

Performance Report: Low Pressure Testing of Dual Shear Gun



Results from Canada and Stavanger with Various Pump Solutions

Introduction

The low-pressure tests performed on the Dual Shear Gun for Client LMP, both in Canada and Stavanger is summarised. The tests used different pump solutions and fluid premix, aiming to document the effect on ES values under varying pressure and flow rates.

Test Setup and Methodology

In Canada, low pressure testing was performed using a fluid premix and a lobe pump. The pump delivered 10 bar pressure and a flow rate of 118 l/min. In Stavanger, low pressure testing at the LMP was carried out with a triplex pump, with pressure set to 30 barg and a flow rate of 573 l/min. Both tests aimed to measure changes in ES values using different combinations of pressure and flow.

Results

- Canada: The test with the lobe pump at 10 bar and 118 l/min resulted in a 43.39% increase in ES.
- Stavanger (LMP): The test with the triplex pump at 30 barg and 573 l/min resulted in a 42.5% increase in ES.

Both setups showed significant improvements in ES, with very similar results despite differences in pressure and flow rate. This indicates that the Dual Shear Gun operates effectively across a wide range of operating parameters.

Discussion

The results from Canada and Stavanger demonstrate that low pressure testing with the Dual Shear Gun provides a marked increase in ES, regardless of pump type or test location. The lobe pump in Canada delivered the desired result at lower pressure and flow, while the triplex pump in Stavanger achieved a comparable improvement at higher pressure and higher flow rate. This premix was already sheared using a Silverson shear unit prior to entering the Dual Shear Gun test. This highlights the flexibility of both the equipment and the methodology, allowing for adaptation to local conditions and requirements. Further: We need to look at performance at higher flowrate with lower pressure differentials to reduce shearing time. To be tested.

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Recommendations

- Further Low and medium testing should be considered to optimize pump type and operating parameters to shear at low energy consumption and reduce footprint

Conclusion

Low pressure testing of the Dual Shear Gun has delivered good results in both Canada and Stavanger, with ES increases above 42%, but the low flow using lobe pump is not commercial sustainable due to increased shearing time using size 8 Nozzle size. The tests show that the equipment is effective under varying conditions and that collaboration between teams has been crucial to success. Further testing may provide additional Insights and improvements.