True Single-Trip™ System

FIELD-PROVEN UPPER AND LOWER COMPLETION SYSTEMS CONFIGURED TO PROVIDE A SINGLE-TRIP SOLUTION
Tubing-Retrievable Safety Valve

With more than 97 percent reliability, we design our safety valves to meet your requirements.

Options include, but are not limited to:

- DepthStar® tubing-retrievable safety valve
- SP™ series tubing-retrievable safety valve
- DataSphere® Opsis™ Permanent Downhole Gauge (PDG) Assembly
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- Highly accurate and reliable pressure and temperature sensors
- Designed for harsh environments up to 30,000 psi and 200°C

X-Trieve™ HC Retrievable Production Packer

- Primarily for deepwater applications, with proven reliability and an extensive field track record
- Largest inside diameter (ID) in a retrievable packer
- Multiple packer options, including hydraulic-set, hydrostatic-set, and with multi-feedthrough cable bypass

Sandface Packer Assembly

- Hydraulic-set isolation packer primarily designed for isolation operations

Openhole Packer

- ZoneGuard® isolation packer
- Hydraulic-set multi-section/multi-durometer high-expansion elements
- Instant setting and sealing, high-differential pressure ratings
- Large range of openhole capabilities and long-term isolation reliability

Descripción de la opción 2: Swellpacker® zonal isolation system

- Based on swelling properties of rubber
- No moving parts, and requires no downhole or surface activation

Remote Activated Screens

- Installation simplicity, effective sand control, and life-of-well reliability
- Flexibility to select standalone or compliant screen for strong wellbore support in more challenging reservoirs
- Adaptable to meet competitive functional requirements for washdown, openhole circulation and filter cake breaker placement, and packer setting capability

Compliant Sand Control: Endurance Hydraulic Screen®

- Positive reservoir compliance with strong wellbore support
- Reliably activated with internal pressure opening flow path for production or injection

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eRED® Plug Shoe Isolation Assembly

- Remotely triggered to open and close for washdown
- Allows circulation of filter cake breaker fluid
- Allows activation of screens and washdown openhole packer, and permanently isolates the shoe during production
- Metal-to-metal ball rotates to open and close
- Actuated by an electronic control module
- Commanded from the surface, using triggers

eMotion-LV Isolation Barrier Valve

- Remotely operated fullbore ball valve used for setting packers and acting as a shallow or deep-set barrier
- Full bore when open
- Multi-specification
- Mechanical override contingency

Remote Activated Circulation Valve

- Provides capability to function open and circulate above the packer at high rates without intervention
- Opt 1: HS circulating valve
- Opt 2: Hydraulically activated Sliding Side-Door® sleeve

THE MAIN COMPONENTS OF THE SYSTEM ARE LISTED BELOW IN ONE OF THE MANY POTENTIAL CONFIGURATIONS OF THE SOLUTION.
True Single-Trip™ System for Upper and Lower Completions

**UNLOCKING THE PATH TO ULTIMATE COMPLETION EFFICIENCY BY INSTALLING UPPER PRODUCTION AND LOWER SANDFACE COMPLETIONS IN A SINGLE TRIP**

### OVERVIEW

The True Single-Trip™ system is specifically designed to facilitate the installation of upper and lower completions to save rig costs by decreasing the number of completion trips. To significantly reduce rig time and health, safety, and environmental (HSE) risk, the system uses proven technologies to minimize exposure time to safety hazards.

The lower completion assembly is run on the same trip as the upper production assembly, including the production packer, downhole gauges, safety valve, and other completion accessories. This replaces the existing conventional system, where the upper and lower completions are installed in multiple trips.

### Benefits

- Up to 50 percent time savings compared to conventional multiple-trip completions in deepwater environments
- Significantly reduces personnel exposure to safety hazards

### Features

- Reliable single-trip system with remote activation of downhole components
- Multiple options available, from high-end interventionless designs to simple completion designs
- Interventionless option does not require any ancillary equipment for component activation
- Ultimate completion system when installed with Endurance Hydraulic Screen® for strong wellbore support and compliant sand control
- Pressure test capability during installation
- Washdown capability during run in hole
- Circulation capability and effective placement of filter cake breaker fluid system across the reservoir
- Limited control line penetration requirements using Halliburton remote open close technology (ROCT): eMotion-LV, eMotion-HS, and eRED® valves
- Tubing annulus displacement capability without risk of formation damage (circulating device above packer)
- Design flexibility with multiple screen and barrier configurations/options to fit customer and well challenges
- ISO 28781 V1 barrier using eMotion-LV valve
- Multiple contingencies for all components and operation installation sequences, along with optional contingency tool capabilities:
  - Long Space-Out Travel Joint (LSOTJ) allows tubing contraction to install tubing hanger
  - Annular polished bore receptacle (PBR) releases the upper completion without releasing the packer

### True Single-Trip™ System Procedure

- Make up lower completion including screens and inflow control as needed
- Make up upper completion and run entire string to total depth
- Land tubing hanger
- Displace open hole to filter cake breaker or solids-free completion fluid system
- eRED plug in washdown shoe closes at predetermined set trigger for bi-directional isolation of shoe during production of injection
- Apply pressure against the eRED plug to set the openhole annular barriers (if used) and set the sandface packer
- Activate and open the flow path in the screens
- eMotion-LV valve closes at the predetermined pressure signature
- Alternatively, apply pressure against the eMotion-LV valve to set the sandface packer if EquiFlow ICD with dissolvable plugs are run
- Open the remotely activated circulation valve and displace annulus above sandface packer to completion fluid system
- Set the X-Trieve HC (HHC) hydrostatic-set retrievable production packer
- Put well on production

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.