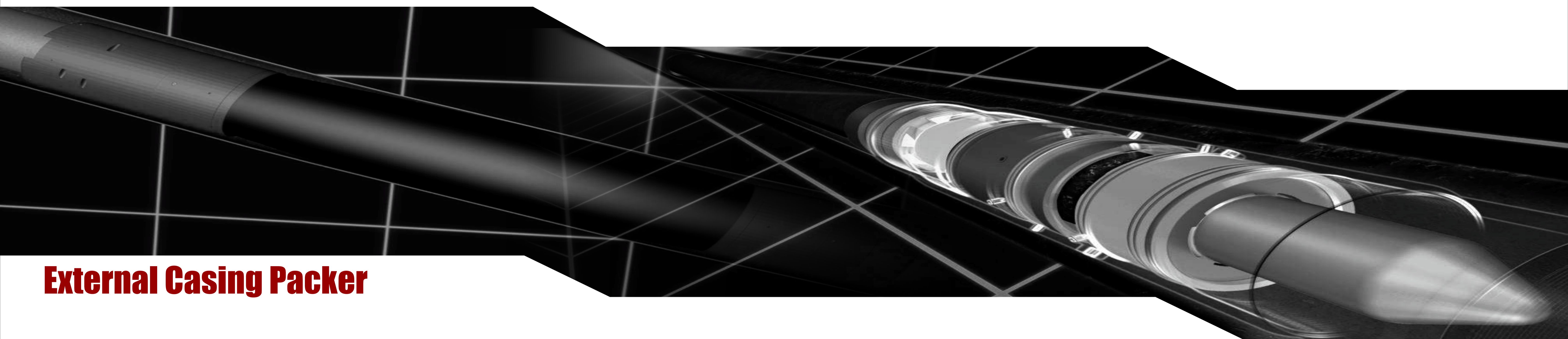
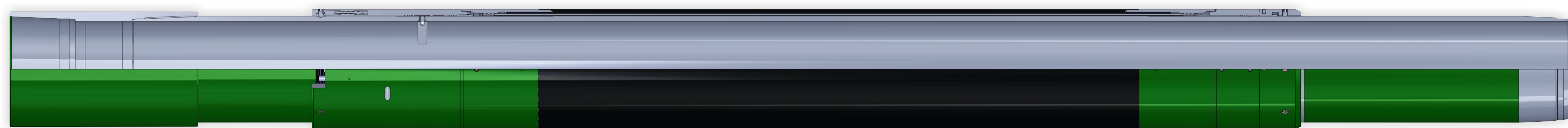


# External Casing Packer & Dual Stage Cementing Collar



## External Casing Packer



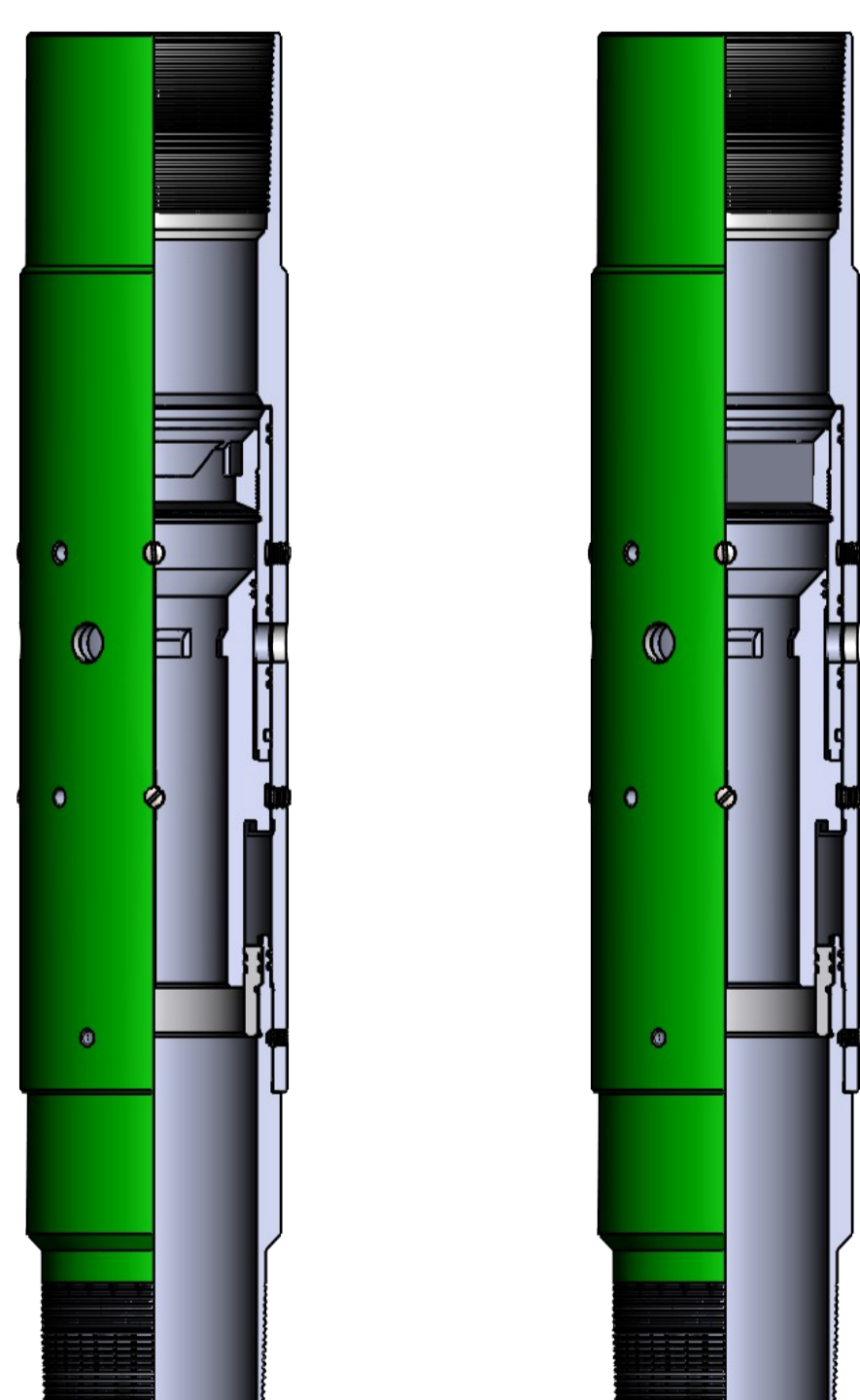
**External Casing Packers** provide robust, region-specific isolation of multiple loss or water zones in vertical, deviated or horizontal wells. The effective isolation of specific zones at different locations is a critical requirement during the drilling, completion and intervention cycles of well. Saga's inflatable packers deliver a high-pressure seal that eliminates annular flow while maintaining the integrity of the casing.

**External Casing Packer** 3 valve system provides a positive locking mechanism with additional redundancy features. After the element has been fully inflated to the predetermined pressure, and the inflation control valve has shifted to the final closed position, a mechanical locking device ensures that no further movement will occur. In addition once the pressure inside casing is bled back to zero an integral locking collet on the opening valve locks this assembly in the closed position. This prevents any fluid by pass between casing and annulus in the event of a soft set. An integral screen prevents coarse particles from entering the valve system.

## DUAL STAGE CEMENTING COLLAR (DSCC)

**Dual Stage Cementing Collar** Multi-stage cementing tools allow the cementing of selected intervals of the casing string to be executed in different stages. Stage collars are a frequent requirement in cementing operations when two or more separate sections behind the same casing string need cementing or for selectively cementing above inflatable packers. Saga group offers mechanical and hydraulic designs of stage collars that are available in a wide range of incremental sizes and manufactured to match up to customers casing grade, weight and thread type.

### Hydraulic

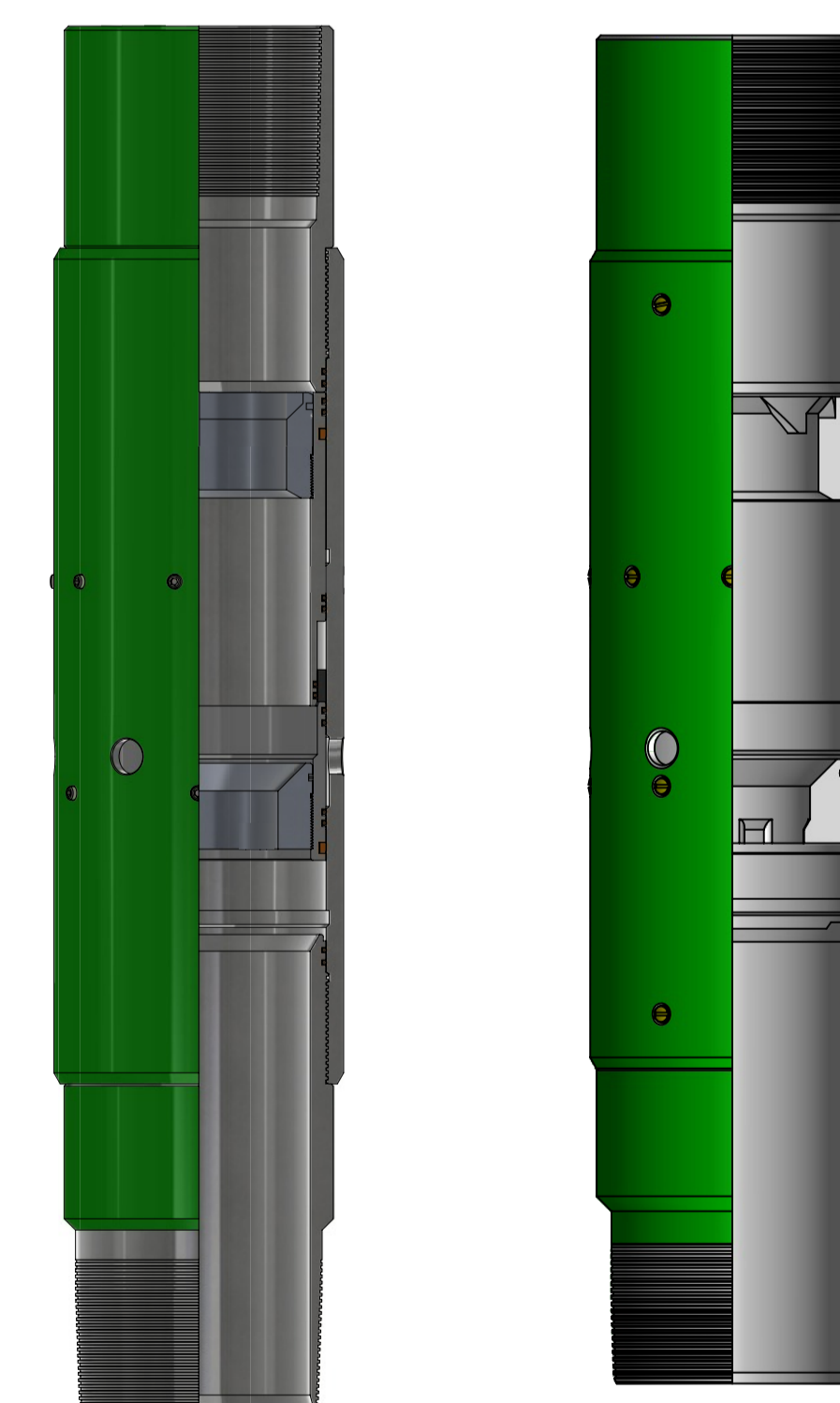


Hydraulic DSCC Non Rotating

Hydraulic DSCC Standard

**Hydraulic DSCC** is designed with hydraulically opened port system. When the first-stage shutoff baffle plug lands on the shut baffle plate increased internal pressure hydraulically opens the stage tool, enabling circulation and then second stage cement to pass through the ports into the annulus above the tool.

### Mechanical



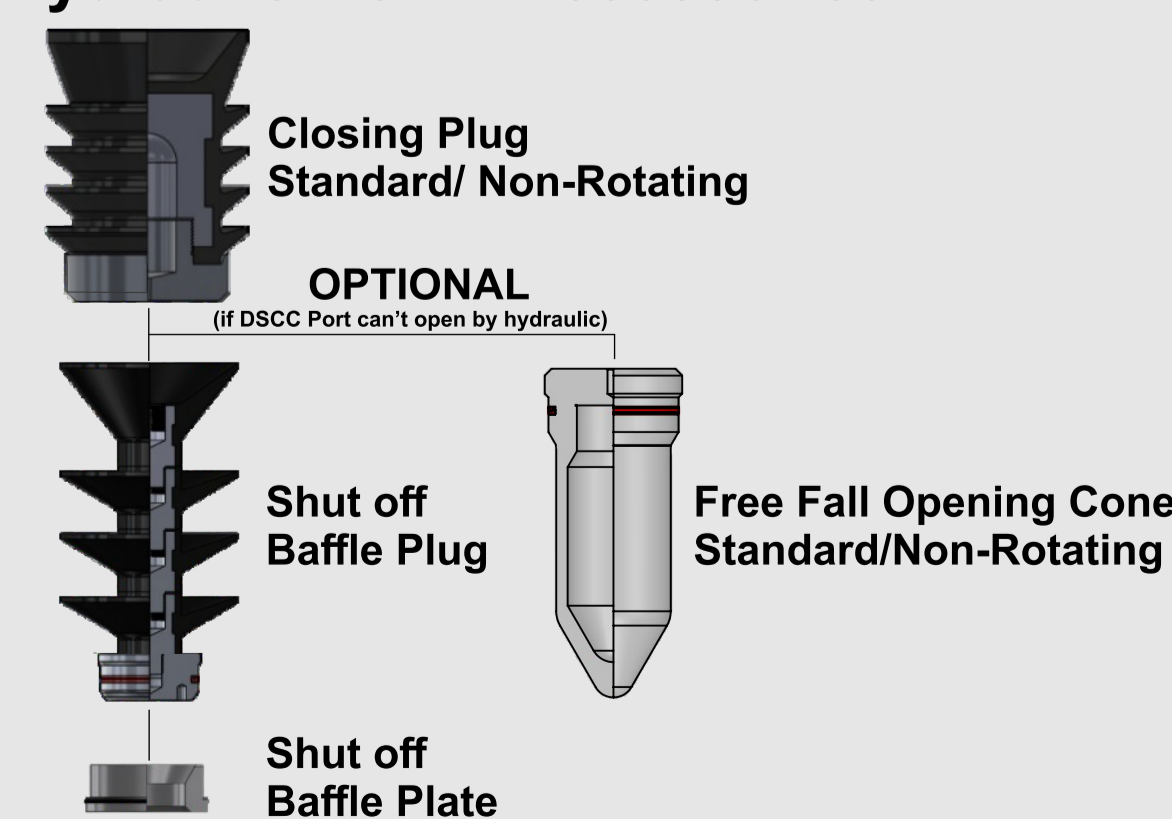
Mechanical DSCC Standard

Mechanical DSCC Non Rotating

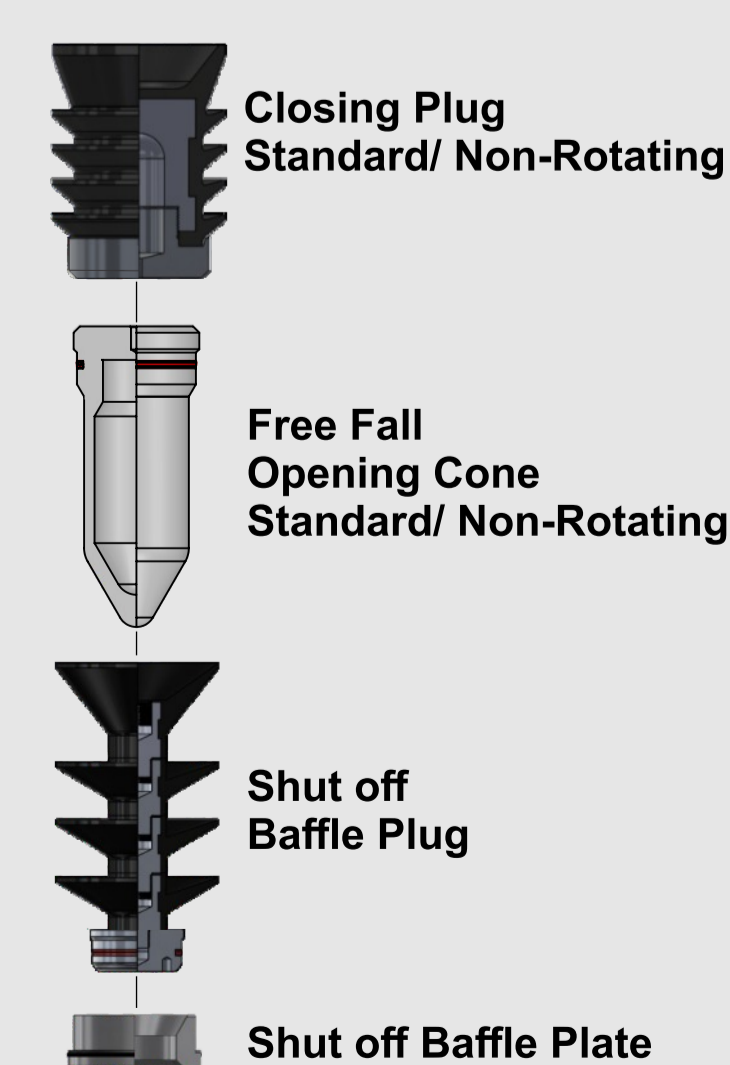
**Mechanical DSCC** multi stage cementing tools is designed in mechanical system to apply the opening and closing sleeve. DSCC used for two stage cementing operation on wells, to reduce the circulating pressure, cement contamination and quantity cement required.

### ACCESSORIES DSCC

#### Hydraulic DSCC Accessories



#### Mechanical DSCC Accessories



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