HOSE FIRE CONNECTION VALVES

Model A156

Hose valve angle pattern with pressure restrictor



PRODUCT DESCRIPTION

The hose valves angle pattern with pressure restrictor model A156, care capable of adjustment to provide a range of the outlet pressures under flowing condition only. Angle pressure restricting valves for water pressure control by adjustable flow restriction. Complete with spring clip to override the setting when full flow is required.

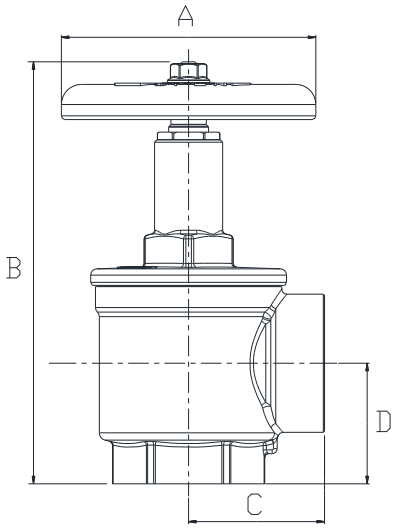
They are used with a Fire Hose Rack Assembly or as a Fire Department outlet connection.

TECHNICAL DATA

Model	A156
Sizes	1 ½" DN40 x 1 ½" DN40 2 ½" DN65 x 2 ½" DN65
End connections	Inlet: Female thread NPT Outlet: Male thread NH (NST)
Working pressure	300 psi (21 bar)
Materials	Body: Forged brass Shutter: Forged brass Bonnet: Forged brass Stem: Brass Handwheel: Red painted aluminum
Finishes	Rough brass (Standard) Polished brass Rough chrome Polished chrome

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DIMENSIONS



VALVE SIZE	DIMENSIONS Inches (mm)			
	A	B	C	D
1 ½“ x 1 ½“ DN40 x DN40	4 1/32” (102,39)	7 19/32” (192,88)	2 1/4” (57,15)	1 7/8” (47,63)
2 ½“ x 2 ½“ DN65 x DN65	5 1/8” (130,17)	10 19/32” (269,08)	3” (76,2)	2 5/8” (66,67)

LOSS PRESSURE

Pressure loss calculation:

$$\Delta P = \left[\frac{GPM}{Cv}\right]^2$$

Where:

ΔP: Differential pressure (between inlet and oulet pressure) (in psi)
GPM: Water flow rate (in gpm)
Cv: Valve Coefficient

SET NUMBER	Cv	
	1 ½” DN40	2 ½” DN65
1	4,40	13,90
2	6,20	19,60
3	6,95	24,20
4	7,60	25,50
5	7,78	28,10
6	8,03	30,05
7	10,09	30,90
8	12,70	34,08
9	13,91	35,78
10	16,63	37,60
11	-	38,40
12	-	39,45
13	-	40,45
14	-	41,80
15	19,67	43,39
16	-	46,80
17	-	51,20
18	-	58,36
19	-	65,60
20	-	73,32
F.0	28,00	125,00

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DETERMINING THE PROPER OUTLET PRESSUE

1- The valves have been designed to reduce the downstream water pressure under flowing (residual) condition only.

The valve should not be set to provide less than the minimum pressure required by NFPA 14: for 1 1/2" valve 100 gpm and for 2 1/2" valve 250 gpm.

NFPA 14 requires that Standpipe systems shall be hydraulically designed to provide the required water flow rate at a minimum residual pressure of 100 psi at the outlet of hydraulically most remote 2 1/2" hose connection and 65 psi at the outlet at the hydraulically most remote 1 1/2" hose station.

Outlet pressures which do not correspond to NFPA 14 requirements must be authorized by local fire department.

There will be a pressure drop due to friction between the outlet and the nozzle.

The amount of this loss should be calculated by qualified personnel, to assure that the nozzle receives water pressure sufficient to its design needs.

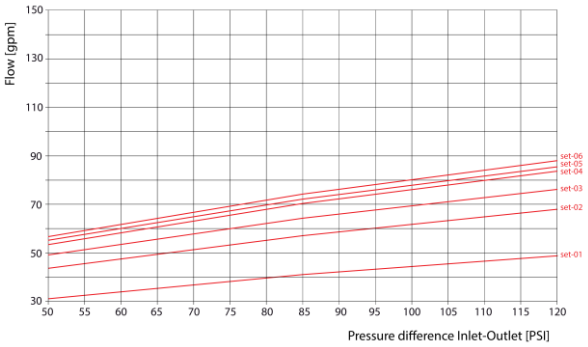
Note that some fire hose nozzles may not operate properly when valve outlet pressure is set at the 100 psi minimum authorized in the 2007 edition of NFPA 14.

The installer should consult with the fire authorities concerning pressures needed by their equipment.

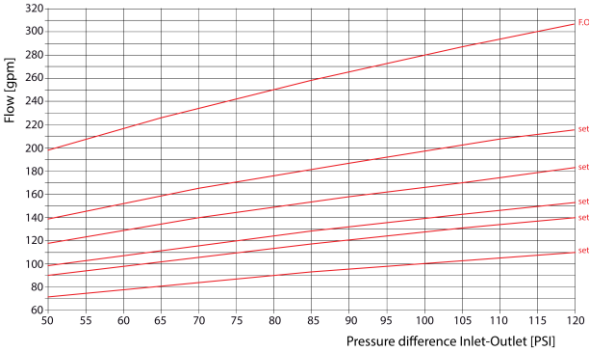
2- To determine the pressures at the hose nozzle, the hydraulic calculation information provided in NFPA. Fire Protection Handbook should be followed.

3- The valves are designed and Listed to reduce inlet pressures under flowing conditions: see the following graphs.

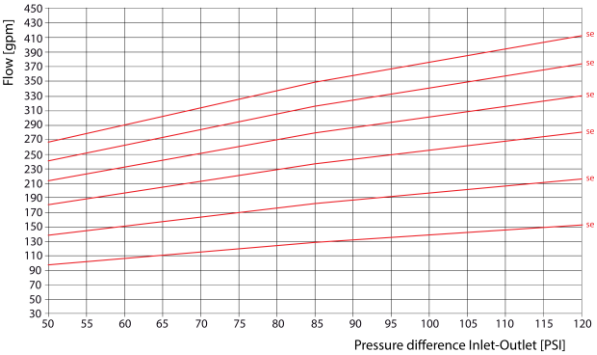
VALVE 1 ½" DN40 SETTING: 1-6



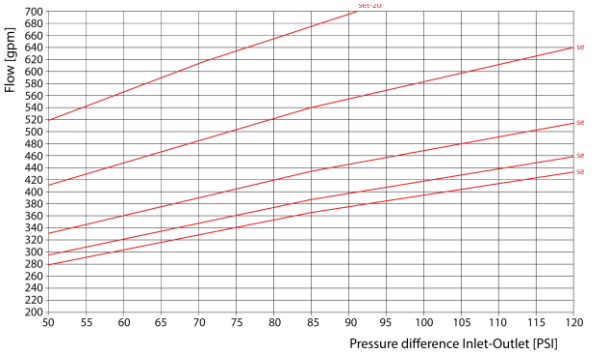
VALVE 1 ½" DN40 SETTING: 7-F.O.



VALVE 2 ½" DN65 SETTING: 1-10



VALVE 2 ½" DN65 SETTING: 12-F.O.



The graphs are referred only to the indicated conditions of flow and pressure.

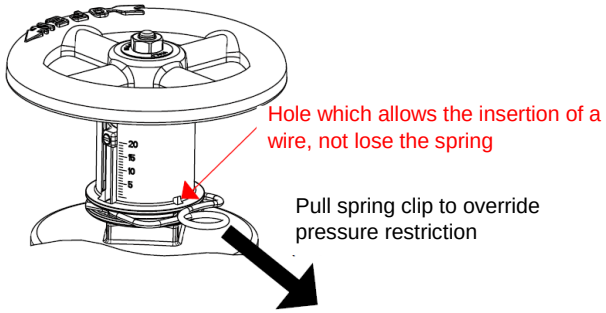
The pressures indicated in the curves are at the outlet of the valve.

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INSTALLATION

1. Pipe unions or rubber-gasketed fittings are to be installed immediately upstream and downstream of the valve to permit easy replacement.
2. Connect the valve to the piping.
3. Select setting number from proper graph.
4. Close valve hand-tight.
5. Loosen set screw in collar.
6. Rotate indicator-cap until top collar reaches selected setting number.
7. Tighten set screw in collar. Valve is now set.
8. To override pressure restriction, pull spring clip.

The valves must be installed on threaded end NPT pipe line using appropriate tools through the hexagon at the bottom of the body. During the installation pay attention not to deform the bonnet or other valve parts, as this could compromise the valve functioning. By turning the handle counterclockwise, the valve opens and it closes by turning the handle clockwise. After installation, verify the tightness through a pressure test.



MAINTENANCE

The maintenance and testing of this valve should be done in accordance with NFPA 25.

No special maintenance is required for these valves.

1. The valve should be inspected for damage or corrosion once a year.
2. The valve has not been designed to accept spare parts.
3. If the valve leaks, the test valve should be opened again to flush the valve.
4. The system should be drained every two to three years and all valves opened fully and lubricant applied to the valve stem. The valve seat should be inspected for debris.
5. The valve should be operated by hand, never using a torque bar or other device. Excess torque may damage the valve.
6. If the valve fails to perform as intended, the valve should be replaced.
7. It is recommended to replace the valve after a lifetime of ten years.

ORDERING INFORMATION

SIZES	CODE
1 ½" DN40 x 1 ½" DN40	A156040X040
2 ½" DN65 x 2 ½" DN65	A156065X065

Specify:

Model	
Quantity	
Size	
Finish	

The equipment presented in this bulletin is to be installed in accordance with the latest published Standard of the National Fire Protection Association, Factory Mutual Research Corporation, or other similar organizations and also with the provisions of governmental codes or ordinances whenever applicable.
This documentation is not contractual. AG Fire Sprinkler reserves the right to any kind of change without notice.

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