

## Deployment System



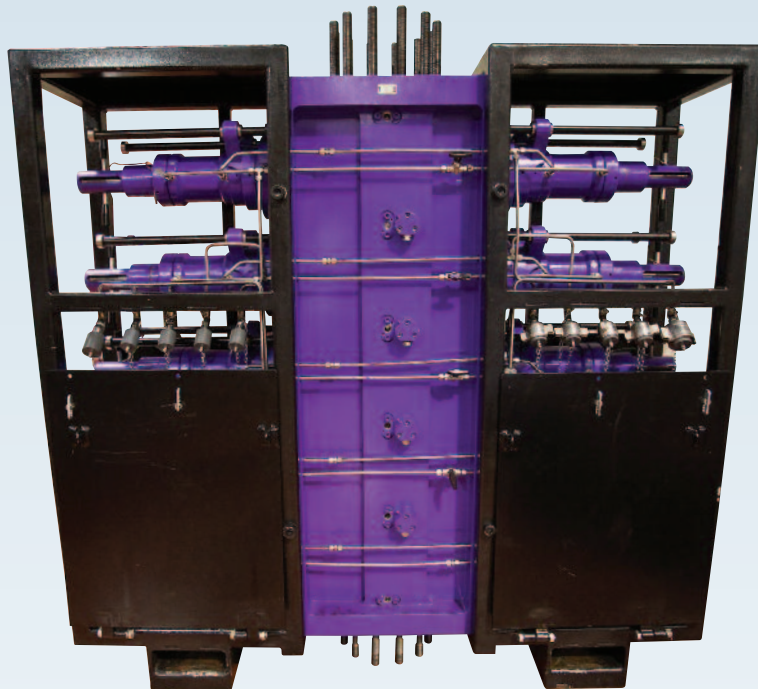
The Phuel Deployment System allows operators to deploy a tool string longer than the available pick-up height into a well bore while maintaining full control of the well pressure. The system makes it possible to deploy longer lengths of production logging tools, clean-up tools and wireline conveyed perforating guns than conventional methods would normally allow and is ideal for tractor operations. The system demonstrates a saving of 40% over other intervention

methods such as coil tubing or hydraulic work over.

The complete deployment system comprises a 5-ram blow-out preventer (1 x shear seal, 2 x pipe and 2 x Wireline rams), hydraulic work window c/w fast test sub and detection system with deployment bars that are used to connect the tools to be deployed into the well.



The system is manufactured to API 6A standards to conform to current requirements for pressure control equipment, and the detection system to current ATEX standards and is rated for zone 1.



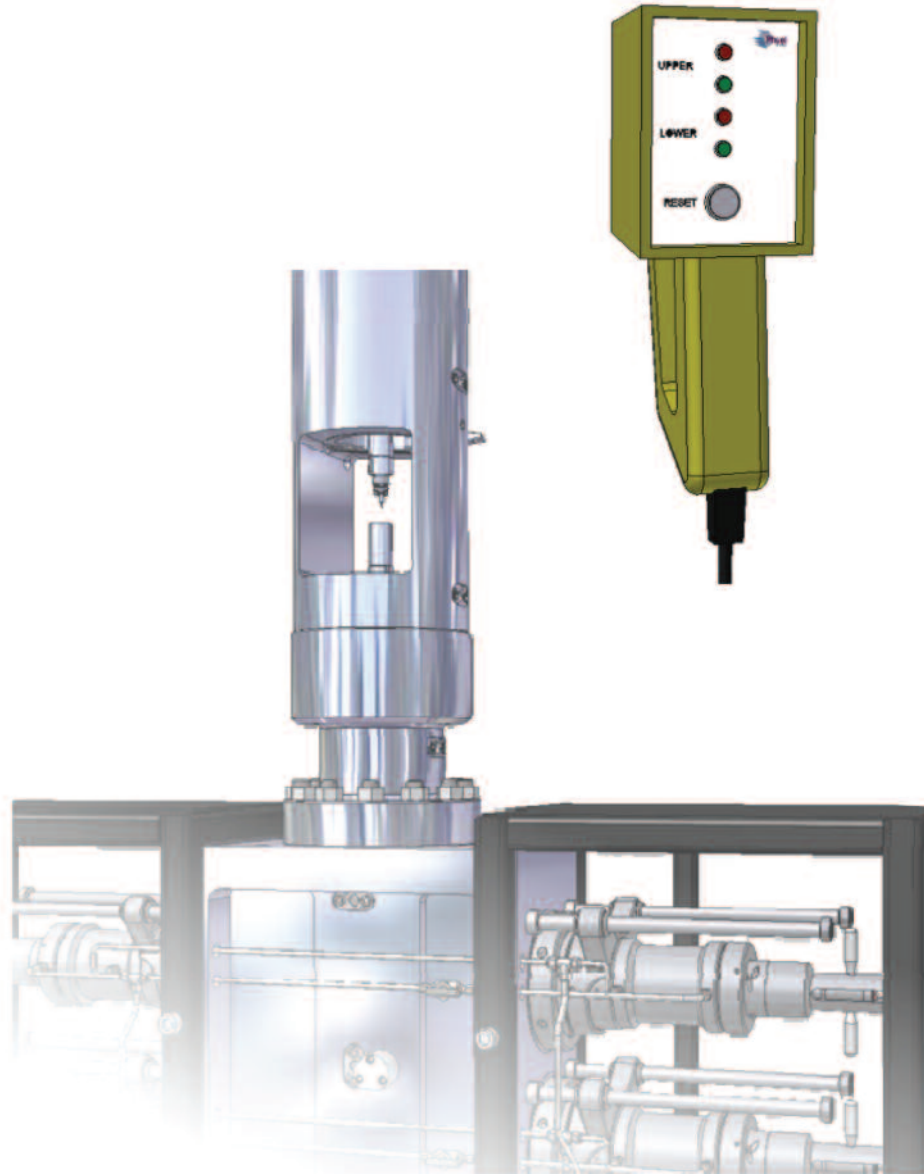
**A FLEXIBLE  
APPROACH,  
IMPROVED SAFETY  
AND EFFICIENCY  
THROUGH DESIGN**

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# Deployment System



- ▶ Fast Test Sub incorporated in window
- ▶ Window seals can be tested without filling the lubricator
- ▶ Five fully-configurable rams for maximum flexibility
- ▶ Two pipe rams, two wireline rams and one shear and seal ram supplied
- ▶ Shear and seal ram will cut deployment bar
- Six available detector positions to suit many bar configurations
- ▶ Safety pin to lock window in fully open position
- ▶ Fast locking actuators to reduce operation time
- ▶ Detection system is ATEX-approved for operation in zone 1 areas
- ▶ Hydraulics are hard piped with quick connections
- ▶ Individual ram control ensures bar is positioned correctly and is not damaged
- ▶ Actuators are mounted on slide bearings for easy retraction when redressing rams
- ▶ Design third party-verified and conforms fully to NORSOK and API standards