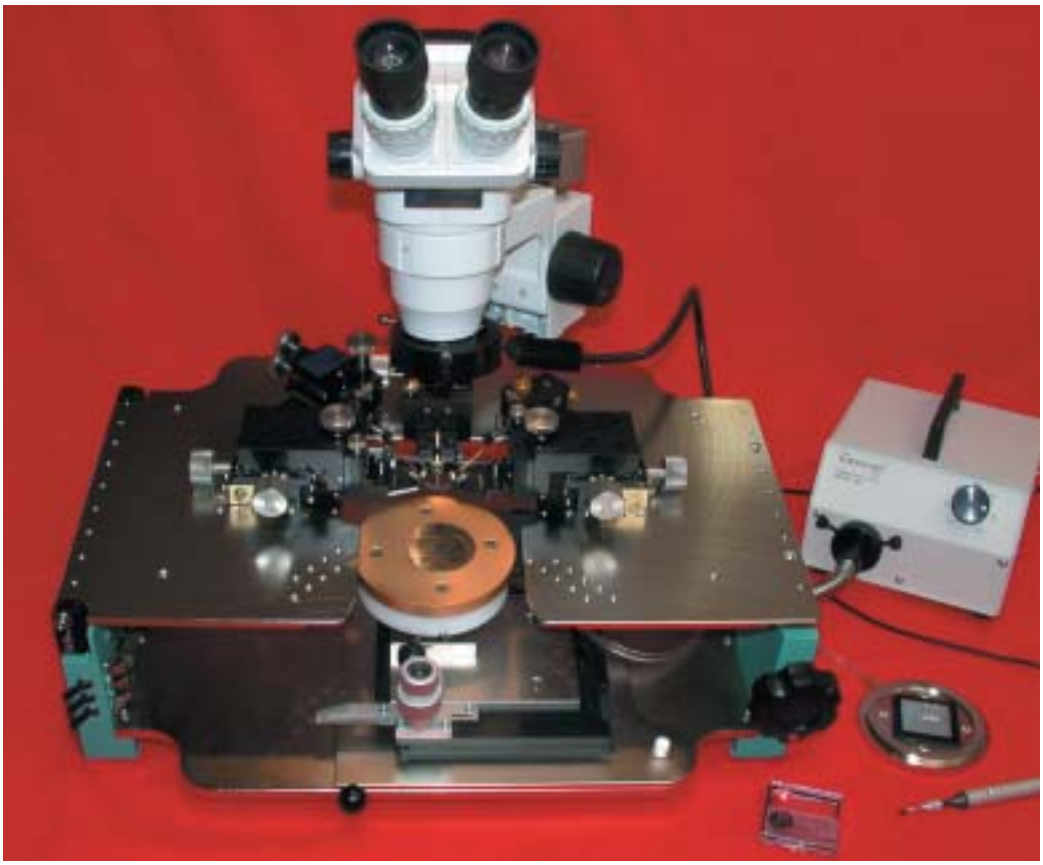
Jmicro Technology

JR-2745



JR-2745 General Instructions

Introduction
The Jr-2745 is usually supplied with most of the items illustrated in the above picture. Probes, calibration substrates and cables are available options. Unpacking information is found on the pages following this introduction.
The manual probe station is a useful and versatile piece of laboratory equipment. Only the basic features are reviewed here. Additional applications will become evident with use.

Positioners
KRN-18A positioners have X, Y, and Z adjustment. Gross placement adjustment of X and Y entails loosening two internal #10 screws and moving the positioner to a different set of mounting holes in the top plate. Mounting hole arrays are on the left, right, back and four corner surfaces of the top plate.
KRN-08A and KRN-01A are magnetic mount positioners. They can be placed anywhere on the top plate surface.

Probes
The Jr-2745 is designed to use probes from GGB Industries with a 'DP' or 'EDP' style mounting. A wide varied of single and multicontact probes are available from J microTechnology or directly from GGB Industries.

ESD & Grounding
The Jr-2745 can be connected to ground by inserting a 'banana plug' into the hole on the back left side of the base.

Microscope
Microscope image will be parafocal if the eyepiece correction is nominally centered around '0' and the microscope is focused at the highest zoom magnification.

Important
Do not attempt to disassemble spring and slide assemble of positioners. Permanent damage may result. Consult factory for repair or servicing of these items.

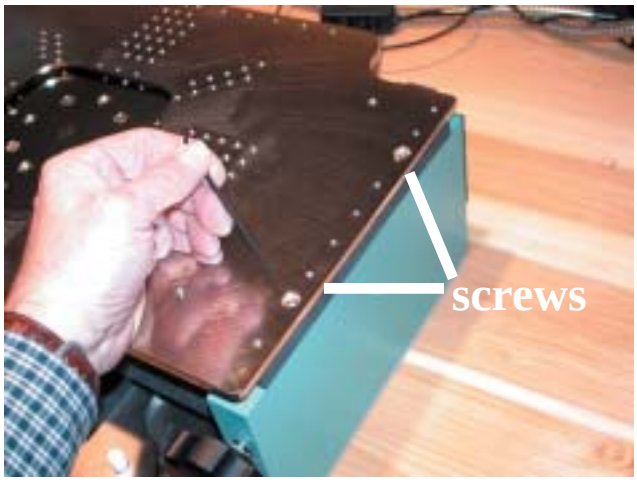
J microTechnology • 3744 NW Bluegrass Pl • Portland, OR 97229

Unpacking and Assembly Instructions

1) JR-2745, NAT-27 and Positioners/Accessories are packaged in three containers. Probe Stations with less than three (3) positioners will be shipped in the one large container.

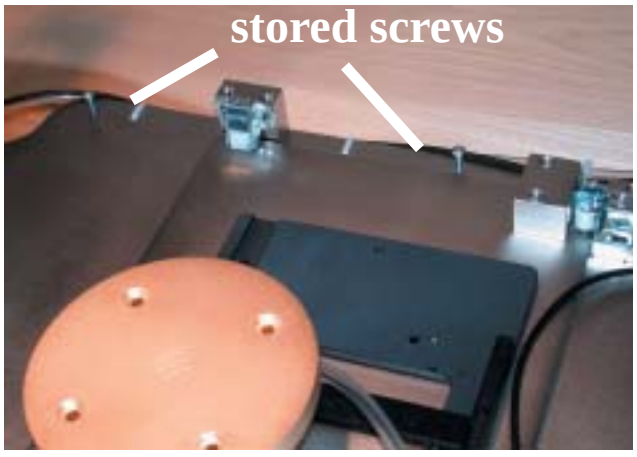
2) Begin by opening larger case and removing JR-2745. Lift by left and right sides.

3) Tools and accesories may be stored under foam covers beneath the Jr-2745.



4) Loosen top plate 'stop' screws with 3/32" hex wrench.

5) Raise top plate and remove chuck locking screw and store in shipping container.

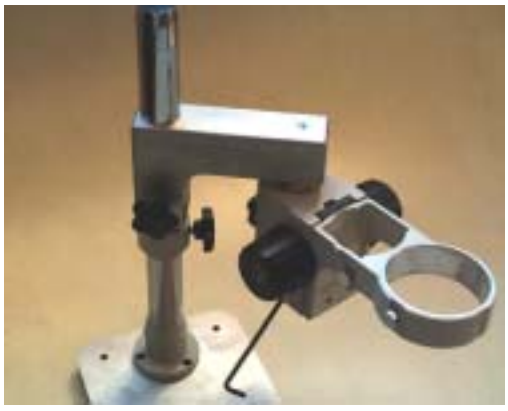


6) Stop screws may be removed and stored in threaded hole in rear of base.

7) Probe Station is stored on in one case, optics are stored with stand in another case. Components fit snuggly. Lift probe station out by grasping sides and remove slowly. Some accessories are stored under station.

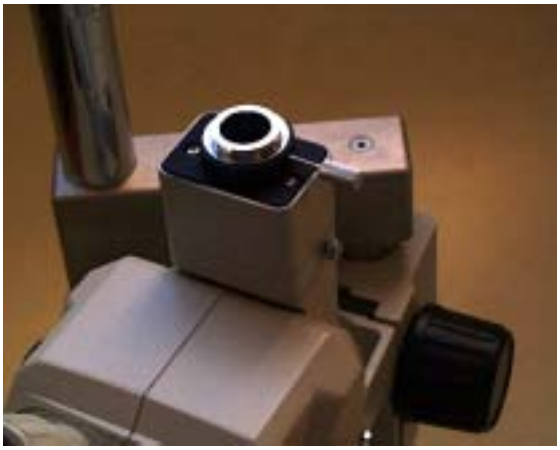
8) Remove microscope, stand, swing arm components. Remove bearing ring from end of swing arm post using 5/32 hex wrench.

9) Slide microscope onto swing arm post.Reattach bearing ring and fasten with #10 screw(s).



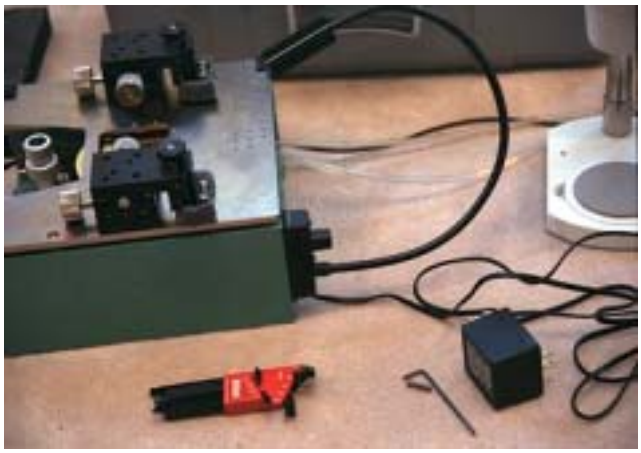
10) Position locking ring on pole, tighten. Slide swing arm assy on to pole.

11) Mount microscope into rack on stand.

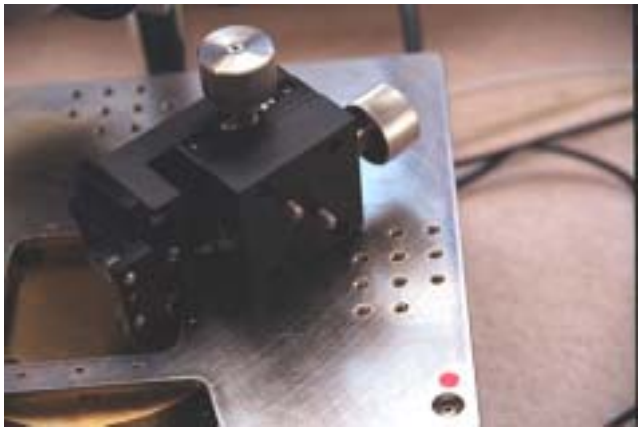


12) Option - Attach camera adapter to vertical accessor port.

13) Open Positioner/Accessory Box. Remove illuminator and transformer. and Positioners.



14) Attach illuminator to right rear of probe station.



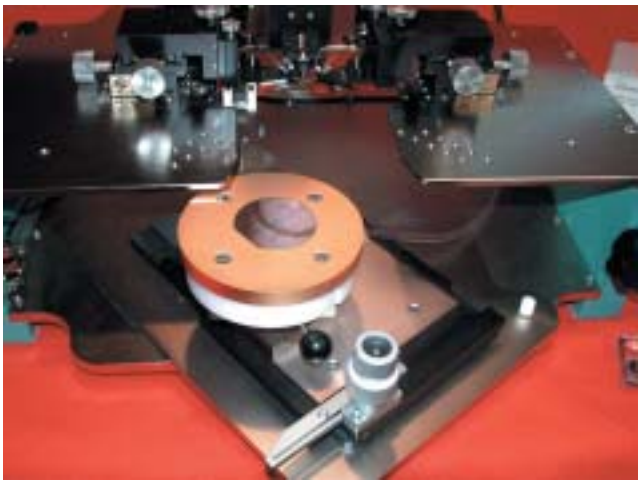
15) Align mounting screws on positioner with threaded mounting holes.

16) Tighten the two(2) #10 positioner mounting screws(internal) with the 5/32” allen wrench. Note: Positioner must be in ‘centered’ X-Y positioner to allow access to screws.

17) Positioner may be elevated with PTFE spacer under body. Probe elevated with the Al spacer on probe mount.

18) Spacer can be installed without removing positionerby loosening hold down screws and sliding slotted spacer in diagonally.

19) Vacuum wand accessory tips and spare light bulb are in accessory box.



20) Swing out chuck.

21) Auxillary vacuum location

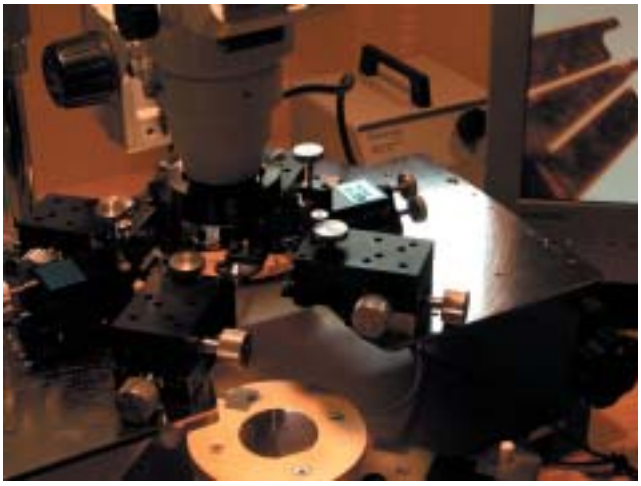
22) Spacers, from left, chuck spacers, probe spacers, positioner spacers.

Spacers are used to position the chuck plate, probe positioners or probes to accommodate various test requirements. These various spacers allow for multiple DUT configurations and probe styles.

The three inch square PTFE spacers are used to elevate the chuck. They are available in 0.125”, 0.062” and 0.030” thick. These spacers can be used singularly or stacked.

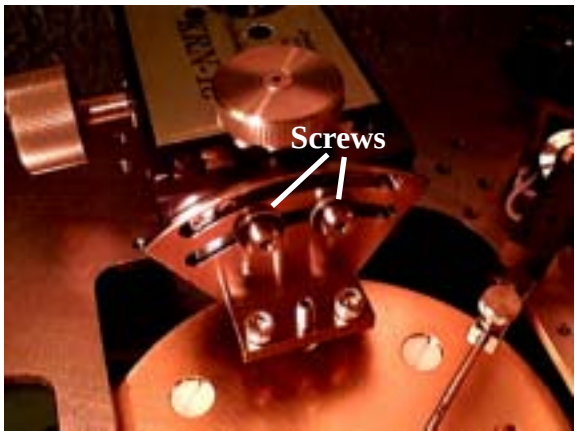
The slotted spacer is for use under the KRN-18A positioner. This 0.125” spacer raises the probe away from the DUT.

The rectangular metal spacers are used on the probe mount to raise the probe body and tip 0.2”.

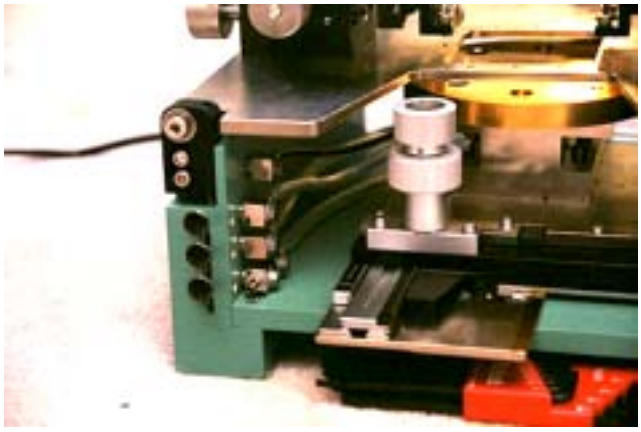


23) JR-2745 manual probe station configured for test.

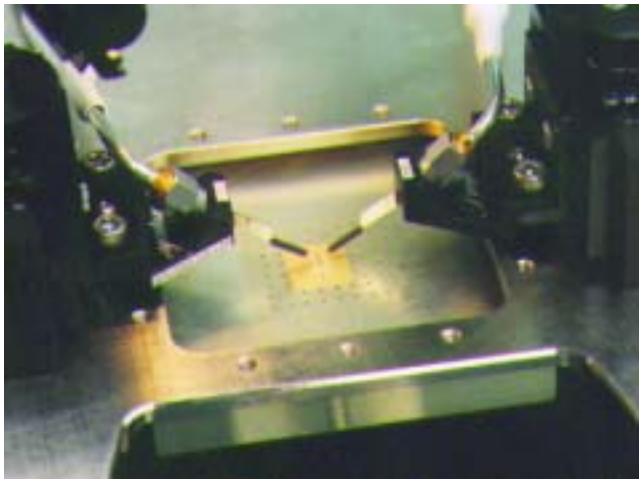
Misc Information



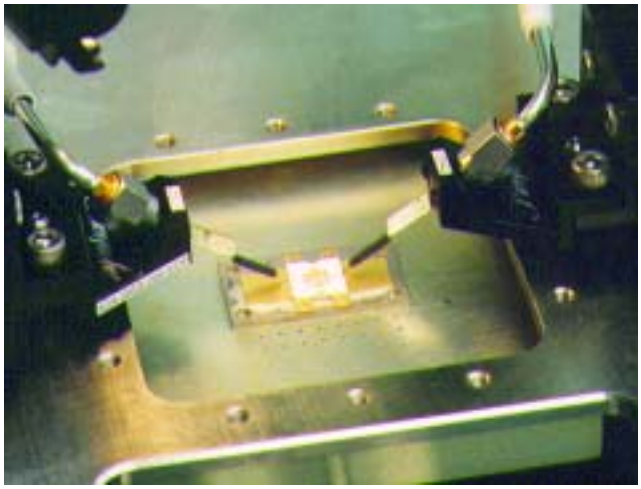
Probe planarity does not normally need to be adjusted. Loosening these screws and rotating plate will result in ±11° of adjustability.



Vacuum control manifold. Upper switch is for stage. Middle switch is for vacuum release gel-pak plate. Bottom switch is unused.



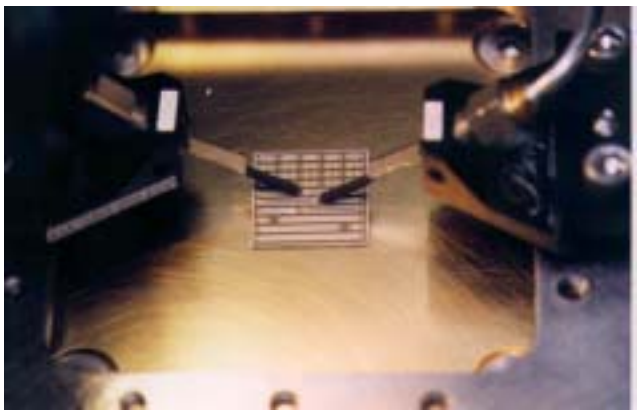
Stage in measurement position for DUT on carrier. Top plate would normally be raised prior to load/loading.



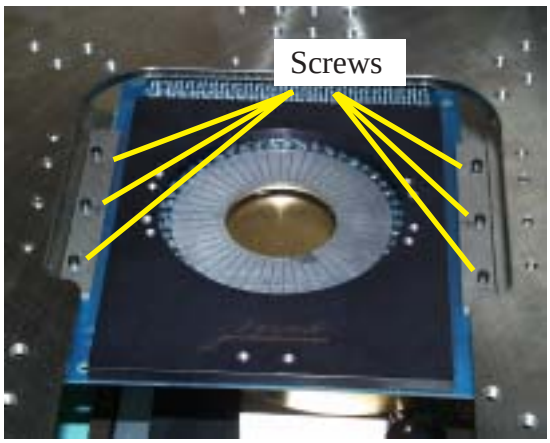
Package on carrier for measurements.

Mounting Probes on Positioners

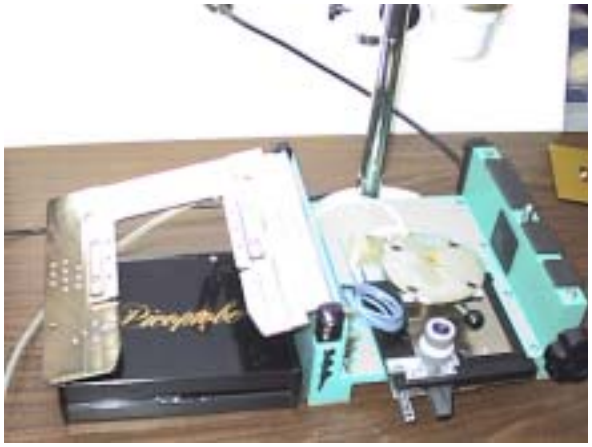
Begin by raising top plate and bringing chuck to front. This opens up the area under the probes to reduce risk of damaging probes. Place probe on mounting bracket. Setscrew/guide pin will locate probe. Screw probe mounting screws into place using 9/64 driver. Screws should be firmly tightened. Raise 'Z' position of probe to highest location before moving chuck into position and lowering top plate.



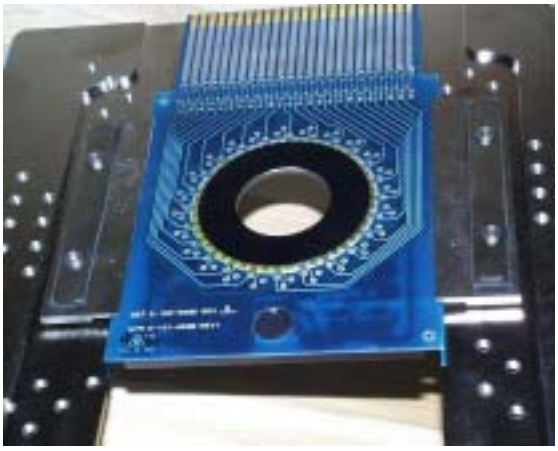
Probe Card Adapter



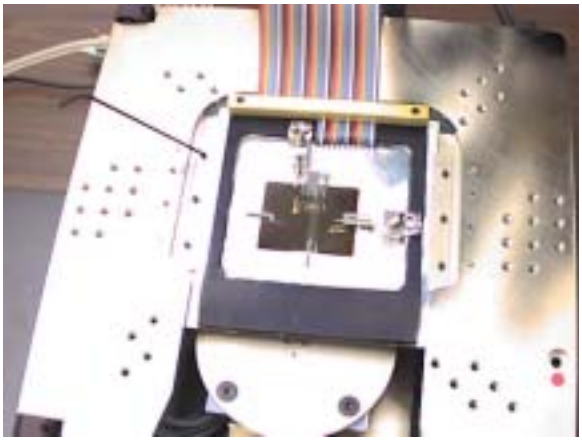
PCA1) To mount a probe card onto top plate, loosen the six(6) 2-56 socket head cap srews on the probe card clamp enough to allow probe card to slide in but still be guided by rails.



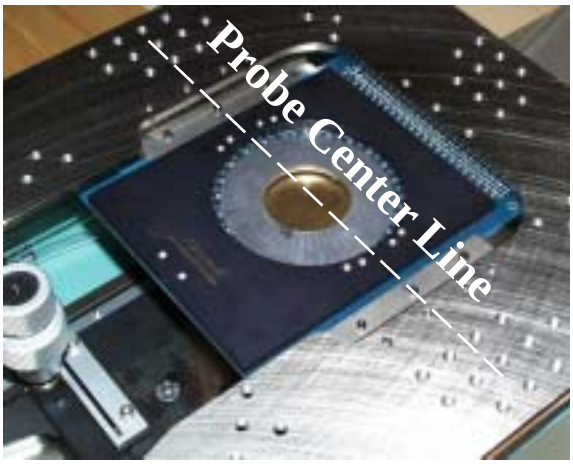
PCA2) Open top plate to expose under surface.



PCA3) Slide and position probe card into rails and clamps. Locate card toward back of opening.

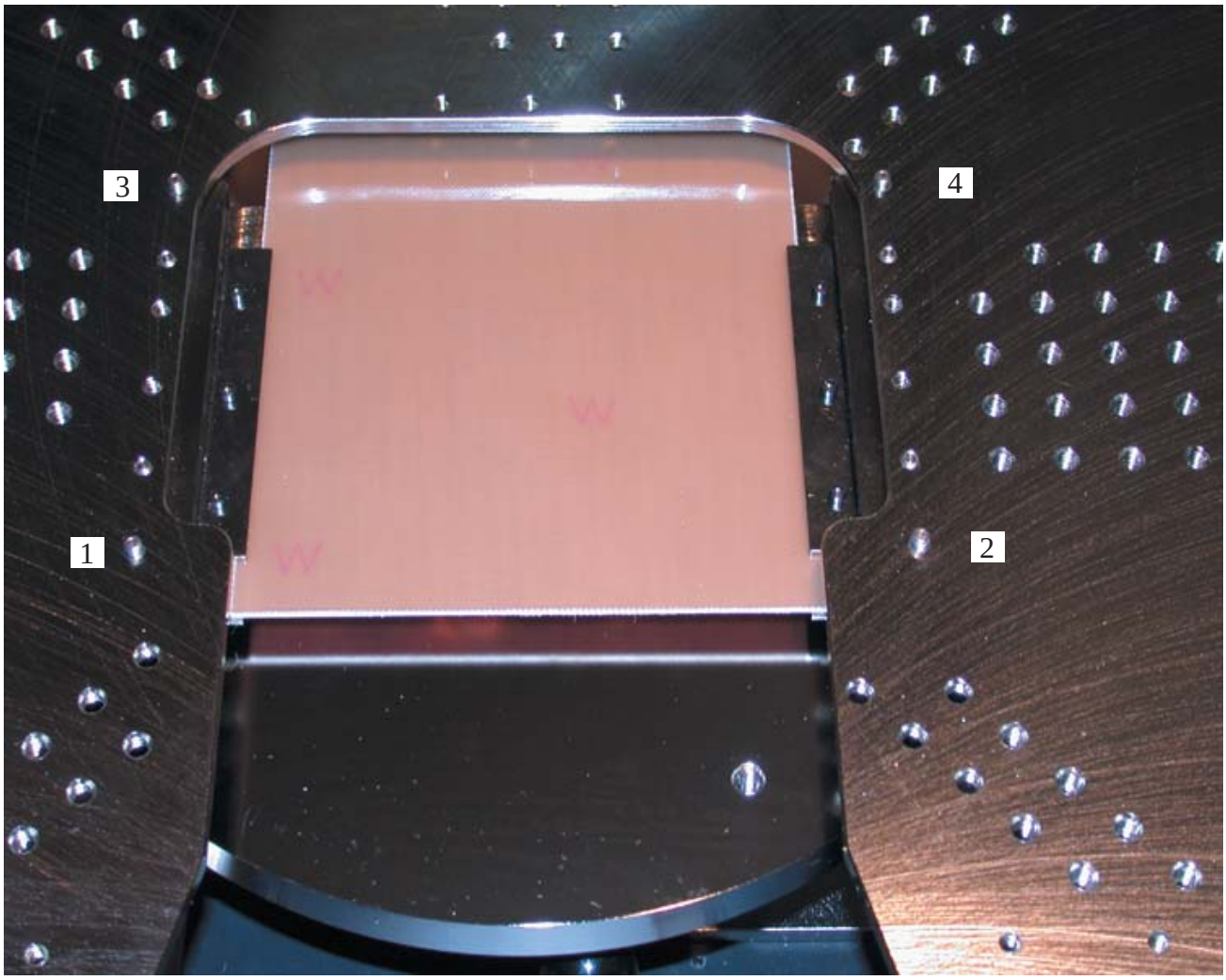


PCA4) With chuck is front position, rotate top plate to normal position.



PCA5) Card should be positioned with centerline aligned with center clamp screws ,tighten clamp screws.

PCA6) Probe Card is ready for depth and planarity alignment. Top coaxial knob controls in/out, bottom knob controls left/right.



PCA7) ‘Set screws’ on left and right of probe card adjust height and planarity of probe card. Screws are approximately 30 mils per turn. Height should be set to within approximately 3 mils, or 1/8th turn resolution. The four set screws allow a 0.2” adjustability total range. That includes the depth and planarity.

Before starting, loosen all set screws to assure that needles do not contact DUT or chuck.

With DUT positioned under the probes and top plate in down position, adjust all four ‘set screws’ to set initial depth of probes slightly above the test device. Continue to adjust in partial turns of set screws while monitoring probe position through microscope to set even deflection or ‘skate’ of probe needles. (Raising and lowering probes(top plate) while visually monitoring skate, and shadows, is a good technique.) Contact on both left and right front should be even.

PTFE spacers are used under the chuck for coarse adjustment of z-height. See page 3 figure 12. Chuck height plus DUT should be 0.60” below the top of ‘top plate’.