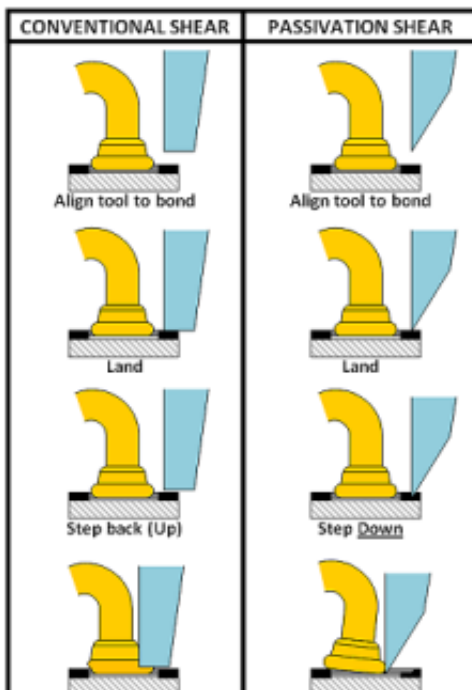




Passivation layer gold ball shear test

- Test with thick passivation layers
- Ultra fine pitch bonds
- Low profile gold balls
- Sensor accuracy $\pm 0.075\%$

Ideal solution for testing low profile gold balls with a thick passivation layer



Conventional shear versus passivation shear

As gold ball bonding geometries reduce, so too does the height of the ball bond. The thickness of the passivation layer though remains the same. This creates a problem when shear testing, because the thickness of passivation layer is greater than the shear height required to test the bond. Conventional shear testing then results in the shear tool “scalping” the top of the ball, low test forces and no measurement of the bond strength.

“Passivation shear” overcomes this problem by testing the bond with an appropriate shear height. After aligning the shear tool to the bond the tool lands on the substrate (passivation layer) in the normal manner. Instead of then lifting up to the required shear height it descends into the passivation layer. It then shears the ball bond. In so doing it shears through a small portion of the passivation layer. The force required to do this is much less than the ball bond strength and the peak force measurement remains that of the bond.

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