

DAMAGE TOLERANT CASING HANGER SEAL

Abstract of the Disclosure

A seal assembly (100) is inserted within an annulus (101) between inner and outer coaxially disposed annular members (103, 105) having a common axis. The seal assembly (100) includes a seal stack (115) having a compliant element (139") sandwiched between two anti-extrusion elements (139') that contain the flow of the compliant element (139"). The seal assembly (100) also includes a sealing ring (139) and a locking ring (117) coupled to the sealing ring (139). The seal assembly (100) also includes an energizing ring (119) configured to be moved axially in a first direction by a ring tool to apply an axial force to the locking ring (117), which in turn acts on the sealing ring (139) to radially deform the sealing ring (139) into sealing engagement with the annular members (103, 105). Continued axial movement of the locking ring (117) in the first direction radially deforms the locking ring (117) into locking engagement with the annular members (103, 105).

Figure 1