

Fixing Pesky Oil Leaks

By Bill Allard

Courtesy of the Pacific Northwest
Region's *Bumper Guard*

Tired of oil drippings left on the garage floor by your favorite Classic? Not all leaks are easy to stop, but those that originate from a machine screw or bolt that has been tapped into an area containing oil or grease can often be addressed.

Examples of affected areas would include oil pans, fuel pumps, differentials, etc. Although manufacturers usually designed attaching fasteners in such situations to thread into a blind hole, some holes either through design or fault penetrated into the oil-filled area.

In this situation, lubricant, especially when warmed, will work its way down the threads of the fastener and eventually drip to the floor.



Previous page:

Far left: 1930 Bucciali Double Huit (U-16) chassis

Upper left: 1930 Bucciali TAV8 Saoutchik roadster at the Blackhawk Museum.

Lower left, and above: this page: Recreated 1932 Bucciali TAV8-32 Saoutchik berline with Voisin 12-cylinder engine at Pebble Beach.

I've used the following technique numerous times to quell this type of leak. The approach requires three "components": first, a fastener that does not have full length threads; second, machining a small chamfer on the base metal beneath the fastener; and third, selecting an appropriately-sized O-ring that fits snugly around the non-threaded portion of the fastener and fills the chamfered area on the base metal.

The idea is to compress the O-ring under the head of the fastener (or washer) such that the O-ring expands between the non-threaded portion of the fastener and the edges of the chamfer. Thus the compressed O-ring provides a seal that blocks the passage of oil. The challenge is to size the chamfer and the cross-section area of the O-ring such that the O-ring fills the void in the chamfer. If the O-ring is too large, or the chamfer too small, excess O-ring material will be squeezed out as the fastener is tightened and will interfere with proper tightening. Too large a chamfer, or too small an O-ring, and the chamfer void will not be filled, allowing oil to continue leaking.

The drawing below shows a cross-section of a typical "repair". When the fastener is fully tightened, the O-ring is compressed enough to expand into the surrounding voids and form a leak-proof seal.

