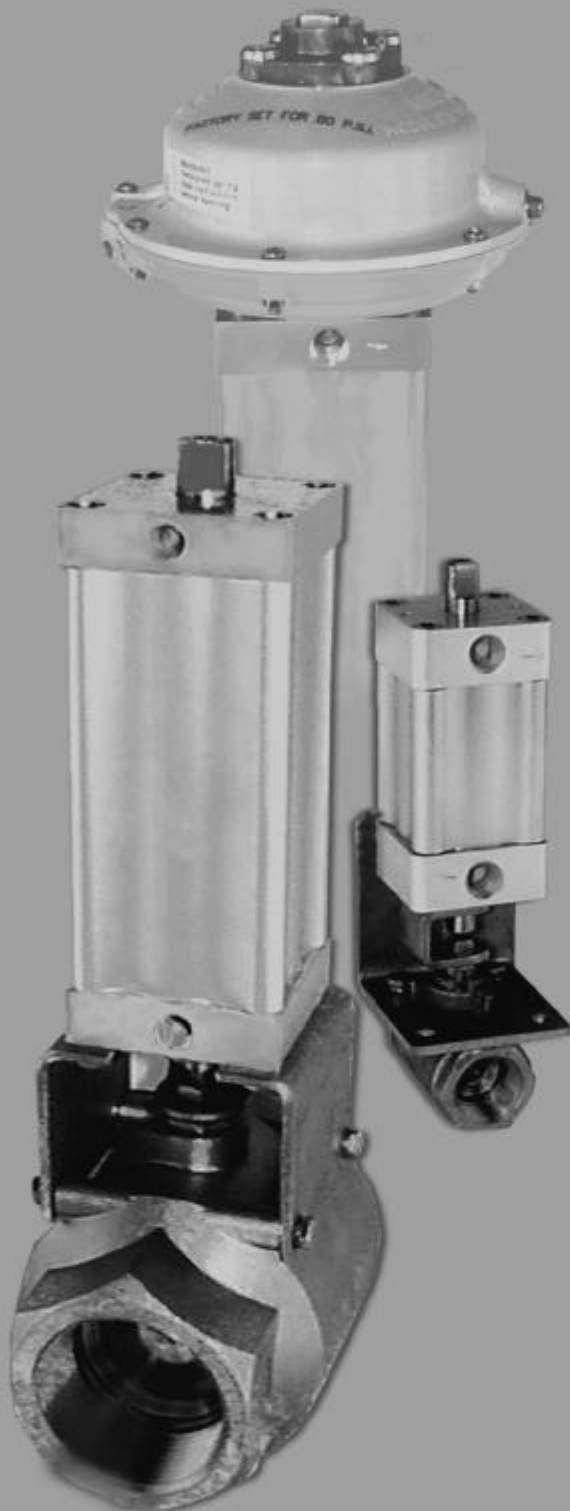


BALL VALVE OPERATORS



TURN-ACT

**ANSWER
ENGINEERING**

VAL-U-ACT^{HEAVY DUTY}
Double Acting Ball Valve Operator Systems

Valve Sizes from 1/4" to 3"
140 in.lbs. to 800 in.lbs.

VAL-U-ACT^{SPRING RETURN}
Single Acting with Spring Close or Open
Valve Operator Systems

Valve Sizes from 1/4" to 3"
140 in.lbs. to 400 in.lbs.

Class-Act^{MINIATURE SERIES}
Compact Double Acting Valve Operator Systems
Valve Sizes from 1/4" to 3/4"
48 in.lbs. to 60 in.lbs.

JUST IMAGINE HOW TURN-ACT'S ANSWER ENGINEERING CAN WORK FOR YOU!

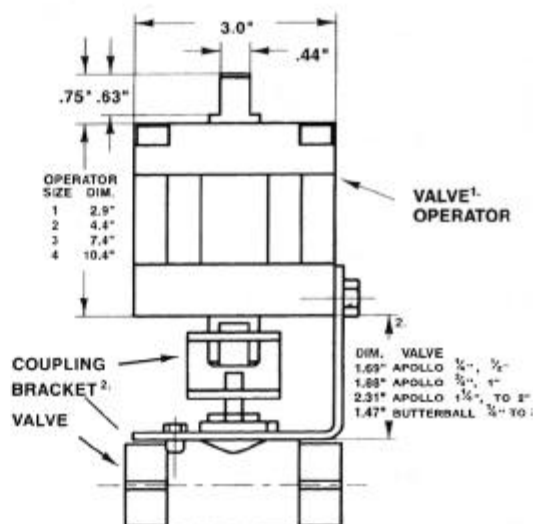
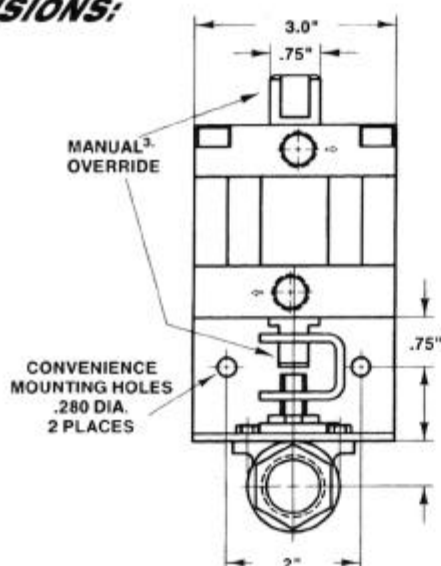
VAL-U-ACT

DOUBLE ACTING VALVE OPERATORS

HOW TO ORDER: USE THE NUMBERING SYSTEM SHOWN BELOW

SERIES		VALVE		OPERATOR		BRACKET & COUPLING		OPTIONS		
V A										
TABLES		1		2		3		4		
1 VA VAL-U-ACT DOUBLE ACTING										
2 00 NO VALVE										
APOLLO BRONZE BALL VALVES ¹ -										
2-WAY					DIVERTER					
VALVE NO.	VALVE SIZE	OPER SIZE	VALVE NO.	VALVE SIZE	OPER SIZE					
BA	1/4"	1	BL	1/2"	1					
BB	3/8"	1	BM	3/4"	1					
BC	1/2"	1	BN	1"	1					
BD	3/4"	1	BO	1 1/4"	2					
BE	1"	1	BP	1 1/2"	2					
BF	1 1/4"	2	BQ	2"	2					
BG	1 1/2"	2								
BH	2"	2								
BJ	3"	3								
APOLLO STAINLESS STEEL BALL VALVES ² -										
2-WAY					DIVERTER					
VALVE NO.	VALVE SIZE	OPER SIZE	VALVE NO.	VALVE SIZE	OPER SIZE					
SA	1/4"	1	SL	1/2"	1					
SB	3/8"	1	SM	3/4"	1					
SC	1/2"	1	SN	1"	1					
SD	3/4"	1	SP	1 1/2"	2					
SE	1"	1	SQ	2"	2					
SF	1 1/4"	2								
SG	1 1/2"	2								
SH	2"	2								
SI	2 1/2"	3								
SJ	3"	3								
MILWAUKEE BUTTERBALL VALVES ³ -										
2-WAY										
VALVE NO.	VALVE SIZE	OPER SIZE	VALVE NO.	VALVE SIZE	OPER SIZE					
ME	1"	1	MF	1 1/4"	1					
			MG	1 1/2"	1					
			MH	2"	2					
OPERATOR (Select OPERATOR from OPER SIZE column in table 2)										
OPER SIZE		OUTPUT TORQUE AT 80 psi								
1		140 inch - pounds								
2		280 inch - pounds								
3		560 inch - pounds								
4		800 inch - pounds								
OPERATOR SHAFT & TRIM MATERIALS										
NO.		DESCRIPTION								
1		MILD STEEL SHAFT AND TRIM								
2		STAINLESS STEEL SHAFT AND TRIM								
BRACKET AND COUPLING VALVE BRAND AND VALVE SIZE										
NO.		DESCRIPTION								
0		NONE								
1		APOLLO 1/4", 3/8", 1/2"								
2		APOLLO 3/4", 1"								
3		APOLLO 1 1/4", 1 1/2", 2"								
4		APOLLO 2 1/2", 3"								
5		MILWAUKEE BUTTERBALL 1/2" - 2"								
OPTIONS										
OPTION NO.		DESCRIPTION								
000		NONE								
E00		FACTORY ASSY; OPER TO BKT, CPLG & VALVE								
401		ADJUSTABLE STROKE CONTROL (ASC)								
A05		PNP HALL EFFECT SOURCING SWS								
A08		NPN HALL EFFECT SINKING SWS								
A02		AC/DC REED SWITCHES								
NOTES:										
1. BRONZE 2-WAY 1/4", 1/2", 3/4" ARE APOLLO SERIES 77 FULL PORT BALL VALVES. 1" THRU 3" ARE APOLLO SERIES 71 STANDARD PORT BALL VALVES. BRONZE DIVERTER VALVES ARE SERIES 71. ALL BRONZE VALVES HAVE STAINLESS STEEL BALLS AND STEMS.										
2. STAINLESS STEEL 2-WAY AND DIVERTER VALVES ARE APOLLO SERIES 76.										
3. BUTTERBALL VALVES ARE # BB1-1040.										

DIMENSIONS:



- NOTES:
1. VAL-U-ACT SIZE -1 SHOWN FOR REFERENCE
 2. BRACKET SHOWN FOR APOLLO AND MILWAUKEE VALVES THROUGH 2" SIZES. APOLLO 2 1/2" AND 3" VALVES UTILIZE A TWO PIECE BRACKET
 3. MANUAL OVERRIDE SHAFT DIMENSIONS APPLY TO BOTH ENDS OF OPERATOR, OVERRIDES 90° OUT OF PHASE.

VAL-U-ACT

INLETS 1/4" FNPT

CAPACITY PER STROKE

OPERATOR SIZE	CUBIC INCHES
1	2.75
2	5.50
3	11.00
4	16.50

FILTRATION REQUIRED

AIR 25-30 MICRONS

TEMPERATURES

-20°F TO 180°F CONSULT FACTORY FOR HIGHER TEMPERATURES

MATERIALS

ROTOR & STATOR SEALS URETHANE
 SHAFT AND CYLINDER BUNA
 CYLINDER ANODIZED ALUMINUM
 END CAPS ANODIZED CAST ALUMINUM
 SHAFT MILD STEEL, OPT'L S.S.
 TRIM MILD STEEL, OPT'L S.S.
 BEARINGS DELRIN
 BRACKETS &
 COUPLINGS STAINLESS STEEL

WEIGHTS

OPERATOR SIZE	POUNDS
1	2.5
2	3.3
3	6.0
4	8.7
BRACKETS	0.2 to 0.8
SPRING RETURN SIZE (additional wt.)	
VAL-U-ACT 2	3.0
VAL-U-ACT 3&4	9.0

VAL-U-ACT

TORQUE CHART FOR DOUBLE ACTING OPERATORS

OPERATOR SIZE	PRESSURE (psi)				
	40	60	80	100	150
1	70	105	140	175	265
2	140	210	280	350	524
3	280	420	560	700	1050
4	400	600	800	1000	1500

TORQUE - (Inch - pounds)

CLASS-ACT

INLETS 1/8" FNPT

CAPACITY PER STROKE

OPERATOR SIZE	CUBIC INCHES
4	1.68
6	2.52

FILTRATION REQUIRED

AIR 25-30 MICRONS

TEMPERATURES

-20°F TO 180°F CONSULT FACTORY FOR HIGHER TEMPERATURES

MATERIALS

ROTOR & STATOR SEALS URETHANE
 SHAFT AND CYLINDER BUNA
 CYLINDER ANODIZED ALUMINUM
 END CAPS ANODIZED ALUMINUM
 SHAFT STAINLESS STEEL
 TRIM MILD STEEL, OPT'L S.S.
 BEARINGS DELRIN
 BRACKETS &
 COUPLINGS STAINLESS STEEL

WEIGHTS

OPERATOR SIZE	POUNDS
4	0.88
6	1.13
BRACKETS	0.3

CLASS-ACT

TORQUE CHART:

OPERATOR SIZE	PRESSURE (psi)				
	40	60	80	100	150
4	21	35	48	60	90
6	35	58	80	100	150

TORQUE (Inch - pounds)

FOR VALVES NOT LISTED OR SPECIAL APPLICATIONS; CONSULT FACTORY

CLASS-ACT

MINIATURE VALVE OPERATIONS

HOW TO ORDER: USE THE NUMBERING SYSTEM SHOWN BELOW



1 CL CLASS-ACT MINIATURE VALVE OPERATOR

2 00 NO VALVE

APOLLO BRONZE BALL VALVES ¹					
2-WAY			DIVERTER		
VALVE NO.	VALVE SIZE	OPER SIZE	VALVE NO.	VALVE SIZE	OPER SIZE
BA	1/4	4	BL	1/2	6
BB	3/8	4			
BC	1/2	4			
BD	3/4	6			

APOLLO STAINLESS STEEL BALL VALVES ²					
2-WAY			DIVERTER		
VALVE NO.	VALVE SIZE	OPER SIZE	VALVE NO.	VALVE SIZE	OPER SIZE
SA	1/4	4	SL	1/2	6
SB	3/8	4			
SC	1/2	4			
SD	3/4	6			

MILWAUKEE BUTTERBALL VALVES ³					
2-WAY					
VALVE NO.	VALVE SIZE	OPER SIZE	VALVE NO.	VALVE SIZE	OPER SIZE
			ME	1	4
			MF	1 1/4	6

NOTES: 1. BRONZE 2-WAY 1/4", 3/8", 1/2" ARE APOLLO SERIES 77 FULL PORT BALL VALVES. THE 1/4" IS A SERIES 71 STANDARD PORT. DIVERTER VALVES ARE SERIES 71. ALL BRONZE VALVES HAVE STAINLESS STEEL BALLS AND STEMS.

2. STAINLESS STEEL 2-WAY AND DIVERTER VALVES ARE APOLLO SERIES 76.

3. BUTTERBALL VALVES ARE #BB1-IOAO.

3 OPERATOR (Select OPERATOR from OPER SIZE column in table 2)

OPER SIZE	OUTPUT TORQUE AT 80 psi
4	48 inch · pounds
6	80 inch · pounds

4 OPERATOR TRIM MATERIALS

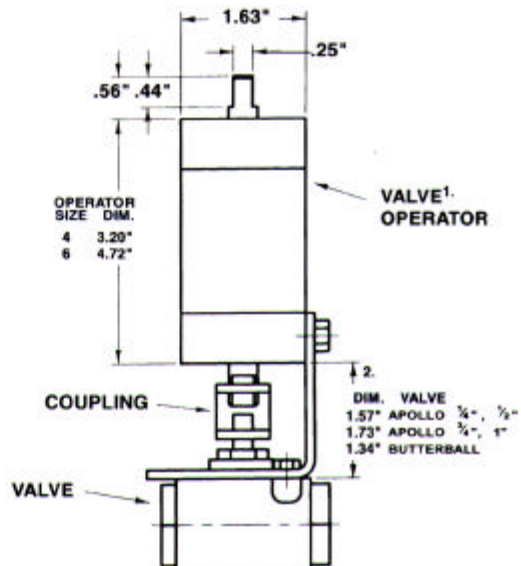
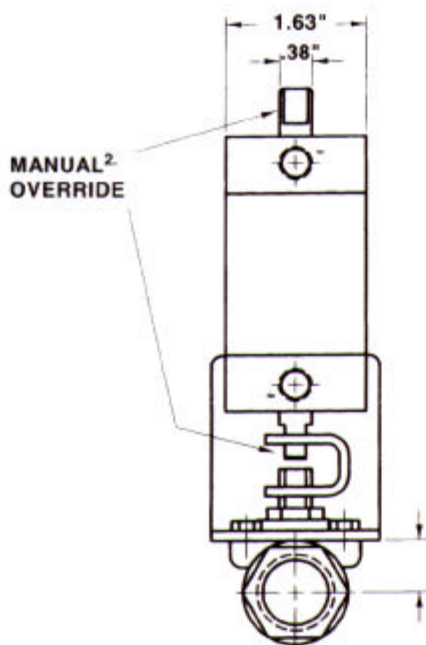
NO.	DESCRIPTION
1	MILD STEEL TRIM
2	STAINLESS STEEL TRIM

5 BRACKET AND COUPLING

NO.	VALVE BRAND AND VALVE SIZE
0	NONE
1	APOLLO 1/4", 3/8", 1/2"
2	APOLLO 3/4"
3	MILWAUKEE BUTTERBALL

6 OPTIONS

OPTION NO.	DESCRIPTION
000	NONE
E00	FACTORY ASSY: OPER TO BKT, CPLG & VALVE
401	ADJUSTABLE STROKE CONTROL (ASC)
A05	PNP HALL EFFECT SOURCING SWS
A08	NPN HALL EFFECT SINKING SWS
A02	AC/DC REED SWITCHES



NOTES: 1. CLASS-ACT SIZE - 4 SHOWN FOR REFERENCE

2. MANUAL OVERRIDE SHAFT DIMENSIONS APPLY TO BOTH ENDS OF OPERATOR. OVERRIDES 90° OUT OF PHASE.

VAL-U-ACT

SPRING RETURN VALVE OPERATORS

HOW TO ORDER: USE THE NUMBERING SYSTEM SHOWN BELOW

V S - B H - 3 1 A - 3 - [E 0 0] , [I I I]

EXAMPLE: VAL-U-ACT SPRING RETURN WITH 3" BRONZE BALL VALVE, OPERATOR, SPRING RETURN CLOSE, BRACKET, COUPLING AND FACTORY ASSEMBLY.

SERIES VALVE OPERATOR BRACKET & COUPLING OPTIONS
 TABLES 1 2 3 4 5 6 7

1 VS VAL-U-ACT SPRING RETURN

2 00 NO VALVE

APOLLO BRONZE BALL VALVES 1-					
2-WAY			DIVERTER		
VALVE NO.	VALVE SIZE	OPER SIZE	VALVE NO.	VALVE SIZE	OPER SIZE
BA	1/4"	2	BL	1/2"	2
BB	3/8"	2	BM	3/4"	2
BC	1/2"	2	BN	1"	2
BD	3/4"	2	BO	1 1/4"	3
BE	1"	2	BP	1 1/2"	3
BF	1 1/4"	3	BQ	2"	3
BG	1 1/2"	3			
BH	2"	3			
BJ	3"	4			

APOLLO STAINLESS STEEL BALL VALVES 2-					
2-WAY			DIVERTER		
VALVE NO.	VALVE SIZE	OPER SIZE	VALVE NO.	VALVE SIZE	OPER SIZE
SA	1/4"	2	SL	1/2"	2
SB	3/8"	2	SM	3/4"	2
SC	1/2"	2	SN	1"	2
SD	3/4"	2	SP	1 1/2"	3
SE	1"	2	SQ	2"	3
SF	1 1/4"	3			
SG	1 1/2"	3			
SH	2"	3			
SI	2 1/2"	4			
SJ	3"	4			

MILWAUKEE BUTTERBALL VALVES 3-					
2-WAY			DIVERTER		
VALVE NO.	VALVE SIZE	OPER SIZE	VALVE NO.	VALVE SIZE	OPER SIZE
			MF	1 1/4"	2
			MG	1 1/2"	2
ME	1"	2	MH	2"	3

OPERATOR (Select OPERATOR from OPER SIZE column in table 2)	
OPER SIZE	OUTPUT TORQUE AT 80 psi
2	140 inch - pounds with spring
3	280 inch - pounds with spring
4	400 inch - pounds with spring

OPERATOR SHAFT & TRIM MATERIALS	
NO.	DESCRIPTION
1	MILD STEEL SHAFT AND TRIM
2	STAINLESS STEEL SHAFT AND TRIM

SPRING RETURN ROTATION	
NO.	DESCRIPTION
A	SPRING CLOSES VALVE
B	SPRING OPENS VALVE

BRACKET AND COUPLING VALVE BRAND AND VALVE SIZE	
NO.	DESCRIPTION
0	NONE
1	APOLLO 1/4", 3/8", 1/2"
2	APOLLO 3/4", 1"
3	APOLLO 1 1/4", 1 1/2", 2"
4	APOLLO 2 1/2", 3"
5	MILWAUKEE BUTTERBALL 1/2" - 2"

OPTIONS	
OPTION NO.	DESCRIPTION
000	NONE
E00	FACTORY ASSY: OPER TO BKT, CPLG & VALVE
401	ADJUSTABLE STROKE CONTROL (ASC)

NOTES: 1. BRONZE 2-WAY 1/4", 3/8", 1/2" ARE APOLLO SERIES 77 FULL PORT BALL VALVES, 3/4" THRU 3" ARE APOLLO SERIES 71 STANDARD PORT BALL VALVES. BRONZE DIVERTER VALVES ARE SERIES 71. ALL BRONZE VALVES HAVE STAINLESS STEEL BALLS AND STEMS.
 2. STAINLESS STEEL 2-WAY AND DIVERTER VALVES ARE APOLLO SERIES 76.
 3. BUTTERBALL VALVES ARE # BB1-10A0.

SPRING RETURN

DESCRIPTION:

Spring Return operators are formed by 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.

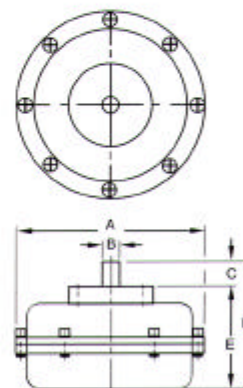
Spring returns are factory-installed and adjusted. The spring returns have a worm drive adjustment for setting or changing spring pretension. By inserting a socket key into one end of the worm the spring pretension can be very easily increased or decreased to suit operating conditions. To increase pretension, turn the worm clockwise; to decrease, turn counterclockwise.

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.

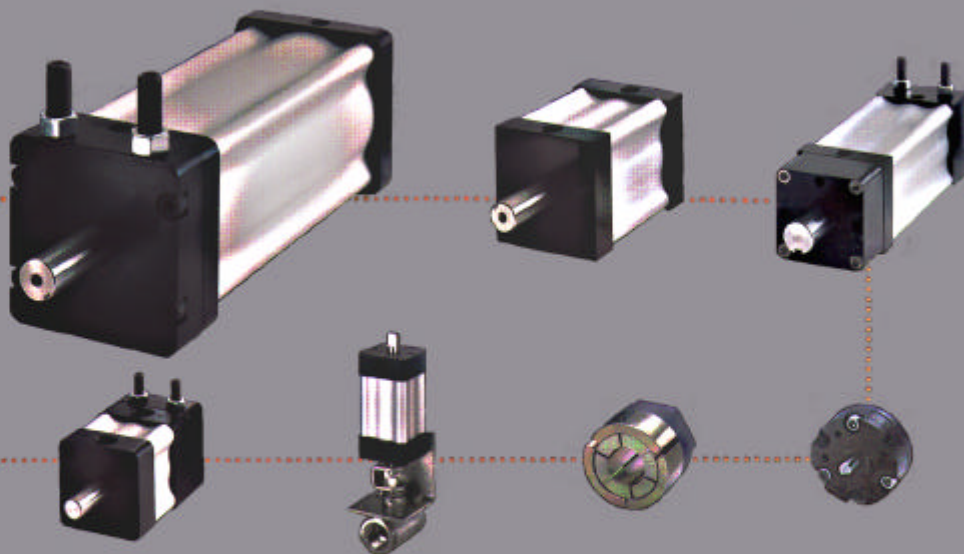


OPERATOR SIZE	A DIA	B SQUARE	C	D	E
2	4.22	.375	.500	2.25	1.78
3 & 4	5.97	.625	.750	4.06	3.23

DIMENSIONS IN INCHES



Rotary Catalog



Multi-Act Catalog



Guided Rod Cylinder Catalog



Can You Imagine Catalog



ANSWER ENGINEERING

TURN-ACT INC.
2230 AMPERE DRIVE
P.O. BOX 99768
JEFFERSONTOWN, KY 40269-0768
PHONE 502.263.7000
FAX 502.263.7007
W-SITE www.turn-act.com