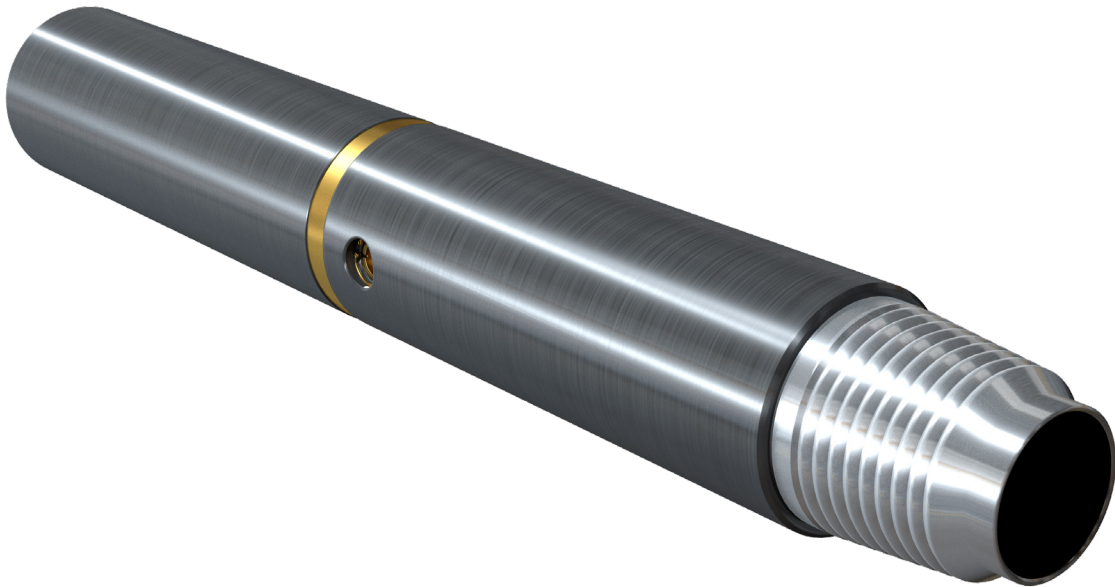


Multi-Cycle Circulation Sub



The Multi-Cycle Circulation Sub is a highly versatile and robust drilling valve specifically engineered for use in drilling operations and Wellbore Clean-Up Bottom Hole Assemblies (BHAs). It features a straightforward dart drop mechanism, which facilitates the repeated opening and closing of circulation ports. This valve may be utilized independently or as a modular component within the ArmRdillo™ Wellbore Clean-Up System..

FEATURES

- Simple 100% shut drop dart activation
- Dart activation is advantageous for ERD wells because of the Dart's design and flow characteristics.
- Unlimited activation between open and close
- Large port total flow areas
- Isolates tools below when ports are open
- Partial Split flow dart available
- Tool position indicated by SPP
- Available sizes, 4-3/4", 6-3/4", 8-1/4" & 9-1/2"

Wellbore Clean-up Technology

BENEFITS

Increases Well Productivity

- A properly executed wellbore clean-up reduces fine debris which can block screens and pore throats reducing well productivity

Integrity

- The Multi Cycle Circulation Sub can be provided with any type of rig end connections including premium and high torque connections, reducing the need for reduced strength crossovers

Reducing Non-Productive Time

- A robust wellbore clean-up is proven to reduce non-productive time during the completion of the well
- Reduces premature failure of drilling equipment by debris which can interfere with valves, electronics and other hardware

APPLICATIONS

- Boosting annular velocities
- Fluid displacement
- Pumping LCM
- Spotting acid
- Freeing stuck pipe
- Allows dry-tripping of the workstring
- Jetting BOP's

OPERATIONAL

- Run in hole as part of a Drilling or WellBore Clean-Up BHA
- When required to open the tool ports, drop a dart.
- Carry out operations as required
- When required to close the tool ports drop a second dart. Repeat as required
- Pull of hole. The darts can be retrieved from the tool at surface.