

# Val-U-Act Ball Valve Operators



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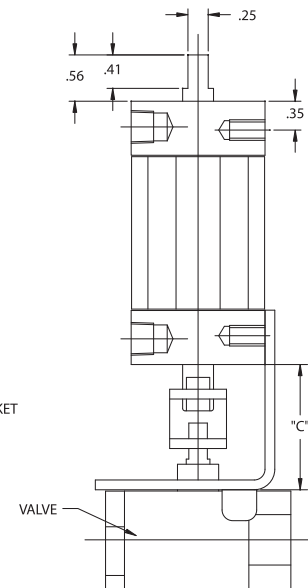
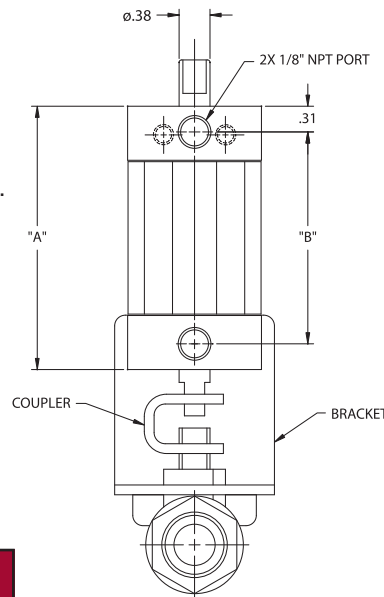
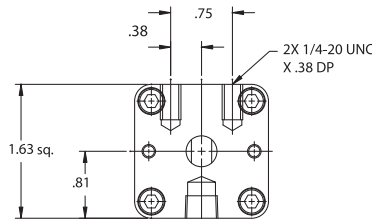
# Specifications: Class-Act (CL) Valve Operator (1/4"-3/4")

## Double Acting Valve Operator Systems

- Valve Sizes from 1/4" to 3/4"
- 48 in. lbs. to 80 in. lbs.

## As compared to other rotary devices, ITT Vane Actuators Have:

- One Moving Part Providing:
  - ZERO Backlash
  - No Loss of Motion
  - Smooth Rotation
  - Precise Repeatability
  - Continuous Full Torque Throughout Rotation
- ITT Patented Urethane Seals for:
  - Long Cycle Life and Non-Lube Service



## SPECIFICATIONS

### Unit Materials

Stator/Rotor Seals .....	Urethane
Shaft/Tube Seals .....	Buna
Cylinder .....	Anodized Alum.
End Caps .....	Anodized Alum.
Shaft.....	Stainless Steel
Trim .....	Mild Steel, Opt'l S.S.
Bearings .....	Delrin
Brackets.....	Stainless Steel
Couplings .....	Stainless Steel

### Miscellaneous

Inlets .....1/8" NPT

### Filtration

Air 25-30 microns

### Temperature Range

-20°F to 180°F. Consult factory for higher temperature.

### Torque Chart (in.lbs.)

Actuator Model	Actuator Torque at				
	40 PSI	60 PSI	80 PSI	100 PSI	150 PSI
742	21	35	48	60	90
762	35	58	80	100	150

### Dimensions (in.)

Actuator Size	A	B
4	3.20	2.57
6	4.75	4.12

### Capacity per Stroke

Actuator Model	Cubic Inches
742	1.66
762	2.52

### Weight

Actuator Model	Pounds
742	0.88
762	1.13
Brackets	0.30

### Dimensions (in.)

Valve Size	C
Apollo 1/4" thru 1/2"	1.57
Apollo 3/4"	1.73

# How To Order: Class-Act (CL) Valve Operator (1/4" – 3/4")

Part Number Example: 742-501-BC-V1-E00 - XXX

MODEL	END CAPS	SHAFT	UNIT MATERIAL	VALVE	BRACKET & COUPLING	OPTIONS	OPTIONS
742	5	O	1	BC	V1	E00	XXX
1	2	3	4	5	6	7	8

1

Model	
Operator - Torque (100 psi) - Rotation	
742	60 in. lbs. - 90°
762	100 in. lbs. - 90°

2

End Caps	
5	Pneumatic Clear Anodized

3

Shaft	
O	Double Manual Override

4

Unit Materials	
Shaft - Body - Trim	
1	303 Stainless Steel, Aluminum, Steel
3	303 Stainless Steel, Aluminum, Stainless Steel

5

Apollo Bronze Ball Valves <sup>1</sup>		
(Use '00' if not selecting a valve)		
Size - Type - Operator		
00	No Valve	
BA	1/4" - 2 way	4
BB	3/8" - 2 way	4
BC	1/2" - 2 way	4
BD	3/4" - 2 way	6
BL	1/2" - Diverter	6

5

Apollo Stainless Steel Ball Valves <sup>2</sup>		
Valve Size - Type - Operator Size		
SA	1/4" - 2 way	4
SB	3/8" - 2 way	4
SC	1/2" - 2 way	4
SD	3/4" - 2 way	6
SL	1/2" - Diverter	6

1 Bronze 2-way 1/4", 3/8" and 1/2" are Apollo Series 77 Full Port Ball Valve. The 3/4" is Apollo Series 71 Standard Port. Diverter Valves are Series 70. All Bronze valves have Stainless Steel Ball and Stem.

2 Stainless Steel 2-way and diverter valves are Apollo Series 76.

6

Bracket	
Valve Brand - Valve Size - Material	
00	No Bracket
V1	Apollo - 1/4", 3/8", 1/2" 304 Stainless Steel
V2	Apollo - 3/4", 1" 304 Stainless Steel

7

Options	
000	No Options
E00	Factory Assembled Operator Bracket, Coupling and Valve
400	Adjustable Stroke Control Cap End
704	Teflon Impregnated Hard Anodized

8

Switch Options	
All Axx Switch Options are Single End Only	
A00	Switch Ready - No Switches
A02	Switch Package <sup>1</sup> - 2 Reed Switches
A05	Switch Package <sup>2</sup> - 2 Sourcing Switches
A08	Switch Package <sup>2</sup> - 2 Sinking Switches

1 Switch has built in protection for use with ABPLC

2 Switch function can be either sinking or sourcing depending on wiring scheme.

Consult Factory for Quick Disconnect Switches

# Specifications: Val-U-Act (VA) Valve Operator (1/4" - 3")

## Double Acting Valve Operator Systems

- Valve Sizes from 1/4" to 3"
- 140 in. lbs. to 560 in. lbs.

As compared to other rotary devices,  
ITT Vane Actuators Have:

- One Moving Part Providing:
  - ZERO Backlash
  - No Loss of Motion
  - Smooth Rotation
  - Precise Repeatability
  - Continuous Full Torque Throughout Rotation
- ITT Patented Urethane Seals for:
  - Long Cycle Life and Non-Lube Service

## SPECIFICATIONS

### Unit Materials

Stator/Rotor Seals .....	Urethane
Shaft/Tube Seals .....	Buna
Cylinder .....	Anodized Alum.
End Caps .....	Anodized Alum.
Shaft .....	Mild Steel, Opt'l S.S.
Trim .....	Mild Steel, Opt'l S.S.
Bearings .....	Delrin
Brackets .....	Stainless Steel
Couplings .....	Stainless Steel

### Miscellaneous

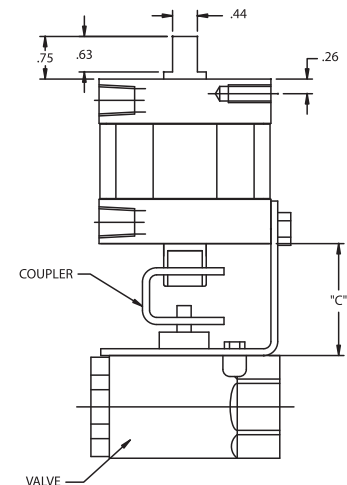
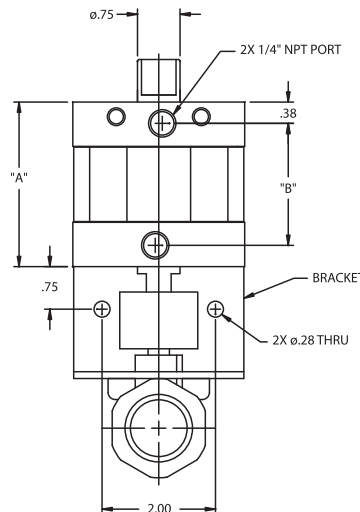
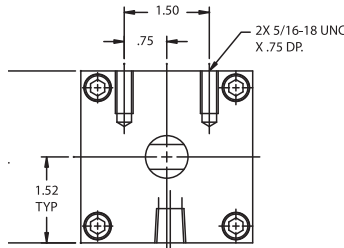
Inlets ..... 1/4" NPT

### Filtration

Air 25-30 microns

### Temperature Range

-20°F to 180°F. Consult factory for higher temperature.



## Torque Chart (in.lbs.)

Actuator Model	Actuator Torque at				
	40 PSI	60 PSI	80 PSI	100 PSI	150 PSI
812	70	105	140	175	265
822	140	210	280	350	524
832	280	420	560	700	1050

## Dimensions (in.)

Actuator Size	A	B
1	2.90	2.15
2	4.40	3.64
3	7.42	6.67

## Capacity per Stroke

Actuator Model	Cubic Inches
812	2.75
822	5.50
832	11.00

## Weight

Actuator Model	Pounds
812	2.5
822	3.3
832	6.0
Brackets	0.2-0.8

## Spring Return

Actuator Model	Add. Weight
822	3.0
832	9.0

## Dimensions (in.)

Valve Size	C
Apollo 1/4" thru 1/2"	1.69
Apollo 3/4" thru 1"	1.97
Apollo 1 1/4" thru 2"	2.31
Apollo 2 1/2" thru 3"	2.25

# How To Order: Val-U-Act (VA) Valve Operator (1/4" - 3")

Part Number Example: 812-501-BC-V1-E00

MODEL	END CAPS	SHAFT	UNIT MATERIAL	VALVE	BRACKET & COUPLING	OPTIONS	OPTIONS
812	5	O	1	BC	V1	E00	XXX
1	2	3	4	5	6	7	8

**1 Model**  
Operator - Torque (100 psi) - Rotation

812	175 in. lbs. - 90°
822	350 in. lbs. - 90°
832	700 in. lbs. - 90°

**2 End Caps**

5	Pneumatic Clear Anodized
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**3 Shaft**

O	Double Manual Override
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**4 Unit Materials**  
Shaft - Body - Trim

1	Polished & Ground Fatigue Proof 1144 Steel - Anod. Alum. - Carb.Steel
3	303 Stainless Steel - Anod. Alum. - Stainless Steel

**5 Apollo Bronze Ball Valves<sup>1</sup>**  
(Use '00' if not selecting a valve)  
Size - Type - Operator

00	No Valve		
BA	1/4"	- 2 way	- 1
BB	3/8"	- 2 way	- 1
BC	1/2"	- 2 way	- 1
BD	3/4"	- 2 way	- 1
BE	1"	- 2 way	- 1
BF	1 1/4"	- 2 way	- 2
BG	1 1/2"	- 2 way	- 2
BH	2"	- 2 way	- 2
BJ	3"	- 2 way	- 3
BL	1/2"	- Diverter	- 1
BM	3/4"	- Diverter	- 1
BN	1"	- Diverter	- 1
BO	1 1/4"	- Diverter	- 2
BP	1 1/2"	- Diverter	- 2
BQ	2"	- Diverter	- 2

**Apollo Stainless Steel Ball Valves<sup>2</sup>**  
Valve Size - Type - Operator Size

SA	1/4"	- 2 way	- 1
SB	3/8"	- 2 way	- 1
SC	1/2"	- 2 way	- 1
SD	3/4"	- 2 way	- 1
SE	1"	- 2 way	- 1
SF	1 1/4"	- 2 way	- 2
SG	1 1/2"	- 2 way	- 2
SH	2"	- 2 way	- 2
SI	2 1/2"	- 2 way	- 3
SJ	3"	- 2 way	- 3
SL	1/2"	- Diverter	- 1
SM	3/4"	- Diverter	- 1
SN	1"	- Diverter	- 1
SP	1 1/2"	- Diverter	- 2
SQ	2"	- Diverter	- 2

<sup>1</sup> Bronze 2-way 1/4", 3/8" and 1/2" are Apollo Series 77 Full Port Ball Valve. 3/4" thru 3" are Apollo Series 71 Standard Port. Diverter Valves are Series 70. All Bronze valves have Stainless Steel Ball and Stem.

<sup>2</sup> Stainless Steel 2-way and diverter valves are Apollo Series 76.

**6 Bracket**  
Valve Brand - Valve Size - Material

00	No Bracket
V1	Apollo - 1/4", 3/8", 1/2" 304 Stainless Steel
V2	Apollo - 3/4", 1" 304 Stainless Steel
V3	Apollo - 1 1/4", 1 1/2", 2" 304 Stainless Steel
V4	Apollo - 2 1/2", 3" 304 Stainless Steel

**7 Options**

000	No Options
E00	Factory Assembled Operator Bracket, Coupling and Valve
400	Adjustable Stroke Control Cap End
704	Teflon Impregnated Hardened Anodized

**8 Switch Options**  
All Axx Switch Options are Single End Only

A00	Switch Ready - No Switches
A02	Switch Package <sup>1</sup> - 2 Reed Switches
A05	Switch Package <sup>2</sup> - 2 Sourcing Switches
A08	Switch Package <sup>2</sup> - 2 Sinking Switches

<sup>1</sup> Switch has built in protection for use with ABPLC

<sup>2</sup> Switch function can be either sinking or sourcing depending on wiring scheme.

**Consult Factory for Quick Disconnect Switches**



# How To Order: Val-U-Act Spring Return (VS) (1/4" - 3")

Part Number Example: 822-5A1-BC-V1-E00

MODEL	END CAPS	SHAFT	UNIT MATERIAL	VALVE	BRACKET & COUPLING	OPTIONS
822	5	A	1	BC	V1	E00
1	2	3	4	5	6	7

**1 Model**  
Operator - Torque (100 psi) - Rotation

822	350 in. lbs. - 90°
832	700 in. lbs. - 90°

**2 End Caps**

5	Pneumatic Clear Anodized
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**3 Shaft**

A	Spring Closes Valve
B	Spring Opens Valve

**4 Unit Materials**  
Shaft - Body - Trim

1	Polished & Ground Fatigue Proof 1144 Steel - Anod. Alum. - Carb.Steel
3	303 Stainless Steel - Anod. Alum. - Stainless Steel

**5 Apollo Bronze Ball Valves<sup>1</sup>**  
(Use '00' if not selecting a valve)  
Size - Type - Operator

00	No Valve		
BA	1/4"	- 2 way	- 2
BB	3/8"	- 2 way	- 2
BC	1/2"	- 2 way	- 2
BD	3/4"	- 2 way	- 2
BE	1"	- 2 way	- 2
BF	1 1/4"	- 2 way	- 3
BG	1 1/2"	- 2 way	- 3
BH	2"	- 2 way	- 3
BL	1/2"	- Diverter	- 2
BM	3/4"	- Diverter	- 2
BN	1"	- Diverter	- 2
BO	1 1/4"	- Diverter	- 3
BP	1 1/2"	- Diverter	- 3
BQ	2"	- Diverter	- 3

**Apollo Stainless Steel Ball Valves<sup>2</sup>**  
Valve Size - Type - Operator Size

SA	1/4"	- 2 way	- 2
SB	3/8"	- 2 way	- 2
SC	1/2"	- 2 way	- 2
SD	3/4"	- 2 way	- 2
SE	1"	- 2 way	- 2
SF	1 1/4"	- 2 way	- 3
SG	1 1/2"	- 2 way	- 3
SH	2"	- 2 way	- 3
SL	1/2"	- Diverter	- 2
SM	3/4"	- Diverter	- 2
SN	1"	- Diverter	- 2
SP	1 1/2"	- Diverter	- 3
SQ	2"	- Diverter	- 3

1 Bronze 2-way 1/4", 3/8" and 1/2" are Apollo Series 77 Full Port Ball Valve. 3/4" thru 3" are Apollo Series 71 Standard Port. Diverter Valves are Series 70. All Bronze valves have Stainless Steel Ball and Stem.

2 Stainless Steel 2-way and diverter valves are Apollo Series 76.

**6 Bracket**  
Valve Brand - Valve Size - Material

00	No Bracket
V1	Apollo - 1/4", 3/8", 1/2" 304 Stainless Steel
V2	Apollo - 3/4", 1" 304 Stainless Steel
V3	Apollo - 1 1/4", 1 1/2", 2" 304 Stainless Steel
V4	Apollo - 2 1/2", 3" 304 Stainless Steel

**7 Options**

000	No Options
E00	Factory Assembled Operator Bracket, Coupling and Valve
400	Adjustable Stroke Control Cap End, Pos. 5
704	Teflon Impregnated Hard Anodized Note: Operator Only

## Spring Return

### Description:

Spring Return operators are formed bolting a spring return unit to a double acting Val-U-Act operator. The return movement is effected by a clock-type spring which is pretensioned to about half the operator torque. The amount of pretension is large, compared to the rotation and therefore the torque does not vary more than 20% over the rotation.

Spring returns are factory-installed and adjusted.

### Specifications:

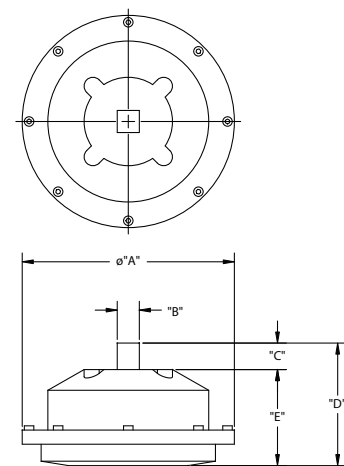
Spring Casing - pressure diecast to BS1004 zinc or aluminum alloy LM25

Finish - Epoxy stove enamel

Spring - Clock type, spring steel

### Ordering:

The spring return is available with the optional Adjustable Stroke Control but not with the Hall Effect or AC/DC Reed Switches.



**Dimensions (in.)**

Operator Size	A	B	C	D	E
2	4.22	.375	.500	2.25	1.78
3 & 4	5.97	.625	.750	4.06	3.23

# Warranty Statement

## Warranty

Seller warrants for one year from the date of shipment Seller's manufactured products to the extent that Seller will replace those having defects in material or workmanship when used for the purpose and in the manner which Seller recommends. If Seller's examination shall disclose to its satisfaction that the products are defective, and an adjustment is required, the amount of such adjustment shall not exceed the net sales price of the defective products only and no allowance will be made for labor or expense of repairing or replacing defective products or workmanship or damage resulting from the same. Seller warrants the products which it sells of other manufacturers to the extent of the warranties of their respective makers. Where engineering design or fabrication work is supplied, Buyer's acceptance of Seller's design or of delivery of work shall relieve Seller of all further obligation, other than as expressed in Seller's product warranty. THIS IS SELLER'S SOLE WARRANTY. SELLER MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED. AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED SELLER'S AFORESTATED OBLIGATION ARE HEREBY DISCLAIMED BY SELLER AND EXCLUDED FROM THIS WARRANTY. Seller neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of its engineering designs or products. This warranty shall not apply to any products or parts of products which (a) have been repaired or altered outside of Seller's factory, in any manner; or (b) have been subjected to misuse, negligence or accidents; or (c) have been used in a manner contrary to Seller's instructions or recommendations. Seller shall not be responsible for design errors due to inaccurate or incomplete information supplied by Buyer or its representatives.

**SELLER'S LIABILITY:** Seller will not be liable for any loss, damage, cost of repairs, incidental or consequential damages of any kind, whether based upon warranty (except for the obligation accepted by Seller under "Warranty" above), contract or negligence, arising in connection with the design, manufacture, sale, use or repair of the products or of the engineering designs supplied to Buyer.



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