The Baker Hughes X-Treme Clean™ XP multi-cycle ball-activated circulation valve is a hydraulically-activated tool that enables mid-string circulation during wellbore cleanup, fluid displacement, and drilling. The valve can be used in deepwater cased hole displacement and wellbore cleanup to boost annular velocity to improve debris removal and perform blowout preventer cleaning. In drilling operations the valve can be used to clean debris or to spot chemicals or lost circulation material (LCM). Because it is hydraulically activated, the valve is also suitable for scenarios where mechanical operation is not feasible.

In cased hole displacement and wellbore cleanup applications, the circulation valve can be run as part of the complete X-Treme Clean wellbore cleanup system. In drilling applications, the valve is typically run in the bottomhole assembly above under-reamers and measurement while drilling (MWD) tools.

The valve provides three flow modes: to the bit, to the ports only, and flow split through bit and ports. In run-in position, all flow is directed through the bit. Depending on your application, the tool’s secondary flow path can be reconfigured by first dropping the right-sized ball. For example, during drilling operations, if LCM is to be spotted, the tool can be activated to the port open-only position to avoid any flow through the debris-sensitive measurement devices below the circulation valve. If there is a need to boost annular velocity for debris removal, a different-sized ball can be dropped to activate the tool while maintaining a split flow path. In this configuration, some of the fluid will exit the ports while some will continue through the bit.

Applications
- Conventional oil and gas
- Deep water
- Deviated and horizontal wells
- Displacement
- Wellbore cleanup
- Removing debris or spotting chemicals/fluids while drilling
- Any application requiring circulation through the mid-string

Features and Benefits
- Multiple cycles
  - Performs multiple operations in one trip
  - Reduces nonproductive time
- Hydraulically activated
  - Eliminates need for set-down weight
  - Improves reliability
- Large circulation ports
  - Enables high flow rates
- Three flow modes
  - Provides flexibility for different applications
To operate the valve, a ball is dropped from surface to shift the internal sleeve, opening the ports for circulation. Depending on the size of the ball dropped, the tool’s flow path to the bit will either be closed off or left open. Dropping a second ball returns the internal sleeve to its run-in position, sealing off the ports and allowing circulation through the tools. All balls are stored within the circulation valve in the integrated ball catcher sub, eliminating the need for additional catcher tools to be run in the string.

This tool has multiple cycles and is limited in cycles only by the capacity of the integrated ball catcher sub. The tool also has a full internal flow path that allows smaller balls to be circulated through for activating or deactivating any tools below. Additionally, the circulation valve is designed with high torque and tensile ratings, making it ideal for deepwater and ultra deepwater operations.

Contact your Baker Hughes representative today or visit www.bakerhughes.com/WBCU to find out how the Baker Hughes X-Treme Clean XP multi-cycle ball-activated circulation valve can help you successfully perform high rate circulation operations in either completion or drilling applications.