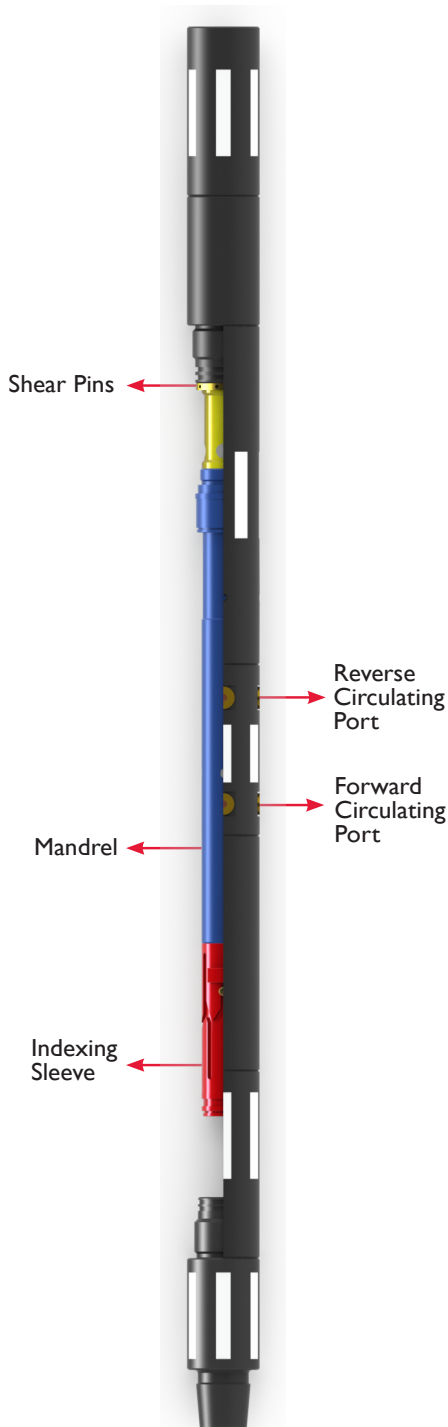









Establish communication between the annulus and the tubing



APPLICATIONS:

-  Drill stem testing
-  Acidizing and injection operations
-  Fluid cushion displacement
-  Reversing out recovered fluids

FEATURES:

-  Unlimited opening and closing cycles
-  Shear pins and indexing mechanism prevent inadvertent operation
-  Independent forward and reverse flow positions

The Multi-Cycle Circulating Valve has unlimited opening and closing cycles. The tool is cycled through tubing and annulus differential pressure. Shear pins hold the valve in the initial position, avoiding accidental cycles while tripping in. Once target depth is reached, applied pressure shears the pins, freeing the tool to cycle through forward, reverse and closed positions.

SPECIFICATIONS:

O.D. in [mm]	5.0 [127]
I.D. in [mm]	2.25 [57]
LENGTH in [m]	93 [2.4]
WEIGHT lb [kg]	364 [165]
MAX TEMPERATURE degF [degC]	350 [177]
PRESSURE DIFFERENTIAL (annulus/tubing) psi [kPa]	15,000 [103,421]
TYPICAL OPERATING DIFFERENTIAL PRESSURE psi [kPa]	500 [3447]
MAX PUMP RATE bbl/min	4.5
TENSILE STRENGTH lbf [kN]	350,000 [1,557]
CONNECTIONS (premium connections available)	3-1/2 API IF

SERVICE

Standard and sour service above 175 degF as per NACE MR 0175

* Slim hole version available upon request.