

Study on tightening characteristics of flareless pipe joint assembly process

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Abstract

The assembly process of flareless pipe joints is very important for the sealing performance of hydraulic pipeline system. Based on the theory of contact mechanics, a theoretical model of the assembly process of pipe joints is established to simulate the extrusion molding process of flareless pipe joints. It is found that tightening torque is an important factor affecting the sealing performance of pipe joints. By comparing the changes of the contact stress between the sleeve and the pipe joint under different tightening tortures, combined with the mechanical transfer and deformation results of the contact surface, the results show that the fitting situation of the sleeve and the pipe is good when the expansion pressure is 180Mpa, and the sealing performance of the pipe joint is good when the tightening tortures are between 15N·m and 18N·m.

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