



CASE STUDY: PEM® TACKSERT® PINS FOR HDD/SSD RACK

As one of the largest tech corporations in the world, this PennEngineering® client develops and sells a variety of computer-related products and services including high-performance servers that are scalable to any size workload.

CHALLENGE

To fasten the plastic handle of an HDD carrier to 2 metal components of an SSD rack for one of their server products, our client was using a costly and labor-intensive assembly process that required the use of 8 parts - 4 thread-forming screws and 4 inserts.

A strong attachment between the plastic handle and metal panels was critical, but there were potential drawbacks to using screws in the assembly process:

- Limitations to joint strength in the plastic handle
- Fastening of the screw could be weakened by creep
- The use of screws is not tamper-resistant

SOLUTION

PennEngineering® was tasked with designing a new fastening alternative that would be simpler than their current screw assembly and could support quick installation.

Working with our client's design center in Taiwan, PennEngineering® successfully replaced the current screw assembly with a custom-engineered microPEM® TackSert® pin.

- TackSert® pins provide a cost-effective alternative to micro screws for attaching thin sheets to plastics, common casting materials, or other similar base materials used in compact assemblies
- Eliminates the need to tap or use threaded inserts
- Low-profile head minimizes protrusion on the top panel
- Unique design features promote reliable and effective performance.

RECOMMENDATIONS

PennEngineering® tested 2 new TackSert® designs to meet the client requirements of easy and fast installation.

Using YTK4-47581 and YTK4- 47761 TackSert® pins in the rack assembly reduced the parts per unit from 8 to 4 - providing significant cost savings and tamper-evident features. The pins also improved the cosmetic look of the assembly.

2+ million rack units using TackSert® pins are produced annually. We will continue with pin production for the next-generation carriers.

Value-Added Local Customer Support

The client used 2 fabricators for installing the TackSert® pins. When one fabricator reported installation issues, PennEngineering® investigated and provided local customer support at the client's Taiwan design center.

Through onsite testing with the client, they ruled out a TackSert® issue and the client confidently proceeded with pin installation and production.



TackSert® pins reduced the customer's parts per unit by 50%.