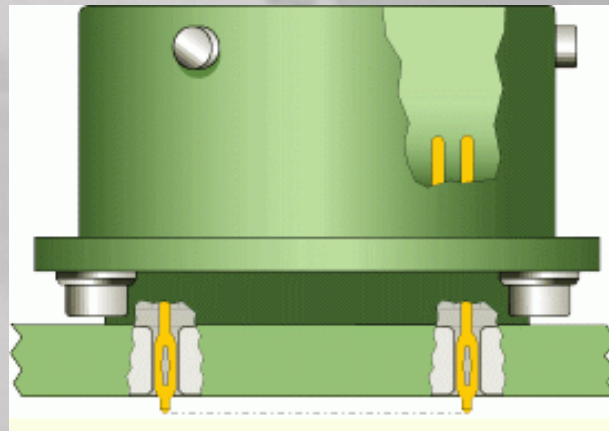


J-Tech Compliant Pin Technology

J-Tech's offering for a solder free World



Compliant Pin Technology



- Compliant pin technology used at J-Tech is a type of contact that is designed to press directly into a PC board without any solder or other terminating materials
- The rear of the contact is designed with an “eye of the needle” style tip that allows this tip to be pressed into a plated through hole on the PC board and gives a gastight electrical connection between the I/O connector, that houses the contact, and the PC board

More Compliant Pin Info



- Compliant press-fit contacts have been around in the commercial and industrial markets for decades, but never really were used until the 1990's in military and aerospace applications (harsh environments)
- This was due to the high cost to manufacture these contacts that needed to meet broad temperature fluctuations and high vibration
- For benign environments, these contacts are easily made in a stamped and form method, but the mating tips of the contacts do not have a spherical radius, which is required in military applications

More Compliant Pin Info



- To make a robust enough compliant pin contact, a hybrid method of manufacturing was born
- A machining operation was built into the sequence of stamping stations in a high speed stamping die to create a cost effective contact and one with a spherical mating tip that meets the M39029 specifications
- Fully machined compliant pin contacts can be produced also but are more costly

Advantages to using Compliant Pin



- Solder is not needed to terminate the I/O connector that has compliant pin contacts to the PC board, which means no cleaning after termination
- No need for contacts crimped to wires from the I/O connector to another board level connector
- All of this saves labor in installation, space within the system, and less connections, which is always a plus

Installation Information



- A standard arbor press and a specifically designed insertion fixture are needed
- The insertion fixture needs to be designed to press on the peripheral seal or around the outside diameter of the plastic insert of the mating end of the I/O connector or around the mating face of the shell
- Evenly distributed forces will allow the connector to press nicely into the PC board

Compliant Pin Electrical Data



- The current carrying capacity of a compliant pin contact equals that of a solder tail, solder cup, and crimp contacts
- The current carrying capacity of the compliant pin to the PC board far exceeds that of the pin to socket engagement
- The millivolt drop through the compliant pin tail to the plated through hole of the PC board is negligible and is better than the requirement in the M39029 specification

Compliant Pin Mechanical Data



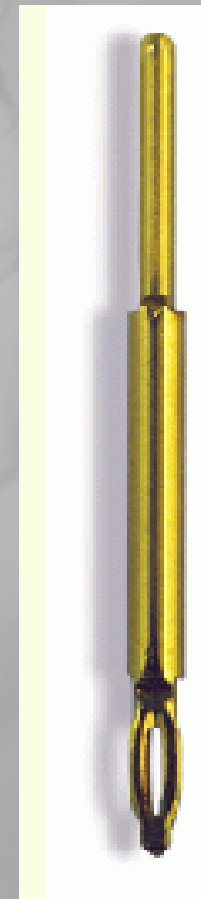
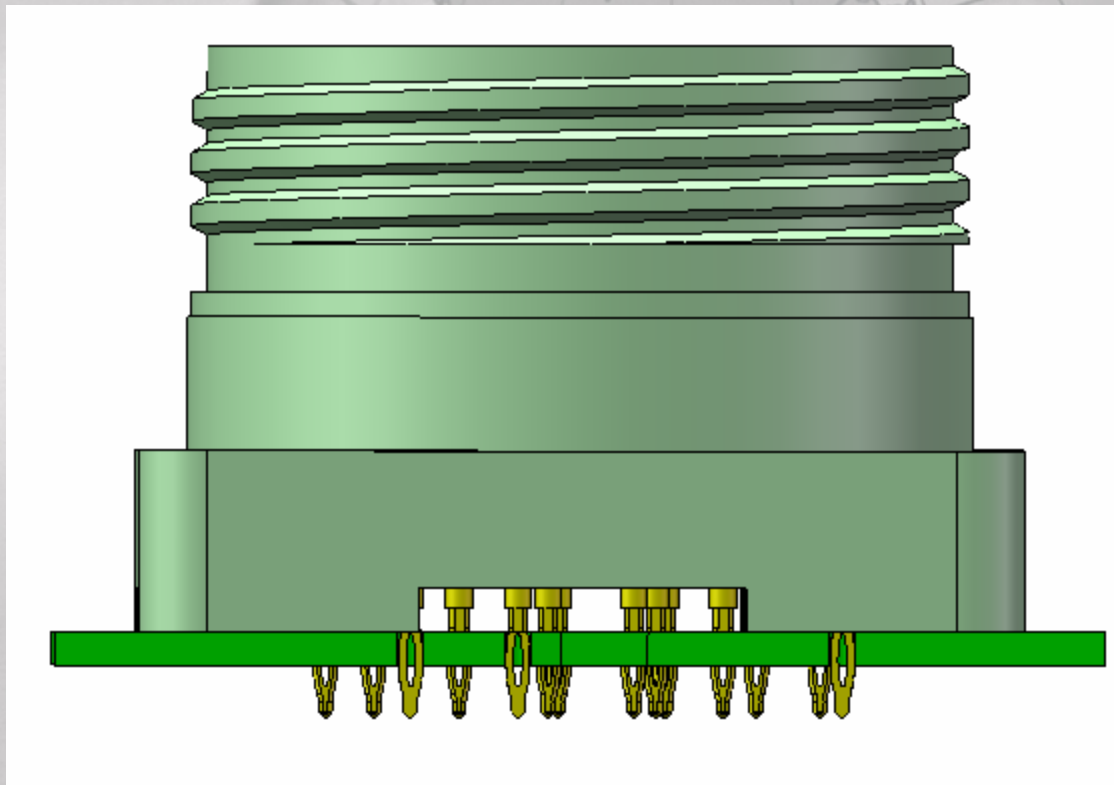
- Insertion Forces typically are 10 lbs. maximum average per contact
- Retention Forces typically are 5 lbs. minimum average per contact
- For a size 22 compliant pin contact, the recommended PC board hole diameter after plating should be about .038"/.042"
- For a size 16 compliant pin contact, this should be about .056"/.060", and size 20 = .047"/.051"

J-Tech Compliant Pin History



- For over a decade, J-Tech has been supplying compliant press fit tails within harsh environment circular connectors for military, aerospace, and commercial applications
- Programs such as the Boeing/LMCO JDAM Bomb, Raytheon ITAS Vehicle Missile Launcher, F-16 and other aircraft communication modems, and others use J-Tech connectors with Compliant pin contacts

Compliant Pin Connector & Contact



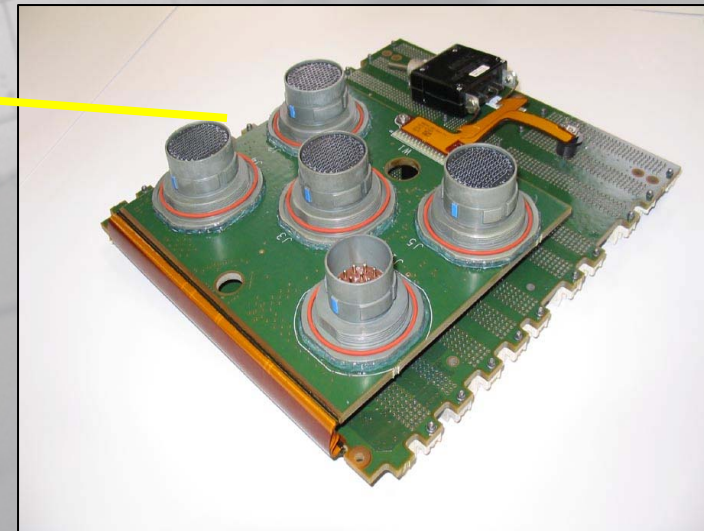
Applications



Raytheon ITAS Program



J-Tech Compliant Pin Connectors on a PC board



Applications

Boeing/LMCO JDAM Bomb



J-Tech Compliant Pin Connector is part of the guidance system in the rear of the missile

