

Suzuki GT750 Oil Pump Shaft Seal Replacement/Modifications

Ian Judd - 06.06.18

Hopefully a permanent solution for the replacement of the leaking seal fitted to the Oil Pump Shaft.

My existing pump fitted to my 1976 A model was leaking badly from the pump shaft. As I had a spare pump which was also leaking, I decided to dismantle for further investigation.

After removing the pump top and removing the shaft I found the seal worn and a small, but noticeable groove worn in the shaft bore caused by the seal body rotating within the pump over 40+ years.

Original Pump & Seal Measurements:-

V/Cup Seal OD - 8.50mm

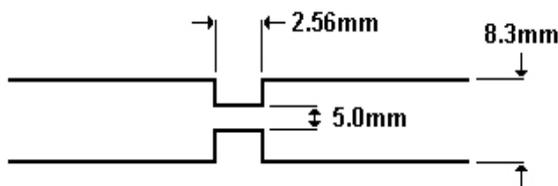
V/Cup Seal ID - 5mm

V/Cup Seal CS* - 2.48mm

(*CS = Cross Section)

Pump Shaft Bore ID - 8.4mm (actually measured at 8.37mm).

OIL PUMP SHAFT



Replacement seals of any suitable type are not available.

After months of research I have found a working solution, a X ring seal and the following is an explanation of these seals properties.

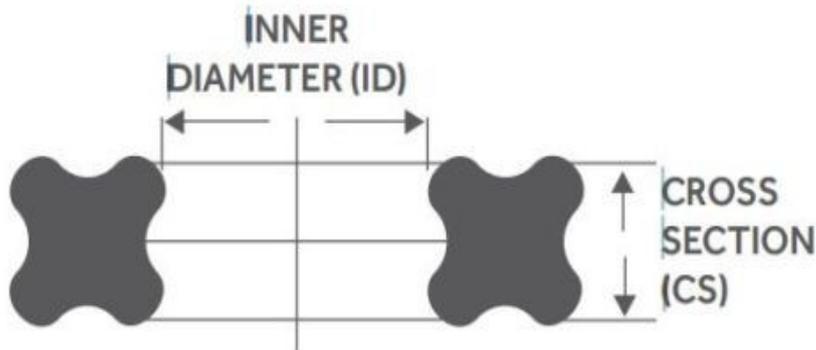
X Ring or Quad Ring Square section seals are suitable for flanges, reciprocating or rotary motion.

The four-lobed design provides twice the sealing surface in comparison to a standard O-Ring. The double-seal action requires less compression to maintain an effective seal. This reduced compression results in less friction, longer seal life and lower risk of twisting.

Black Nitrile Rubber Compound 44601 70 Shore hardness - working temp approx -30c to +120c.

Perfect for use with oils, gases and non-aromatic fuels.

Viton material seals are also available, but are not required for use in an oil pump.



I purchased the following size:

5.28mm ID x 1.78mm CS = total OD of seal = 8.84mm BS009.

These seals are available from:-

Seal Force LTD - <http://www.sealforce.co.uk> or via E-Bay at - https://www.ebay.co.uk/itm/IMPERIAL-NITRILE-70-RUBBER-X-QUAD-RINGS-1-78MM-CROSS-SECTION-SIZES-BS004-BS026/371746784784?ssPageName=STRK%3AMEBIDX%3AIT&var=640725144300&_trksid=p2055119.m1438.l2649

Fitting the New Seals

As the new seals are slightly bigger in OD @ 8.84mm compared with the original bore ID @ 8.40mm I drilled the bore oversize to 8.50mm. This removes the wear in the bore and allows the seal to fit the shaft. The new seal has a ID 5.28mm, but as the shaft dimension where the original seal sits is 5mm this difference allows for a slight compression of the seal when fitted to the shaft and inserted into the bore. This difference is seal OD and bore size gives a tighter fit of the shaft in the bore, but the shaft rotates smoothly, without binding. (lubricate the seal with pump oil before inserting shaft into the bore on final fitment).

Original Seal - 8.50 OD to Bore 8.40 ID = 0.10mm

New Seal - 8.84mm to Bore 8.50mm = 0.34mm

Original Seal total dimensions - 5mm ID to 8.50mm OD = 3.50mm

Original Shaft total dimensions - 5mm ID to 8.40mm OD = 3.40mm

New Seal total dimensions - 5.28mm ID to 8.84mm OD = 3.56mm

New Shaft total dimensions - 5mm ID to 8.50mm OD = 3.50mm

I have modified both pumps, one of which is currently fitted to my own bike and has covered 1000 miles plus with no signs of leakage.

I hope this helps.

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