We receive many requests from customers asking for recommendations on how to retain seals in an application. One of the most popular “quick fixes” is to apply liberal amounts of adhesive to a standard O-ring type product without respect to groove shape or sealing function. However, Parker OES provides a wide array of sealing technologies, offering innovative solutions to accommodate the challenging and vast sealing needs of our customers.

**Replacing RTV with Pre-Applied PSA**

A customer had been using a standard O-ring product on an outdoor electronic device. This part was sealing the external edge of the enclosure and meant to keep out water and dust. The enclosure was plastic injection molded so this extreme edge had irregular geometry to accommodate the molding process. The original proposal was to shove O-ring cord in place and adhere it down with RTV (Room Temperature Vulcanization) so that it did not fall out during assembly. This left a rust colored stripe exposed on a consumer device due to fitment issues. Parker’s proposal was to replace the O-ring cord with a custom hollow extrusion that fit the available space and allowed complete closure, thus not exposing the seal to be visible. The RTV process was replaced with PSA (Pressure Sensitive Adhesive) that was preassembled to the seal and allowed for quick and clean placement during assembly and retention for any maintenance needed.
Replacing cyanoacrylate adhesives with interference friction

A different customer had been using a similar product solution for an industrial cartridge filter. A sheet metal cap had a groove stamped into it and then an O-ring was adhered in place with a cyanoacrylate adhesive (power glue). This was a time consuming, messy step with a relatively costly consumable being used. Parker was able to offer a custom hollow shape that self-retained in the groove due to interference based friction rather than adhesive attachment. It was bonded into a finished ring using Parker’s proprietary splicing technology to give a complete seal around the whole perimeter of the cartridge opening.

The discussion of how to keep a seal located in the right place is one that happens on every application. Sometimes, the answer is as simple as “gravity will hold it.” Other times, a more purposeful solution needs to be pursued. Standard product can be combined with adhesives to achieve the goal. However, Parker has other solutions that do not require that additional time and the expense of another consumable item.
For more information on custom sealing solutions, visit the Parker O-Ring & Engineered Seals Division website and chat with an engineer today!

This article was contributed by James Upshur, Product Engineer, Parker O-Ring & Engineered Seals Division.

Source: http://blog.parker.com/innovative-solutions-improving-seal-retention

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