"Apollo"®

REVISION DATE: 03/01/06

MODEL A108

DESCRIPTION

A108 PRESSURE RELIEF/PRESSURE SUSTAINING VALVE

The Model A108 has a wide range of applications: anywhere a system must be protected from pressures that are too high (relief) or too low (sustaining).
Typical examples include:
- Pump systems
- Municipal distribution systems
- Irrigation systems

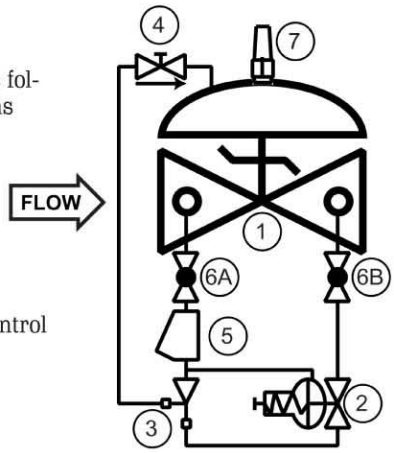
SERIES FEATURES

- Relief Valve: Limits inlet pressure by relieving excess pressure
- Pressure Sustaining: Prevents inlet pressure from dropping below a predetermined minimum
- Operates over a wide flow range
- Inlet pressure is adjustable with single screw
- Quick opening and adjustable closing speed
- Can be maintained without removal from the line
- Factory tested and can be pre-set to your requirements

SCHEMATIC

The Model A108 consists of the following components, arranged as shown on the schematic diagram:

1.) Basic Control Valve
2.) Pressure Relief/Back Pressure Pilot
3.) Ejector
4.) Flow Control Valve Adjustable closing speed control
5.) Y-strainer- protects pilot system from dirt/debris
6.) Isolation Ball Valves
7.) Visual Indicator (Optional)



OPERATION

The normally closed, spring-loaded pilot, sensing upstream pressure, responds to changes in pressure and causes the main valve to do the same. The net result is a constant modulating action of the pilot and main valve to hold the upstream pressure constant. The pilot system is equipped with a closing speed control that fine tunes the valve response to the system variables.

RECOMMENDED INSTALLATION

- Install the valve with adequate space above and around the valve to facilitate servicing. Refer to the Dimension table.
- Valve should be installed with the bonnet (cover) at the top, particularly 8" and larger valves, and any valve with a limit switch.
- Shut-off valves should be installed upstream and downstream of the control valve. These are used to isolate the valve during start up and maintenance.
- Install a pressure gauge upstream of the valve to enable adjustment to the required pressure setting. This gauge may be installed in the upstream side port of the valve body.

Sizes: GLOBE/ANGLE

Threaded Ends:
1 1/4" - 3"

Grooved Ends:
1 1/2" - 4"

Flanged Ends:
1 1/4" - 24" (globe);
1 1/4" - 16" (angle)

SIZING GUIDELINES

Pressure sustaining valves and pressure relief valves that operate frequently should be limited to a maximum velocity of 25ft/sec. Pressure relief valves that operate intermittently may be extended to 45 ft/sec.

SIZE	1 1/4"-1 1/2"	2"	2 1/2"	3"	4"	6"
FLOW @ 25FT/SEC GPM	115-160	260	375	575	1000	2250
FLOW @ 45FT/SEC GPM	210-280	460	650	1000	1800	4000

SIZE	8"	10"	12"	14"	16"	24"
FLOW @ 25FT/SEC GPM	3900	6125	8750	10600	13750	31250
FLOW @ 45FT/SEC GPM	7000	11000	16000	19000	25000	56000

MAX. PRESSURE

END CONNECTIONS	DUCTILE IRON	STEEL/STN STL	BRONZE
Threaded	640 psi	640 psi	500 psi
Grooved	300 psi	300 psi	300 psi
150# Flanged	250 psi	285 psi	225 psi
300# Flanged	640 psi	740 psi	500 psi

TEMPERATURE RANGE

(Valve Elastomers)
Buna-N -40° F - 180°F; Viton 0° F - 400°F; EPDM 0° F - 300°F

SPRING RANGES

(inlet setting)
5-30 psi, 20-80 psi, 65-180 psi, 100-300 psi

STANDARD MATERIALS

Consult factory for others.
Body/Bonnet: Ductile Iron (epoxy coated), Carbon Steel (epoxy coated), Stainless Steel, B61 Bronze, Others available (consult factory)
Seat Ring: Bronze B61, Stainless Steel
Stem: Stainless Steel, Monel
Spring: Stainless Steel
Diaphragm: Nylon Reinforced, Buna-N, Viton, EPDM
Seat Disc: Buna-N, Viton, EPDM
Pilot: Bronze, Stainless Steel
Other pilot system components: Bronze/Brass, All Stainless Steel
Tubing & Fittings: Copper/Brass, Stainless Steel

"Apollo" Valves
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SPECIFICATIONS

The <pressure relief><pressure sustaining> valve shall function to <prevent main line pressure from exceeding a predetermined maximum><prevent the upstream pressure from falling below a predetermined minimum.>

DESIGN

The valve shall be a single-seated, line pressure operated, diaphragm actuated, pilot controlled globe valve. The valve shall seal by means of a corrosion-resistant seat and a resilient, rectangular seat disc. These, and other parts, shall be replaceable without removing the valve from the line. The stem of the main valve shall be guided top and bottom by integral bushings. Alignment of the body, bonnet and diaphragm assembly shall be by precision dowel pins. The diaphragm shall not be used as a seating surface, nor shall the pistons be used as an operating means. The pilot system shall be furnished complete and installed on the main valve. It shall include a closing speed control, Y-strainer and isolation ball valves. The <pressure relief><pressure sustaining> valve shall be operationally and hydrostatically tested prior to shipment.

MATERIALS OF CONSTRUCTION

The main valve body and bonnet shall be ductile iron per ASTM A536, Grade 65-45-12. All ferrous surfaces shall be coated with 4 mils of epoxy. The main valve seat ring shall be bronze per ASTM B61. Elastomers (diaphragms, resilient seats and O-rings) shall be Buna-N. Control pilots shall be ASTM B61 bronze. The closing speed control and isolation ball valves shall be brass, and control line tubing shall be copper.

OPERATING CONDITIONS

The <pressure relief><pressure sustaining> valve shall be suitable for controlling the inlet pressure to a <maximum><minimum> of <X> psi at flow rates ranging from <X to X> gpm.

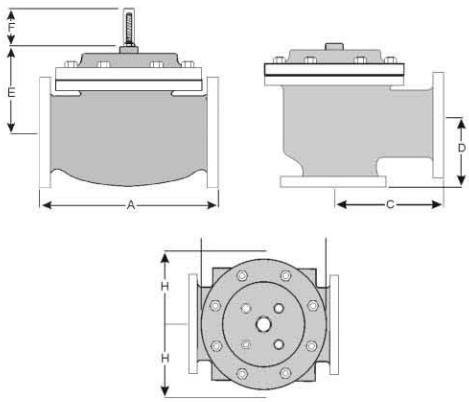
ACCEPTABLE PRODUCTS

The <pressure relief><pressure sustaining> valve shall be a <size> Model A108, <globe pattern, angle pattern>, with <150# flanged, 300# flanged, threaded, grooved> end connections, as manufactured by Conbraco Industries, Matthews, NC.

U.S. DIMENSIONS - INCHES

DIM	END CONN.	1 1/4-1 1/2	2	2 1/2	3	4	6	8	10	12	14	16	24
	SCREWED	8 3/4	9 7/8	10 1/2	13	--	--	--	--	--	--	--	--
A	GROOVED	8 3/4	9 7/8	10 1/2	13	15 1/4	--	--	--	--	--	--	--
	150# FLGD	8 1/2	9 3/8	10 1/2	12	15	17 3/4	25 3/8	29 3/4	34	39	40 3/8	62
	300# FLGD	8 3/4	9 7/8	11 1/8	12 3/4	15 5/8	18 5/8	26 3/8	31 1/8	35 1/2	40 1/2	42	63 3/4
	SCREWED	4 3/8	4 3/4	6	6 1/2	--	--	--	--	--	--	--	--
C	GROOVED	4 3/8*	4 3/4	6	6 1/2	7 5/8	--	--	--	--	--	--	--
ANGLE	150# FLGD	4 1/4	4 3/4	6	6	7 1/2	10	12 11/16	14 7/8	17	--	20 13/16	--
	300# FLGD	4 3/8	5	6 3/8	6 3/8	7 13/16	10 1/2	13 3/16	15 9/16	17 3/4	--	21 5/8	--
	SCREWED	3 1/8	3 7/8	4	4 1/2	--	--	--	--	--	--	--	--
D	GROOVED	3 1/8*	3 7/8	4	4 1/2	5 5/8	--	--	--	--	--	--	--
ANGLE	150# FLGD	3	3 7/8	4	4	5 1/2	6	8	11 3/8	11	--	15 11/16	--
	300# FLGD	3 1/8	4 1/8	4 3/8	4 3/8	5 13/16	6 1/2	8 1/2	12 1/16	11 3/4	--	16 1/2	--
E	ALL	6	6	7	6 1/2	8	10	11 7/8	15 3/8	17	18	19	27
F	ALL	3 7/8	3 7/8	3 7/8	3 7/8	3 7/8	3 7/8	6 3/8	6 3/8	6 3/8	6 3/8	6 3/8	8
H	ALL	10	11	11	11	12	13	14	17	18	20	20	28 1/2

*GROOVED END NOT AVAILABLE IN 1 1/4"



For maximum efficiency, the Apollo control valve should be mounted in a piping system so that the valve bonnet (cover) is in the top position. Other positions are acceptable but may not allow the valve to function to its fullest and safest potential. In particular, please consult the factory before installing 8" and larger valves, or any valves with a limit switch, in positions other than described. Space should be taken into consideration when mounting valves and their pilot systems.

Special Functions
00A= Pressure Relief (0-30 PSI)
00B= Pressure Relief (20-80 PSI)
00C= Pressure Relief (65-180 PSI)
00D= Pressure Relief (100-300 PSI)
00H= Pressure Relief (200-750 PSI)

***Other Options Available Upon Request**

Model Number

A108	G	0 0 B	0 2 0	1	1	1	1

Valve Type / Connection
A=Angle / Flanged ANSI 150 Class
B=Angle / Flanged ANSI 300 Class
C=Angle / Threaded (1-1/4 - 3")
E=Angle / Grooved Ends (1-1/2 - 4")
F=Angle / Flanged 300clsX150cls
G=Globe / Flanged ANSI 150cls
H=Globe / Flanged ANSI 300cls
J=Globe / Threaded Ends (1-1/4 - 3")
V=Globe / Grooved Ends (1-1/2 - 4")

Valve Size
012= 1 - 1/4"
015= 1 - 1/2"
020= 2"
025= 2 1/2"
030= 3"
040= 4"
060= 6"
080= 8"
100= 10"
120= 12"
140= 14"
160= 16"
240= 24"

Seat Ring Material
1=Bronze, B61
2=Stainless Steel

Body & Bonnet Material
1=Ductile Iron
2=Cast Steel
4=Bronze
7=Stainless Steel

Elastomers
1=Buna-N 2=Viton 3=EPDM

Pilot, Fitings, Tube

MATERIAL			
CODE	PILOT	FTGS	TUBE
1	BZ	BRS	CU
4	SS	BRS	CU
8	SS	SS	SS
9	BZ	SS	SS

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