

Evo-Trieve® Retrievable Bridge Plug

INTRODUCTION

The Evo-Trieve® retrievable bridge plug (RBP) is a high-performance retrievable monobore plugging device that does not require a predetermined setting restriction for locating or sealing within the production completion. Evolved from the industry-leading HE3®, TR0 / TR1 and Monolock® retrievable bridge plugs, the Evo-Trieve RBP blends past experience with future industry requirements.

The Evo-Trieve RBP is V0-qualified per ISO14310 to 7,500 psi and up to 325°F. Its robust design includes large slip and element footprints to provide improved pressure-holding capability in unsupported casing. Debris tolerance has been verified through a comprehensive flow loop testing program.

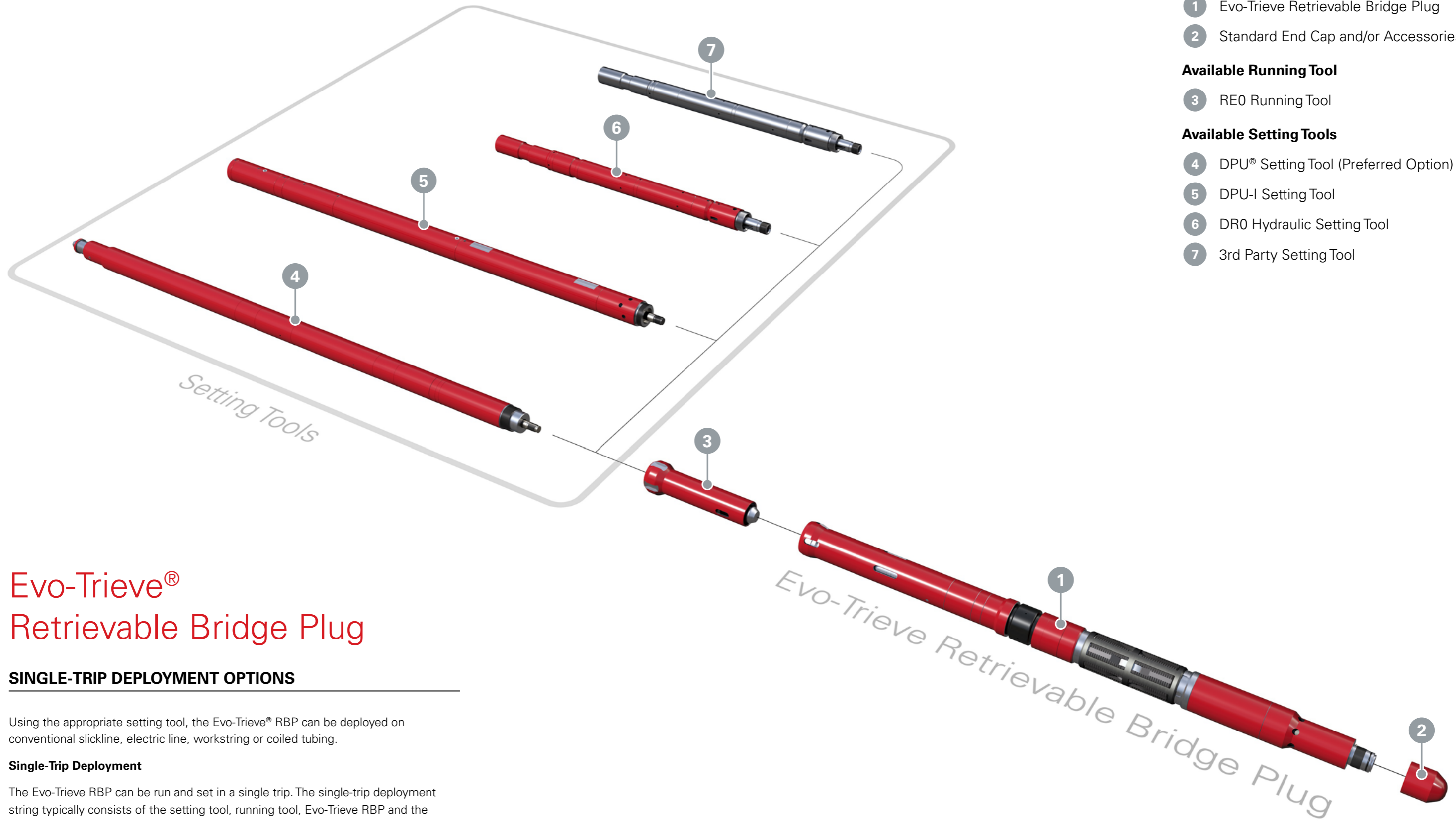
The Evo-Trieve RBP was designed to be as flexible as possible, with options for using either slickline, electric line, workstring or coiled tubing for both deployment and retrieval.

The Evo-Trieve RBP can be deployed in either a single-trip or two-trip operation, depending on the operational requirements.

The retrieval options depend on the initial deployment method. Specifically, a single-trip deployed Evo-Trieve RBP can be equalized and retrieved with either a single-trip or two-trip operation. However, a two-trip deployed Evo-Trieve RBP (complete with PE sub and prong) can only be equalized and retrieved using a two-trip operation.

These options are documented on the following pages.





Single-Trip Deployed Items

- 1 Evo-Trieve Retrievable Bridge Plug
- 2 Standard End Cap and/or Accessories

Available Running Tool

- 3 RE0 Running Tool

Available Setting Tools

- 4 DPU® Setting Tool (Preferred Option)
- 5 DPU-I Setting Tool
- 6 DR0 Hydraulic Setting Tool
- 7 3rd Party Setting Tool

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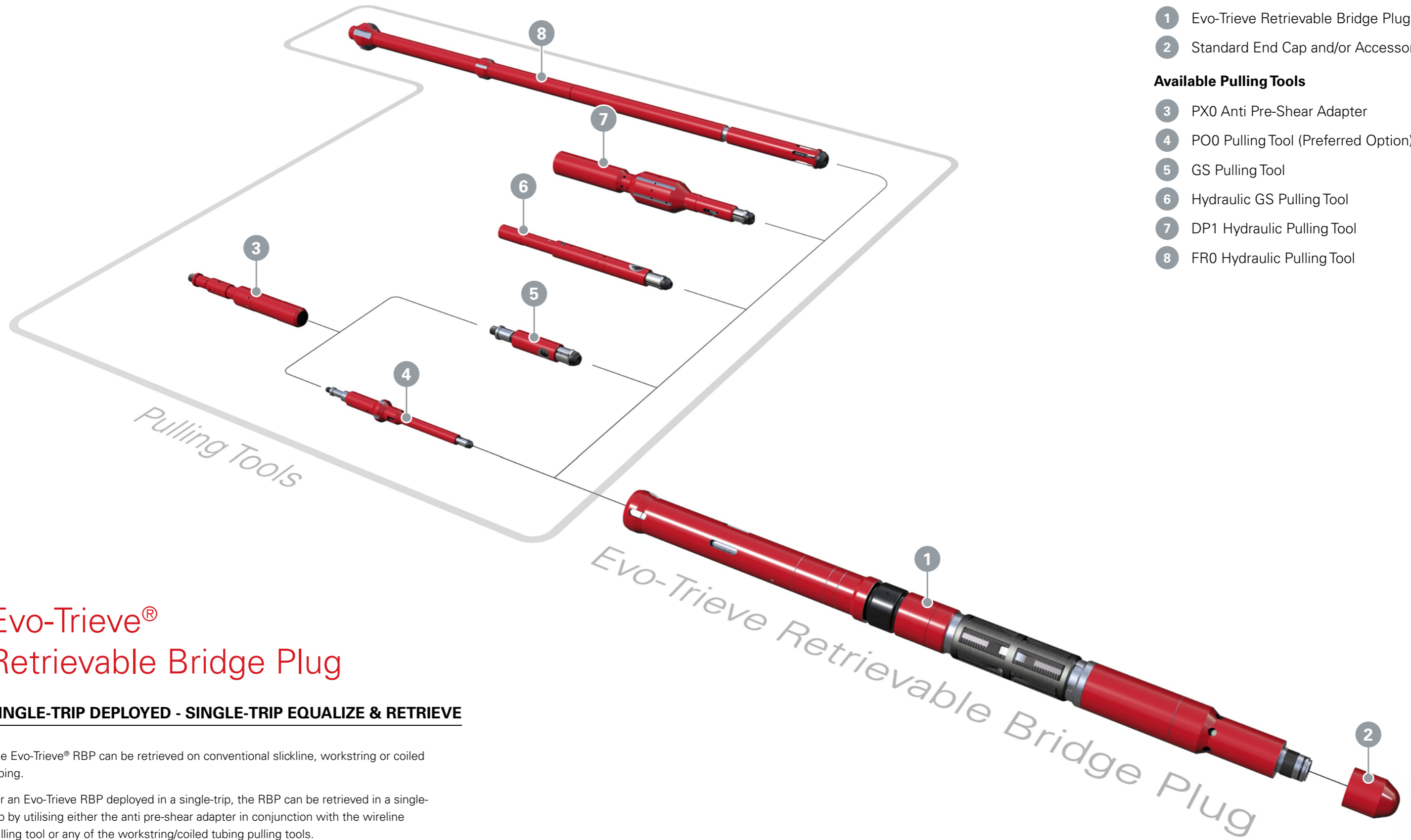
SINGLE-TRIP DEPLOYMENT OPTIONS

Using the appropriate setting tool, the Evo-Trieve® RBP can be deployed on conventional slickline, electric line, workstring or coiled tubing.

Single-Trip Deployment

The Evo-Trieve RBP can be run and set in a single trip. The single-trip deployment string typically consists of the setting tool, running tool, Evo-Trieve RBP and the standard end cap and/or accessories.

Refer to the table on page 9 for further details or click here:



Single-Trip Deployed Items

- 1 Evo-Trieve Retrievable Bridge Plug
- 2 Standard End Cap and/or Accessories

Available Pulling Tools

- 3 PX0 Anti Pre-Shear Adapter
- 4 PO0 Pulling Tool (Preferred Option)
- 5 GS Pulling Tool
- 6 Hydraulic GS Pulling Tool
- 7 DP1 Hydraulic Pulling Tool
- 8 FR0 Hydraulic Pulling Tool

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SINGLE-TRIP DEPLOYED - SINGLE-TRIP EQUALIZE & RETRIEVE

The Evo-Trieve® RBP can be retrieved on conventional slickline, workstring or coiled tubing.

For an Evo-Trieve RBP deployed in a single-trip, the RBP can be retrieved in a single-trip by utilising either the anti pre-shear adapter in conjunction with the wireline pulling tool or any of the workstring/coiled tubing pulling tools.

Refer to the table on page 10 for further details or click here:



Single-Trip Deployed Items

- 1 Evo-Trieve Retrievable Bridge Plug
- 2 Standard End Cap and/or Accessories

Available Pulling Tools

- 3 PO0 Pulling Tool (Preferred Option)
- 4 GS or High-Load GS Pulling Tool

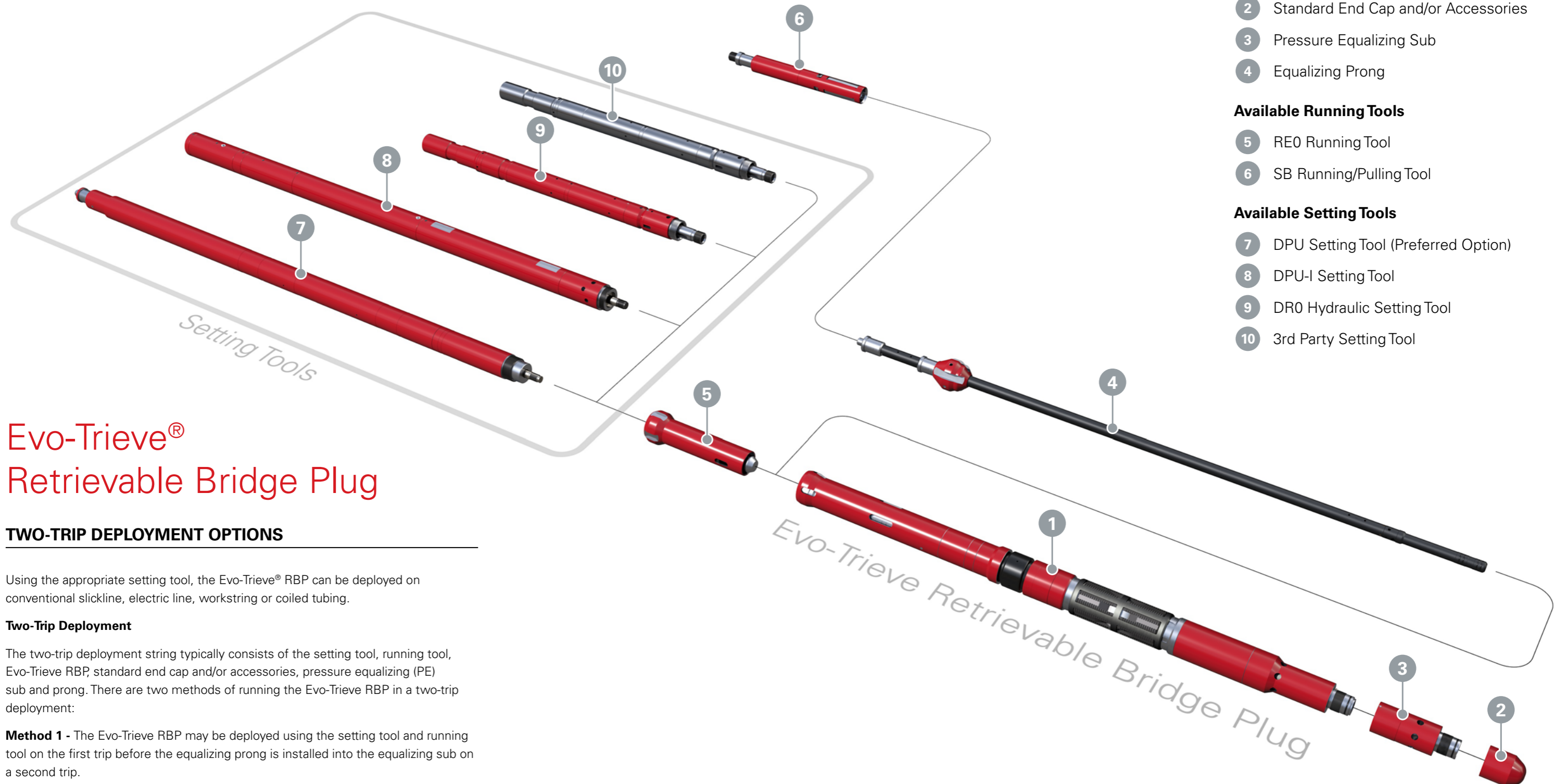
Evo-Trieve® Retrievable Bridge Plug

SINGLE-TRIP DEPLOYED - TWO-TRIP EQUALIZE & RETRIEVE

The Evo-Trieve® RBP can be retrieved on conventional slickline, workstring or coiled tubing.

For an Evo-Trieve RBP deployed in a single-trip, the RBP will have to be retrieved in two trips if the wireline pulling tools are not used with the PX anti pre-shear adapter.

Refer to the table on page 10 for further details or click here:



Two-Trip Deployed Items

- 1 Evo-Trieve Retrievable Bridge Plug
- 2 Standard End Cap and/or Accessories
- 3 Pressure Equalizing Sub
- 4 Equalizing Prong

Available Running Tools

- 5 REO Running Tool
- 6 SB Running/Pulling Tool

Available Setting Tools

- 7 DPU Setting Tool (Preferred Option)
- 8 DPU-I Setting Tool
- 9 DR0 Hydraulic Setting Tool
- 10 3rd Party Setting Tool

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TWO-TRIP DEPLOYMENT OPTIONS

Using the appropriate setting tool, the Evo-Trieve® RBP can be deployed on conventional slickline, electric line, workstring or coiled tubing.

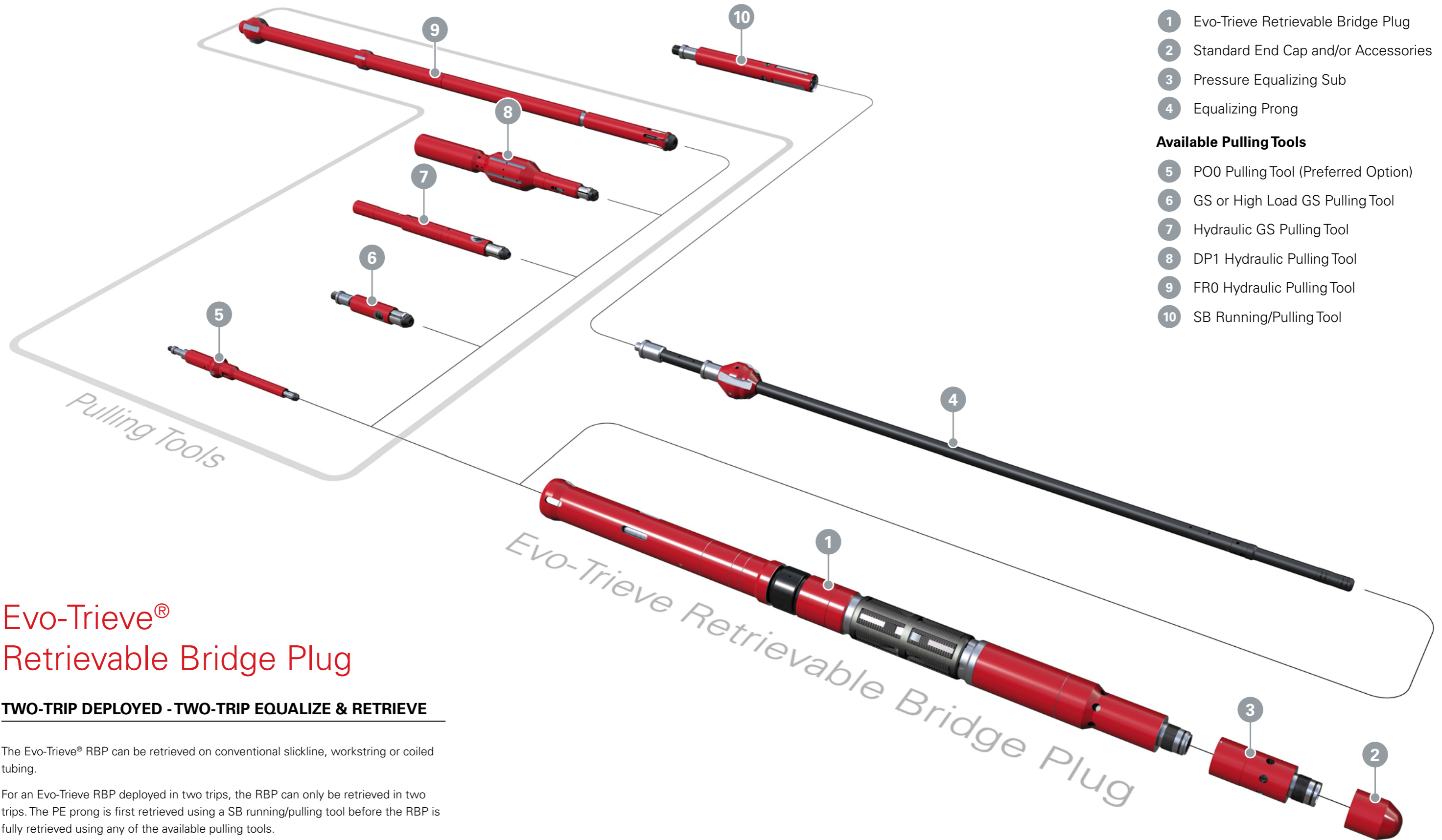
Two-Trip Deployment

The two-trip deployment string typically consists of the setting tool, running tool, Evo-Trieve RBP, standard end cap and/or accessories, pressure equalizing (PE) sub and prong. There are two methods of running the Evo-Trieve RBP in a two-trip deployment:

Method 1 - The Evo-Trieve RBP may be deployed using the setting tool and running tool on the first trip before the equalizing prong is installed into the equalizing sub on a second trip.

Method 2 - The use of a PE sub and prong also permits pre-installation of the Evo-Trieve RBP in the tubing. This is usually done as part of the sub assembly make up in the workshop. The PE sub is then plugged using the PE prong on a second trip.

Refer to the table on page 9 for further details or click here:



Two-Trip Deployed Retrieval Items

- 1 Evo-Trieve Retrievable Bridge Plug
- 2 Standard End Cap and/or Accessories
- 3 Pressure Equalizing Sub
- 4 Equalizing Prong

Available Pulling Tools

- 5 PO0 Pulling Tool (Preferred Option)
- 6 GS or High Load GS Pulling Tool
- 7 Hydraulic GS Pulling Tool
- 8 DP1 Hydraulic Pulling Tool
- 9 FR0 Hydraulic Pulling Tool
- 10 SB Running/Pulling Tool

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TWO-TRIP DEPLOYED - TWO-TRIP EQUALIZE & RETRIEVE

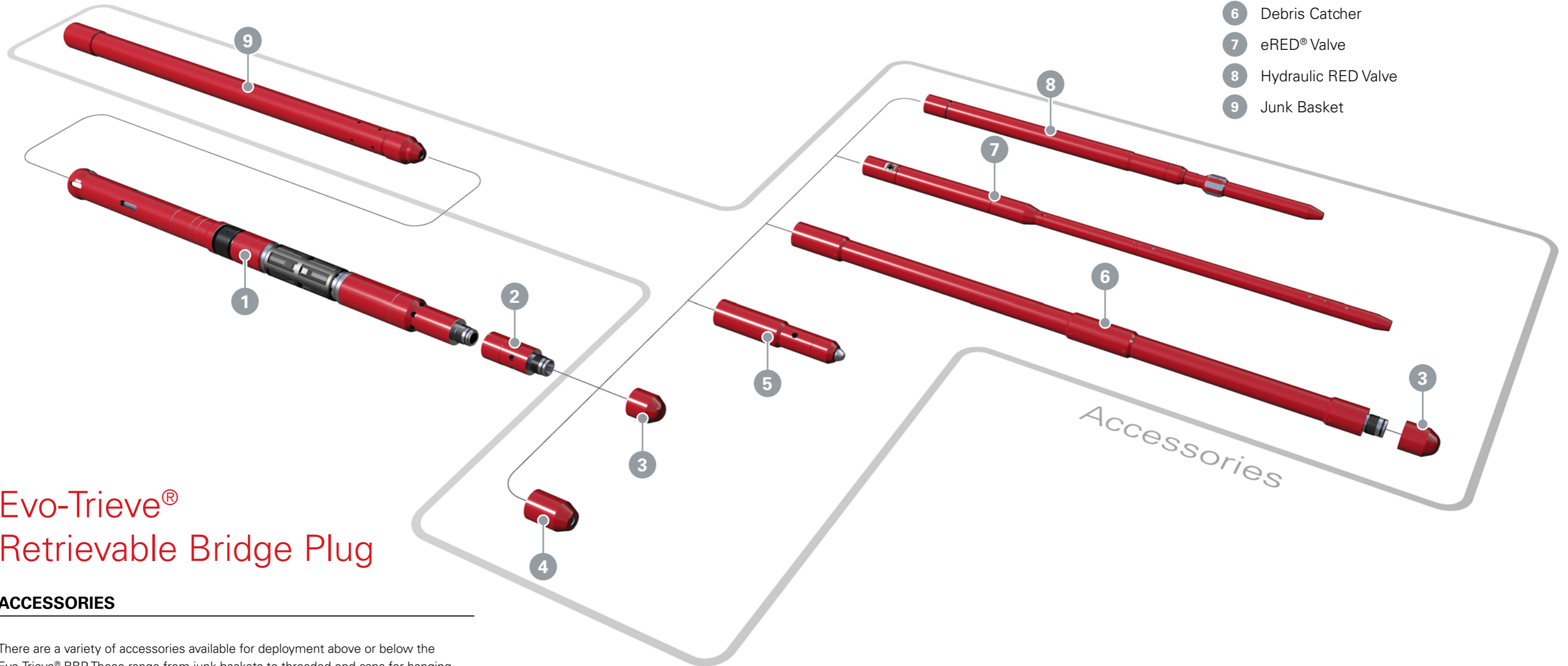
The Evo-Trieve® RBP can be retrieved on conventional slickline, workstring or coiled tubing.

For an Evo-Trieve RBP deployed in two trips, the RBP can only be retrieved in two trips. The PE prong is first retrieved using a SB running/pulling tool before the RBP is fully retrieved using any of the available pulling tools.

Refer to the table on page 10 for further details or click here:

Key to Equipment

- 1 Evo-Trieve Retrievable Bridge Plug
- 2 Pressure Equalizing Sub (for use in Two-Trip deployment)
- 3 Standard End Cap
- 4 Alternative End Cap with Box Connection
- 5 BN1 Ball Seat Assembly
- 6 Debris Catcher
- 7 eRED® Valve
- 8 Hydraulic RED Valve
- 9 Junk Basket



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ACCESSORIES

There are a variety of accessories available for deployment above or below the Evo-Trieve® RBP. These range from junk baskets to threaded end caps for hanging gauges. These tools when used in conjunction with the Evo-Trieve RBP provide customers with many different intervention solutions.

Refer to the table on page 8 for further details or click here:

Evo-Trieve® RBP Accessories Summary

Deployed Above Evo-Trieve® RBP

Accessories	Working Principle	Comments
Junk Basket (P.330JB0*)	The junk basket is a receptacle set above the Evo-Trieve RBP in order to collect any debris that may settle on top of the Evo-Trieve RBP. It has an internal fish neck on top to allow running and retrieval using a standard GS Pulling Tool.	Single-Trip Deployment Junk basket is run and set above the Evo-Trieve RBP on a separate trip. Two-Trip Deployment Junk Basket is attached to PE prong before running downhole.

Deployed Below Evo-Trieve® RBP

Accessories	Working Principle	Comments
Debris Catcher (P.408DC0*)	The debris catcher is used in severe debris conditions. Unlike the junk basket which allows debris to be contained above the Evo-Trieve RBP, the debris catcher allows for debris to be contained in an area below the Evo-Trieve RBP. This protects the equalization feature on the Evo-Trieve RBP.	Remove standard end cap and attach the debris catcher to Evo-Trieve RBP. Re-attach standard end cap below the debris catcher.
Alternative End Cap	The alternative end cap is a bull nose with an integral box connection to allow deployment of downhole gauges.	Replace standard end cap with the alternative end cap. There are two gauge connection sizes available: <ul style="list-style-type: none"> • 1-1/16" - 10 UNS Box Connection • 15/16" - 10 UNS Box Connection
BN1 Ball Seat Assembly (P.419BN1*)	The BN1 ball seat assembly is attached to the bottom of the Evo-Trieve RBP to allow the ability of the tubing to self fill or flow. It allows tubing flow until a ball is dropped onto the seat. Once the ball is on seat and the required pressure is applied, the ball seat shifts to the closed position and blocks flow. Once the seat is closed, the ball is trapped by a retainer and the seat cannot be re-opened.	Replace standard end cap with BN1 ball seat assembly.
Hydraulic RED Valve	The Hydraulic RED valve is a retrievable well barrier that is deployed in the closed position and subsequently opened by remote command. It is capable of containing pressures of up to 10,000 psi in either direction until opened. It is suitable for use in virtually any type of well operation where a temporary downhole barrier is required.	Replace standard end cap with Hydraulic RED Valve.
eRED® Valve	The eRED Valve is a computer controlled ball valve that can be repeatedly opened and closed by remote command. When the eRED Valve is run below the Evo-Trieve RBP, it forms the Evo-RED® RBP which can be remotely opened and closed multiple times without need for any control lines or interventions.	Replace standard end cap with eRED Valve.

Evo-Trieve® RBP Deployment Options Summary

Setting Method	Setting Tools	Setting Tools Working Principle	Evo-Trieve RBP Running Tool	Running Tool Working Principle	Tool	Equalizing Prong and Running Tool	Equalizing Prong and its Running Tool Working Principle	
Electric Line	DPU-I Or Third Party Setting Tool (eg. Baker 10/20)	DPU-I The DPU-I tool, conveyed on electric line, is a rig-safe, non-explosive electro-mechanical tool that provides slow controlled setting force to maximize sealing and anchoring of the plugging device. Third Party Setting Tool Typically an electric line setting tool will utilize an explosive charge to develop force through pressure.	REO Running Tool (P303RE0*)	The REO running tool provides the interface between the setting tool and the Evo-Trieve RBP. It is designed to make up to the setting tool and then stab into the Evo-Trieve RBP before running in hole (RIH). It provides a means of converting the setting force from the setting tool into the Evo-Trieve RBP.	Evo-Trieve Retrievable Bridge Plug (P801EVO*)	PE Sub and Prong (P413PE0*) & SB Running/Pulling Tool (40SB*)	<p>PE Sub and Prong</p> <p>The pressure equalizing (PE) sub is attached to the bottom of the Evo-Trieve RBP and provides a facility to equalize pressure across the Evo-Trieve RBP prior to retrieval by removal of the equalizing prong.</p> <p>The use of a PE sub and prong system permits the Evo-Trieve RBP pre-installation in the tubing.</p> <p>The installed Evo-Trieve RBP with PE sub is then run downhole to allow auto-filling of the tubing.</p> <p>The Evo-Trieve RBP with PE sub is later plugged using an equalizing prong which is run on a SB running/pulling tool on a separate slickline trip.</p> <p>SB Running/Pulling Tool</p> <p>The SB running/pulling tool is designed to run, engage and pull the equalizing prong at its external fish neck. It is attached to a standard wireline toolstring. It permits continuous upward jarring and can be released only by downward jarring.</p>	
	Wireline (Slickline)	Downhole Power Unit (DPU®) (Preferred option)						The DPU tool, conveyed on slickline, is a rig safe, non-explosive electro-mechanical tool that provides slow controlled setting force to maximize sealing and anchoring of the plugging device. The DPU electrical power is supplied via a self-contained battery pack. Recommended DPU: 146DPU27 - 3.59" OD
	Workstring Coiled Tubing	DR0 Hydraulic Setting Tool (P270DR0*)						The DR0 hydraulic setting tool is a coiled tubing or workstring-deployed device that uses pressure applied from surface to set downhole tools.
Single-Trip Deployed Items						Additional Items for Two-Trip Deployment		

Evo-Trieve® RBP Retrieval Options Summary

Pulling Method	Pulling Tools	Pulling Tools Working Principle	Single-Trip Deployed		Two-Trip Deployed
			Single-Trip To Equalize and Retrieve	Two-Trip To Equalize and Retrieve	Two-Trip Equalize and Retrieve
Wireline (Slickline)	Anti Pre-Shear Adapter (P.303PX0*) & PO Pulling Tool (P.303PO0*) OR GS Pulling Tool (Part Number: 40GS*) OR High-load GS Pulling Tool (Larger Size GS)	Anti Pre-Shear Adapter When attached to the GS/PO pulling tool, the PX adapter permits unlimited downward jarring. It is designed to adapt to the GS/PO pulling tool to prevent emergency release during heavy downward jarring. The PX adapter can be deactivated by jarring up which will shear a shear pin in the adapter. PO Pulling Tool PO0 pulling tool is a standard wireline pulling tool used for release and retrieval of various intervention products. It has an emergency release feature incorporated in the event that the plug cannot be released and/or retrieved. Limited sizes available. GS Pulling Tool GS pulling tool is used during wireline operations to equalize, unset and pull on the internal fish neck in the RBP release sleeve. It is designed to shear with a jarring down action and is used where excessive jarring upward is necessary to retrieve the Evo-Trieve RBP. High-load GS Pulling Tool High-load GS pulling tool can be deployed for contingency retrieval of the RBP where a larger jarring force is required. The high-load GS does not have the capability to equalize the plug. The RBP must be in the equalized and released position prior to using this tool. SB Running/Pulling Tool The SB running/pulling tool is designed to run, engage and pull the equalizing prong at its external fish neck. It is attached to a standard wireline toolstring. It permits continuous upward jarring and can be released only by downward jarring.	1) Attach PX adapter onto PO/GS pulling tool. 2) Latch PO/GS into the release sleeve of the Evo-Trieve RBP. 3) To Equalize Plug: Jar down. This will shear the shear screws in the equalizing valve. 4) To Retrieve Plug: Jar up. This will shear the shear screws in the release sleeve. Pull out of hole (POOH). Emergency Release of Pulling Assembly: 1) To deactivate PX adapter: Jar up excessively. This will shear the shear pin in the adapter. 2) Jar down to release PO/GS from plug. This will shear the shear pin in the pulling tool.	1) Latch PO/GS into the release sleeve of the Evo-Trieve RBP. 2) To Equalize Plug: Jar down. This will shear the shear screws in the equalizing valve. 3) Pull PO/GS out of hole for redress after equalization. 4) Redressed PO/GS/high-load GS run in hole to be latched into the release sleeve of the plug. 5) To Retrieve Plug: Jar up. This will shear the shear screws in the release sleeve. Pull out of hole (POOH). Emergency Release of Pulling Assembly: 1) Jar down to release PO/GS/High-load GS from plug. This will shear the shear pin in the pulling tools.	1) To Equalize Plug: Pull PE prong out of hole using the SB pulling tool listed on the PE prong EDS. 2) Latch PO/GS/high-load GS into the release sleeve of the plug. 3) To Retrieve Plug: Jar up. This will shear the shear screws in the release sleeve. Pull out of hole (POOH). Emergency Release of Pulling Assembly: 1) Jar down to release PO/GS/high-load GS from plug. This will shear the shear pin in the pulling tools.
	Workstring Flow Release Pulling Tool (P.260FR0*) OR Hydraulic GS Pulling Tool (140GS*) OR Hydraulic Release Pulling Tool (P.260DP1*)	These hydraulic pulling tools are ideally suited to heavy duty applications where prolonged heavy jarring operations are involved. A mechanical/hydraulic jar is typically installed above the pulling tool to create a greater jarring load. They are also used in horizontal wells where the transfer of mechanical load is difficult to achieve, where the hydraulic release mechanism provides the best options for emergency release. With careful equipment selection of the coiled tubing string configuration (eg. hydraulic jar, weight bar, etc), the retrieval operation may be completed in a single trip by pulling tension. However, this is dependent upon the specific well deviation, condition, restriction, debris, etc. Flow Release Pulling Tool The FR0 flow release pulling tool is designed to mechanically latch into and hydraulically disengage from the EVO plug's release sleeve internal fish necks. It is supplied with various interchangeable nozzle as standard in order to provide the operator with release flow rate flexibility. Hydraulic GS Pulling Tool Similar to the FR0, the hydraulic GS pulling tool mechanically latches into the plug. In the event that the EVO plug cannot be retrieved, the hydraulic GS pulling tool can be released using hydraulic pressure by pumping a ball down the coiled tubing. Hydraulic Release Pulling Tool Hydraulic release pulling tool is designed to be run on drill pipe or coiled tubing (provided ball is able to pass the coiled tubing selected). It mechanically latches into and hydraulically disengages from the internal fish neck of the release sleeve.	1) Latch FR0/hydraulic GS/DP1 into the release sleeve of the Evo-Trieve RBP 2) To Equalize Plug: Jar down. This will shear the shear screws in the equalizing valve. 3) To Retrieve Plug: Jar up. This will shear the shear screws in the release sleeve. Pull out of hole (POOH). Emergency Release of Pulling Assembly: 1) Flow through the FR0/hydraulic GS/DP1 pulling tool to release it from plug.	N/A	1) To Equalize Plug: Pull PE prong out of hole using the SB pulling tool listed on the PE prong EDS. 2) Latch FR0/hydraulic GS/DP1 into the release sleeve of the plug. 3) To Retrieve Plug: Jar up. This will shear the shear screws in the release sleeve. Pull out of hole (POOH). Emergency Release of Pulling Assembly: 1) Flow through the FR0/hydraulic GS/DP1 pulling tool to release it from plug.
Coiled Tubing					