VALVE-SEAT INTERFACE ARCHITECTURE

ABSTRACT

A pump assembly with valve-seat interface architecture configured to extend the life of pump components and the assembly. A valve (100) of the pump assembly is equipped with a conformable valve insert (101) that is configured with a circumferential component having the capacity to. reduce the radial strain' of its own deformation upon its striking of a valve seat at the interface within the pump assembly. The circumferential component may include a concave surface (150) about the insert, a rounded abutment (175) at the strike surface of the insert, or a core mechanism (200) within the insert that is of greater energy absorbing character than surrounding material of the insert. Additionally, the valve seat itself may be configured for more even wear over time and equipped with a conformable seat insert to reduce wear on the valve insert.

Fig. 1