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Butterfly Valve:
UFLK Series **Linkage Solution**
 2-way Valves
 3-way Valves

Retrofit Solutions for Virtually any Valve

Manufacturers:

Butterfly: Bray, Centerline, Keystone, Flowseal and more

Control: On/Off, Floating, 2-10VDC
 Multi-Function Technology®
 Spring Return or
 Non-Spring Return

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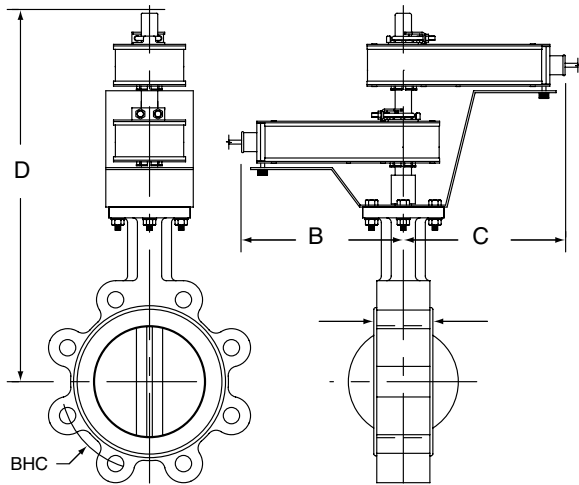


Butterfly Valve Retrofit

Tips for choosing a butterfly valve retrofit solution

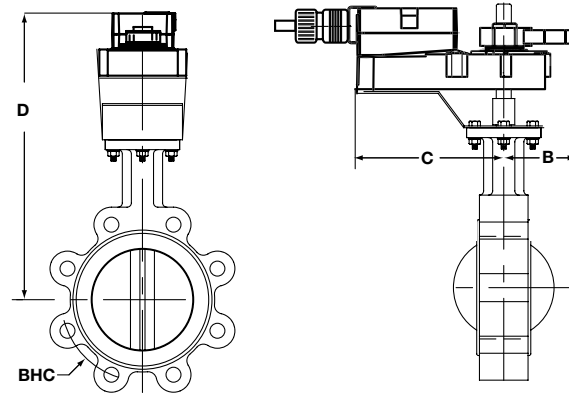


Dimensions with 2-Way Valve



BF2WUDIM

Dimensions with 2-Way Valve



AM_GM_LineRevised

Maximum Dimensions (Inches)

Size	B	C	D(Max)	Actuator
2"	9	9	19.5	AF
2"	7	7	15	AMB(X)
2"	4.25	4.25	15.5	SY1...
2"	8	13	20.25	SY2...
2½"	9	9	20	AF
2½"	9	9	20	2*AF
2½"	7	7	15.5	AMB(X)
2½"	4.25	4.25	16	SY1...
2½"	8	13	20.75	SY2...
3"	7	7	16	AMB(X)
3"	8	8	16	GMB(X)
3"	9	9	20.5	2*AF
3"	4.25	4.25	16.25	SY1...
3"	8	13	21	SY2...
4"	8	8	17	GMB(X)
4"	9	9	21	2*AF
4"	8	8	21	2*GMB(X)
4"	8	13	21.75	SY2...
5"	8	8	17.5	GMB(X)
5"	9	9	22	2*AF
5"	8	13	22.25	SY2...
6"	8	8	22.5	GMB(X)
6"	8	13	23	SY2...
6"	8	13	22.75	SY3...
8"	8	13	24.25	SY3...
8"	12	15	29	SY4...
10"	8	13	25.5	SY3...
10"	12	15	30	SY4...
12"	8	13	27.25	SY3...
12"	12	15	32	SY4...
14"	12	15	33	SY5...
16"	12	15	34.5	SY6...
18"	14	21	39.25	SY8...
20"	14	21	41.5	SY8...
24"	14	22	53.25	SY11...
30"	14	22	57.5	SY12...

Application Notes

1. Dimensions are approximate
2. Custom kits may be taller and varies by application needs
3. Dimension "D" allows for actuator removal without the need to remove the valve from the pipe.
4. Dual actuated valves have single actuators mounted on each valve shaft.

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SY Series Actuators

SERIES	MODEL	TORQUE	RUN TIME(S) 90°@60Hz	POWER SUPPLY	DUTY CYCLE	CONTROL			FEEDBACK
						PROPORTIONAL	3 POINT	ON/OFF	
SY1	SY1-110	35 Nm / 310 in-lb	12 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY1-24	35 Nm / 310 in-lb	12 seconds	24 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY1-220	35 Nm / 310 in-lb	12 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY1-110P	35 Nm / 310 in-lb	12 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY1-24P	35 Nm / 310 in-lb	12 seconds	24 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY1-220P	35 Nm / 310 in-lb	12 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA	
SY2	SY2-110	90 Nm / 801 in-lb	15 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY2-24	90 Nm / 801 in-lb	15 seconds	24 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY2-220	90 Nm / 801 in-lb	15 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY2-120MFT	90 Nm / 801 in-lb	15 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY2-24MFT	90 Nm / 801 in-lb	15 seconds	24 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY2-230MFT	90 Nm / 801 in-lb	15 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA	
SY3	SY3-110	150 Nm / 1335 in-lb	22 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY3-24	150 Nm / 1335 in-lb	22 seconds	24 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY3-220	150 Nm / 1335 in-lb	22 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY3-24MFT	150 Nm / 1335 in-lb	22 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY3-120MFT	150 Nm / 1335 in-lb	22 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY3-230MFT	150 Nm / 1335 in-lb	22 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA	
SY4	SY4-110	400 Nm / 3560 in-lb	16 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY4-24	400 Nm / 3560 in-lb	16 seconds	24 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY4-220	400 Nm / 3560 in-lb	16 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY4-24MFT	400 Nm / 3560 in-lb	16 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY4-120MFT	400 Nm / 3560 in-lb	16 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY4-230MFT	400 Nm / 3560 in-lb	16 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA	
SY5	SY5-110	500 Nm / 4450 in-lb	22 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY5-24	500 Nm / 4450 in-lb	22 seconds	24 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY5-220	500 Nm / 4450 in-lb	22 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY5-24MFT	500 Nm / 4450 in-lb	22 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY5-120MFT	500 Nm / 4450 in-lb	22 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY5-230MFT	500 Nm / 4450 in-lb	22 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA	
SY6	SY6-110	650 Nm / 5785 in-lb	28 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY6-220	650 Nm / 5785 in-lb	28 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY6-120MFT	650 Nm / 5785 in-lb	28 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY6-230MFT	650 Nm / 5785 in-lb	28 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY7	SY7-110	1000 Nm / 8900 in-lb	46 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY7-220	1000 Nm / 8900 in-lb	46 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY7-120MFT	1000 Nm / 8900 in-lb	46 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY7-230MFT	1000 Nm / 8900 in-lb	46 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
SY8	SY8-110	1500 Nm / 13350 in-lb	46 seconds	120 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY8-220	1500 Nm / 13350 in-lb	46 seconds	230 VAC ±10%, 50/60 Hz	30%		•	•	none, opt 1k
	SY8-120MFT	1500 Nm / 13350 in-lb	46 seconds	120 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA
	SY8-230MFT	1500 Nm / 13350 in-lb	46 seconds	230 VAC ±10%, 50/60 Hz	75%	•			2-10 VDC/4-20 mA

Proportional actuators will accept 0-10 VDC, 2-10 VDC, or 4-20 mA control signals as standard.

All SY actuators are non-spring return, but can be used with NSV-SY back up systems for fail-safe applications.

These products carry a two year warranty when sold as part of an assembly or with a UFLK retrofit kit.

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Valve Body Model	Valve Configuration	Size	Failsafe	Close-Off psi	Belimo Actuator Series (Sold Separately)	Belimo Linkage	
C200 Round Top Series Butterfly Valves	2-way	2"	No	200	AM	UFLK3500	
					SY1	UFLK3538	
					SY2	UFLK3540	
			Yes	200	AF	UFLK3500	
		2½"	No	200		GM	UFLK3500
						SY1	UFLK3538
						SY2	UFLK3540
			Yes	200	2*AF	UFLK3502	
					GK	UFLK3500	
		3"	No	200		GM	UFLK3500
						SY1	UFLK3538
						SY2	UFLK3540
			Yes	200	2*AF	UFLK3502	
					GK	UFLK3500	
		4"	No	200		2*GM	UFLK3508
						SY2	UFLK3542
					Yes	200	2*GK
		5"	No	200	SY2	UFLK3544	
		6"	No	200	SY3	UFLK3544	
		8"	No	200	SY4	UFLK3546	
		10"	No	200	SY4	UFLK3548	
		12"	No	200	SY5	UFLK3550	
		14"	No	150	SY5	UFLK3550	
		16"	No	150	SY7	UFLK3552	
	18"	No	150	SY8	UFLK3554		
	20"	No	150	SY8	UFLK3556		
	24"	No	150	SY10	UFLK3558		
	3-way	2"	No	200	AM	UFLK6500	
					SY1	UFLK6536	
					SY2	UFLK6538	
			Yes		200	2*AF	UFLK6502
		2½"	No	200		GM	UFLK6500
						SY1	UFLK6536
						SY2	UFLK6538
Yes			200		2*AF	UFLK6502	
				GK	UFLK6500		
3"		No	200		2*GM	UFLK6502	
					SY1	UFLK6536	
					SY2	UFLK6538	
		Yes	200	2*GK	UFLK6502		
4"		No	200		2*GM	UFLK6508	
					SY2	UFLK6540	
		Yes		200	2*GK	UFLK6508	
5"		No	200	SY3	UFLK6542		
6"		No	200	SY4	UFLK6544		
8"		No	200	SY4	UFLK6546		
10"		No	200	SY5	UFLK6548		
12"	No	200	SY7	UFLK6550			
14"	No	150	SY7	UFLK6550			
16"	No	150	SY8	UFLK6552			
18"	No	150	SY9	UFLK6554			
20"	No	150	SY10	UFLK6556			

All close-off pressures listed are approximate and based on valve condition and application.



Valve Body Model	Valve Configuration	Size	Failsafe	Close-Off psi	Belimo Actuator Series (Sold Separately)	Belimo Linkage	
C200 Square Top Series Butterfly Valves	2-way	2"	No	200	AM	UFLK1300	
						SY1	UFLK1338
						SY2	UFLK1340
			Yes	200	AF	UFLK1300	
		2½"	No	200	GM	UFLK1300	
						SY1	UFLK1338
						SY2	UFLK1340
			Yes	200	2*AF	UFLK1302	
					GK	UFLK1300	
		3"	No	200	GM	UFLK1300	
						SY1	UFLK1338
						SY2	UFLK1340
			Yes	200	2*AF	UFLK1302	
					GK	UFLK1300	
		4"	No	200	2*GM	UFLK1308	
						SY2	UFLK1342
			Yes	200	2*GK	UFLK1308	
		5"	No	200	SY2	UFLK1344	
		6"	No	200	SY3	UFLK1344	
		8"	No	200	SY4	UFLK1346	
		10"	No	200	SY4	UFLK1348	
		12"	No	200	SY5	UFLK1350	
		14"	No	150	SY5	UFLK1350	
		16"	No	150	SY7	UFLK1352	
	18"	No	150	SY8	UFLK1354		
	20"	No	150	SY8	UFLK1356		
	24"	No	150	SY10	UFLK1358		
	3-way	2"	No	200	AM	UFLK4300	
					SY1	UFLK4338	
					SY2	UFLK4340	
			Yes	200	2*AF	UFLK4302	
		2½"	No	200	GM	UFLK4300	
						SY2	UFLK4340
			Yes	200	2*AF	UFLK4302	
					GK	UFLK4300	
		3"	No	200	2*GM	UFLK4302	
						SY2	UFLK4340
			Yes	200	2*GK	UFLK4302	
		4"	No	200	2*GM	UFLK4308	
						SY2	UFLK4342
			Yes	200	2*GK	UFLK4308	
		5"	No	200	SY3	UFLK4344	
6"		No	200	SY4	UFLK4346		
8"		No	200	SY4	UFLK4348		
10"		No	200	SY5	UFLK4350		
12"		No	200	SY7	UFLK4352		
14"		No	150	SY7	UFLK4352		
16"		No	150	SY8	UFLK4354		
18"		No	150	SY9	UFLK4356		
20"		No	150	SY10	UFLK4358		

All close-off pressures listed are approximate and based on valve condition and application.

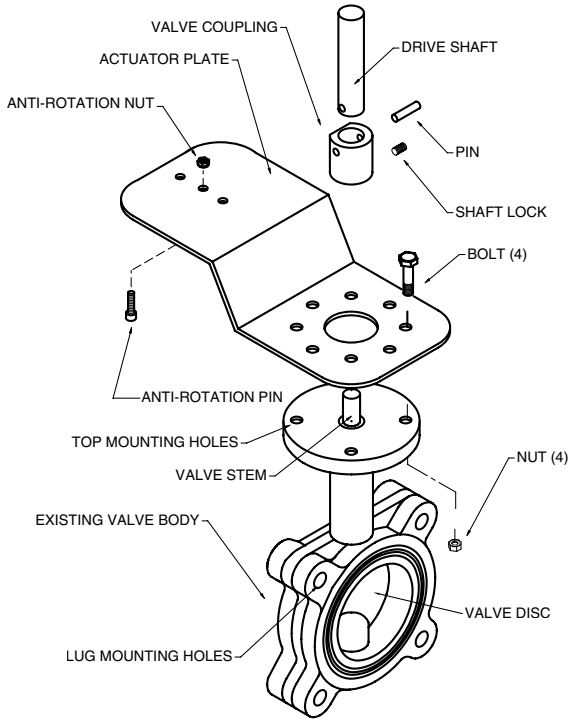
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Valve Body Model	Valve Configuration	Size	Failsafe	Close-Off psi	Belimo Actuator Series (Sold Separately)	Belimo Linkage
C225 Square Top Series Butterfly Valves	2-way	2"	No	285	GM	UFLK1400
					SY1	UFLK1436
					SY2	UFLK1438
			Yes	285	2*AF	UFLK1402
			GK		UFLK1400	
		2½"	No	285	GM	UFLK1400
					SY1	UFLK1436
					SY2	UFLK1438
			Yes	285	2*AF	UFLK1402
			GK		UFLK1400	
		3"	No	285	GM	UFLK1400
					SY1	UFLK1436
					SY2	UFLK1438
			Yes	285	2*AF	UFLK1402
			GK		UFLK1400	
		4"	No	285	2*GM	UFLK1408
					SY2	UFLK1440
			2*GK		UFLK1408	
		Yes	285			
	5"	No	285	SY2	UFLK1442	
	6"	No	285	SY4	UFLK1444	
	8"	No	285	SY4	UFLK1446	
	10"	No	285	SY5	UFLK1448	
	12"	No	285	SY6	UFLK1450	
	14"	No	285	SY7	UFLK1452	
	16"	No	285	SY9	UFLK1454	
	18"	No	285	SY10	UFLK1456	
	20"	No	285	SY10	UFLK1458	
	3-way	2"	No	285	GM	UFLK4400
					SY1	UFLK4436
					SY2	UFLK4438
		Yes	285	GK	UFLK4400	
2½"		No	285	GM	UFLK4400	
				SY2	UFLK4438	
				GK	UFLK4400	
		Yes	285			
3"		No	285	2*GM	UFLK4402	
				SY2	UFLK4438	
				2*GK	UFLK4402	
		Yes	285			
4"	No	285	SY3	UFLK4440		
5"	No	285	SY3	UFLK4442		
6"	No	285	SY4	UFLK4444		
8"	No	285	SY5	UFLK4446		
10"	No	285	SY7	UFLK4448		
12"	No	285	SY8	UFLK4450		
14"	No	285	SY8	UFLK4452		
16"	No	285	SY12	UFLK4454		

All close-off pressures listed are approximate and based on valve condition and application.

2-way Single Actuator

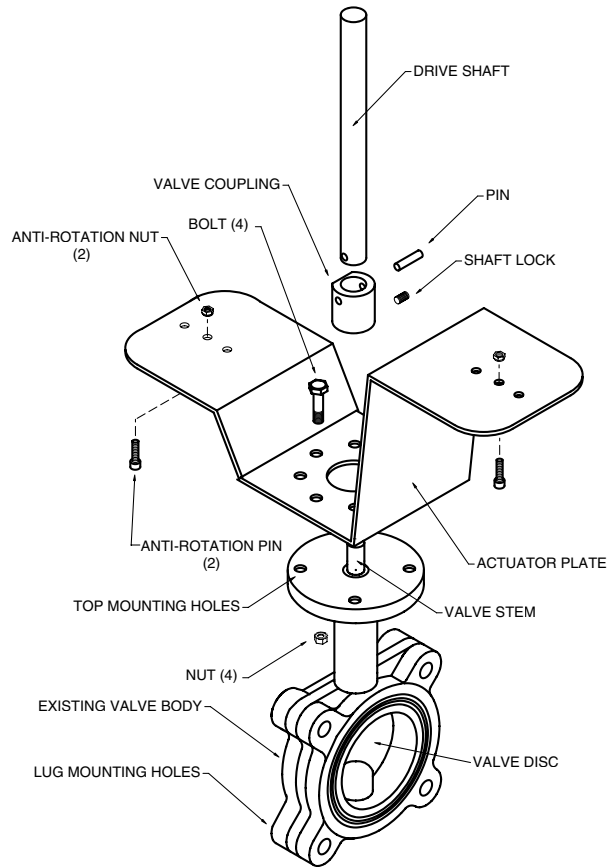
Generic – Must complete BFV Retrofit Form



UFSP0000

2-way Dual Actuator

Generic – Must complete BFV Retrofit Form



UFSP0008

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UFLK/UFSP Series Butterfly Valve Retrofit Solution

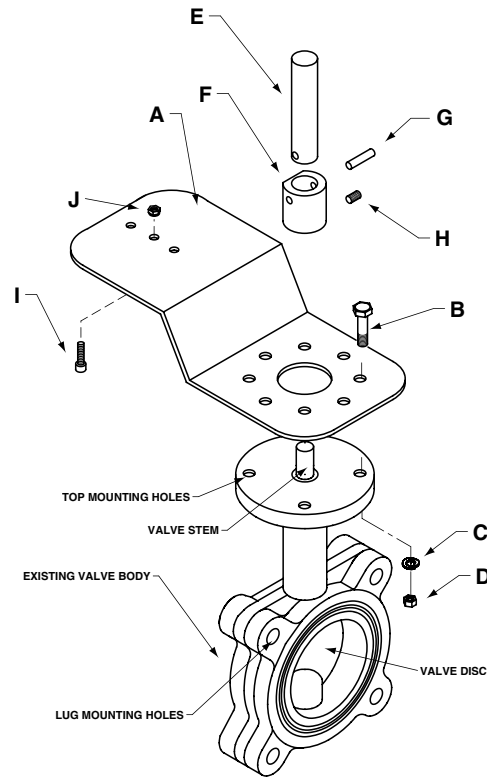
Retrofitting 2-way Valves with Belimo Direct Coupled Actuator(s)



Assembly Sequence for Existing Valves



The valve should be stripped down to its basic form, as shown. Remove all other linkage components before starting the assembly sequence below. The linkage components have been designed to attach to the valve in this state, rather than to any existing hardware.



Please refer to the above exploded view above when following the assembly procedure, to better identify which parts are being addressed in each step.



Step 1) Assemble the actuator mounting bracket (A) to the top of the valve actuator mounting pad using the supplied bolts (B), lock washers (C) and nuts (D). The bracket does NOT need to be oriented on the valve body in any particular position, however, the bracket should not come into contact with pipes, conduit or walls.



Step 2) Once all four bolts, lock washers and nuts have been assembled onto the valve body, tighten securely.

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Step 3) Determine the position of the valve disc. Most manufacturers mark the TOP of the valve stem with a slot which indicates the disc angle. Slide the drive pin assembly, consisting of the drive shaft (E), the valve shaft coupling (F), the mating pin (G), and the setscrew (H), over the valve shaft. It may be necessary to back out the set screw (H) a few turns to make sure there is clearance in the coupling pocket (bottom of (F) for the valve shaft. You will notice there is a flat on the outside diameter of (F). This flat should be parallel to the disc position when assembled correctly.



Note: Belimo recommends drilling a pilot hole into the shaft. This will ensure the set screw (H) sits flat. Failure to do this may result in the coupler (F) slipping over time.



Step 4) Once the drive pin assembly has been seated onto the valve stem, tighten setscrew (H) to lock the assembly onto the valve shaft. The drive shaft (E) should be concentric and parallel with the valve shaft so there is no binding.

Any angular alignment MUST be corrected before moving on to the next step.



Step 5) Mark the TOP of the drive shaft to indicate the valve disc position. At this time, you should rotate the valve disc so that it is in the closed position. This will help facilitate proper attachment of the actuator.



Step 6) Assemble the actuator to the linkage by sliding the actuator shaft clamp over the kit drive shaft (E). The actuator anti-rotation pin (I) should already be positioned in the correct hole for the actuator, but it can be moved to

accommodate AM, GM or AF series actuators. Make sure the anti-rotation pin nut (J) is tight.



Step 7) Make sure the bottom of the actuator is PARALLEL to the mounting plate (A) when tightening the actuator clamp nuts. If this is not checked, it is possible that binding could cause erratic movement of the valve

disc due to reduced torque transmission to the valve shaft.



Step 8) For AF series actuators, release the pre-load on the spring before tightening the clamp nuts, as the valve disc has already been positioned at the fully closed position. For fail open requirements, pre-wind the AF spring to full open position before

tightening the clamp nuts. When released, the spring will then OPEN the valve disc.