BIDIRECTIONAL RAM BOP AND METHOD

ABSTRACT

A ram blowout preventer (16) for sealing a well (10); the ram blowout preventer (16) including a body (16) having cavity with a recess; a ram block (20) configured to move inside the cavity; a top seat (26) disposed in the recess and configured to seal the well (10) when in contact with the ram block (20); a movable lock ring (34) extending inside a groove (36) of the body (16) and a corresponding groove (38) of the top seat (26) and configured to move inside the groove of the body (16), along a direction substantially parallel to the well (10); a first seal (40) extending inside a groove of the top seat (26) and configured to contact the body (16) and the top seat (16); and a second seal (31) extending inside a groove of the ram block (20) and configured to contact the ram block (20) and the top seat (26). A width (w1) of the groove (36) of the body (16) is larger than a width (w3) of the lock ring (34) by a predeterminded value, which is larger than normal tolerances, and a distance (D1) from a centerline (19) of the well (10) to the first seal (40) is larger than a distance (D2) from the centerline (19) of the well (10) to the second seal (31).

[Figure 12]