

Model A Circulation Valve

Applications

- Operations involving flow-actuated tools
- All milling operations and other job types involving flow-sensitive tools

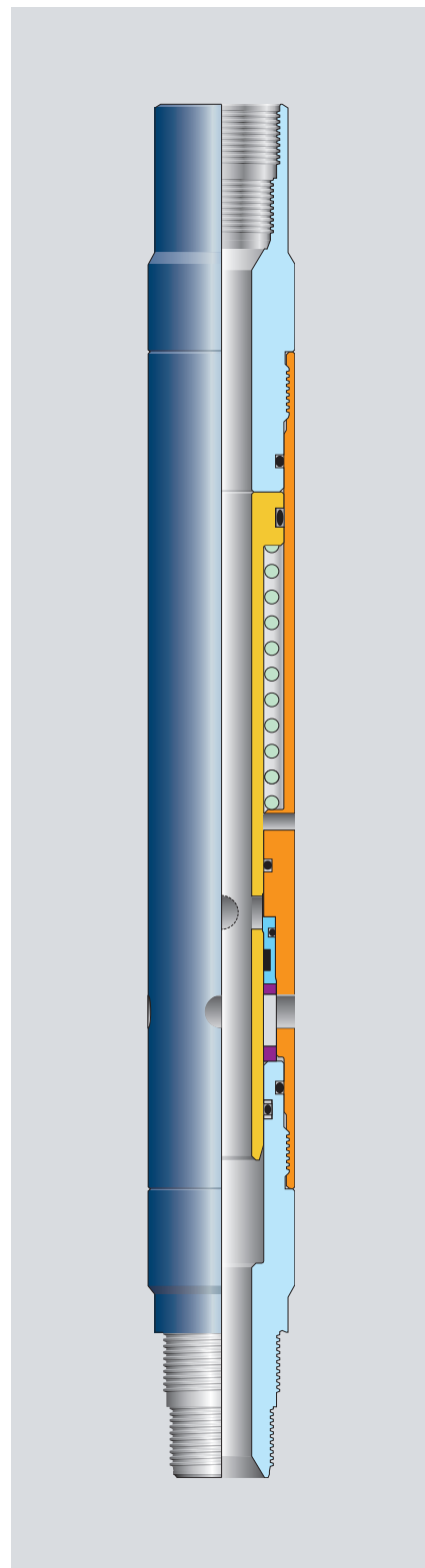
Benefits and features

- Diverts flow into the annulus upon exceeding the threshold rate or differential pressure
- Protects flow-driven downhole tools against excessive flow rates
- Reduces wear on flow-actuated tools
- Partial bypass allows high-annular-flow velocities for solids transport.
- Multiple acting valve allows repeated actuation without trip to surface for redressing.
- Allows circulation even if tool string below is plugged
- Bonded seals for reliable operation

The CoilTOOLS Model A circulation valve allows the placement of fluid either through the valve to the tool string below or out through the side-ports of the valve and directly into the annulus. Control is achieved by varying the rate of circulation. At low flow rates, the flow is directed through the tool. High flow rates divert the flow directly into the annulus.

The Model A circulation valve has been developed for motors and other flow-driven downhole tools that are sensitive to excessive flow rates but require high-annular velocities for solids transport. The Model A circulation valve is multiple acting.

In the flow-through position, all flow is directed through the tool to the lower BHA, e.g., a downhole motor. At flow rates below the threshold level, the pressure acting against the spring force is insufficient to shift the flow to the annulus. If the flow rate is increased above the threshold rate, the piston mandrel shifts down and opens the flow to the annulus. If the flow rate is dropped, the annulus is closed off again. The required pressure differential to manipulate the Model A circulation valve can be generated either by increased flow rate or by plugging the tool string below the circulating valve (e.g., by dropping a ball).



Model A Circulation Valve

OD (in.)	ID (in.)	Length [†] (in.)
2.125	0.875	20.813

[†] Includes CS Hydril thread