

Chasing Down A Burman Leak

There are just a few places where oil/grease can leak from the outer case of a Burman BAP gear box and one of those places is where the gear change shafts pass through it.



In OVR #36 Bernhard Kurschel described how to effectively fit an internal oil seal to the gear change shaft carrier. While this tamed at least 80% of the oil leaking from the gear change area, some traces of oil was still able to find its way to the outside world along the tiny space between PR50-C-094 the ratchet foot change sleeve and the inner PR50-C-090 sector spindle.

Wanting to eliminate this remaining small leak I closely examined the components in the gear change area and immediately noticed the space at the outer end of the gear change shaft assembly that look suited to an 'O' ring.

From my parts stock I found that a 5/16" OD x 1/16" cross section 'O' ring could be easily persuaded into the groove between the two shafts (picture above). As the back of the Gear Indicator PR50-C-097-1 sits on the shoulder of the inner shaft and proud of the outer sleeve as shown on the right - without some form of retainer there is the opportunity for any such 'O' ring to work its way upwards and lose sealing effectiveness. My solution to this was to modify a 0.015" shim that I had on hand so that it would fit over the inner shaft but inside the hole in the gear change lever, so acting as a retainer for the 'O' ring; as shown in the images below. It is essential that when installed the face of the shim is a few thou' below the shoulder on the sector spindle.



Gear Lever

Even with Bernhard's oil seal mod in place it is essential to retain a seal between the gear lever and the gear shaft carrier to prevent grit and detritus getting into the shaft space and causing problems. You can retain the felt seal or, as I did, find a 'O' ring to perform the outer sealing role. I used a 3/4" od x 1/8" section 'O' ring.

Now nice and tidy; and leak free.