



# Developing a sustainable fastener solution - Lighting Cluster

By Glenda Roberts - TR Fastenings



**We are experiencing changes in thinking from our customer base around the conventional use of fasteners. The recent legislation “The Right to Repair” is having an impact where designers are having to consider returning to fasteners rather than welding products, or having fixings that are permanent.**

Instead, there is an opportunity to use thread forming fasteners with additional head features to ensure that they provide the clamp load required and in vibratory situations. This allows for disassembly and ultimately will ensure fewer domestic appliance end up in landfill and because of this legislation there is a real environmental benefit.

[Watch the Right to Repair Video](#)

Following on from the success we had with the innovative EPW screw for thin sheet metal applications we continue to seek out other products where we can resolve industry application issues. We were proud to be given the Innovation Award for the EPW fastener at the previous Stuttgart Fastener Show. This was originally designed for domestic appliances application but is now morphing into a product used in automotive applications, in particular in Electric Vehicles.

## Sealing fastener

Automotive lighting clusters fixings have not changed very much over the years. One problem that persists is ensuring that there is no water

ingress into the assembly requiring a fastener with a neoprene sealing washer. This usually involves the fastener having a neoprene washer placed under the head of the screw and that inevitably deteriorates over time leading to leakage. There can also be clamp load issues.

Working in collaboration with a Tier1 automotive customer, we took on the challenge of developing a one-piece part fastener which should eliminate water ingress and providing the required clamp load. Our Technical Team in TR VIC in Italy took an alternative concept culminating in a screw with a unique under the head feature that has now been patented. This part has subsequently been tested and has been signed off by the customer. This is a unique product and improves conventional sealing technology. So, what were the benefits to both companies.

- It is now a one-piece fastener not two.
- We produce c60million of these a year, eliminating the need for the same number of washers. Neoprene is generally not recyclable when integrated into an assembled product.
- Production is faster as we do not have to assemble the washer.
- And as a result, there is a cost benefit to both parties, and other Customers are keen to pursue this patented design

There will be other sectors where this unique sealing screw technology can be applied.





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Together with our application and design engineers we are constantly seeking out areas where we can assist in improving a product suggesting alternatives and having the capability to manufacture prototypes in our own 7 manufacturing sites is a real winning combination. Our hybrid strategy of being both a distributor and a manufacturer enables us to reach a wider customer base and utilise our in-house capabilities.

We are adding new products to our website constantly. In recent months we have added over 3,000 parts to our plastic and cable management range. These include push and drive fastener, screw rivets, panel fasteners and an expanded range of PCB fixings. We will shortly be adding a new range of thread forming screws that meet some of the exacting requirements for robotic and high-volume manufacturing into plastics.

The knowledge base pages on the TR website are used extensively by customers engineers seeking dimensional data and product information. In addition to these, engineers and designers can choose the product that they are interested in and download a dimensioned drawing. In many cases there is a product animation that illustrates how the product performs. This is a great training tool and can be used across disciplines from purchasing and sourcing teams, or to be assist for assemblers.

Sven Brehler - TR Group Engineering Director explains that “We really see our USP as solution providers and actively welcome opportunities to

be involved at the inception of product design or in solving technical problems.”

