

IPC MPD

Vertechs IPC MPD system is an all-electric managed pressure drilling solution that integrates iChoke (Intelligent All-Electric MPD Choke) and the IPC MPD - Auto Control System, designed to deliver a rapid and stable response to pressure fluctuations during complex and variable drilling conditions. Compared with conventional hydraulic-actuated MPD configurations, the compact all-electric iChoke architecture can largely reduce equipment footprint and hydraulic-system complexity.



FEATURES

- IPC AI Neural Network-Based Control Algorithm replaces conventional model-based control and dynamically adjusts to real-time downhole changes, fluid properties and pressure variations.
- IPC MPD - Auto Control System: Redundant automatic control system equipped with IPC AI neural network algorithm for multi-parameter control including SBP, SPP, MFC.
- iChoke with compact and modular design integrates servo motor, reducer and transmission.

- Modular actuator assembly replacement strategy eliminates field maintenance
- Shock-resistant design intended to improve field durability
- Reduced system complexity compared with hydraulic MPD configurations
- Compact manifold design for reduced footprint < 97 ft² (9 m²)

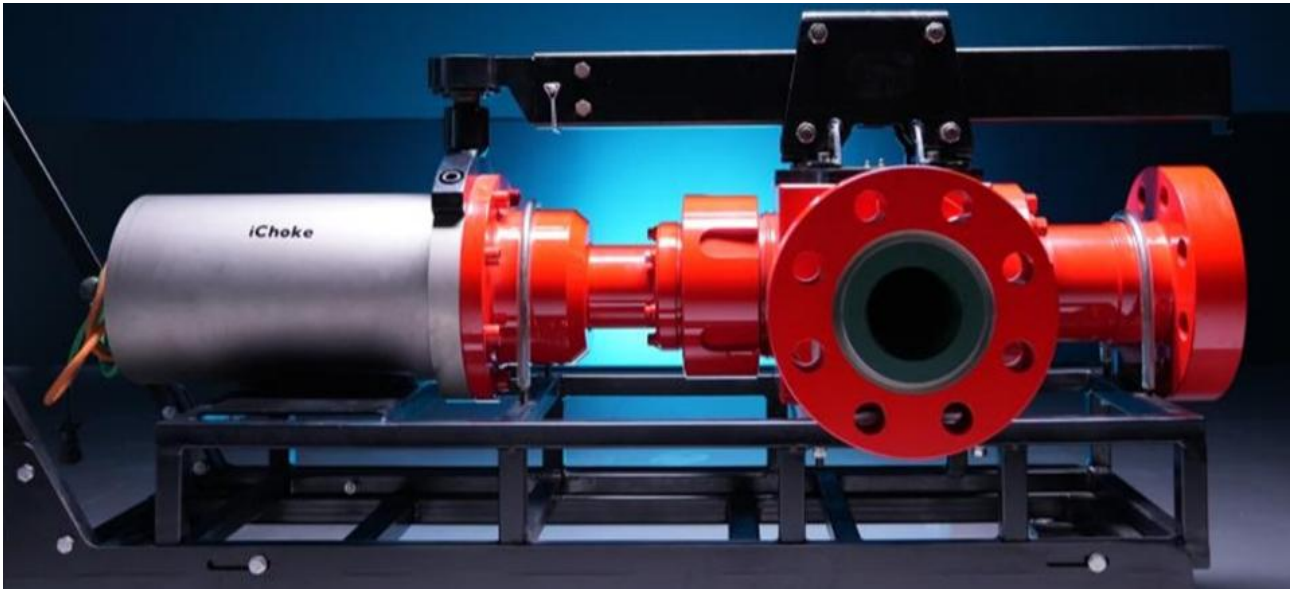


Fig. iChoke

BENEFITS

- High-speed and high-precision actuation
- Faster pressure control response
- Improved control repeatability and digital monitoring capability
- Faster deployment and smaller equipment footprint
- No field maintenance required

APPLICATION

- Managed Pressure Drilling (MPD) pressure-sensitive formations
- Underbalanced Drilling (UBD)
- Land or offshore rigs
- Narrow drilling window, depleted zones and

SPECIFICATIONS

API Monogrammed	API 16C	Pressure Control Accuracy	±15 psi [±0.1 MPa]
Rated Working Pressure	5,000 psi [35 MPa]	Ambient Temperature	-45 °C to 80 °C [-49 °F to 176 °F]
Control System	IPC MPD - Auto Control System with AI Neural Network-Based Control Algorithm	Pressure Control Modes	SBP, SPP, MFC (Optional)
Response Time	< 100 ms	Communication Protocol	WITS
Explosion-Proof Rating	Zone 1	IP Rating	IP65, Dust-tight & Water jet-proof
Connection Size	4 1/16 in	Orifice Size	3 in / 2 in
Effective Linear Control Range	10%-90%	Positioning Resolution	0.01%
Stroke Time	< 7 s	Actuator	iChoke intelligent all-electric actuator, 48 V DC, ±0.02 mm position accuracy

NOTE: Technical specifications are for reference only and may differ from final delivered equipment, subject to confirmation upon agreement.

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