# VIV Fastening Mechanism

- **ROV compatible**
- **Rugged to withstand vibration and rotational stresses**
- **Made of 30-year corrosion-resistant material**

**NASA technology offers subsea stability.**

Vortex Induced Vibration (VIV) occurs when ocean currents flow past the risers that transport well fluids from the sea floor to the surface/offshore production structures. The vibration is extremely destructive to risers and associated equipment. To counteract VIV, suppression fairings are fastened around the risers using remote operated vehicles (ROV).

To accomplish this, the fastener must:

a) Be compatible with ROV installation;

b) Allow free movement of the fairing so it can re-orient itself to the ocean currents;

c) Not loosen under unpredictable natural forces.

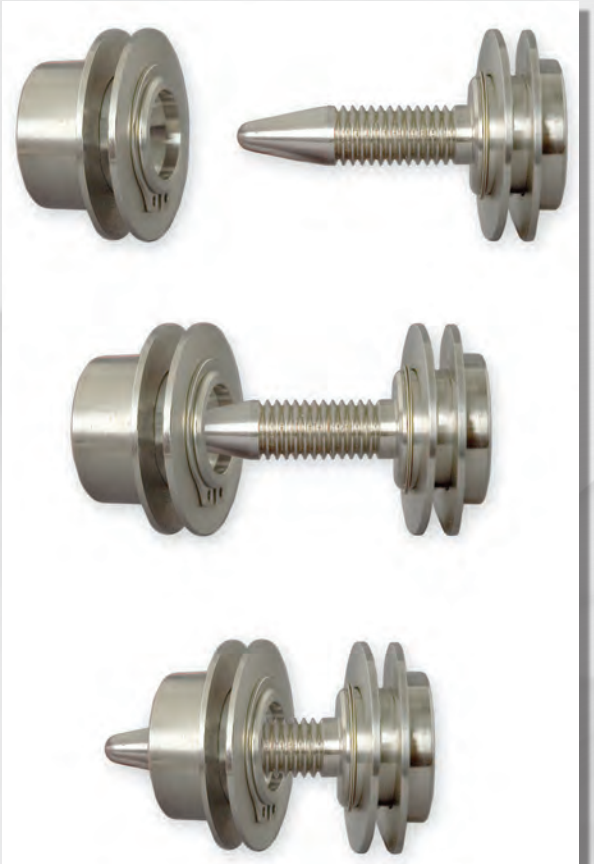
Standard threaded fasteners don't meet these criteria, but FASTORQ's ZipNut VIV Fastening Mechanism does!

ZipNut, developed for NASA and used in Space Shuttle missions, the International Space Station and in repair of the Hubble Telescope, now goes subsea in this state-of-the-art application. The specific innovation in mechanical engineering is the use of radial grooves to make the connection permanent. The FASTORQ system follows the same principle of a check valve, allowing movement only in one direction.

Users have quickly gained the capability to install fairings with ROVs faster and with greater reliability. The ZipNut VIV Fastening Mechanism protects your project from the catastrophic failure caused by vortex induced vibration.

See FASTORQ's Warranty on page 29 for more details.

**Total Assurance Guarantee 1 Year**



**Notice the conical tip on the male component to help alignment for smooth fastening into the female component. To prevent loosening due to vibration or rotation, radial grooves in the components replace the helical threads normally used in fasteners. Once the ZipNut fasteners engage, the action is irreversible.**