

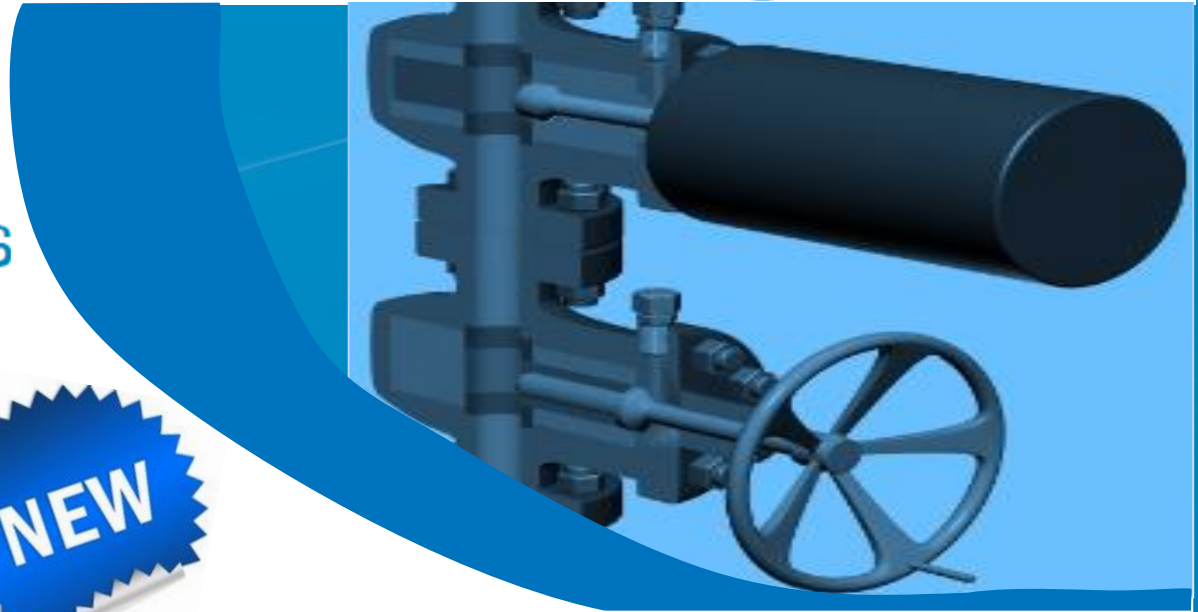


Kinetics Controls
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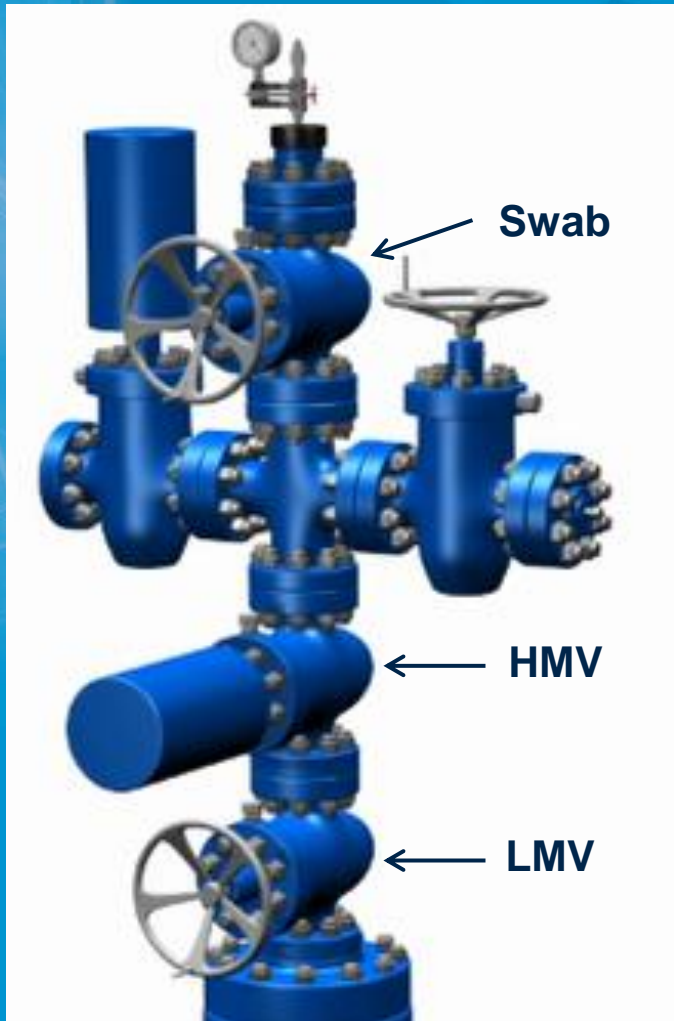


MAC-PAC - Leak Sealing Solution



*“Successful Tree Valve Isolation
UK Offshore with Mac-Pac”*

Gate Valve Isolations with Mac-Pac



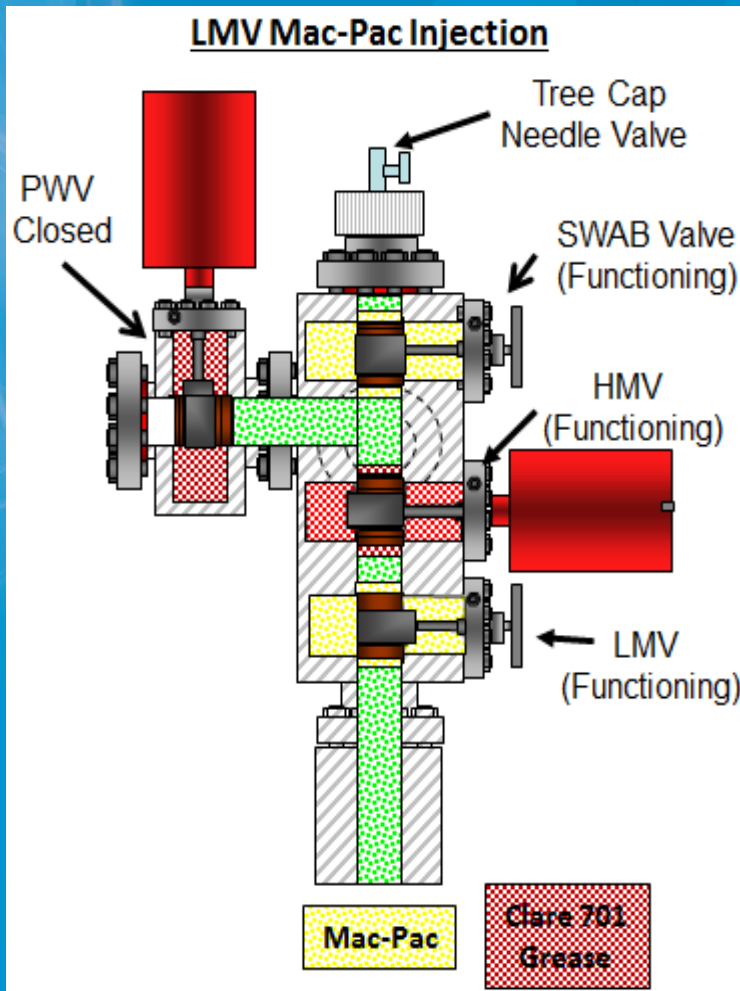
Background

- ❑ KCI were approached by a major Oil and Gas producer in the UK to provide isolations on Christmas Tree valves on a Water Injection well where all three inline Gate Valves have failed.
- ❑ The Isolations are required to break containment to install a secondary Swab Valve. This would allow Well Intervention and Well Abandonment operations to continue.
- ❑ All inline gate valves have a recorded leak rate of 10litres per minute.

Planned Operation

- ❑ Displace the existing Clare 601 & 701 grease from the valve cavities and replace it with KCI's Mac-Pac through a GSP fitting on the gate valve bonnet to provide an effective valve isolation.
- ❑ Obtain a zero leak rate build up through the closed tree valves.
- ❑ Prepare the well for future Intervention operations.

Gate Valve Isolation with Mac-Pac



Actual operation

- ❑ Connect KCI deployment tooling to the SWAB valve. Inject 1.5ltrs of Mac-Pac and witnessed a PBU. Functioned valve and tested. Zero pressure build up above.
- ❑ Connect KCI deployment tooling to the LMV. Inject 5.5ltrs of Mac-Pac and witnessed a PBU. Functioned valve and tested. Zero pressure build up above however, a very small fluid leak was witnessed at the vent point. An extended pressure build up test was carried out overnight – Good test.
- ❑ The customer was happy with the isolation of both valves.
- ❑ An attempt was made to inject Mac-Pac into the MPWV as water injection pressure was entering the tree cavity but the valve would not accept any Mac-Pac.
- ❑ Carry out functional checks – all OK. The well will remain closed in until the planned intervention work begins.