

# MPowerD Choke Manifold: 5000S

The MPowerD choke manifold is designed to provide primary finite control for balanced/underbalanced fluid return rates and wellhead pressure during managed pressure drilling (MPD) operations. This choke manifold has been proven for use in a wider range of MPD applications and is suitable for most land and shelf drilling operations.

## Safety

### Isolation valves with suitable pressure rating

- Safety for personnel

### Integrated pressure relief valve (PRV)

- Safety for the operation

### Inconel nickel-chromium alloy 625 for high strength and outstanding corrosion resistance

- Lower ownership costs

### Collection unit for capturing and holding drilling fluids when servicing the choke

- Reduces environmental contamination

## Features and Benefits

Our easy-to-install choke manifold offers simple operation and maintenance within a small footprint, which provides a cost-effective option for your MPD applications and overall ownership costs. Each of our MPowerD systems features robust designs, and the choke manifold includes these proven subcomponents:

### HXE-G3 Choke

#### Continuous duty-cycle Siemens electric servo motor

- Yields extremely precise pressure control and quick response times
- Allows the choke to function reliably in very cold conditions, without the cost of running and maintaining hydraulic lines

#### Remote MPowerD control system allows automatic or manual control of the choke

- Automatic mode – the choke will rapidly adjust trim positioning to maintain the setpoint pressure that is input at the control system
- Manual mode – choke can be operated by bypassing the electric motor for inspection and service

#### Shaffer 2300 SFC Manual Gate Valves

- Through-conduit gate valves that are robust and easy to maintain
- Forged steel body and bonnet, bidirectional sealing, low operating torque, manually operated (non-rising stem)

### MPD 30 PRV

- Continuous monitoring of the wellbore pressure to prevent overpressurization scenarios
  - Hard trip – set at the highest expected pressure
  - Soft trip – set dynamically by the MPD operator
- Fail-in-place design to prevent unintentional pressure fluctuations
- Bleeds off only excess pressure and will close under pressure to maintain setpoint
- Network capable system that is interfaced with the MPowerD control system for remote setpoint control

### Integrated bypass line

- Allows cement and the casing shoe to be drilled out with no impact to the chokes while in MPD mode
- Directs pressure and fluids safely away from personnel servicing the choke while online

## Technical Specifications

### Choke Specifications

Working pressure.....	5,000 psi
Flange inlet and outlet.....	API 4 1/16 in.
Service.....	Sour NACE MR0175
API Standards.....	API 6A and API 16C monogrammed
Ring groove inlay.....	CRA 625
Temp. class.....	'P+U' (-20 to 250°F)
Choke model.....	HXE-G3
Choke actuator.....	Electric servo
Choke size.....	3 in.
Relief valve.....	MPD 30 automatic PRV
Isolation valves.....	Shaffer™ 2300 SFC
Performance standard.....	PSL-3
Dimensions (L x W x H).....	9.5 x 8 x 9.5 ft
Weight.....	18,700 lbm
Lifting certification.....	DNV 2.7-1
Area classification.....	Class 1, Div.1, ATEX Zone 1
Manufacturing certifications.....	ISO 9001-2008 and API Q1 9th edition

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