

notes

BAUSCH & LOMB Scientific Optical Products Division

August 1973
No. 2

*Frank
align of Stereo*

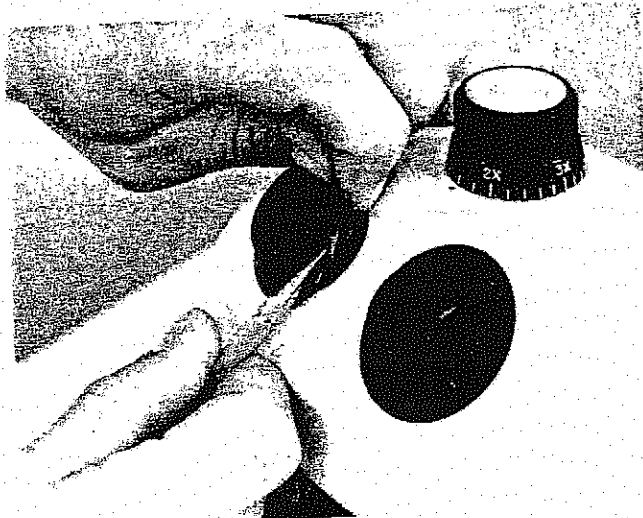
PROCEDURE FOR ROUTINE MAINTENANCE OF 312701 STEREOZOOM POWER POD



I. Checking Pod For Mechanical and Optical Alignment

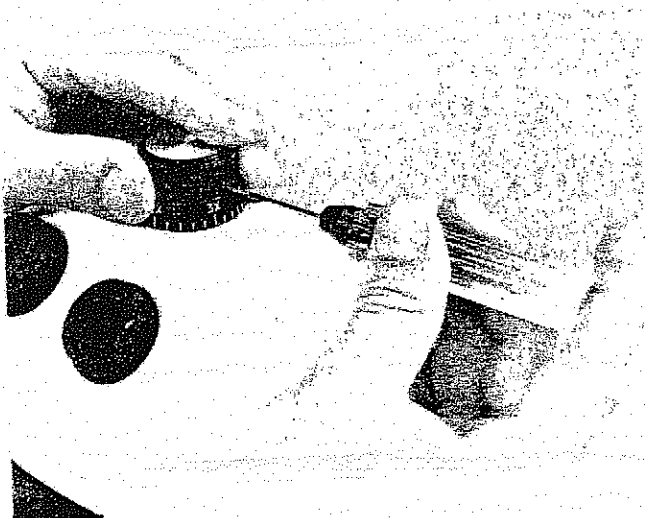
1. Place Power Pod in stand.
2. To check for centration, first insert an eyepiece with crosshair reticle (e.g. 310562 with 311603) into one of the eyepiece adapters.
3. Place a crossline centering slide (311695) on the base; turn zoom magnification to highest power; and adjust slide so that crossline coincides with eyepiece reticle.
4. Turn zoom magnification knob to lowest power and observe displacement of slide and reticle. DO NOT REFOCUS.
5. If displacement is within $1/16$ " and image focus is acceptable, repeat steps 2, 3 and 4 with the other eyepiece adapter.

Return the Power Pod to the factory for repair if any of these three conditions occur in either optical train: if image displacement is greater than $1/16$ "; if focus is unacceptable; if image "jumps" in and out of focus during zoom.

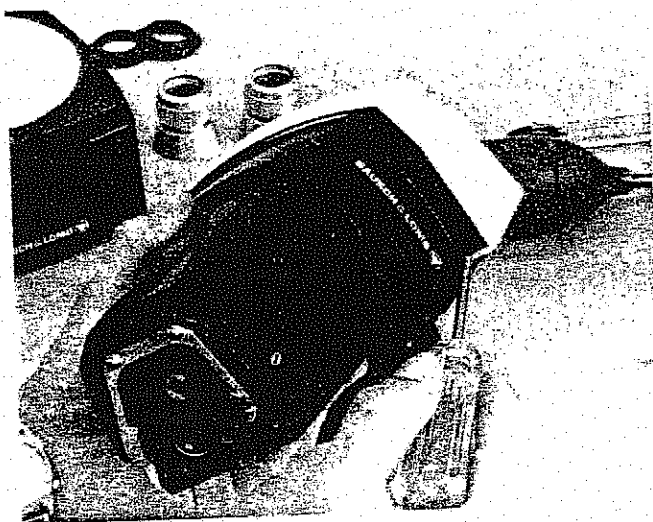


II. Lubricating The System

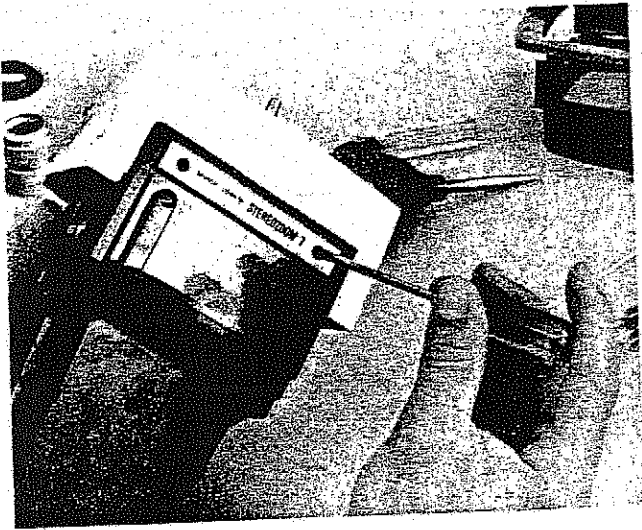
1. Remove eyepiece adapters by unscrewing counterclockwise.
2. Lift dust seals with jeweler's screwdriver. Pull free.



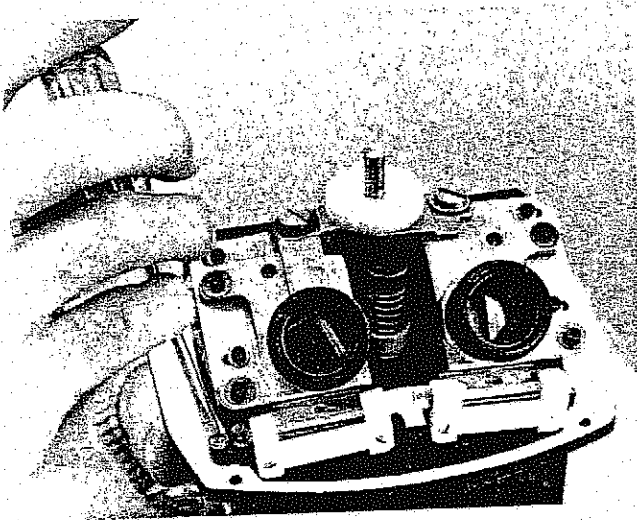
3. Remove zoom magnification knob with 0.050" Allen Wrench.



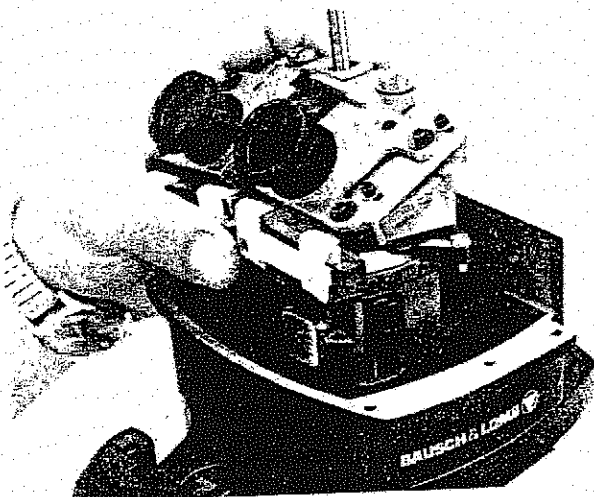
4. Remove four screws on bottom of cover, using 0.109" Allen Wrench. (Some of the newer units will have slotted screw heads.)



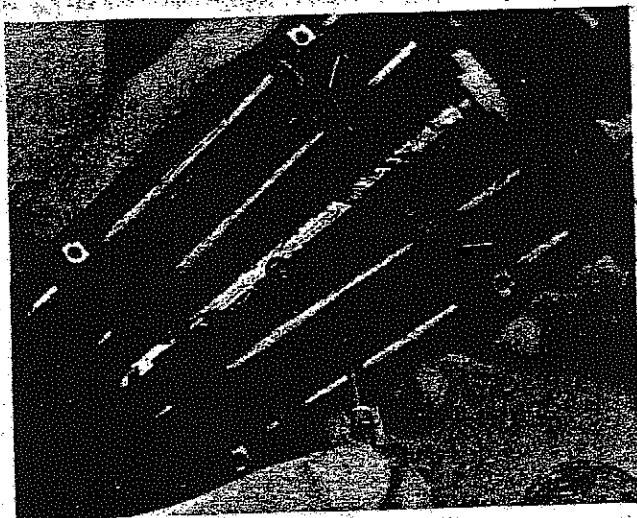
5. Remove two screws from back cover, using conventional screwdriver.
6. Lift top cover free.
7. Remove foam dust ring from shaft and gear assembly (#22 in illustration).



8. Remove three screws securing optical unit to lower housing using conventional screwdriver.



9. Lift inner unit free.



10. Remove original grease from guide rods with a brush.
11. Relubricate rods with KG-207 using a brush.
12. If necessary, lubricate cam with KG-207-44 Mix.

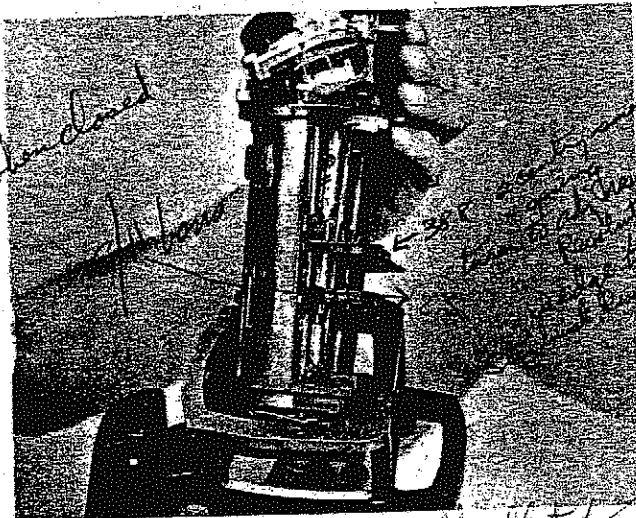
CAUTION: Do not touch lens surfaces when lubricating.

III. Cleaning The Optics

To clean the optics, you will need a German silver pick or orange wood, wrapped with lens tissue dipped in solvent. (Use Acetone or Ether for solvent.)

Insert optical unit into work housing (a modified 312701-425). Replace zoom magnification knob and eyepiece adapters.

The work housing goes into a "B" type stand (312684-88).



Focus with flat target

① if out at low + focus dia pull up if out and gets better screw it till sharp image of lead

② worse - screw down zoom back to high - adjust lens

2. Look through one of the eyepiece adapters. Using the zoom magnification knob, you can focus on air surface of each lens as you clean it.

Use a 315701-000 dark field stop on the stage to aid in detecting any foreign particles in the optical system.



Yoke - 2-050 push pull left side - do not touch C/A after adjusting to High on R/S check High/Low left side long with linear USFP then work for High if any

On center fade out

Focus high & zoom to fade out & focus at focus out
zoom back to high & adjust lower yoke till high in focus
zoom to low & adjust low till low in focus

Left side Middle fade out.

Drop from high to where fade out zoom to high
& adjust upper top yoke.

Centeration

Slide

Center X line ~~EP~~ to EP X at high, zoom to
low - Center at low lay adj rods. adjust outside
of side & inside ~~EP~~ rods from front.
zoom to high and adjust slide, zoom to low & adjust rod
repeat till centered.

at High Power ~~more~~ 388. Lens to center, zoom
to low & adjust rods.

Rod only adjusts at lower power.

Center slide to High power & see where low falls

adjust low ~~low~~ high with rods then center High
G/H lens.

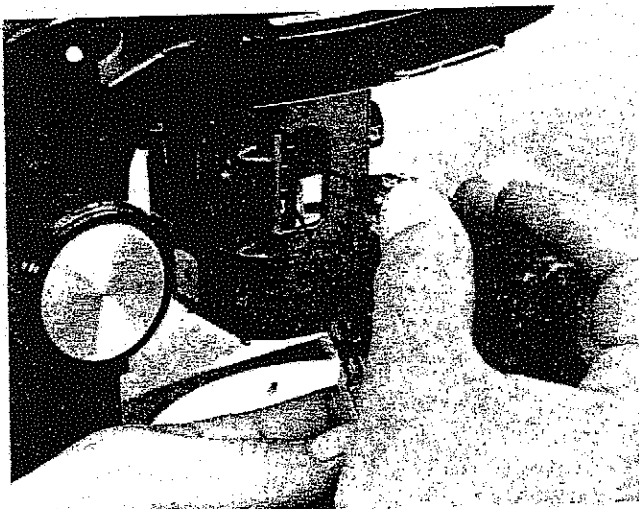
With



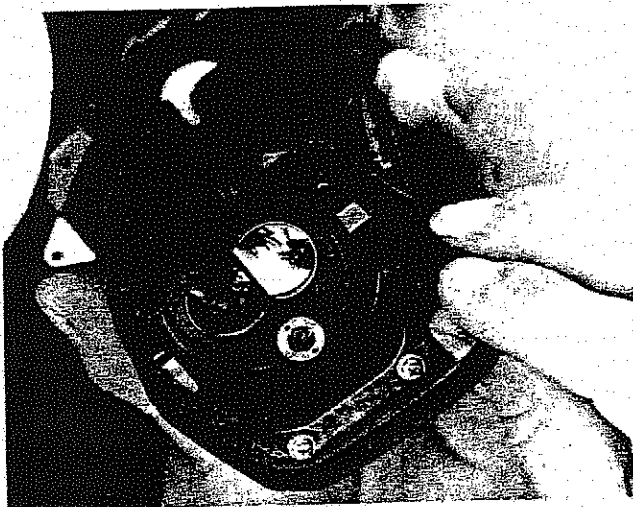
IV. Adjusting The Optical System

1. Secure optical unit in work housing with three screws. Insert 15X eyepiece into right eyepiece adapter.
2. Turn zoom magnification knob to highest power. Focus on crossline centering slide (311695).
3. Turn zoom magnification knob to lowest power.

Loosen set screw (#6 in illustration) on eyepiece ring, and adjust ring for best focus. Resecure set screw.

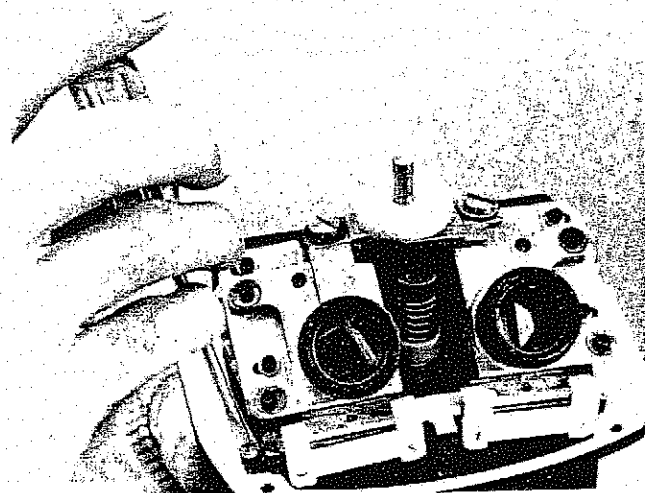


4. Remove eyepiece and place into left eyepiece adapter. While still at low power, adjust eyepiece focusing ring for best focus. Do not refocus with coarse adjustment.
5. Turn zoom magnification knob to highest power and check focus.
6. If focus adjustment is necessary, adjust the two screws in the lower yoke (#23 in illustration). Using two 0.050" Allen Wrenches, simultaneously loosen one screw while tightening the other until sharp focus is achieved.

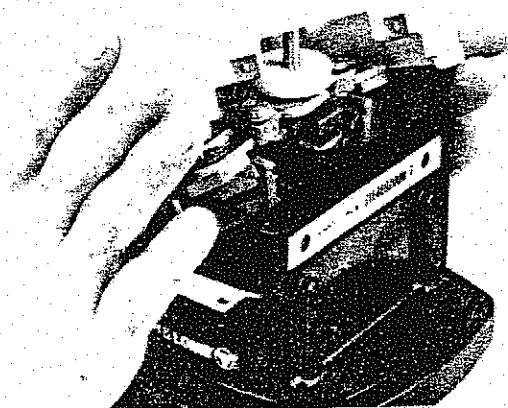


V. Reassembly

1. Turn zoom magnification knob to lowest power. This will enable you to easily reposition the knob later.
2. Remove zoom magnification knob and eyepiece adapters.
3. Remove the screws that secure the optical unit in the work housing and carefully lift the unit free.
4. Replace gasket (#9 in illustration).

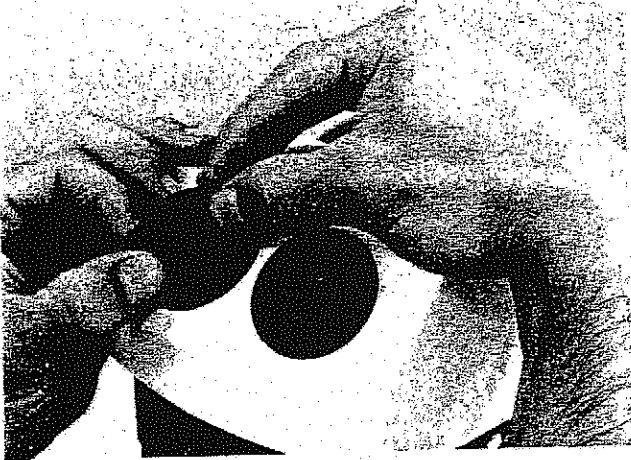


5. Place unit into lower housing and secure with three screws.



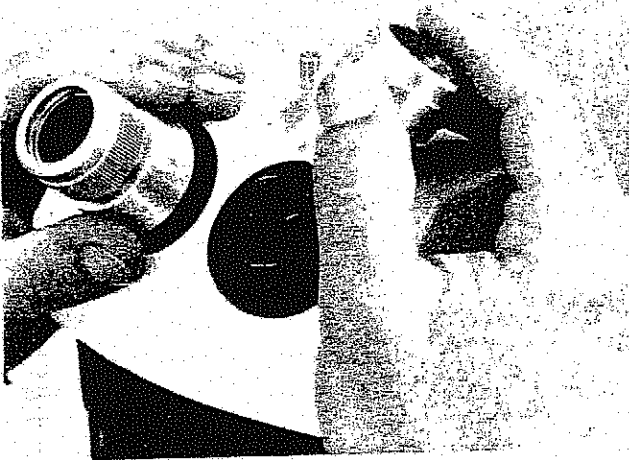
6. Replace foam dust ring onto gear and shaft assembly (#22 in illustration), and replace top cover. Secure with four screws on the bottom and two at the rear.

7. Replace dust seals.



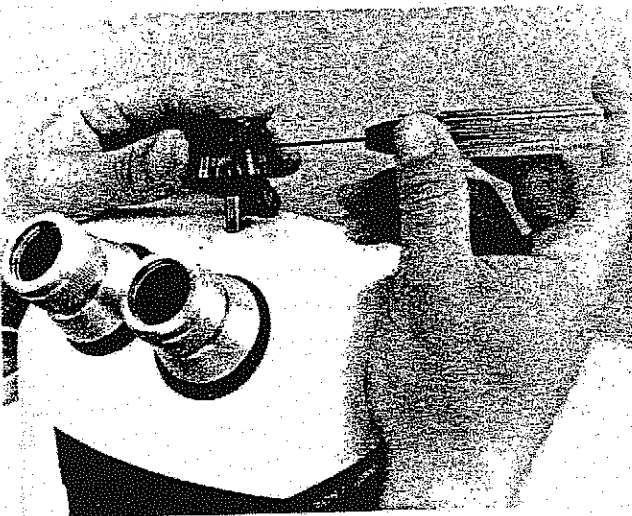
8. Replace eyepiece adapters. Turn in clockwise direction. Do not disturb eyepiece adjusting rings (#8 in illustration).

Apply PZ-409 to external thread of left eyepiece adapter. The right eyepiece adapter is "fixed." The left eyepiece adapter is "adjustable."



9. Replace zoom magnification knob. Set at 1X against stop -- aligns with red dot. Secure set screw.

10. Install eyepieces and check full travel of zoom magnification knob. If image "jump" occurs at either end, readjust slightly (Step 9).



Align / EP tube up or down

R.S.

If out when zoom raise image then adjust relay lens up.
(Relay under mirror)

If won't clear up by lifting up EP screw relay down

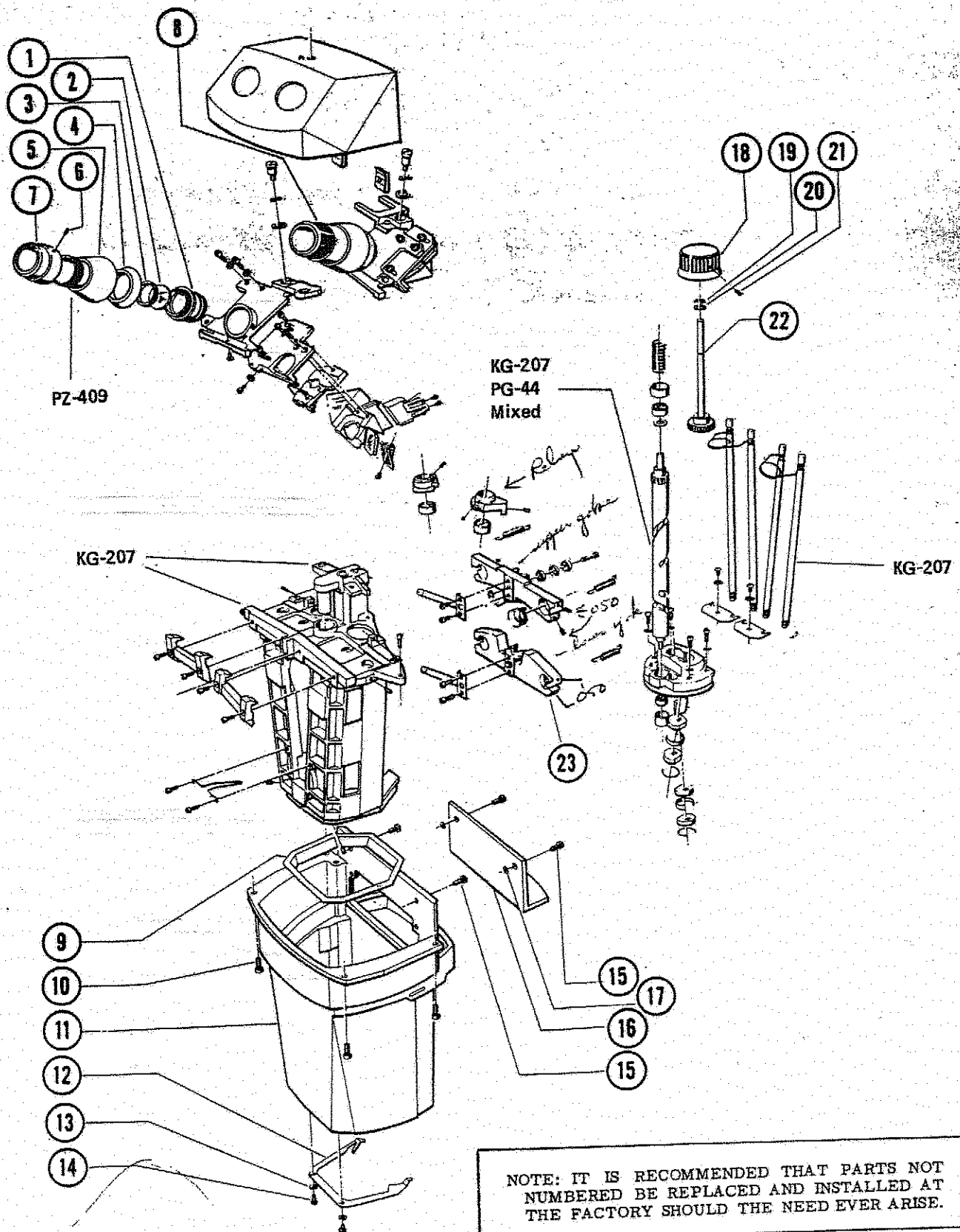
L.S.

Adjust EP tube till low in focus

zoom to high

If high out - adjust lower yokes - tighten one loosen the other

Centricity - R/S -



94

Focus - Right side CA on stand to High Power Zoom to low if low out
adjust top lens to shape - zoom & high & low focusing
& low & high focus top lens

Left side - zoom & high - if out adjust bottom lens to high high
zoom to low and adjust top lens. Adjust low lens
after adjusting zoom back to High

If can't get h/s in get new starty part on High
or right side

Centration R/S Move slide till zoom straight, move mirror till
circle
in eye

R/S Don't move slide - move EP mount (bottom) move
zoom straight & adjust mirrors till get in circle.

Jump is caused by springs on mount & need shims - sticky grease
" at top or bottom - zoom gear not meshing with cam gear.
When one side turns before other or zoom gear it will jump
loosen two screws till meshes even & apply grease cam.

Slide out R/S take all shims in upper left in cam carrier.

If TPD out - loosen top screw on bar move bar to right
& see result - If does fine if doesn't move other way
R/S + h/s same

✓ Magnif - Focus High on May scale 813438.02'

STEREOZOOM 7 POWER POD, CAT. NO. 31-27-01

KEY	DESCRIPTION	PART NO.
1	Tube	312701-438
2	Dust Cover	312701-047
3	Snap Ring	312701-437
4	Dust Seal	312701-410
5	Adapter (left)	312701-234
	Adapter (right) Not Exploded	312701-325
6	2 -64 x 1/16 Set Screw	312701-379ND
7	Eyepiece Ring	312701-235
8	Eyepiece Adjusting Ring	312701-236
9	Gasket	312701-356
10	6-32 x 1/4 Fillister Hd. Screw	312701-436ND
11	Lower Housing	312701-425-510 77 ¹¹
12	Mounting Spring	312701-349
13	1/8 x 1/4 Dia. Washer	312701-351ND
14	4-40 x 1/4 Phillips Hd. Screw	312701-308ND
15	6-32 x 1/2 Fillister Hd. Screw	312701-400ND
16	Cover Plate	312701-393
17	F-332 Washer	90008-463
18	Knob	312701-312
19	Tru-Arc 5103-25	312701-302ND
20	F-310 Washer	90008-378
21	4-40 x 1/4 Set Screw	315882-105
22	Gear & Shaft Assembly	312701-408
23	Lower Yoke	312701-464