

e-balance

Partially automated managed pressure drilling control system

APPLICATIONS

- Low permeability reservoirs
- Highly fractured reservoirs
- Depleted or underpressured reservoirs
- Hard overburden formations
- High-pressure reservoirs
- Unstable or ballooning formations
- Flow drilling

BENEFITS

- Increase ROP and reduce drilling days
- Manage gas flow at surface while flow drilling
- Prevent or reduce severity of influxes and losses
- Reduce problem time
- Reduce formation damage
- Maintain consistent, repeatable performance

FEATURES

- Streamlined design requiring minimal equipment
- Automatic connection schedule

The e-balance* partially automated managed pressure drilling control system represents a step change in pressure control for managed pressure drilling (MPD) and underbalanced drilling (UBD) operations, bridging the gap between manual control and fully automated systems with integrated real-time hydraulics.

Unlike other automatic and semiautomatic control systems, the automatic calibration feature of the e-balance control system reduces the need to tune the pressure response of the system to account for variations in equipment and well conditions. This reduces the time required to bring the system into operation and improves pressure-control performance. In the manual position and manual pressure modes, the choke operator uses the human machine interface to manage the required choke position and pressures.

The service requires only limited equipment (chokes, console, and computer system). This small footprint can rig in on even the tightest rig layouts. The console and instrumentation are certified to suit the application.

The e-balance control system can be provided with a rotating control device (RCD), mud gas separators, a gas flowmeter measurement system, and mass flowmeter system as needed. All necessary pipe work and valves can be provided with the service or separately. The choke operator can control the system from a computer located in a safe area or on the drill floor.



Typical Physical Properties	Length, in [cm]	Width, in [cm]	Height, in [cm]	Weight, lb [kg]
@balance control (hydraulic power unit and programmable logic controller)	48 [122]	40 [102]	71 [180]	2,500 [1,134]
Choke manifold	84 [213]	84 [214]	80 [203]	8,880 [4,018]

Engineering services are available to provide job analysis and design using VIRTUAL HYDRAULICS* drilling fluid simulation software. Office-based and wellsite engineering support is available to execute the design.



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