

AXIAL FLOW VALVE



Axial Flow Valve

Precise control, compact design

Size	3" ~ 48" (~ 72")
Bore	Full or reduced (not piggable)
Pressure	150# ~ 2500#
Temperature	-129°C ~ 250°C (538°C)
Connections	Wide choice on request
Materials	Wide choice on request

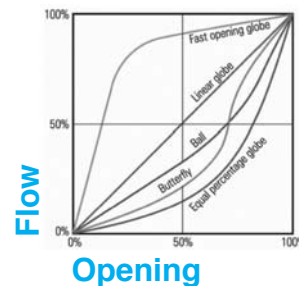


GENERAL INFORMATION

Precise control of:

- Pressure / Flow / Temperature

Unlimited choice of opening - flow characteristics (cage design):



Characteristics:

- Small, compact design
- Opening and closing at full differential pressure
- Pressure balanced piston requiring a small actuator
- Bubble tight sealing
- Bi-directional
- Lower noise level than conventional valve types
- Vertical or horizontal orientation without modification
- Fast stroke

APPLICATIONS

Used as:

- Control valve
- Choke (Joule Thompson) valve
- Surge relief valve
- Shut-off (quick response)

Applied in:

- Oil and gas production
- Process industries
- Transmission, distribution and storage of fluids

Used for wide range of fluids:

- Crude oil to refined products
- High gas-oil multiphase fluids
- Natural gas (with contaminants - sand)

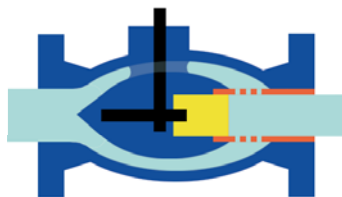
Examples of application:

- NAM Sappemeer
- Petrobras Mexilhao Petrobras
- Aracaju
- Mirny Atom
- TransGaz

HOW AFV WORKS

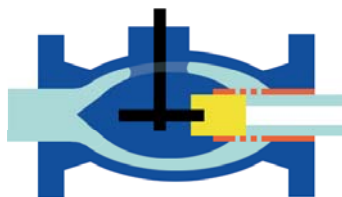
Open position

The valve piston (yellow) is out of cage (red) holes area and full flow is reached.



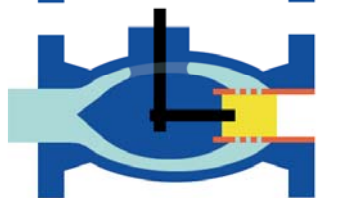
Controlling the flow

By moving the piston some of the cage holes are closed and flow is controlled.

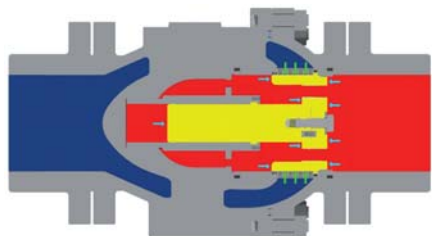


Closed position

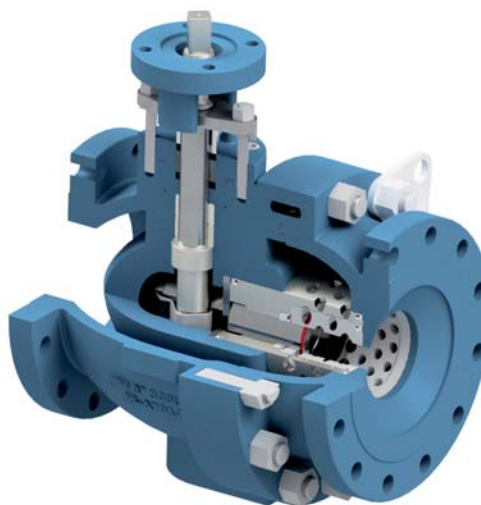
After quarter turn of the stem, the piston blocks all the cage holes, the valve is closed and sealing.



Pressure left and right of piston are the same (balanced), hence a smaller actuator is needed.



CONTROL SEAL BENEFITS



Rotating stem

Less friction, smaller / standard actuator - quarter turn
Avoids fugitive emissions, Fast stroking

Advanced body design with bonnet

Faster fabrication, top+side entry, In-line maintenance

Bubble tight dual sealing

Up to ANSI FCI Class V or VI
Metal-to-metal or metal-to-metal + soft sealing
Fire safe execution possible

Competitive price and delivery terms

ANTI-SURGE EXECUTION

Special execution for severe service anti-surge and compressor recycle solutions – Control Seal Axial Flow Valve combines proven flow control technology with reliable fast stroking actuation. Axial flow control is provided by fast acting pneumatic spring return actuator which can achieve less than 1.5 second operation times (for valves up to 10") leading to fast and accurate control.

CAGE DESIGN

Cage design by ANSYS CFD simulation.



AXF-FS Trim
For fast shut-off, Extreme high Cv, suitable for throttling applications



AXF-CL / AXF-CEQ Trim
Linear / eq% Single cage
Control Valve applications, wide rangeability



AXF-CCL-II / AXF-CCEQ-II Trim
Linear / eq% Double cage
For high pressure drop and high dP
Velocity, cavitation and noise reduction



AXF-CCW Trim
Labyrinth cage
For highest dP, excellent noise abatement
Elimination of erosion, vibration and cavitation

DESIGN STANDARDS

Design	API 6D, ASME B16.34
Face to Face dim.	API 6D, ASME B16.10, B16.47, BW
Flanges	ASME B16.5, B16.25
Fire Safe	ISO 10497, API 607, BS 6755 ISO
Fugitive Emission	15848, TÜV, SHELL MESC SPE 77-312
Testing	API 598, ANSI/FCI 70.2
Marking	CE, MSS-SP-25
Topworks	ISO 5211
Sizing selection	ANSI/ISA S75.01-2007 & IEC 60534-8-3:2010



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