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**ABSTRACT****CO-LINEAR TENSIONER AND METHODS FOR ASSEMBLING  
PRODUCTION AND DRILLING RISERS USING SAME**

The invention is directed to a tensioner for providing a conduit, e.g., drilling and production riser strings, from a floating vessel at the surface of the ocean to the blowout preventer stack, production tree, or other assembly which is connected to the wellhead at the sea floor. The tensioner compensates for vessel motion induced by wave action and heave and maintains a variable tension to the riser string alleviating the potential for compression and thus buckling or failure of the riser string. The tensioner of the present invention preferably includes at least one mandrel having at least one hang-off donut; at least one upper flexjoint swivel assembly, at least one radially ported manifold, and at least one tensioning cylinder co-linearly combined in a single unit. Methods for assembling risers are also disclosed.

**FIGURE 1**