

Tree Cap Wedge Seal System and Method to Operate the Same

Abstract of the Disclosure

A tree cap (11, 103, 123) has a wedge type annular metal seal (49) for capping and sealing a subsea tree (14) and associated methods to energize the same. The tree cap (11, 103, 123) includes a cam element (33) having a lower end (39) with a conical profile (53) adapted to be disposed within a respective bore (47) of the subsea tree (14). The cam element (33) moves along an axis (67) of the bore (47). The annular metal seal (49) is disposed on an outer diameter of the cam element (33) so that the cam element (33) may compress the annular metal seal (49) against an actuation member (71) to seal the bore (47) of the subsea tree (14). The tree cap (11, 103, 123) includes a housing (15, 83, 125) adapted to be disposed on and secure to the subsea tree (14). The housing (15, 83, 125) carries the cam element (33) and exerts an axial force on the cam element (33) to deform the annular metal seal (49) into sealing engagement between the tree cap (11, 103, 123) and the subsea tree (14).

Figure 1