

A-Series Velocity Valves

Differential-pressure-operated, subsurface-controlled, deepset, flapper-type velocity safety valves with working pressures to 10,000 psi [68,950 kPa]

APPLICATION

- Sweet to moderately corrosive environments from 40 degF to 300 degF [4 degC to 149 degC]

BENEFITS

- Offers a versatile solution.
- Provides an unobstructed flow path and reliable production.
- Design is cost effective and easy to run.
- Allows fewer potential leak paths.
- Reduces problems associated with solids and scale deposition.
- Applies to a wide range of subsurface environments.

FEATURES

- Unlimited setting depths
- Straight-through bore design
- Designed in accordance with API and ISO criteria
- Compact design
- Minimum number of seals
- Field-proven Inconel® 718 flapper and seat with metal-to-metal sealing
- Optimal geometry and clearance between sliding components
- Adjustable flow rates and closing pressures

The Camco* A-series velocity valves are engineered to prevent wells from overproducing or blowing out in the event the surface controls malfunction or become damaged. These valves are differential-pressure-operated valves set to close at a predetermined rate of flow. They can be adjusted to close at different flow rates by changing the spring, using spring spacers, or varying the inside diameter of the choke bean.

The A-series velocity valves are normally open. They have unlimited setting depths and, with appropriate material selection, are suitable for moderately corrosive environments. The valves are available to 10,000-psi [68,950-kPa] working pressure.

The A-series velocity valves are available in a variety of materials. They feature the innovative and field-proven flapper-closure system. The premium flapper mechanism has full, metal-to-metal sealing plus a secondary soft seat, and it meets a leakage-acceptance criterion that is substantially more stringent than API and ISO specifications.

OPERATION

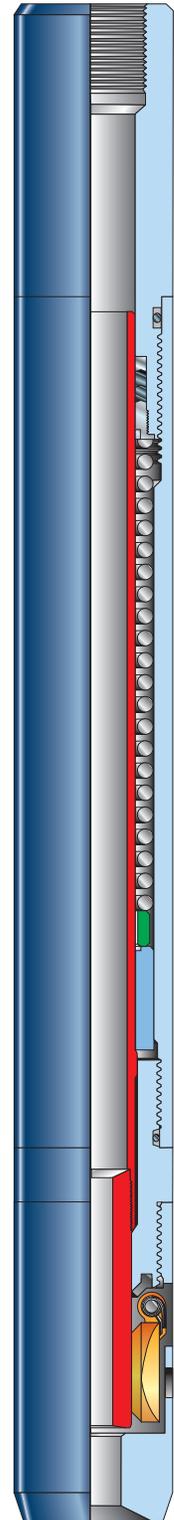
Type A-series valves are installed on an appropriate lock and inserted into a landing nipple using standard slickline methods.

Open

These valves are normally open. The spring-loaded flow tube holds the flapper open to allow flow through the valve's ID.

Close

The A-series velocity valves close when differential pressure across the choke bean reaches a predetermined level. When the chosen pressure differential is reached, the flow tube moves upward, allowing the flapper to close and shut in the production flow.



A-3 velocity safety valve.

A-Series Velocity Valves

Engineering Data For A-Series Velocity Valves [†]				
Tubing OD [‡] (in [mm])	Valve Type	Valve OD [§] (in [mm])	Max. Flow Area ^{††} (in ² [mm ²])	Working Pressure ^{††} (psi [kPa])
1.900 [48.3]	A-3	1.406 [35.7]	0.110 [71.3]	5,000 [34,475]
2.375 [60.3]	A-3H	1.750 [44.5]	0.249 [160.6]	10,000 [68,950]
	A-3			5,000 [34,475]
2.875 [73.0]	A-4H	2.218 [56.3]	0.719 [464.1]	10,000 [68,950]
	A-3			5,000 [34,475]
3.500 [88.9]	A-3HP	2.718 [69.0]	1.474 [1,100.9]	10,000 [68,950]
	A-3M		1.352 [872.2]	
4.500 [114.3]	A-6A	3.708 [94.2]	3.546 [2,288.1]	5,000 [34,475]

[†] The Engineering data provided illustrate the scope of this product offering and are not all inclusive. Additional sizes and pressure ratings are available upon request.

[‡] These valves can be matched to any lock with a suitable crossover.

[§] The spring and choke size will be established to match well performance.

^{††} Velocity valves suit any landing nipple with bore size 0.03 in larger than the OD of the valve.

^{††} The working pressure of the system is equal to the lowest pressure component rating of the lock, valve, and nipple combination.

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