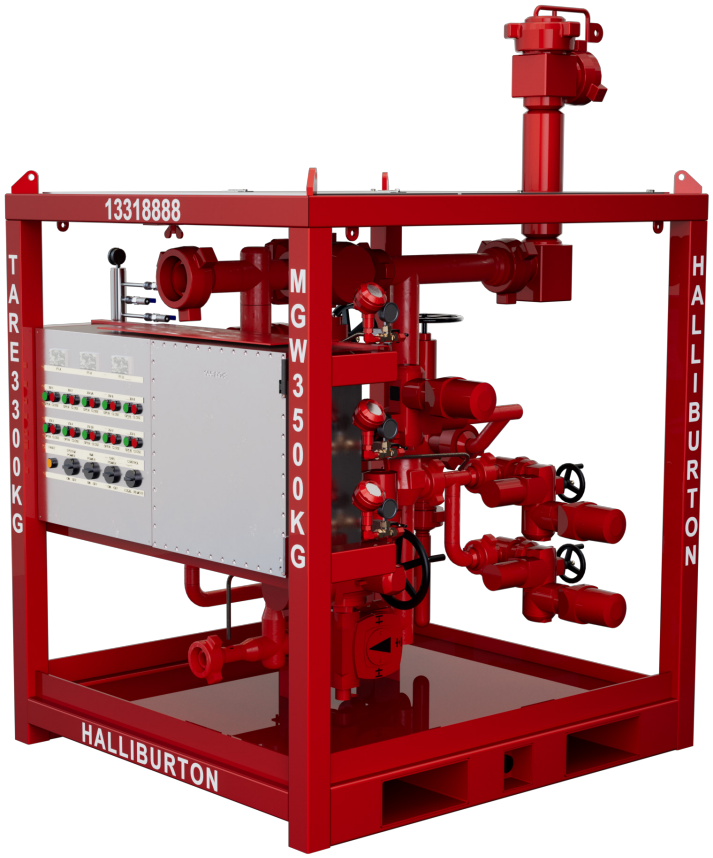
e-cd™ Electric Manifold

MANAGED PRESSURE DRILLING OPERATIONS FOR CONTINUOUS CIRCULATION AND HOLE CLEANING

OVERVIEW

The e-cd™ circulating device is an Eni-patented system used in managed pressure drilling operations to enable continuous circulation and hole cleaning even while making connections. It is used while either drilling or tripping in or out of the hole. The manifold, when used in conjunction with the e-cd subs in the drill string, allows connections to be made without ever turning rig pumps off.



FEATURES

- Designed to easily divert the drilling mud from the standard flow path downhole to the side port of the circulation sub when making a connection while drilling
- Diversion is performed without stopping the continuous circulation of fluids – mud pumps are never turned off
- Used to equalize the pressurized chambers to ensure a soft pressure build-up to minimize any water-hammer or pressure effects
- Bleeds off the trapped pressure above the circulating sub for safe disconnection of the top drive when attaching another stand
- Provides access for an independent mud fill-up system for the new empty drill pipe stand without any variation of flow rate or equivalent circulation density
- Enables soft bleed-off of trapped pressure behind the side port closure mechanism
- Compatible with loss circulation material and high-density drilling fluids (up to 2.40sg / 20ppg)
- Includes pressure sensors to improve process and safety
- 10,000 psi working pressure
- Fully compatible with MPD software suite

BENEFITS

- Electric powered and actuated with rig power
- Remotely controlled via HMI, remove personnel from Red Zone
- Fully compatible with new generation electric rigs
- NORSOK, IECEx, ATEX Zone 1, CE, DNV 2.7-1 certified

APPLICATIONS

- New generation electric rigs
- Standard Rigs

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Equipment Specifications

Equipment	Electric Manifold
Material Number	102806615
Working Pressure, psi (bar)	10,000 (690)
Max Flow Rate, gpm (lpm)	1,200 (4500)
Mud Weight, sg (ppg)	2.4 (20)
Inlet Connection Standpipe	4-in. 1502 Female
Outlet Connection Standpipe	4-in. 1502 Female
Outlet Connection Diversion	2-in. 1502 Female
Filter Connection	4-in. 1502
Filter Material	Stainless Steel
Filter Size	3-in. OD x 21.5-in. – .31 Holes
Plug Valves Main	2 x 3-in. FMC Style
Plug Valves Bleed Off	2 x 1-in. FMC Style
Control System Power	Electric Power
Control System Location	Local/Remote
Actuator Controls	Electric
Position Sensors	Electric
Weight, lb. (kg)	7,716 (3,500)
Length, in. (cm)	76 (193)
Width, in. (cm)	68 (175)
Height Shipping, in. (cm)	89 (193)
Height with Lift, in. (cm)	89 (193)
Lift Structure	Four Points
Service	Standard
Temperature Rating, °F (°C)	-20 to 250 (-29 to 121)
Pressure Gauges	UPT
Design Specifications	NORSOK PED 2014/68/EU ATEX 2014/34/EU IECEx MACHINE DIRECTIVE 2006/42/EC DNV 2.7-1

Equipment	UPS
Material Number	102869703*
Input Power	380, 400, 415, 460, 480, 500, 690 VAC 50/60 HZ 3 Phase
Output Power	400 VAC 50/60 HZ 3 Phase
Control System Power	Electric Power
Weight, lb. (kg)	462 (1020)
Length, in. (cm)	36 (91.6)
Width, in. (cm)	42.5 (108.1)
Height Shipping, in. (cm)	67 (171.0)
Height with Lift, in. (cm)	67 (171.0)
Lift Structure	Four Points
Service	Standard
Temperature Rating, °F (°C)	14 to 104 (-10 to 40)
Design Specifications	NORSOK PED 2014/68/EU ATEX 2014/34/EU IECEx MACHINE DIRECTIVE 2006/42/EC DNV 2.7-1

** Optional – UPS can be used, if required, in conjunction with e-cd Electric Manifold*

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com

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