

Tōsei Kōki TKS shutter

by Dennis Oyama



There are some small grub screws that hold the focus ring to the first lens element ... I could not budge them, so I worked around it.

Remove the focus ring stopping pin ... plastic tip pliers, or just wrap something around it to avoid tool marks.

Rotate lens slowly while lifting lightly ... when lens releases mark its position as you will use that when you screw it back on.



Mark the position of the middle group.

Unscrew the middle lens element.



Remove the focus stopping post.

Turn the locking dial until the flat end faces the inside

Rotate securing plate until you match the notches.



Notice the speed cam.

Pull it off.



The mechanism at 7'oclock, stamped T.K., is the self timer.

Remove the long spring.

At top there is a brass arm that need to be pushed out of the way.

Position self timer priming arm curved notch.

With your three hands ... convince it all to come out.



The slow speed escapement is held on by two large round headed screws. The top-middle one can be accessed after cocking the shutter to push some arms/gears out of the way.



Here is a view of both components.



Mark the position of the flash sync port on the aluminum plate ... this will help when putting the shutter back together.

Note the torsion spring that is held on by that screw.

This image shows what I figured out about the shutter problem ... when the shutter is set, the blades would open then close.

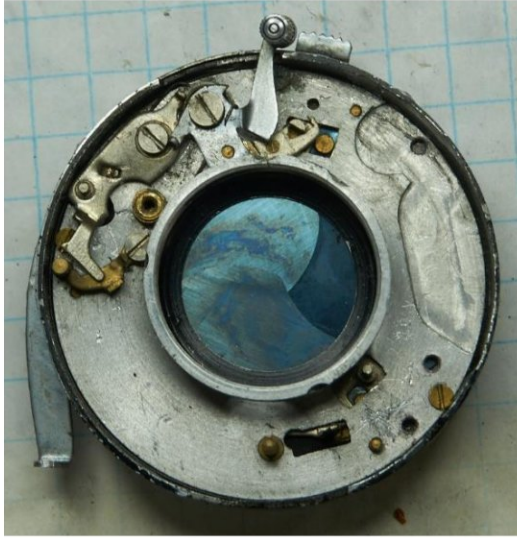
At the top you can see the setting arm and the leaf lever.

The leaf lever was engaging the blade stud when the setting arm is moved.

This should not occur if the stud is in its left most position ... in this case it was not.

The torsion spring (at 5 o'clock) is the blade-operating-ring spring, this keeps the shutter blades from opening. I noted that it was slightly bent out of shape, but even correcting this the blades were not kept in the fully closed position. If I hold the blade stud to the left, then the leaf lever clears the stud ... no engagement.

This meant there was resistance on the blades that is keeping the spring from keeping the blades fully closed, this requires me to get down there and clean up.

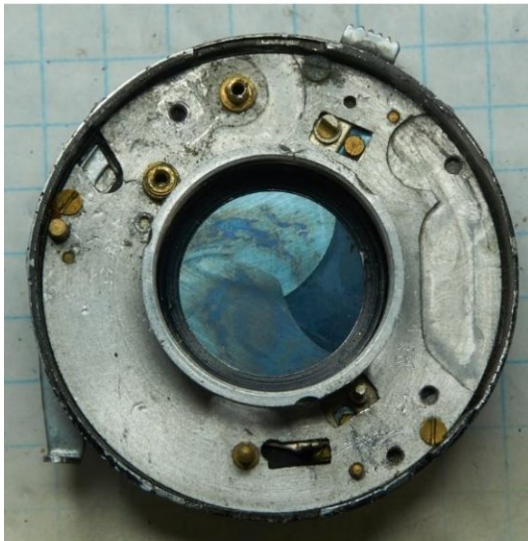


Remove the spring and sync post parts.

The shutter cocking levers and things are almost all spring loaded.

Take a careful look at how the springs are positioned ... you may even want to make a map.

Keep them together when removing them.

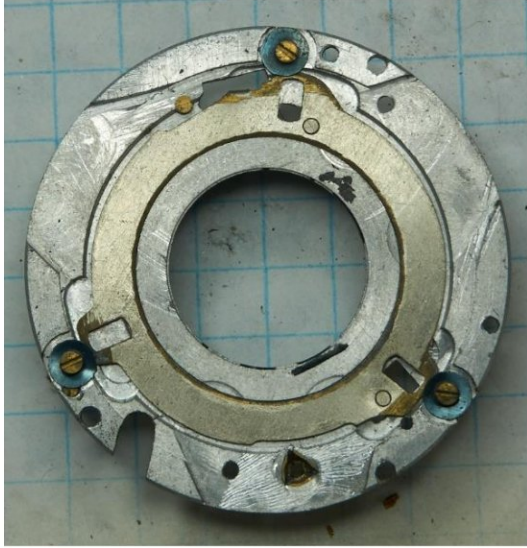


Gently flip over and the shutter part will come out in your hand.



This was the first problem ... the shutter blades were not moving freely without resistance.

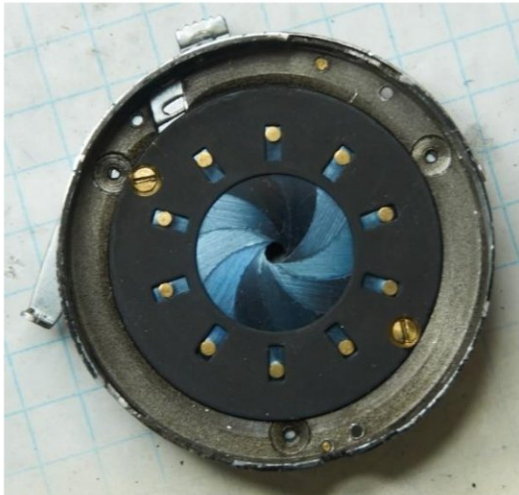
These need to be cleaned ... and try not to bend them.



Clean the surrounding metal it rides on.

Unscrew the three screws with the metal washer underneath ... note that they are slightly bent.

Clean up the ring that moves the blades.



I was not so bold as to take apart the 10 leaf aperture ... good thing they were in good physical shape, clean, and moving freely.