BI-DIRECTIONAL PRESSURE ENERGIZED AXIAL SEAL AND A SWIVEL CONNECTION APPLICATION

ABSTRACT

A tubular connection has first and second tubular members (11, 17) having aligned bores (19) with a common axis (21) and having first and second seal surfaces (29, 33), respectively. A metal seal (37) has a first end portion (41) that sealingly engages the first seal surface (29) and a second end portion (45) that sealingly engages the second seal surface (33). The metal seal (37) has a sidewall (47) with at least two folds (49, 51)). One of the folds (49) defines an axial interior gap. The other of the folds (51) defines an axial exterior gap. An exterior spacer member (61) is positioned in the exterior gap to limit closing of the exterior gap in response to a greater pressure on the interior of the seal (37) than on the exterior. An interior spacer member (55) is positioned in the interior gap to limit closure of the interior gap in response to a greater pressure on the exterior of the seal (37) than on the interior.

Figure 1