

Disassembly a ZENZA BRONICA ZENZANON 150/4 PS Lens

By M.Vettore (Rev 2.0)

These instructions should be valid for all PS and PE lenses ranging from 50 to 250 mm. excluding zoom lenses the PS 110 & PE 105 (I cannot check them) and the 35 and 500 mm lenses. Of course the brand-name ring diameter varies so an appropriate rubber cone where needed must be provided. The number of optical groups also changes

Things You'll Need

All the tools are available at Micro-Tools (a division of Fargo Enterprises, Inc.) or Micro-Tools Europe GmbH), JCIS screwdrivers at ASG. (see links at the bottom of the page)

- Rubber cone, size 64mm (2.52") (i.e. Micro-Tools Lens Ring Tool 55mm & 63mm#12 Gum Rubber) or a rubber barrel , although a rubber grip cloth could be use the cone or the barrel are better.
- Spanner wrench with slot and pointed tips (mine slot are 4.4mm X 0.9mm or 0.17" X 0.034"), should span between 30mm to 65mm (1.18" to 2.56") Micro-Tools or eBay (the last is cheaper) (Pic. 1)
- JCI S #0 or JIS #0 screwdriver.
- Thin flat nose pliers or tweezers
- Thin tip soldering iron.

Unassembly

Before starting complete open the diaphragm, to latter simplify the assembly operations.

1. Remove the brand-name ring using the rubber cone or the spanner wrench with round tips (Pic. 2 A); also an old calliper could work.
2. Unscrew front optical assembly using a spanner wrench with flat tips (Pic. 3 A), if the lens has not been serviced before, the optical group threads are painted with a lock tight paint so the task may be a little hard.
Mark with a visible marker the inner ring to the internal side (Pic. 3 A), the ring is symmetric but some adjustments not, if you don't like to make the adjustments again you will get the chance to reassembly as it was.
Caution: it is easy to scratch the glass so if you feel insecure cut a disk fitting the glass from a mild plastic cap and fix it to the glass with adhesive tape to protect it.
3. Unscrew the screws (Pic. 4 A, 4 x BL p/n P3B1425) holding the little flaps linking the inner aperture ring (Pic. 4 B) to lens aperture ring. The little flaps come out; the lens aperture ring is free to rotate.
Caution: usually the screw head is locked with a screw lock agent; before trying to unscrew the screw it is better to remove the lock agent with a pointed tool and clean with denaturated alcohol or acetone.
Caution: before use any kind of solvent remove the rear optical assembly (see step 12), don't undervalue the effect of solvents on multicoated glass surfaces. Also cock the shutter (see note 1) before the application of solvents to avoid they drop on shutter or diaphragm blades.
4. Unscrew the screws (Pic. 5 A, 6 x BL p/n P3B1425) retaining the standoffs (Pic. 5 B) and remove them.
5. Now it is possible to pull out the inner aperture ring, it is free but the thin clearance between it and the surrounding lens barrel cylinder prevents it to get out easily; the two levers attached (Pic. 5 B) could help to get some grip points. If you achieve to lift up somewhere the ring you can use some kind of plastic blade to get it out without scratching. Should exist

- a Bronica service tool for this but it is impossible to find. In every case you should get rid of that and pull the ring out.
6. Unscrew the screws (Pic. 6 A, 4 x BL p/n P1B1730) fixing the barrel front part. The barrel front part will come out.
 7. Remove the e ring (Pic. 7 A) retaining the A/T lever pin and pull it out (Pic. 7 B).
Caution: there is a ball under the spring (Pic. 7 C), it will drop out after the pin has been removed, don't lose it.
 8. Unscrew the screws (Pic. 8 A, 2 x BL p/n P3B1420) fixing the DOF preview lever (Pic. 8 B) and remove it.
 9. Unscrew the screws (Pic. 9 A, 3 x BL p/n P1B1750) fixing the barrel middle part. The part will come out.
 10. Unscrew the screws (Pic 10 A, 2 x custom screws) holding the DOF preview guide. (Not needed on PS40 lens).
Caution: these screws are custom parts quite impossible to get as spare part, be extremely careful unscrewing them, don't wear down the screw heads.
Unscrew the screws (Pic. 10 B, 3 x BL p/n P1B1740) fixing the barrel bottom part. The part will come out.
 11. Unscrew the screws (Pic. 11 A, 5 x BL p/n C1B1750) fixing the lens rear back and extract it.
Caution: be careful with the flexible flat cable don't bend it.
 12. Unscrew the rear optical assembly (Pic. 12 A) see recommendations at step 1.
 13. Unsold the shutter wires from the flat cable pad, tweezers facilitate the operation
 14. Using the spanner wrench unscrew the shutter unit fixing ring (Pic. 13 A) and slip off the shutter from the front side.

Reassembly

Before reassembly clean and lube:

- If the focus ring doesn't operate smoothly you can lube the stub of the focus helicoid screw protruding from the barrel rotating the focus ring, put a little veil of helicoid screw silicon grease (Micro-Tools) on the thread and exercise it for a while, pay attention don't spill grease around.
- Clean parts, remove dust and speckles with a soft brush; grease and oil can be removed using lighter fluid like Zippo or Ronseal; I recommend them because they aren't so aggressive with plastic and don't leave residues.
- Don't clean if not strictly necessary the glass surfaces, the external glasses could be clean as usual after the lens has been reassembled, for the internals (i.e. those facing the shutter) only wipe the dust and speckles with air.
Caution: Some Pressurized Air Blaster cans contain Tetrafluorethane as propellant, if you heavy blast the glass the propellant can condense on the glass and that isn't good for the coating. Watch the canned air. Even held upright and at room temp. A classic air blaster is better.
- Air blowing the shutter tunnel too; be extremely gently with the shutter and diaphragm blades.
- Put a little bit of grease on the screw threads before screwing, that reduces the possibility screws become stuck in the future. Don't worry the screws become loose if they are enough tighten or locked by lock paint.
- Put screw lock paint (i.e. Micro-Tools Screw Lock) where it is needed.
- Before mounting back the shutter open or close it complete in order to facilitate the orientation of the aperture rings.

Assembly steps

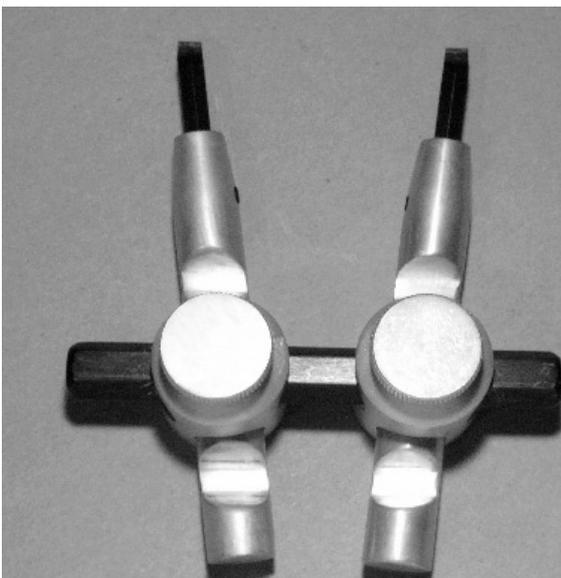
1. Put the shutter in place, to do that first group together the wires with adhesive paper tape or a piece of aluminum foil in order to let them pass trough the hole. Use the pass-through hole as reference for positioning the shutter. When the shutter is in the right position on the back side of the plate holding the shutter two screw heads of shutter must be framed on two pass-through holes. Block the shutter screwing the shutter ring first by finger then with the spanner wrench.

Caution: Don't put the finger on the diaphragm –shutter blades.

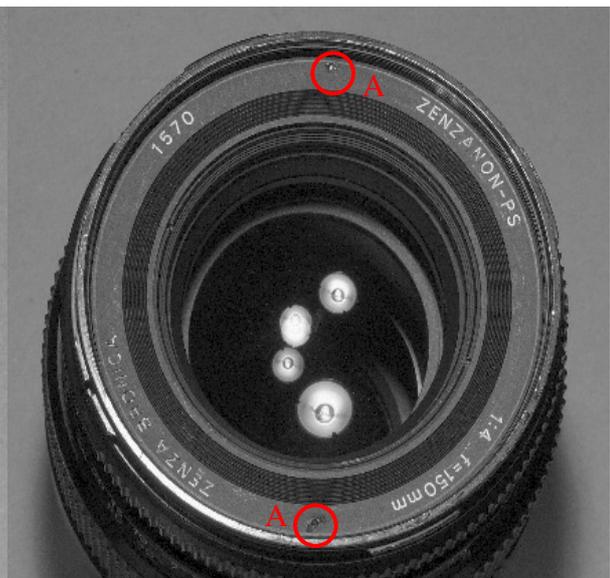
2. Sold the wires to the flat cable pad, wiring is show on Pic. 14.
3. Screw-in the back optical assembly, first by finger then with the spanner wrench.
4. Put the lens rear back on; the two levers must engage the shutter slots show on Pic. 15. To get the back plate right position twist it pushing the pin showed on Pic. 16 A.

On the front section:

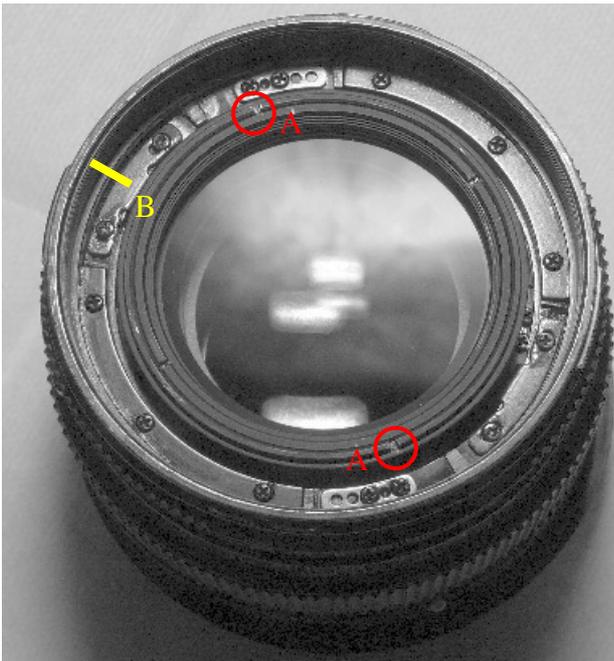
5. To orientate the barrel bottom part see at Pic. 11 C as reference, fix the part, put the DOF preview guide back.
6. Put the barrel middle part on, to orientate it refer to the A/T lever pin hole (see Pic. 7) the hole in the middle part must match the one in the bottom part.
7. Insert the A/T lever pin and fix it with the e-ring, then fix the middle part.
8. Unscrew the A/T lever pin spring screw (Pic. 17 A BL p/n P3B1420) then loose the other screw (Pic. 17 B BL p/n P3B1420), displace the spring and put the ball in the hole (Pic. 17 C) before putting the spring back in place and screwing the screws.
9. Put back the barrel front part; use the A/T lever as reference.
10. Put the aperture inner ring back, the mark done at step 2 will help to get the right position. The two arms must however engage the shutter levers.
11. Rotate the lens aperture ring till the larger aperture (actually 4) match the white dot the put back the flaps. Fix the two standoffs; screw the front optical assembly and the brand-name ring.



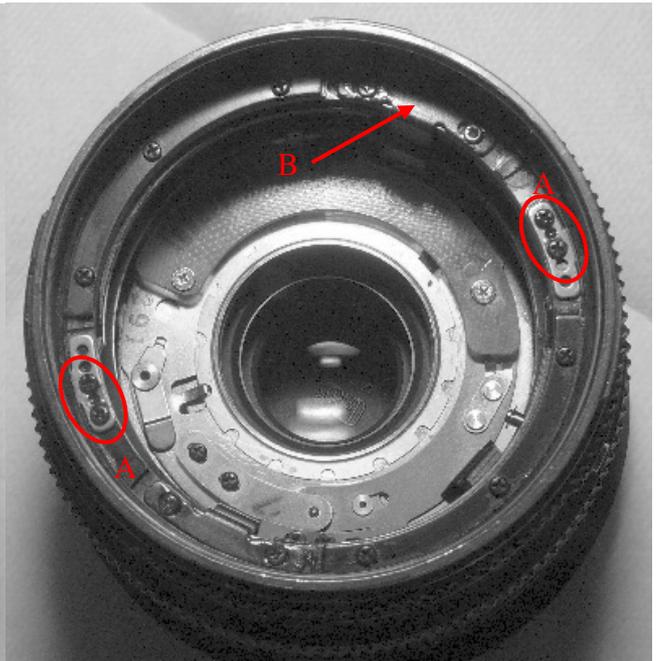
Pic. 1



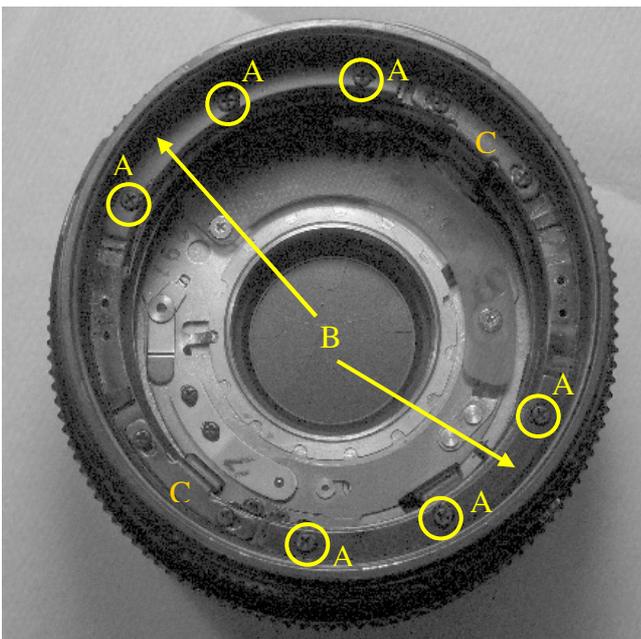
Pic. 2



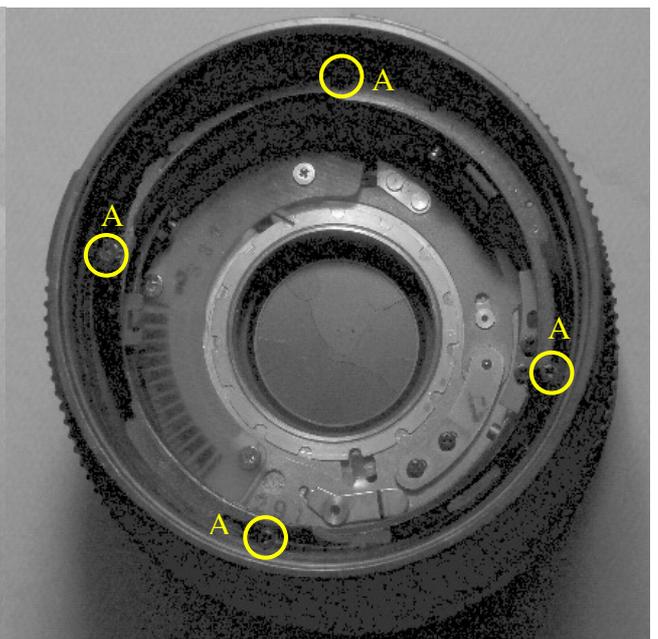
Pic. 3



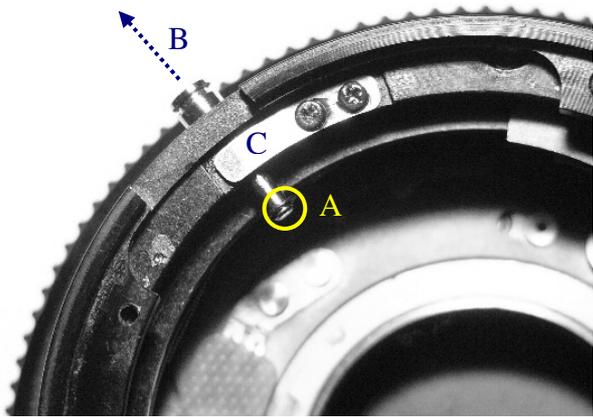
Pic. 4



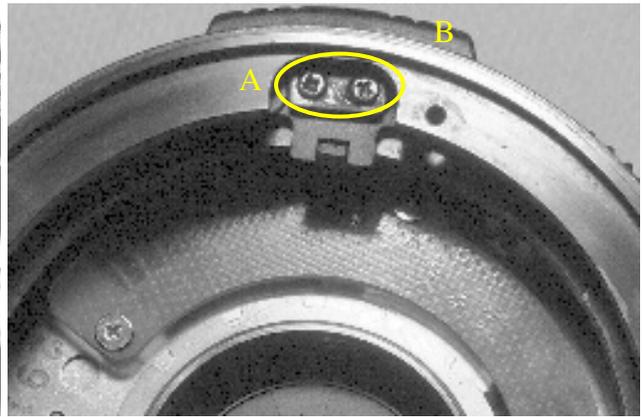
Pic. 5



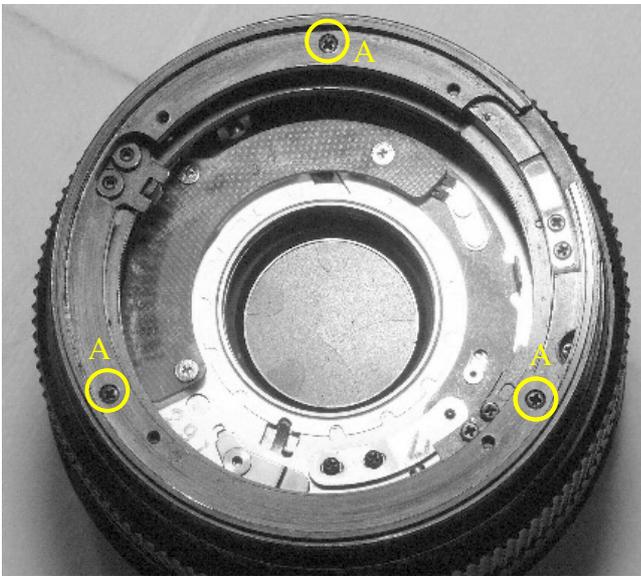
Pic. 6



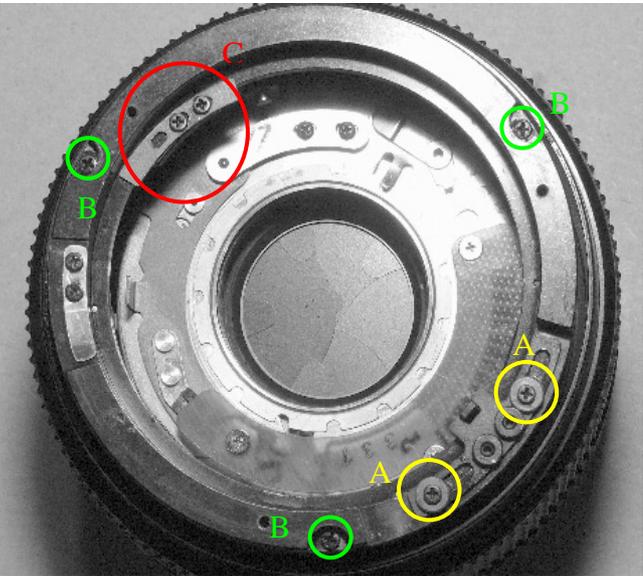
Pic. 7



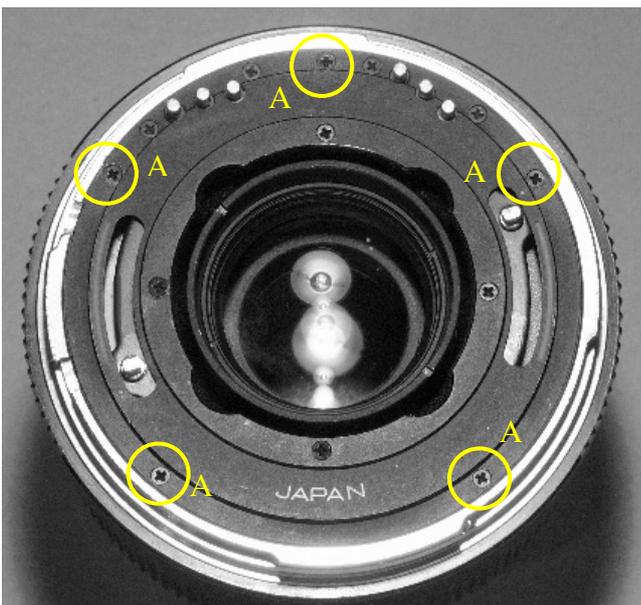
Pic. 8



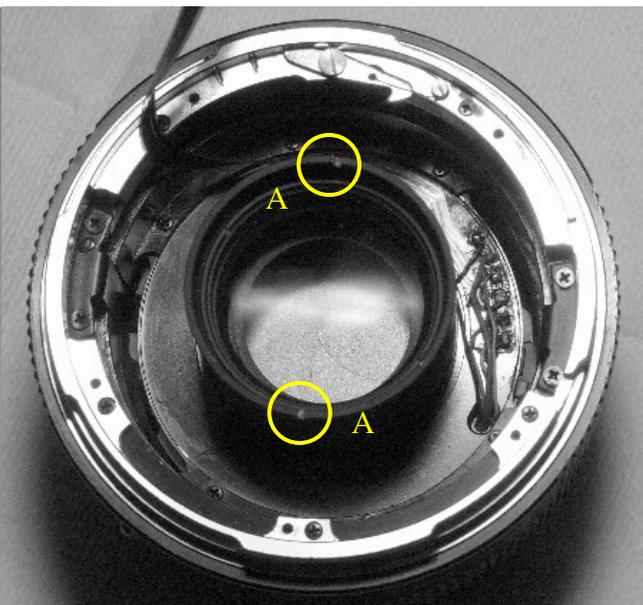
Pic. 9



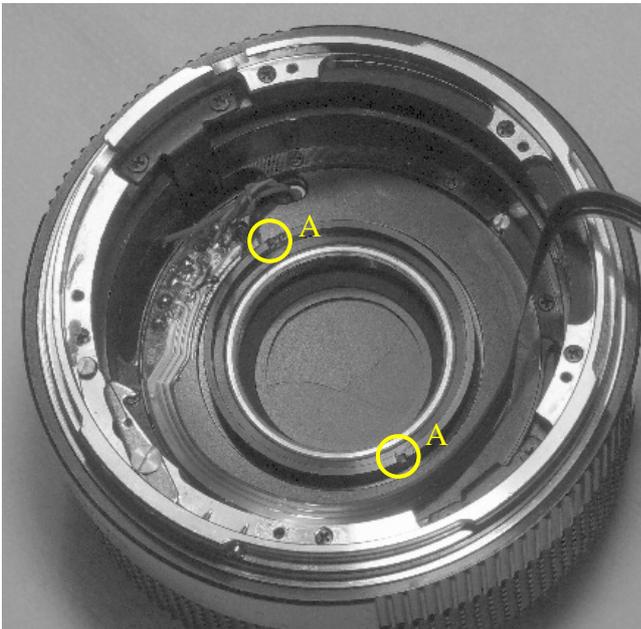
Pic. 10



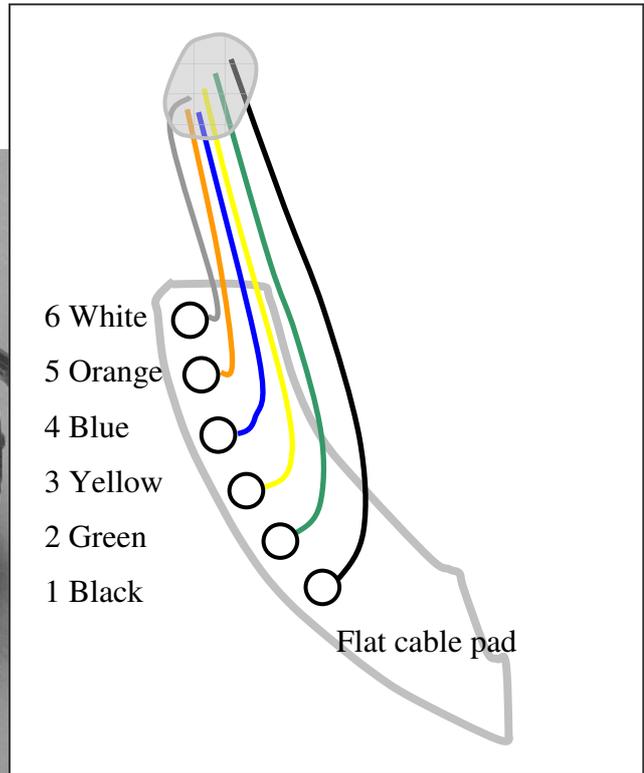
Pic. 11



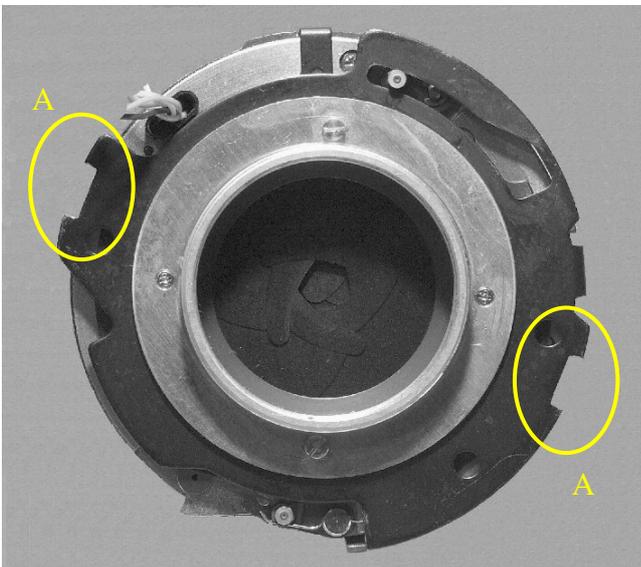
Pic. 12



Pic. 13



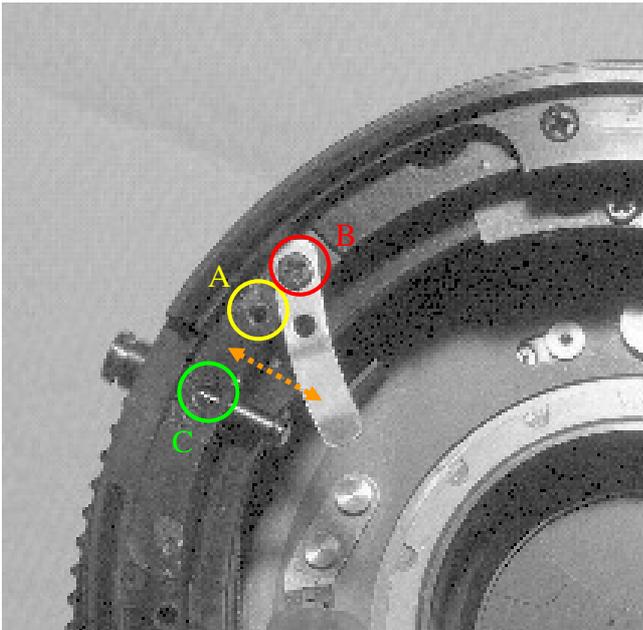
Pic. 14



Pic. 15



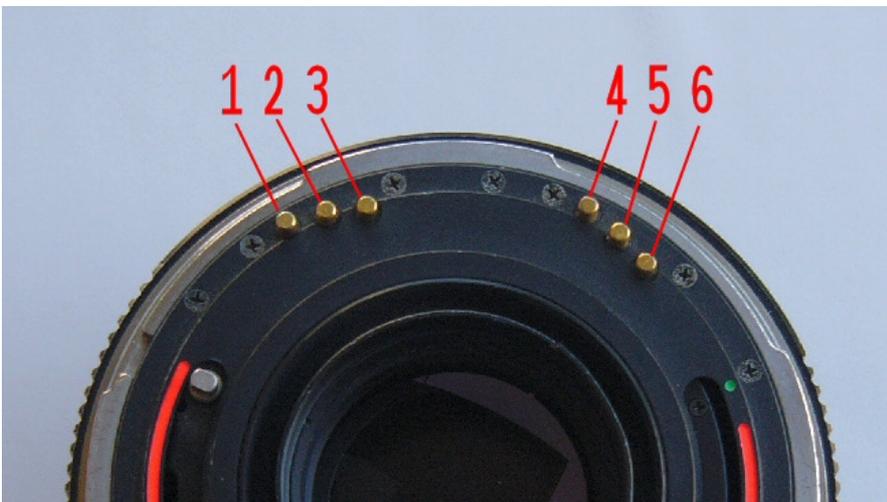
Pic. 16



Pic. 17

Lens contacts

Lens has 6 contacts:



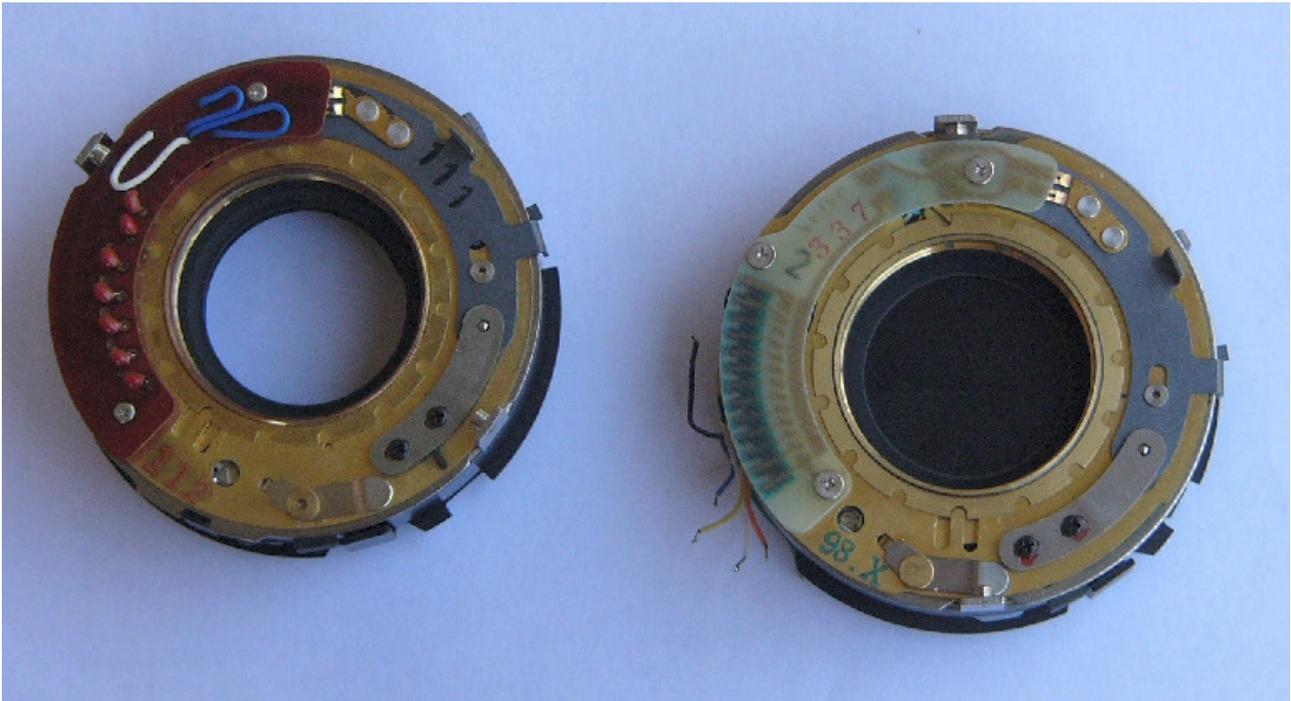
Pin	Shutter wire color	Use
1	Black	Ground, common lead
2	Green	Flash contact
3	Yellow	A/T Switch sense
4	Blue	Electromagnet sense
5	Orange	Magnet (Electromagnet) solenoid
6	White	Diaphragm value

The resistance value between pins 1 and 6 notifies to a metered prism the aperture value.

Notes on the Seiko #0 Shutter

There are 2 types of Seiko shutters:

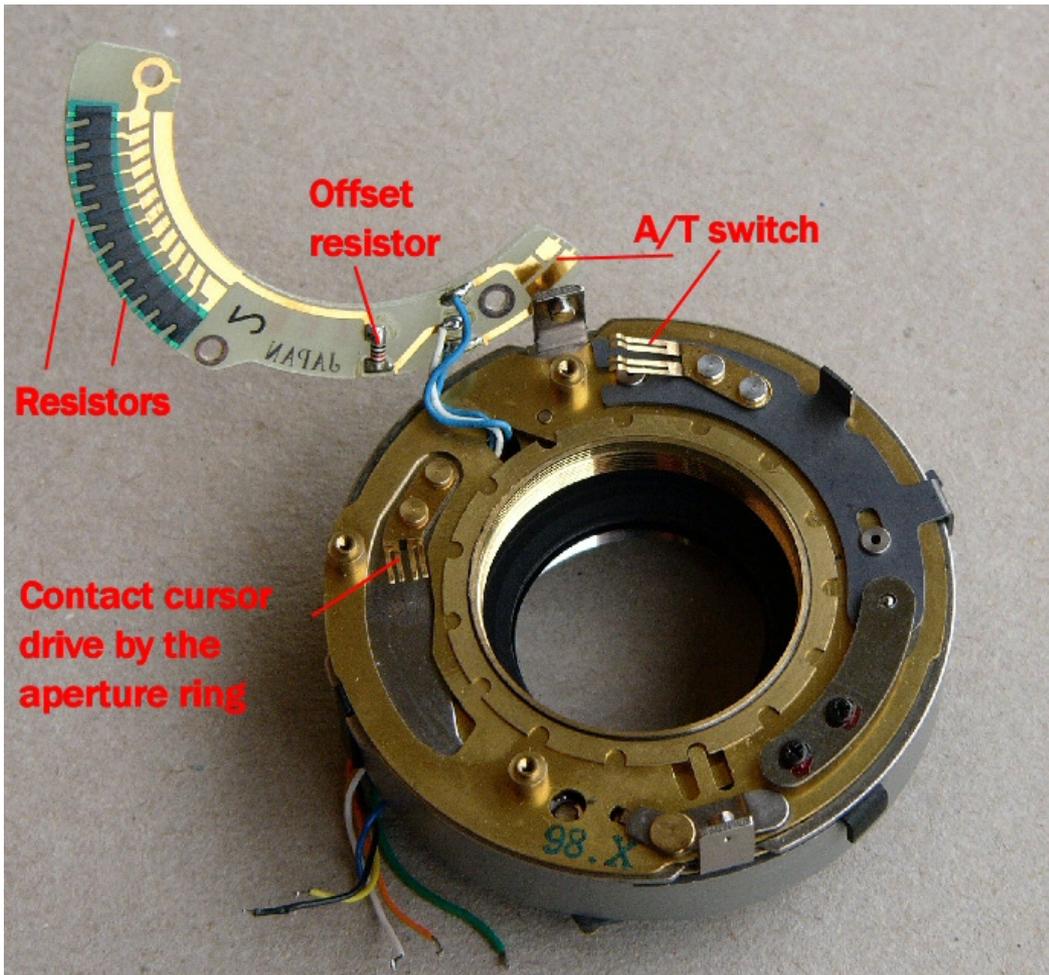
- ❏ Old type used on Zenzanon S, E, MC lenses, it has 7 aperture stops although mechanically it is possible to hold the half position and the diaphragm acts according, the half position isn't notified to the metered prism. It is identifiable by the reddish printed circuit board with seven resistors shaped like pillows on the upper side.
- ❏ New type used on Zenzanon PS, PE lenses, it has 13 aperture stops that include the half positions and it fully notifies that to the metered prism. The circuit board is green without any component on the upper side.



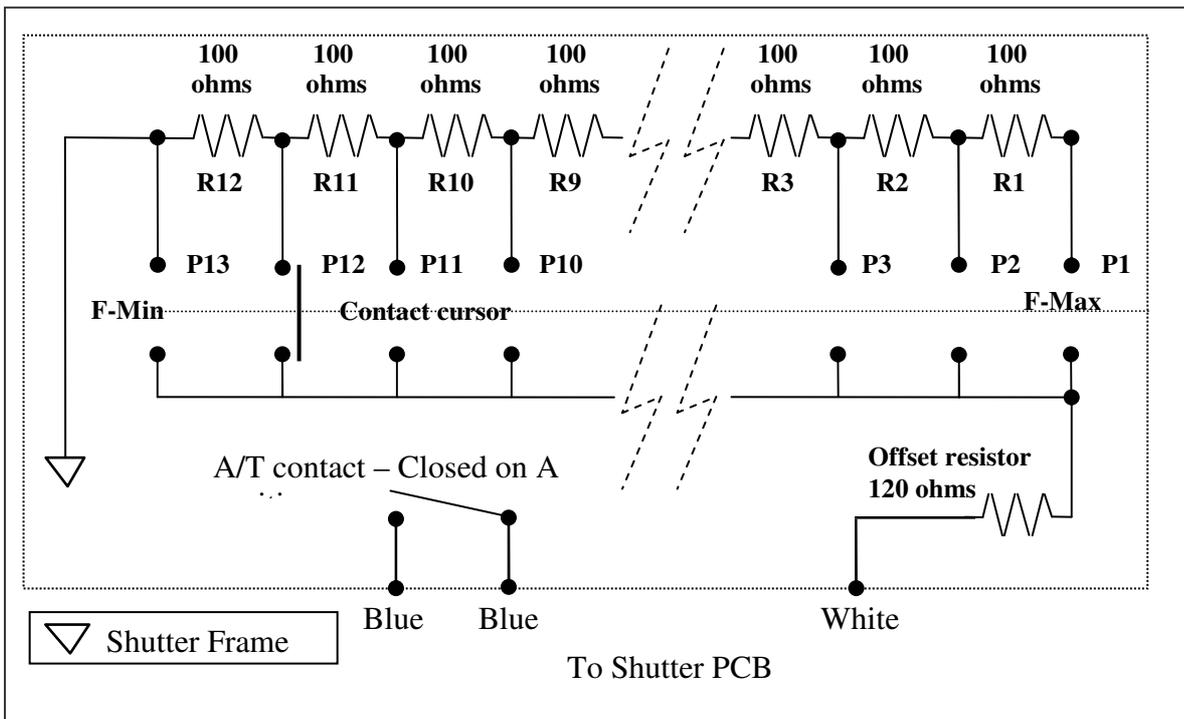
Left, Seiko shutter #0 old type, right the new type.

Old and new type by default shots at 1/500 of second, the limitation of SQ-Ai doesn't shot at this speed with no or dead batteries, is only due to the SQ-Ai body not to the lens.

The shutter must be replaced with the same model; if you replace the shutter with a different model you may lose the correctness of the diaphragm apertures and/or the precision of your metered prism



Diaphragm aperture PCB reverse side on a new type shutter.



Schematic diagram of a new type shutter (PS 150/4 lens) diaphragm aperture circuit.

The lens assembly screws, described in this article, are very easy to damage and very hard to find as spare parts, we could provide a complete set, refer to www.buonaluce.com for more information.

Links

Tools Micro-Tools www.micro-tools.com

ASG: <http://www.asg-jergens.com>

Moody Tools: <http://www.moodytools.com>

Useful information on SQ and ETR systems By Danny Gonzalez

<http://medfmt.8k.com/mf/gbronica.html>

Medium Format Digest Forum - Bronica on photo.net http://www.photo.net/bboard/q-and-a-one-category?topic_id=35&category=Bronica

Information on the SQ system at Tamron (looking around you can find information on the ETR system) http://www.tamron.com/bronica/sq_guide.asp

Edwin Leong Bronica Tips at CameraHobby.com http://www.camerahobby.com/Photo-Bronica_Tips.htm

Camera Fix Hobbyist Camera Repair Group <http://groups.yahoo.com/group/camera-fix/>

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