TUBING HEAD CONTROL AND PRESSURE MONITOR DEVICE

ABSTRACT Of THE DISCLOSURE

A tubing hanger and wellhead have features for controlling and monitoring fluid pressure to downhole equipment. The tubing hanger has an internal vertical passage. A hydraulic line connects to the lower end of the vertical passage and runs downhole. The vertical passage communicates with a lateral passage through the outer wall of the hanger. A lateral passage through the wellhead housing is generally aligned with the lateral passage of the hanger when the hanger is installed in the wellhead housing. A pressure shaft is installed in the wellhead passage and has a passage therethrough. A seal member having spherical ends is inserted between spherical receptacles located on the inner end of the pressure shaft passage and on the outer end of the lateral passage of the hanger. The seal member has an internal passage having a flared inner end. The seal member is allowed to rotate to sealingly connect the lateral passages if some misalignment of the lateral passages exists. A gage or other pressure monitoring device or a source of hydraulic pressure can be attached to the outer end of the pressure shaft to communicate with the shaft passage.

Figure 1.