

Axial Flow Nozzle Check Valve: Non-Slam API 6D Check Valve

In an axial flow check valve, the disc travels a short distance inside a diffuser on the flow axis and, assisted by a spring, closes just before flow stops. This largely prevents the slam and pressure surge seen with swing check valves; it is preferred at compressor and pump discharges and on large-diameter pipelines.

Technical specifications

Size	2"–60" (DN50–DN1500)
Pressure class	ASME Class 150–1500
End connections	RF / RTJ flanged (ASME B16.5 / B16.47), butt-weld (ASME B16.25)
Design	API 6D, ASME B16.34
Face-to-face	ASME B16.10 on request (same length as a swing check valve); short pattern option
Materials	A216 WCB, A351 CF8M, A995 4A (duplex); other alloys on request
Seat	Metal-to-metal, CoCr hard-faced
Installation	Horizontal line or vertical line with upward flow



Key features

- Spring-loaded, short-stroke disc: closes before reverse flow begins
- Protection against slam and pressure surge
- Low pressure drop through the venturi body
- Swing check face-to-face option: replacement without line modification
- Construction resistant to vibration and pulsation

Face-to-face dimensions (mm)

On request, axial flow check valves can be supplied with the same flanged face-to-face dimension as swing check valves (ASME B16.10); in this option they replace an existing swing check valve without piping modification. The values below apply to this option; dimensions of short-pattern designs are given with the quotation.

NPS	DN	Class 150	Class 300	Class 600
2	50	203	267	292
2½	65	216	292	330
3	80	241	318	356

NPS	DN	Class 150	Class 300	Class 600
4	100	292	356	432
6	150	356	444	559
8	200	495	533	660
10	250	622	622	787
12	300	698	711	838
14	350	787	838	889
16	400	864	864	991
18	450	978	978	1092
20	500	978	1016	1194
24	600	1295	1346	1397

Values are for raised-face (RF) flanged ends and conform to ASME B16.10. Ring-type joint (RTJ) ends are slightly longer; butt-weld (BW) end-to-end dimensions are listed separately in the standard. Exact dimensions are shown on the general arrangement (GA) drawing supplied with the quotation.

Face-to-face dimensions, high-pressure classes (mm)

NPS	DN	Class 900	Class 1500
2	50	368	368
3	80	381	470
4	100	457	546
6	150	610	705
8	200	737	832
10	250	838	991
12	300	965	1130
14	350	1029	1257
16	400	1130	1384
18	450	1219	1537
20	500	1321	1664
24	600	1549	1943

Part materials

Part	Material options
Body, diffuser, disc	A216 WCB, A351 CF8M, A995 4A (duplex)
Bearing (bushing)	Stainless steel, duplex stainless
Spring	SS316, Alloy X-750, Alloy 718
Seat	Metal-to-metal, CoCr hardfaced (disc and body seat)