

Technical Specification

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|--------------------------------|-------------------------|---------------------------|------------------------|
| Casing Size, in | 7.000 20-57.1 lbs/ft | 9.625 32.3-75.6 lbs/ft | 13.375 61-98 lbs/ft |
| Outer Diameter (NOM), in (mm) | 4.750 (120.65) | 6.750 (171.45) | 8.00 (203.2) |
| Inner Diameter, in (mm) | 2.00 (50.8) | 2.50 (63.5) | 3.00 (76.2) |
| RPM Range | 0-120 | 0-120 | 0-120 |
| Approx. Length, ft (m) | 9.0 (2.7) | 10.5 (3.2) | 12.0 (3.7) |
| Connection | NC38 | NC50 | 6-5/8" API REG |
| Maximum Temp f (oC) | 400 (204) | 400 (204) | 400 (204) |
| Maximum Tensile Strength, lbf | 400,000 | 820,000 | 1,100,000 |
| Activation Pressure Range, psi | 50-2000 | 50-2000 | 50-2000 |
| Impact Frequency Range (Hz) | 0-32 | 0-24 | 0-24 |

Technical Advantages

- **Simple, robust, proven drive system: HydroVolve INFINITY®**
- **Simple make up and deployment procedure – no specialist rig personnel required**
- **Simple, quick control from surface at drillers console**
- **Rapid, effective high-frequency action**
- **Unrivalled wellbore cleaning action**
- **Unrivalled radial impulse for debris mobilisation and bond-breaking**
- **Interfaces with 3rd party systems**
- **Versatile operation**
- **Short-lightweight-robust**
- **Low-pressure, low-torque, low-load operation**
- **Kind to surface equipment**

HydroVolve QUAKE®



HydroVolve QUAKE® is a high frequency radial impulse tool engineered to stimulate enhanced production, productivity and performance.

HydroVolve QUAKE® harnesses the power of the HydroVolve INFINITY® engine to drive an array of radial impulse strikers into contact with the wall of the wellbore. The HydroVolve QUAKE® strikers deliver high frequency impulse energy to break bonds, mobilise solids, clean and cleanse wellbore systems across a diverse range of applications.

The HydroVolve QUAKE® may be deployed as a standalone device or in tandem with additional systems. It is operated simply and quickly from surface using standard drilling console controls. The downhole high-frequency radial impulse action of the HydroVolve QUAKE® is activated simply by flowing through a rotating workstring.

Applications at a glance

- PRODUCTION ENHANCEMENT – sand screen, ICD and liner system cleansing
- PRODUCTION ENHANCEMENT – scale removal
- CASING REMOVAL – cement and solids bond busting
- WELLBORE CLEANUP – wellbore needle-gunning debris removal
- PERF-WASH-CEMENT – annular flow and debris evacuation enhancement

HydroVolve QUAKE® is a simple, low-risk, high-return wellbore service system that provides unparalleled and unrivalled production and performance enhancement.

Operator Benefits

- Improved production/injection from underperforming screens and liners
- Through-bore restoration in scaled wells
- Reduced pulling forces in casing removal
- Increased casing intervals pulled
- Unrivalled active wellbore cleanup
- Optimised cement placement in PWC operations

HydroVolve QUAKE® is the tool-of-choice for deployment for maximum performance in a range of critical well operations:

PRODUCTION ENHANCEMENT - Debris

HydroVolve QUAKE® delivers high frequency impulse to wells to enhance production/injection from plugged, blocked and bridged-off screens and liners. The high frequency vibration and radial impulse delivered by HydroVolve QUAKE® is engineered to mobilise solids and to clear blocked flow paths, immediately delivering improved production to underperforming wellbores.

PRODUCTION ENHANCEMENT-Scale

HydroVolve QUAKE® is the ideal system for deployment in scale removal operations. Deployed either standalone or in tandem with an appropriate scale mill the HydroVolve QUAKE® impulse action is targeted to shatter and pulverise scale residue to fully cleanse the wellbore and perforations of the impairment.

CASING REMOVAL-Cement and Debris

Casing recovery in P&A and slot recovery is often encumbered by high pulling forces caused by cement and barite deposits in the annulus. HydroVolve QUAKE® shatters cement bonds, hydrates and loosens compacted barites and mobilises settled solids to massively reduce frictional binding forces. Additionally, pre-treating of casing prior to recovery with HydroVolve QUAKE® is proven to alleviate excessive break-out torques of recovered casing couplings at surface preventing the need to use cold-cutting equipment and saving valuable rig time.

WELLBORE CLEANUP-Cement and Debris

The high frequency action of the radial impulse strikers of the HydroVolve QUAKE® provide an unrivalled wellbore cleaning action – akin to a wellbore needle-gun. As the HydroVolve QUAKE® is operated, the strikers sweep a full 360 degree path around the wellbore providing up to 80 individual wellbore strikes per revolution – over 7000 strikes per minute at 90rpm removing all trace of cement, mud-solids, rust, LCM or any unwanted deposit from the wellbore.

PERF-WASH-CEMENT-Cement and debris

HydroVolve QUAKE® is a highly effective complimentary technology for PWC operations. Passage of the HydroVolve QUAKE® over the PWC zone pre and/or post washing provides the ideal action for opening and enhancing hydraulic communication, mobilising settled debris in the annulus and clearing any blockage from perforations during the wash cycle to provide the perfect conditions for an effective cement or alternative barrier placement.

PERF AND SQUEEZE-Cement and debris

HydroVolve QUAKE® is an equally effective complimentary technology for Perf and Squeeze operations. Passage of the HydroVolve QUAKE® over the zone pre and/or post perforating provides the ideal action for opening and enhancing hydraulic communication to provide the perfect conditions for an effective cement or alternative barrier squeeze.

Technical Features

