

**Managed Pressure Drilling**  
Continuous Circulation Systems

# e-cd™ Dual Split Circulating Sub

Enabling continuous circulation and hole cleaning while making connections

## Overview

The e-cd™ circulating device is an Eni-patented system used in managed pressure drilling (MPD) 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 e-cd circulating sub, paired with the e-cd diversion manifold, enables connections to be made without shutting down rig pumps.

In today's drilling environment, the industry faces increased pressure-related challenges in developing mature and unconventional fields, both on land and offshore. There is a heightened focus on improving the feasibility of marginal wells and improving the efficiency and safety. MPD is a key technology that aids in achieving these objectives while reducing drilling risks.



## FEATURES

- Utilizes a dual flapper valve configuration with upper flapper valve to act as a check valve when disconnecting the top drive and adding a new stand
- Operates with the side flapper entry port connection to make a drill pipe connection without turning off the mud pumps, allowing a second metal-metal plug seal for another barrier
- Maintains flow down the drill string with a high pressure, flexible hose connected to the side port during pipe connections
- New dual split two pieces double shouldered design to allow premium threads for full compatibility with drill pipes with premium threads and the same MUT values
- Middle thread is proprietary Halliburton HAL-56 thread with high mechanical characteristics and premium MUT values

## BENEFITS

- Uninterrupted flow during connections, allowing constant ECD and hole cleaning during the connection process
- Reduces transition errors during connections
- Reduced likelihood of connection gas, stuck pipe incidents, and ballooning effects
- No bottom hole temperature variations due to stopped circulation
- Real-time monitoring during connections
- Allows wireline/intervention operations as upper axial valve is not spring-loaded when closed
- Subs can act as reverse flow check with 3.7 bbl/min back flow



**Equipment Specifications | Premium Threads**

	7 in. E-CD SUB	7 in. E-CD SUB	7 in. E-CD SUB	7 in. E-CD SUB	7 in. E-CD SUB	7 in. E-CD SUB
Connections	4-1/2 in. GP EIS	5-1/2 in. GP EIS	GP XT-57	GP TT525	GP TT575	TT585
Drillpipe Manufacturer	Grand Prideco	Grand Prideco	Grand Prideco	Grand Prideco	Grand Prideco	Grand Prideco
Drillpipe Thread Seal	Double	Double	Double	Double	Double	Double
e-cd Sub Thread	Double	Double	Double	Double	Double	Double
Make-Up Torque, ft.-lb.	As per DP Specs	As per DP Specs	As per DP Specs	As per DP Specs	As per DP Specs	As per DP Specs
HAL56-DS Max Make Up Torque, ft-lb	72,500	72,500	72,500	72,500	72,500	72,500
Tensile Strength at Max HAL56-DS MUT, lb.	1,341,334	1,341,334	1,341,334	1,341,334	1,341,334	1,341,334
Working Pressure, psi (bar)	10,000 (690)	10,000 (690)	10,000 (690)	10,000 (690)	10,000 (690)	10,000 (690)
Length, in. (mm)	51.15 (1299)	51.15 (1299)	51.15 (1299)	51.15 (1299)	51.15 (1299)	51.15 (1299)
Outer Diameter, in. (mm)	7.16 (181.9)	7.16 (181.9)	7.16 (181.9)	7.16 (181.9)	7.16 (181.9)	7.16 (181.9)
Inner Diameter, in. (mm)	2.8 (71)	2.8 (71)	2.8 (71)	2.8 (71)	2.8 (71)	2.8 (71)
Drift ID, in. (mm)	2.625 (66.7)	2.625 (66.7)	2.625 (66.7)	2.625 (66.7)	2.625 (66.7)	2.625 (66.7)
Maximum Flow Rate (side port), gpm (lpm)	900 (3406)	900 (3406)	900 (3406)	900 (3406)	900 (3406)	900 (3406)
Side Port Primary Seal	Metal/Metal Flapper	Metal/Metal Flapper	Metal/Metal Flapper	Metal/Metal Flapper	Metal/Metal Flapper	Metal/Metal Flapper
Side Port Secondary Seal	Metal/Metal Plug	Metal/Metal Plug	Metal/Metal Plug	Metal/Metal Plug	Metal/Metal Plug	Metal/Metal Plug
Temperature Rating, °F (°C)	325 (163)	325 (163)	325 (163)	325 (163)	325 (163)	325 (163)
Body Material	4130 Mod	4145	4145	4145	4145	4145
Elastomers	Viton	Viton	Viton	Viton	Viton	Viton
Service	Standard	Standard	Standard	Standard	Standard	Standard
Design Specifications	API 7.1	API 7.1	API 7.1	API 7.1	API 7.1	API 7.1
Maintenance Specifications	TH Hill DS1 Level 5	TH Hill DS1 Level 5	TH Hill DS1 Level 5	TH Hill DS1 Level 5	TH Hill DS1 Level 5	TH Hill DS1 Level 5

**Notes:**

- » Refer to the equipment databook for individual equipment specifications.
- » These ratings are guidelines only. Contact your local Halliburton representative for more information.



**For more information, contact your local Halliburton representative or visit us on the web at [www.halliburton.com](http://www.halliburton.com)**

Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.

H0121546 04/18 © 2024 Halliburton. All Rights Reserved.