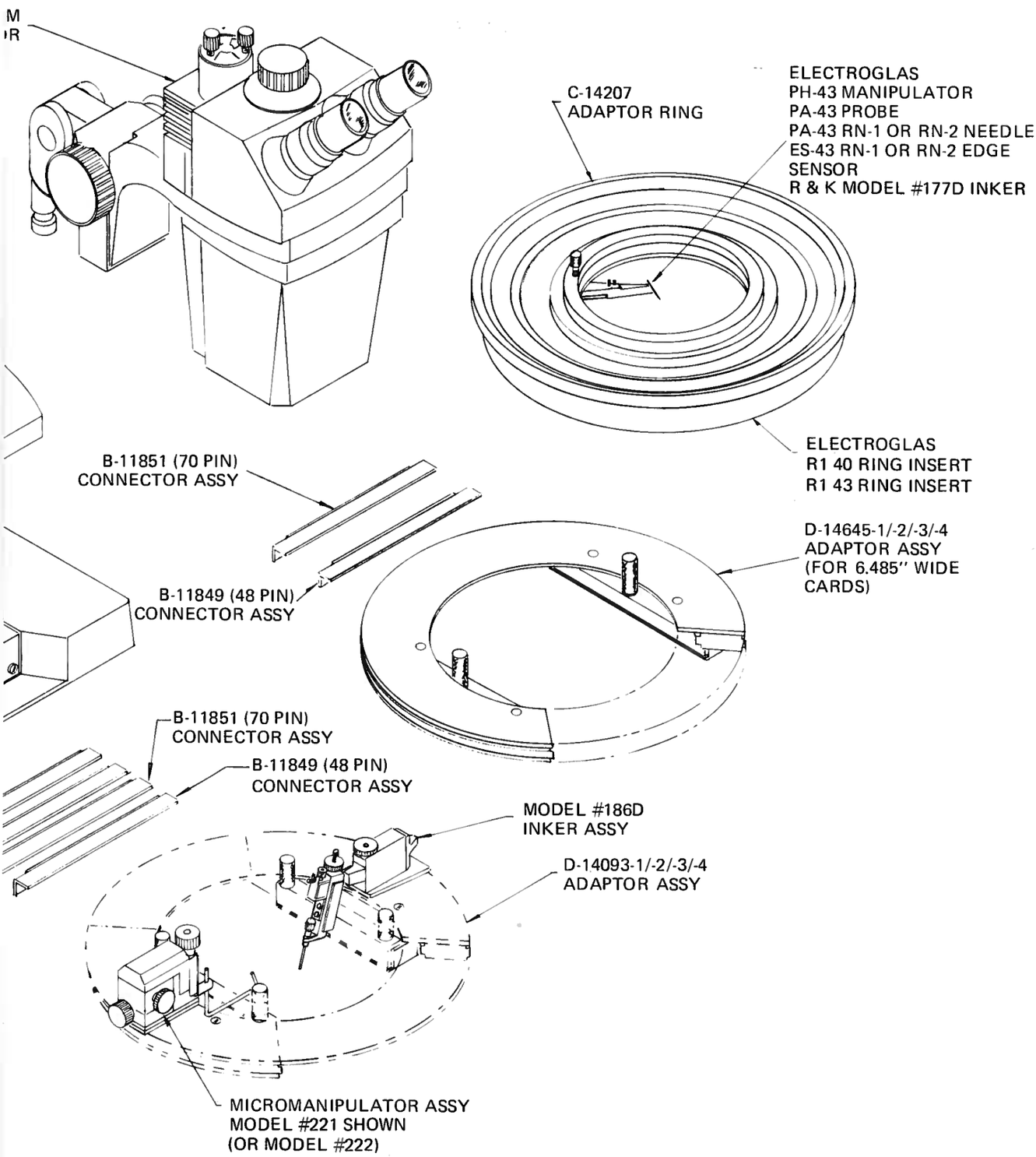
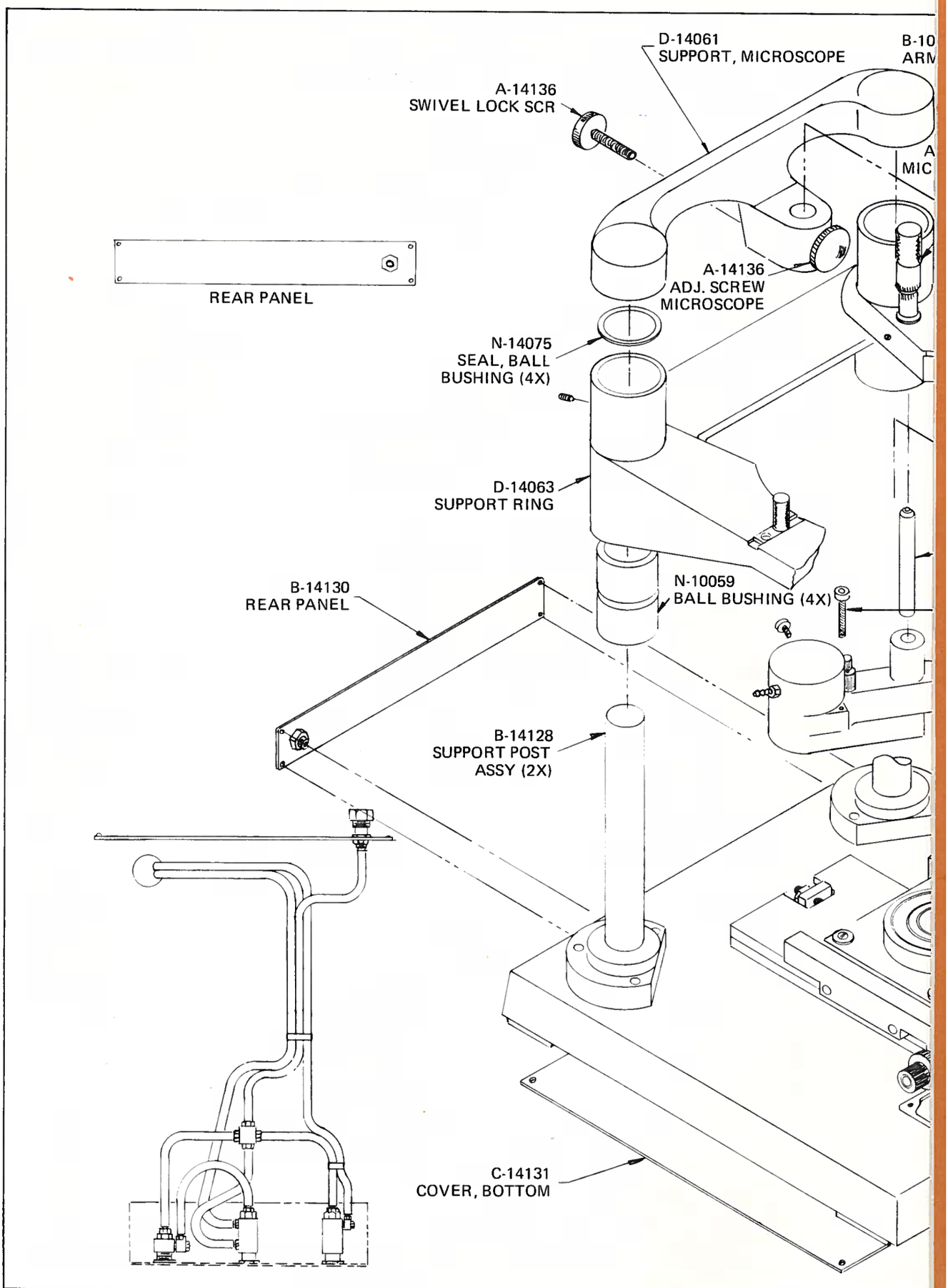
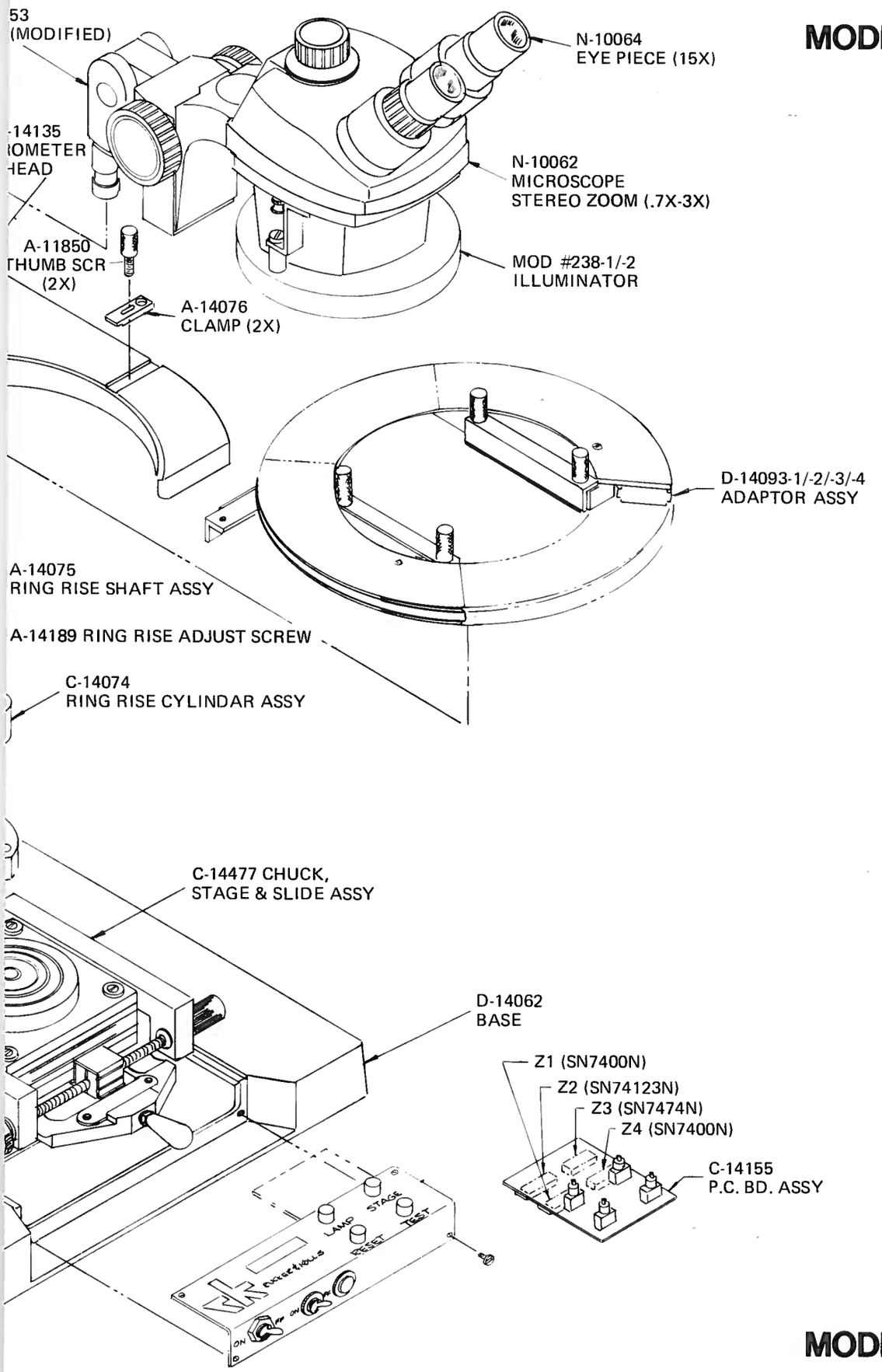
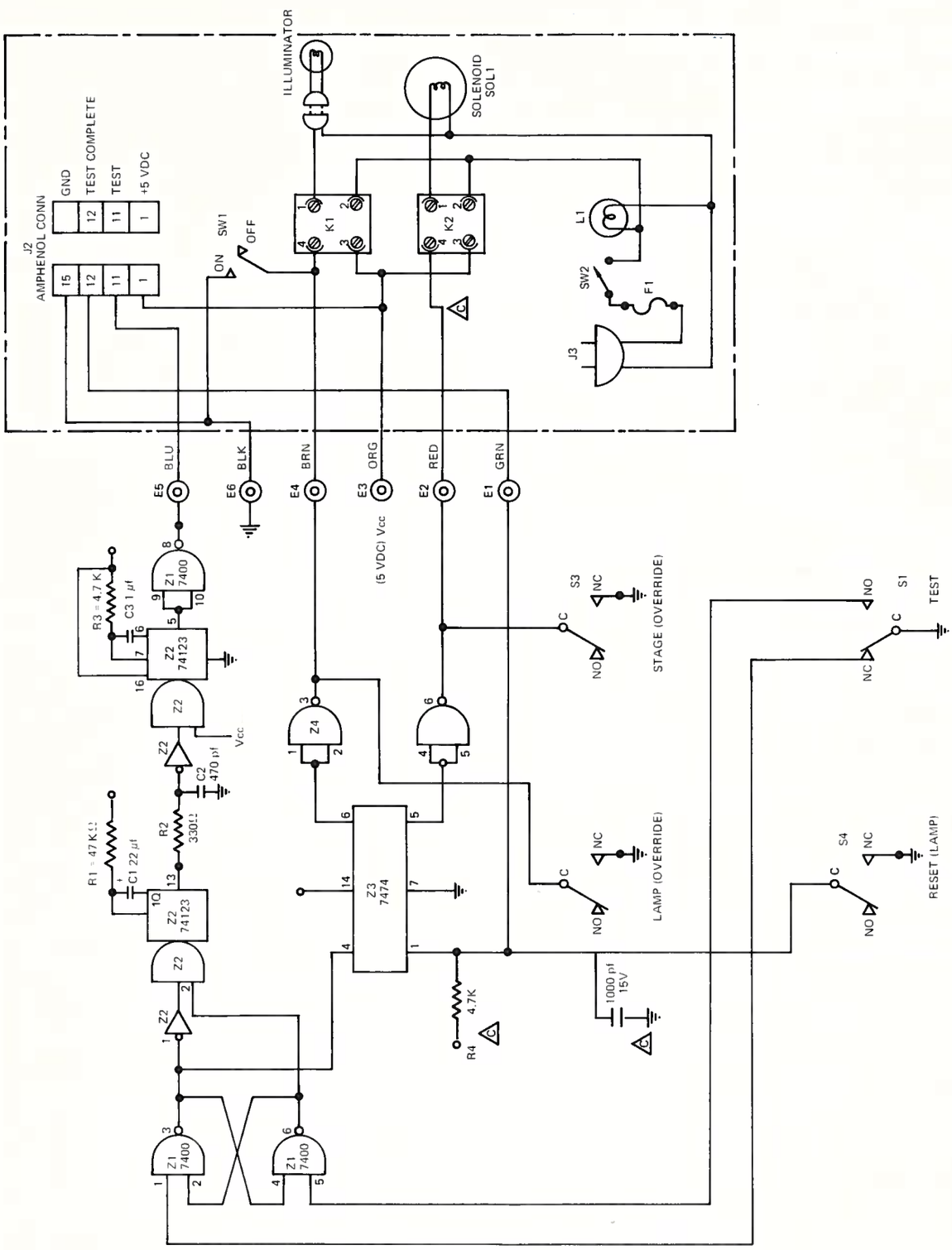


ACCESSORIES


D-14061
SUPPORT, MICROSCOPE
B-10
ARM
A-14136
SWIVEL LOCK SCR
A
MIC
REAR PANEL
A-14136
ADJ. SCREW
MICROSCOPE
N-14075
SEAL, BALL
BUSHING (4X)
D-14063
SUPPORT RING
B-14130
REAR PANEL
N-10059
BALL BUSHING (4X)
B-14128
SUPPORT POST
ASSY (2X)
C-14131
COVER, BOTTOM


53
(MODIFIED)
-14135
OMETER
HEAD
A-11850
THUMB SCR
(2X)
A-14076
CLAMP (2X)
N-10064
EYE PIECE (15X)
N-10062
MICROSCOPE
STEREO ZOOM (.7X-3X)
MOD #238-1/-2
ILLUMINATOR
D-14093-1/-2/-3/-4
ADAPTOR ASSY
A-14075
RING RISE SHAFT ASSY
A-14189 RING RISE ADJUST SCREW
C-14074
RING RISE CYLINDAR ASSY

C-14477 CHUCK,
STAGE & SLIDE ASSY
D-14062
BASE
Z1 (SN7400N)
Z2 (SN74123N)
Z3 (SN7474N)
Z4 (SN7400N)
C-14155
P.C. BD. ASSY
STAGE
LAMP
RESET
TEST
ON
OFF



MODEL 240
Schematic & Wiring Diagram

Model 260 (only):

Check the movement of the manually-actuated ring assembly — fine adjustment portion first. Grasp one of the handles and rotate it rearward approximately 30° — this amount of handle movement will raise the ring assembly of .020±.005". At this point, the pressure required to move the handle will increase; further movement of the handle will cause additional vertical travel of the ring assembly, but at a greater rate per unit of handle movement than was the case in the fine adjustment portion. Total movement of the ring assembly should be approximately .250" (minimum) with .750" as an optimal distance.

All Models:

Center the optics field of vision (use a low magnification level) by placing a probe card in the card clamps and adjusting the optics from side to side (you may need to loosen the optics lock nut). "In & out" adjustment (i.e. Y axis) is accomplished by rotating the tilt adjust nut clockwise to move the optics to the rear of the station and counter-clockwise to move the optics to the front of the station. You will, of course, need to re-focus after these adjustments.

NOTES:

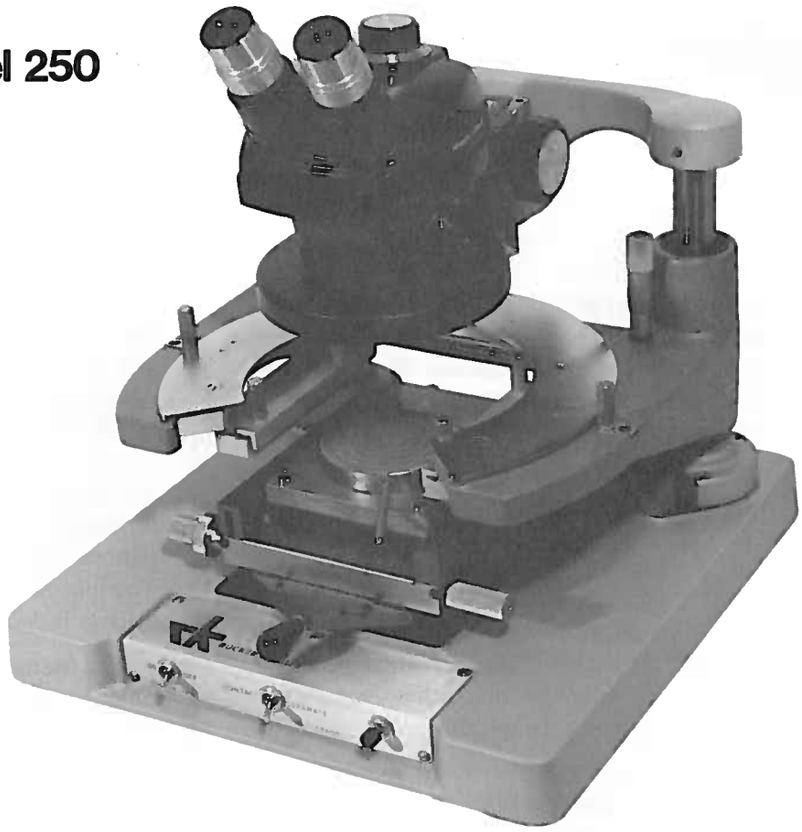
SET-UP PROCEDURES: MODELS 240 & 250

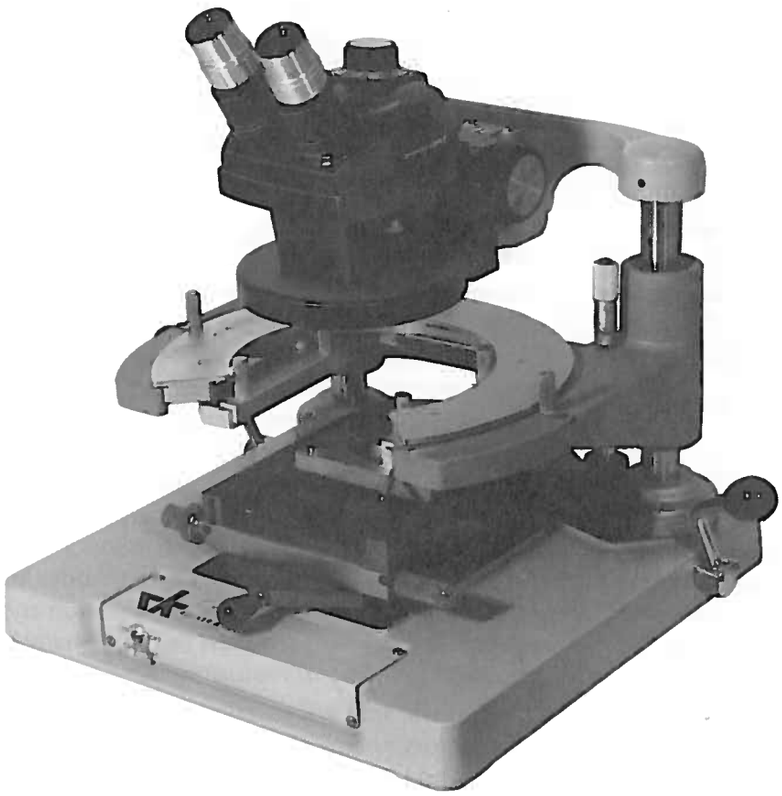
1. Install optics and illuminator.
2. Connect 5 volt power supply to tester connector (with connector provided, pin #1 = 5 volts, pin #15 = gnd, pin #11 test, pin #12 - test complete) for Model 240 only.
3. Connect AC line cord to 115 volt source.
4. Connect illuminator transformer cord to AC receptacle.
5. Connect vacuum line to bulkhead fitting (16" Hg min.)
6. Ring travel is preset at .010 - .012" (may be adjusted to .062).
7. To adjust ring travel, loosen ring rise lock nut, and unscrew adjusting screw.
8. Pull slide into loading position. Place device on chuck and push slide back to center position.
9. Turn micrometer .005 of an inch after probes have touched device (this will give .005 over travel of probes).
10. Every 200 hours (30 days), apply 20 weight oil (3 in 1) to port of ring rise cylinder (approximately 15 drops).

SET-UP PROCEDURES: MODEL 260

1. Install optics and illuminator.
2. Connect vacuum line to bulkhead fitting (16" Hg min.).
3. Pull slide into loading position, place device on chuck and push slide back to center position.
4. Turn micrometer .005 of an inch after probes have touched device (this will give .005 over travel of probes).
5. Downward travel of ring consists of 2 positions, coarse approximately .25 (.75 option), fine .020±.005.

Model 250



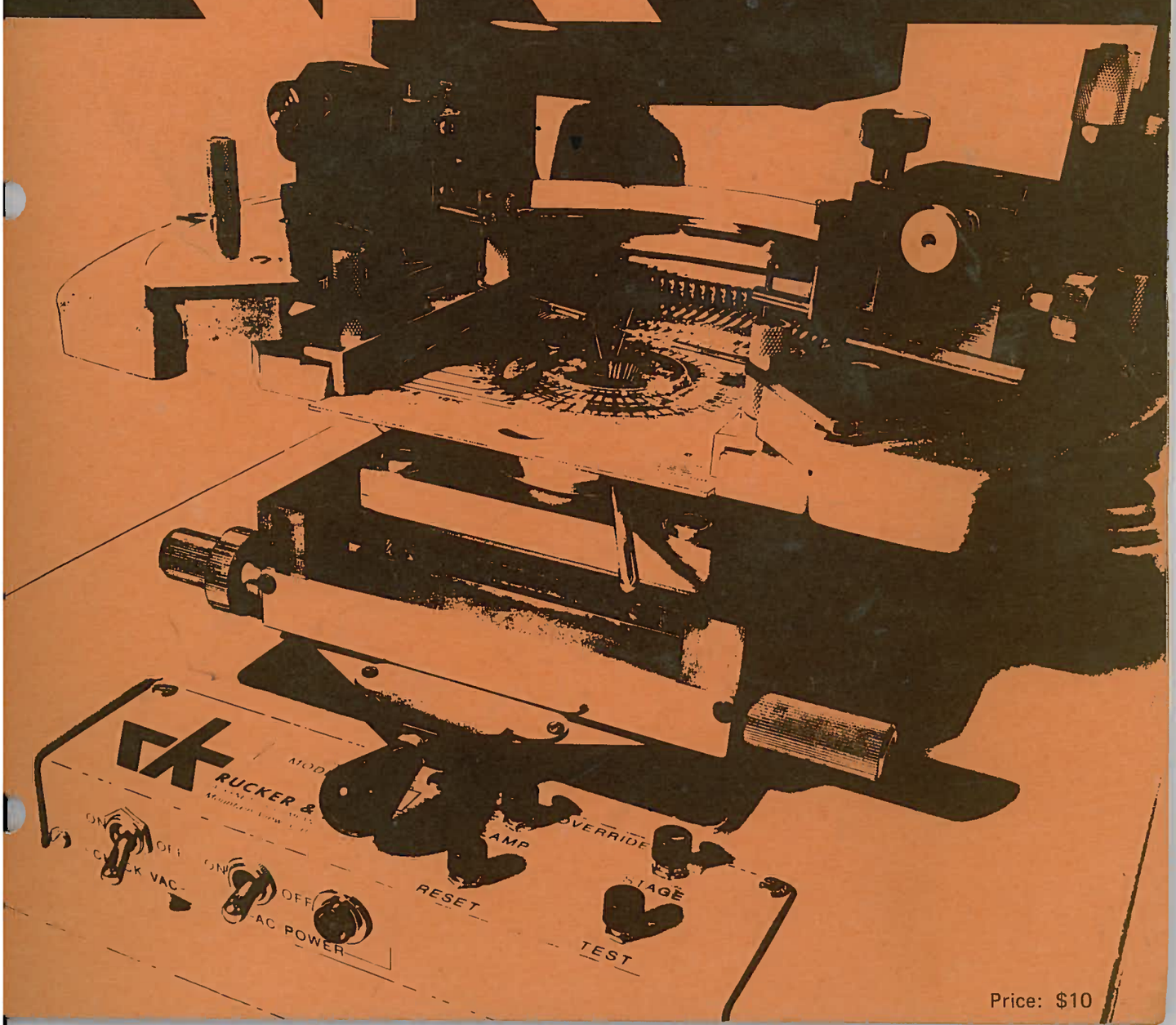


Model 260

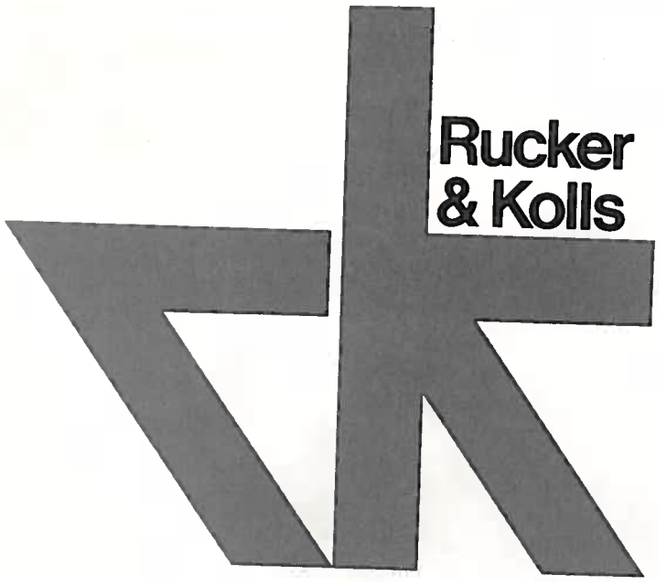
Paul Miller
1/78

INSTRUCTION MANUAL

Model 240
Model 250
Model 260



Price: $10



INSTRUCTION MANUAL

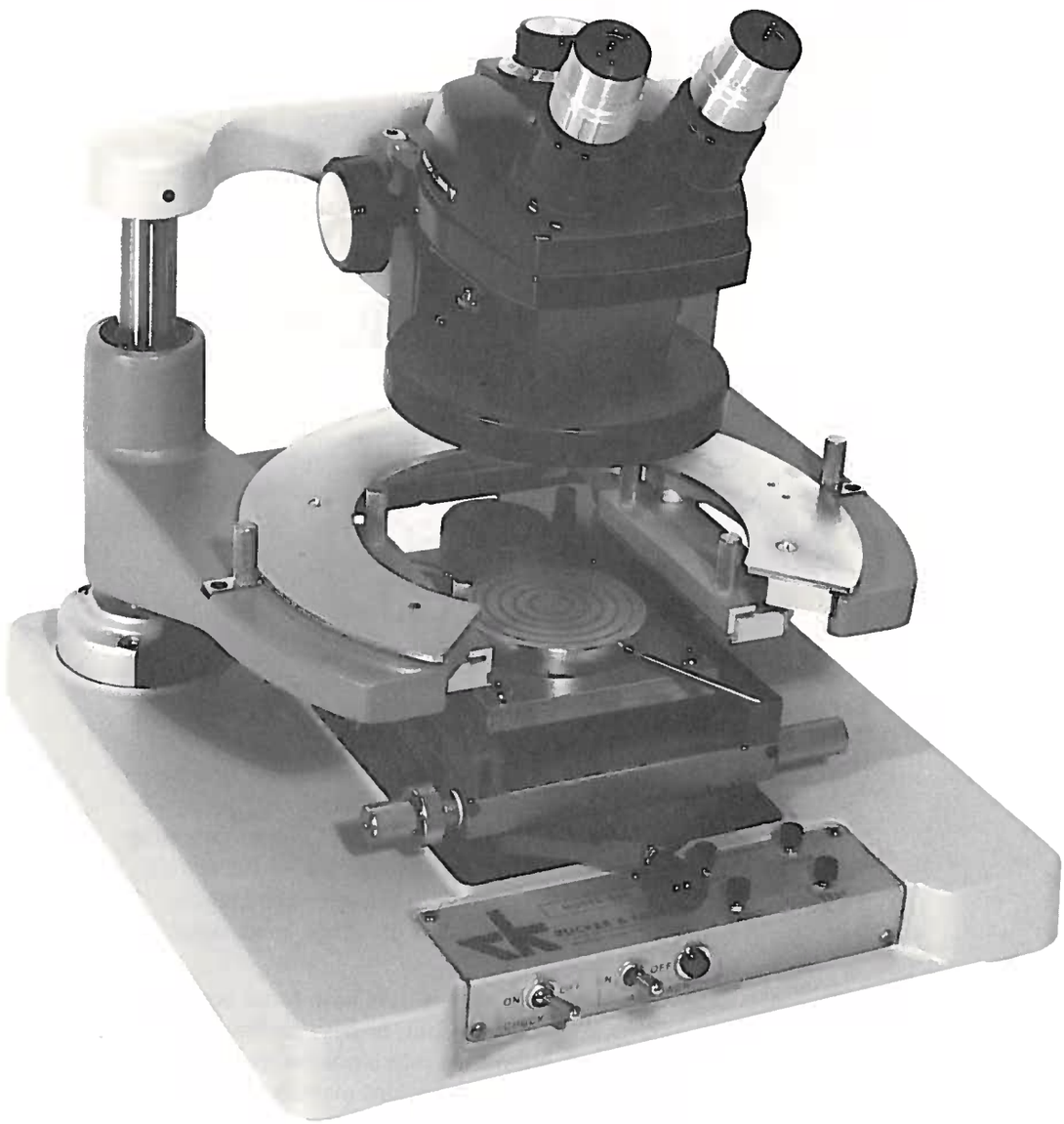
Model 240
Model 250
Model 260

INTRODUCTION

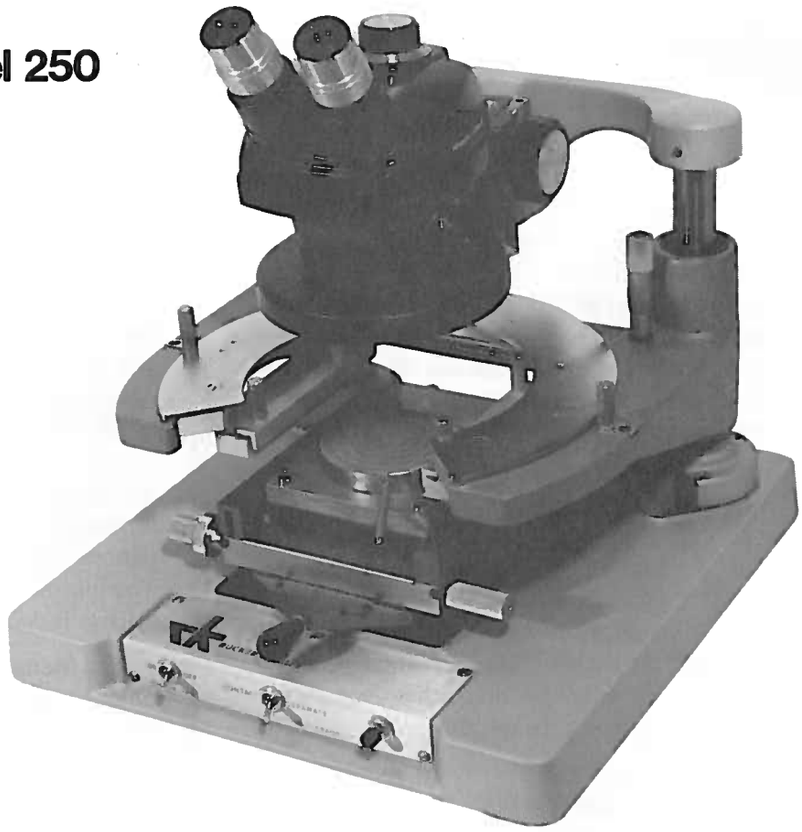
This manual will provide you with the necessary information for using and maintaining your Rucker & Kolls Probe Station. Chapter One deals with initial set-up and general use of the station. Chapter Two deals with general maintenance; Chapter Three contains drawings, schematics, and parts lists.

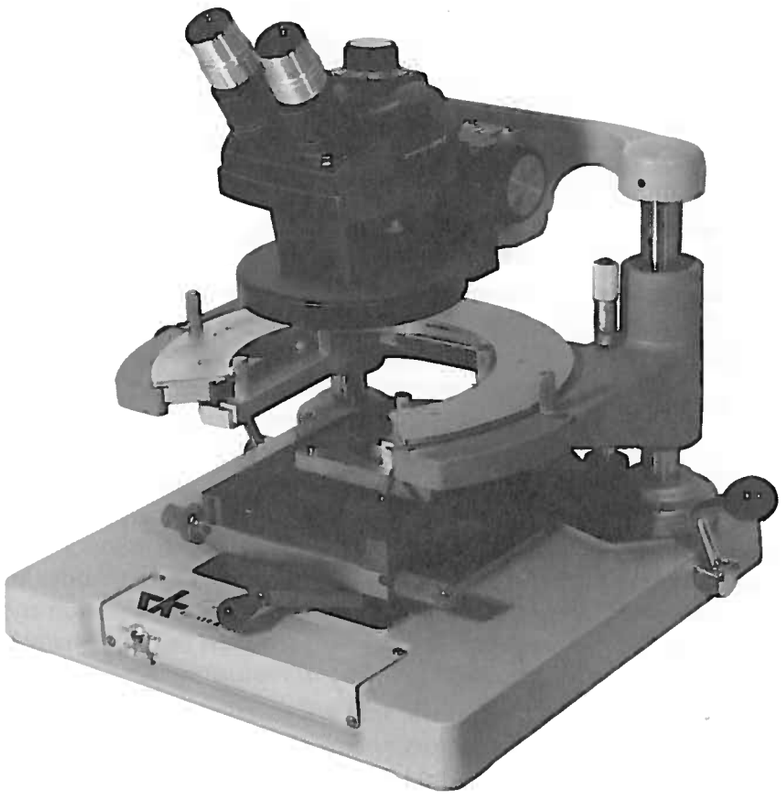
Your station can be used with fixed point probe cards, adjustable probes, or with probe cards and finely adjustable micro-positioners for "autopsy probing." Available options include hot chucks, rotational bases and joystick motion control, hot/cold chucks, higher power optics, co-axial illumination and package testing adaptors. For further information on the use and applications of your station, contact your local R & K representative or Rucker & Kolls in Mountain View, California.

Model 240



Model 250





Model 260

CHAPTER ONE
Set-Up and General Operation

Unpack your unit (carefully!) and inspect it for damage (any physical damage should be reported immediately to the shipping company). Remove the optics pod from its carton and install it on the probe station along with the eyepieces (guard optional) and the illuminator. Note: for the Model 240, the illuminator power source should be connected to the switched AC outlet at the rear of the station.

The table or surface on which you intend to use your station should be flat and relatively free from vibration. A 110V AC, 50/60 Hz Power source is required. (Probe stations for 220V AC, 50 Hz are available). A vacuum source providing a minimum vacuum of 16" of Hg is required for the 240 and 250 models. Prior to connecting either vacuum or power, check that the appropriate control switches are turned "off".

Now you are ready for a brief check of the mechanical portion of the station. For shipping purposes, the micrometer has been adjusted to remove all weight from it; you should now adjust it clockwise to raise the probe ring to about the midpoint of its travel. Loosen the rotation lock nuts on the card adaptor and rotate the adaptor CCW to its stop; then CW to the other stop; then re-tighten. (The adjustment just checked is provided to align the X-Y axis of the probe card or adjustable probe assembly to the station's X-Y stage assembly for step & repeat probing operations). Next, check the operation of the X-Y & Theta controls of the stage and chuck assemblies.

Model 240 (only):

The Model 240 requires a 5V DC power source (less than 10% ripple) connected to the back panel connector marked "tester" to enable the logic in the station to function. Connect +5 VDC to pin #1 and gnd to pin #15. Place a wafer on the vacuum chuck and place the vacuum switch to the "on" position. Turn on the probe station AC power switch (red pilot lamp will now be on). Apply the 5V DC (from a separate power supply or may be supplied from your tester). Depress the "reset" button. Then depress the "stage" button. The ring assembly will remain in the down position for as long as you keep the button depressed. Depressing the "test" button causes the ring assembly to lower, a "Start Test" pulse to be generated at pin #11 on the "tester" connector, and the illuminator to be extinguished (if the switch labeled "lamp" — on the rear panel — is in the "on" position. If the switch is in the "off" position, the illuminator will not be switched but will remain "on."). During this sequence, the illuminator may be momentarily activated by depressing the "lamp" button on the front panel. The illuminator will stay on for as long as the button is depressed.

The Model 240 will remain in this state until one of two things occur: either an "End of Test" Signal is received at pin #12 of the connector or the operator depresses the "reset" button on the front panel.

You will find your station has been pre-set at the factory to provide .010 - .012" of travel in the Z axis, however, this dimension can be easily changed by adjusting the knob and lock nut (identified as the "ring rise adjust screw") from 0" to .062".

Model 250 (only):

Check the operation of the vacuum Z motion by first loading a wafer on the vacuum chuck, turning the switch identified as "chuck vacuum" to the "on" position, and depressing the button marked "stage". Depressing the button will cause the probe ring to remain lowered as long as the button is depressed; the ring assembly will return to an elevated position when the button is released. When the toggle switch marked "stage.. contact/separate", is in the "contact" position, the ring will move to the lowered position and *remain* there; when switched to the "separate" position, the ring will return to its raised position.

You will find your station has been pre-set at the factory to provide .010 - .012" adjusting the knob and lock nut (identified as the "ring rise adjust screw") from 0" to .062".

CHAPTER TWO
General Maintenance:

Your probe station has been designed to provide maximum trouble-free service provided that normal care is exercised in its use and routine service is performed. Please refer major problems to your local R & K representative or directly to the factory.

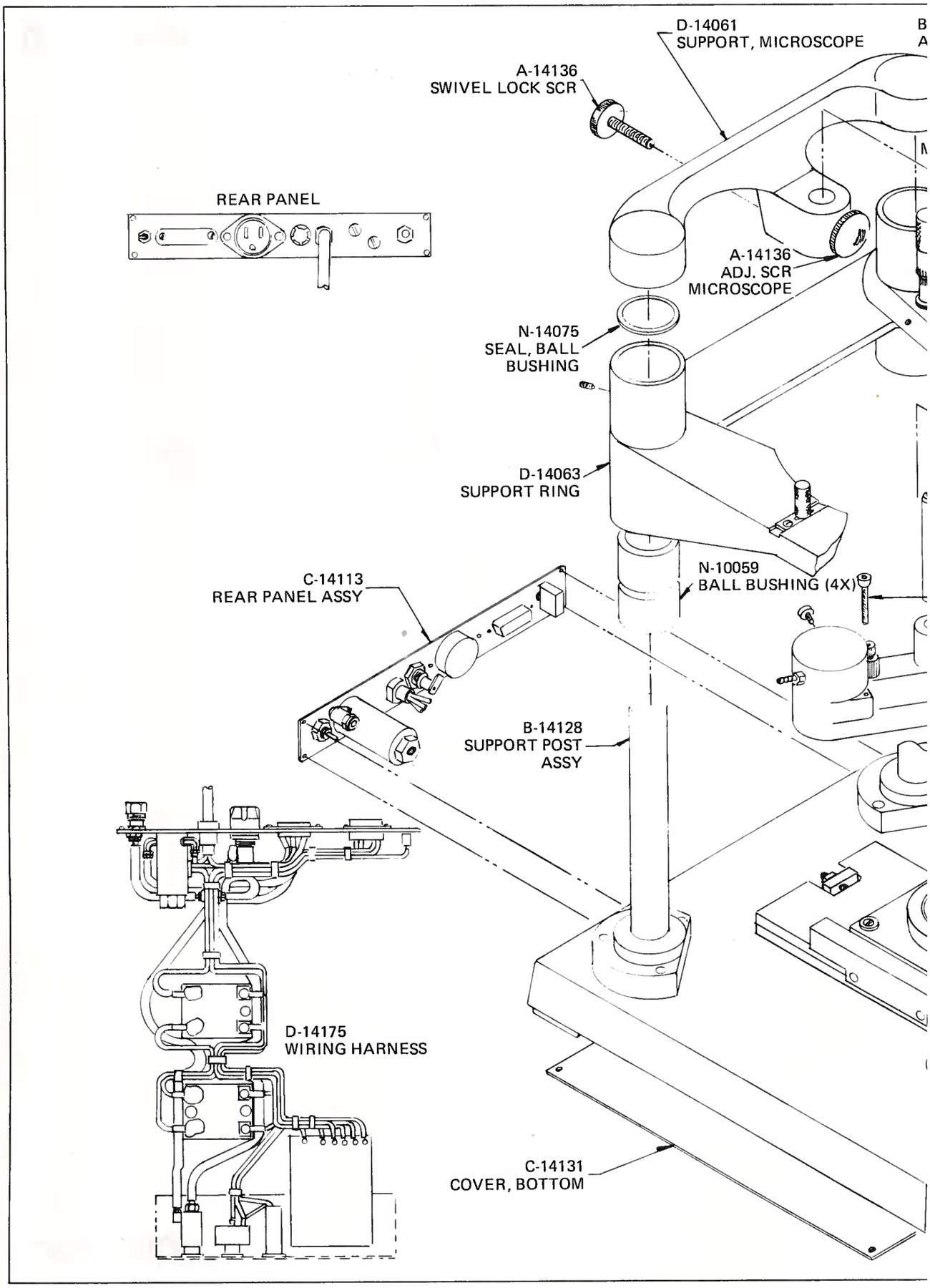
Once every 30 days of operation:

1. Deposit 3-5 drops of light machine oil or equivalent into the port marked "oil" on the ring rise cylinder assembly.
2. Lift the ring assembly and wipe the two vertical stainless steel posts with a cloth saturated in light machine oil (apply sparingly).
3. Position the load-slide assembly all the way to the front stop and wipe the two horizontal shafts with light machine oil as in Step 2.
4. Raise the ring rise assembly and deposit one drop of light machine oil on the top of the ring rise shaft.
5. Check all controls and functions for excessive freeplay.
6. Using an R & K Model 157 Kit (or equivalent) insure that the ring assembly is planar with the chuck assembly.

Once every 120 days of operation (co-incident with the 30 day maintenance schedule):

1. Lightly grease the microscope focus rack using moly-grease.
2. Remove the X-Y stage from the station; apply moly-grease sparingly to the points of wear and light machine oil to the cable.

NOTES: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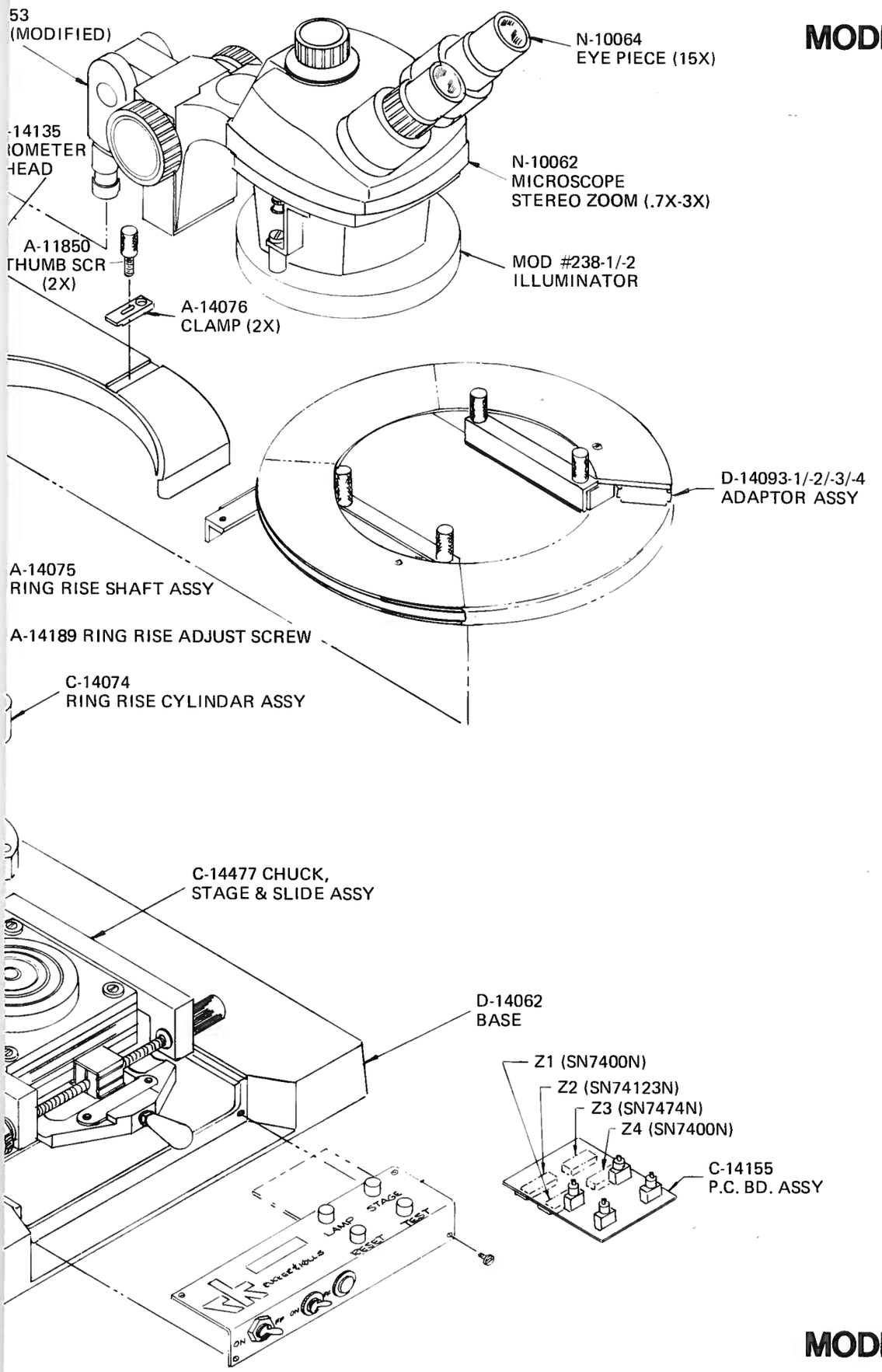
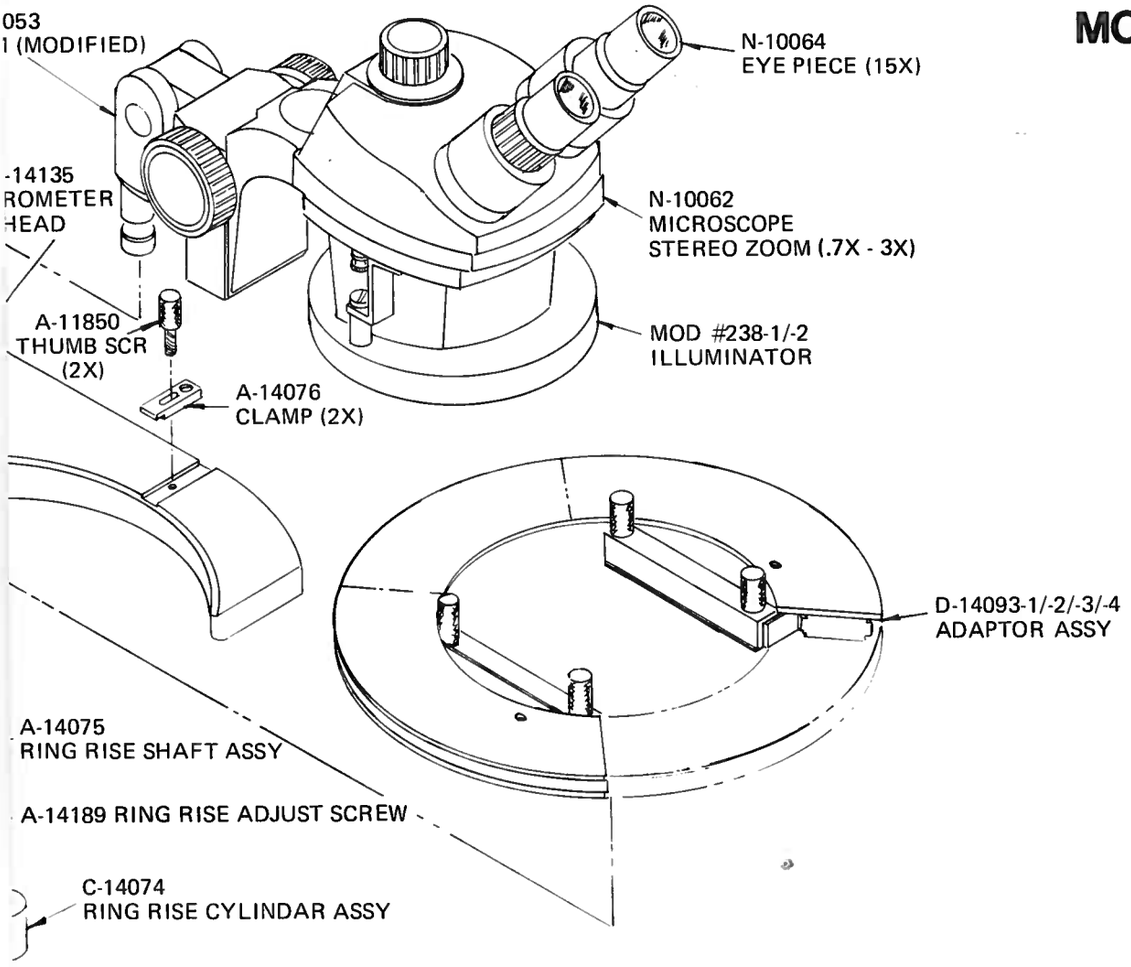
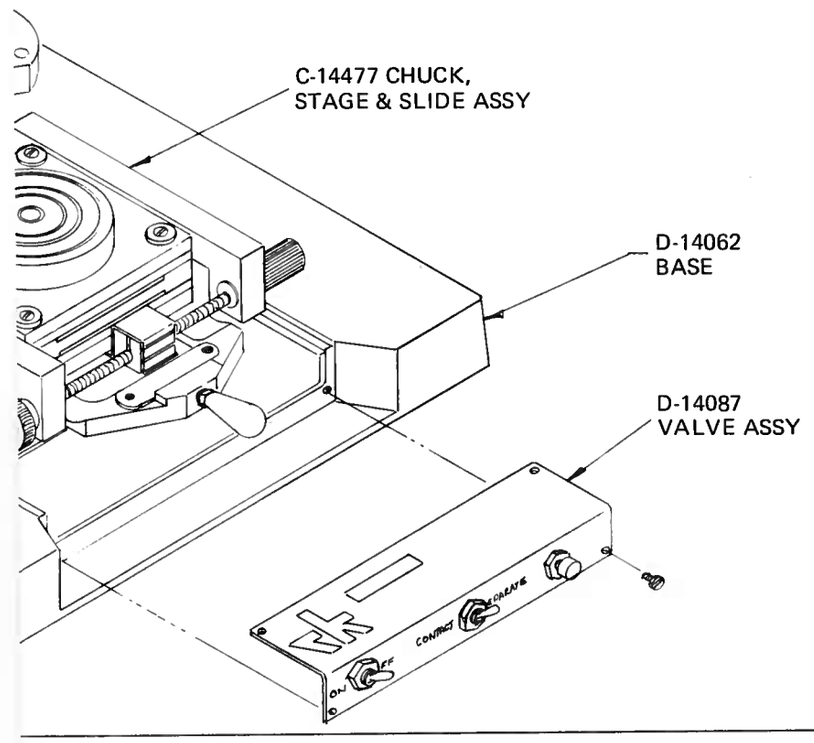
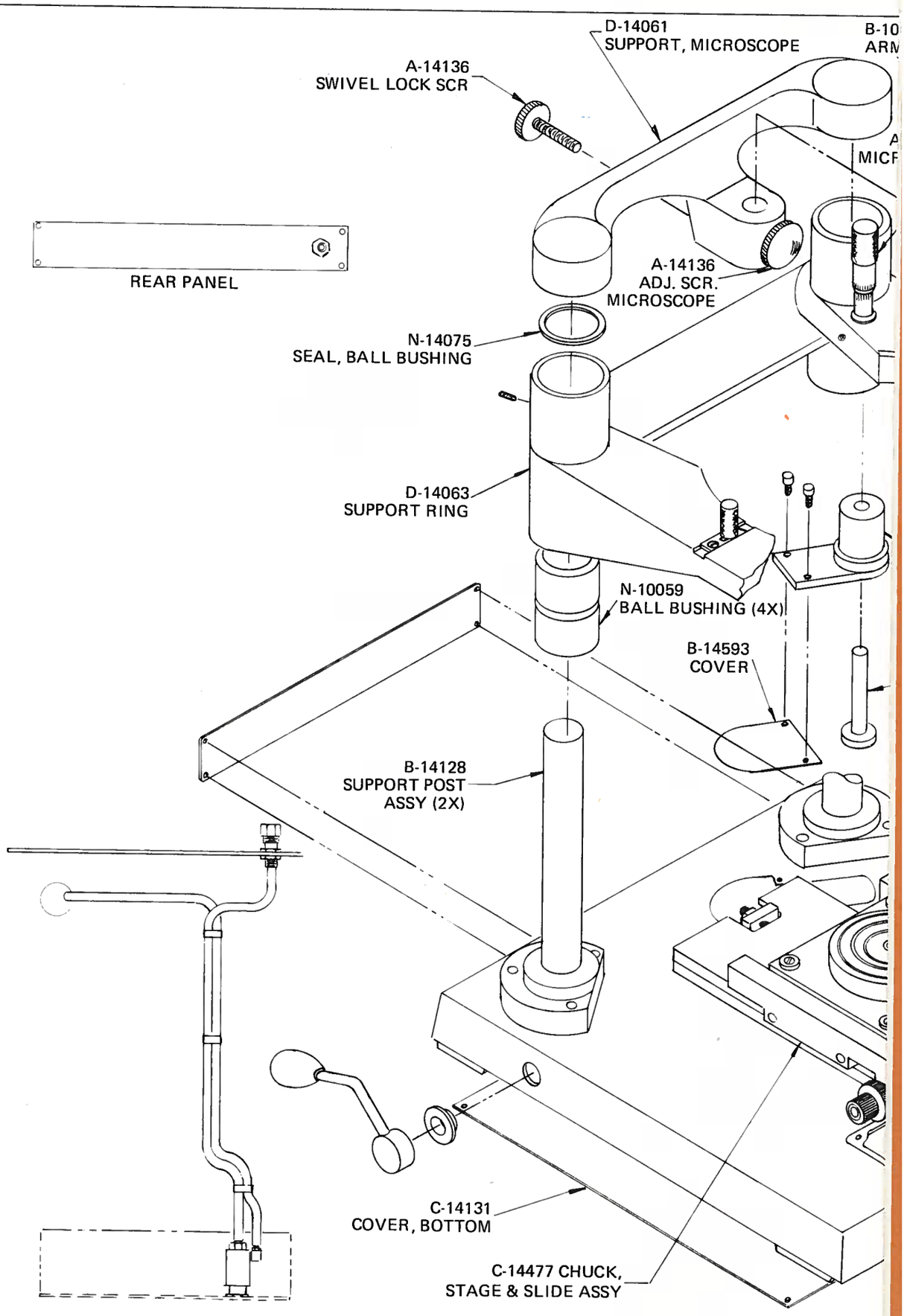
SUPPORT, MICROSCOPE
A-14136
SWIVEL LOCK SCR
REAR PANEL
A-14136
ADJ. SCR
MICROSCOPE
N-14075
SEAL, BALL
BUSHING
D-14063
SUPPORT RING
C-14113
REAR PANEL ASSY
N-10059
BALL BUSHING (4X)
B-14128
SUPPORT POST
ASSY
D-14175
WIRING HARNESS
C-14131
COVER, BOTTOM


53
(MODIFIED)
-14135
OMETER
HEAD
A-11850
THUMB SCR
(2X)
A-14076
CLAMP (2X)
N-10064
EYE PIECE (15X)
N-10062
MICROSCOPE
STEREO ZOOM (.7X-3X)
MOD #238-1/-2
ILLUMINATOR
D-14093-1/-2/-3/-4
ADAPTOR ASSY
A-14075
RING RISE SHAFT ASSY
A-14189 RING RISE ADJUST SCREW
C-14074
RING RISE CYLINDAR ASSY

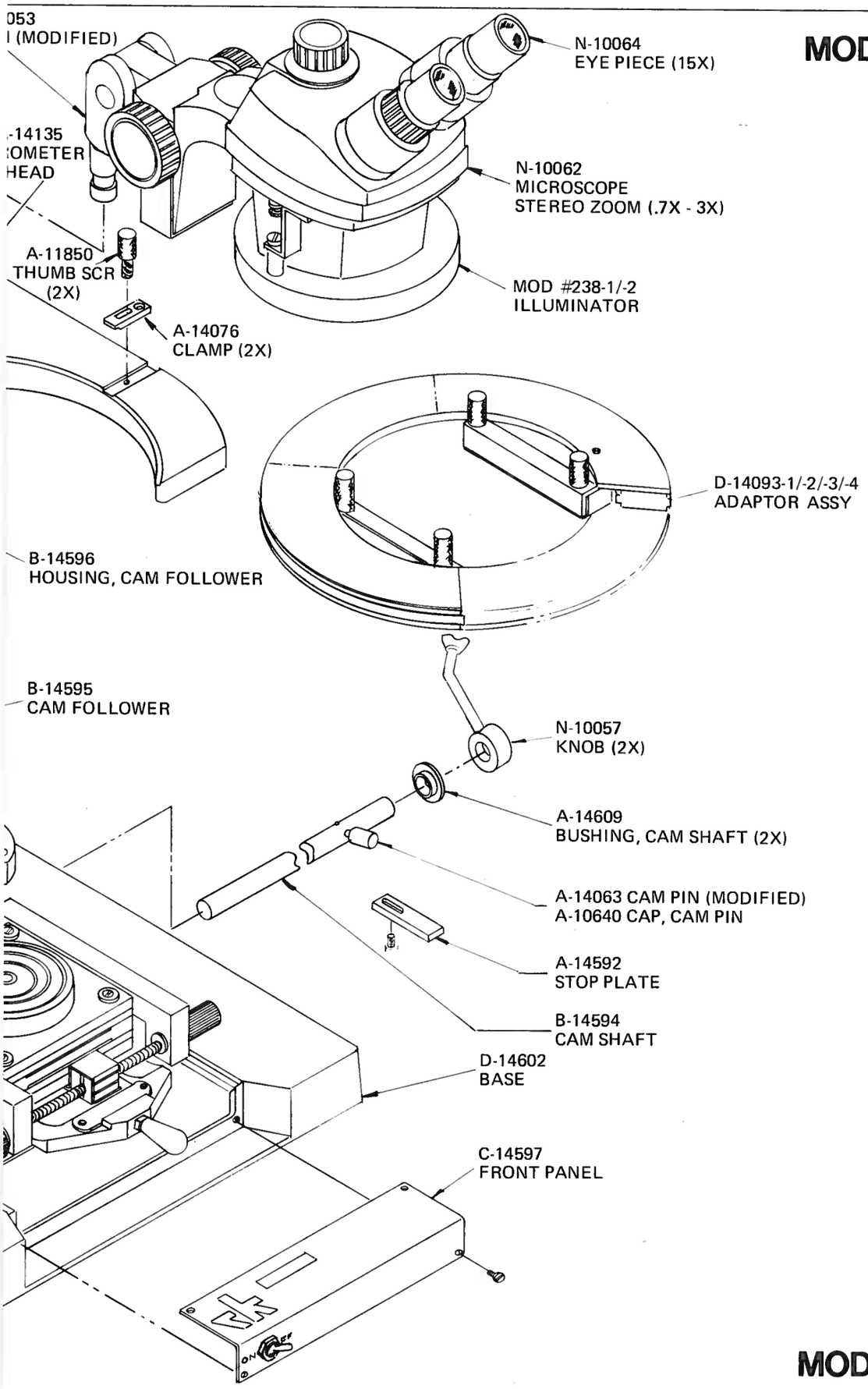
C-14477 CHUCK,
STAGE & SLIDE ASSY
D-14062
BASE
Z1 (SN7400N)
Z2 (SN74123N)
Z3 (SN7474N)
Z4 (SN7400N)
C-14155
P.C. BD. ASSY
STAGE
LAMP
RESET
TEST
ON
OFF


053
1 (MODIFIED)
-14135
ROMETER
HEAD
A-11850
THUMB SCR
(2X)
A-14076
CLAMP (2X)
N-10064
EYE PIECE (15X)
N-10062
MICROSCOPE
STEREO ZOOM (.7X - 3X)
MOD #238-1/-2
ILLUMINATOR
D-14093-1/-2/-3/-4
ADAPTOR ASSY
A-14075
RING RISE SHAFT ASSY
A-14189 RING RISE ADJUST SCREW
C-14074
RING RISE CYLINDAR ASSY


C-14477 CHUCK,
STAGE & SLIDE ASSY
D-14062
BASE
D-14087
VALVE ASSY
ON
OFF
CONTROL
RELEASE

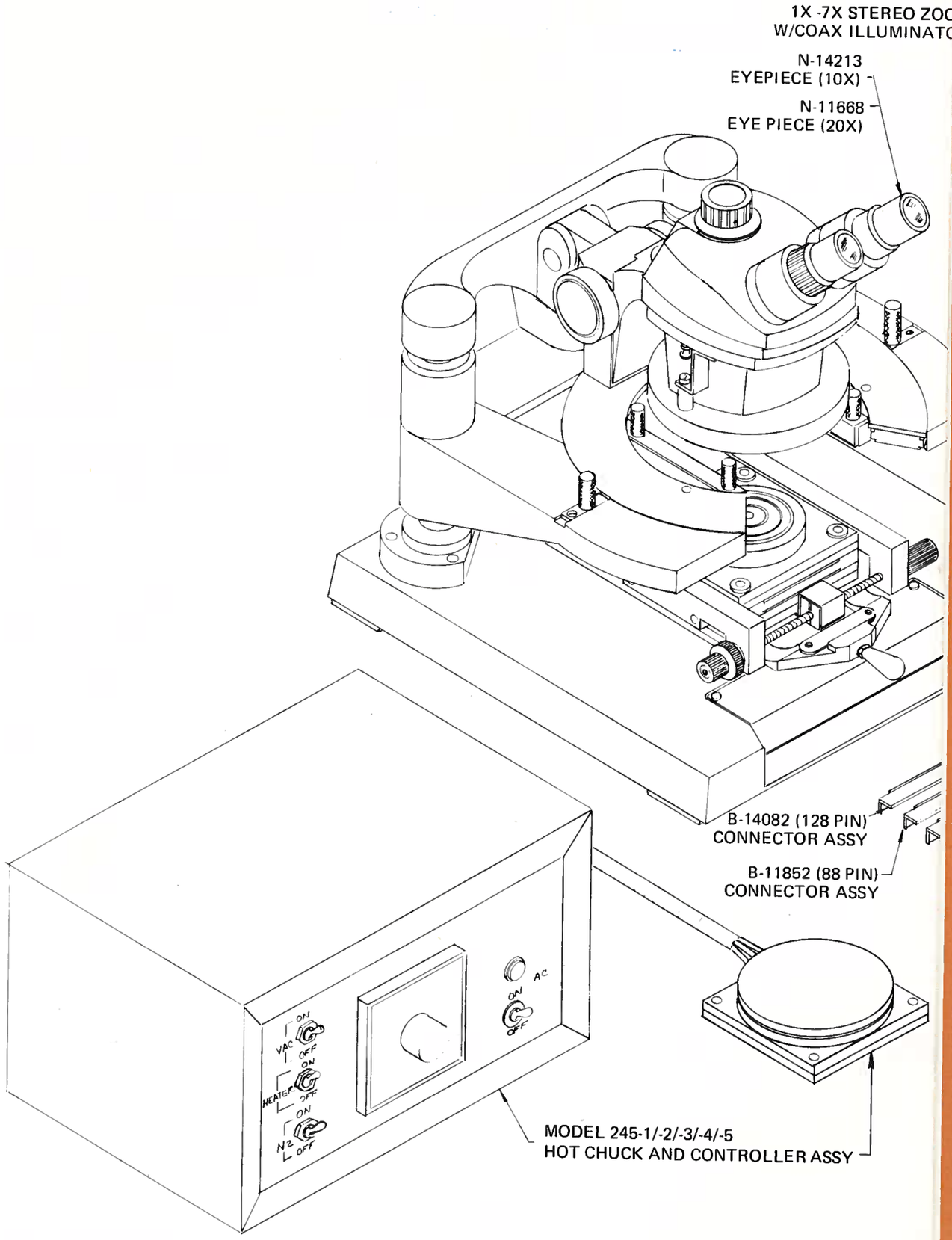

D-14061
SUPPORT, MICROSCOPE
A-14136
SWIVEL LOCK SCR
REAR PANEL
A-14136
ADJ. SCR.
MICROSCOPE
N-14075
SEAL, BALL BUSHING
D-14063
SUPPORT RING
N-10059
BALL BUSHING (4X)
B-14593
COVER
B-14128
SUPPORT POST
ASSY (2X)
C-14131
COVER, BOTTOM
C-14477 CHUCK,
STAGE & SLIDE ASSY

MODEL 260

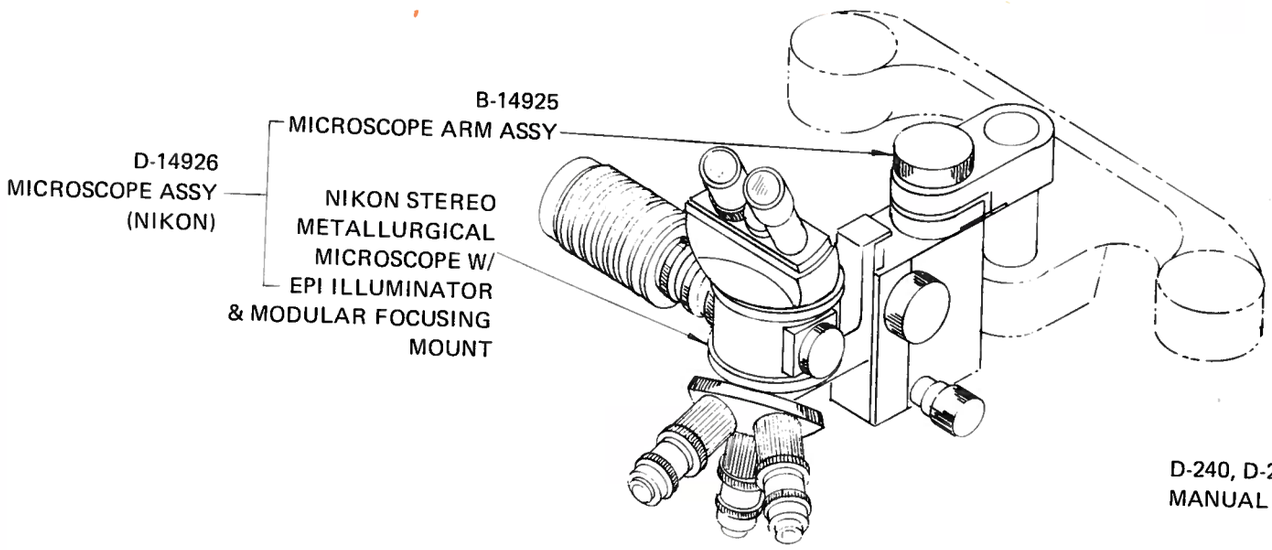


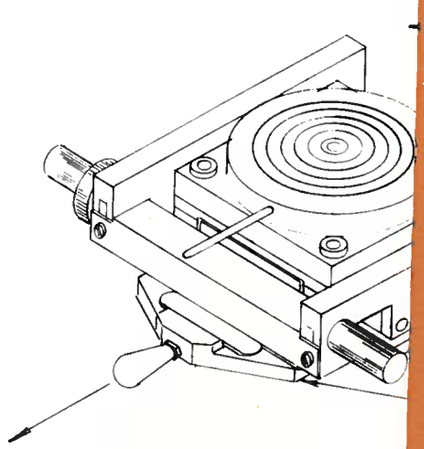
MODEL 260

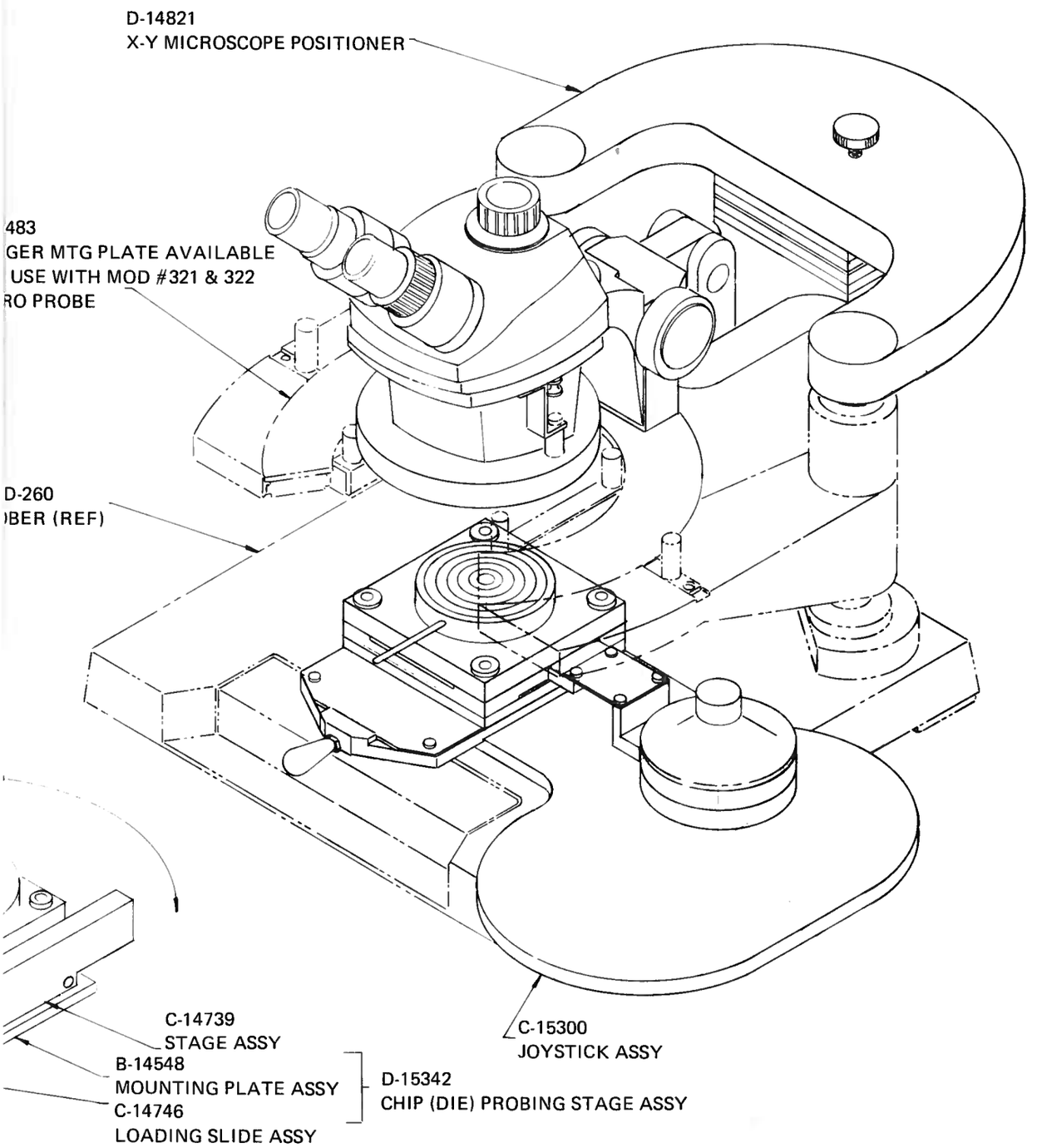
ACCESSORIES



MANUAL PROBER WITH ACCESSORIES







MANUAL PROBER WITH ACCESSORIES