

Bonding Solutions for Medical Transducers

Opportunity

A medical imaging equipment company in Australia designing a new transducer is struggling to bond silicone tubing components to Cyclopol plastic. A fast fixturing adhesive is needed that bonds well to these substrates and fill gaps up to 0.6 mm.

Substrates: ABS (Acrylonitrile-Butadiene-Styrene) || Silicone

Challenges

- Fixture rates of oxime silicones were too slow to meet production line output goals
- Low cured material strength of oxime silicone in large gaps resulted in cohesive failures
- Softer durometer of silicones did not add to the structural integrity of the transducer

Solutions

Product(s) used: Loctite 3090

Components

The oil filling silicone tube and transducer body are cleaned with isopropanol prior to dispensing Loctite 3090.

Dispense and Cure

No primer is required to enhance adhesion for bonding to the silicone tubing. Loctite 3090 is dispensed onto the Cyclopol and the component parts are assembled by hand.

Outcome

The Henkel solution allows the company to rapidly bond the transducer components to meet manufacturing production goals. Product assembly strength and overall quality exceed engineering requirements.



Benefits

- Large gap filling capability of Loctite 3090 easily cures between loose fitting components
- High bond strength and fast adhesive fixture times insure production quality and output goals will be met
- Low blooming nature of Loctite 3090 protects both the visual quality of the part and transducer operation