



1/4" - 2" 89 Series Three Piece Stainless Steel Ball Valves

2 Otter Court, Raymond, New Hampshire 03077 • Tel. (603) 895-4761 • FAX (603) 895-6785 • www.geminivalve.com



FEATURES

- **Easy Alignment of Assembly Bolt Holes at Installation**
- **Precise Alignment of Component Ports easily achieved at Installation Independent of the Assembly Bolts**
- **Two Piece Pipe Adaptor Eliminate Possibility of Body Seal Leakage Due to Seal Face Distortion, even if the Assembly Bolts are Overtightened**
- **Assembly Bolts Screw Directly into the Flanges Enabling Installation with a Single Wrench - No Nuts to Lose**
- **Available with Pneumatic and Electric Actuators**

Gemini 89 Series offers 1/4" - 2" three piece ball valves with socket weld, butt weld, or female screwed end pipe adaptors. Standard material of construction is stainless steel.

In addition to the traditional features offered with three piece construction, the 89 Series overcomes many of the traditional three piece ball valve installation problems. For example, rotational alignment of the bolt holes is not required at installation of the pipe adaptors as with traditional three piece valves. The pipe adaptors, although factory assembled as integral units, allow the flanges to rotate independently of the pipe connectors. This two piece

construction of the pipe adaptors, also eliminates the possibility of distortion of the pipe connector sealing face, should the assembly bolts be overtightened. The alignment of the pipe connectors to the body is achieved by the mating counterbore on the flanges. This assures easier and more accurate port alignment of all components that is traditionally achieved by use of the assembly bolts.

The assembly bolts screw directly into the assembly flanges. Thus only a single wrench is required to tighten the assembly bolts. There are no assembly nuts to be dropped or lost when installing or servicing the valve.

Precise machining of all key components results in effective sealing with minimum operating torque.

In addition to these unique features, the traditional three piece advantages have been retained. For applications requiring welded connections, the valve can be readily disassembled, the ends welded into the line, and then quickly and easily reassembled. Similarly, if quick easy valve repair is imperative, the center section can easily be removed, the seats and seals replaced, and the valve quickly returned to service.

Available with both pneumatic and electric actuators.

Specifications and Dimensions

Valve Specifications

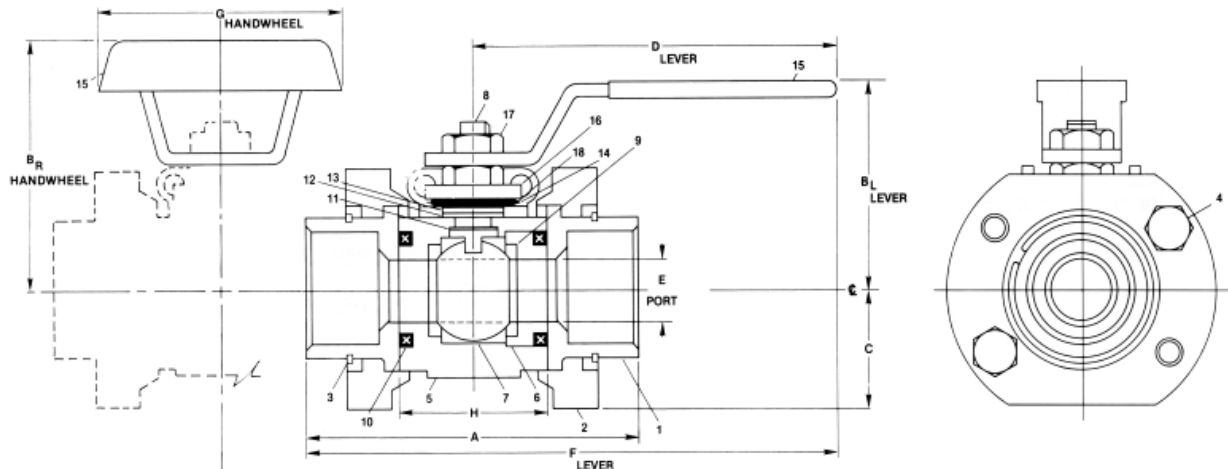
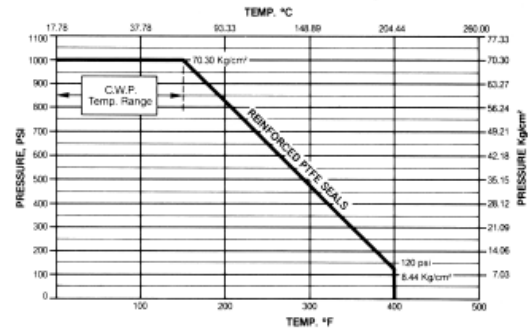
Sizes: 1/4" - 2", pipe socket weld, pipe butt weld, tube socket weld*, tube compression end* and female screwed end, N.P.T. & B.S.P.T.

* - Standard Port Models Only

Material: 316 Stainless Steel

Pressure: 20 micron vacuum to 1000 psi cold working pressure (CWP) nonshock service. Saturated steam to 150 psi

Pressure-Temperature Ratings



VALVE SIZE			DIMENSIONS (INCHES)								
STD. PORT	FULL PORT	PORT DIAM.	A	B _L	B _R	C	D	E	F	G	H
1/2	1/4 & 3/8	0.5	3.18	2.12	2.77	1.09	5.25	0.5	6.84	3.30	1.50
3/4	1/2	0.6	3.38	2.25	2.84	1.17	5.25	0.6	6.94	3.30	1.50
1	3/4	0.8	3.74	2.50	3.09	1.43	5.25	0.8	7.12	3.30	1.50
1 1/4	1	1.0	4.57	2.88	3.34	1.60	6.75	1.0	9.03	3.30	2.25
1 1/2	1 1/4	1.25	4.65	3.21	3.67	1.92	6.75	1.25	9.07	3.30	2.25
2	1 1/2	1.50	5.12	3.31	3.78	2.00	6.75	1.50	9.31	3.30	2.62

VALVE SIZE			DIMENSIONS (MM)								
STD. PORT	FULL PORT	PORT DIAM.	A	B _L	B _R	C	D	E	F	G	H
1/2	1/4 & 3/8	12.4	80.7	53.8	70.3	27.7	133	12.4	173	83.8	38.1
3/4	1/2	15.8	85.8	57.1	72.1	29.7	133	15.8	176	83.8	38.1
1	3/4	20.3	95.0	63.5	78.4	36.3	133	20.3	180	83.8	38.1
1 1/4	1	24.6	116	73.1	84.8	40.6	171	24.6	229	83.8	57.1
1 1/2	1 1/4	31.8	118	81.5	93.2	48.7	171	31.8	230	83.8	57.1
2	1 1/2	38.1	130	84.1	96.0	50.8	171	38.1	236	83.8	57.1



Figure No.	Description	Quantity	Material
1	Pipe Connector	2	316L Stainless Steel
2	Pipe Connector Flange	2	316/CF8M Stainless Steel
3	Flange Retaining Ring	2	AISI Type 316 Stainless Steel
4	Assembly Bolt	4	18-8 Stainless Steel
5	Body	1	316L Stainless Steel
6	Insert	1	316 Stainless Steel
7	Ball	1	316/CF8M Stainless Steel
8	Stem	1	316 Stainless Steel
9	Seats	2	15% Glass Filled PTFE
10	Body Seals	2	Viton
11	Stem Seal	1	25% Glass Filled PTFE
12	Thrustwasher	1	15% Glass Filled PTFE
13	Follower	1	18-8 Stainless Steel
14	Belleville Springs	2	18-8 Stainless Steel
15*	Handle	1	18-8 Stainless Steel
16*	Stop	1	18-8 Stainless Steel
17	Nut	1	18-8 Stainless Steel
18	Grounding Spring	1	18-8 Stainless Steel
19	Pilot / Spacer	1	18-8 Stainless Steel

* - Used with 1.0, 1.2 and 1.5 Port Valves Only



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ISL026-0706



- **Compact, Lightweight Aluminum Body and Bracket featuring Teflon®-Impregnated Hard Anodized Surfaces**
- **Standard 'In Line' or 'Cross Mount' Valve to Actuator Configurations**
- **Stainless Steel External Trim & Viton® O-rings Standard**
- **Direct Valve Stem Coupling to Actuator Shaft Minimizes Backlash**
- **Manual Override**
- **Available with Integral NAMUR Pilot Valve or can be Remotely Piloted**
- **Available with Limit Switches**
- **Optional ISO 5211.2 FO3 & FO5 Valve & NAMUR Accessory Mounting Brackets Available**



Product Information

The A500 Series pneumatic actuators offer the latest technology from Gemini Valve for pneumatically actuating our 89 Series ball valves.

Again, we are combining the three key elements for long, reliable, trouble free life - a premium quality ball valve, a quality actuator designed to meet the torque requirements of the valve, and a mounting system which assures alignment and rigidity.

Gemini Ball Valves' low operating torque makes possible a compact actuator which is both economical to install and operate. Precise machining of all the valve components, including the seats, controls the sealing preload. This assures bubble-tight sealing, minimizes the operating torque and optimizes the valve life.

The A500 Series Actuators represents the combination of the latest in machining technology and our more than twenty five years experience in producing high performance pneumatic actuators. The simplicity of our rack and pinion design is made possible through our unique manufacturing techniques. The results - a compact, ball valve

actuator which is efficient and trouble free.

Our mounting system precisely couples the actuator drive shaft to the valve stem. Additionally, the valve stem nut is fixed within the actuator shaft. These features combined with a rigid mounting bracket, results in a pneumatically actuated ball valve which minimizes backlash, assures optimum stem seal life and prevents any possibility of stem nut back off.

All 500 Series are designed to operate using an air supply of 50 - 125 psi. The air can be delivered by direct mounting pilot valves having NAMUR interfaces or from remote pilot valves connected via means of 1/8" NPT female threaded orifices in the actuator face plates. Gemini Valve 4GP Series four way solenoid operated pilot valves are available for NAMUR interface mounting.

Special brackets and pinion shaft extensions are available for mounting the Gemini Valve LS-1 limit switch assemblies, as well as, auxiliary equipment, such as positioners and signal transmitters, requiring NAMUR standard interface mounting compatibility.

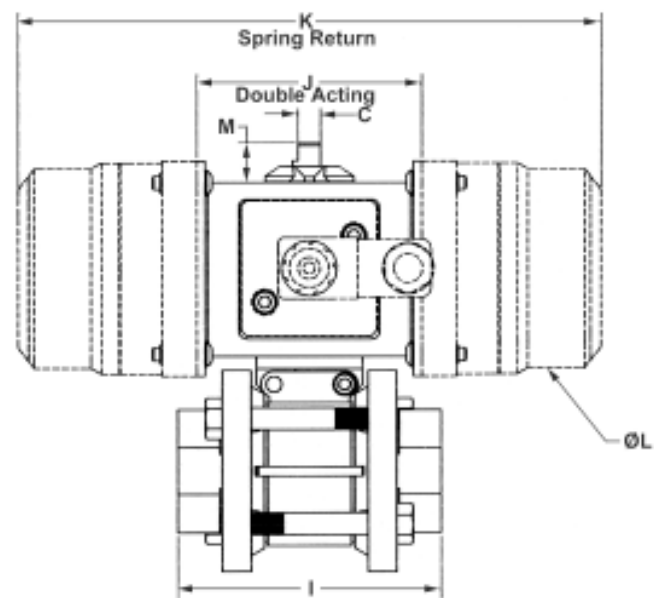
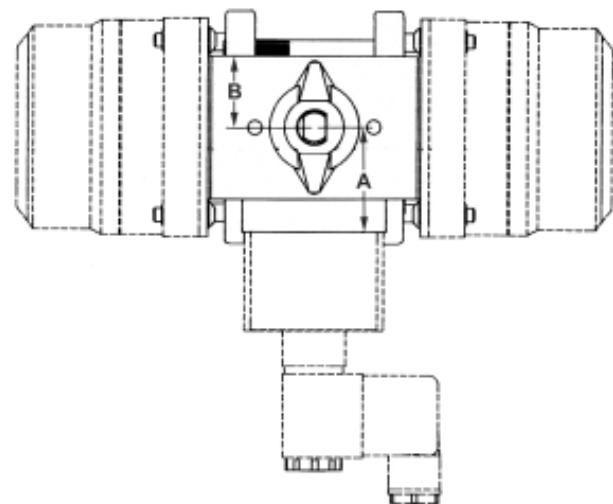
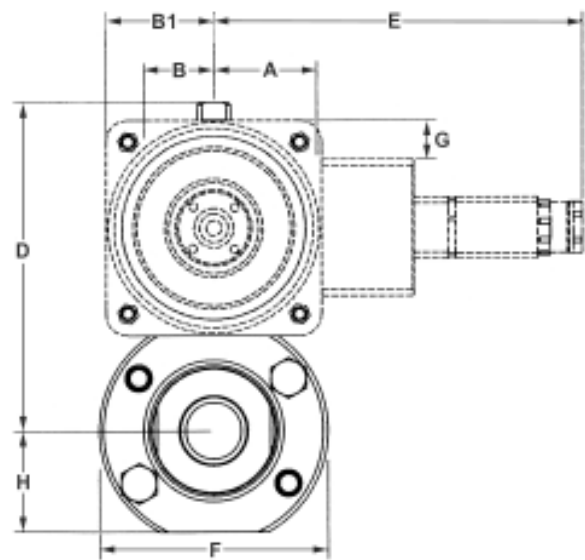
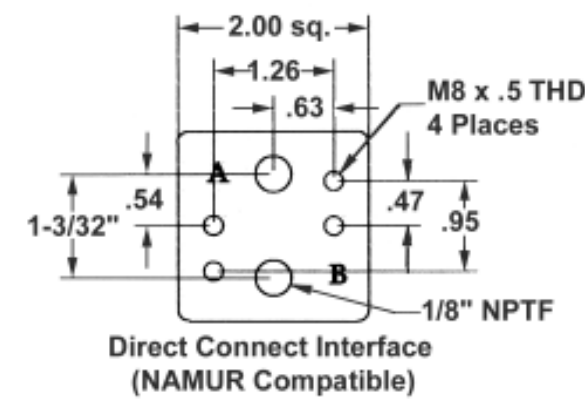
A500 Series Actuators are also available with ISO 5211.2 F03 and F05 mounting configurations. Actuators with ISO 5211 mounting configurations have special pinion shafts installed at the factory and therefore, are not interchangeable with units mounting onto our ball valves.

Caution: Care must be taken to assure that the output torque of the A500 Series Actuator selected is adequate to turn the valve or device to be operated.

Need further information?
Have questions?
Want to place an order?

Please call us @ 603 895-4761 now and tell us how we can be of service!

Dimensions



Valve Size		Spring Return	Double Acting	Approximate Dimensions, Inches													
Std. Port	Full Port			A	B	B1	C	D	E	F	G	H	I	J	K	L	M
1/2	1/4&3/8	A512SR	A512D	1.46	1.00	1.53	.31	4.33	4GP	2.50	.32	1.09	3.18	3.62	8.31	2.81	.57
3/4	1/2							4.41	4.67 (3GP)	2.75		1.17	3.38				
1	3/4							4.66	(4.50)	3.25		1.43	3.74				
1-1/4	1	A522SR	A522D	1.87	1.55	2.25	.50	6.67	4GP	3.75	1.10	1.60	4.56	5.28	11.23	3.50	.82
1-1/2	1-1/4							7.00	5.18 (3GP)	4.50		1.92	4.66				
2	1-1/2							7.12	(5.00)	4.75		2.00	5.12				

Specifications

Air Supply

An air supply pressure of 50 - 125 psi. Sufficient air delivery must be available at the actuator to ensure dependable operation. The following precautions should be observed:

Air supply should be clean and free of moisture. When dirty or wet air is a problem; a filter / separator should be specified; these units are most effective when installed as closely as possible to the actuator. A filter, when used, should permit a minimum flow of 4 scfm at an upstream pressure of 60 psi.

Eliminate severe restrictions to air flow (certain solenoid valves & fittings). The most restricted passage must have an area no smaller than .012 inches square, the area of 1/8" diameter orifice. If more than a single actuator is to be supplied by an individual pilot, the minimum passage requirement applies per actuator.

Tubing: For short runs up to 5 feet 5/32" I.D. is suitable, 1/4" I.D. will serve up to 30 feet. For longer runs, use 3/8" I.D. or larger.

Temperature

Pneumatic Actuators are designed to operate in ambient temperatures between -20°F (-28.0°C) and +350°F (+175°C). Care must be taken to assure that the moisture content of the air supply is sufficiently low to prevent icing within the actuator.

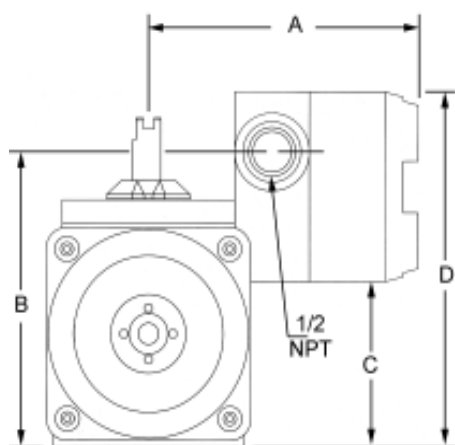
Port Connections: 1/8" NPT

Accessories

Solenoid pilot valves and limit switches are available. Please see our literature or contact us direct.

Dimensions

A500 with LS-1 Limit Switch



Actuator	A	B	C	D
A512D, A512SR	3.97	4.23	2.37	5.10
A522D, A522SR	4.24	5.91	4.05	6.78

Torque Output

Torque Output - in. - lbs.*

Model	50 psi	60 psi	70 psi	80 psi	90 psi	100 psi	Spring Stroke	
							Start	End
A512D	56	67	78	90	101	112	N/A	N/A
A512SR	50	60	70	82	94	105	100	56
A522D	180	225	270	360	405	450	N/A	N/A
A522SR	180	225	270	360	405	450	360	255

CAUTION: Care must be taken to assure the output torque of the A500 Series Actuator selected is adequate to turn the valve or device to be operated. Note: Does not apply for mounting of Gemini Valves to A500 Series Actuators. Gemini Valve offers a selection chart for your convenience. See our literature for details. Note also; special sizing considerations should be given when a valve is handling suspended solids, abrasives, dirty media, oxygen and dry gasses.

* - Approximate



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LIMITED WARRANTY - Copy Available Upon Request.

Specifications subject to change without notice and without obligation on the part of the manufacturer.