

AOCV® - Autonomous Outflow Control Valve

Injection wells have significant challenges in achieving uniform zonal injectivity. Water flooding is a widely used recovery technique within the upstream industry to increase oil recovery. Inconsistent zonal injectivity creates poor reservoir conformance and inefficient pressure support. This leads to excessive fluid losses into high perm zones and/or fractures which yields poor sweep efficiency. Additionally, this adds longer residence time of fluids travelling within the reservoir which ultimately results to a reduction in oil recovery.

Autonomous *Outflow* Control Valves (AOCV®) effectively redistribute injection fluid flow, enabling operators to autonomously achieve uniform zonal fluid distribution within injection wells. This provides a more efficient injection flood front by providing a constant flow behaviour through the AOCVs across the injection well as per the operators' designed parameters.

The AOCVs are tailored for each operators defined injection performance to provide a constant injection rate with increased differential pressure. This reduces (or stops) excessive fluid injection from short-circuiting to the surrounding oil producers.

Features & Benefits

Autonomous: Reacts to ΔP injection pressure to provide constant and uniform outflow control in all compartments

Improved Reservoir Conformance: The AOCV® provides uniformity of injected flood front through reduced short-circuiting from highly transmissible pathways

Customizable Design: Designed across various injection volumes providing versatile reservoir management options to operators while maintaining uniform fluid distribution

Retrofittable: Can be installed in new and existing wells

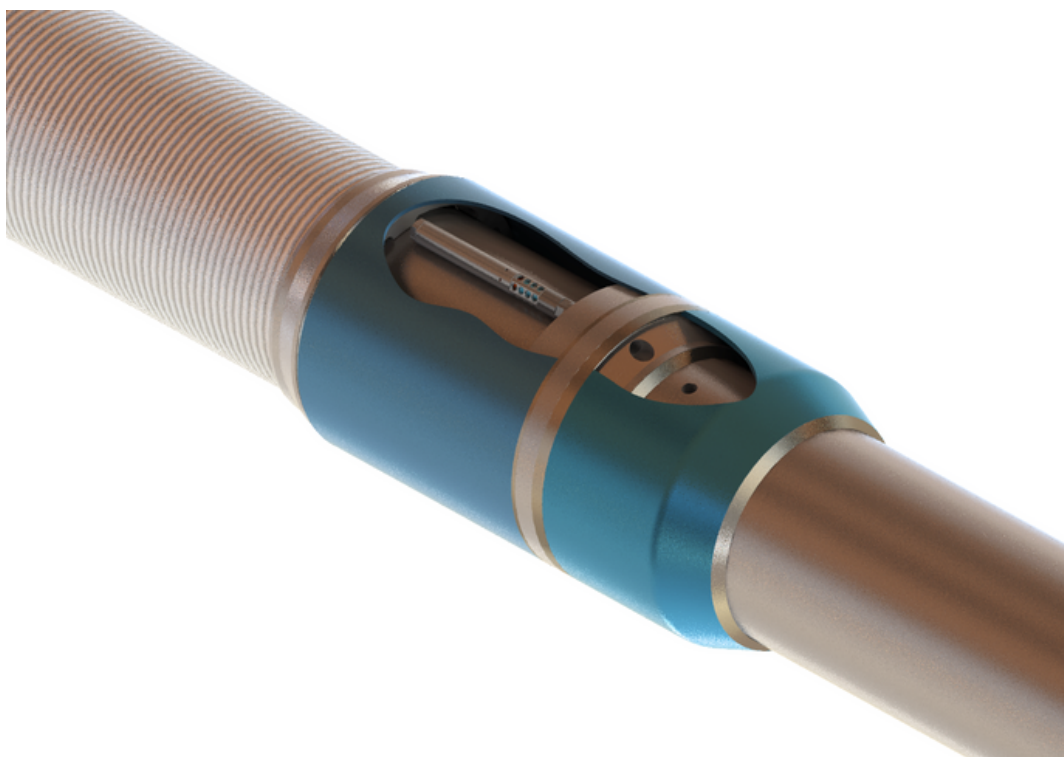
Accessibility: Full bore ID for any future operations

Engineered & Robust: InflowControl's AOCV® is designed for the life of the well providing superior erosion resistance and carefully designed to limit sensitivity to scale and debris

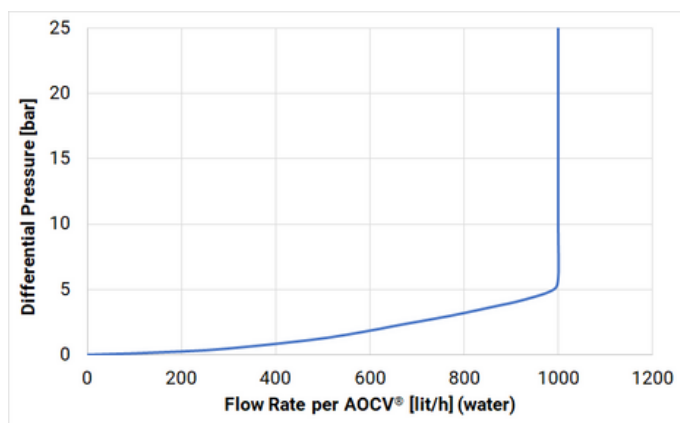
Enhanced Oil Recovery: Improved sweep efficiency through uniform fluid distribution within the reservoir allowing more oil to be produced and ultimately increasing recovery factors

Cost Effective: Reduced OPEX costs by controlling injection of water or gas autonomously; simplified deployment (no control lines); eliminating the need for risky interventions

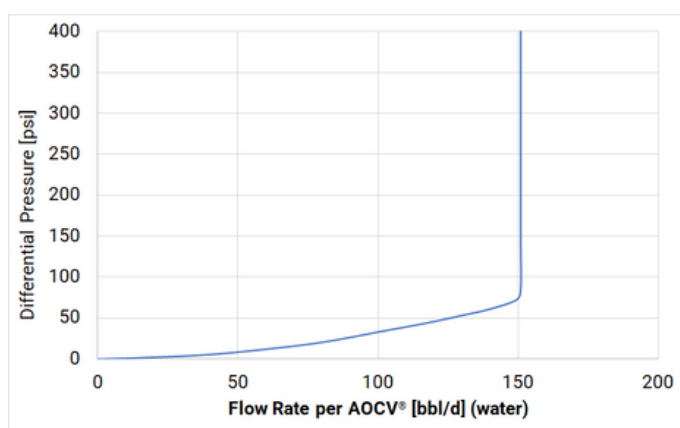
Wide Applicability: Suitable for waterfloods, polymer, ASP (Alkali-Surfactant-Polymer), and gas flooding applications



Flow performance examples



Single AOCV®



Dual AOCV®

AOCV® size [in]	2 7/8	3 1/2	4 1/2	5 1/2	6 5/8	7
Max OD [in]	4.000	4.650	5.700	6.700	7.800	8.200
OD Super Slim [in]	3.750	--	--	--	--	--
Length	R1, R2, R3 or custom length					
Strainer Material	304L, 316L or Alloy 825					
Pressure	Max differential pressure 200 bar / 3000 psi					
Temperature	Max temperature 150°C / 302°F					
Flow Rate	Up to 300 bbl/d / 48m³/d *based on dual AOCV® design - higher rates available upon request					

*Other basepipe size, material, and grades are available and can be configured as per operator specifications. Screen type & length, tool length, threads, material, etc. are all determined and selected in line with operator requirements for the specific application prior to manufacturing.