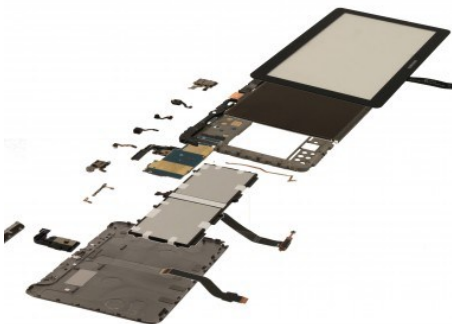


MOBILE DEVICE INDUSTRY

TABLET DISPLAY ALIGNMENT AND ASSEMBLY

The Situation

A leading mobile device OEM's next generation tablet design required precise alignment of the display relative to the back housing. After the contract manufacturer's attempt to develop an alignment fixture failed, the OEM turned to Owens Design's expertise in machine vision and precision automated assembly to solve the problem.



**Next Generation Tablet Design
Required Automated Assembly**

The Challenge

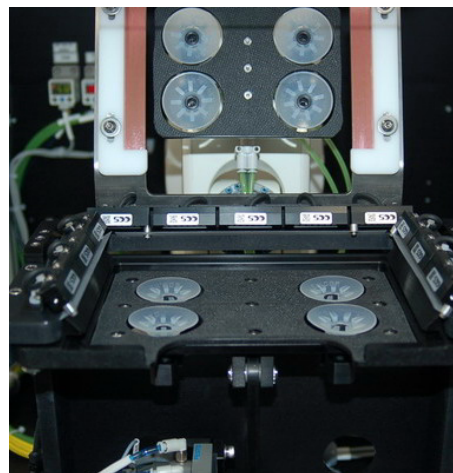
There were several technical challenges that needed to be solved. The assembly process required aligning the screen to less than 20 microns while feeding multiple connectors through the mid-plate. Then the display was attached using pressure sensitive adhesive. Once installed, the final gap needed to be measured for in process quality inspection.



**Precision Alignment Tolerances Achieved using
Innovative Clamshell Fixturing and Vision Guided Robot**

The Solution

After evaluating the first attempt at an alignment fixture, Owens' team of equipment development



**Clamshell Design Combines
Part Fixturing and Vision Illumination**

experts determined an active alignment approach was required to repeatedly meet the 20 micron gap tolerance. Utilizing machine vision with an innovative clamshell mechanism and compact robot provided a flexible approach that met the product specification. The workcell is adaptable to multiple form factors, leveraging the manufacturing investment over future product generations.