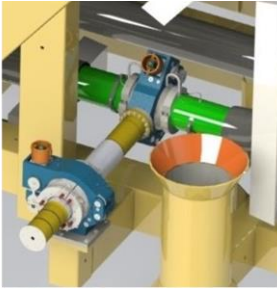


SUBSEA PIPING SYSTEM ANTI-VIBRATION CLAMPS



PRODUCT DATASHEET

SYSTEM, PRODUCT AND SERVICE PROVIDER



Anti-Vibration-Clamp features and benefits:

- Prevents flow induced vibration to escalate above threshold where piping arrangement could see fatigue damages
- Pure mechanical design, none active hydraulic components
- Grab around the piping in one end and secure the stationary part in the other end
- Allow for flexibility during assembly and connection of piping system
- Can be installed on existing piping system subsea
- Clamps are operated by ROV
- 4 off Anti-Vibration Units in service on subsea templates

Technical data for weak link

Design code	ISO 13628
Size, outer diameter of pipe	Up to 12 inch
Working length	Adjusted for application
Material	Typical Carbon steel, interface item to pipe will be the same as pipe
Coating	Typical Norsok system 7, or as required

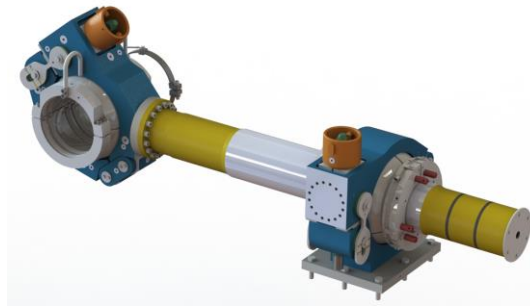
Product verification

- Verification testing in workshop to simulate horizontal connection between XT and manifold
- Good correlations between analyses and test results

Workshop testing to confirm functionality



SUBSEA PIPING SYSTEM ANTI-VIBRATION CLAMPS



Assembling into manifold module

How it works

The location of the Anti-Vibration Clamp are determined by the flow/piping analyses and the given layout of the module/structure. Required movement of the piping during any connection/disconnection will determine the overall dimensions.

After assembly, the Anti-Vibration-Clamp is free to move in all directions and angle at low friction. When the piping is connected, the Anti-Vibration-Clamps are closed and thereby give a piping system with acceptable characteristics to prevent flow induced vibrations.