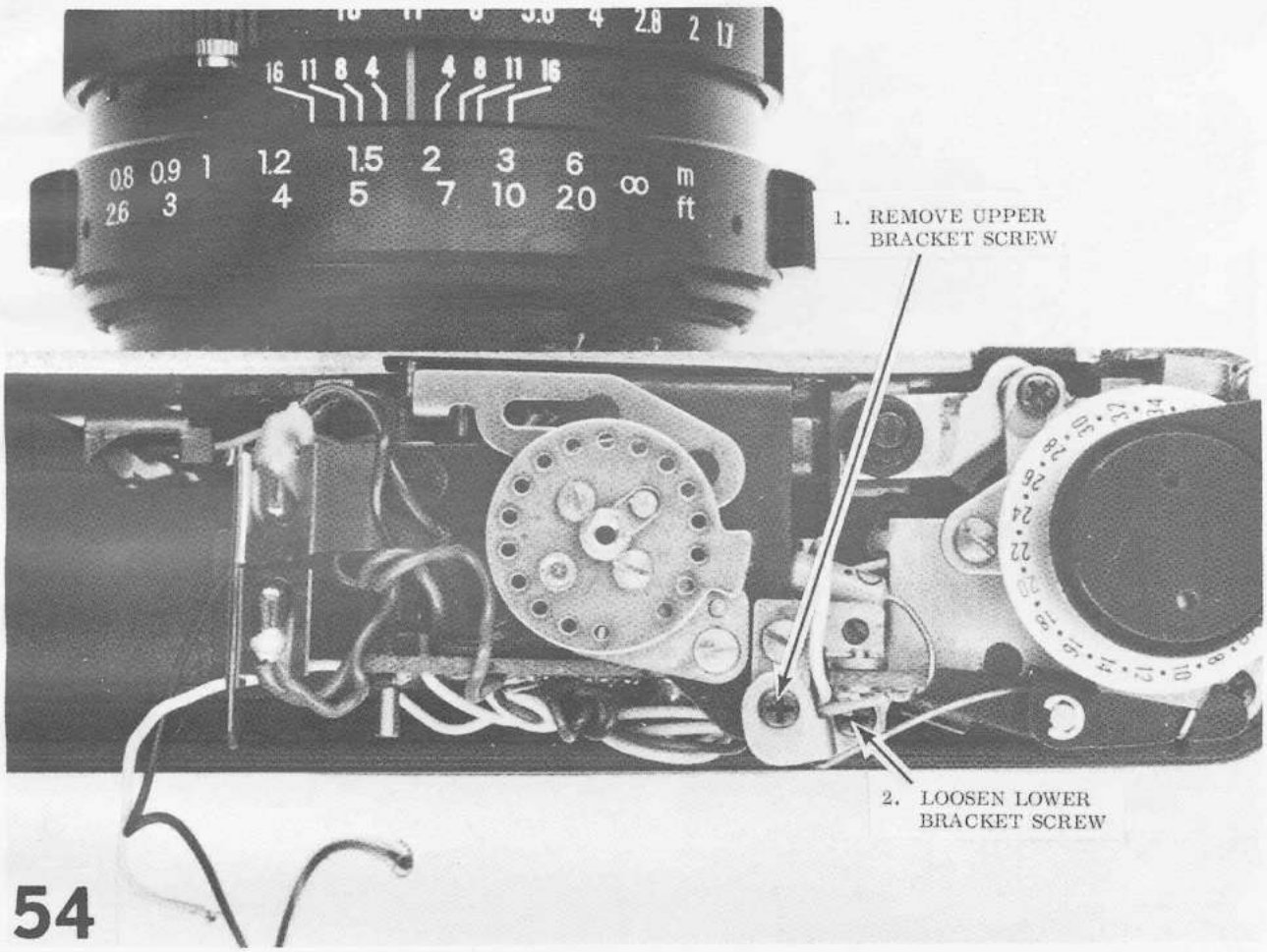

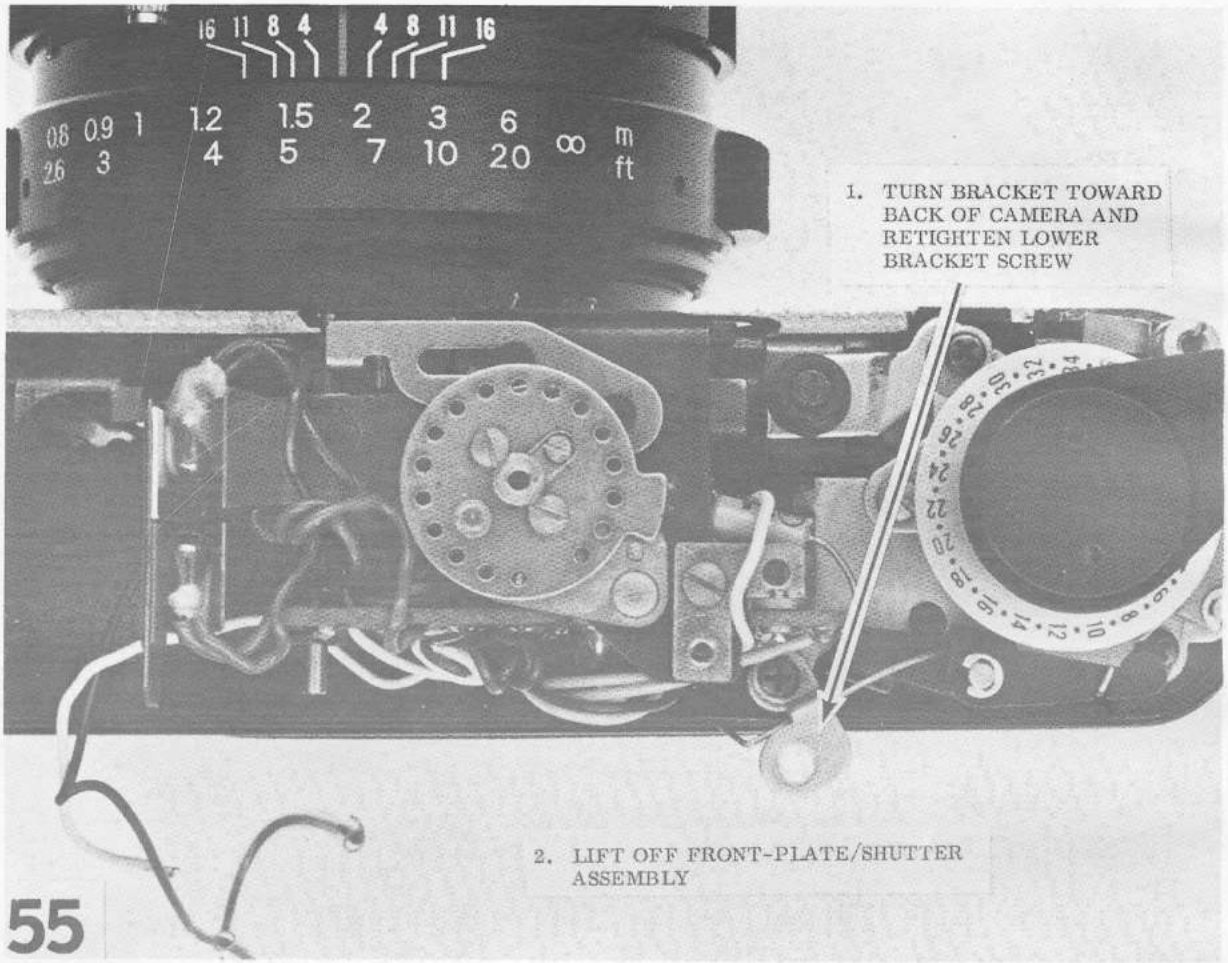

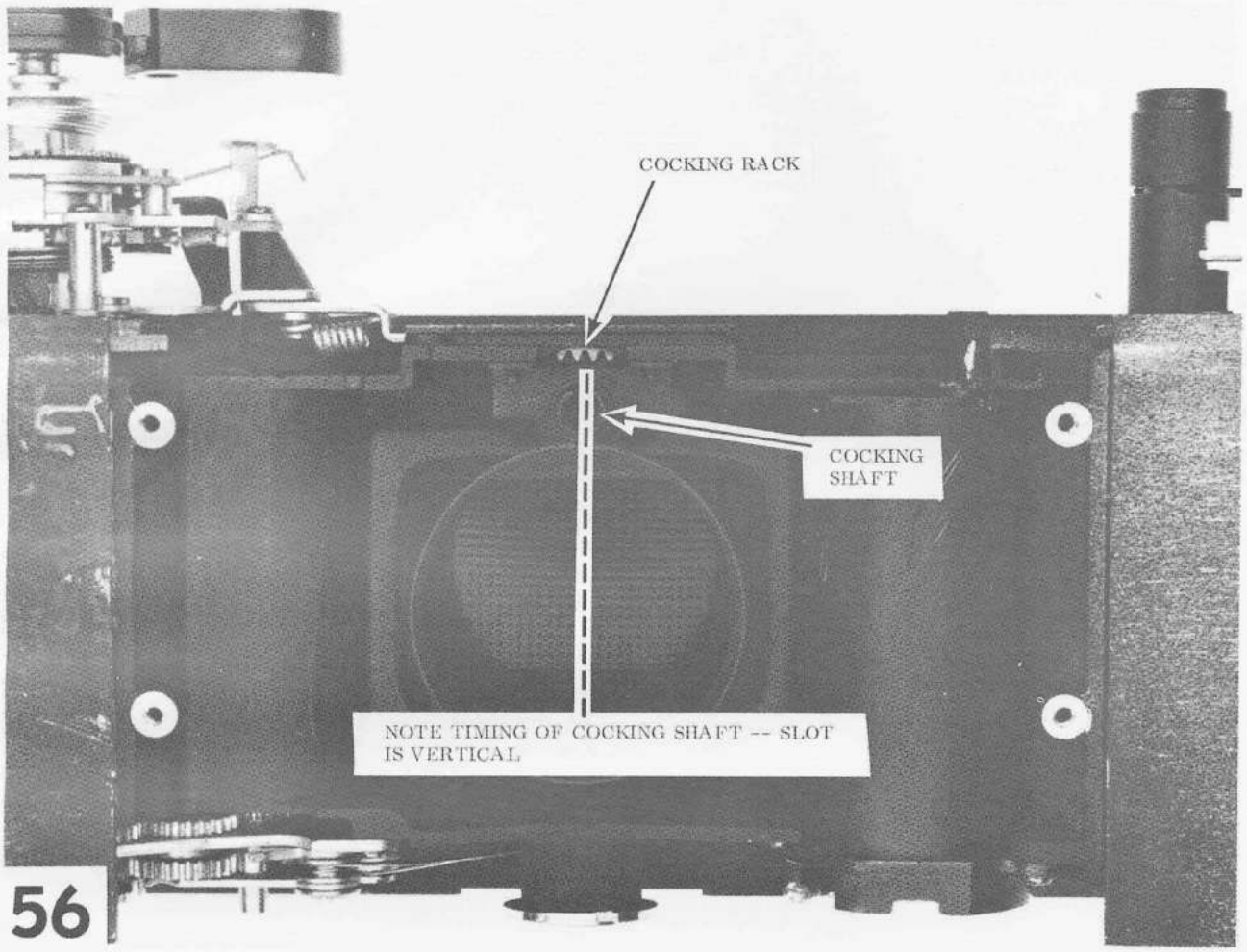

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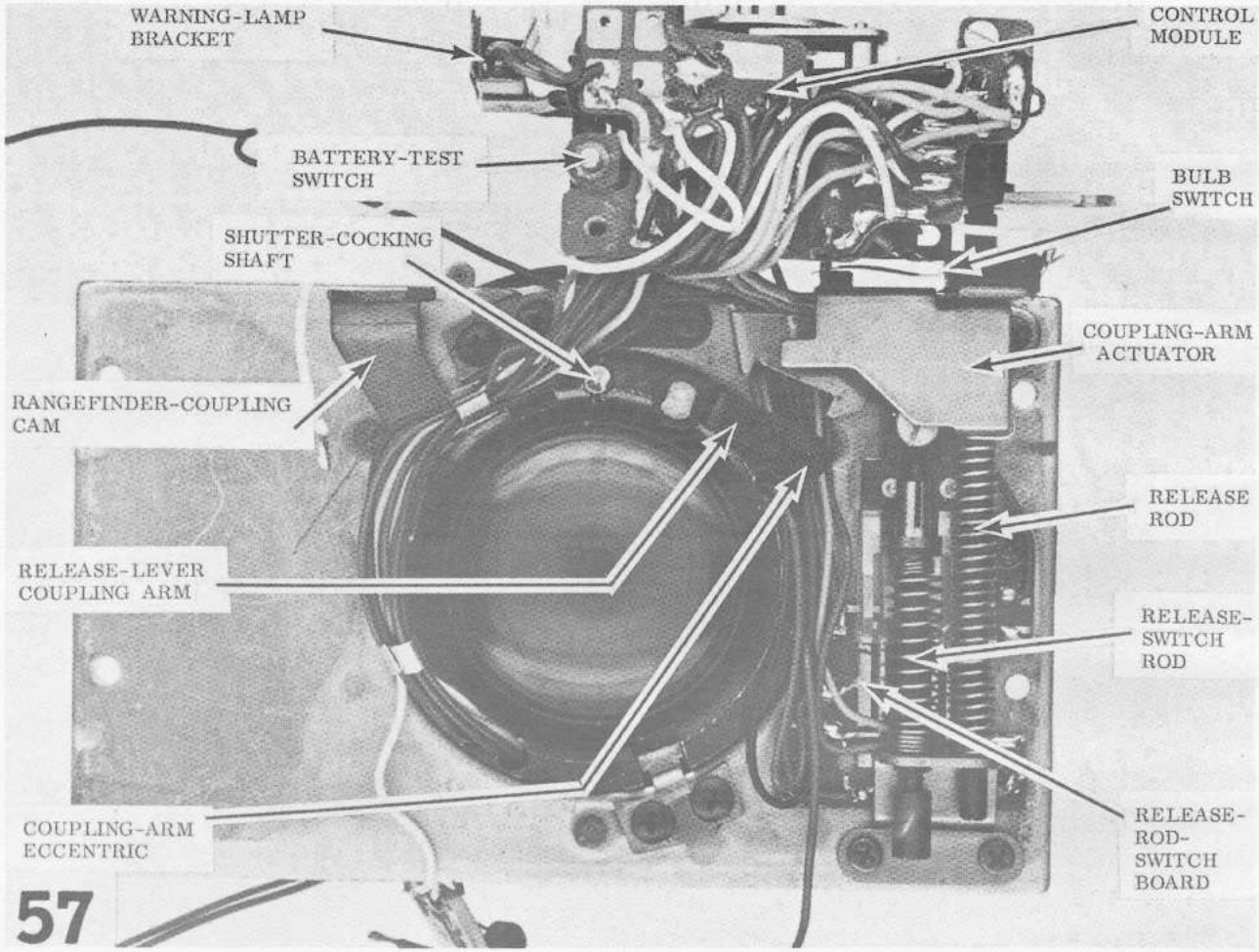
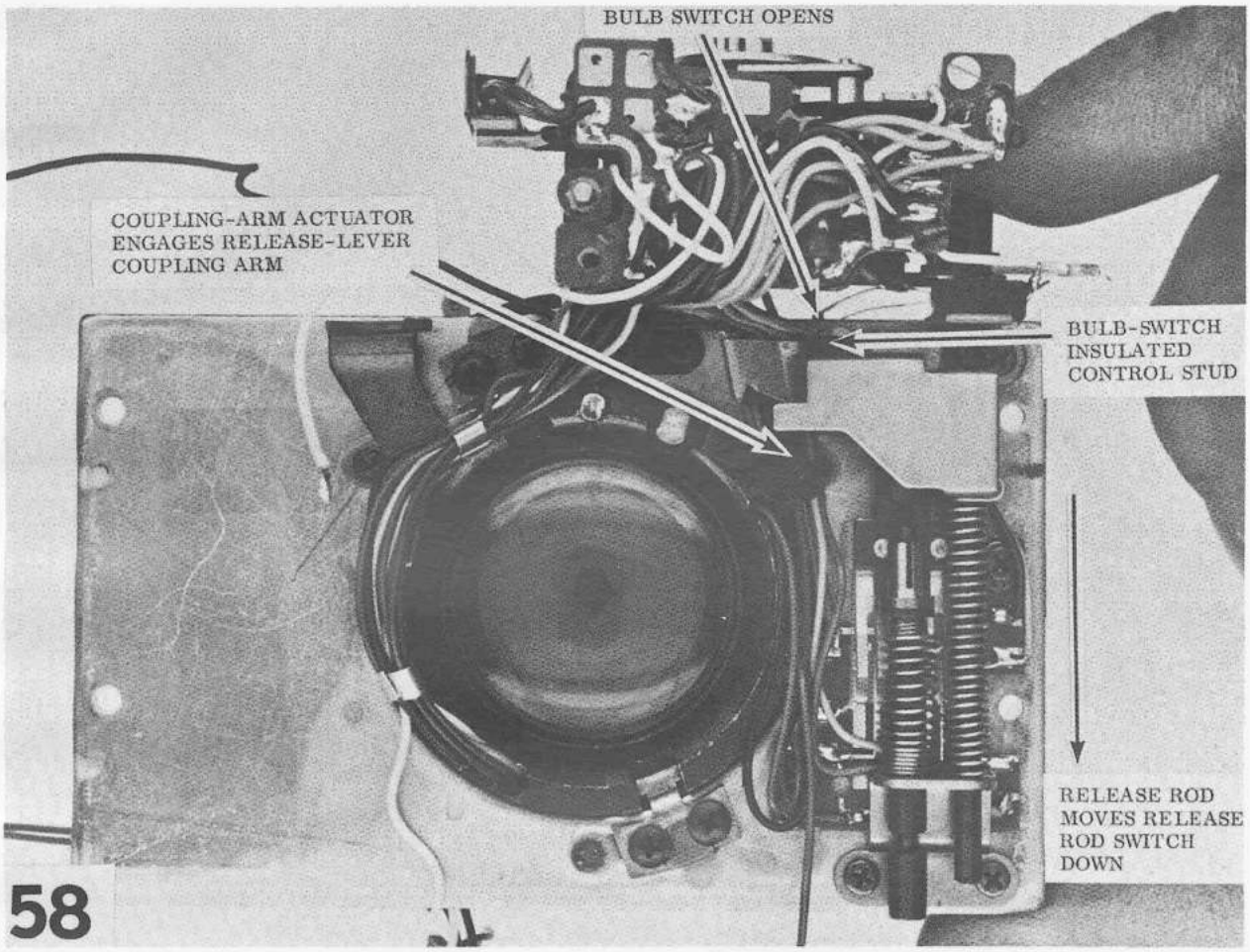
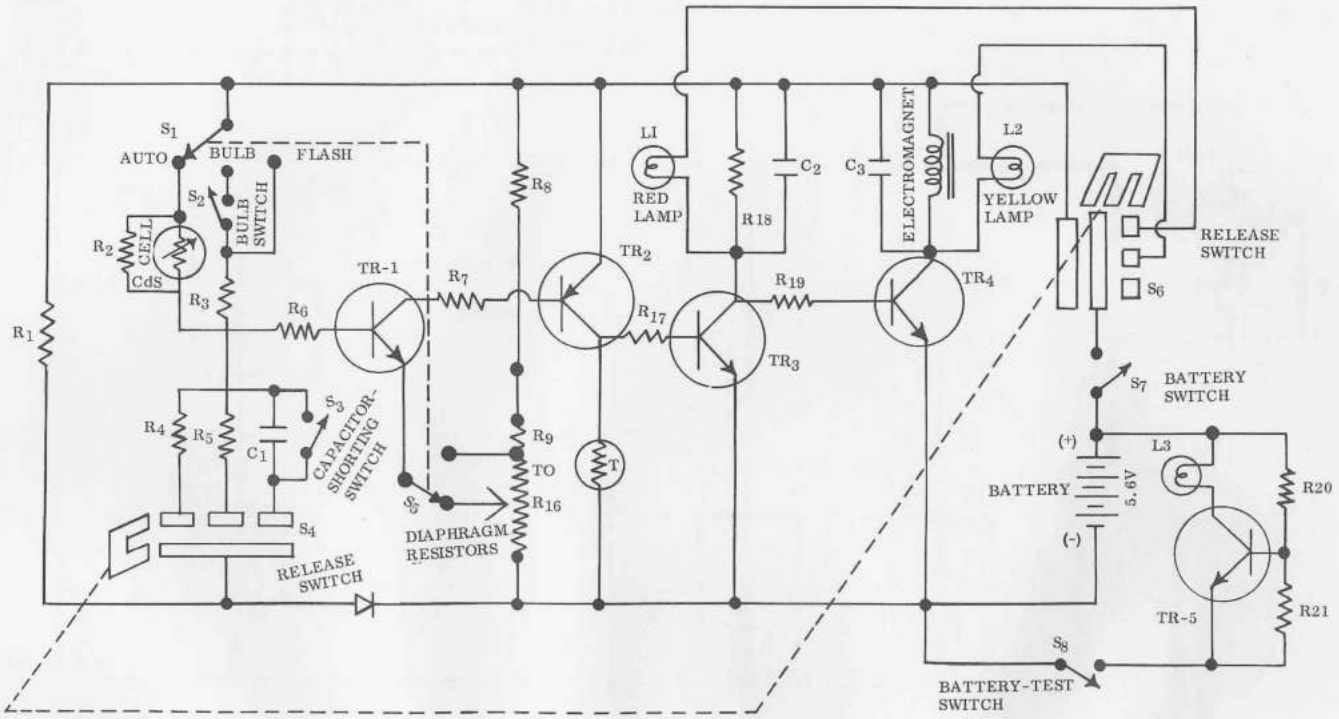
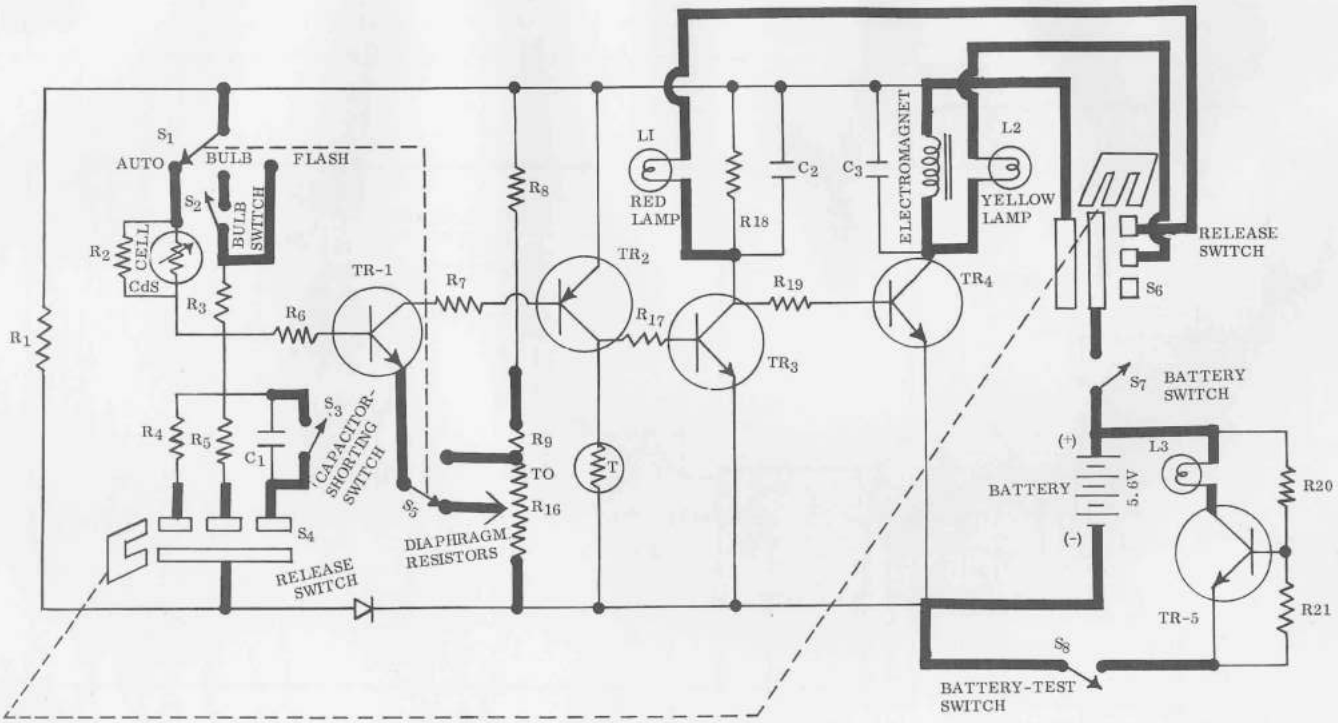


57

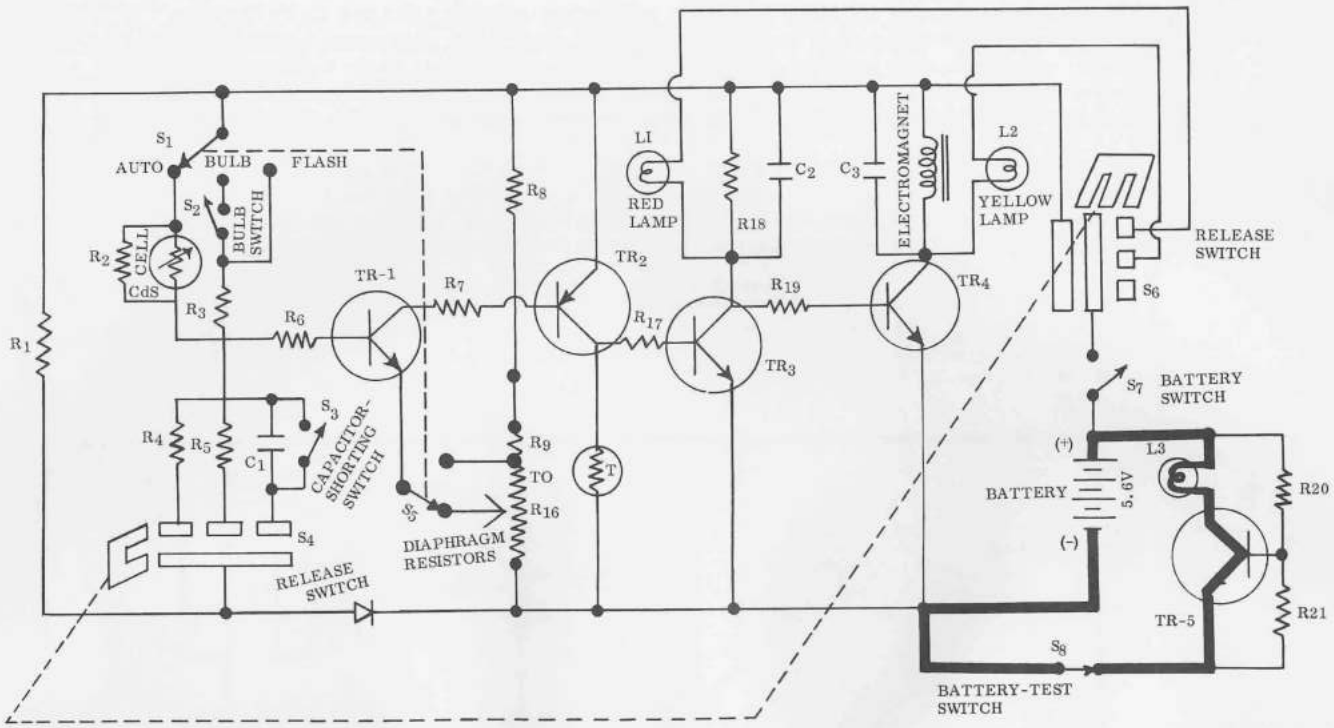




59



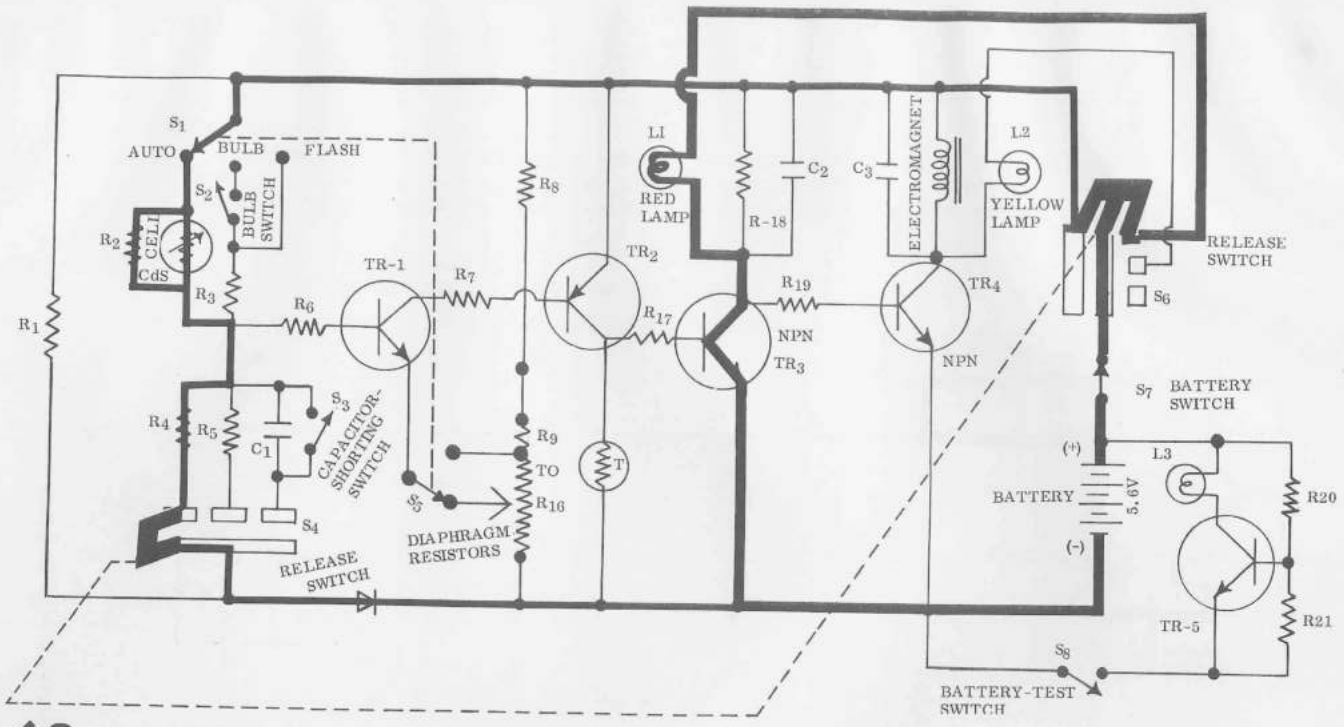
HEAVY LINES INDICATE WIRES -- LIGHT LINES INDICATE PRINTED CIRCUIT PATHS



61

HEAVY LINES INDICATE CURRENT PATH FOR BATTERY-TEST LAMP

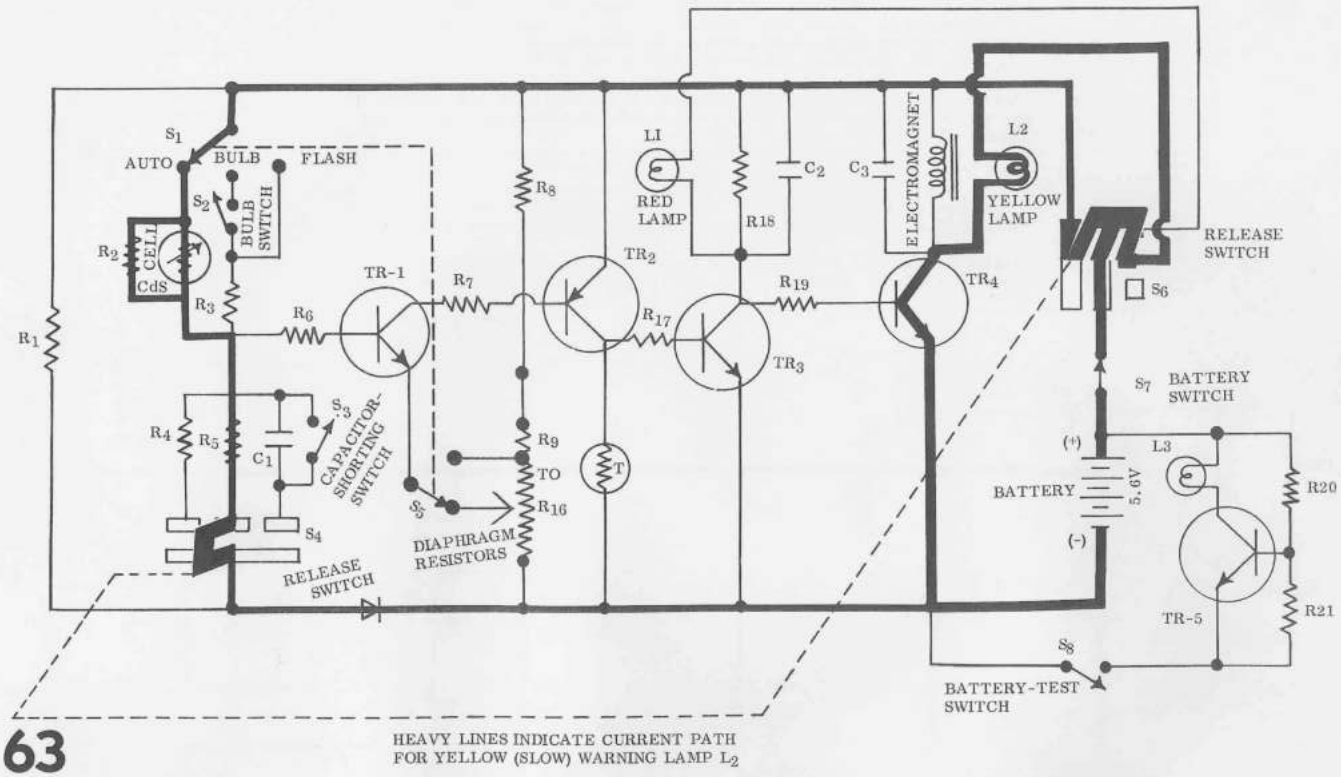
Depressing the battery-test button closes the battery-test switch S_8. Battery current then flows through resistors R21 and R20. A sufficient voltage drop across R21 turns on transistor TR5. So current flows through the transistor and through the battery-test lamp L_3.



HEAVY LINES INDICATE CURRENT PATH FOR RED (OVEREXPOSURE) WARNING LAMP L_1

As you start depressing the release button, the shutter-release switch connects the red lamp L_1 into the circuit. But L_1 can turn on only if transistor TR3 conducts. And the triggering of transistor TR3 depends on the resistance of the CdS cell, as established by the light conditions.

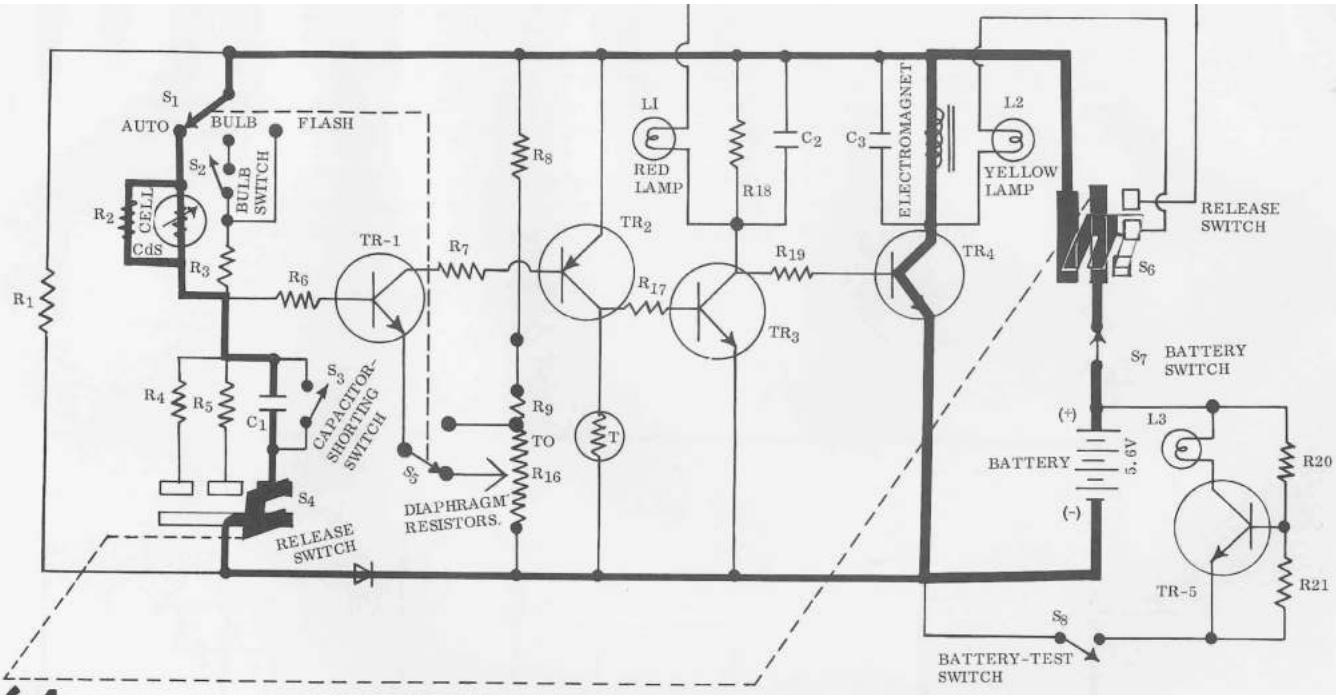
Consider that the light conditions are so bright that a shutter speed faster than 1/500 second is required. The resistance of the CdS cell is then low. Consequently, enough of the battery voltage is dropped across resistor R_4 to trigger transistor TR1. Transistor TR1 triggers transistor TR2. And TR2 triggers TR3 to turn on lamp L_1. You can turn off lamp L_1 by setting a smaller diaphragm opening -- that changes the resistance in the emitter circuit of TR1.



HEAVY LINES INDICATE CURRENT PATH
FOR YELLOW (SLOW) WARNING LAMP L_2

Depressing the release button a little further connects the yellow lamp L_2. Lamp L_2 turns on when the light conditions are so dim that a shutter speed slower than 1/30 second is required. The resistance of the CdS cell is then high.

The high resistance of the CdS cell keeps transistor TR1 turned off -- the voltage dropped across R_5 is too low to trigger the transistor. Consequently, transistors TR2 and TR3 are also turned off. As long as transistor TR3 is turned off, transistor TR4 conducts. And the current flowing through transistor TR4 also flows through the yellow lamp L_2.



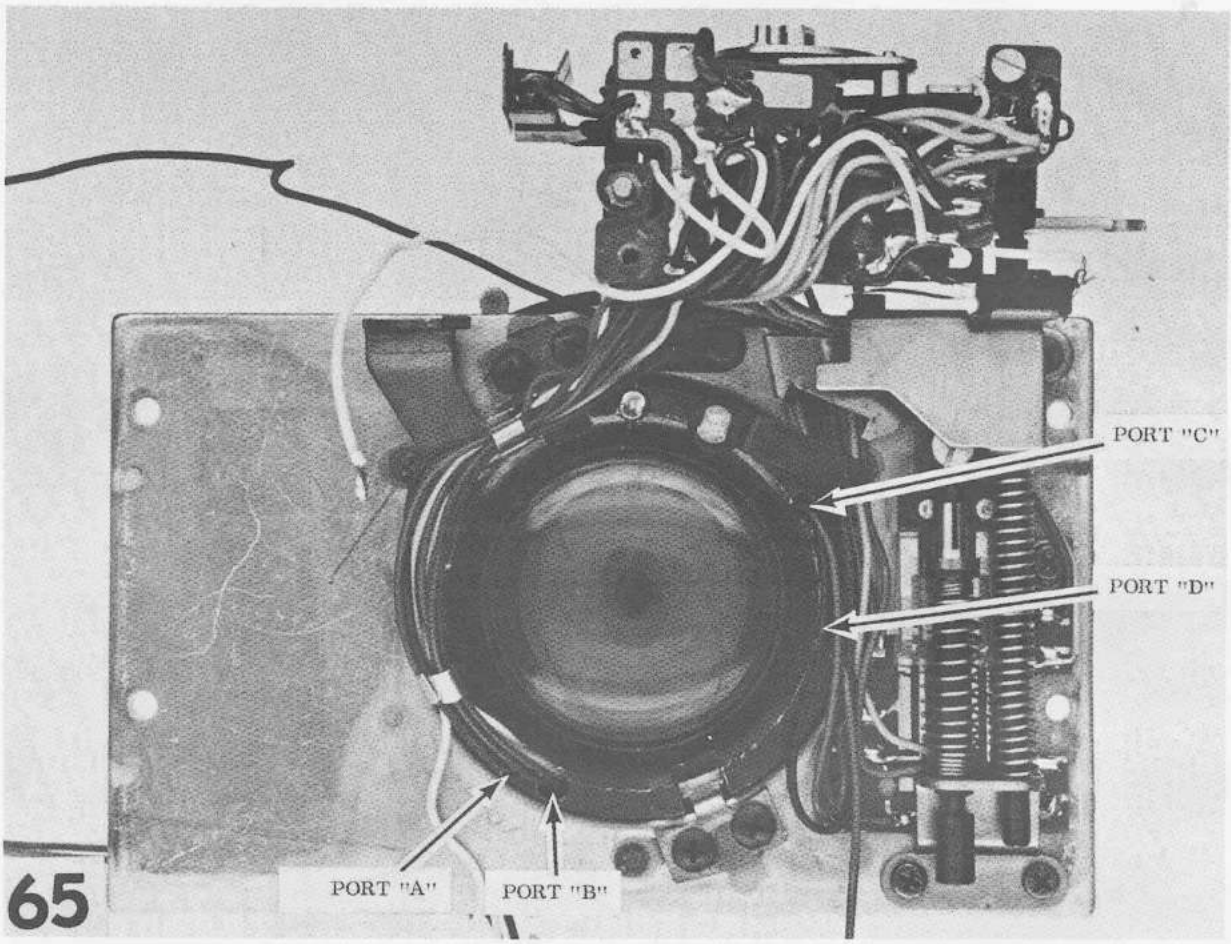
HEAVY LINES INDICATE CURRENT PATH FOR EXPOSURE CYCLE

When the shutter-release switch reaches the bottom of its stroke, it connects the timing capacitor C_1 to the circuit. Also, the shutter releases and the blades move to the open position.

Transistor TR1 remains turned off while the timing capacitor charges to the required voltage. Consequently, transistor TR4 conducts current through the electromagnet. The electromagnet holds its armature to keep the blades in the open position.

The time it takes for the timing capacitor to charge depends on the resistance of the CdS cell. When the timing capacitor reaches a sufficient charge, the voltage on its positive plate turns on transistor TR1 -- this trigger voltage depends on the diaphragm setting which determines the resistance in the emitter circuit of TR1. TR1 turns on TR2, and TR2 turns on TR3. Now, TR3 robs transistor TR4 of the base current it needs to conduct. TR4 shuts off, depriving the electromagnet of current.

As the blades close, the blade-operating ring closes the capacitor-shorting switch S_3. S_3 opens as the blades open and closes as the blades close. So the time that S_3 opens determines when the timing capacitor can start accepting a charge. The eccentric adjustment on S_3 is your high-speed adjustment point.



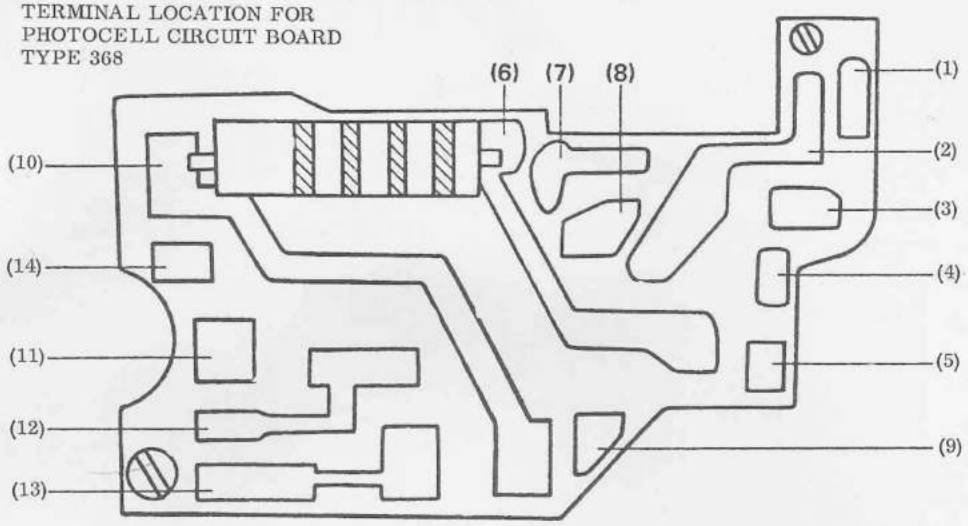
65

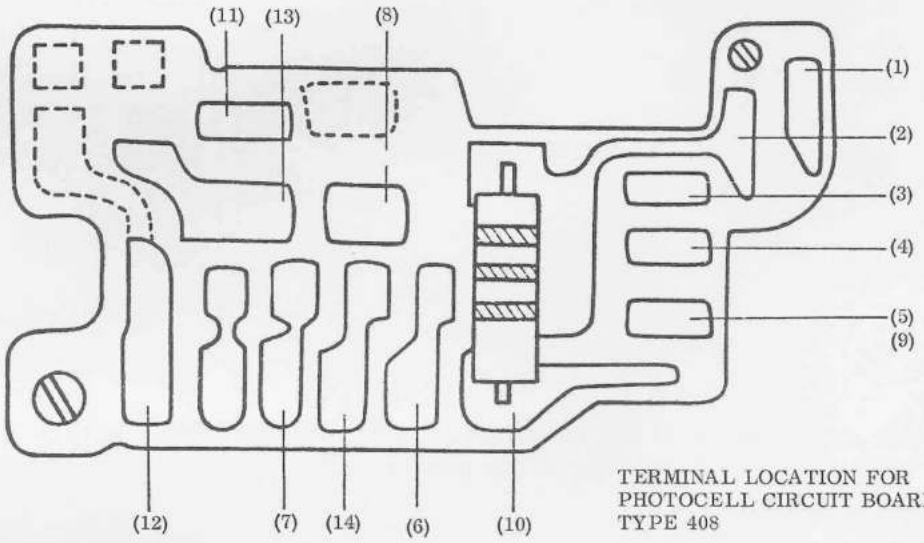
Note the color coding of the wires coming from each port. In different cameras, the color codes may vary slightly from port to port. But they're generally consistent from side to side.

Here's the normal color coding of the wires from each port:

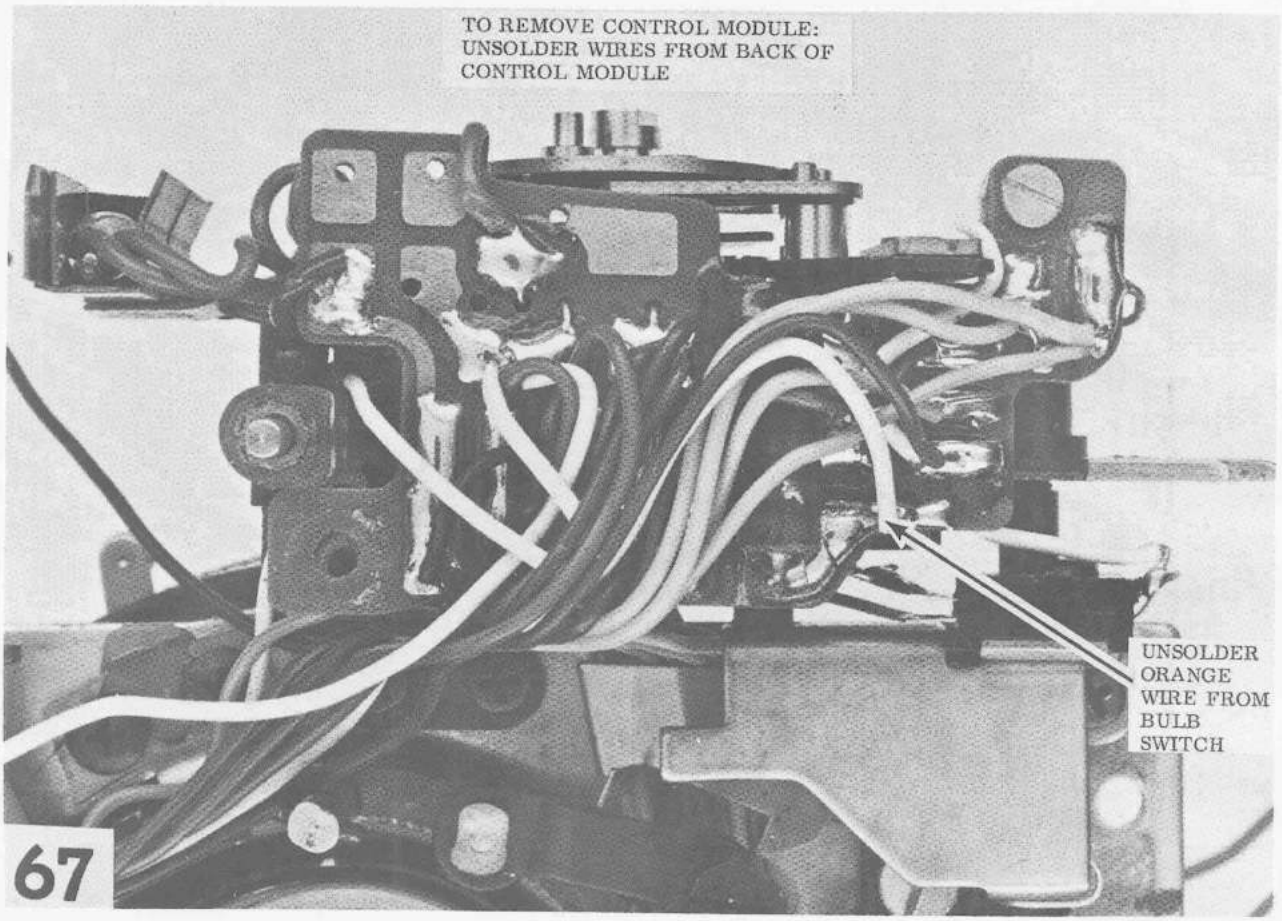
PORT A -- green, dark blue, orange, and brown
PORT B -- red, white, and purple
PORT C -- yellow, yellow, red, and black
PORT D -- red, black, and brown

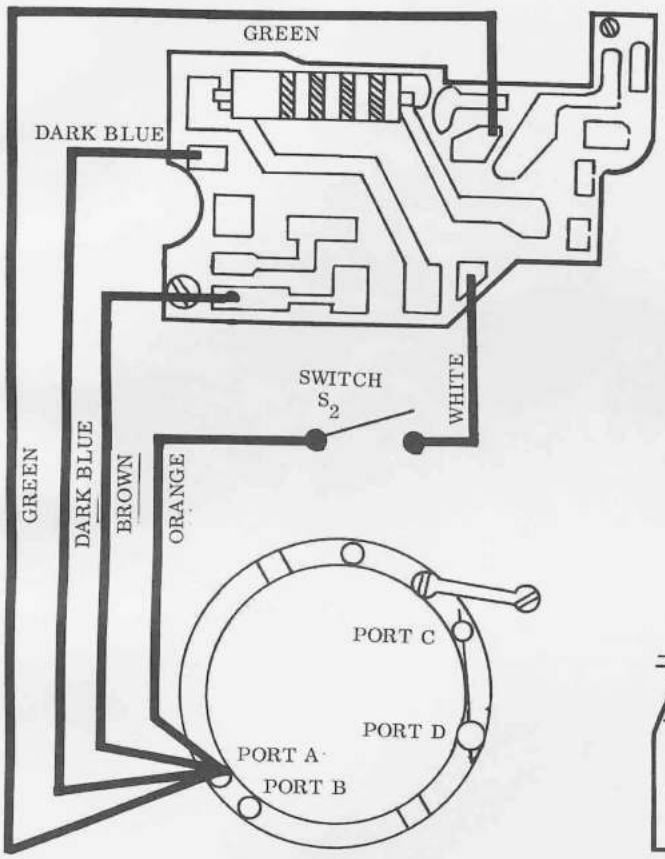
TERMINAL LOCATION FOR
PHOTOCELL CIRCUIT BOARD
TYPE 368



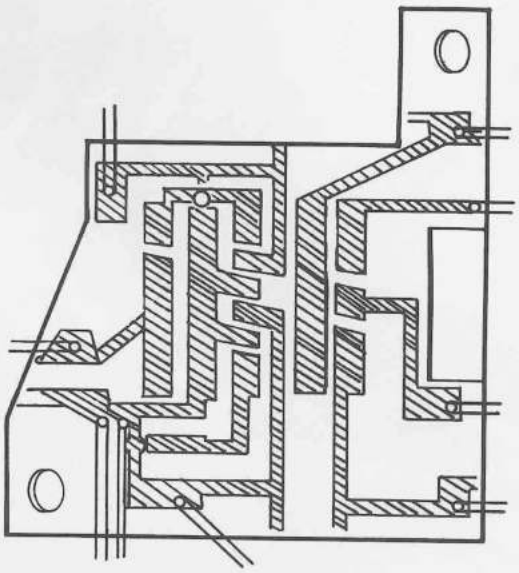


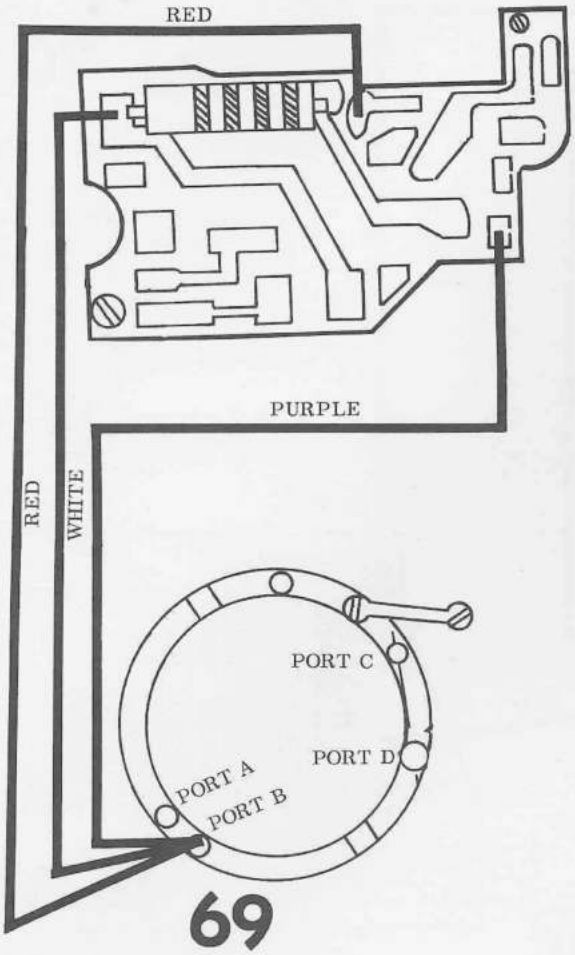
TERMINAL LOCATION FOR
PHOTOCELL CIRCUIT BOARD
TYPE 408



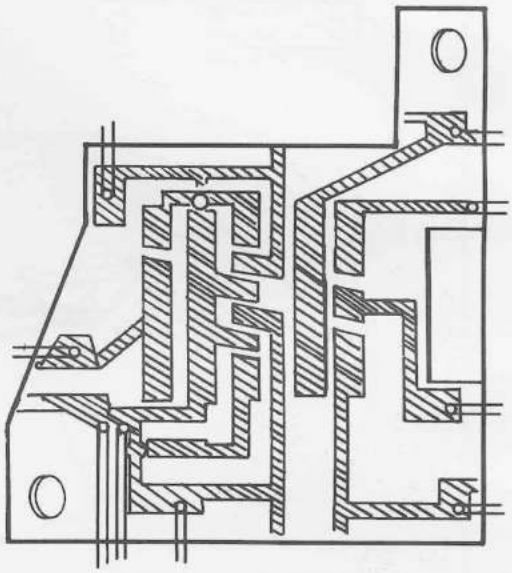


WIRING FROM PORT A

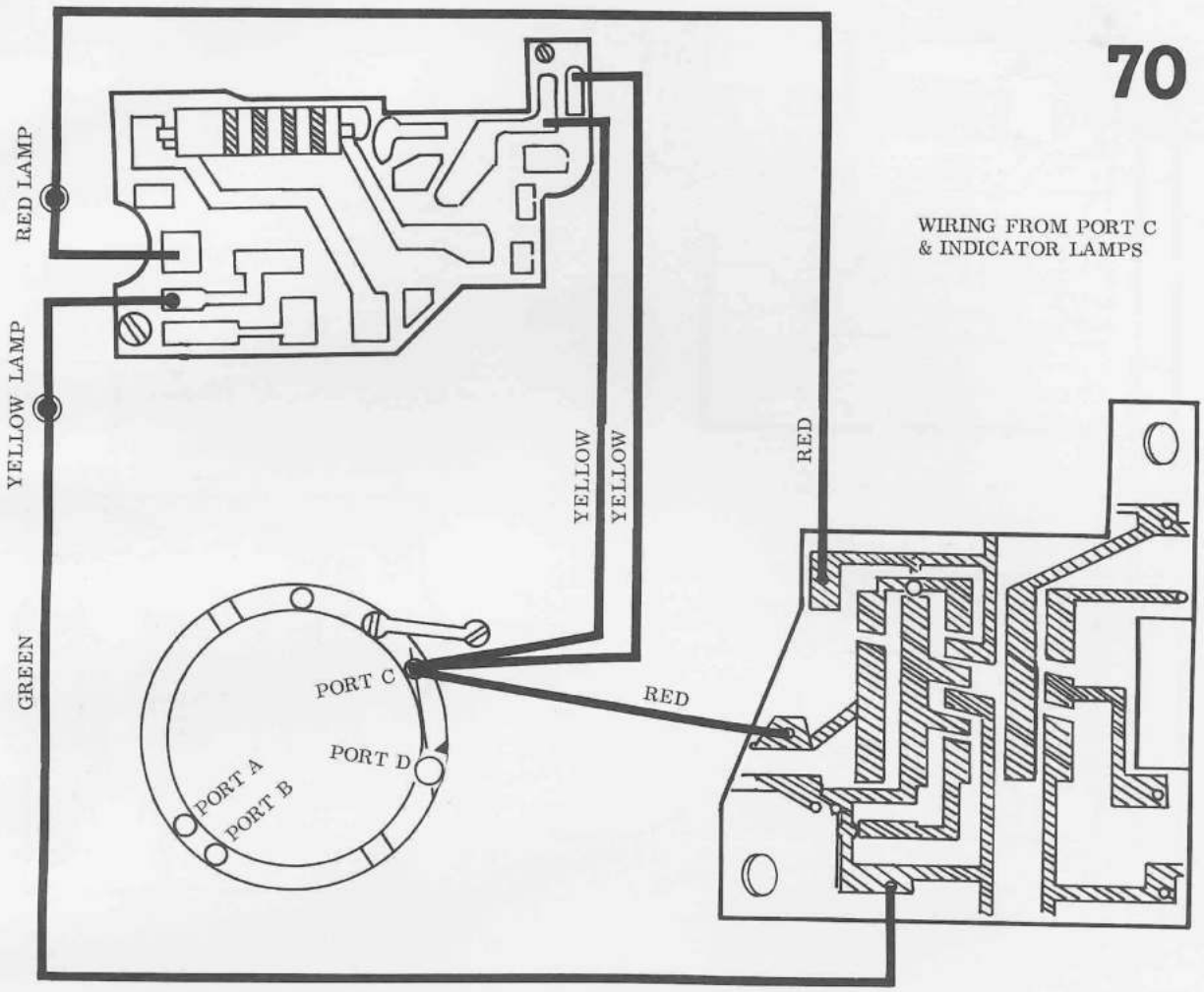


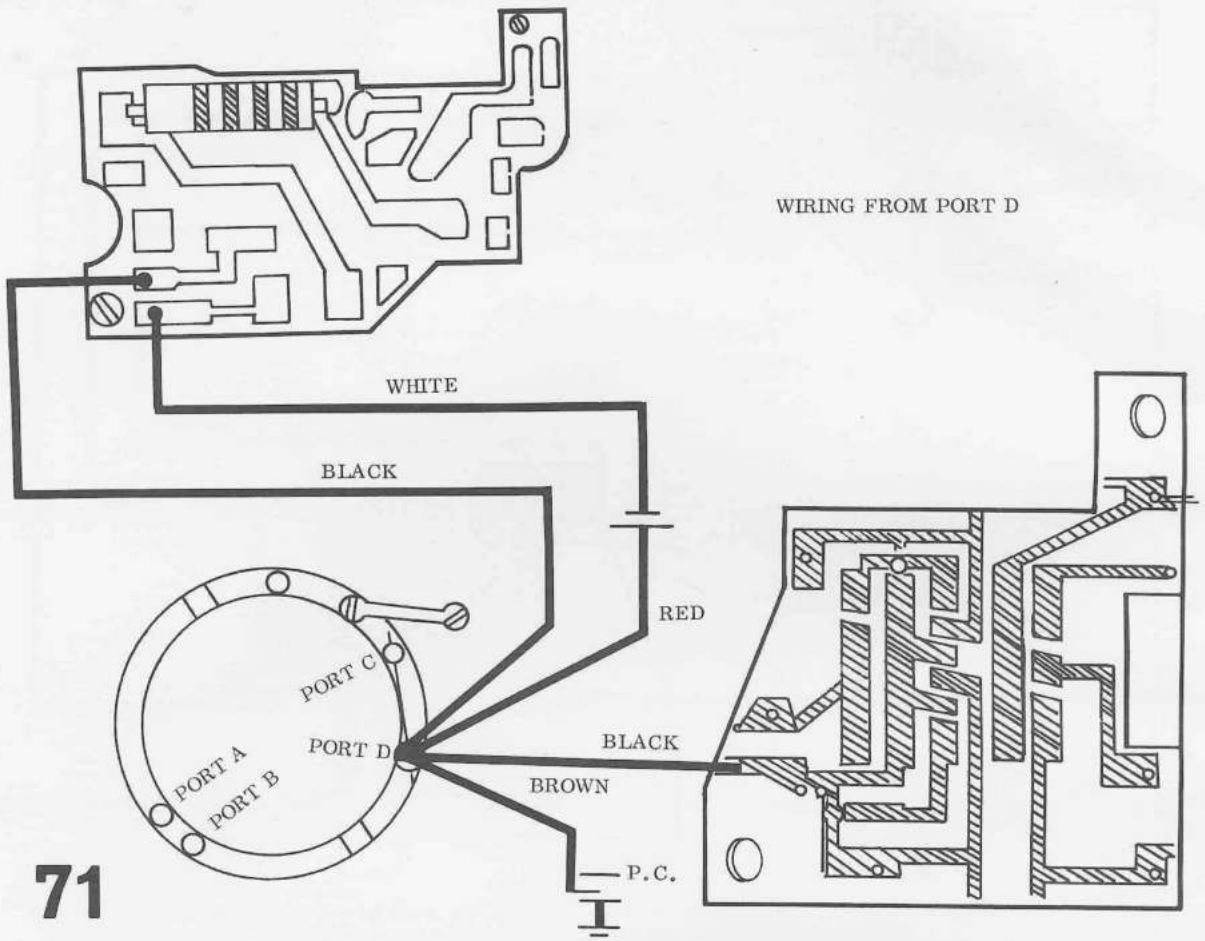


WIRING FROM PORT B

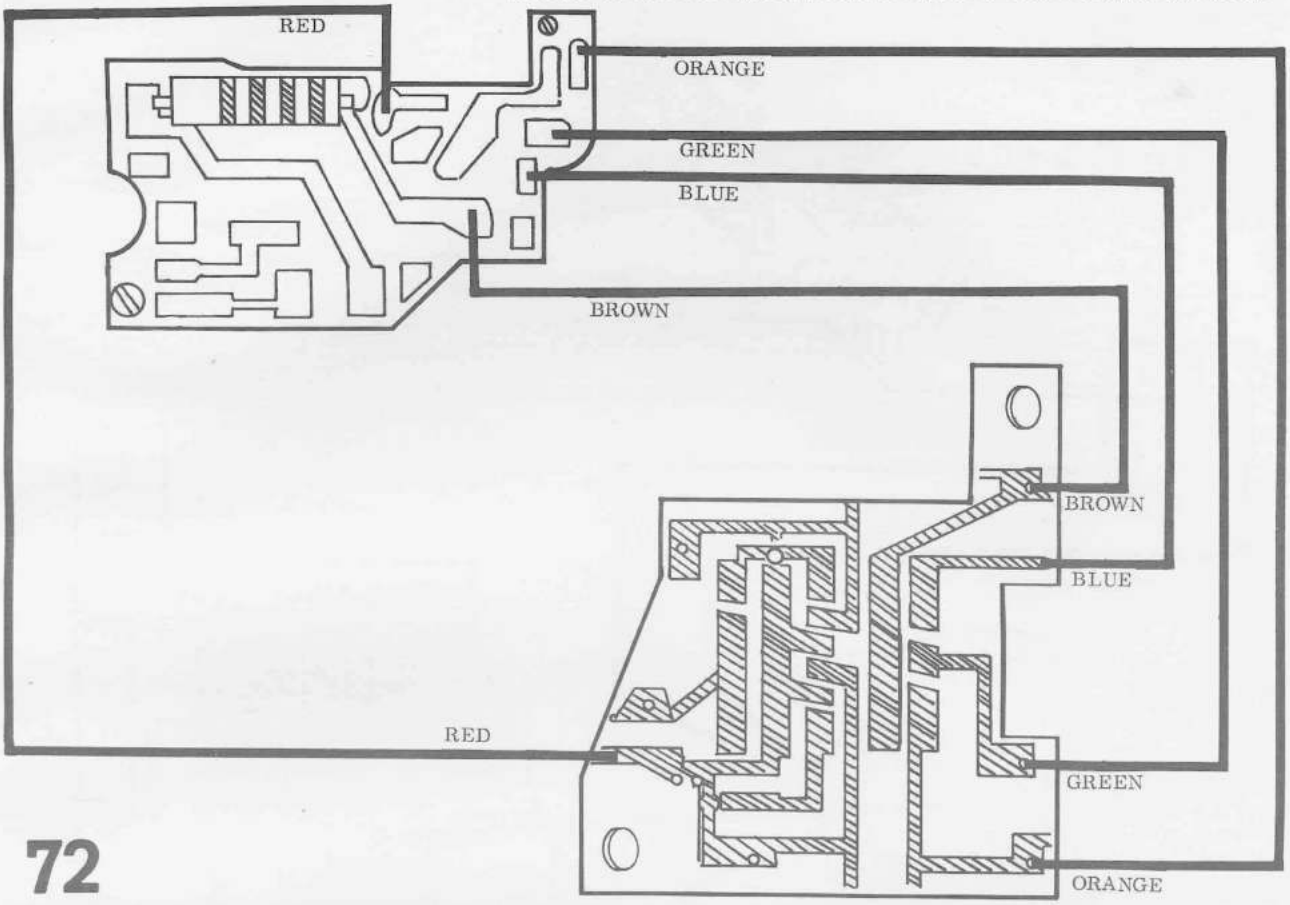


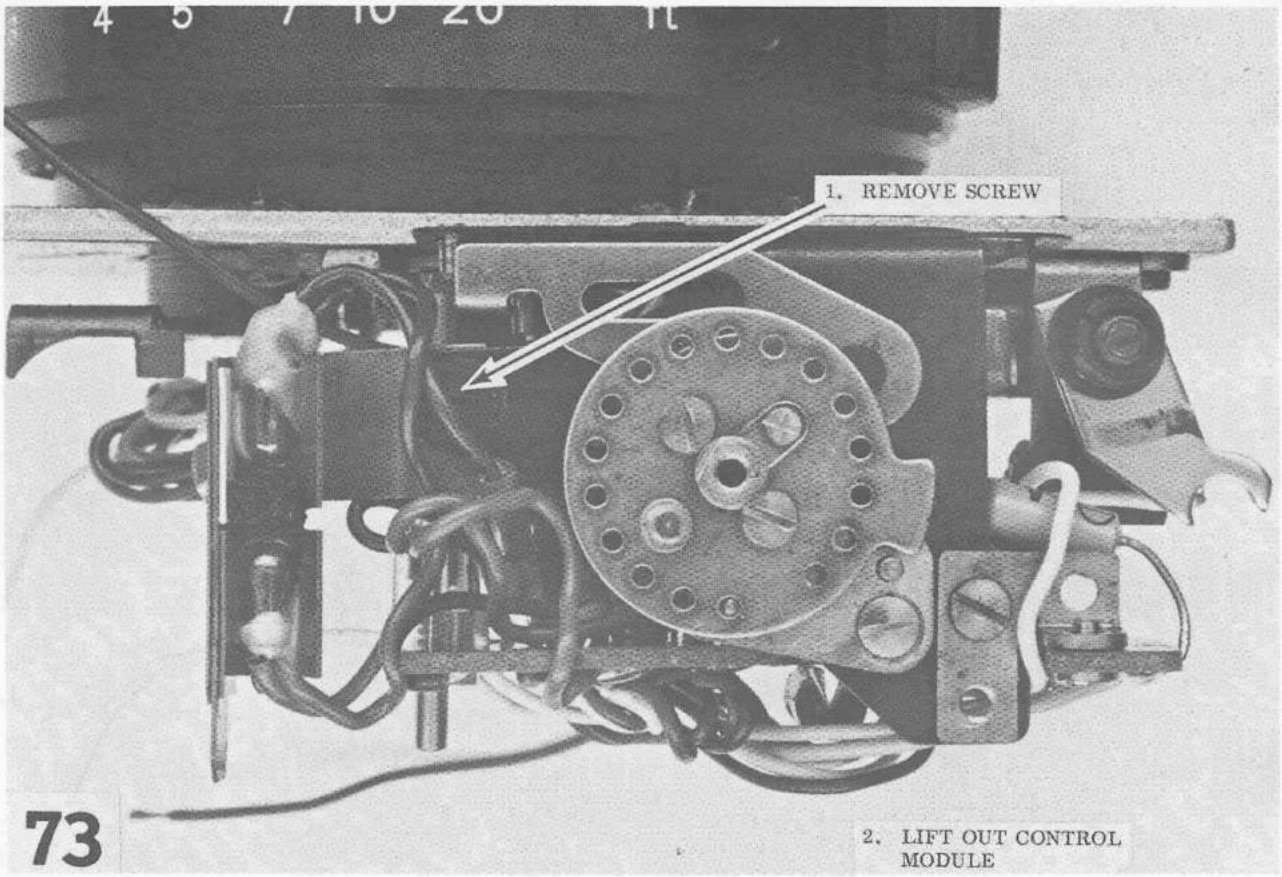
WIRING FROM PORT C
& INDICATOR LAMPS



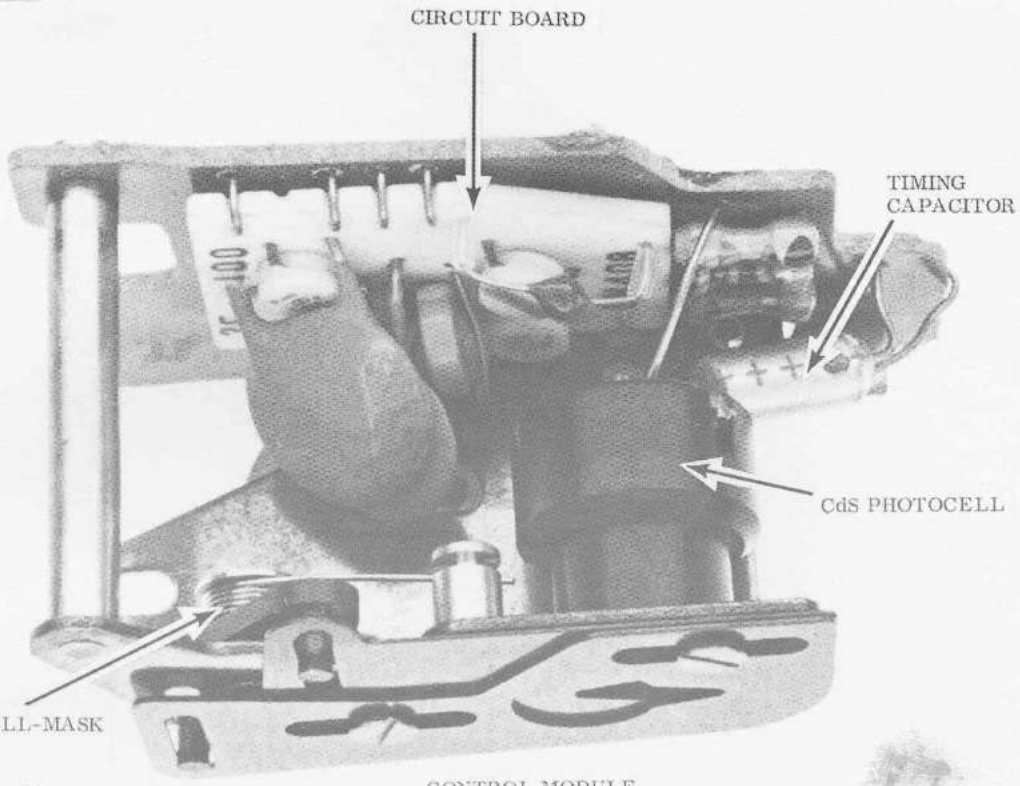


DIRECT WIRING OF SWITCH BASE PLATE TO PHOTOCELL ASSEMBLY



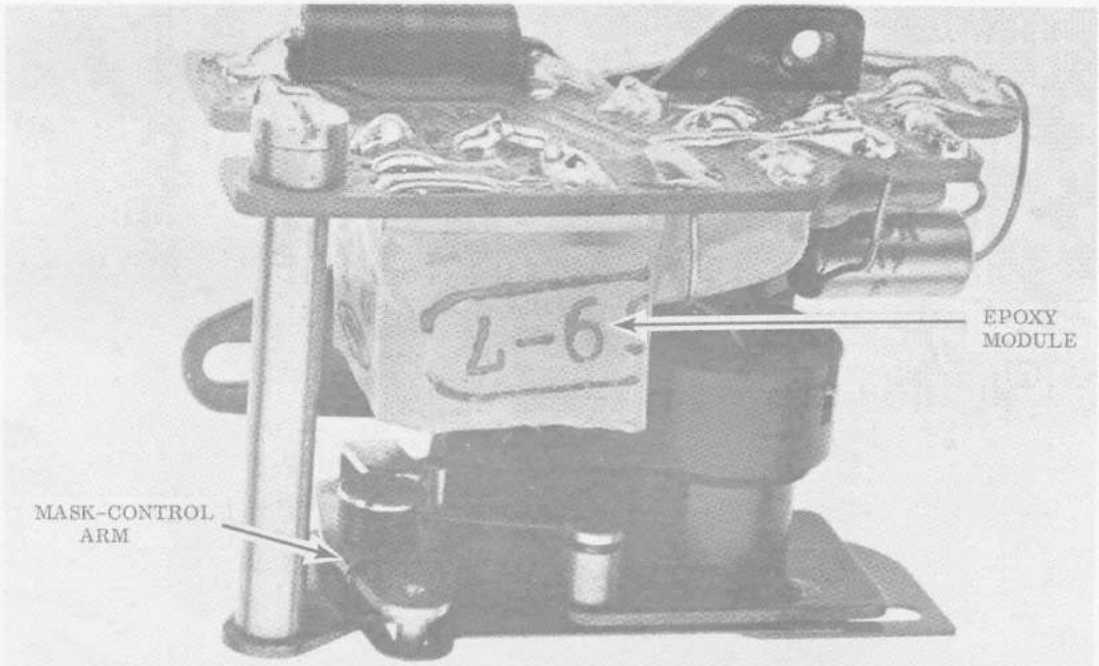


73



74 A

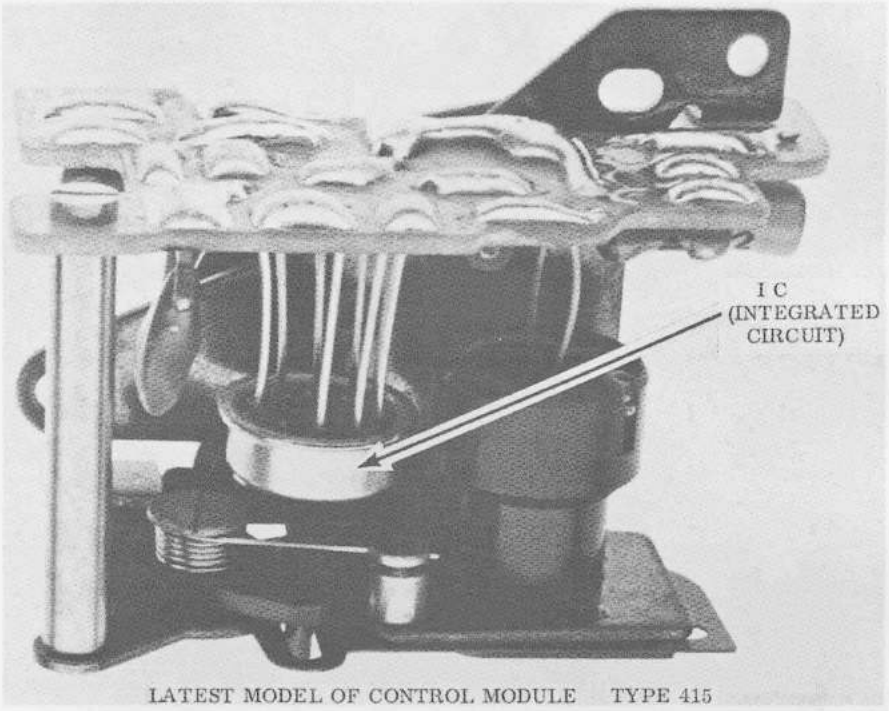
CONTROL MODULE
TYPE 408



74 B

EARLY MODEL CONTROL MODULE (NO LONGER AVAILABLE AS A REPLACEMENT PART)

TYPE 368



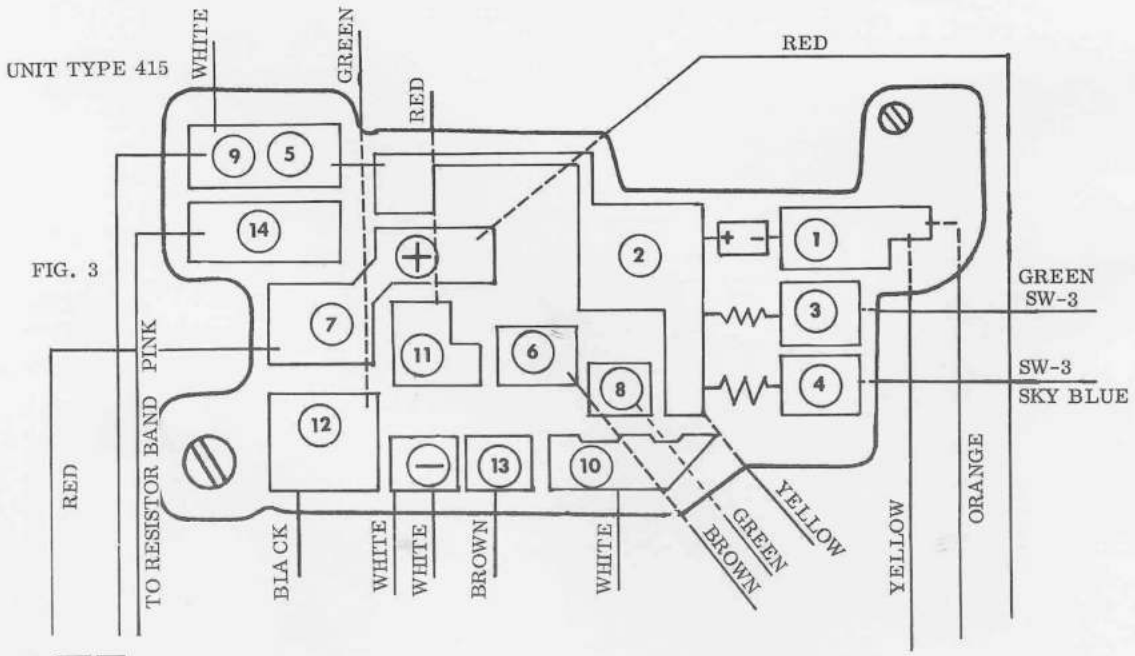
LATEST MODEL OF CONTROL MODULE TYPE 415

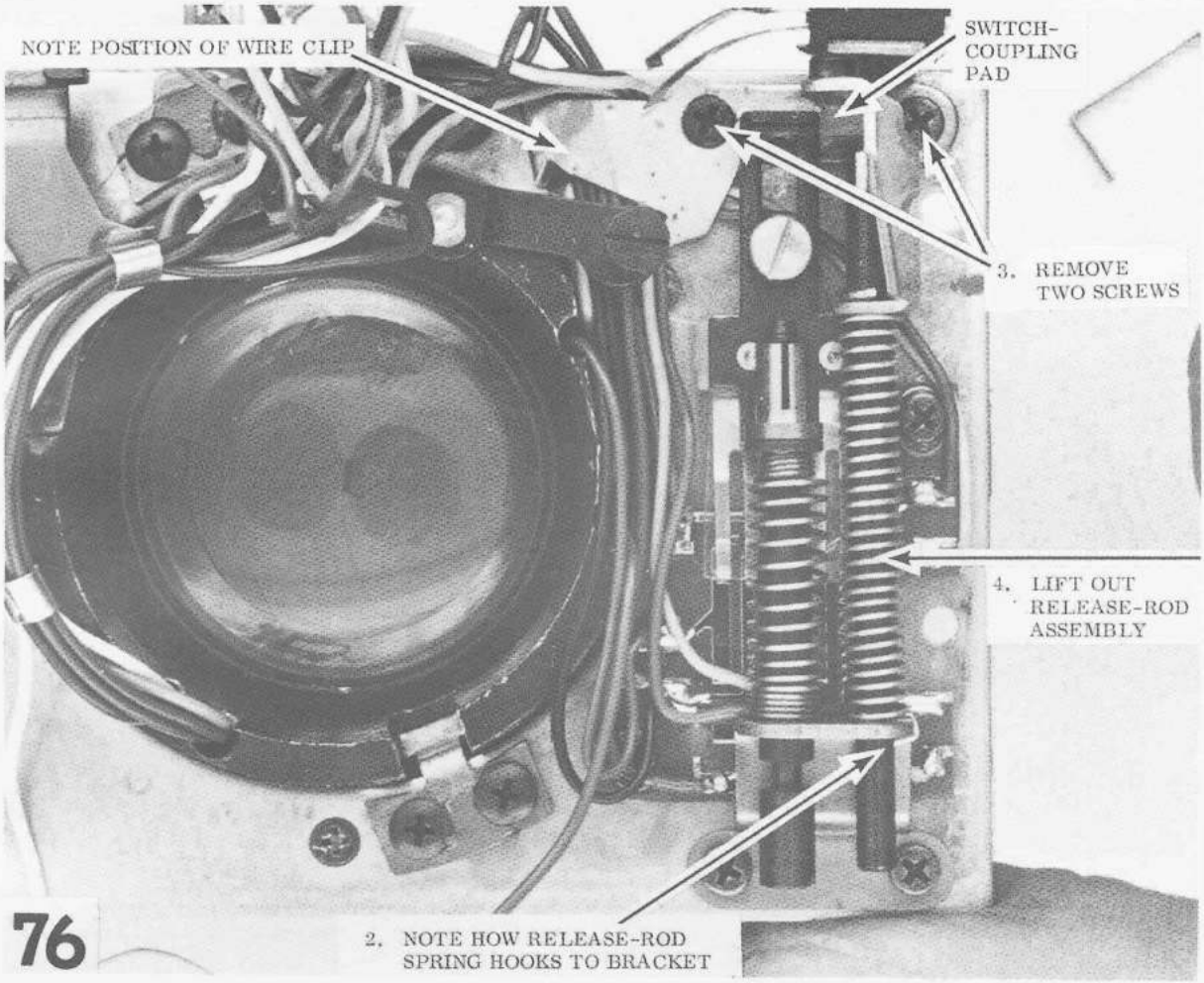
If you're installing the new-style control module in an older camera, you must also replace the diaphragm-resistor board. Use the new-style diaphragm-resistor board for shutter EB-413 with a total resistance of 10K.

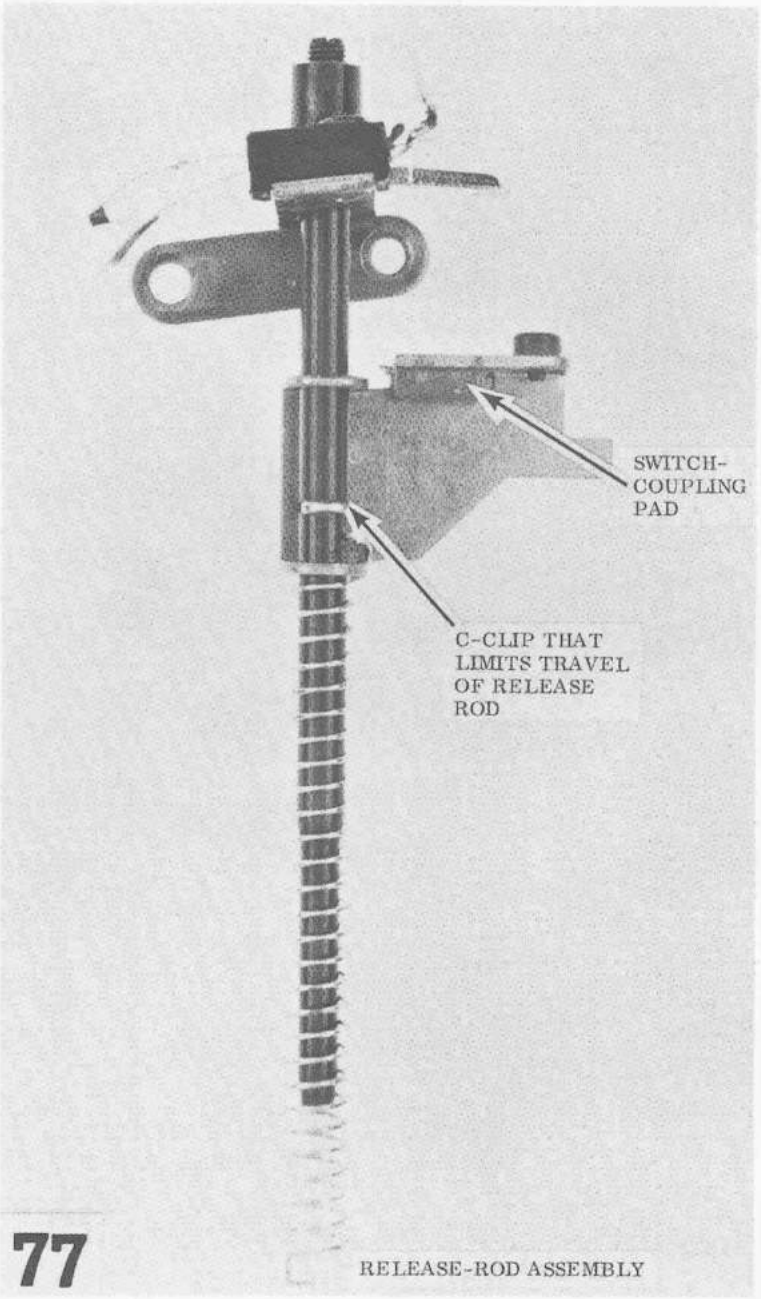
The mounting system for the Type 415 control module is also a little different. You'll have to replace the bracket shown in figure 54 with a threaded post (part #31751200).

There's another variation in the color coding of one wire, as shown in the diagram. The pink wire running to the Type 415 control module replaces the blue wire in the other styles. This pink wire goes to the diaphragm-resistor board.

WIRING DIAGRAM

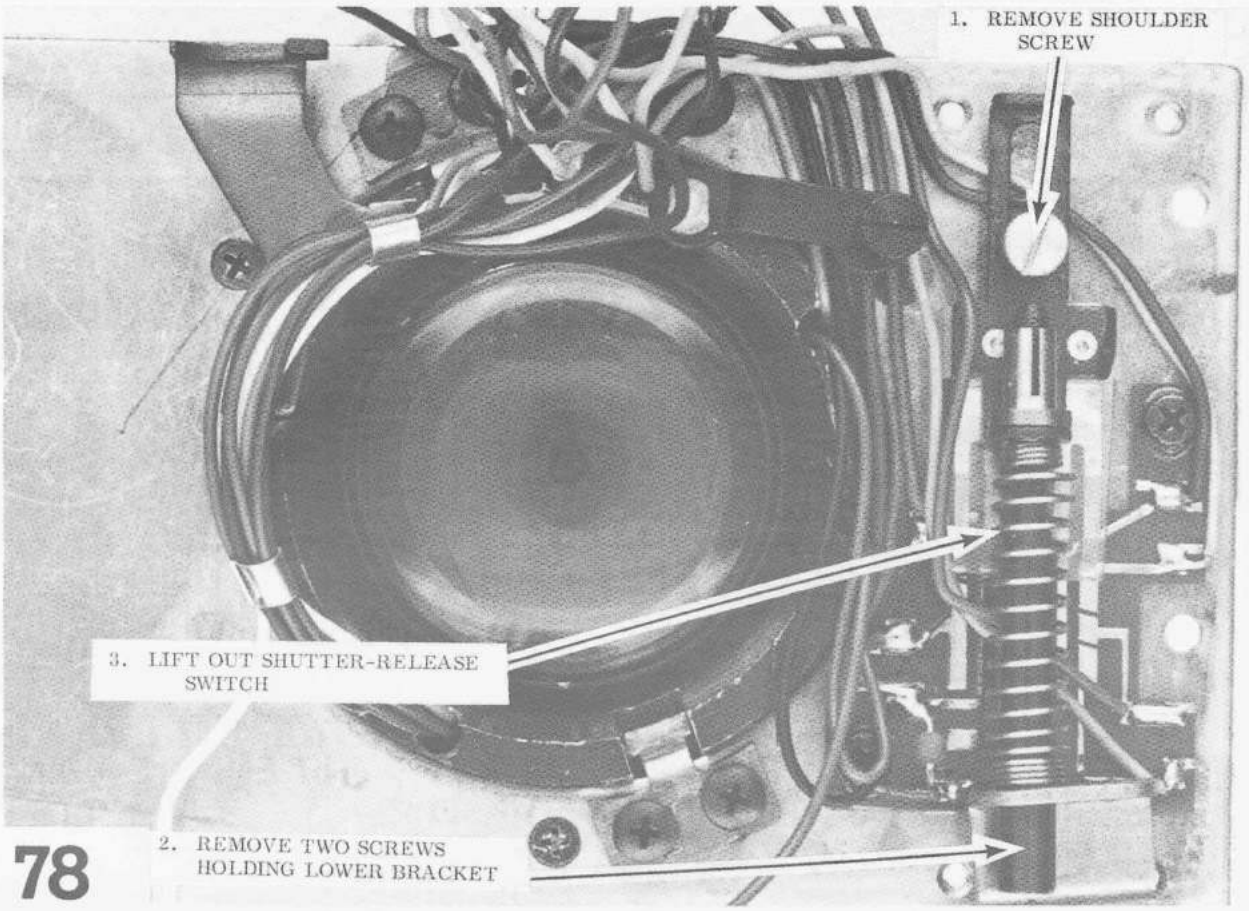




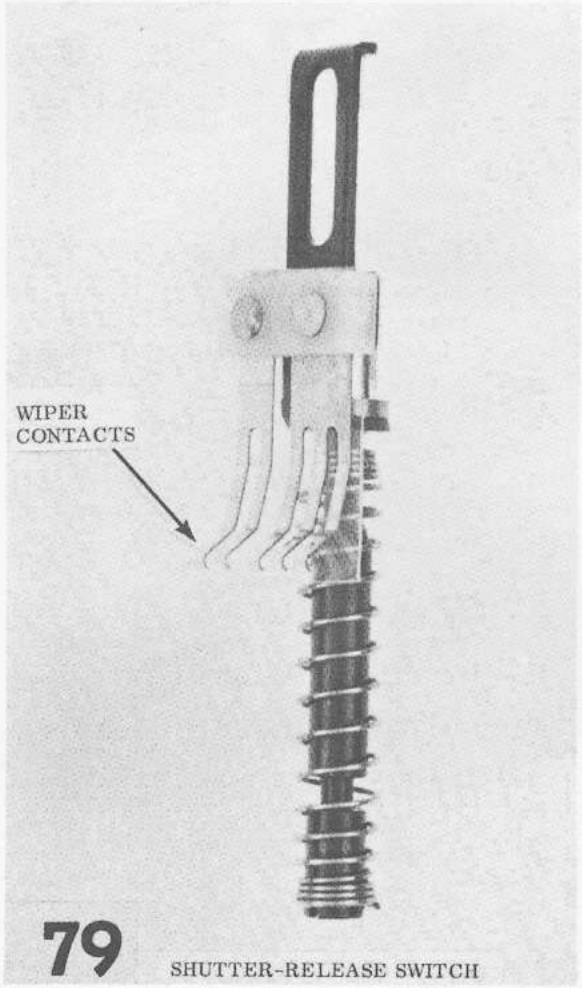


77

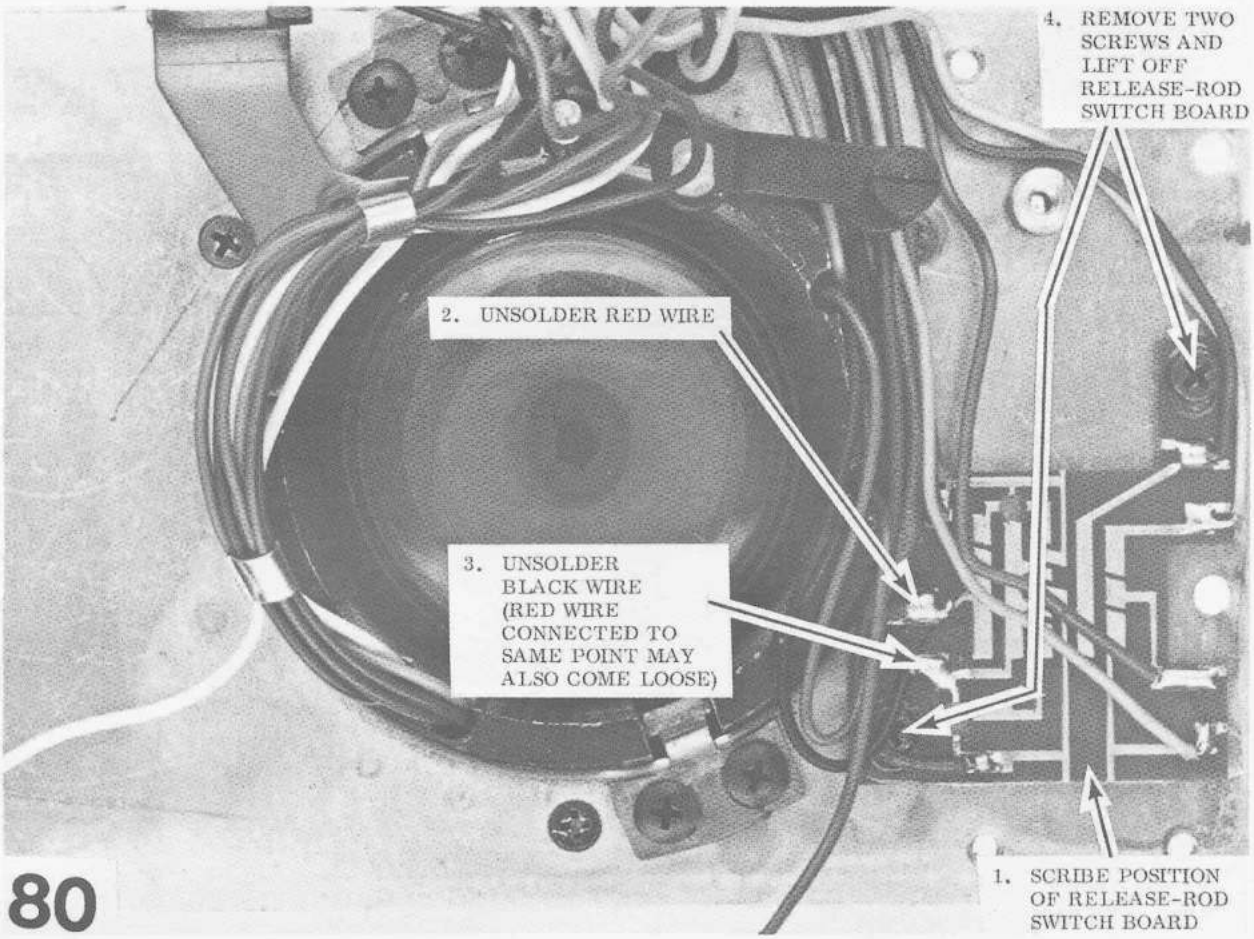
RELEASE-ROD ASSEMBLY



78

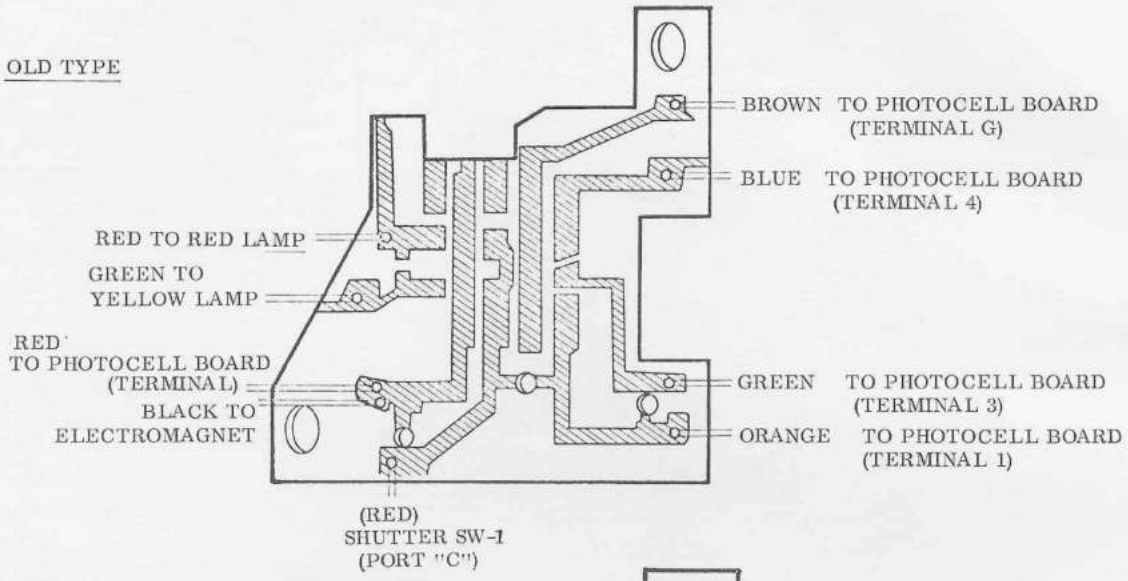


79 SHUTTER-RELEASE SWITCH

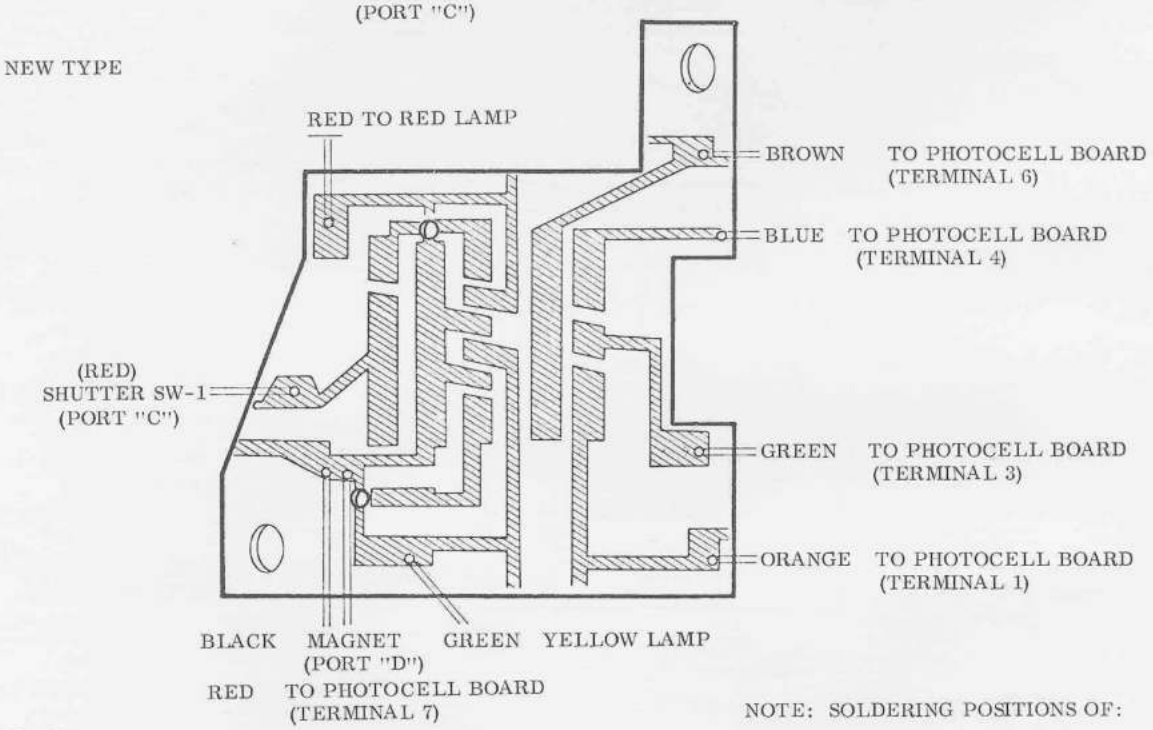


SWITCH BASE PLATES

OLD TYPE



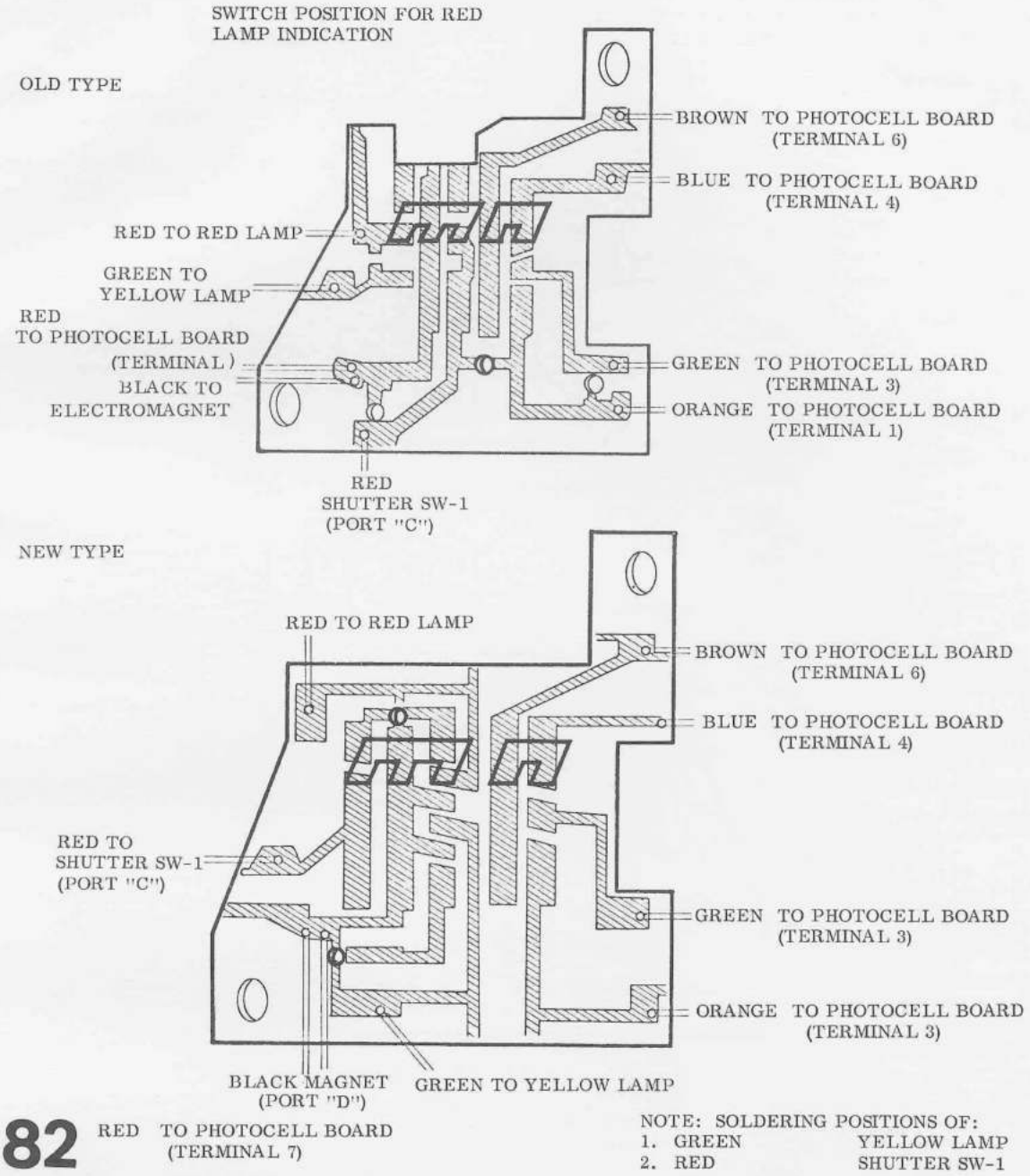
NEW TYPE



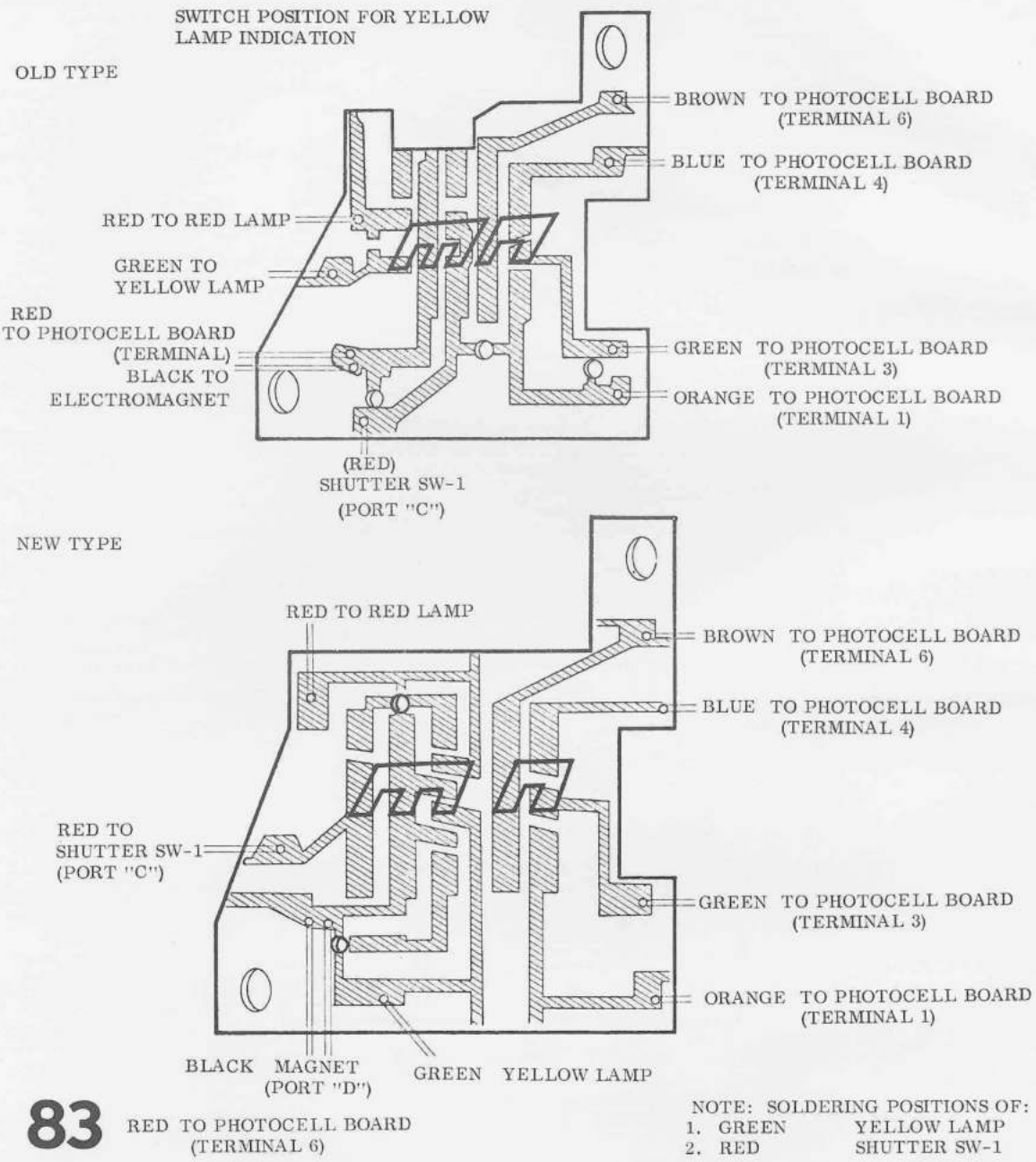
NOTE: SOLDERING POSITIONS OF:

1. GREEN YELLOW LAMP
2. RED SHUTTER SW-1

SWITCH BASE PLATES



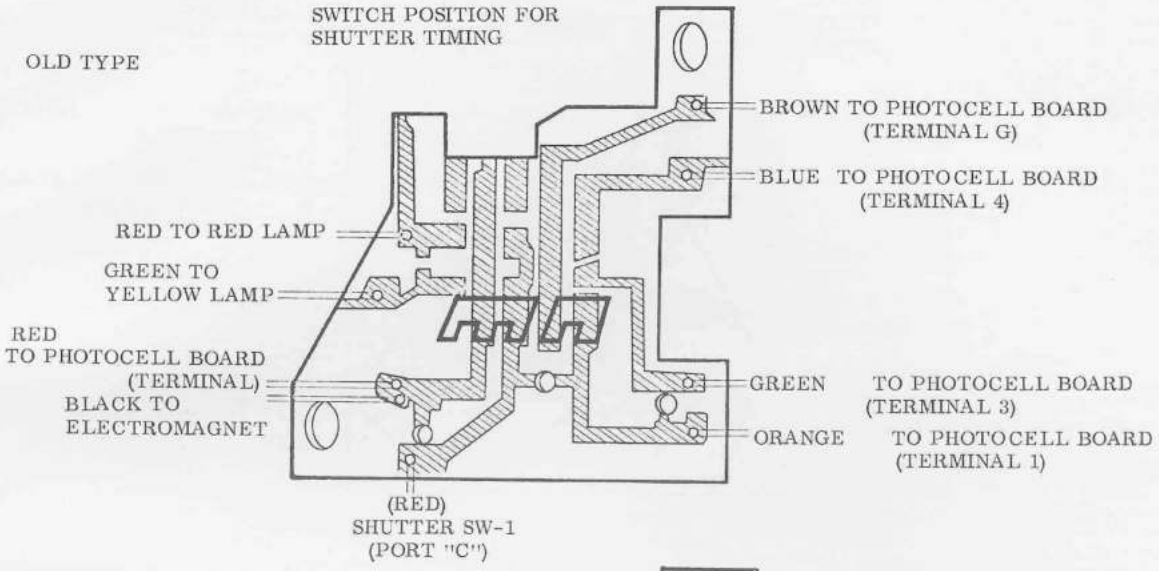
SWITCH BASE PLATES



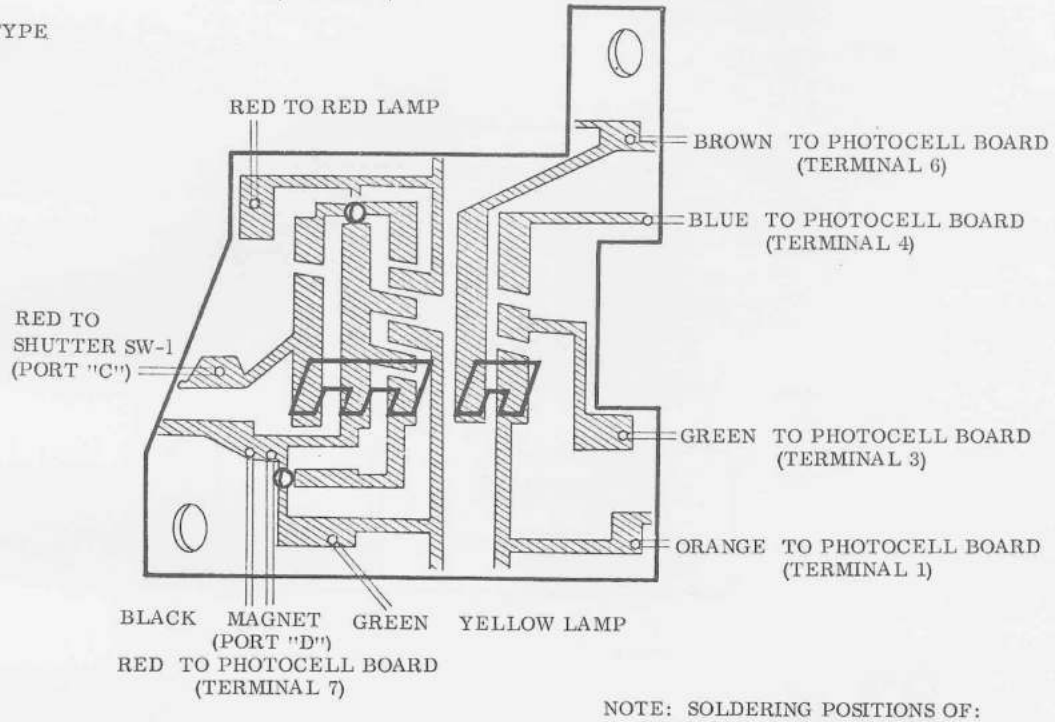
RED TO PHOTOCELL BOARD (TERMINAL 6)

NOTE: SOLDERING POSITIONS OF:
1. GREEN YELLOW LAMP
2. RED SHUTTER SW-1

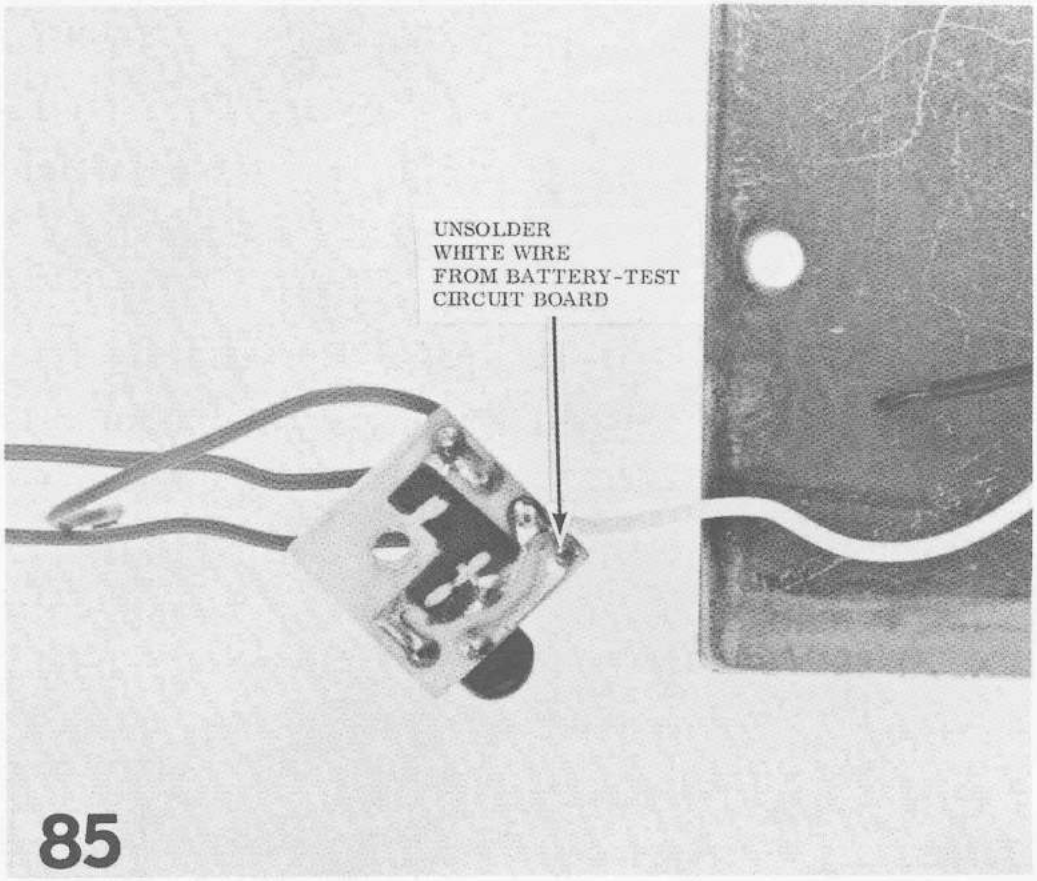
OLD TYPE



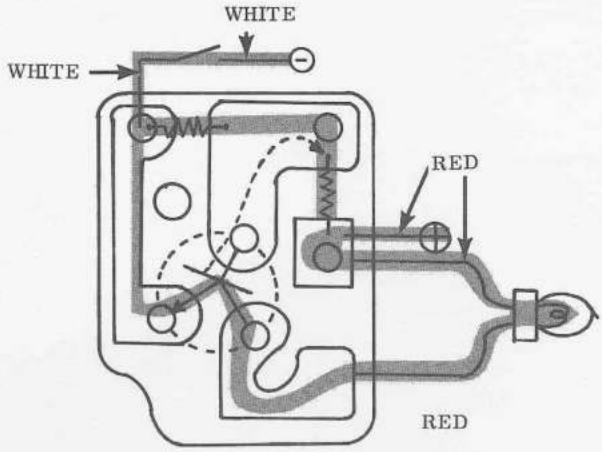
NEW TYPE



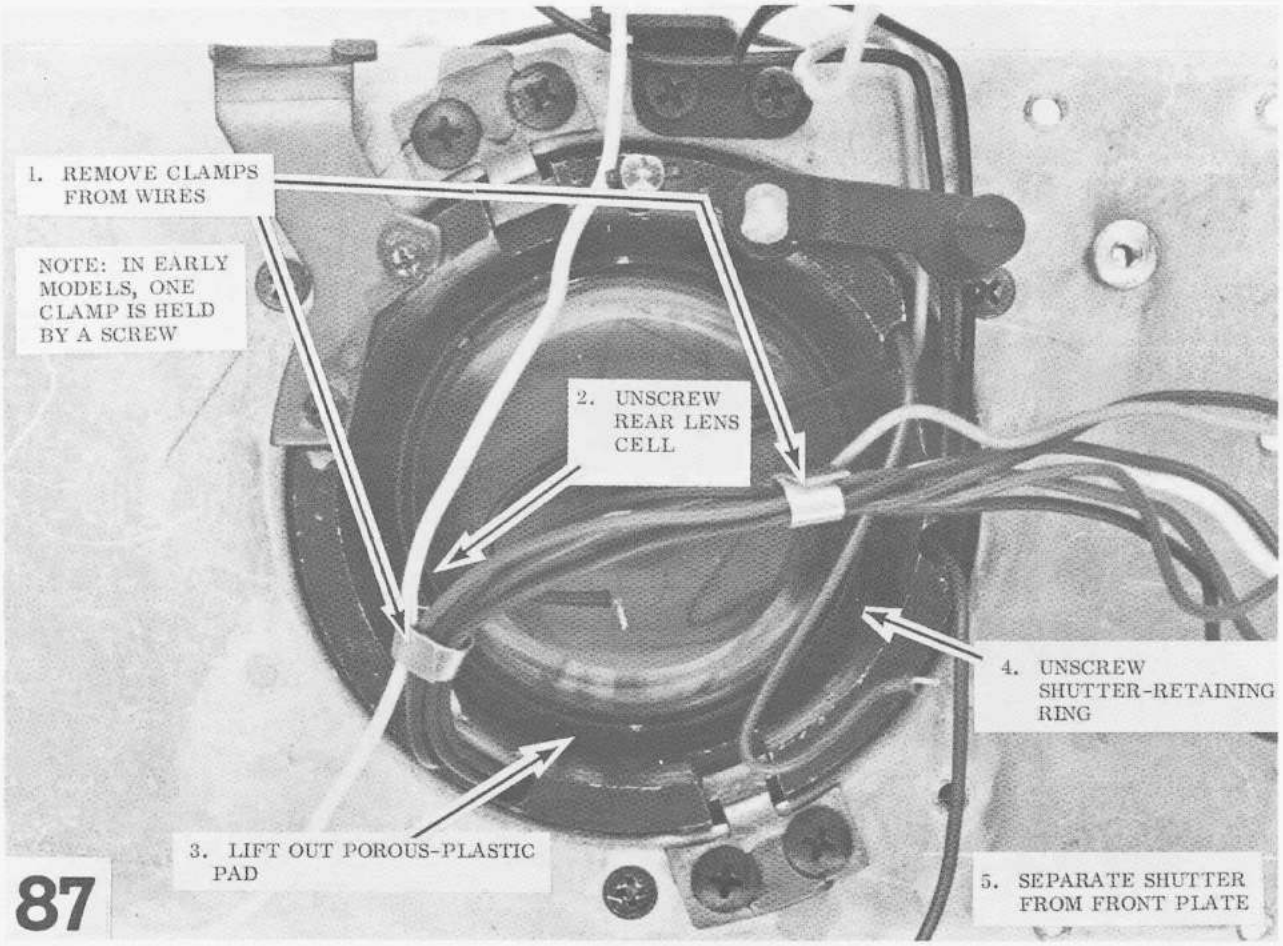
NOTE: SOLDERING POSITIONS OF:
1. GREEN YELLOW LAMP
2. RED SHUTTER SW-1



85

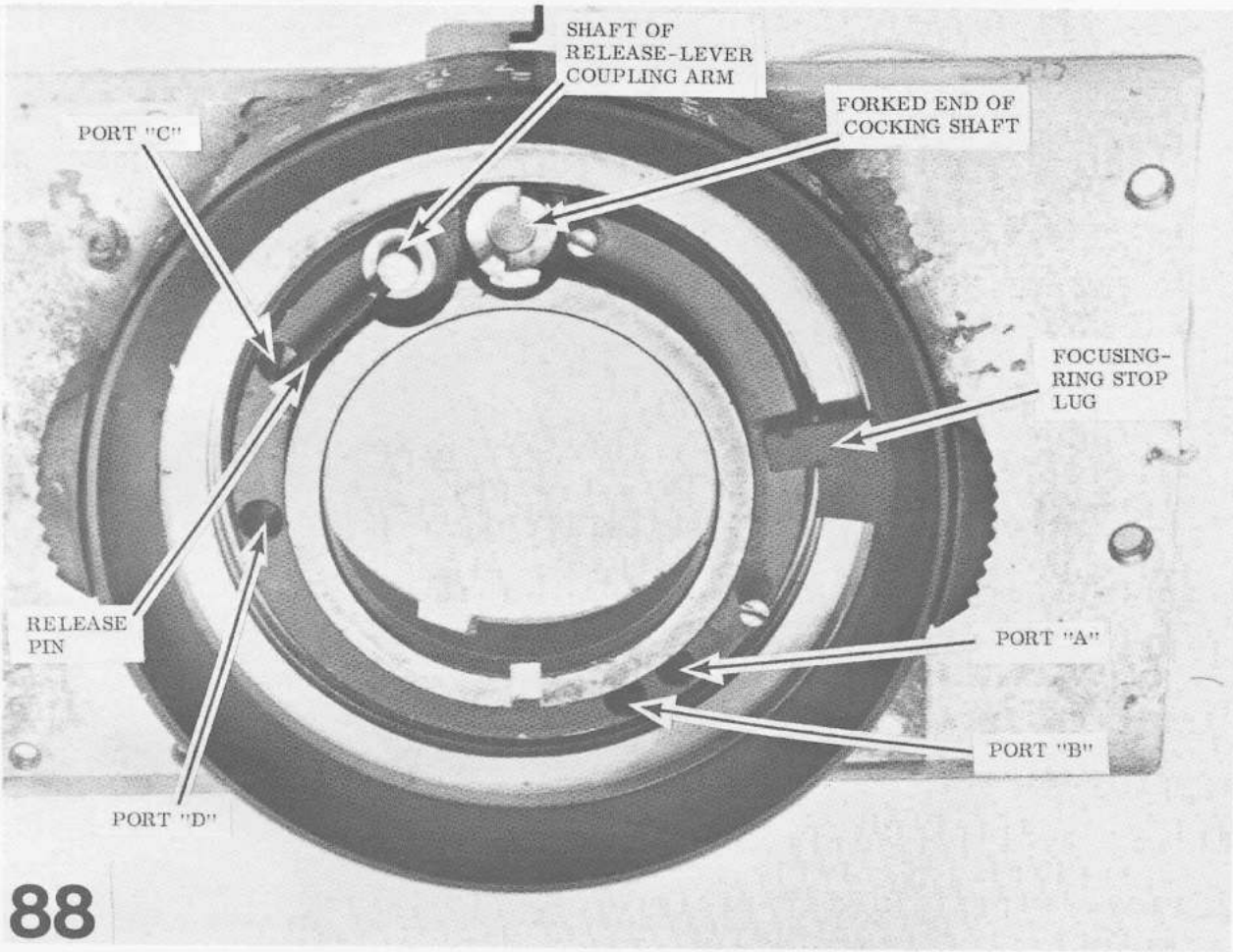


CHECKER BASE

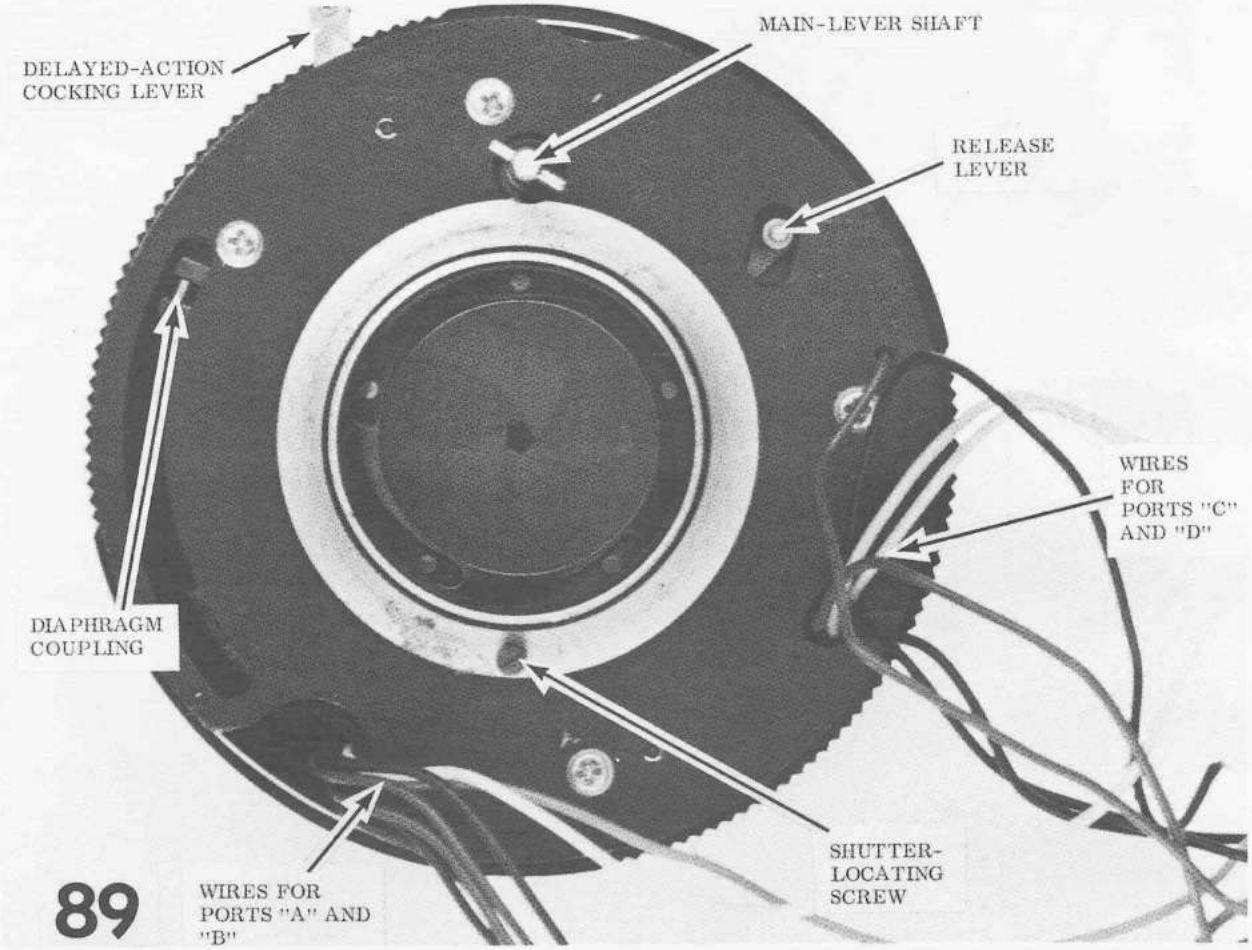


PORT A -- green, dark blue, orange, and brown
PORT B -- red, white, and purple
PORT C -- yellow, yellow, red, and black
PORT D -- red, black, and brown

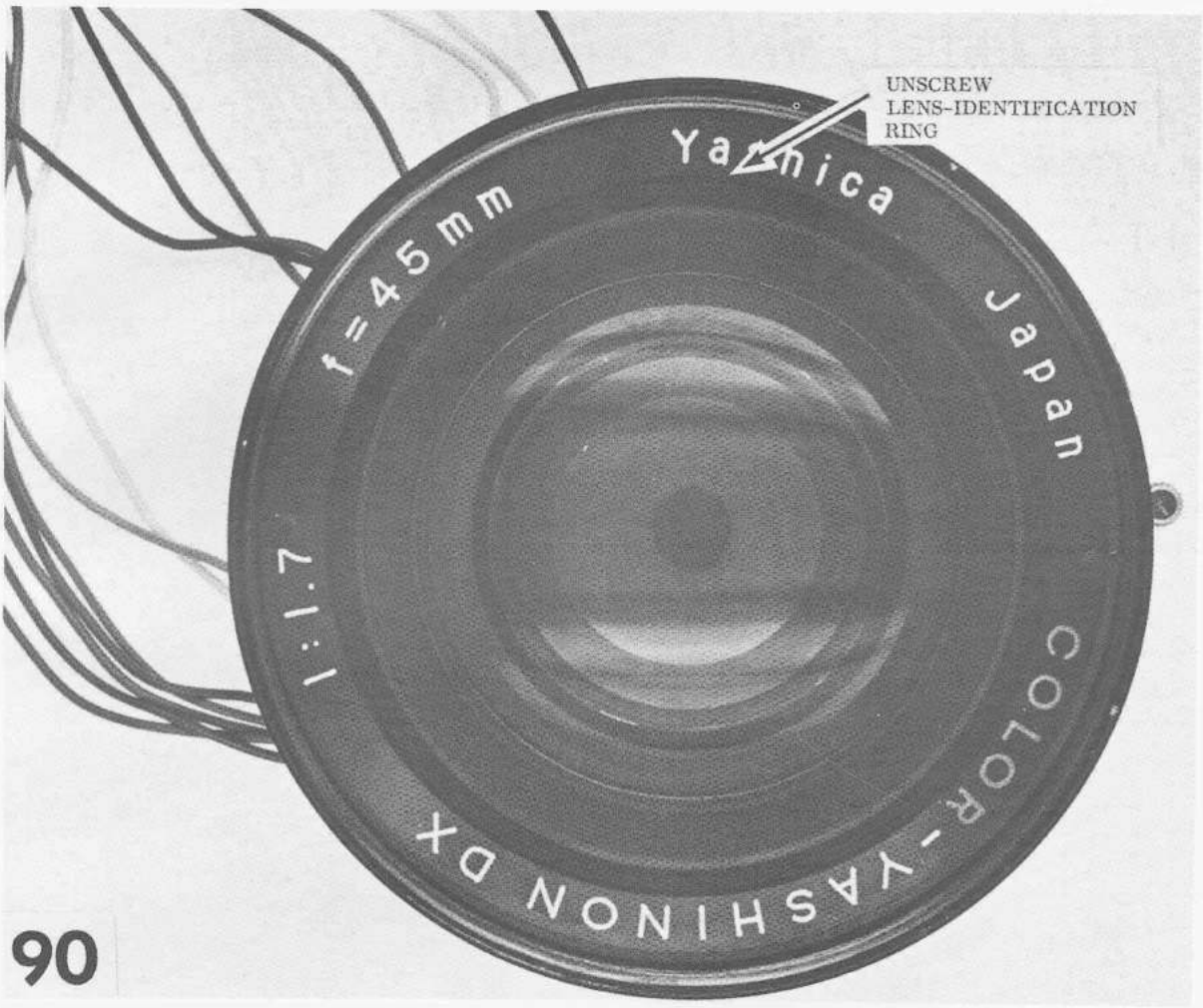
(NOTE VARIATIONS IN YOUR PARTICULAR CAMERA)

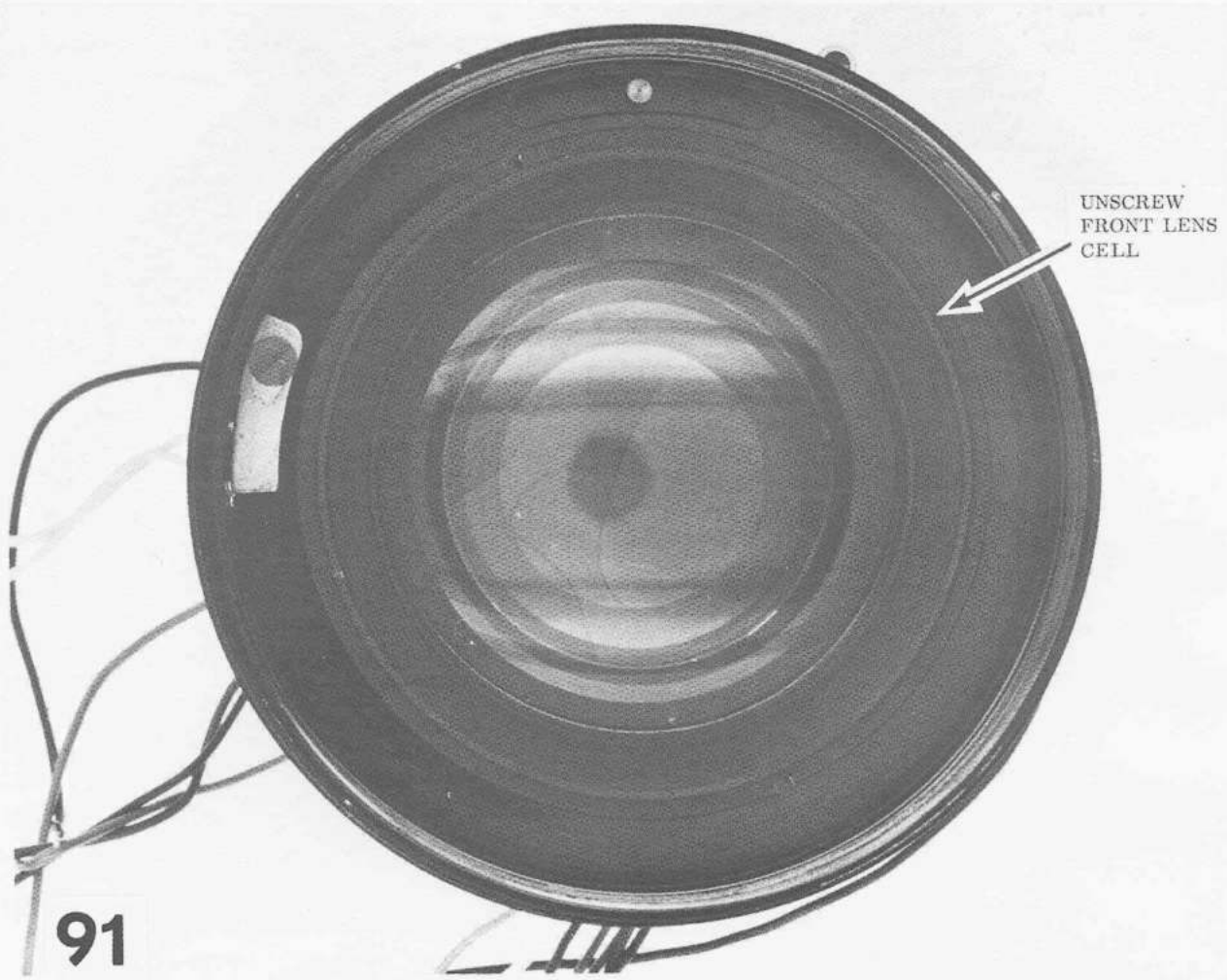


88



89





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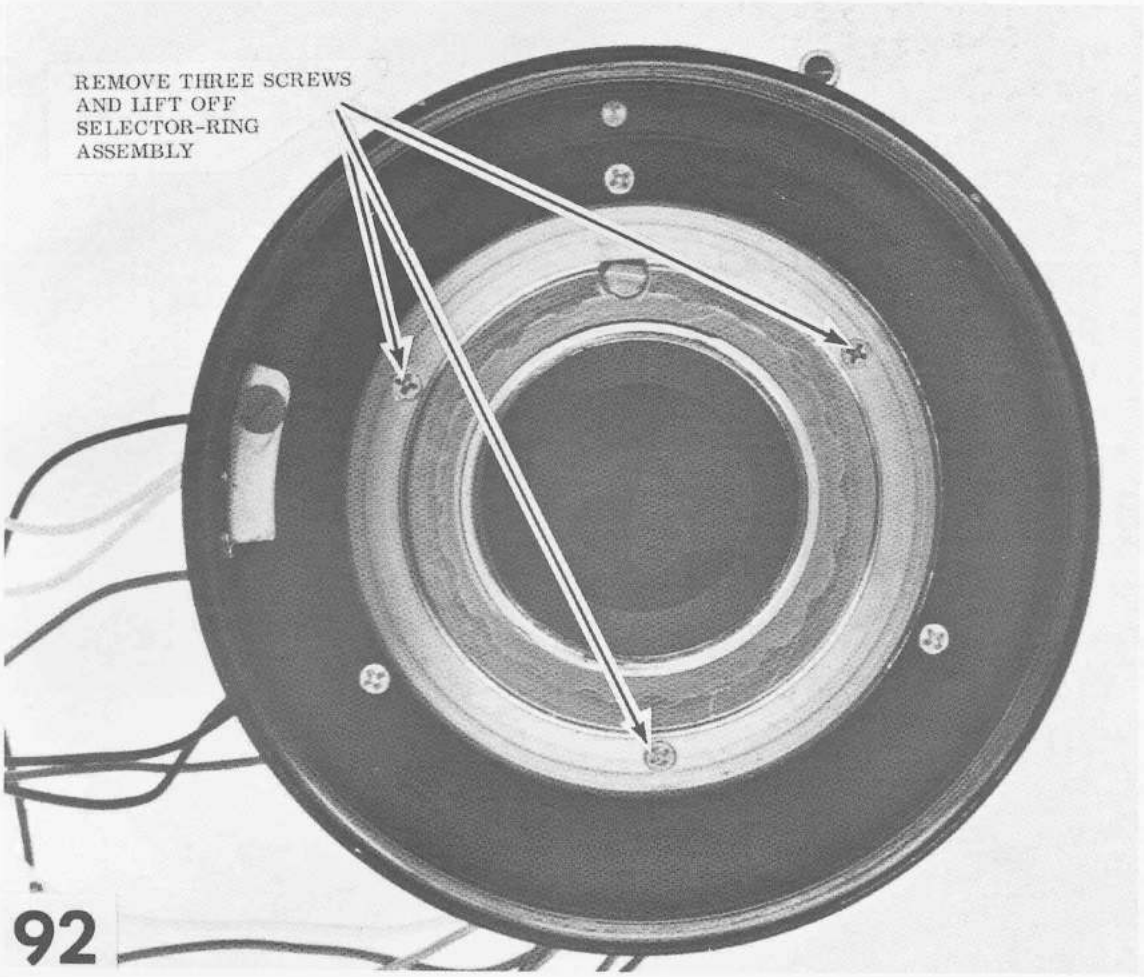

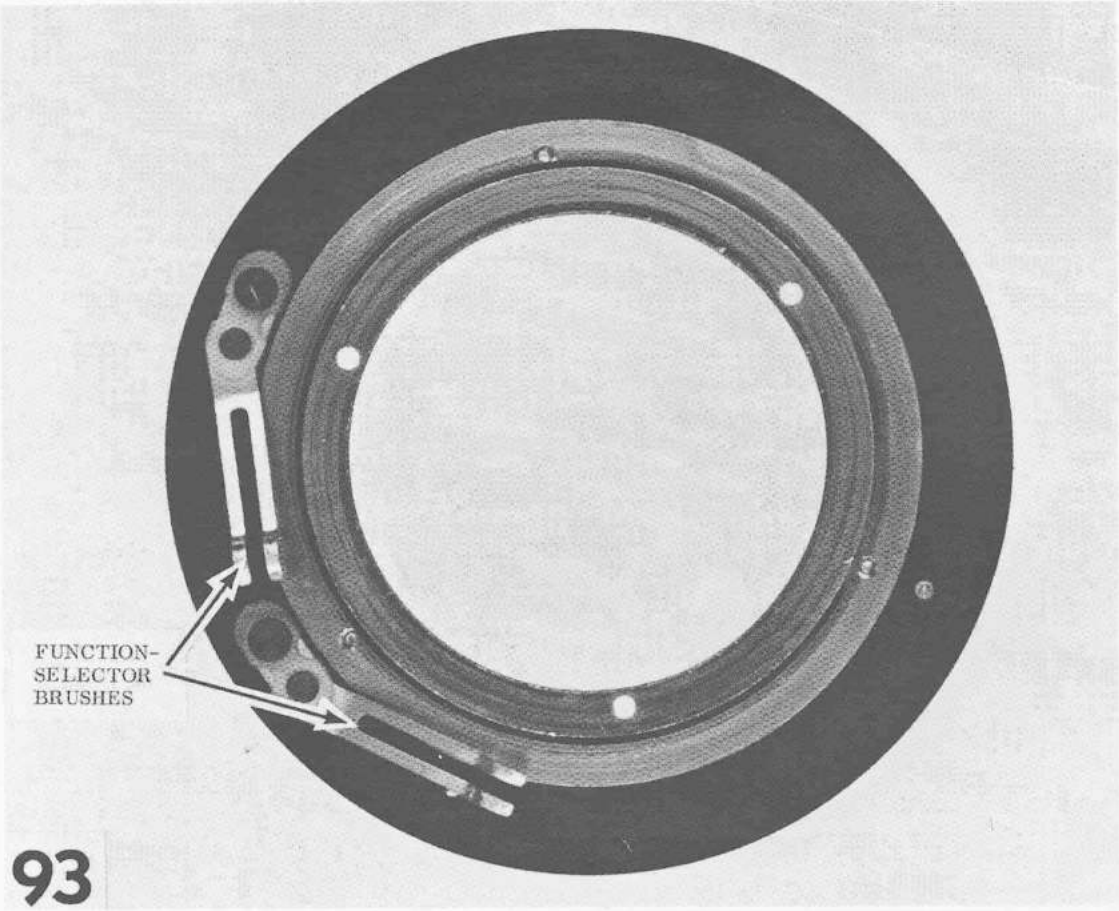

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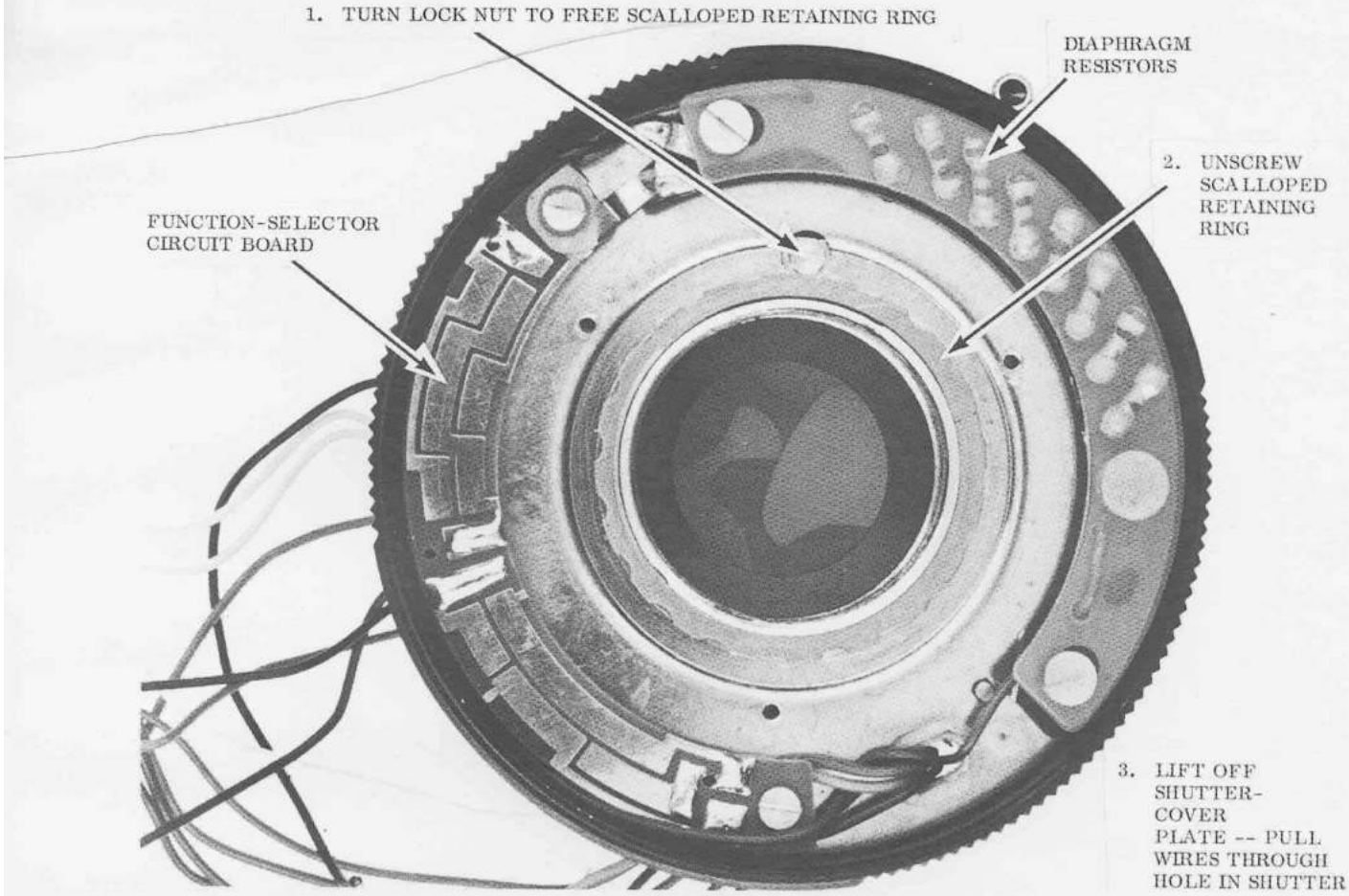
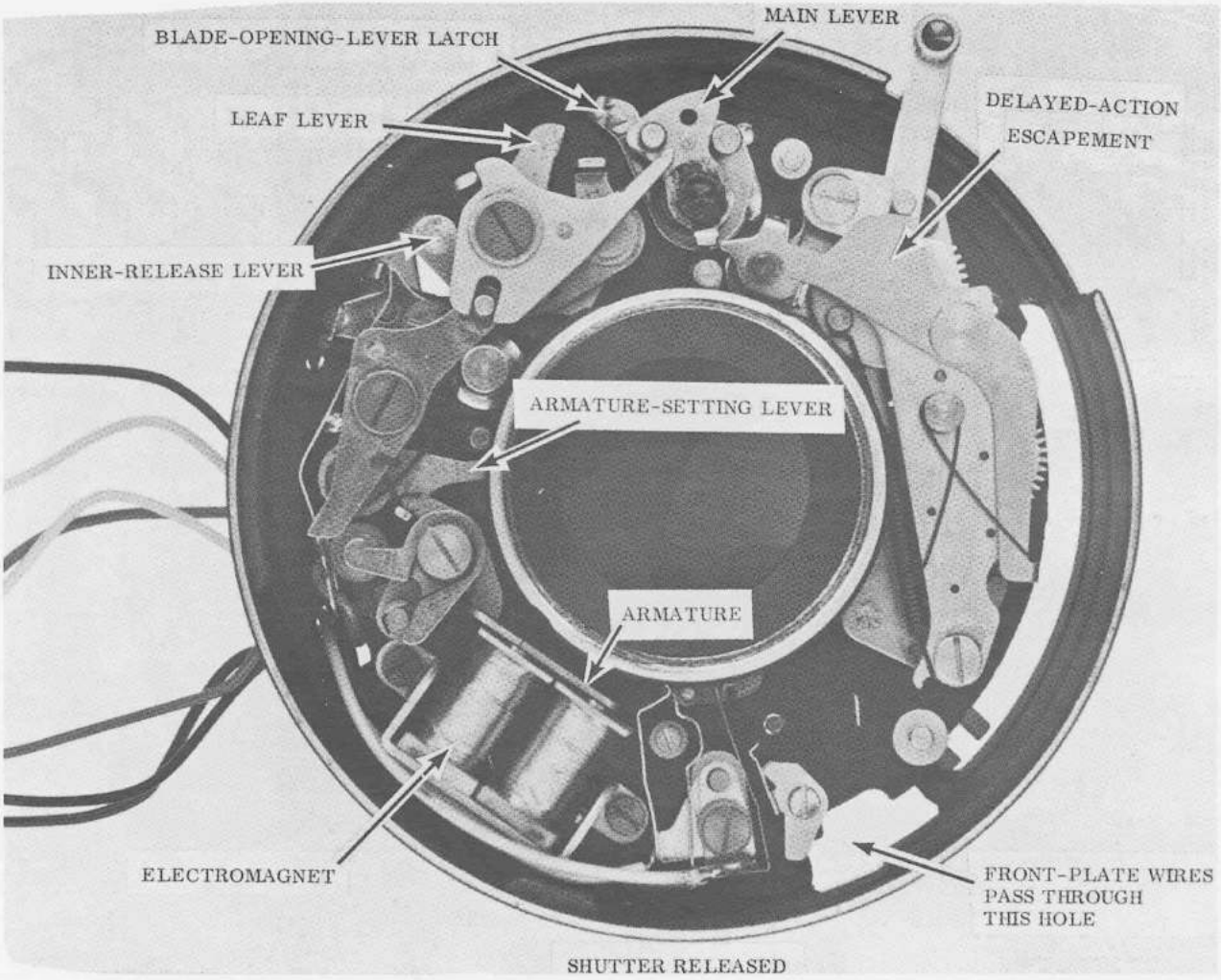
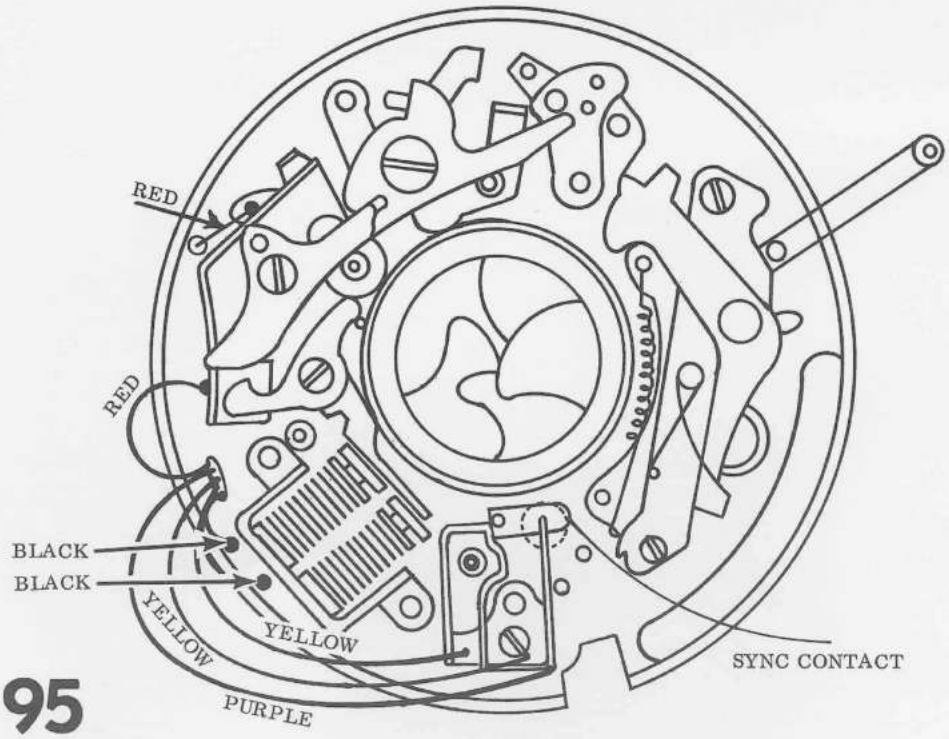
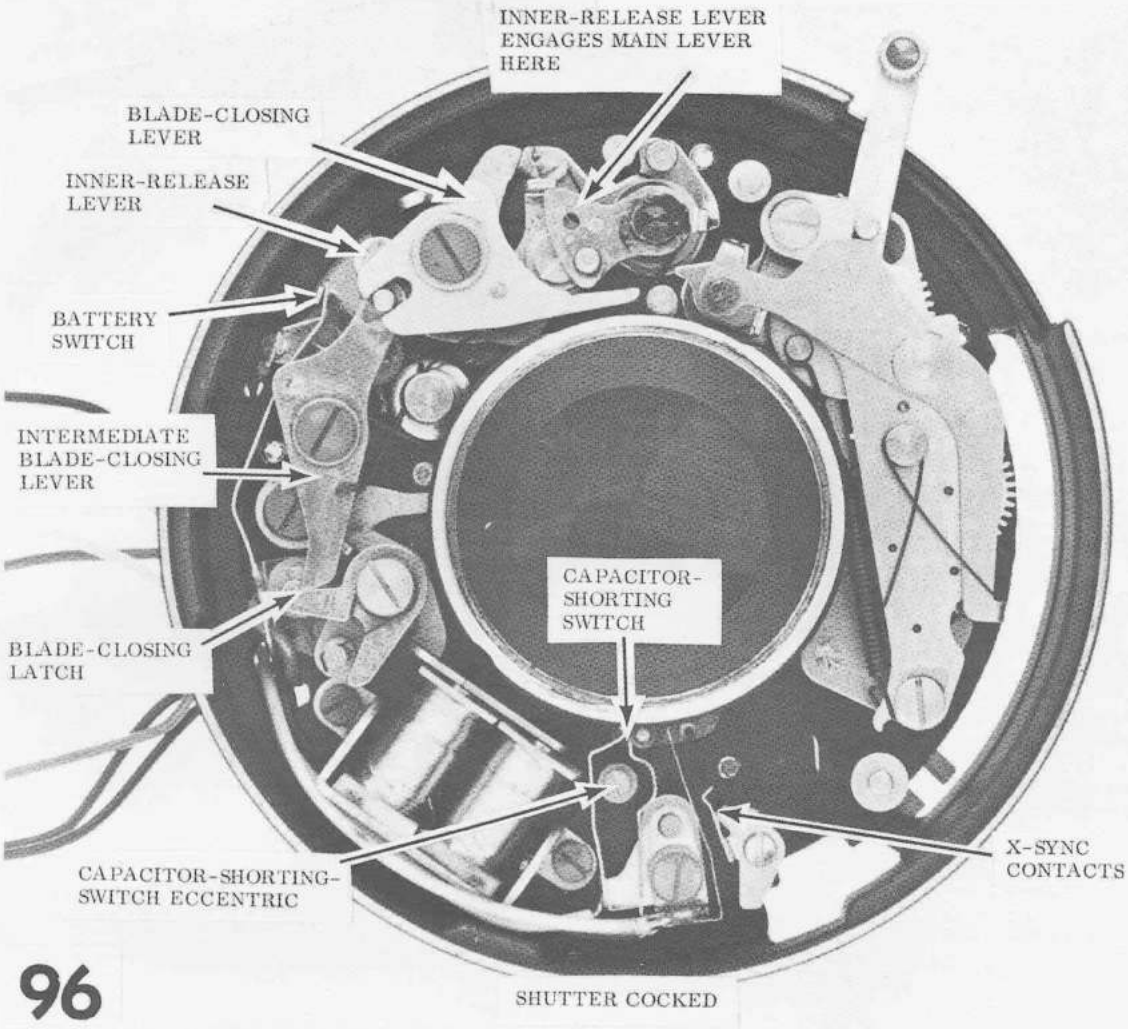




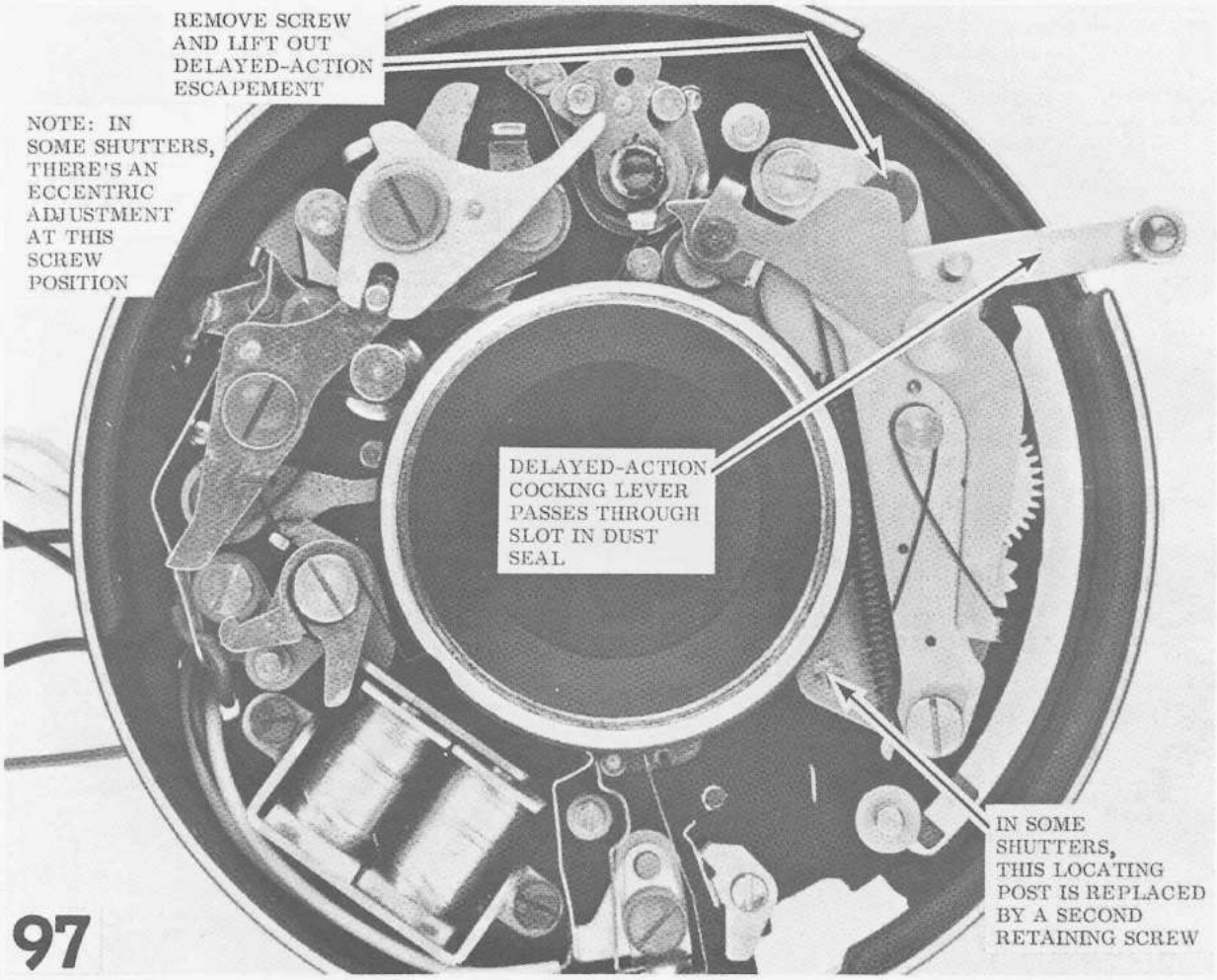
SHUTTER RELEASED

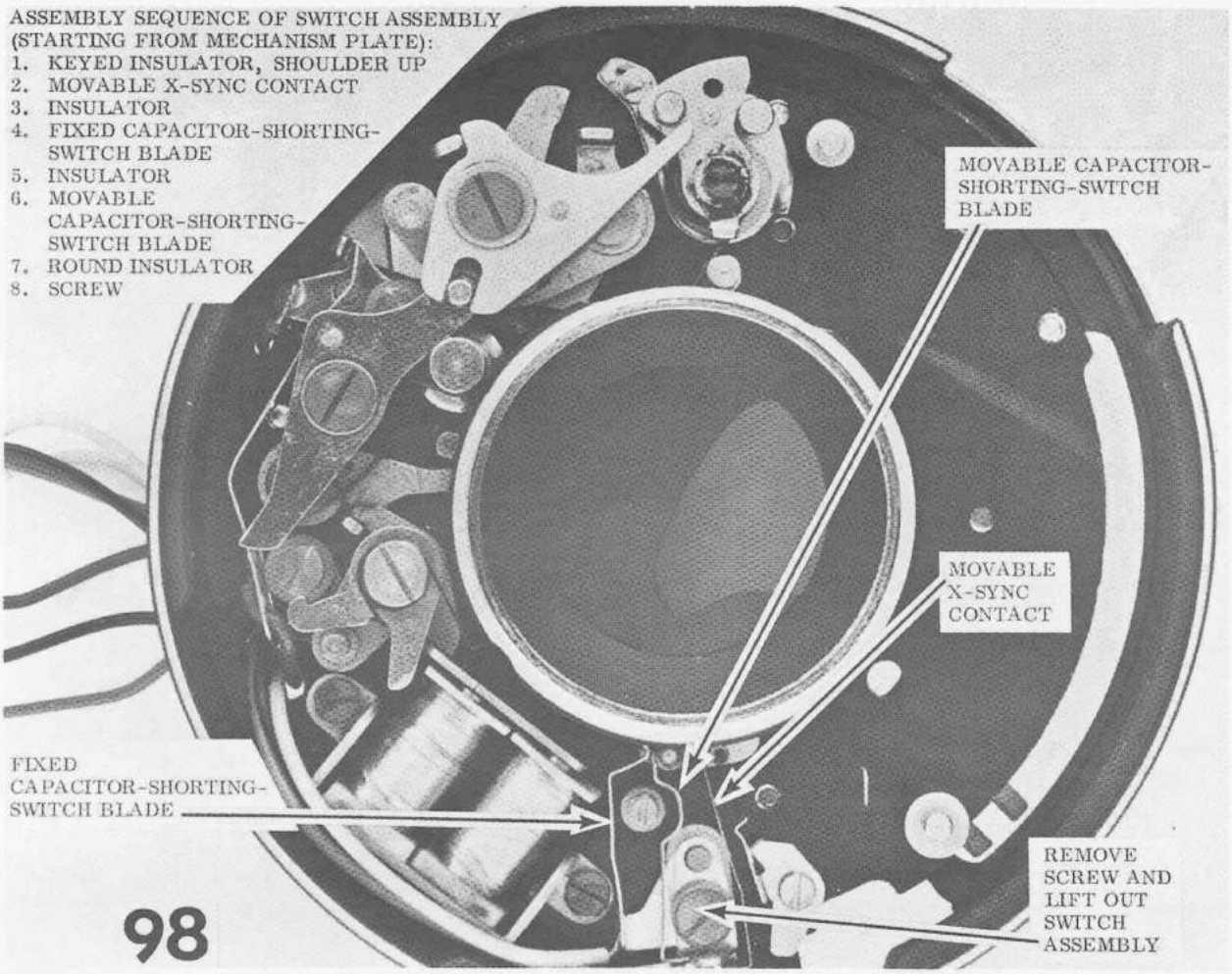
INSIDE SHUTTER

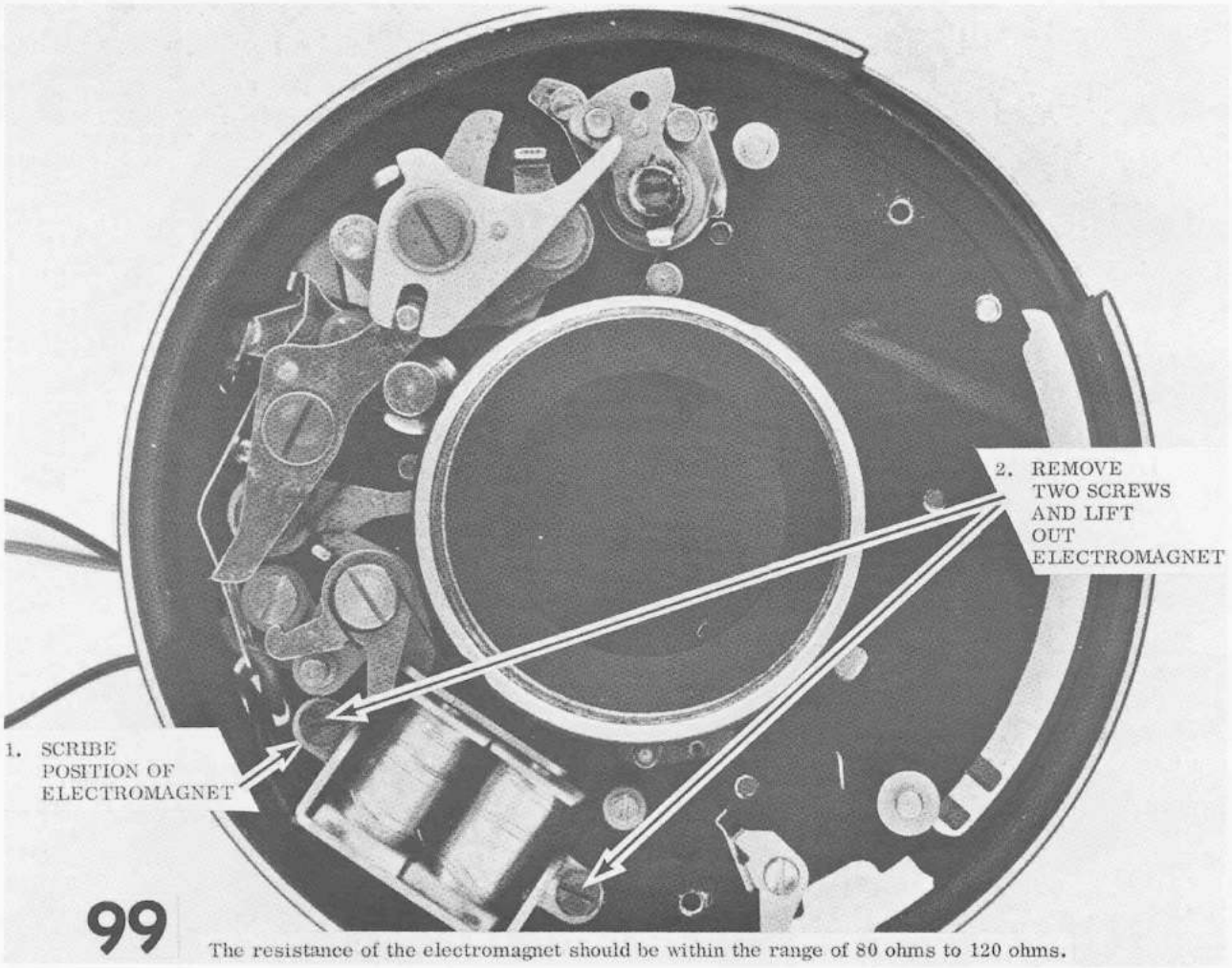




96







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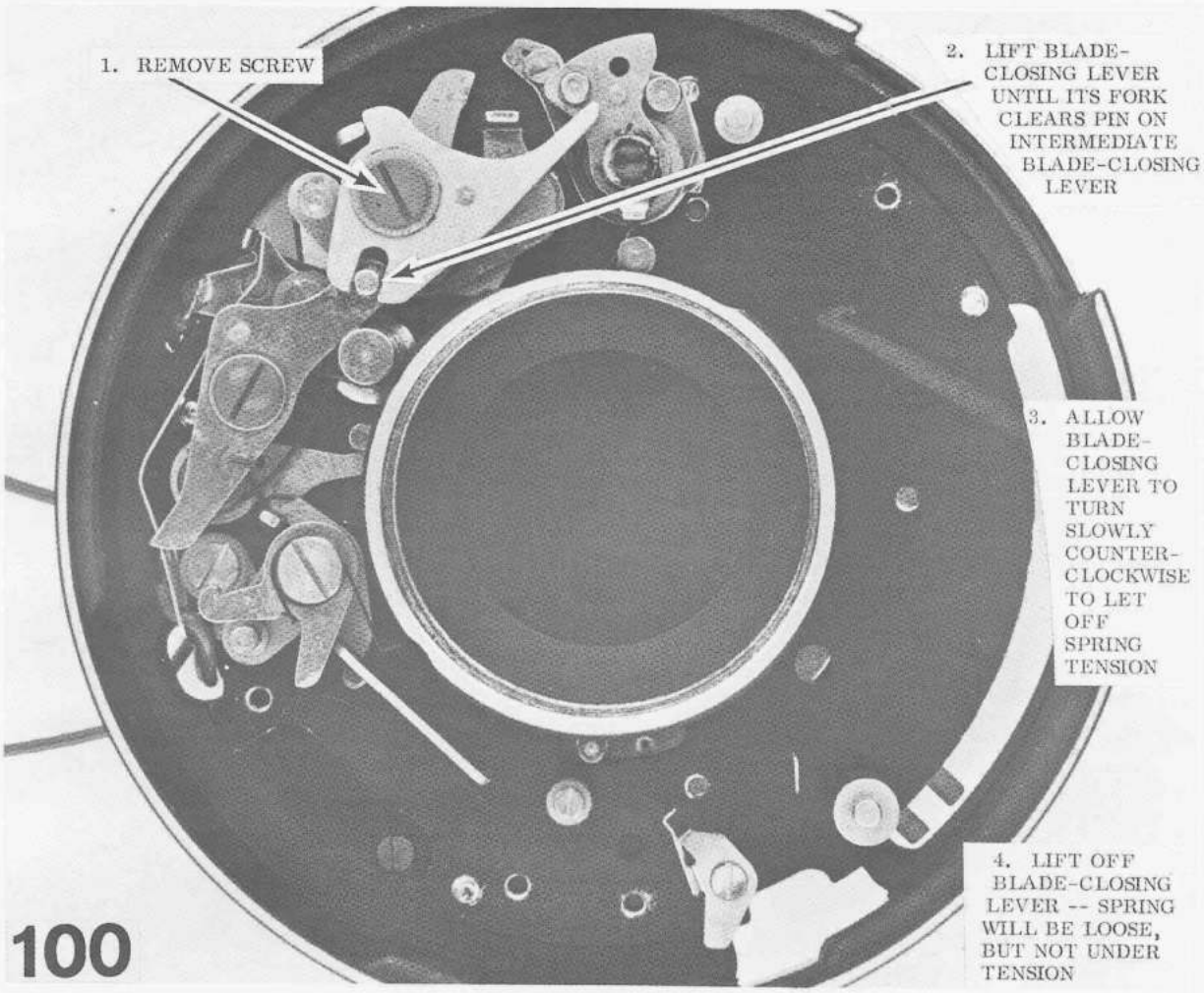
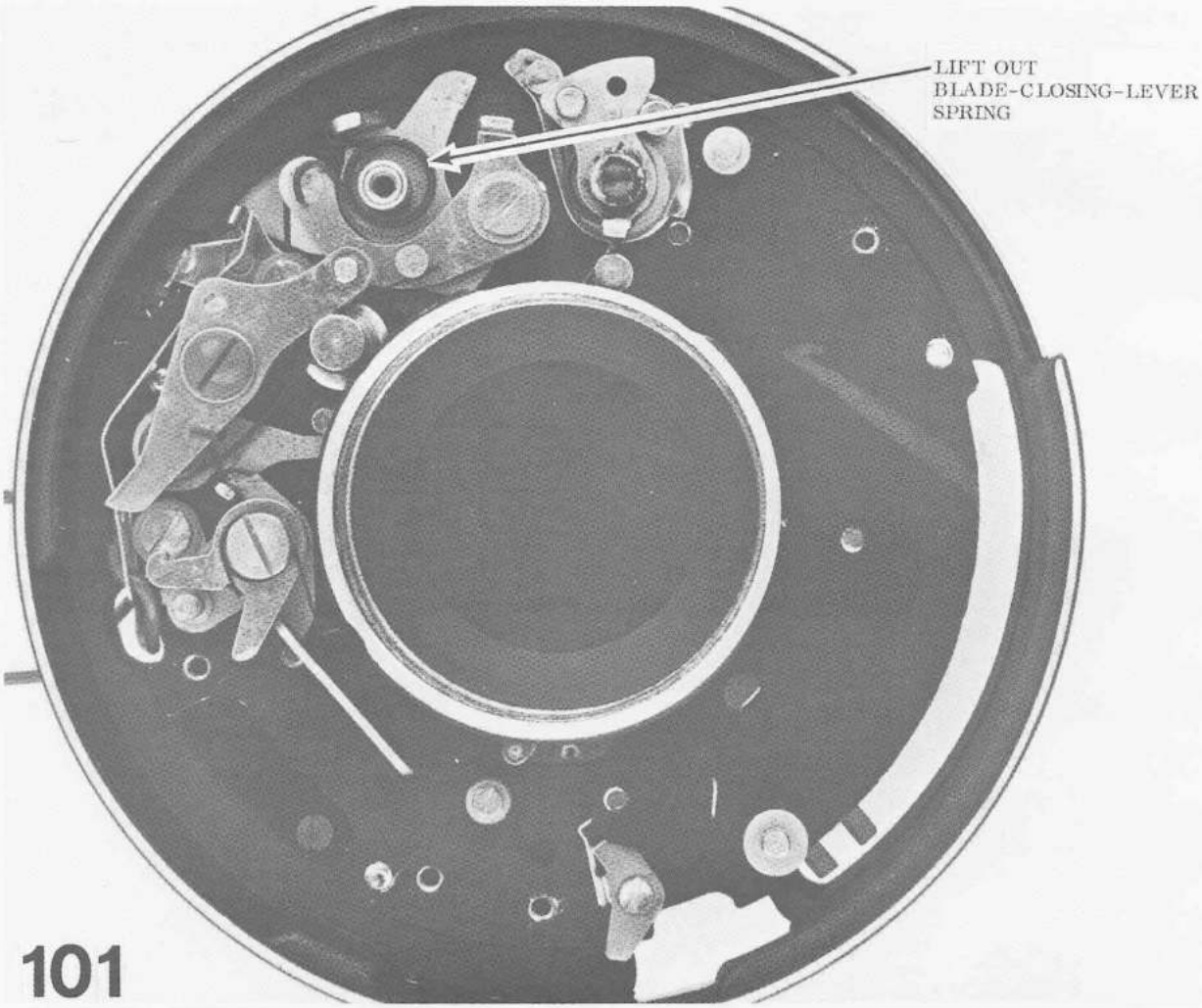
The resistance of the electromagnet should be within the range of 80 ohms to 120 ohms.





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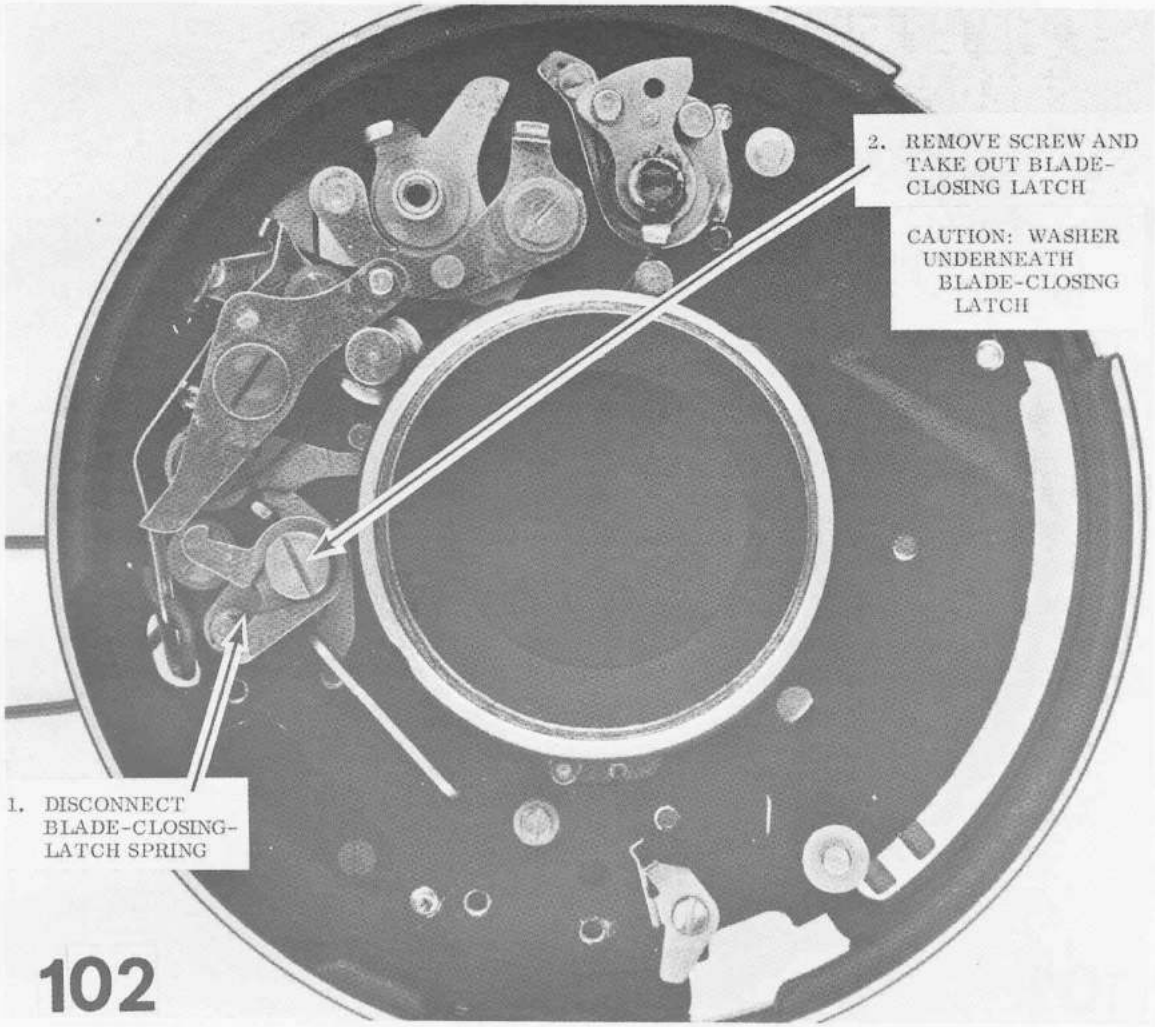

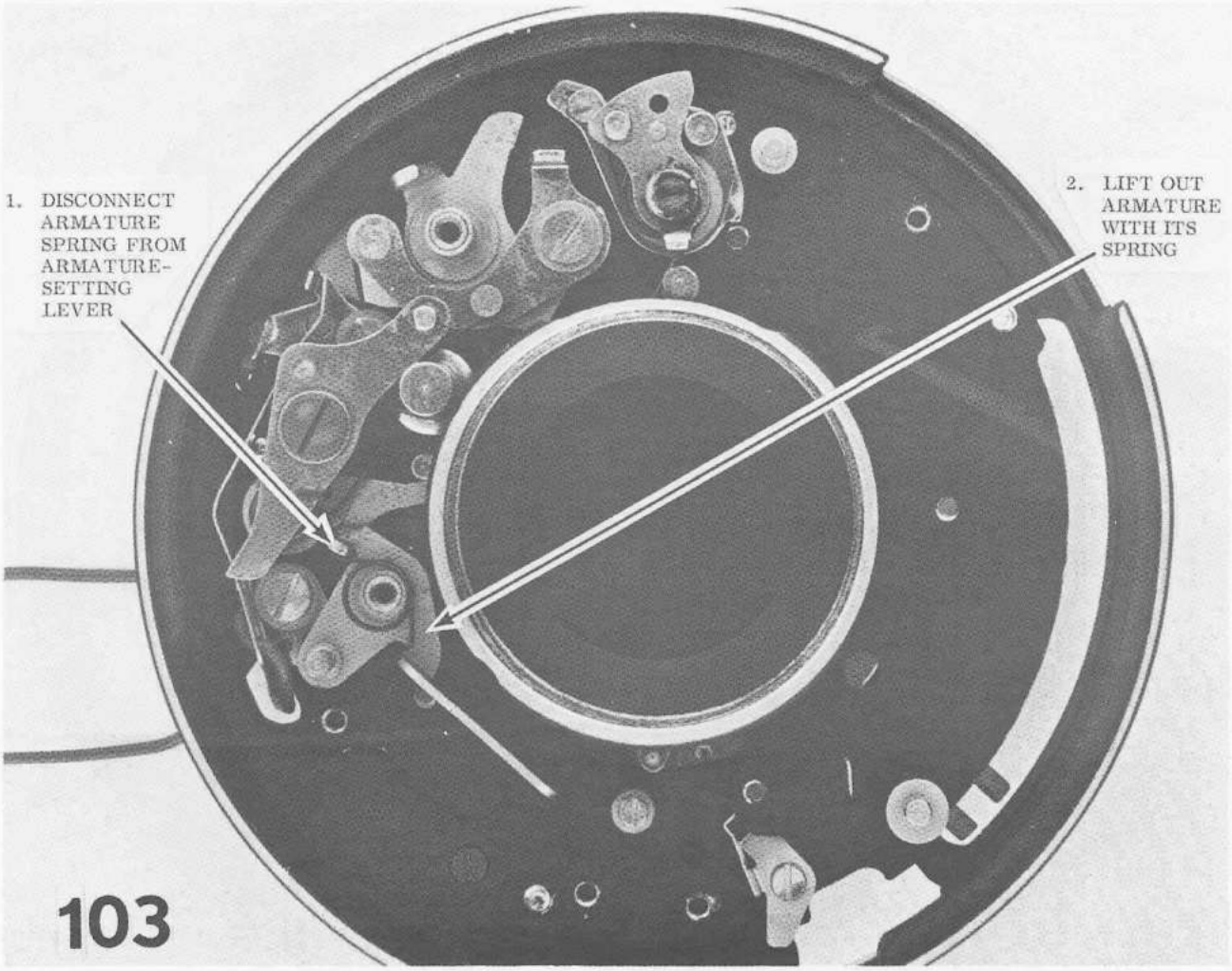

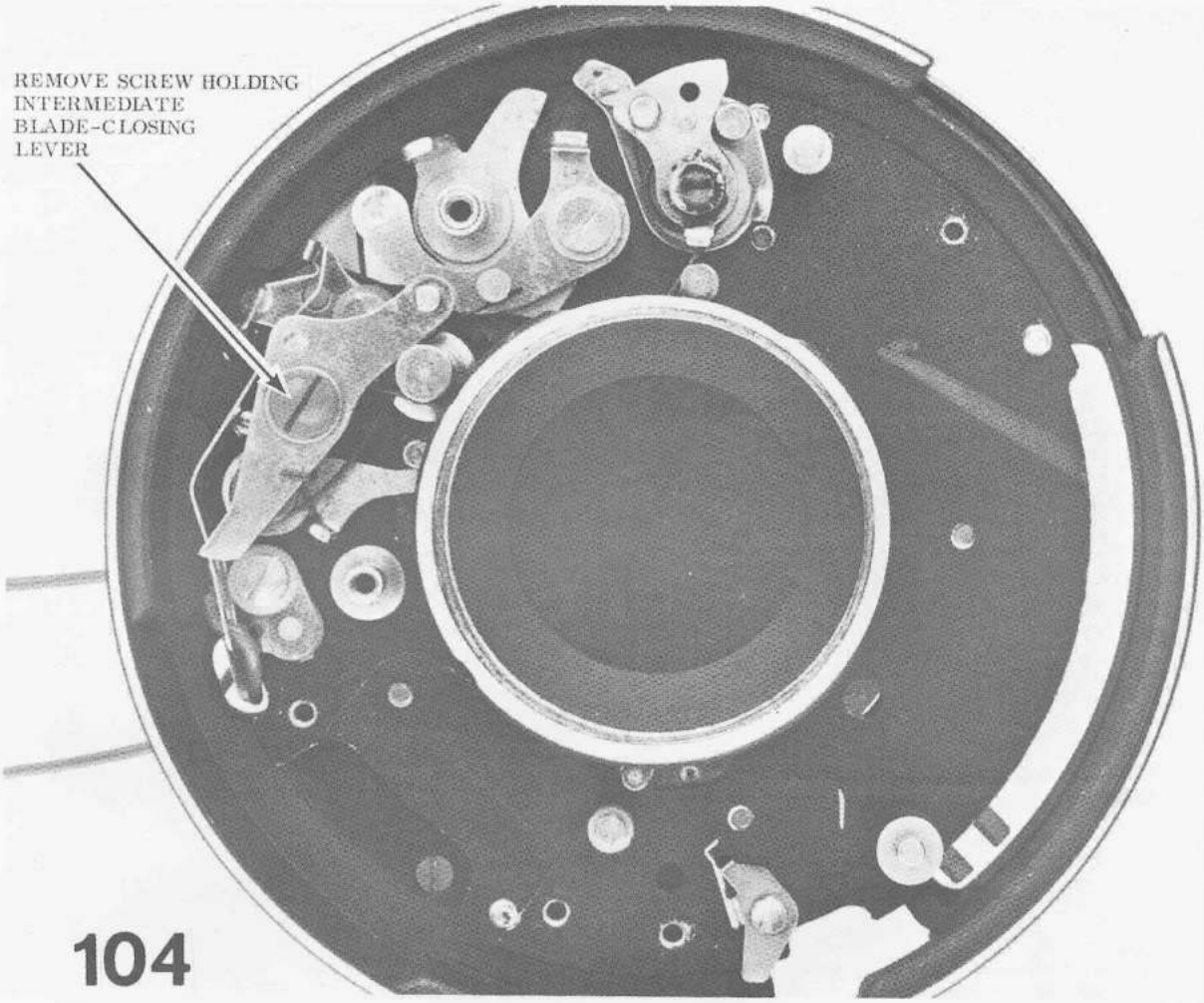

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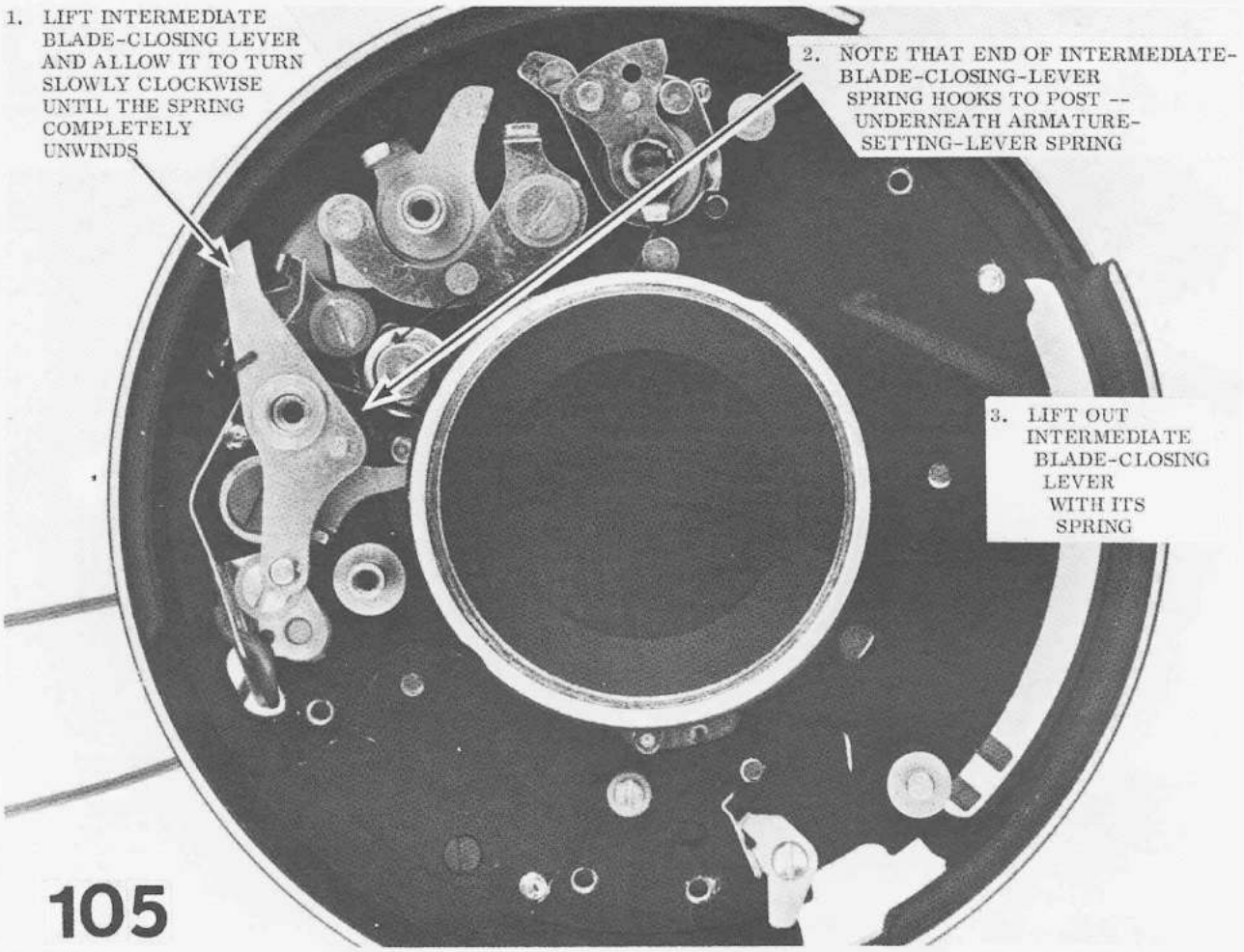

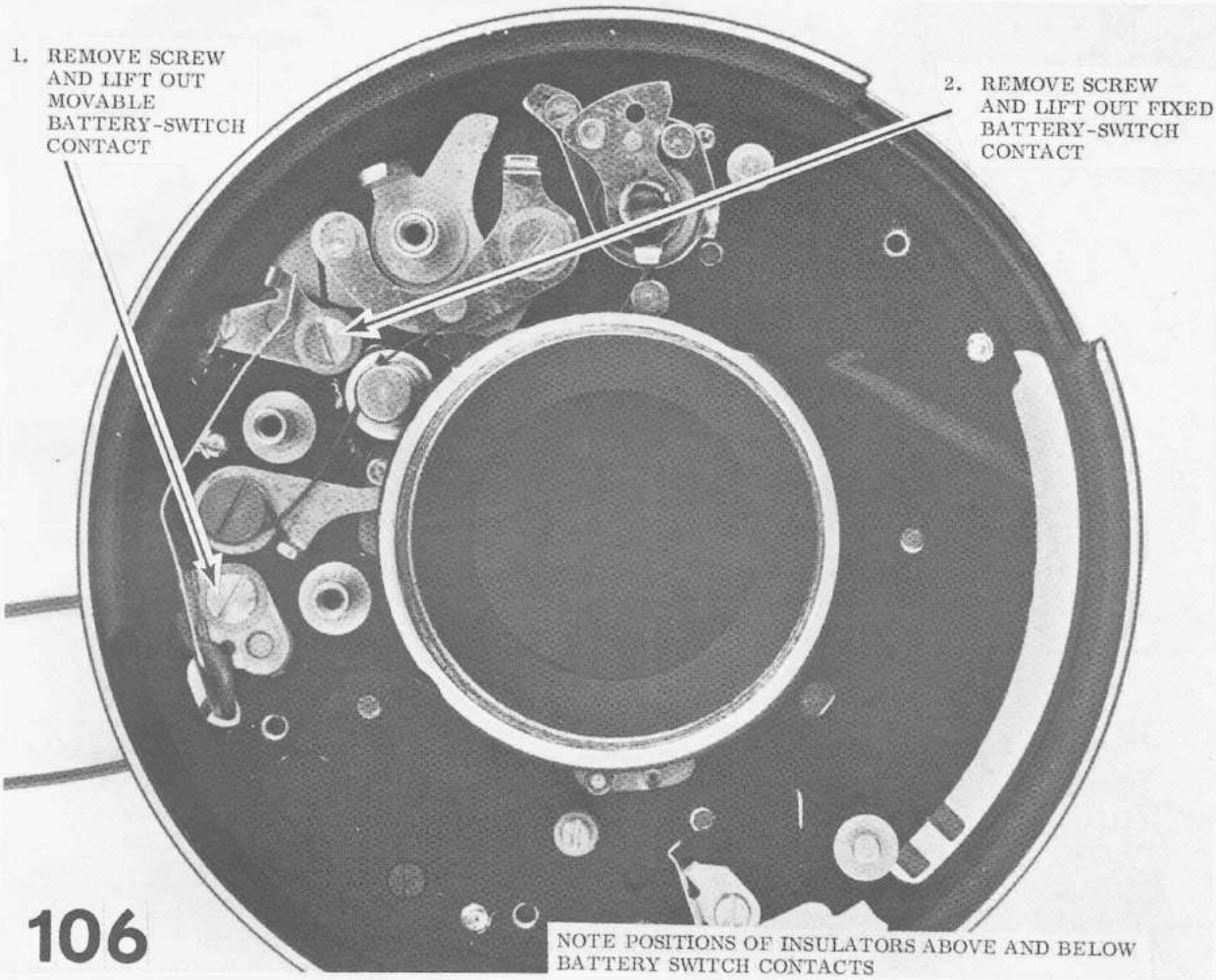

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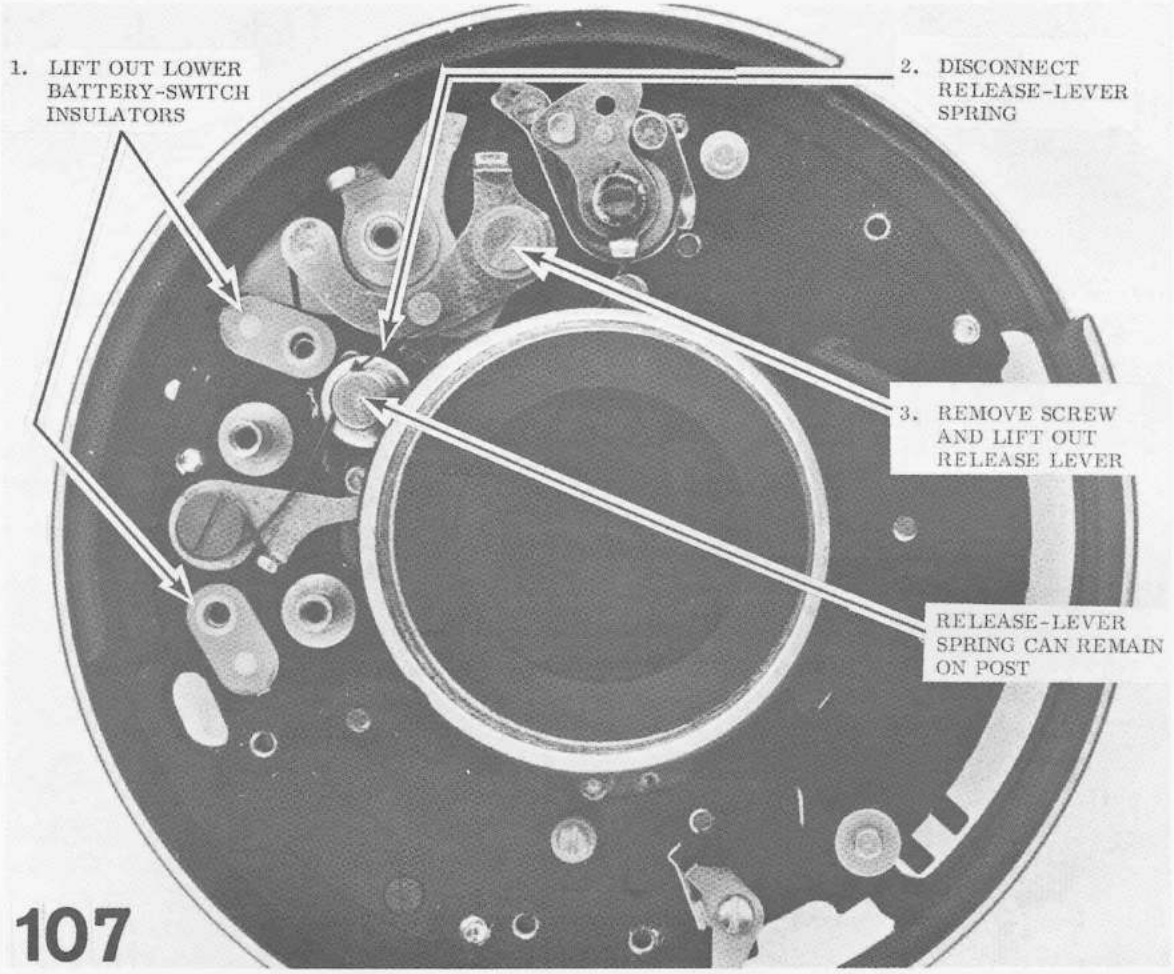
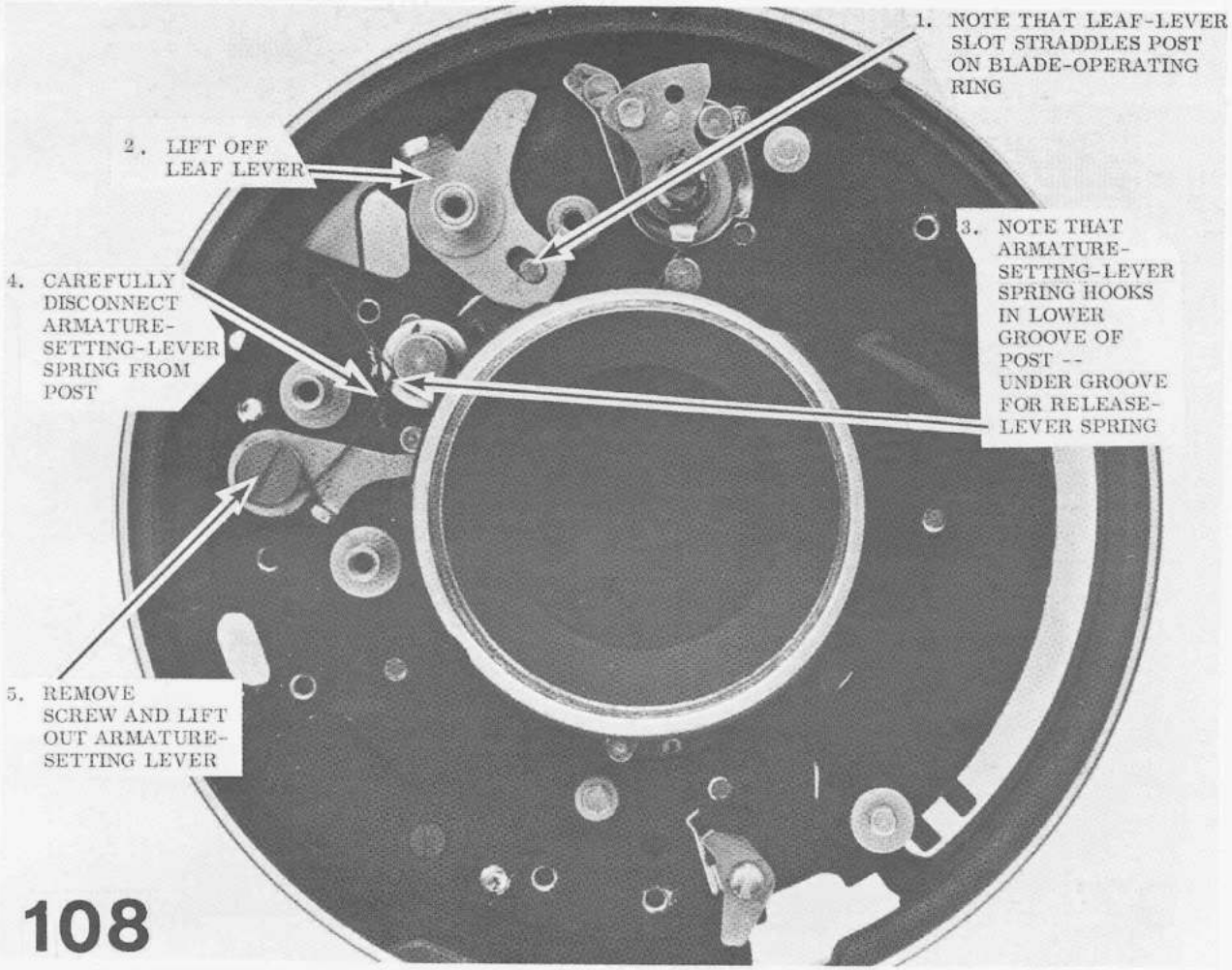
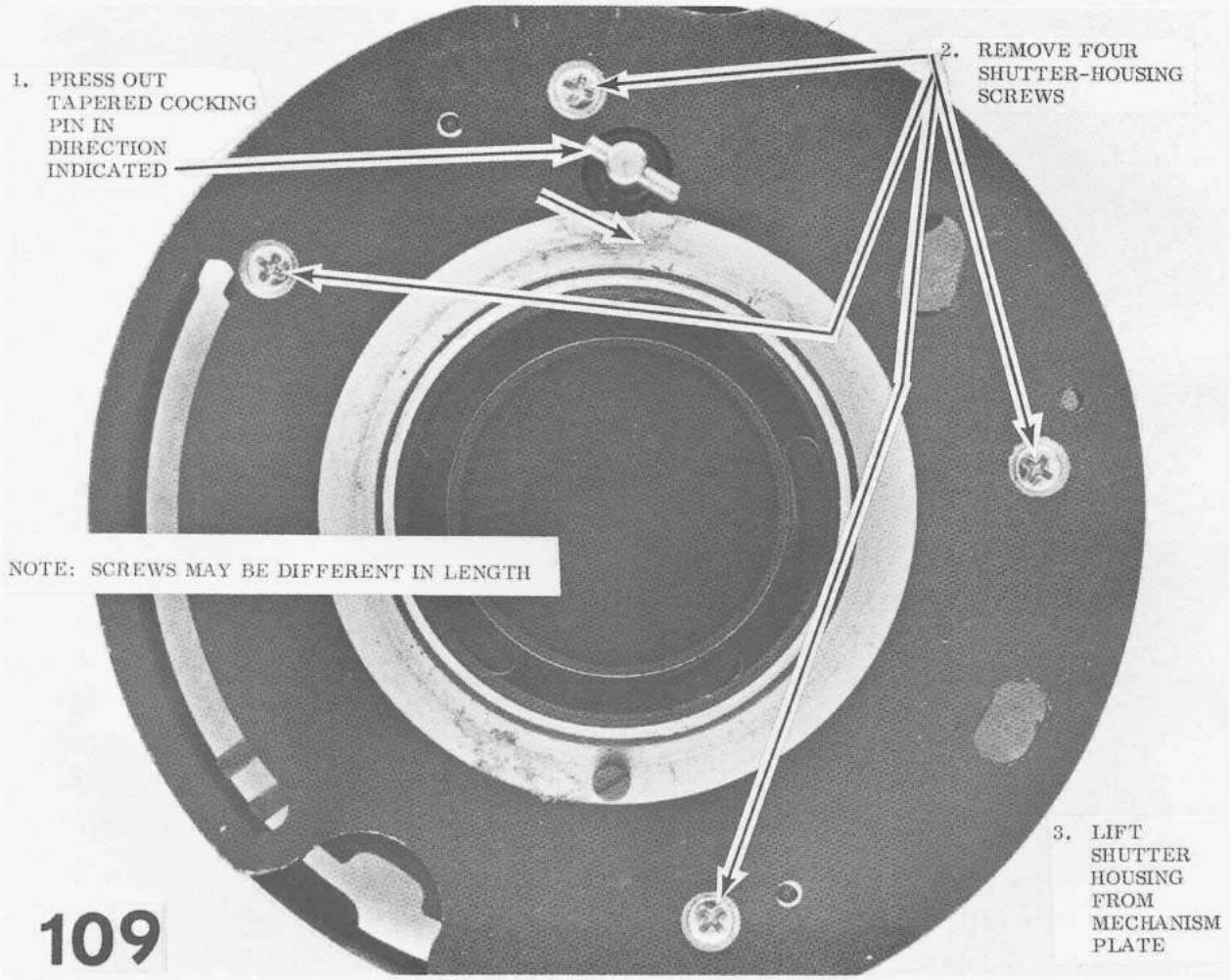
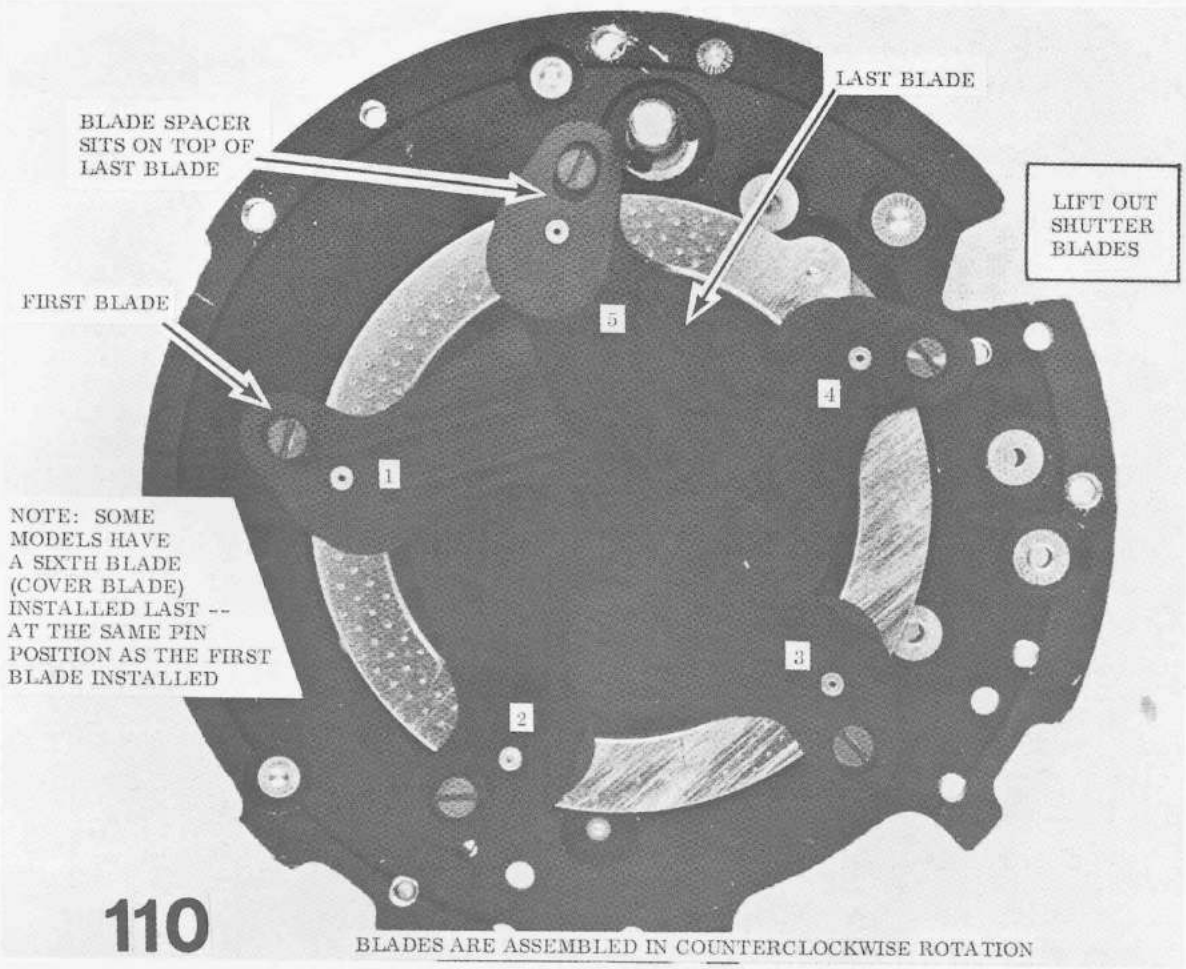
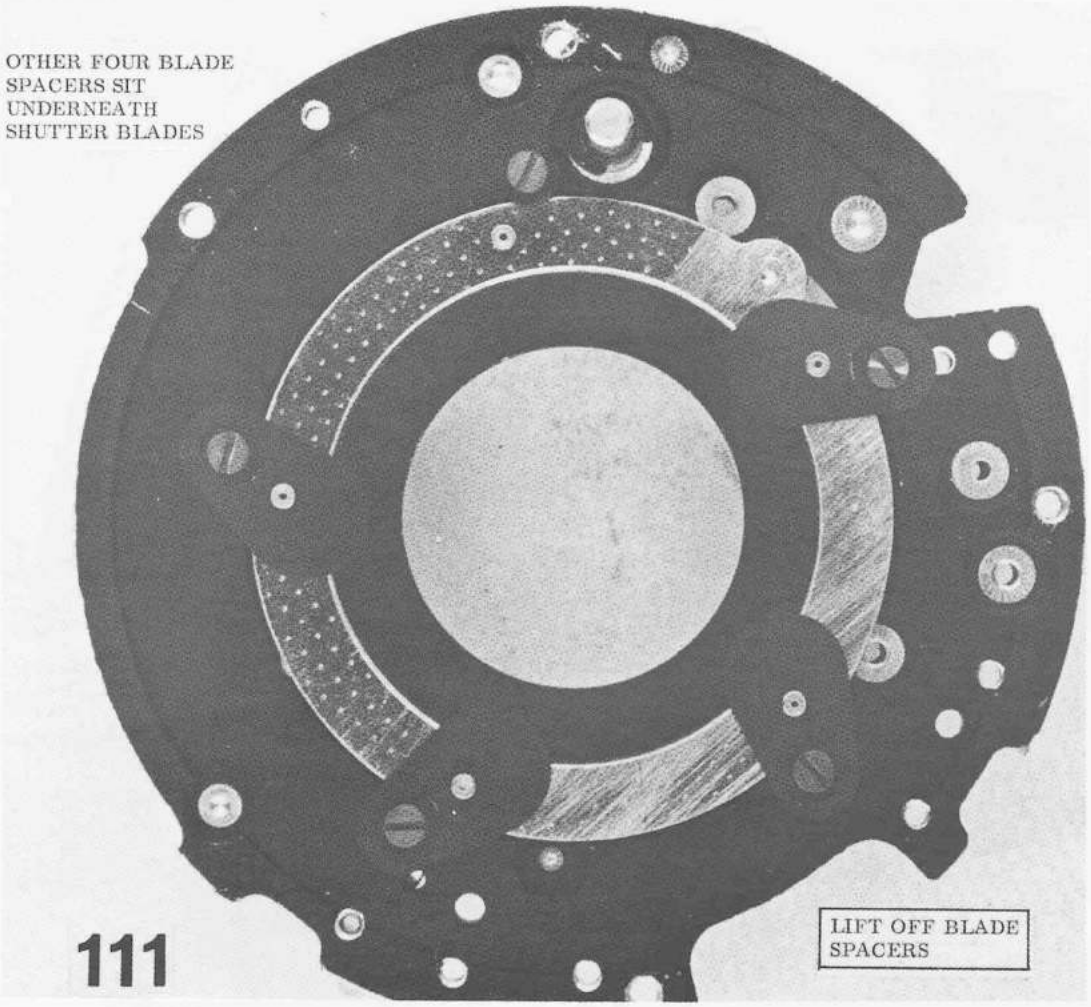
NOTE POSITIONS OF INSULATORS ABOVE AND BELOW BATTERY SWITCH CONTACTS

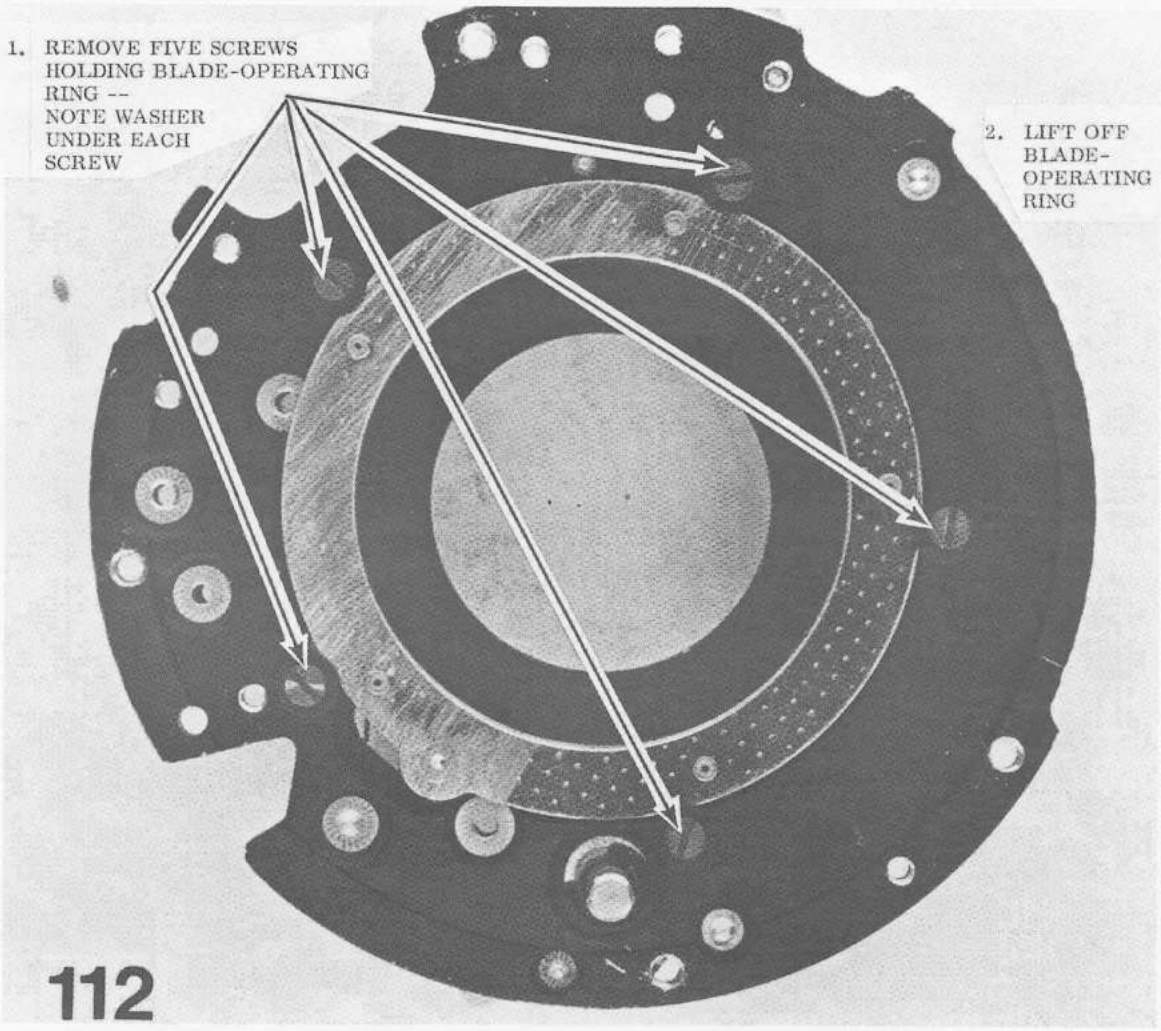


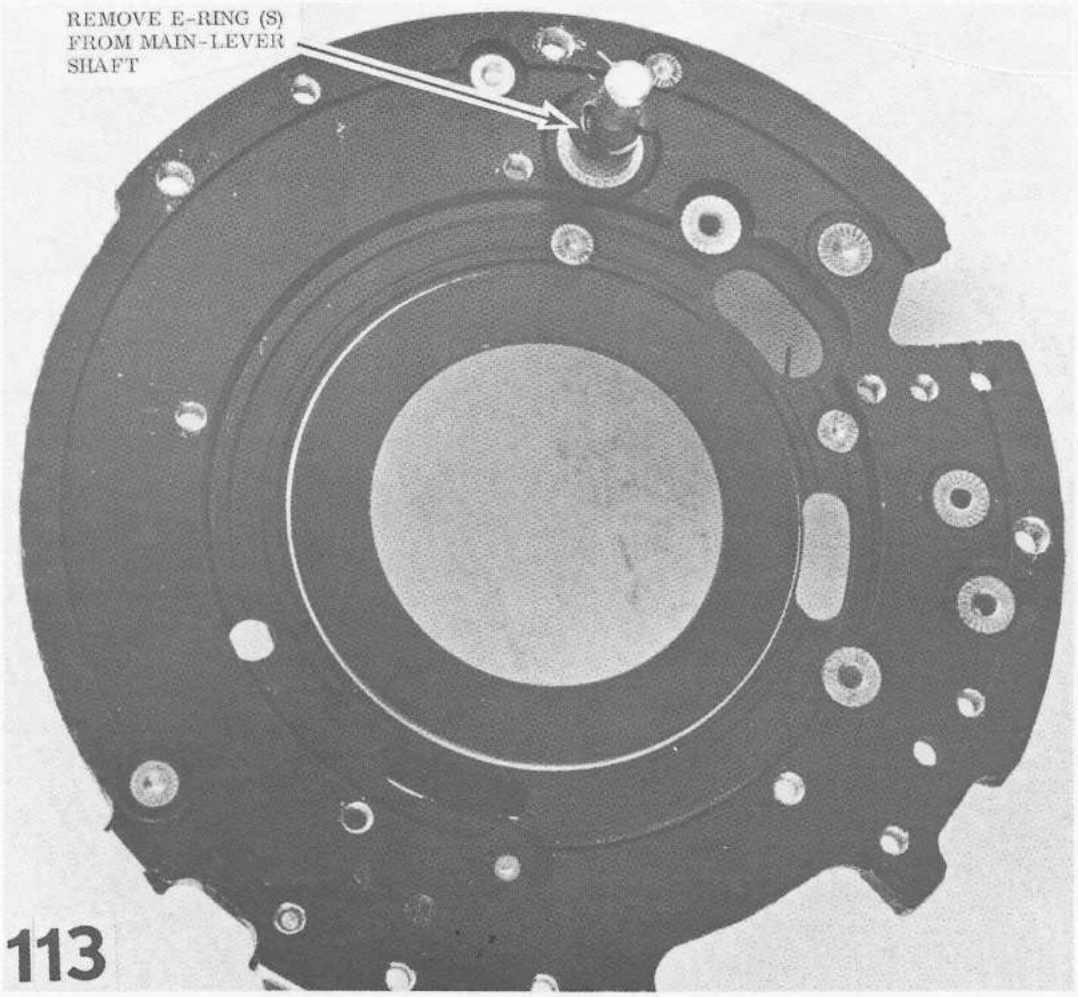


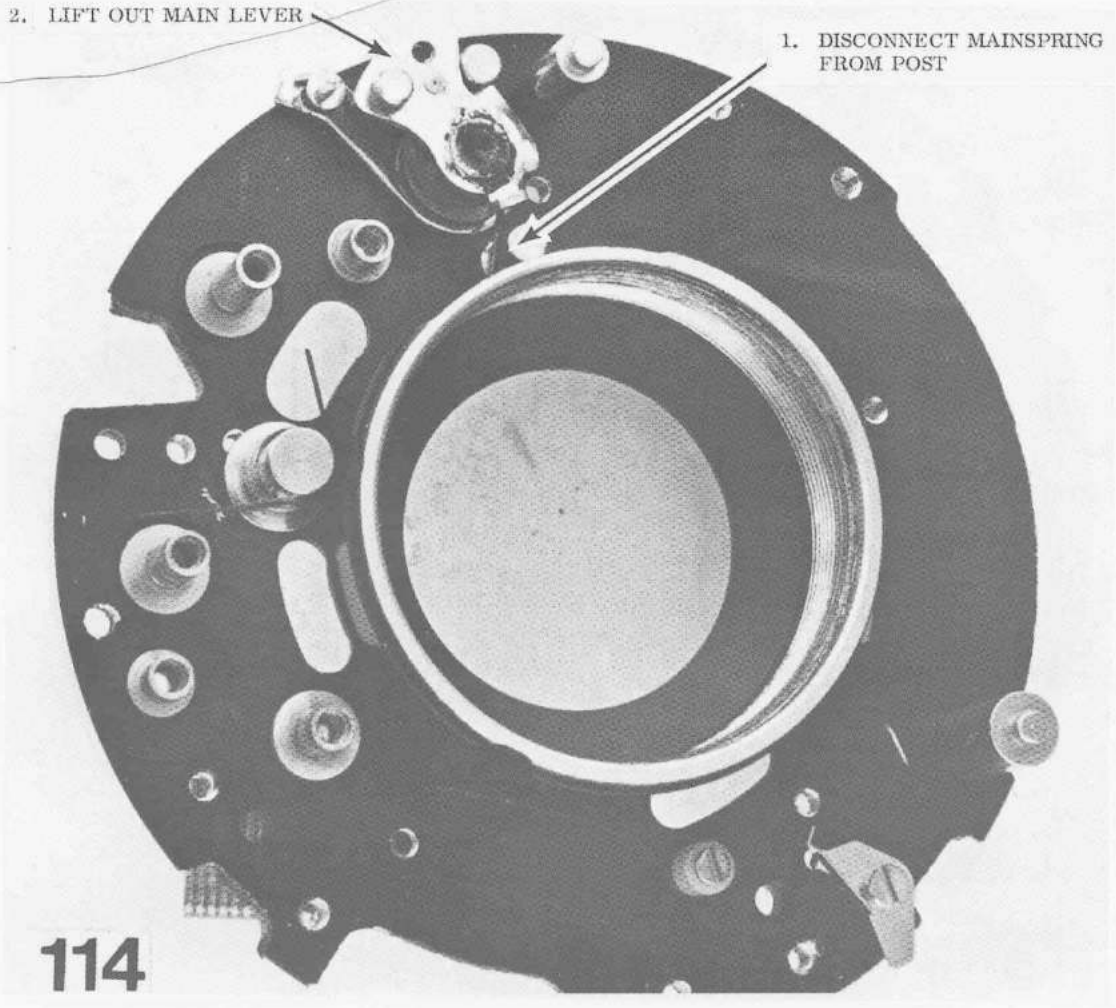


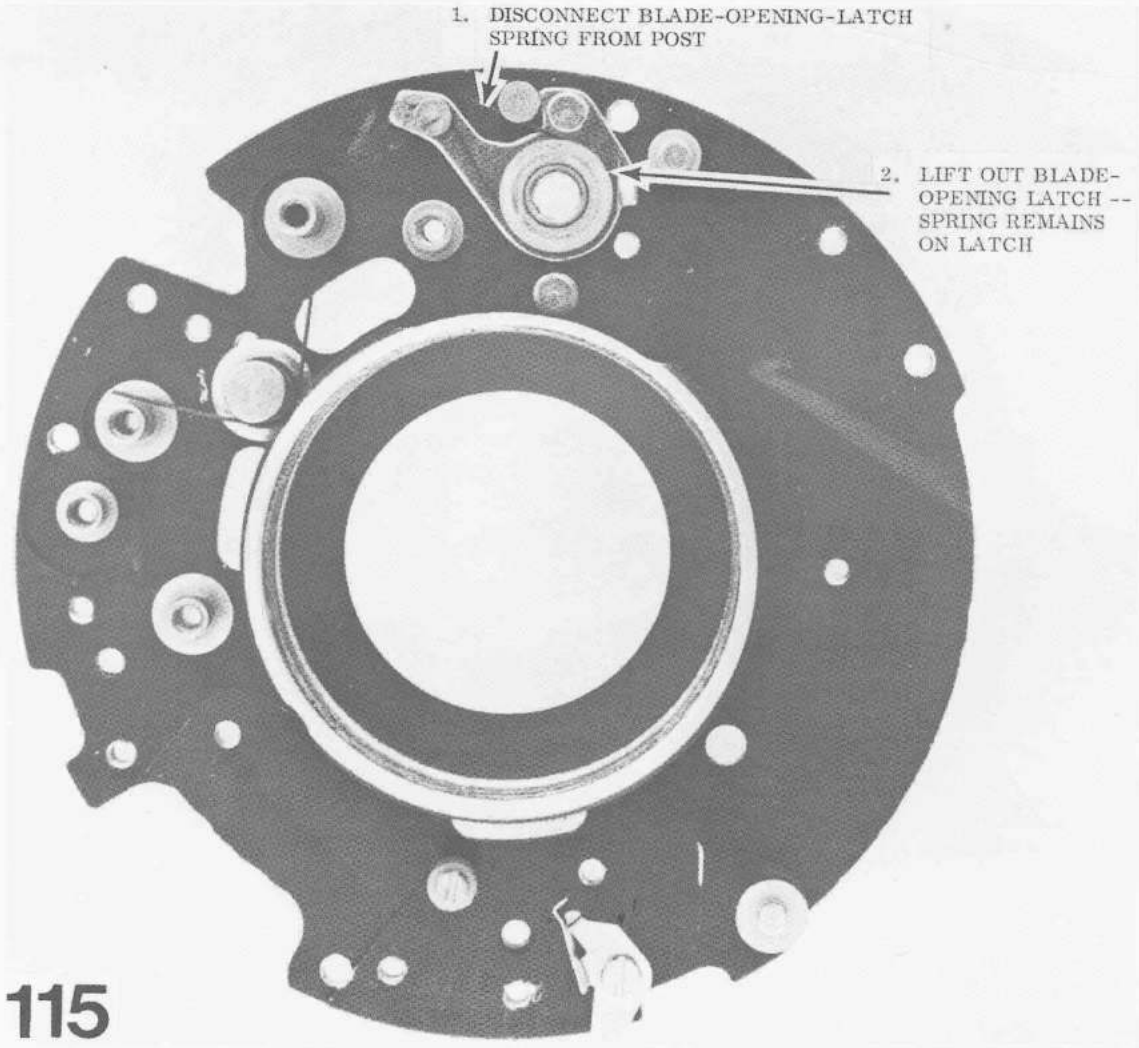












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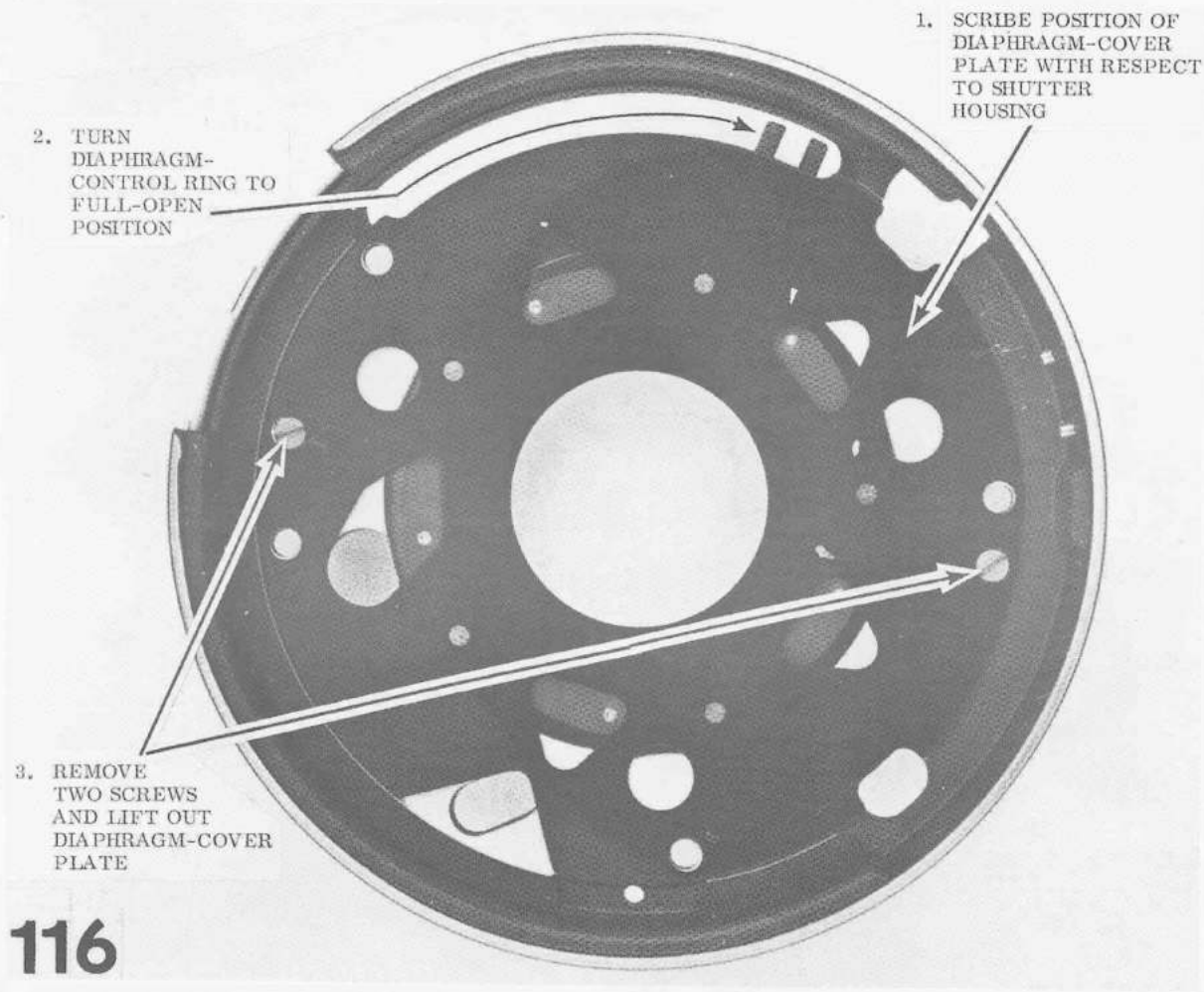

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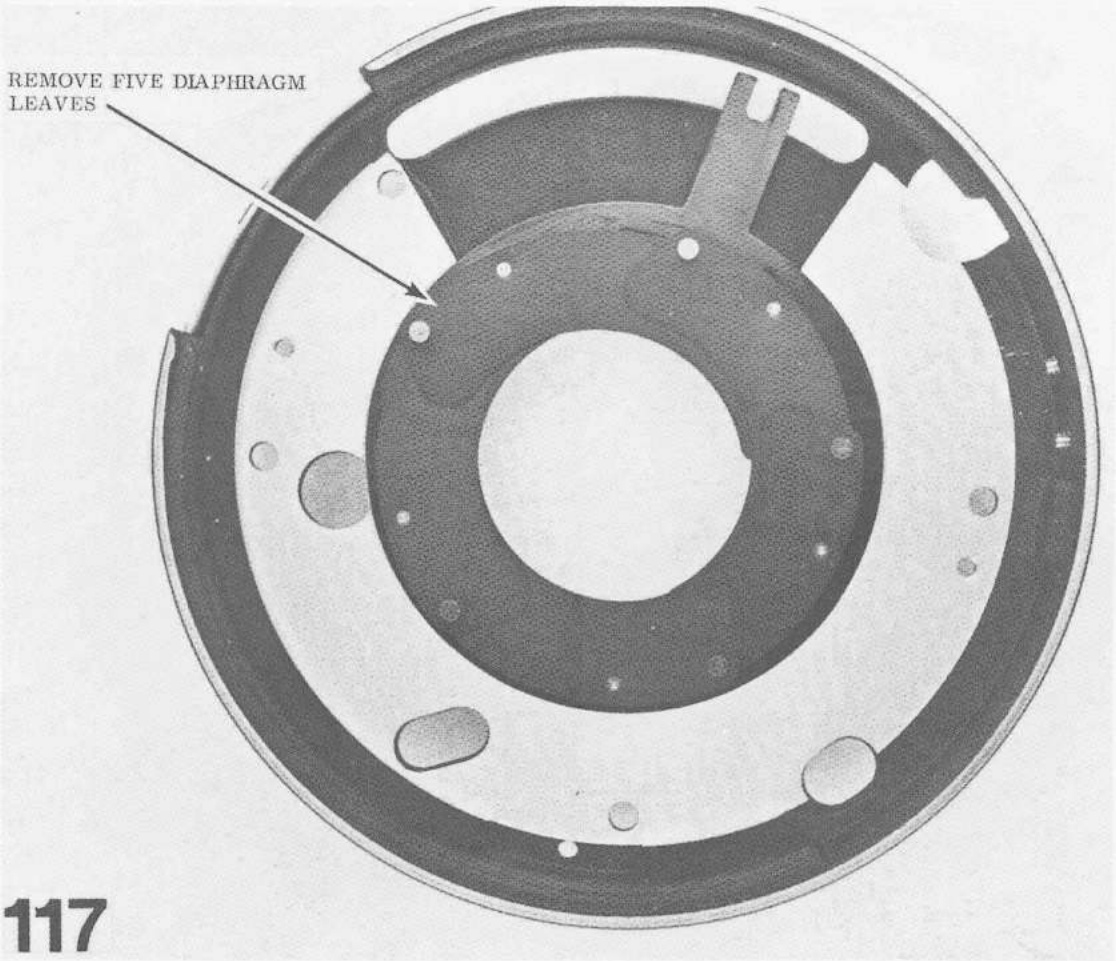

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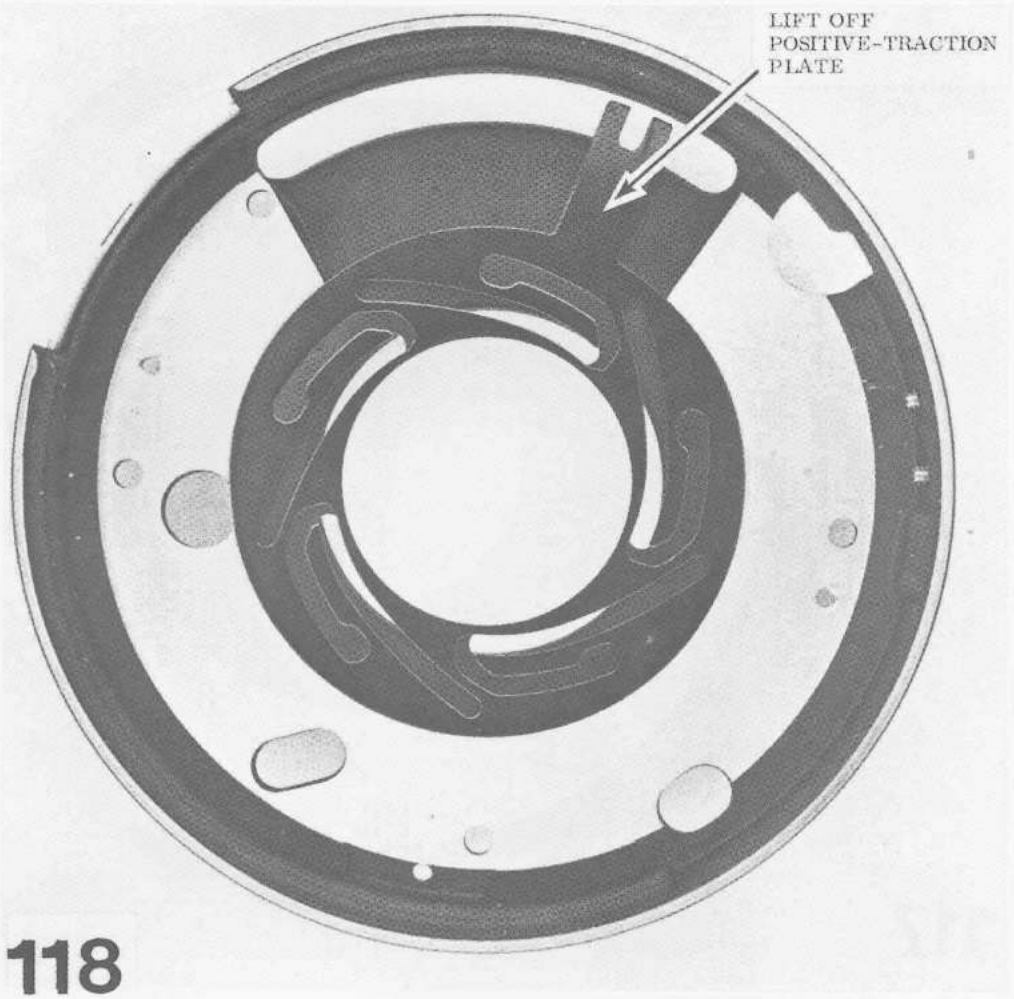

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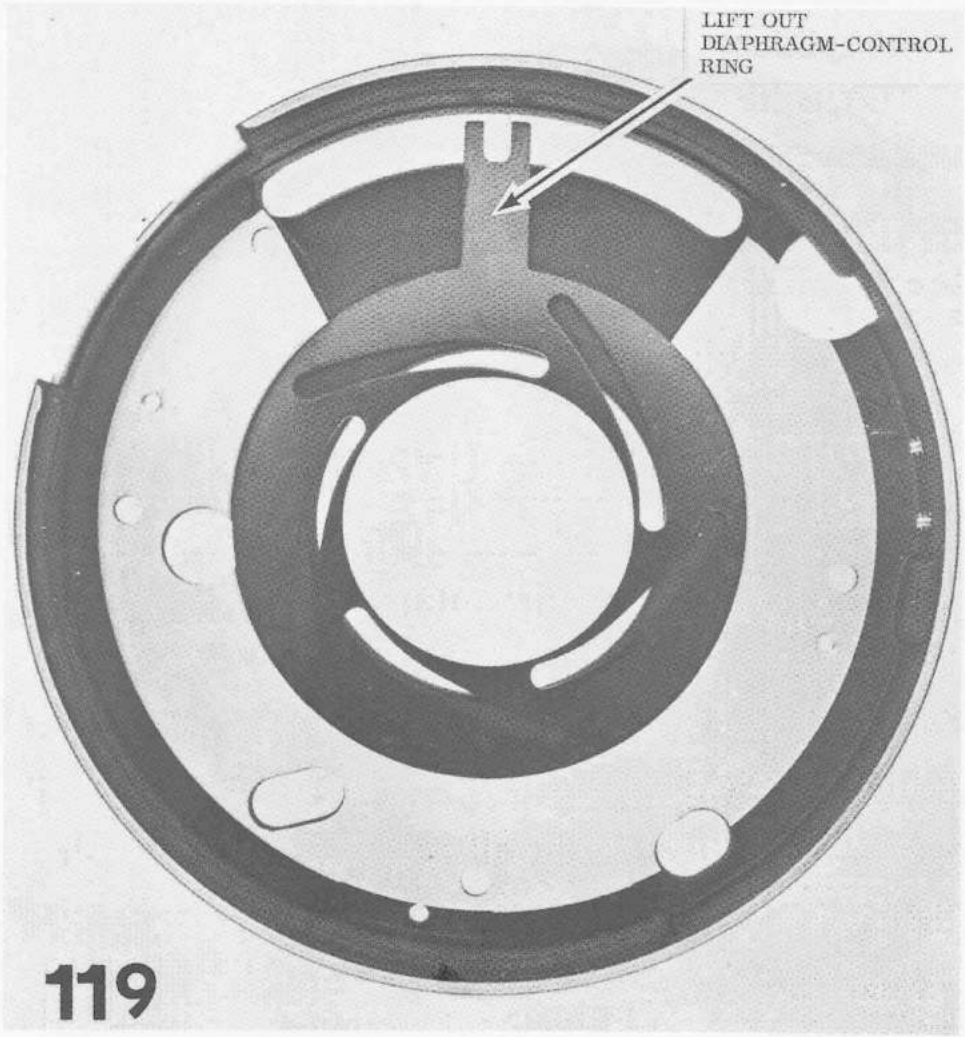

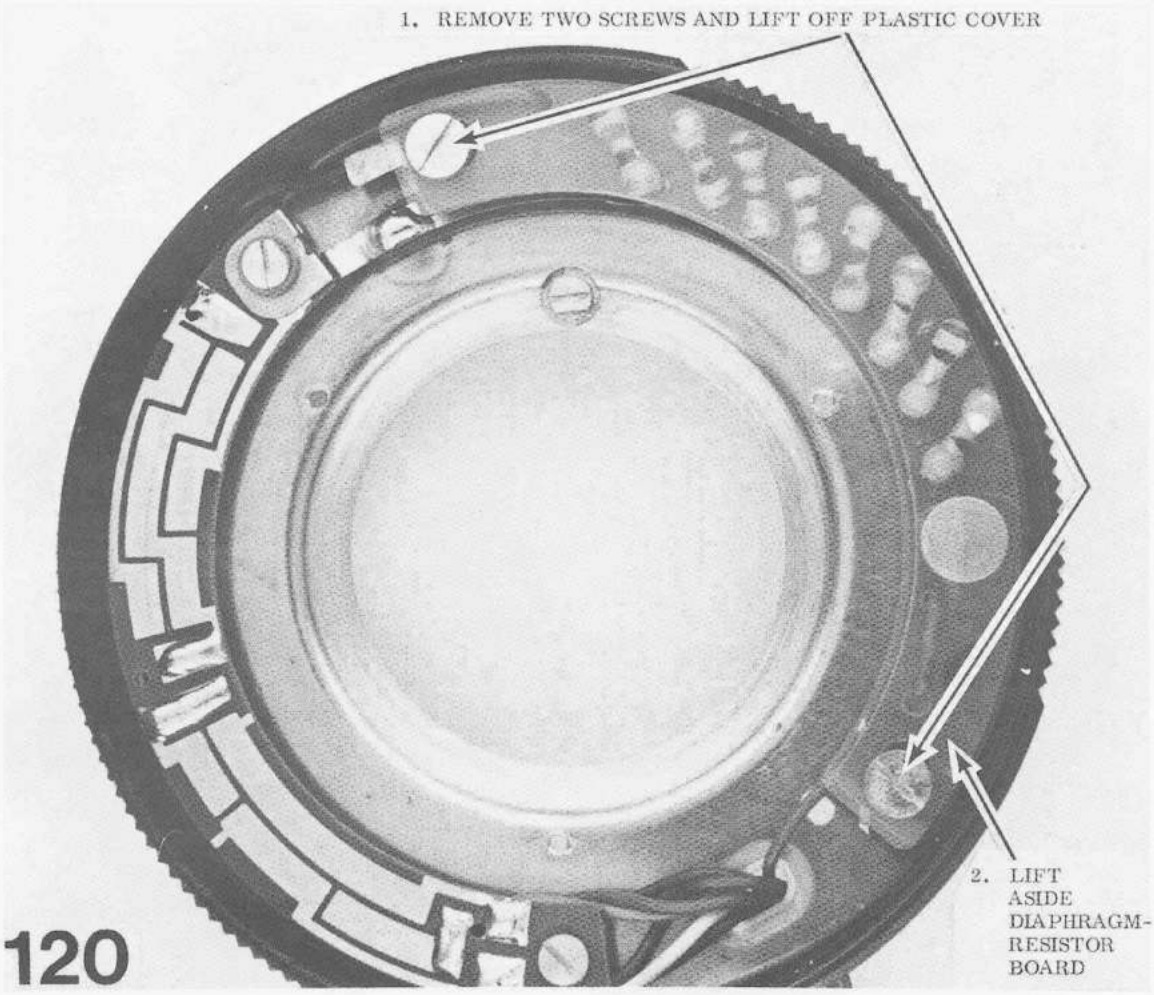

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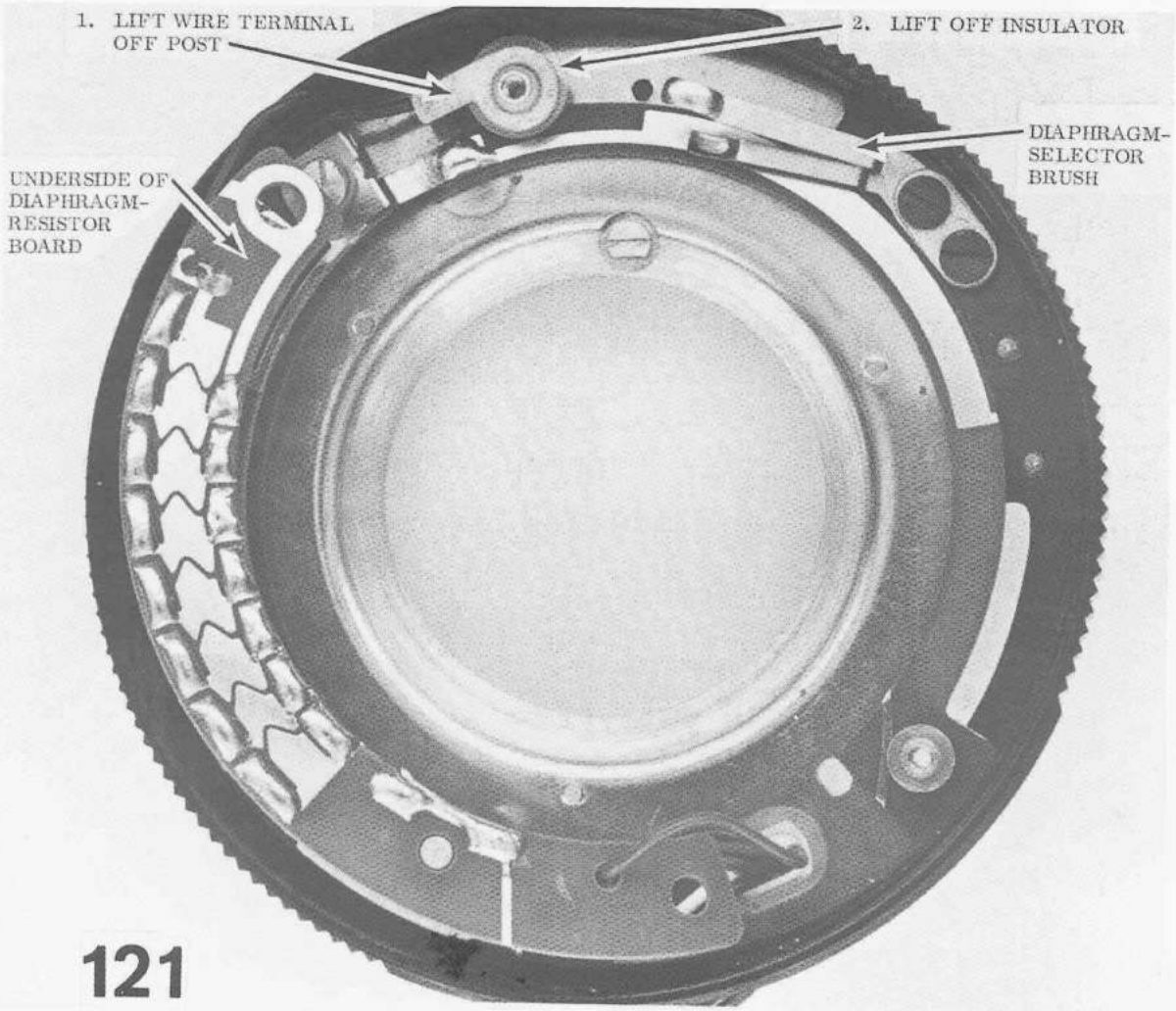

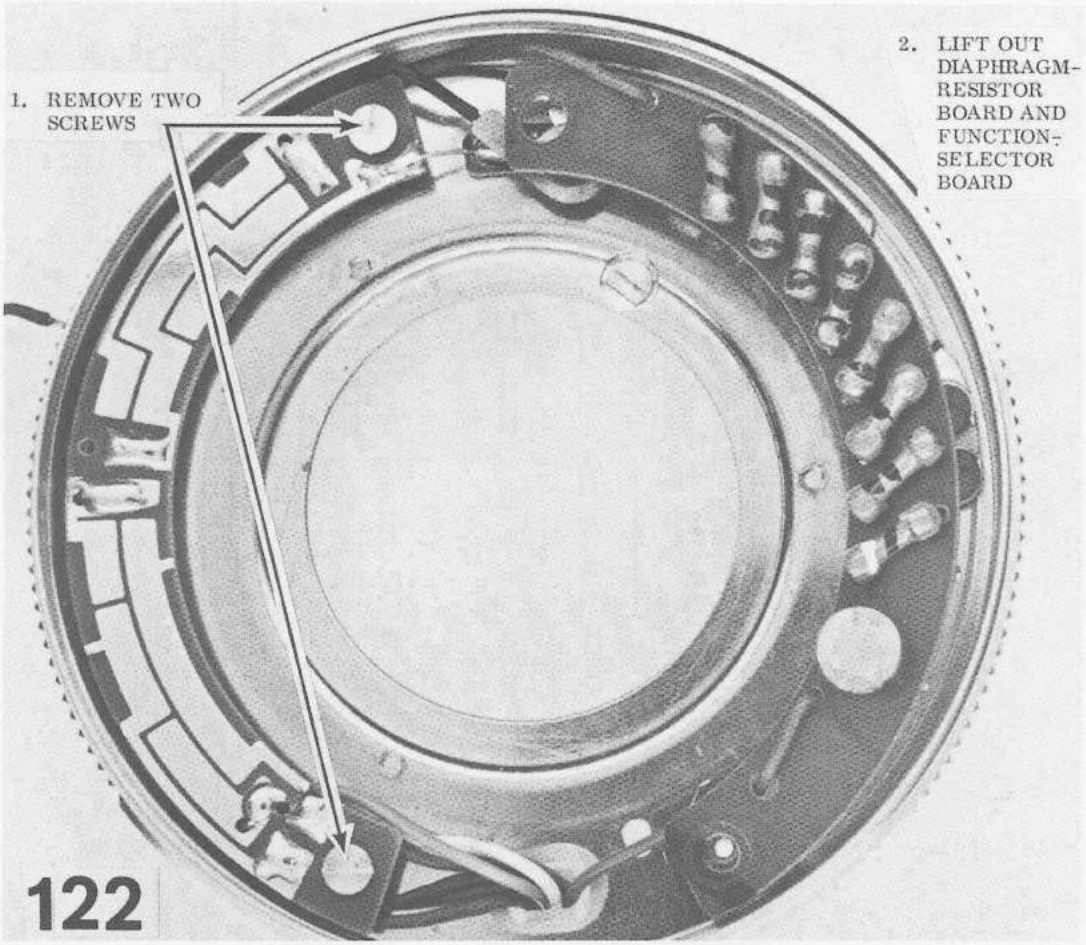

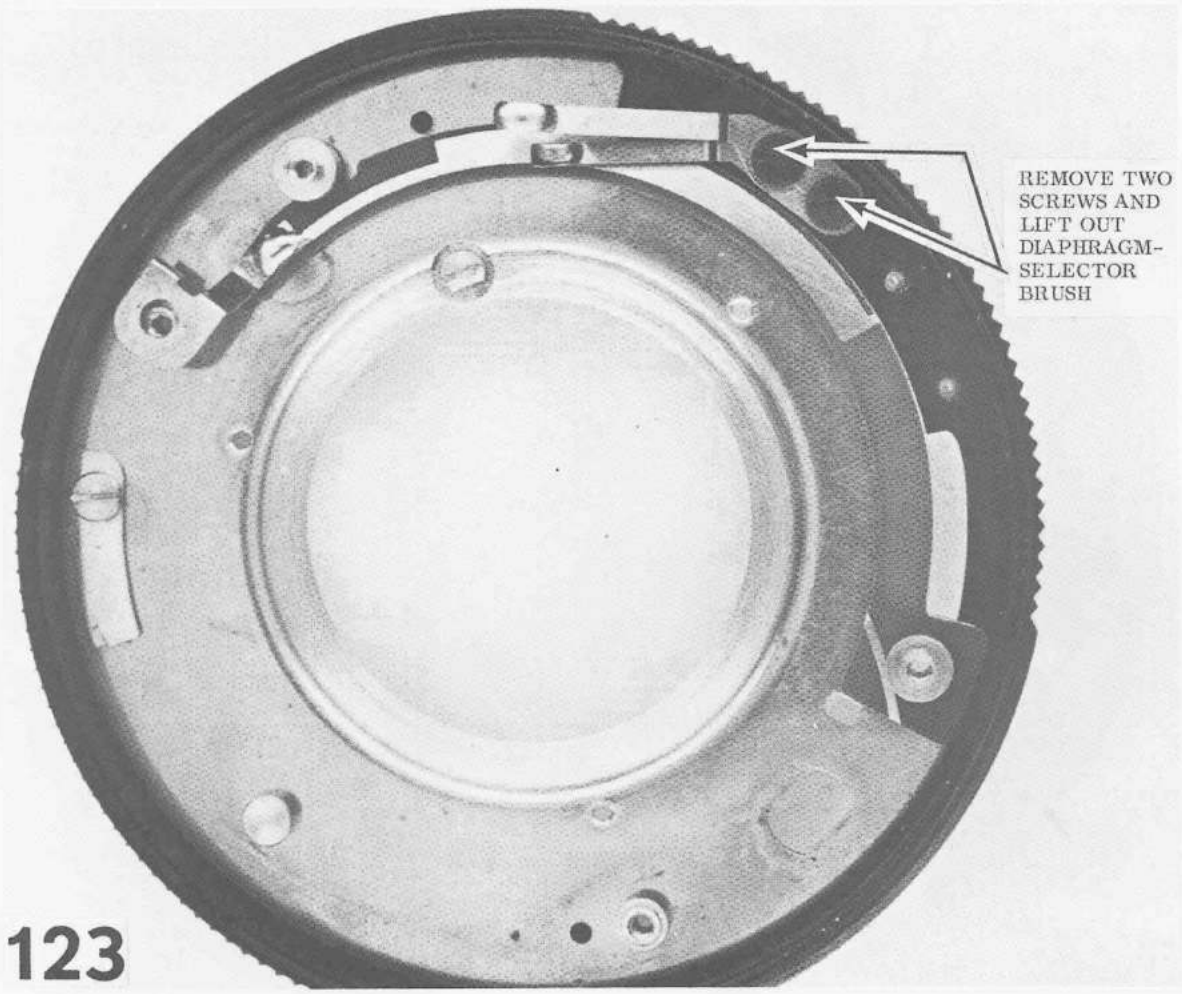

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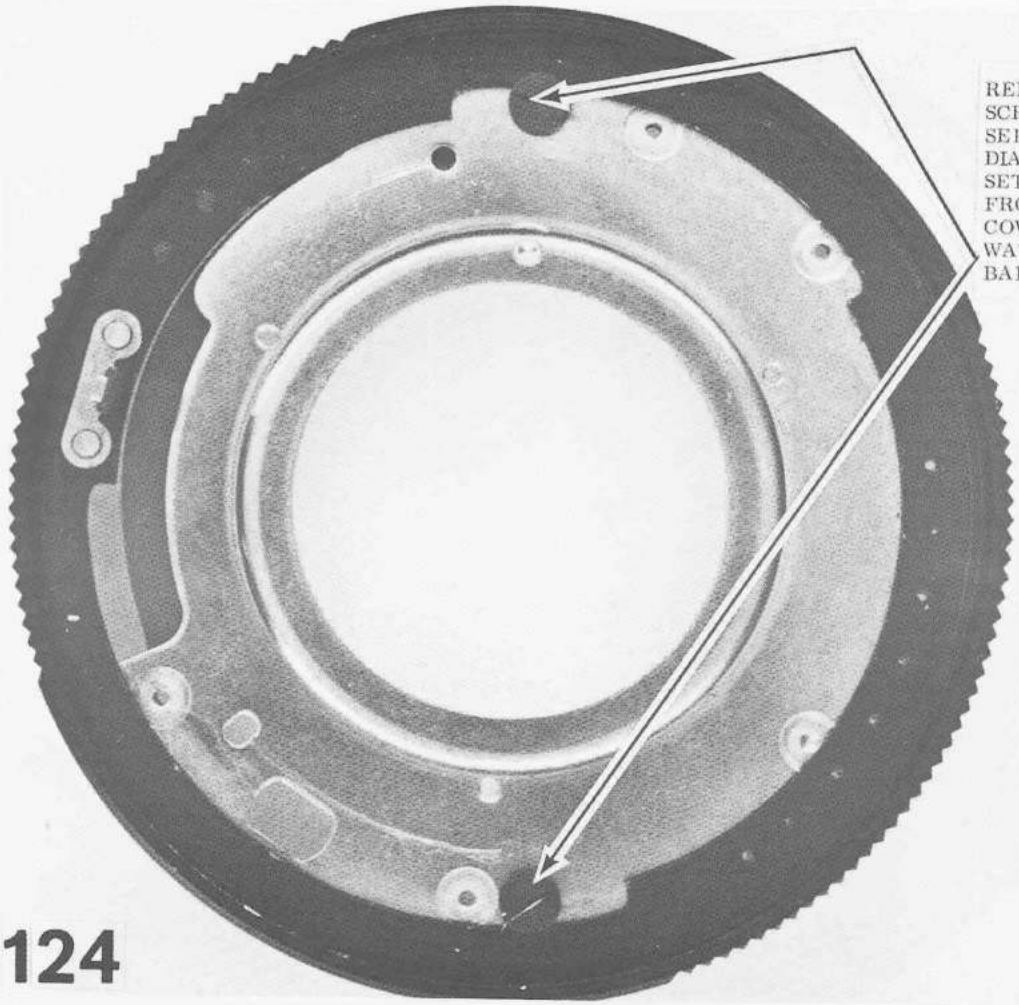

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