

TENSIONER CYLINDER CONNECTIONS WITH MULTI-AXIAL DEGREES OF FREEDOM

ABSTRACT OF THE DISCLOSURE

A coupler having two degrees of axial freedom couples a hydro-pneumatic cylinder to a tensioner ring of a riser tensioner mounted to a platform. A post extends along an axis of the cylinder and an intermediate sleeve is disposed around the post to form a post annulus. An outer sleeve is secured to the tensioner ring and defines a cavity into which the post and intermediate sleeve are inserted so that an annulus is formed between the sleeve and the outer sleeve. The outer sleeve is coupled to the intermediate sleeve so that the outer sleeve may pivot on the coupling between the outer sleeve and the intermediate sleeve relative to the intermediate sleeve. The intermediate sleeve is coupled to the post so that the intermediate sleeve may pivot on the coupling between the intermediate sleeve and the post relative to the post.

Figure 1