

Drill String Valve Actuator with Inflatable Seals

ABSTRACT

Method and actuator system for a Kellyguard valve disposed in a drill string. The actuator system includes a sleeve (52) that includes a cavity; an actuator (54) disposed inside the cavity and configured to rotate the Kellyguard valve; first and second external regions (68a, 68b) of the sleeve (52) having plural holes configured to receive a medium under pressure for actuating the actuator (54); a ring (56) provided around the sleeve (52) and configured to be fixed, the ring (56) having first and second internal grooves (70a, 70b); and first and second seals (58a, 58b) provided inside the first and second grooves (70a, 70b), respectively, at least one of the first and second seals (58a, 58b) being configured to not touch the first or second external regions (68a, 68b) of the sleeve (52) when in a collapsed state and to touch the first or second external regions (68a, 68b) when in an inflated state.

Figure 3