

INSTALLATION OF DIAPHRAGM LEAVES

Whenever you disassemble a diaphragm, be certain to note the individual characteristics of the leaves (wings). Since diaphragms in different shutters vary in peculiarities, reference notes will assist you in replacing the leaves properly. Record such details as which end goes up (the ends may be different in shape or the pins may vary in length), the correct rotation (clockwise or counterclockwise), and any variations among the leaves (some leaves may be designed to allow clearance for shutter parts at a particular location). Despite any unique features, however, the installation procedure for diaphragms in general is basically the same. A Compur-Rapid was used for the following description and illustrations. You can apply these instructions to other models you will encounter, keeping in mind any peculiarities you noted on disassembly.

The leaves should be cleaned the same way as shutter blades. If there are any fingerprints present, wash the leaves and gently wipe them dry. The leaves may be all the same, each end of each leaf having the same size pin protruding from one side. With the leaves lying flat on your bench, arrange all of them so that the pin at the left end of each leaf is down and the pin at right end of each leaf is up. The diaphragm control ring has slots radiating like the spokes of a wheel. Pick up a leaf and place it so that the pin at its left end (which is down) fits into one of the slots.

Proceeding in a counterclockwise direction, there may be several slots exposed. Place another diaphragm leaf in position on top of the one first installed, resting the pin in the first slot visible in a counterclockwise direction. Adjust the two leaves inserted thus far so that the inside edges are even with the edge of the central opening in the diaphragm control ring. Place the next diaphragm leaf in position proceeding in exactly the same manner.

Eventually, you will reach a point where a leaf cannot be installed this way, for the first leaf that was inserted is lying over the slot into which it should be fitted. This starts a ticklish operation and you may have to make several attempts before the leaf is successfully installed. With the point of a screwdriver or tweezers, hold slight pressure on the leaves already inserted. Lift a diaphragm leaf from your bench with a pair of tweezers and carefully slip it underneath the free end of the diaphragm leaf which was first inserted. Handle this diaphragm leaf as you would the blade of a knife between the pages of a book. Gently slide it between the first diaphragm leaf and the diaphragm control ring, moving it slowly and gently until the pin slips into its slot. With this accomplished, once more gently adjust the position of the leaves, so that the inner edges of all the leaves fall in a circle which coincides with the inside diameter of the diaphragm control ring.

The last diaphragm leaves are inserted in exactly the same

way. Be very gentle as you hold the other diaphragm leaves down with a screwdriver or tweezers and slip the last diaphragm leaves into proper position. Exasperation frequently comes at this stage of diaphragm installation when one or another of the diaphragm leaves decides that it doesn't like its present position and falls out of place. A little patience is required while you repeat what you have so painstakingly accomplished.

If you are lucky and get all the diaphragm leaves into position on the first try, it is suggested that you take them all out again and practice the assembly several times.

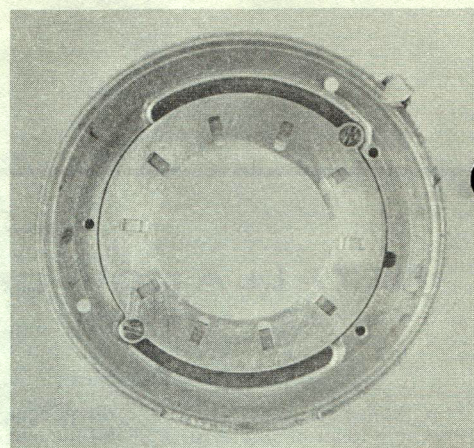
It is necessary to install the diaphragm cover plate so that all of the exposed pins on the right ends of the diaphragm leaves fit into their respective holes in the plate. All of the diaphragm leaves should, at this stage assembly, be adjusted so that they form a full circle of the diaphragm of the center hole in the diaphragm control ring. This is the largest f/stop to which the diaphragm can be adjusted, and the control ring would be in position as far as it will go in a clockwise direction. This permits the calibration marks on the nameplate of the shutter to be correct.

With the diaphragm control ring at its extreme clockwise rotation, you will probably discover that the pins in the diaphragm leaves will not line up perfectly with the holes in the cover plate. Without permitting the cover plate to touch the diaphragm leaves, rotate it gently until it is possible to align most, if not all, of the pins on the ends of the diaphragm leaves. The diaphragm cover plate may then be lowered so that as many pins as possible slip into their holes. Hold the cover plate down, so that the leaves cannot move too freely, and with your tweezers adjust all of the leaves that have not fitted into their respective holes until the pins drop into position. Adjustments will invariably be required. At this point a miscalculation may force a complete replacement of all of the diaphragm leaves. Do not despair at any difficulty which arises during this operation. It is perhaps one of the most difficult assemblies you will ever have to make, and practice will make you quite proficient.

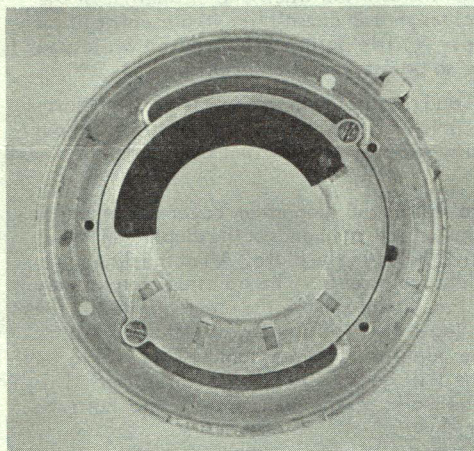
Time is of no essence. Work very slowly until you acquire the feel of handling the fragile leaves that are found in each shutter. With the pins finally fitted into the holes, it will be possible to move the diaphragm control ring counterclockwise and back, while checking the operation. If the diaphragm leaves operate smoothly, the job is complete. If they do not move freely, opening and closing as a multi-sided figure, and in a uniform manner, one or more of the pins in the diaphragm leaves may not be seated properly, either in the holes or the slots of the assembly. If the two ends of the leaves differ slightly, one or more leaves may be installed backwards. One bent leaf in a set may cause complete failure.

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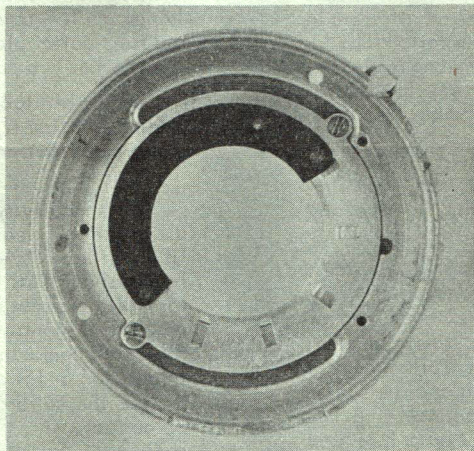
**THE FOLLOWING ILLUSTRATIONS
SHOW THE DIAPHRAGM AT
VARIOUS STAGES OF
REASSEMBLY**



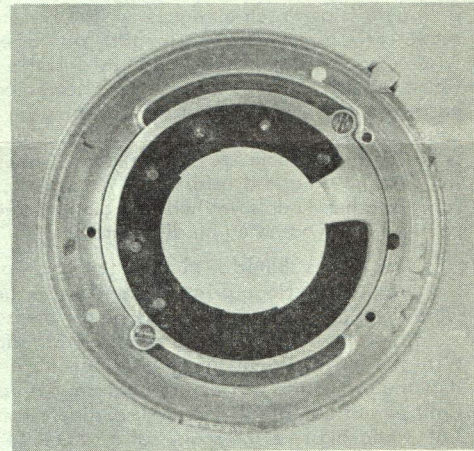
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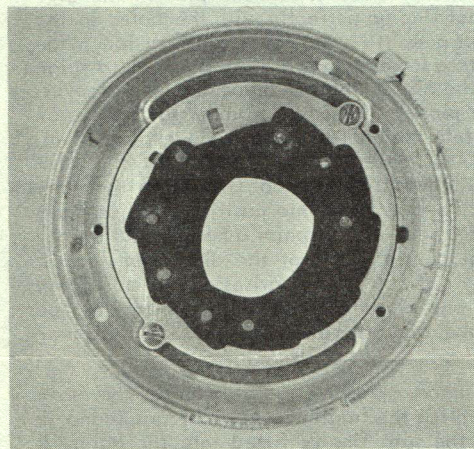
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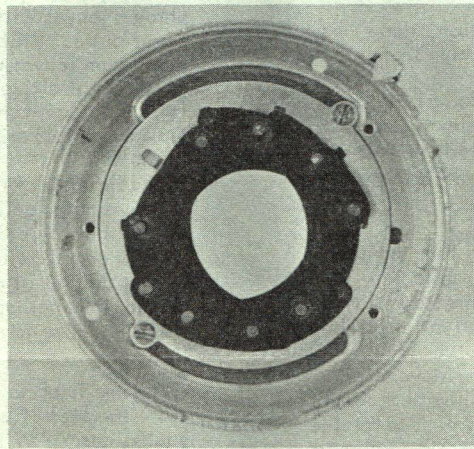
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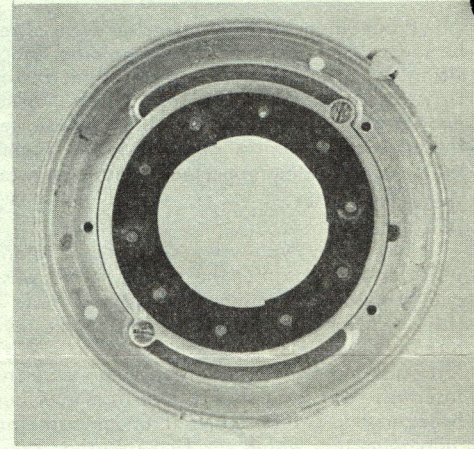
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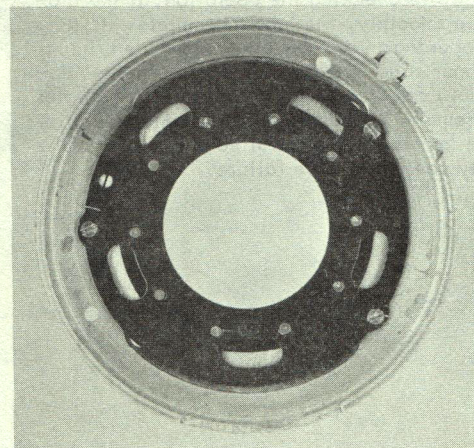
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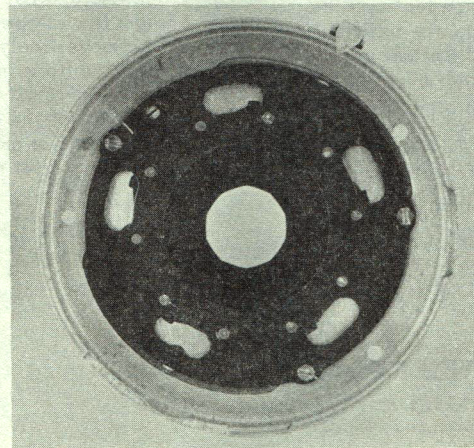
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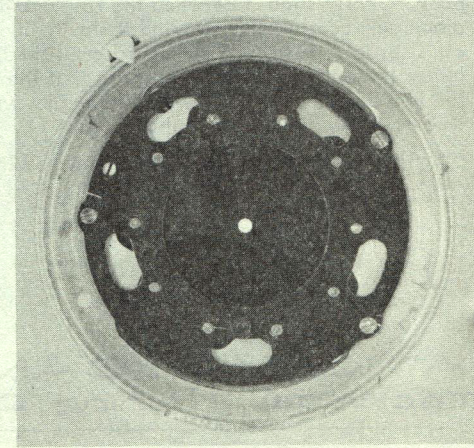
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