

Using the Model 25010 Oriented Crystal Polisher on Model 920

1.0: Introduction

The Model 25010 Lapping Fixture is a fixture designed to hold the Model 250 2-Axis Goniometer during lapping and polishing operations. The Model 25010 allows the user lap a single crystal material oriented using the Model 250 along the desired orientation and direction. This allows very accurate orientations to be obtained with high quality lapped surfaces. This brief report will demonstrate the ability of the lapping fixture to be used on pre-existing lapping equipment, such as the Model 920. The equipment setup will be shown.

2.0: Model 25010

The Model 25010 is a large lapping fixture with a center slide assembly designed to accommodate the Model 250 2 Axis goniometer. The goniometer is attached to the fixture via a draw rod and the amount of material to be removed is adjusted using a micrometer dial on the top of the center slide. The crystal is mounted to the Model 250 using a low melting point mounting wax which is stable under x-ray bombardment as well as at room temperature. Figure 1 shows a schematic of the fixture.

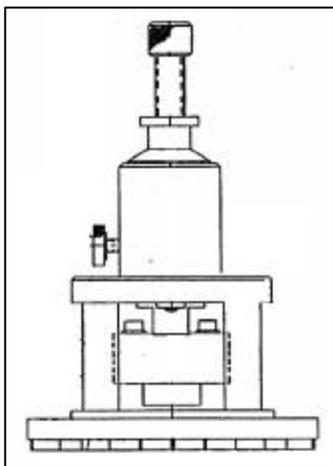


Figure 1: Illustration of the Model 25010 with the Model 250 2 Axis Goniometer mounted into the fixture.

Using the Model 25010 on Model 920

The Model 25010 can be used on the 8" diameter Lapping and Polishing wheel of the Model 920 using two workstations to hold the fixture into place. Although some overlap of the fixture will occur over the center of the lapping wheel, this will not affect the final quality of the specimen as the specimen is still lapped as normal due to the specimen being located in the center of the lapping plate.

The fixture is held into place using two Model 92002 workstations. These workstations are motor driven and provide both a means of rotation for the fixture as well as supporting the fixture during preparation. Figure 2 is a schematic illustrating the setup used for holding the fixture in place.

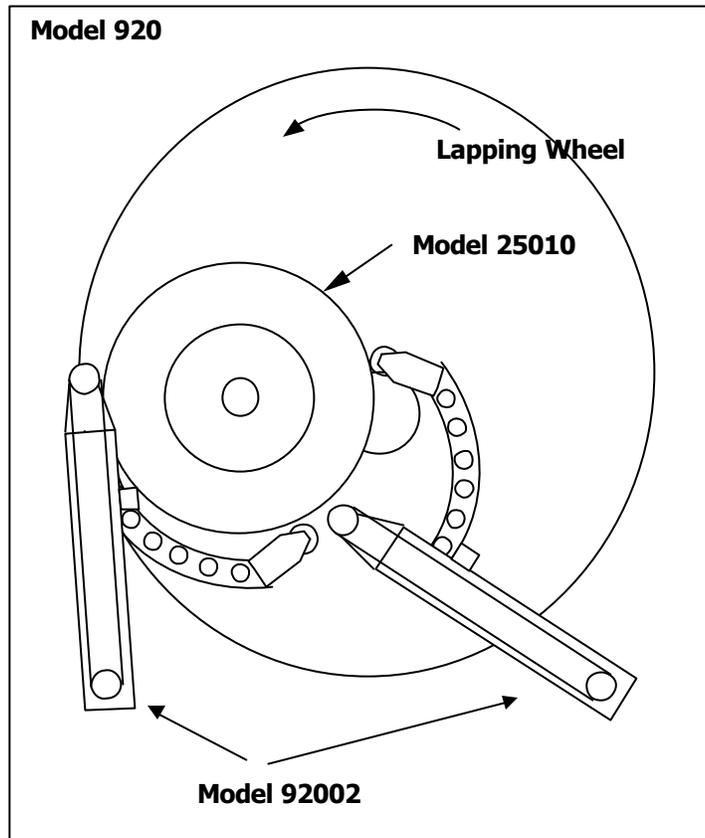


Figure 2: Illustration of the setup used for lapping with the Model 25010 on the Model 920.

3.0: Conclusion

It has been demonstrated that although the Model 920 is not designed to normally accommodate such large lapping and polishing fixtures, it can be used for small scale lapping using the Model 25010 Lapping Fixture. The use of 2 workstations such as the Model 92002 help hold the fixture in place and also aid in the rotation of the fixture to increase lapping uniformity.