

THE AXIAL FLOW VALVES

SERIES Class 300/600









Quality Policy

SANAYE GAZ IRAN is manufacturer of high quality products and services to its customers.

This is ensured through corrective and preventive actions along with continuous improvements of the effectiveness of the quality system.

Company Profile

SANAYE GAZ IRAN MFG Co. was founded in 1980.

Since then, it has been in production of high quality domestic and industrial Gas Regulators and Gas Meters. Over the past three decades, through innovation and constant strive for excellence and quality, its annual production has increased from 56,000 to over 500,000 units.



The organization has always maintained quality while providing a continuous improvment of before and after sale customer service as its goal.

Over 200 highly qualified and experienced engineers and technicians are employed by S.G. in Qazvin, Iran.



The Axial Flow Valves Description

The Axial Flow Valve is an industry standard for pressure regulation in distribution and transmission applications.

SANAYE GAZ IRAN offers a full range of Axial Flow Valve regulators up to Class 600 applications and sizes from 2" up to 8".

The regulator is pilot controlled. Sanaye Gaz Iran can provide a full range of supporting controls.



The design of the Axial Flow Valve means that it can be used in a wide range of applications. A simple change of sleeve upgrades the axial flow valve from one pressure range to another. A change of control will convert the axial from pressure to volumetric control or to monitor override, or safety control.











The simplicity of the Axial Flow Valve makes maintenance easy. Whilst no special tools are strictly required.

Fully interchangeable and reversible components in addition to wafer design construction, ensure that the axial flow valve is simple to install, remove and maintain.

The only spares required for each valve size are a single sleeve and three 'O'-rings.









Axial Flow Valve Main Parts

- > (1) INTERCHANGEABLE VALVE CAGE CLOSURE
- > (2) VALVE CAGE CLOSURE
- > (3) VALVE BODY
- > (4) RUBBER SLEEVE



The heart of the Axial Flow Valve is the unique 'V' form flexible sleeve. This is the only moving part. Throttling and control is performed by the sleeve expanding and contracting in relation to the inlet and outlet slotted cages which fit inside the sleeve and are formed to match the 'V' configuration. An outer cylindrical body surrounds the cage and sleeve assembly forming a 'V' shaped cavity all around the sleeve. All four parts are held together with a single bolt through the centre of the cages. Control is achieved by modulating the pressure in the cavity at the back of the sleeve.

How It Works

With gas supply pressure at the back of the sleeve equal to inlet pressure, the sleeve is closed against the inlet cage. A closing force equal to inlet pressure acts on the downstream 'V' sleeve area forcing it against the downstream cage to provide double closure and a completely tight seal.

The pressure at the back of the sleeve creates a pressure imbalance across the sleeve, inlet pressure now being higher. This expands the sleeve away from the cages thereby allowing flow from inlet to outlet. The pressure at the back of the sleeve can now be referred to as the 'Control' Pressure.

Reducing the control pressure further increases the differential across the sleeve allowing it to expand further until the sleeve is flat against the body for 100% capacity. The position of the sleeve, and therefore flow, is controlled by the pressure at the back of the sleeve.

Maintenance

Under normal operation conditions, the axial flow valve is capable of long-term service operation.

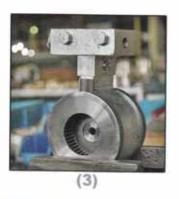
Amongst different parts of the equipment, sleeves are most exposed to severe conditions like fluid impurities and are most recommended to be replaced regularly.

Sanaye Gaz Iran recommendation for optimum operation intervals is 18 months.

The procedure to replace the sleeves is given in steps shown in pictures below:

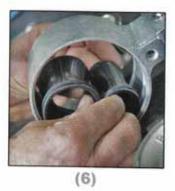




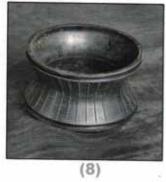






















Storage

Idealy Axial flow valves should be stored in original shipping boxes.

Plastic bags may also be used and will prevent foreign materials from entering the valve passage.

When removing an axial flow valve from service it is recommended that the valve be throughly cleaned and inspected prior to storage.

SLEEVES should be kept out of direct sunlight and away from contaminants, radiation and Ozone producing electrical equipment.

Temperature above 35°C are to be avoided.

Sleeves should be stored in polyethylene bags inside a box.



Capacity Tables - Class 300 - ISA METHOD - (SCMH)

Gas Specific Gravity 0.6 Base Pressure: 14.73 psig Temperature: 15.5° C

2" Class 300

Cv=66.5	F	p=1.00		Fg=1.29	1	Xt=0.590			Fk=0.929	
Inlet Pressure (psig)	0	10	20	Outle 30	50	(psig) 75	100	150	200	
15	2110	1586								
30	3200	3143	2650							
60	5352	5352	5352	5182	3653	- 2				
125	9996	9996	9996	9996	9996	9486	7646			
250	18944	18944	18944	18944	18944	18944	18944	18180	14753	

3" Class 300

Cv=135	F	Fp=1.00		Fg=1.291		Xt=0.	490	Fk=0.929	
Inlet Pressure (psig)	0	10	20	Outle 30	et Pressure 50	(psig) 75	100	150	200
15	3936	3143							
30	5918	5918	5210						
60	9883	9883	9883	9826	7249				
125	18491	18491	18491	18491	18491	18151	15121		
250	35056	35056	35056	35056	35056	35056	35056	34632	29167

4" Class 300

Cg=231	Fp=1.00			Fg=1.291		Xt=0.480		Fk=0.929		
Inlet Pressure (psig)	0	10	20	Outle 30	et Pressure 50	(psig) 75	100	150	200	
15	6654	5380								
30	10024	10024	8863							
60	16764	16764	16764	16679	12403					
125	31347	31347	31347	31347	31347	30837	25797			
250	59381	59381	59381	59381	59381	59381	59381	58786	49753	

6" Class 300

Cg=325	Fp=1.00		Fg=1.291			Xt=0.495			Fk=0.929			
Inlet Pressure		Outlet Pressure (psig)										
(psig)	0	10	20	30	50	75	100	150	200			
15	9515	7589										
30	14328	14328	12544									
60	23956	23956	23956	23786	17500							
125	44769	44769	44769	44769	44769	43863	36444					
250	84838	84838	84838	84838	84838	84838	84838	83705	70368			

8" Class 300

Cg=560	Fp	Fp=1.00		Fg=1.291		Xt=0.450	Fk=0.929		
Inlet Pressure (psig)	o	10	20	Outle 30	et Pressure 50	(psig) 75	100	150	200
15	15659	12884					<u>. </u>		
30	23560	23560	21209						
60	39332	39332	39332	39332	29818				
125	73568	73568	73568	73568	73568	72916	61873		
250	139348	139348	139348	139348	139348	139348	139348	138782	119300

Capacity Tables - Class 600 - ISA METHOD - (SCMH)

Gas Specific Gravity 0.6 Base Pressure: 14.73 psig Temperature: 15.5° C

2" Class 600

Cv=67.6		Fp=1.00		Fg=1,291		Xt=0.590		Fk=0.929		
Inlet Pressure		200	7252	Outlet Pressure (psig)					1.50047	
(psig)	0	100	200	300	500	700	900	1100	1300	
250	19256	19256	15008	0	0 .	0	0	0	0	
400	30186	30186	29988	25599	0	0 -	0	0	. 0	
600	44741	44741	44741	44486	32933	0	0	0	0	
1000	73822	73822	73822	73822	73511	66687	44146	0	0	
1400	102932	102932	102932	102932	102932	102508	97297	83620	53066	

4" Class 600

Cv=248	Fp=1.00			Fg=1.291		Xt=0	590	Fk=0.929	
Inlet Pressure (psig)	0	100	200	Outle 300	et Pressure 500	(psig) 700	900	1100	1300
250	70679	70679	55048	0	0	0	0	0	0
400	110719	110719	110040	93956	0	0	0	0	0
600	164097	164097	164097	163248	120800	0	0	0	0
1000	270880	270880	270880	270880	269663	244659	161917	0	0
1400	377664	377664	377664	377664	377664	376078	356964	306815	194623

6" Class 600

Cg=500	Fp:	Fp=1.00		Fg=1.291		Xt=0.511		Fk=0.929	
Inlet Pressure (psig)	0	100	200	Outle 300	t Pressure 500	(psig) 700	900	1100	1300
250	132609	132609	108766	0	0	0	0	0	0
400	207734	207734	207734	184400	0	0	0	0	0
600	307891	307891	307891	307891	239392	0	0	0	0
1000	508234	508234	508234	508234	508234	476547	323210	0	0
1400	708605	708605	708605	708605	708605	708605	689207	604398	389670

8" Class 600

Cv=710

	100						7,000,12020	370	0.000	O'COLORED .
	Inlet Pressure				Outle	et Pressure	(psig)			
I	Pressure (psig)	0	100	200	300	500	700	900	1100	1300

Xt=0.550

Fa=1.291

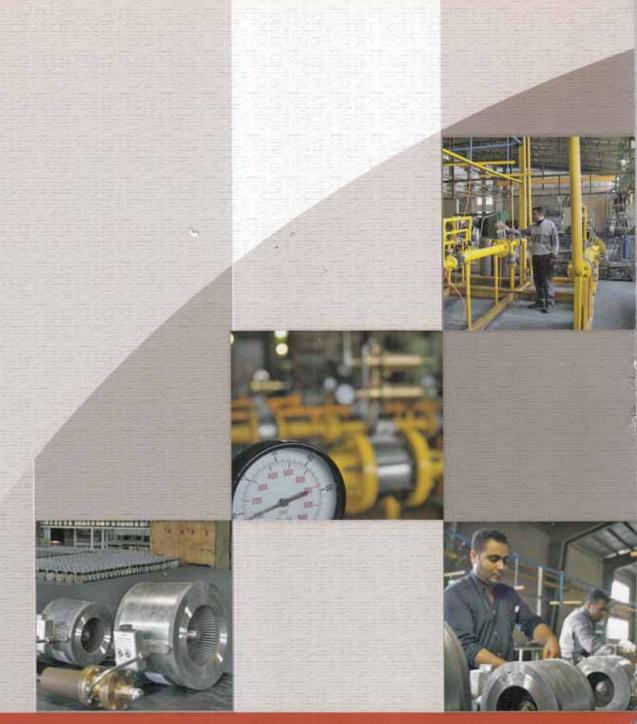
Inlet Pressure	Outlet Pressure (psig)										
(psig)	0	100	200	300	500	700	900	1100	1300		
250	195331	195331	156140	0	0	0	0	0	. 0		
400	306022	306022	305512	265642	0	0	0	0	0		
600	453582	453582	453582	453015	343060	0	0	0	0		
1000	748730	748730	748730	748730	626627	689292	461397	0	0		
1400	1043906	1043906	1043906	1043906	1043906	1043000	1001601	868907	555381		

NOTE: The capacities shown in this bulletin are the maximum capacities of the valve only in the full open condition.

Actual capacities of the valve in the regulating or relief mode are a function of the pilot employed, the restrictor setting, the downstream piping, and the gas velocity. Good engineering practice suggests sizing the load below the maximum capacity of the valve.

Recommended sizing is 50% to 80% of maximum capacity.

Fp=1.00





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