

# Keyless Locking Devices Eliminates the Need for Keyways in the Oil & Gas Industry

*Climax Keyless Locking Devices used in place of keyways when mounting shaft components for manufacturing cold rolled steel and welded pipes eliminate fretting and associated equipment damage.*



Traditionally, manufacturers of cold rolled steel and welded pipes in gas transmission use multiple hydraulic motors to drive the steel conveying rolls. These hydraulic motors are typically mounted onto a shaft with the use of keyways. The application subjects the motor/shafting to frequent and severe shock loading which causes a systemic problem of keyway failure. Due to reverse bending moment, the slip fit rigid flanged coupling with a standard keyway and two set screws often faces issues such as fretting, resulting in catastrophic failures. These failures cause the manufacturer unnecessary expenses in damaged equipment, including extensive labor and loss of production.

Climax Metal Products decided to look for alternate solutions to prevent keyway failures. Climax C600E keyless rigid couplings with a step-bore inner ring provides this solution. A Climax keyless rigid coupling creates a high pressure high capacity mechanical interference fit that eliminates the "slop" from the connection while providing the reassurance that a keyway failure is avoided. Additionally, the zero backlash connection is unaffected by shock load which contributes to the failure of the traditional keyed approach. Easy to install with simple hand tools, Climax keyless rigid couplings provide a simplified disassembly and repair when the need arises saving time and money.

Climax carries an extensive inventory of straight bore keyless rigid couplings. Step-bore components are available upon request. Climax engineers have the ability to engineer custom designs to fit any application challenge you may have.

## For Rotating Applications:

- Keys, keyways, and set screws are prone to shaft damage and fretting corrosion
- Splines, prone to fretting corrosion and require expensive machining
- Shrink or press fits that are difficult to install and remove
- QD/Taperlock bushings use keyways where wallowing occurs causing fretting and backlash
- Requires only the use of simple hand tools for installation and removal

