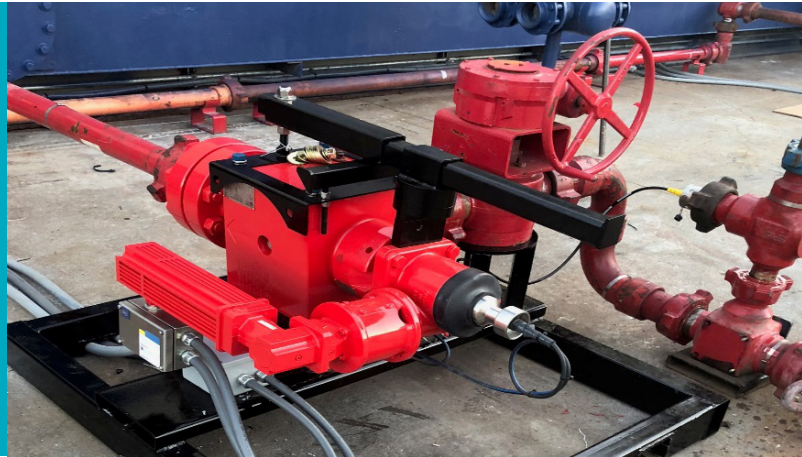


Expro Excellence

Expro delivers bespoke solution for pump testing application

PowerChokes



Objectives and background

- Expro's customer were using hydraulic chokes to test duplex/tri-plex test frac pump trailers before they were installed on rigs by holding back pressure on the pumps allowing them to verify the pump outputs. The customer wanted to move away from using hoses, reduce the number of cables, and they wanted to automate the control of high pressure up to 15,000psi for multiple pumps
- The customer was struggling to find a bespoke solution in the market place

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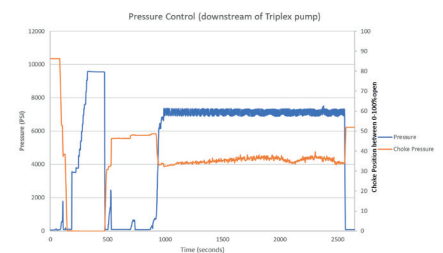
- Expro offers a comprehensive portfolio of products and services allowing us to perform all the customer's requirements in house. From engineering design, assembly and manufacturing, this enabled a quick and cost effective solution
- Expro decided to use the servo electric choke which is worm gear driven along with Automatic Back Pressure (ABP) auto tuning software logic to solve the customer's challenges. We used our field proven technology to create a new bespoke solution to meet our customer's requirements
- The main challenges of using this technology included:
 - The ABP system had been designed for controlling pressures from the return side of live wells at pressures below 1,500psi
 - To give the customer the ability to control multiple chokes simultaneously with minimal cables
 - Due to the high pressure involved for actuation forces, we needed to prevent the internal forces damaging the customer's equipment and prolong its longevity
- For this application Expro needed to control the choke in a very precise and accurate manner while maintaining pressures of up to 15,000psi requiring high actuation forces. Our worm gear electric choke is field proven and has a high level of accuracy and control

- Our innovative software is intelligent, automated and intuitive providing a high level of accuracy and reduces the requirement for human interface, regardless of operating conditions
- Our software was developed to be both user friendly and also has the capability to auto-tune without user intervention

Value to the client

- Our innovative software enabled the customer to simultaneously test frac pumps (reducing the time for testing and a significant reduction in manpower requirements)
- Expro's solution increases the operational safety, reducing human interface in a high pressure environment
- The system was very compact with a smaller footprint than the existing hydraulic choke solution
- Our electric choke is light weight and has minimal maintenance requirements (trim change out can be conducted in under 15 minutes by one person)
- Fast turnaround on testing frac pump trailers between jobs
- Expro's intuitive, user friendly software has increased levels of automation which has resulted in safer and more reliable operations that require lower levels of staff training
- As can be seen in Figure 1, Expro can successfully control pressure to a very tight tolerance margin of up to 15,000psi in auto mode

Bespoke solution



Contact

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