

PowerChokes®

Managed Pressure Drilling (MPD) / Underbalanced Drilling (UBD) Services

Expro offers a cost effective multi-tiered, solutions based approach for MPD/UBD services, while providing expertise and exceptional service quality.

Expro provides equipment ranging from a single hydraulic choke, which is manually operated, to a full blown MPD solution. Each includes well model engineering services; and brings together a wealth of experienced technicians and well supervisors.

Expro designs and manufactures chokes, Pressure Relief Valves (PRVs) and automated control systems such as Automatic Back Pressure (ABP) system all of which deliver a cost effective, quality solution.

Expro equipment is designed modularly, allowing packages to be tailored for the customer, resulting in a reduced footprint and cost reduction.

Over 1,000 wells have been drilled using the ABP system during an eight year period, and throughout a variety of global locations. Expro's systems are reliable, and most importantly are very user friendly.

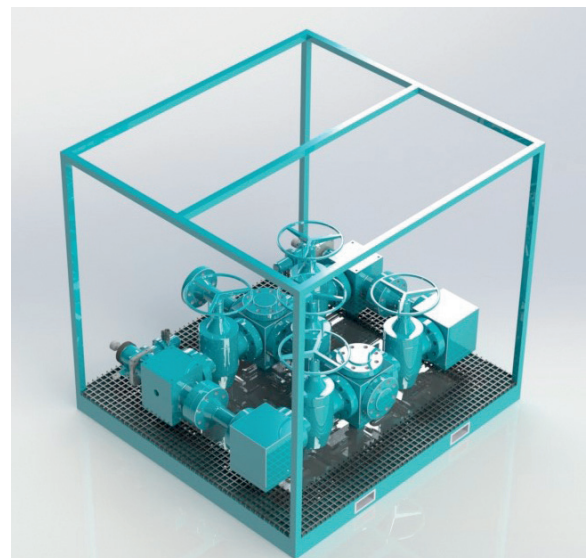
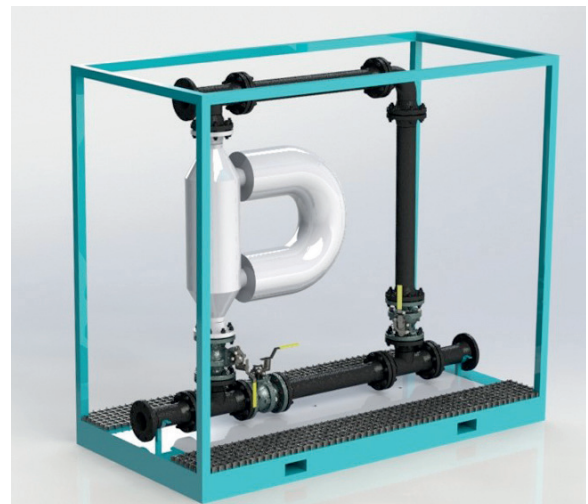
The system is used to mitigate or reduce well issues, including lost circulation and stuck pipe. Our tailored solution can acquire data for further analysis or it can be integrated into the rig system to enable the sharing of data.

Features and benefits

- Automation of drilling processes
- Ramp tables
- PRV integration
- Single or dual choke options
- Well modelling services
- Dual sensor technology
- Data acquisition
- Rig integration
- Coriolis integration
- Experienced MPD operators
- Dual choke modes

Services

- Chokes and controls for manual operations
- Setpoint choke systems
- Full MPD services
- Coriolis and data acquisition services
- Well modelling services
- MPD and UBD operator and supervisors
- Training rig crew to run setpoint choke systems



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| Technical specifications | | | |
|--------------------------|-------------------------------------|---|---------------------------------------|
| Chokes | HPU | ABP | Coriolis |
| API 6A & 16C | ATEX Zone 1, class 1, division 1 | 15" touch screen HMI with optional additional remote HMIs | 2", 3" and 4" as standard |
| 1" to 4" trim | Dual choke operation | ATEX and IECEx Zone 2 | Various systems for data acquisitions |
| API 5,000 to 20,000psi | API 16C | Dual choke operation | Small footprint standalone manifold |
| H2S service | Back-up gauges provided as required | | |

ABS, DNV, ATEX IECEx, NEC and CEC approvals

Expro can provide solutions for the following:

- Managed Pressure Drilling (MPD)
- Underbalanced Drilling (UBD)
- MPD cementing
- Drilling with casing
- Tight drilling window between the frac and pore pressure
- Drill bit/BHA lifetime extension
- Increasing ROP
- Lost circulation
- Connection gas
- Wellbore stability issues
- NPT time associated with well control issue
- Stuck pipe
- Flaring restrictions
- Ballooning
- Surge and swab effects
- Tripping pressure control issues
- Choke plugging issues
- Frac hits (offset)
- Mud cost reduction
- Longer laterals can be drilled
- Formation mapping