

JR-2727 General Instructions

Introduction

The Jr-2727 is usually supplied with 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 personal 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

Positioners have X, Y, and Z adjustment. Gross placement adjustment of X and Y entails loosening two #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. Single screw mounting is possible, though not recommended, for unique wide spaced probe positions.

Probes

The Jr-2727 is designed to use probes from GGB Industries with a 'JM' style mounting. A wide varied of single and multicontact probes are available from J microTechnology or directly from GGB Industries.

ESD & Grounding

The Jr-2727 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 parfocal 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 assembly of positioners. Permanent damage may result. Consult factory for repair or servicing of these items.

Unpacking and Assembly Instructions



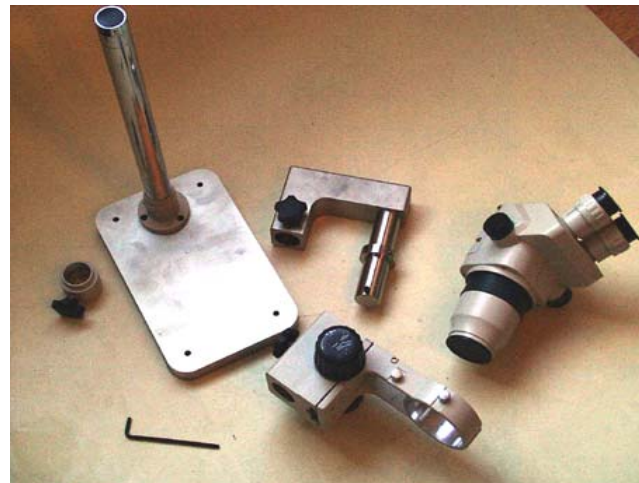
1) JR-2727 Packaged in Storage Case. Case has pull handle and wheels. Recent models ship with microscope in separate case.



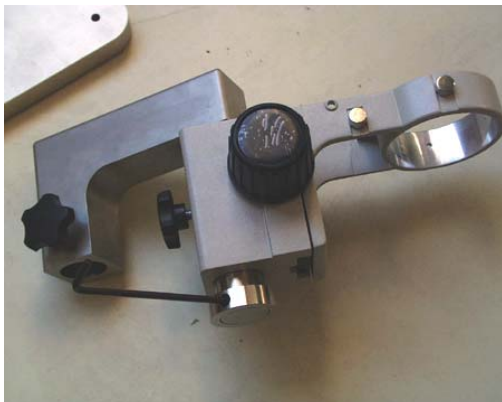
2) Begin by opening case. Some items may be stored behind foam in the top cover.



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



4) Remove probe station, microscope, stand, swing arm components and tools. Remove bearing ring from end of swing arm post using 5/32 hex wrench.



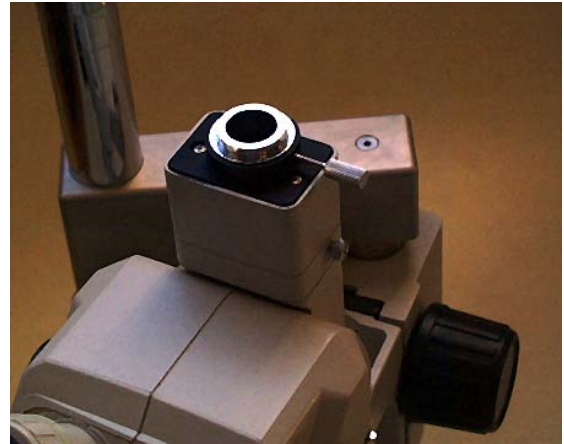
5) Slide microscope onto swing arm post. Reattach bearing ring and fasten with #10 screw(s).



6) Position microscope and rack on pole. Locking ring is not required in this configuration. Slide swing arm assembly on to pole.



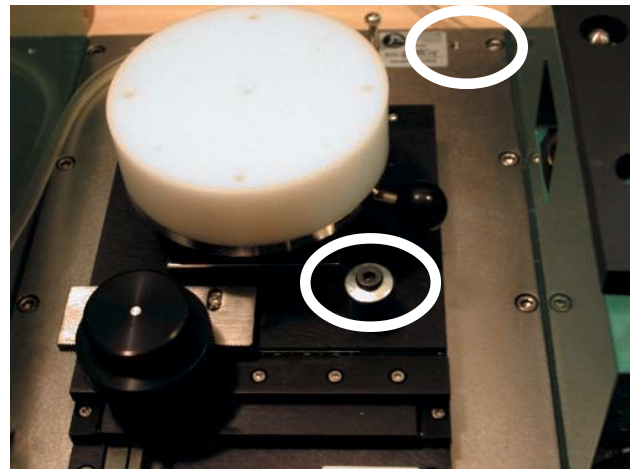
7) Mount microscope into rack on stand.



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



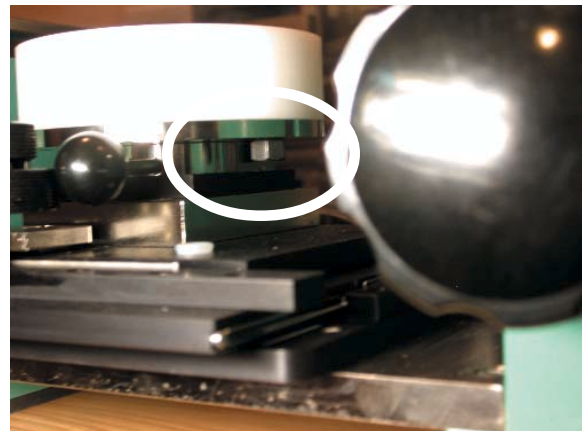
9) Loosen top plate 'stop' screw with 3/32" hex wrench. Stop screw may be removed and stored in threaded hole in rear of base.



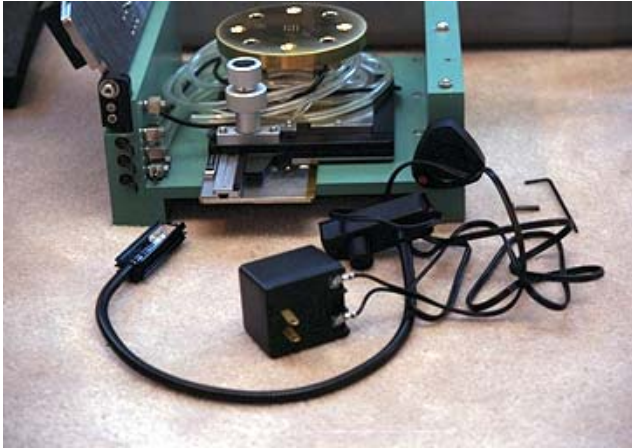
10) Stage locking screw needs to be removed and stored in back left corner.



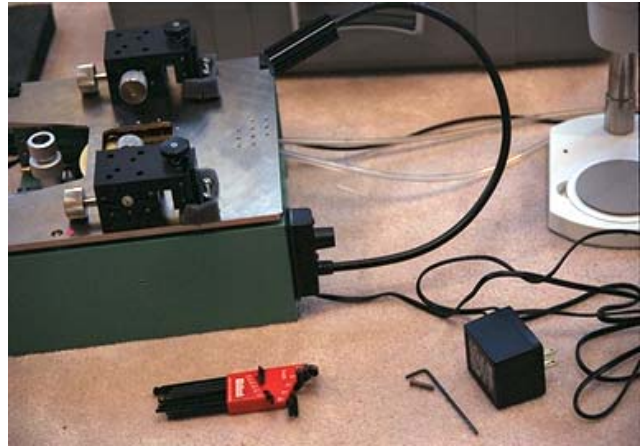
11) Remove chuck to insert spacers. Spacers are used to position the chuck plate, probe positioners or probes to accommodate various test requirements.



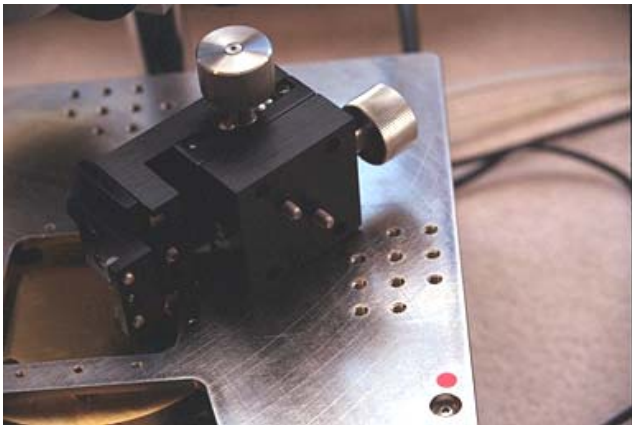
12) Chuck is isolated from stage by a 3.75" spacer 'puck'. Puck is connected to stage by 4 ea. 4-40 thumb screws on underside.



13) Remove illuminator and transformer.



14) Attach illuminator to right rear of probe station.



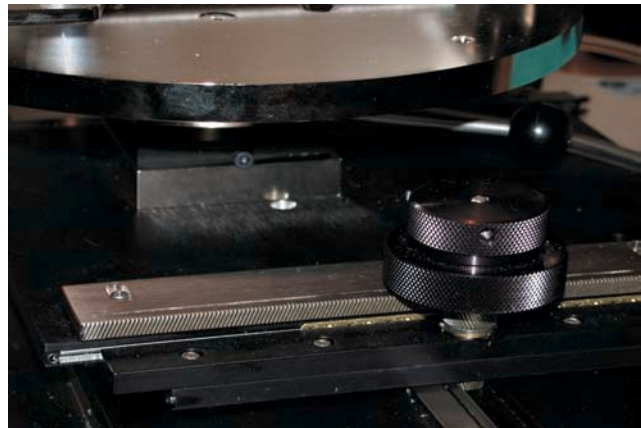
15) Align mounting screws on positioner with threaded mounting holes.



16) Mount KRN-18A using the two(2) #10 positioner mounting screws with the 5/32" allen wrench. Note: Positioner must be in 'centered' X-Y positioner to allow access to screws.



17) Positioner with PTFE spacer under body and Al spacer on probe mount. Spacer can be installed without removing positioner by loosening hold down screws and sliding slotted spacer in diagonally.



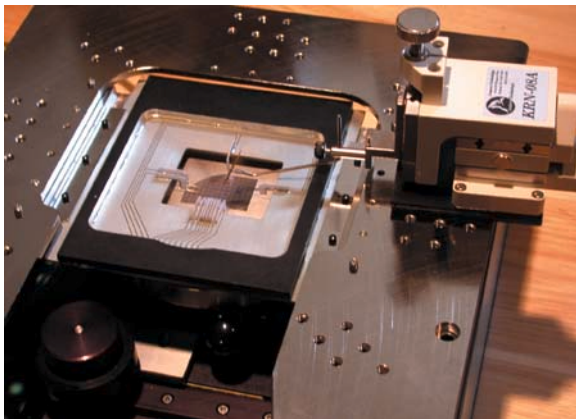
18) Stage Lock - tighten #6 screw with 7/64" allen wrench to lock chuck.



19) KRN-18 can be positioned in seven locations on top plate. (Use LDP style probes for most versatility)



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



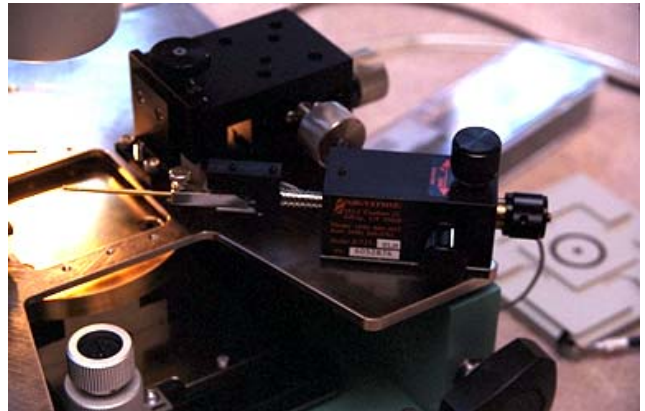
21) Optional Probe Card Adapter and KRN-08A probe positioner



22) DC Positioner kit. Five Pd alloy needles and needle holder.

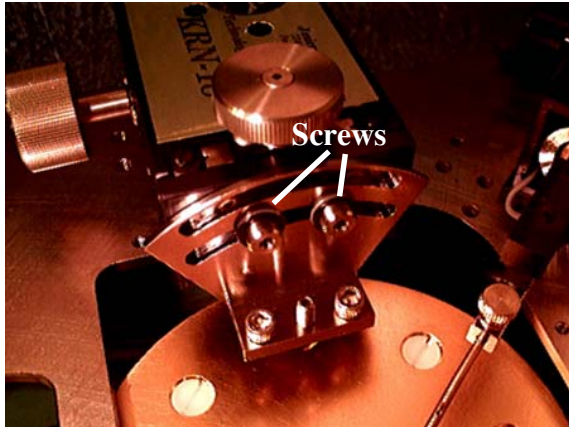


23) JR-2727 personal probe station configured for test.

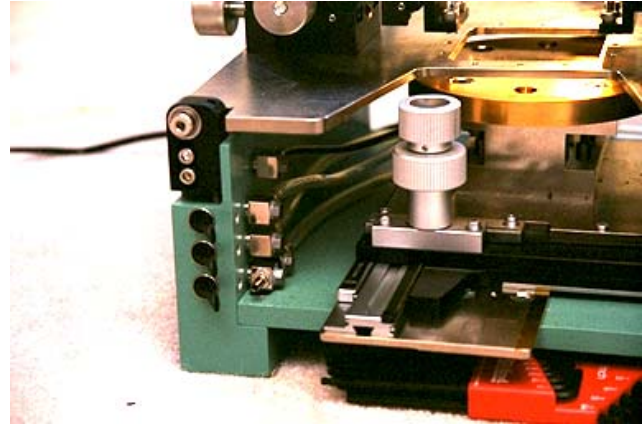


24) Optional DC Positioners can be placed around microwave positioners.

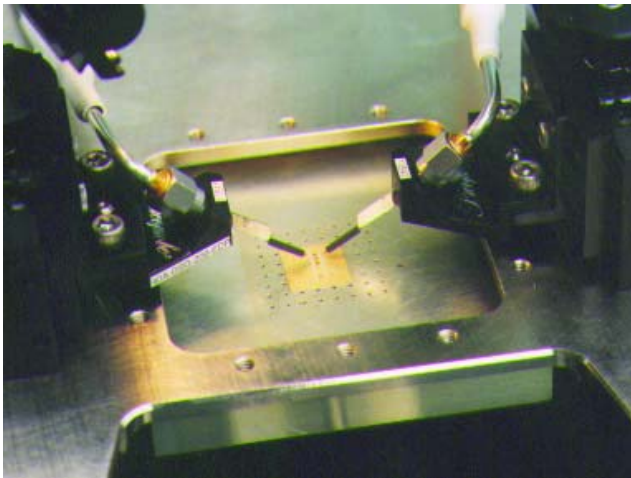
Misc Information



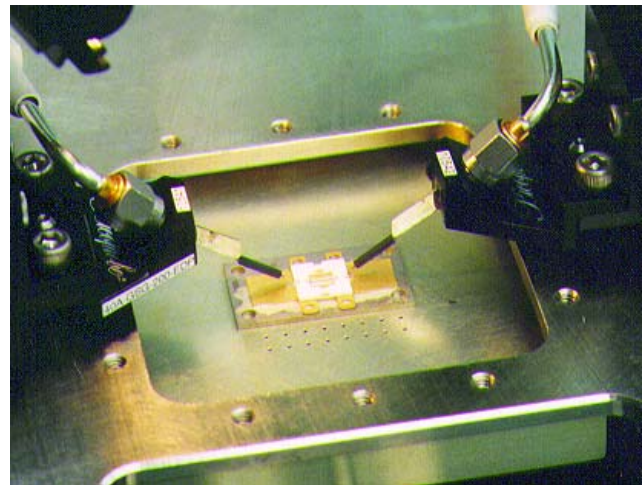
Probe planarity does not normally need to be adjusted. Loosening these screws and rotating plate will result in $\pm 11^\circ$ of adjustability.



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



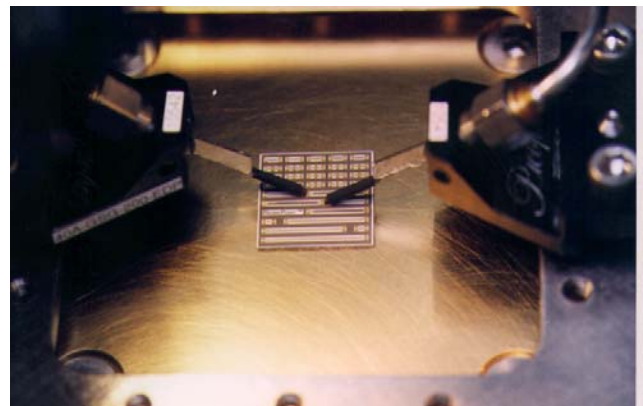
Stage in measurement position for DUT on carrier. Top plate would normally be raised prior to load/loading.



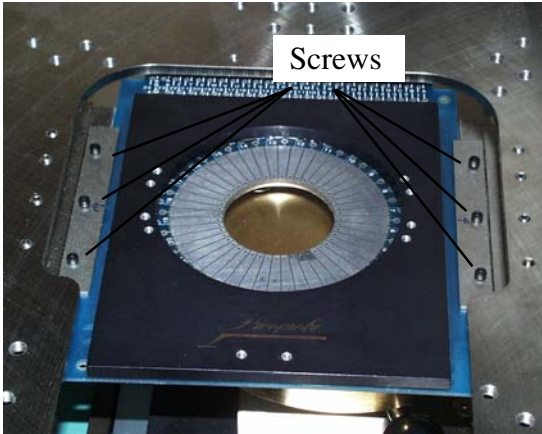
Package on carrier for measurements.

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.



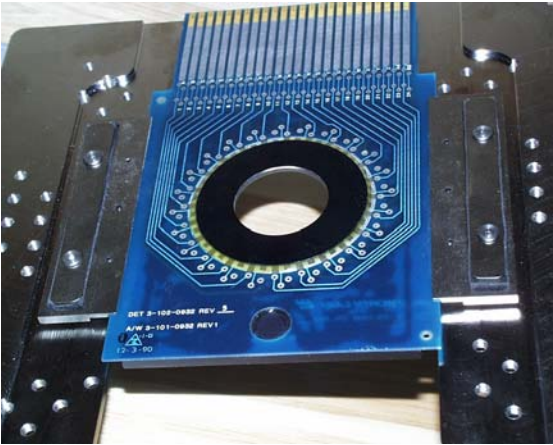
Probe Card Adapter



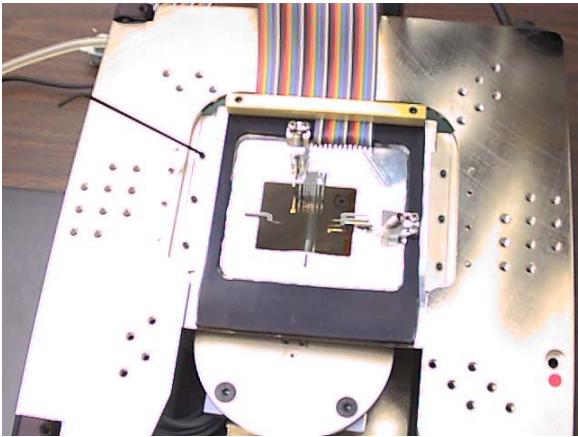
PCA1) To mount a probe card onto top plate, loosen the six(6) 2-56 socket head cap screws on the probe card clamp enough to allow probe card to slide in but still be guided by rails.



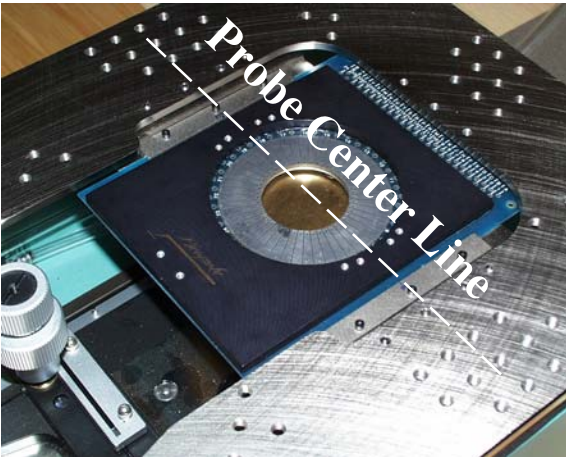
PCA2) Open top plate to expose under surface.



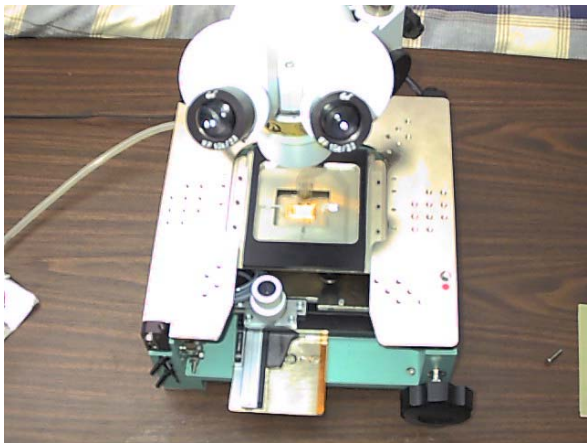
PCA3) Slide and position probe card into rails and clamps. Locate card toward back of opening.



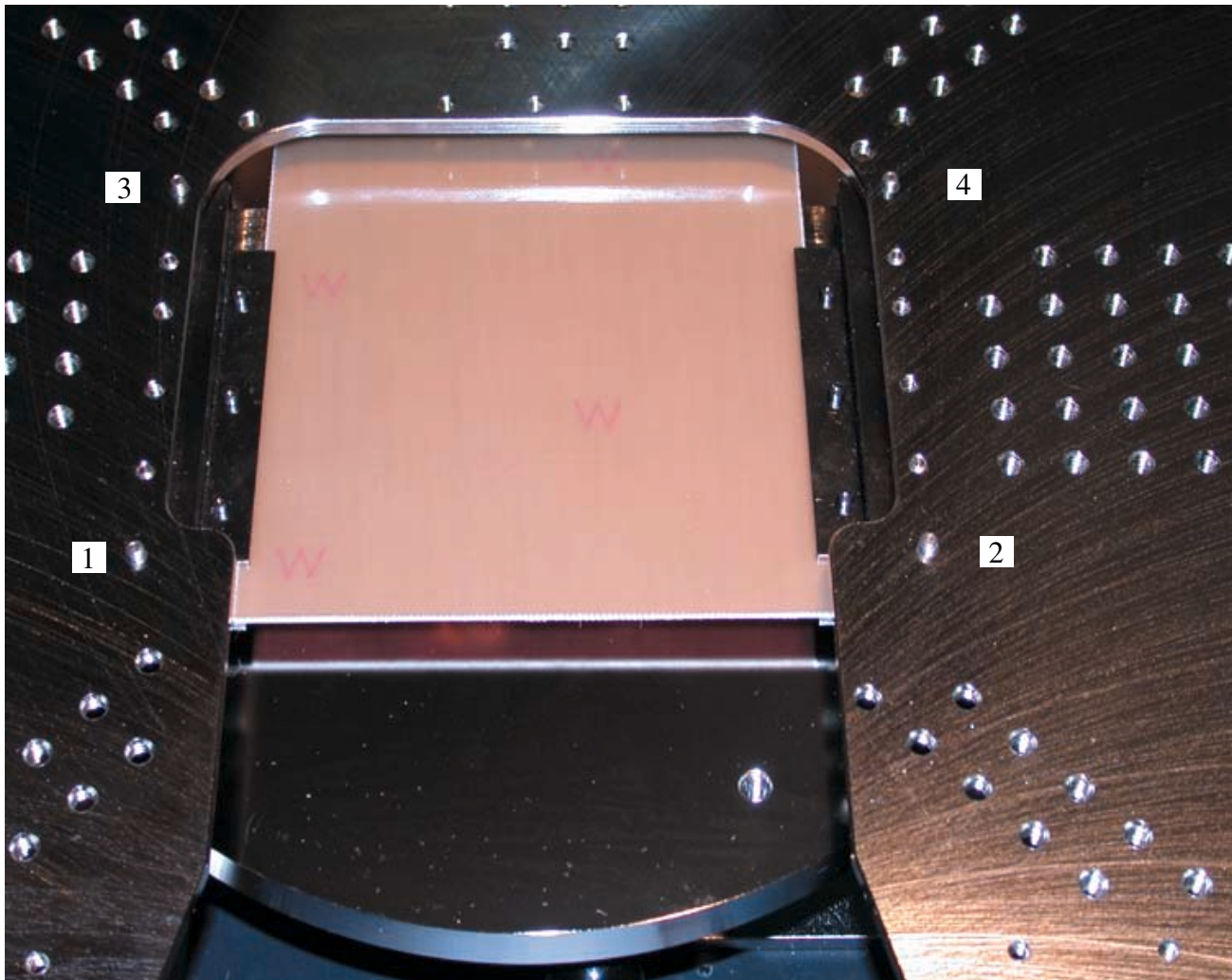
PCA4) With chuck is front position, rotate top plate to normal position.



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'.