

**Invention:** AN APPARATUS AND A METHOD FOR CONDUCTING A GALLING RESISTANCE TEST

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**Term of Patent:** Eight years from 23 August 2021

**Inventor(s):** Hemanta Doley, Sandeep Singh, Nabam Teyi

**IPR:** Hemanta Doley, Sandeep Singh, Nabam Teyi

**Grant:** Innovation Patent

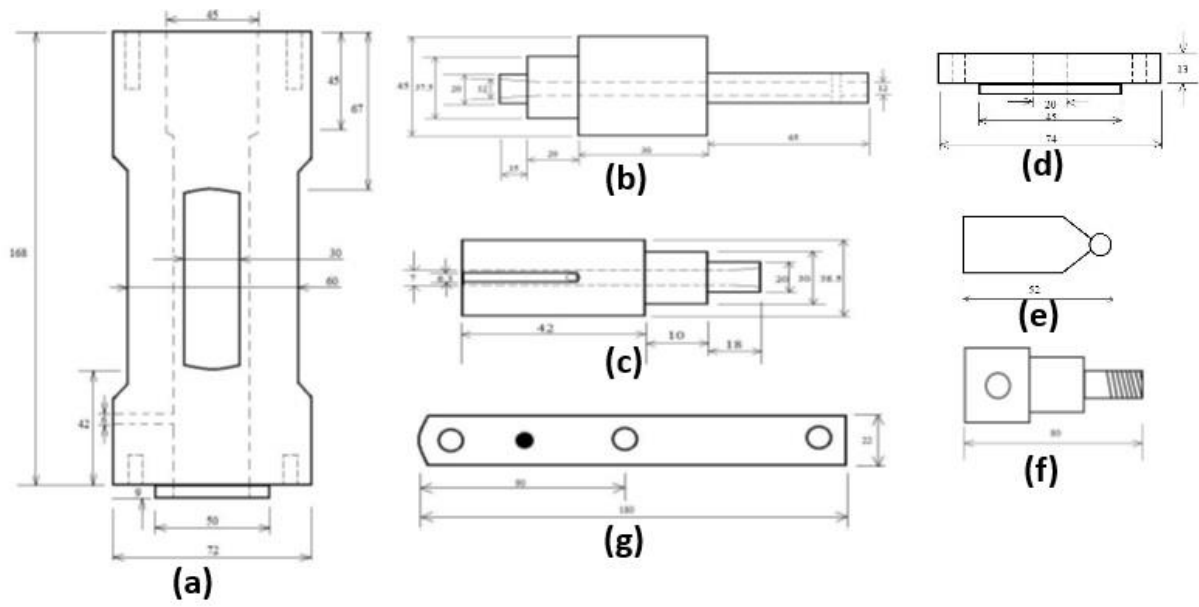
**Granting Authority:** IP Australia

**Overview:**

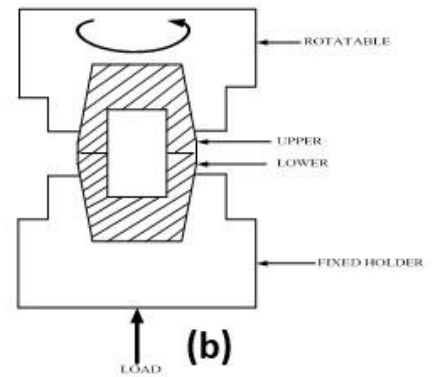
The present disclosure relates to an apparatus and a method for conducting a galling resistance test. The apparatus consists of a main cylinder with an upper (rotatable) and a lower (fixed) holder fitted to it, where a through hole of varying diameter is used. The lower holder's motion is constrained by a keyway designed along the periphery of the cylinder, ensuring a successful galling test. A thrust system fits the upper holder with a bearing for smooth, frictionless rotary motion, while limiting axial movement. A stationary button is loaded vertically via a Class 1 lever system comprising a fulcrum, lever, load concentrator, and fixed pulley

**Claims:**

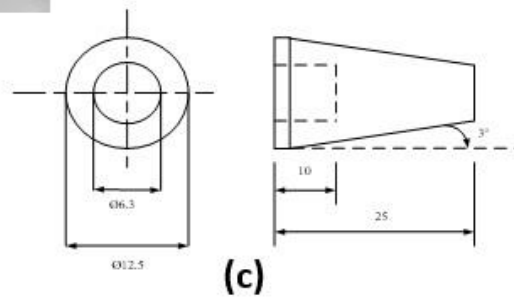
An apparatus for conducting a galling resistance test comprising a main cylinder with an upper (rotatable) and a lower (fixed) holder, each fitted with a varying diameter through hole. The lower holder's motion is constrained by a keyway along the cylinder. The upper holder is fitted with a bearing for smooth rotary motion and limited axial movement. An internal taper of approximately  $3^\circ$  on the holder prevents specimen slippage due to friction. A stationary button is loaded vertically via a Class 1 lever system with a fulcrum, lever, load concentrator, and fixed pulley. The apparatus ensures repeatability of the galling test, adhering to ASTM G196 standards. A galling resistance test method includes mounting a specimen, reducing its diameter, applying a load through the fulcrum, and rotary motion, followed by examining the sample for material transfer to determine galling.



(a)



(b)



(c)

Fig. Some snapshots of the graphical draft of the product/process/design/prototype