Model A115-1

Description

The Model 115-1 has an extremely wide range of applications: anywhere it is necessary to open and close a valve electrically. Typical examples include:

- Process control
- Irrigation systems
- Storage tank level control
- Automated wash systems
- Automated fountains
- Dust control

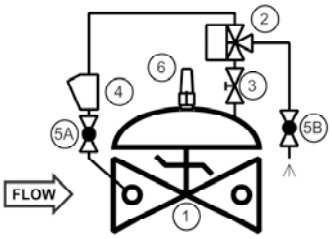
Series Features

- Electrically operated solenoid allows valve to open or close
- Can be maintained without removal from the line
- Adjustable response speed
- Factory tested and can be pre-set to your requirements
- Exhaust-to-atmosphere operation allows minimum pressure loss

Schematic

The Model A1115-1 consists of the following components, arranged as shown on the schematic diagram:

1) Basic Control Valve
2) Three-way Solenoid Pilot
3) Needle Valve
4) Y-Strainer
5) Isolation Ball Valves
6) Visual Indicator (Optional)



Operation

A three-way solenoid, in one position, connects supply pressure to the main valve diaphragm chamber, causing the main valve to close. In the other position, the solenoid connects the diaphragm chamber to the atmosphere, allowing the valve to open fully. The pilot system is equipped with a needle valve that allows the opening and closing speed of the valve to be adjusted.

The solenoid can be supplied for either energize-to-open or energize-to-close operation.

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 startup and maintenance.
- Wire the valve solenoid via conduit appropriate to the applcation.

Sizes: GLOBE/ANGLE

Screwed Ends:
1-1/4" - 3"

Grooved Ends:
1-1/2" - 4"

Flanged Ends:
1-1/4" - 6"

Sizing Guidelines

Consult the factory for asistance.

Max. Pressure

End Connections	Ductile Iron	Steel/Stn Stl	Bronze
Threaded	400 psi	400 psi	400 psi
Grooved	300 psi	300 psi	300 psi
150# Flanged	250 psi	285 psi	225 psi
300# Flanged	400 psi	400 psi	400 psi

Temperature Range

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

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
Soleniod:
Enclosure: Weatherproof NEMA 4X / Explosion Proof NEMA 4X, 6P, 7,9
Body: Brass, Stainless Steel
Voltages: 24, 120, 240, 480 VAC / 12, 24 VDC

Model A115-1

Specifications

The solenoid shut-off valve shall open and close via discrete electrical signals. The valve shall be equipped with a three-way solenoid valve that will allow the valve to open when <energized, deenergized>.

Design

The solenoid 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 pistons be used as an operating means. The pilot system shall be furnished complete and installed on the main valve. It shall include a needle valve, Y-strainer, solenoid valve and isolation ball valves. The solenoid shut-off 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 brone per ASTM B61. Elastomers (diaphragms, resilient seats and O-rings) shall be Buna-N. The needle valve and isolation ball valves shall be brass, and control line tubing shall be copper. The solenoid shall have a brass body, weatherproof enclosure and be suitable for operation on <voltage>.

Operating Conditions

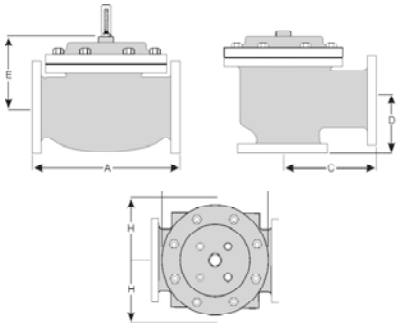
The solenoid shut-off valve shall be suitable for pressures of <X to X> psi at flow rates up to <X> gpm.

Acceptable Products

The solenoid shut-off valve shall be a <size> Model 115-1, <glove pattern, angle pattern>, with <150# flanged, 300# flanged, threaded, grooved> end connections, as manufactured by Conbraco Industries, Matthew, 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
A	Screwed	8-3/4	9-7/8	10-1/2	13	-	-	-	-	-	-	-	-
	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
C Angle	Screwed	4-3/8	4-3/4	6	6-1/2	-	-	-	-	-	-	-	-
	Grooved	4-3/8	4-3/4	6	6-1/2	7-5/8	-	-	-	-	-	-	-
	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	-
D Angle	Screwed	3-1/8	3-7/8	4	4-1/2	-	-	-	-	-	-	-	-
	Grooved	3-1/8	3-7/8	4	4-1/2	5-5/8	-	-	-	-	-	-	-
	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
H	All	10	11	11	11	12	13	14	17	18	20	20	28-1/2



Special Functions

20X = Energize to Open (2-Way Solenoid)
2CX = Energize to Close (2-Way Solenoid)
30X = Open On Pwr Loss (Electronic)
3CX = Close On Pwr Loss (Electronic)
3HX = Hold Position On Pwr Loss (Electronic)
40X = Energize Open (8" & Larger)
4CX = Energize to Close (8" & Larger)

* Sizes 8" and larger 3-way solenoid w/ accelorator
** Specify voltage and enclosure

Body & Bonnet Material

1 = Ductile Iron
2 = Cast Steel
4 = Bronze
7 = Stainless Steel

Pilot, Fittings, Tube

	MATERIAL		
CODE	PILOT	FTGS	TUBE
1	BZ	BRS	SS
2	SS	STL	SS
3	BZ	STL	SS
4	SS	BRS	CU
5			
6			
7	BZ	MN	MN
8	SS	SS	SS

Model Number

A115	G	2CX	020	1	1	7	3

Valve Type/Connection

A = Angle/Flanged Ansi Cls 150
B = Angle/Flanged Ansi Cls 300
C = Angle/Threaded (1-1/4"-3")
E = Angle/Grooved Ends (1-1/2"-4")
F = Angle/Flanged Ansi Cls 300 x Cls 150
G = Globe/F langed Ansi Cls 150
H = Globe/Flanged Ansi Cls 300
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"

Elastomers

1 = Buna-N
2 = Viton
3 = EPDM

Seat Ring Material

1 = Bronze, B61
2 = Stainless Steel

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REVISION DATE: 02/13/06

MODEL A115-2

DESCRIPTION

A115-2 SOLENOID CONTROL VALVE

The Model A115-2 has an extremely wide range of applications: anywhere it is necessary to open and close a valve electrically. Typical examples include:

- Process control
- Irrigation systems
- Petroleum loading terminals
- Storage tank level control
- Automated wash systems
- Automated fountains
- Dust control

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)

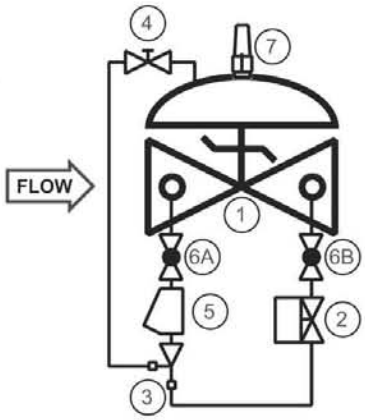
SERIES FEATURES

- Electrically operated solenoid allows valve to open or close
- Can be maintained without removal from the line
- Adjustable response speed
- Factory tested and can be pre-set to your requirements
- Exhaust-to-atmosphere operation allows minimum pressure loss

SCHEMATIC

The Model A115-2 consists of the following components, arranged as shown on the schematic diagram:

1.) Basic Control Valve
2.) Two-way Solenoid Pilot
3.) Ejector
4.) Needle Valve
5.) Y-Strainer
6.) Isolation Ball Valves
7.) Visual Indicator (Optional)



OPERATION

A two-way solenoid, when closed, causes the main valve to close. Opening the solenoid opens the valve. The pilot system is equipped with a needle valve that allows the opening and closing speed of the valve to be adjusted.

The solenoid can be supplied normally closed (energize to open) or normally open (energize to close).

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 startup and maintenance.
- Wire the valve solenoid via conduit appropriate to the application.

SIZING GUIDELINES

Consult the factory for assistance.

MAX. PRESSURE

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

Working pressures of solenoids vary greatly. Consult factory on application of A115-2 valves.

TEMPERATURE RANGE

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

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
Solenoid:
Enclosure: Weatherproof NEMA 4X / Explosion Proof NEMA 4X, 6P, 7, 9
Body: Brass, Stainless Steel
Voltages: 24, 120, 240, 480 VAC / 12, 24 VDC

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MODEL A115-2

REVISION DATE: 02/13/06

SPECIFICATIONS

The solenoid shut-off valve shall open and close via discrete electrical signals. The valve shall be equipped with a two-way solenoid valve that will allow the valve to open when <energized, deenergized>.

DESIGN

The solenoid 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 pistons be used as an operating means. The pilot system shall be furnished complete and installed on the main valve. It shall include a needle valve, Y-strainer, solenoid valve and isolation ball valves. The solenoid shut-off 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. The needle valve and isolation ball valves shall be brass, and control line tubing shall be copper. The solenoid shall have a brass body, weatherproof enclosure and be suitable for operation on <voltage>.

OPERATING CONDITIONS

The solenoid shut-off valve shall be suitable for pressures of <X to X> psi at flow rates up to <X> gpm.

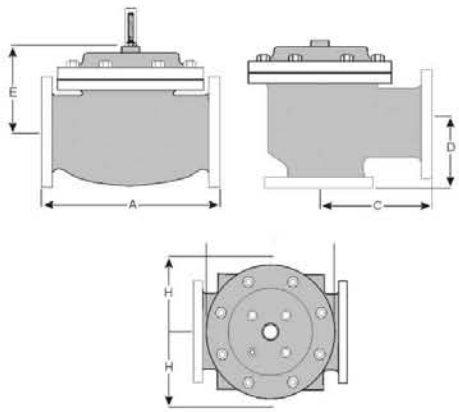
ACCEPTABLE PRODUCTS

The solenoid shut-off valve shall be a <size> Model A115-2, <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
	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
	300# FLGD	8 3/4	9 7/8	11 1/8	12 3/4	15 5/8	18 5/8
	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
	300# FLGD	4 3/8	5	6 3/8	6 3/8	7 13/16	10 1/2
	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
	300# FLGD	3 1/8	4 1/8	4 3/8	4 3/8	5 13/16	6 1/2
E	ALL	6	6	7	6 1/2	8	10
H	ALL	10	11	11	11	12	13

*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
20X=Energize to Open (2-way Solenoid)
2CX=Energize to Close (2-way Solenoid)

***Specify Voltage and Enclosure**

Model Number

A	1	1	5	G	2	C	X	0	2	0	1	1	8	3

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 1/4"
015= 1 - 1 1/2"
020= 2"
025= 2 1/2"
030= 3"
040= 4"
060= 6"

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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REVISION DATE: 02/16/06

MODEL A115-3

DESCRIPTION

A115-3 SOLENOID CONTROL VALVE

The Model A115-3 has an extremely wide range of applications: anywhere it is necessary to open and close a valve electrically. Typical examples include:
- Process control
- Supervisory flow or pressure control
- Automated fountains

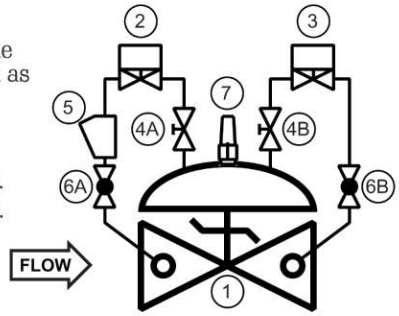
SERIES FEATURES

- Electrically operated solenoids enable the valve to be opened, closed, or held in any position
- Can be maintained without removal from the line
- Independently adjustable opening and closing speeds
- Factory tested
- The model A115-3 is also the basis for Apollo Series A22 and A88 electronic valves.

SCHEMATIC

The Model A115-3 consists of the following components, arranged as shown on the schematic diagram:

1.) Basic Control Valve
2.) Two-way Solenoid Pilot, N.O.
3.) Two-way Solenoid Pilot, N.C.
4.) Needle Valve
5.) Y-Strainer
6.) Isolation Ball Valves
7.) Visual Indicator (Optional)



OPERATION

Two two-way solenoids operate the Model A115-3. The first connects the main valve inlet to the diaphragm chamber and, when it is open, causes the main valve to close. The second solenoid connects the diaphragm chamber to the main valve outlet and, when it is open, allows the main valve to open. A needle valve is installed in series with each solenoid, giving separate adjustment of the valve opening and closing speeds.

The solenoids can be supplied to give one of the following "default" modes on absence or loss of electrical power:
- Default to closed
- Default to open
- Default in last position

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 startup and maintenance.
- Wire the valve solenoid via conduit appropriate to the application.

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

Consult the factory for assistance.

MAX. PRESSURE

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

Working pressures of solenoids vary greatly. Consult factory on application of A115-3 valves.

TEMPERATURE RANGE

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

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
Solenoid:
Enclosure: Weatherproof NEMA 4X / Explosion Proof NEMA 4X, 6P, 7, 9
Body: Brass, Stainless Steel
Voltages: 24, 120, 240, 480 VAC / 12, 24 VDC

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REVISION DATE: 02/13/06

MODEL A115-3

SPECIFICATIONS

The solenoid control valve shall operate by means of discrete electrical signals. The valve shall be equipped with two two-way solenoid valves that will allow the valve to be opened, closed, or held in any intermediate position. The solenoids shall be configured so that the valve will <open, close, hold position> on loss of electric power.

DESIGN

The solenoid 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 two needle valves, a Y-strainer, two solenoid valves and isolation ball valves. The solenoid control 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. The needle valve and isolation ball valves shall be brass, and control line tubing shall be copper. The solenoid valves shall have brass bodies, weatherproof enclosures and be suitable for operation on <voltage>.

OPERATING CONDITIONS

The solenoid control valve shall be suitable for pressures of <X to X> psi at flow rates up to <X> gpm.

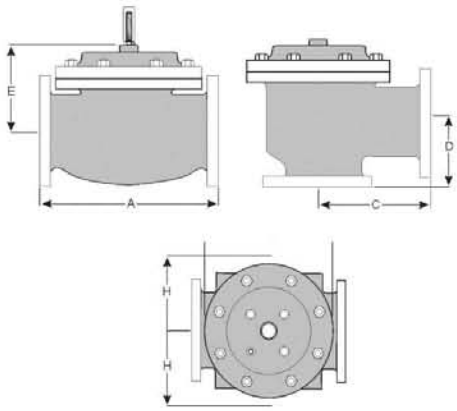
ACCEPTABLE PRODUCTS

The solenoid shut-off valve shall be a <size> Model A115-3, <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
A	SCREWED	8 3/4	9 7/8	10 1/2	13	--	--
	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
	300# FLGD	8 3/4	9 7/8	11 1/8	12 3/4	15 5/8	18 5/8
C ANGLE	SCREWED	4 3/8	4 3/4	6	6 1/2	--	--
	GROOVED	4 3/8*	4 3/4	6	6 1/2	7 5/8	--
	150# FLGD	4 1/4	4 3/4	6	6	7 1/2	10
	300# FLGD	4 3/8	5	6 3/8	6 3/8	7 13/16	10 1/2
D ANGLE	SCREWED	3 1/8	3 7/8	4	4 1/2	--	--
	GROOVED	3 1/8*	3 7/8	4	4 1/2	5 5/8	--
	150# FLGD	3	3 7/8	4	4	5 1/2	6
	300# FLGD	3 1/8	4 1/8	4 3/8	4 3/8	5 13/16	6 1/2
E	ALL	6	6	7	6 1/2	8	10
H	ALL	10	11	11	11	12	13

*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
30X=Open on PWR Loss (Electronic)
3CX=Close on PWR Loss (Electronic)
3HX=Holds Position on PWR Loss (Electronic)

***Specify Voltage and Enclosure**

Model Number

A	1	1	5	G	3	C	X	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 1/4"
015= 1 - 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

"Apollo" Valves

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"Apollo"®

REVISION DATE: 02/13/06

MODEL A115-4

DESCRIPTION

A115-4 SOLENOID CONTROL VALVE

The Model A115-4 has an extremely wide range of applications: anywhere it is necessary to open and close a valve electrically. Typical examples include:

- Process control
- Storage tank level control
- Automated fountains
- Emergency shut-off valve in fuel systems
- Irrigation systems
- Automated wash systems

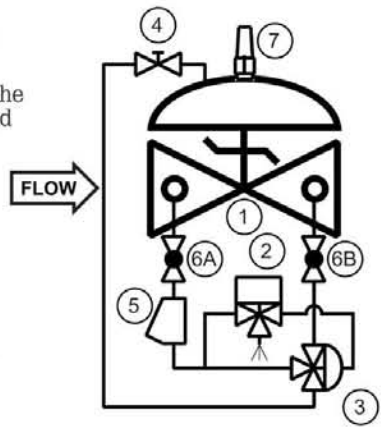
SERIES FEATURES

- Electrically operated solenoid allows valve to open or close
- High capacity pilot system provides positive response in larger valves
- Can be maintained without removal from the line
- Adjustable response speed
- Exhaust-to-atmosphere operation (optional) allows minimum pressure loss
- Factory tested

SCHEMATIC

The Model A115-4 consists of the following components, arranged as shown on the schematic diagram:

1.) Basic Control Valve
2.) Three-way Solenoid Pilot
3.) Three-way Auxiliary Pilot
4.) Needle Valve
5.) Y-Strainer
6.) Isolation Ball Valves
7.) Visual Indicator (Optional)



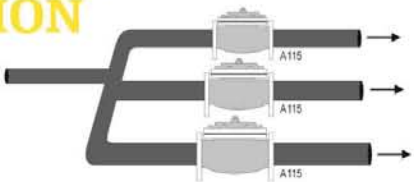
OPERATION

A three-way solenoid operates a high-capacity three-way auxiliary pilot. In one position, the pilot connects supply pressure to the main valve diaphragm chamber, causing the main valve to close. In the other position, the pilot connects the diaphragm chamber downstream (or to atmosphere), allowing the valve to open. The pilot system is equipped with a needle valve that allows the opening and closing speed of the valve to be adjusted.

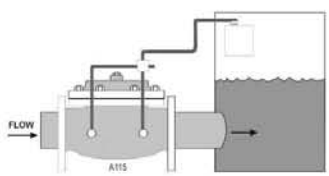
The solenoid can be supplied for either energize-to-open or energize-to-close operation.

RECOMMENDED INSTALLATION

ZONE CONTROL
Used in irrigation and industrial processes, each flow line can activated independently of others.



LEVEL CONTROL
Valve, activated by level sensor, fills storage tank.



"Apollo" Valves

Sizes: GLOBE/ANGLE

Flanged Ends:
8" - 24" (globe);
8" - 16" (angle)

SIZING GUIDELINES

Consult the factory for assistance.

MAX. PRESSURE

END CONNECTIONS	DUCTILE IRON	STEEL/STN STL	BRONZE
150# Flanged	250 psi	285 psi	225 psi
300# Flanged	400 psi	400 psi	400 psi

Working pressures of solenoids vary greatly. Consult factory on application of A115-4 valves.

TEMPERATURE RANGE

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

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
Solenoid:
Enclosure: Weatherproof NEMA 4X / Explosion Proof NEMA 4X, 6P, 7, 9
Body: Brass, Stainless Steel
Voltages: 24, 120, 240, 480 VAC / 12, 24 VDC

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"Apollo"®

REVISION DATE: 02/13/06

MODEL A115-4

SPECIFICATIONS

The solenoid shut-off valve shall open and close via discrete electrical signals. The valve shall be equipped with a three-way solenoid valve that operates a three-way auxiliary pilot, allowing the valve to open when <energized, deenergized>.

DESIGN

The solenoid 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 needle valve, Y-strainer, solenoid valve, auxiliary pilot and isolation ball valves. The solenoid shut-off 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. The auxiliary pilot shall be bronze per ASTM B61. The needle valve and isolation ball valves shall be brass and control line tubing shall be copper. The solenoid shall have a brass body, weatherproof enclosure and be suitable for operation on <voltage>.

OPERATING CONDITIONS

The solenoid shut-off valve shall be suitable for pressures of <X to X> psi at flow rates up to <X> gpm.

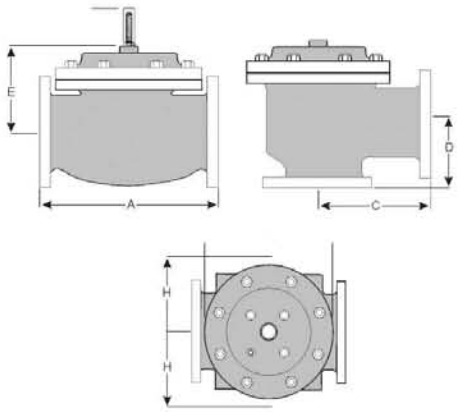
ACCEPTABLE PRODUCTS

The solenoid shut-off valve shall be a <size> Model A115-4, <globe pattern, angle pattern>, with <150# flanged, 300# flanged> end connections, as manufactured by Conbraco Industries, Matthews, NC.

U.S. DIMENSIONS - INCHES

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

*GROOVED END NOT AVAILABLE IN 1 1/4"



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Special Functions
40X=Energize to Open
4CX=Energize to Close

***Sizes 8" and Larger 3 -Way Solenoid w/Accelerator**
****Specify Voltage and Enclosure**

Model Number

A	1	1	5	G	4	C	X	0	2	0	1	1	1	1

Valve Type / Connection
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Pilot, Fitings, Tube

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

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