



**A-T Controls, Inc.**



## Manual and Automated Resilient Seated Butterfly Valves

Featuring the KE Series actuator for electric automation on butterfly valves up to 4"



**OS/OC Series:** Wafer and Lug Style, Class 150 Resilient Seated Butterfly Valves | pg 2

**AS Series:** Lined Butterfly Valves | pg 10

**NS Series:** NSF/ANSI 61 & 372 Certified and Dead-End Service Butterfly Valves | pg 16



Canada Registration Numbers (CRN)



VALVE NSF/ANSI 61 ALSO CERTIFIED TO NSF/ANSI 372 <SDZD>



Featuring **TRIAO** CONTROLS Actuators and Accessories

## A-T Controls Butterfly Valves

cover a wide range of industries from General Purpose to Chemical, Food and Beverage, Pulp and Paper, Waste Water applications and more. A-T Controls Butterfly Valves are designed to comply with MSS-SP-67 and API-609 and are tested to comply with API-598 standards. They are compatible with ANSI 125/150 flanges.



### Standard Materials of Construction and Specifications

#### **Body**

Ductile Iron (Stainless Steel available)

#### **Disc**

Nickel Plated Ductile Iron (316SS, Aluminum Bronze, Nylon Coated Ductile iron, Undercut 316, Undercut Aluminum Bronze) . . . others may be available on request

#### **Seat**

EPDM (Buna-N, Food grade EPDM, High temp EPDM, Viton®, PTFE over EPDM) . . . others may be available on request

#### **Stem**

420SS (431SS, 17-4 PH® and others available)

#### **Stem Bushing**

PTFE (Lubricated Bronze available)

#### **Stem Seal**

Buna (Viton® available)

Each body is cast, precisely machined and powder coated to meet rigid tolerances.

Multiple seat and disc material options are available to meet a wide variety of process applications.

Square Stem design facilitates direct mounting of actuators.

Each stem is machined to fit tightly into the upper disc for smooth operation and minimal hysteresis.

Bushings are available in PTFE and lubricated bronze. Both are corrosion resistant with minimal effect on valve torque.

Bi-directional, bubble tight shutoff for full pressure differential.

## Wafer and Lug Style

Sizes 1 1/2" - 36" in Stock

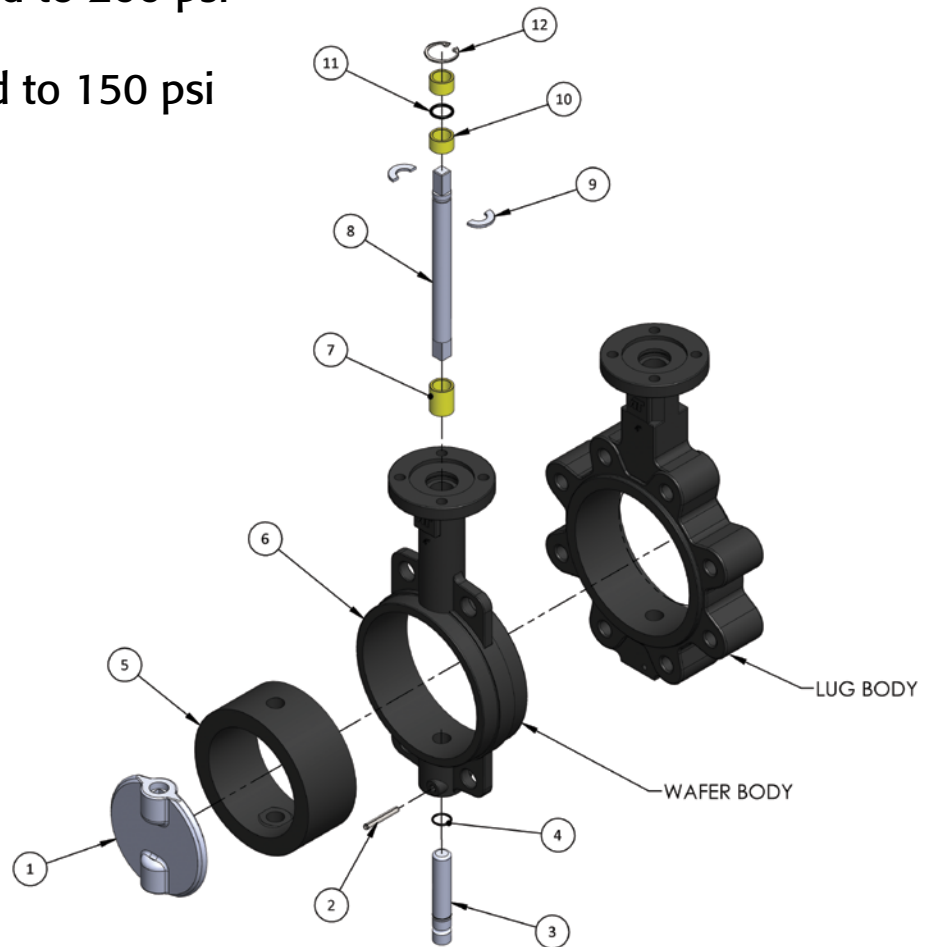
(larger sizes available)

Sizes 1 1/2" - 12" rated to 200 psi

(PTFE seats rated to 150 psi)

Sizes 14" - 36" rated to 150 psi

(PTFE seats rated to 90 psi)



ITEM	QTY.	DESCRIPTION	MATERIAL	OPTIONAL MATERIALS
1	1	DISC	DUCTILE IRON - ENP PLATED	ALUMINUM BRONZE, 316 STAINLESS STEEL, NYLON COATED DUCTILE IRON
2	1	LOWER SHAFT RETAINER PIN	ASTM A-582	
3	1	LOWER SHAFT	420 STAINLESS STEEL	316 STAINLESS STEEL
4	1	LOWER SHAFT O-RING	BUNA-N (non-wetted part)	EPDM, VITON®
5	1	SEAT	BUNA-N	EPDM, VITON®, EPDM BACKED PTFE
6	1	BODY	DUCTILE IRON	316 STAINLESS STEEL
7	1	LOWER BUSHING	PTFE	LUBRICATED BRONZE
8	1	UPPER SHAFT	420 STAINLESS STEEL	431 STAINLESS STEEL, 17-4 PH®
9	1	SHAFT KEEPER RING	STEEL	
10	2	UPPER BUSHING	PTFE	LUBRICATED BRONZE
11	1	UPPER SHAFT O-RING	BUNA-N (non-wetted part)	EPDM, VITON®
12	1	RETAINING RING	STEEL	

### Butterfly Valve Cv Values (US-GPM @ 1 Δ P) - Rated Flow Coefficients

Valve Size	10°	20°	30°	40°	50°	60°	70°	80°	90°
1-1/2"	NA	4	7	11	19	29	44	57	70
2"	0.9	6	12	22	38	59	93	125	155
2-1/2"	1.5	10	21	38	61	97	152	213	262
3"	2	14	31	55	91	145	245	340	417
4"	3	24	55	100	163	261	444	640	773
5"	5	39	88	160	261	421	716	1,053	1,267
6"	8	54	120	224	369	521	1,020	1,500	1,771
8"	13	99	226	421	698	1,125	1,862	2,789	3,230
10"	21	162	366	686	1,135	1,826	3,044	4,471	5,327
12"	28	240	542	1,026	1,687	2,739	4,563	6,832	8,117
14"	39	286	689	1,308	2,081	3,187	5,460	8,804	10,878
16"	53	429	995	1,887	2,954	4,659	7,907	11,854	14,062
18"	69	557	1,292	2,436	3,786	6,005	10,440	14,457	17,884
20"	86	689	1,622	2,916	4,738	7,223	12,537	18,573	22,484
24"	241	1,016	2,368	4,095	6,783	10,574	17,132	25,462	31,320

### Approximate Operating Torque (In·lbs)

SIZE	Δ P= 50 PSI		Δ P= 100 PSI		Δ P= 150 PSI	
	WET	DRY & PTFE	WET	DRY & PTFE	WET	DRY & PTFE
1-1/2"	91	145	96	153	103	163
2"	109	174	115	184	123	196
2-1/2"	115	218	122	231	136	258
3"	175	332	186	353	192	364
4"	276	505	309	565	328	600
5"	433	753	476	828	512	890
6"	672	1,182	748	1,316	831	1,462
8"	1,214	2,088	1,360	2,339	1,527	2,626
10"	1,902	3,233	2,200	3,740	2,530	4,310
12"	2,781	4,533	3,284	5,353	3,794	6,184
14"	3,548	5,322	4,125	6,187	4,870	7,305
16"	4,415	6,622	5,590	8,385	6,685	10,027
18"	5,780	8,670	7,354	11,031	8,958	13,437
20"	7,410	11,115	9,670	14,505	11,950	17,925
24"	11,580	17,370	14,860	22,290	18,680	28,020

### UNDERCUT DISC OPERATING TORQUE (In·lbs)

Size	50 PSID		75 PSID	
	WET	DRY & PTFE	WET	DRY & PTFE
6"	403	709	426	749
8"	728	1,253	772	1,328
10"	1,141	1,940	1,231	2,092
12"	1,669	2,720	1,820	2,966

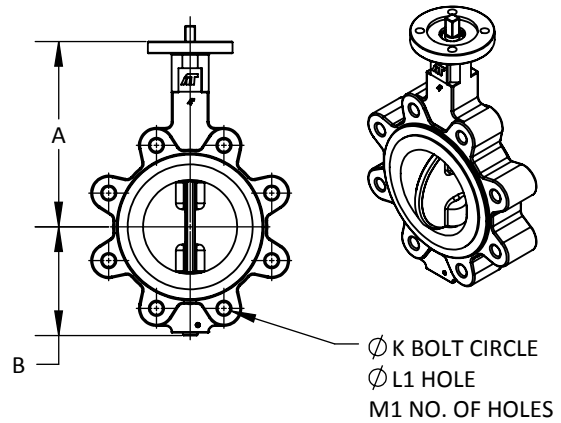
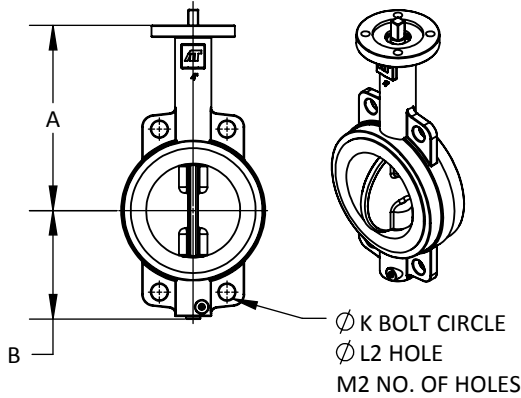
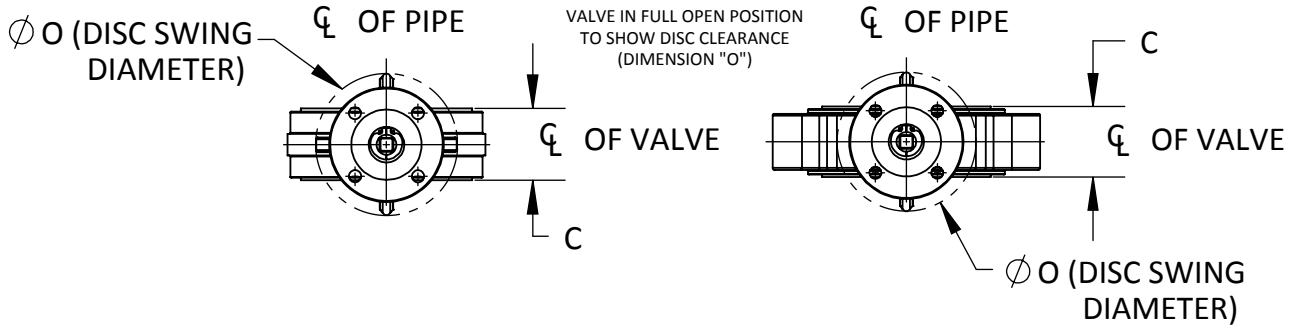
PTFE Seats: Use Dry Operating Torque Only.

### Seat Temperature Ratings

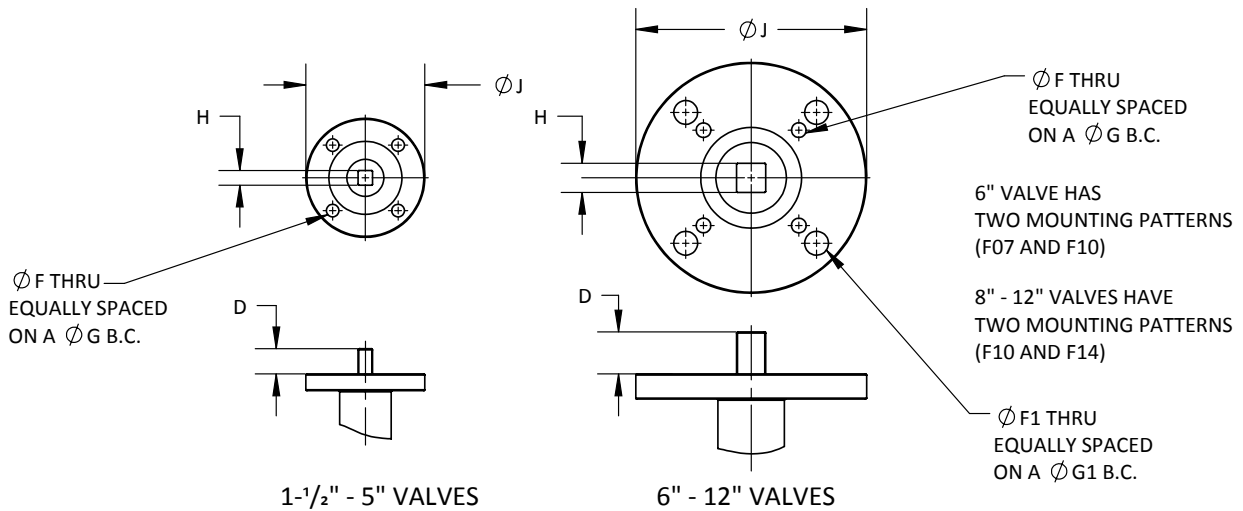
Material	Temperature Ratings °F
Buna-N	0° to 200°
EPDM	-20° to 250°
Food Grade EPDM	-20° to 250°
High Temp EPDM	-20° to 275°
PTFE over EPDM	0° to 275°
Viton®	-10° to 325°

### Wafer Style Body

### Lug Style Body



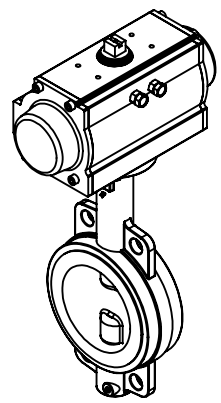
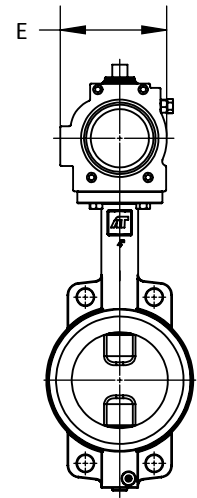
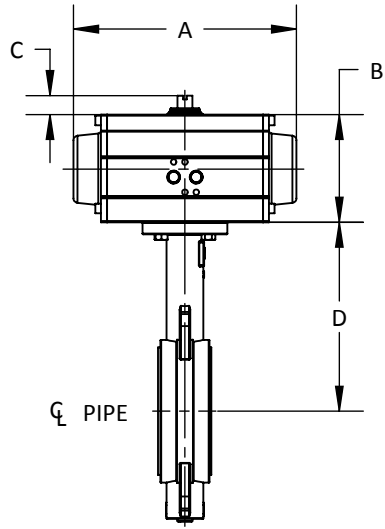
### Mounting Pad Details



SIZE	A	B	C	D	F	F1	G	G1	H	J	K	L1	L2	M1	M2	WAFER	LUG	O	ISO5211
1-1/2"	5.35	2.72	1.26	0.67	0.38	N/A	2.756	N/A	0.354	3.54	3.88	1/2-13 UNC	0.63	4	4	5 LBS	8 LBS	1.68	F07
2"	6.38	3.13	1.75	0.73	0.38	N/A	2.756	N/A	0.354	3.54	4.75	5/8-11 UNC	0.75	4	4	6 LBS	9 LBS	2.00	F07
2-1/2"	6.88	3.50	1.94	0.73	0.38	N/A	2.756	N/A	0.354	3.54	5.50	5/8-11 UNC	0.75	4	4	7 LBS	13 LBS	2.50	F07
3"	7.13	3.75	1.94	0.73	0.38	N/A	2.756	N/A	0.354	3.54	6.00	5/8-11 UNC	0.75	4	4	10 LBS	14 LBS	3.10	F07
4"	7.88	4.64	2.13	0.77	0.38	N/A	2.756	N/A	0.433	3.54	7.50	5/8-11 UNC	0.75	8	4	13 LBS	19 LBS	4.10	F07
5"	8.38	5.00	2.34	0.85	0.38	N/A	2.756	N/A	0.551	3.54	8.50	3/4-10 UNC	0.88	8	4	18 LBS	22 LBS	4.85	F07
6"	8.88	5.50	2.25	0.85	0.38	0.44	2.756	4.016	0.551	4.92	9.50	3/4-10 UNC	0.88	8	4	21 LBS	31 LBS	6.12	F07/F10
8"	10.25	6.88	2.50	0.83	0.44	0.71	4.016	5.512	0.669	6.88	11.75	3/4-10 UNC	0.88	8	4	34 LBS	49 LBS	7.96	F10/F14
10"	11.50	8.00	2.85	1.02	0.44	0.71	4.016	5.512	0.748	6.88	14.25	7/8-9 UNC	1.00	12	4	45 LBS	72 LBS	9.86	F10/F14
12"	13.25	9.50	3.22	1.32	0.44	0.71	4.016	5.512	0.866	6.88	17.00	7/8-9 UNC	1.00	12	4	74 LBS	105 LBS	11.88	F10/F14

DIMENSION "C" REPRESENTS VALVE SEAT IN RELAXED CONDITION. APPROXIMATELY 1/8" OF TOTAL COMPRESSION IS REQUIRED FOR PROPER SEALING WITH PIPE FLANGES.

A-T Controls reserves the right to change product designs and technical/dimensional specifications without notice. See website for updates.



OC/OS Series Double Acting Dimensions

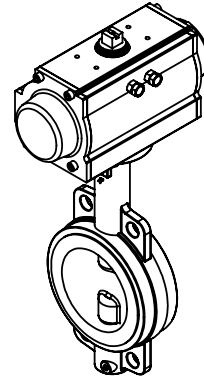
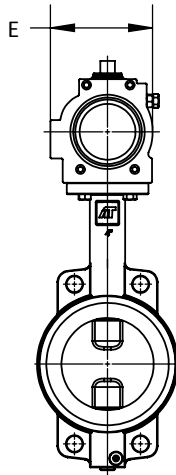
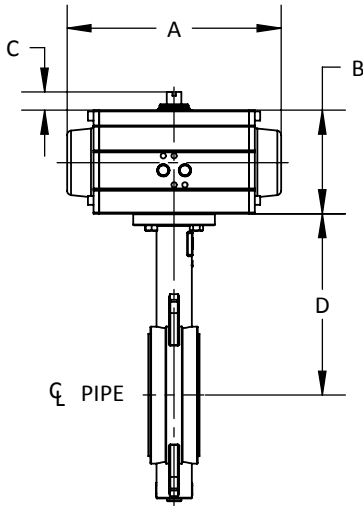
SELECT "WET" OR "DRY" MEDIUM APPLICATION AND THE CORRESPONDING PRESSURE DROP VALUE. THEN SELECT THE VALVE SIZE AND REFERENCE THE CORRECT ACTUATOR DIMENSION SET BELOW. *PTFE Seats: Use Dry Actuator Sizing Only.*

VALVE SIZE	WET			DRY & PTFE		
	PRESSURE DROP					
	50	100	150	50	100	150
ACTUATOR DIMENSION SET						
	#	#	#	#	#	#
1-1/2"	#	#	#	#	#	#
2"	1	1	1	1	1	1
2-1/2"	2	2	2	2	2	2
3"	3	3	3	14	14	14
4"	4	5	5	5	5	5
5"	6	6	6	15	15	15
6"	7	7	7	16	16	17
8"	8	9	9	9	18	18
10"	10	11	11	19	19	19
12"	12	12	13	13	13	13

DIMENSION SET	A	B	C	D	E	ACTUATOR
#	7.95	3.43	0.79	5.35	3.29	2R40DA
1	7.95	3.43	0.79	6.34	3.29	2R40DA
2	7.95	3.43	0.79	6.89	3.29	2R40DA
3	7.95	3.43	0.79	7.13	3.29	2R40DA
4	7.95	3.43	0.79	7.87	3.29	2R40DA
5	9.29	4.49	0.79	7.87	4.41	2R80DA
6	9.29	4.49	0.79	8.39	4.41	2R80DA
7	10.87	4.88	0.79	8.90	4.69	2R130DA
8	11.46	5.28	0.79	10.24	5.06	2R200DA
9	13.90	6.18	0.79	10.24	5.91	2R300DA
10	13.90	6.18	0.79	11.50	5.91	2R300DA
11	15.16	6.93	1.18	11.50	6.50	2R500DA
12	15.16	6.93	1.18	13.27	6.50	2R500DA
13	20.95	8.31	1.18	13.27	6.89	2R850DA
14	9.29	4.49	0.79	7.13	4.41	2R80DA
15	10.87	4.88	0.79	8.39	4.69	2R130DA
16	11.46	5.28	0.79	8.90	5.06	2R200DA
17	13.90	6.18	0.79	8.90	5.91	2R300DA
18	15.16	6.93	1.18	10.24	6.50	2R500DA
19	20.95	8.31	1.18	11.50	6.89	2R850DA

Pneumatic Double Acting actuators above are sized with 80 PSIG supply.

CONSULT FACTORY FOR ACTUATOR SIZING ON VALVES LARGER THAN 12"



SELECT "WET" OR "DRY" MEDIUM APPLICATION AND THE CORRESPONDING PRESSURE DROP VALUE. THEN SELECT THE VALVE SIZE AND REFERENCE THE CORRECT ACTUATOR DIMENSION SET BELOW. *PTFE Seats: Use Dry Actuator Sizing Only.*

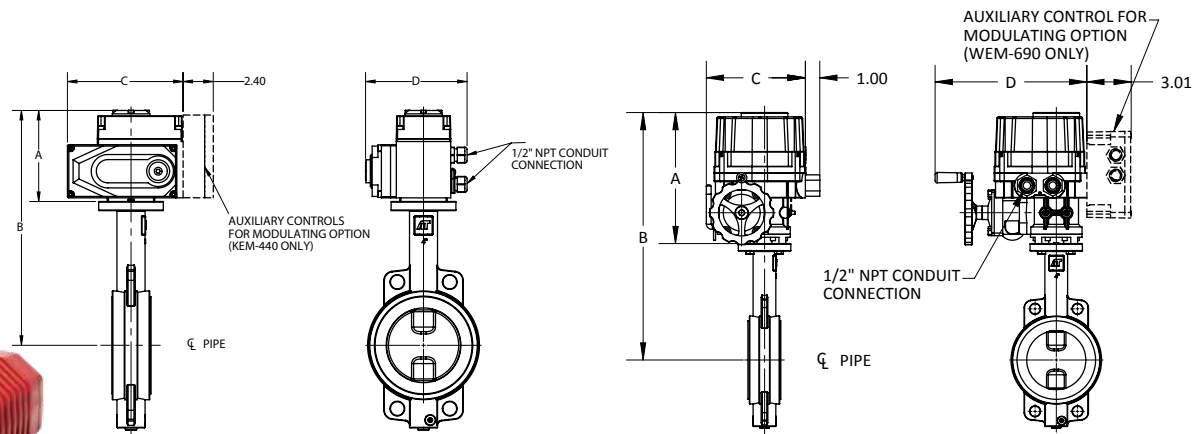
VALVE SIZE	WET			DRY & PTFE		
	PRESSURE DROP					
	50	100	150	50	100	150
	ACTUATOR DIMENSION SET					
1-1/2"	#	#	#	#	#	#
2"	1	1	1	1	1	1
2-1/2"	2	2	2	2	2	13
3"	3	3	3	14	15	15
4"	4	4	4	16	16	16
5"	5	5	5	5	5	5
6"	6	6	6	17	17	18
8"	7	7	8	19	19	19
10"	9	10	10	20	CF	CF
12"	11	12	12	CF	CF	CF

DIMENSION SET	A	B	C	D	E	ACTUATOR
#	9.29	4.49	0.79	5.35	4.41	2R80SR
1	9.29	4.49	0.79	6.34	4.41	2R80SR
2	9.29	4.49	0.79	6.89	4.41	2R80SR
3	9.29	4.49	0.79	7.13	4.41	2R80SR
4	11.46	5.28	0.79	7.87	5.06	2R200SR
5	13.90	6.18	0.79	8.39	5.91	2R300SR
6	13.90	6.18	0.79	8.90	5.91	2R300SR
7	15.16	6.93	1.18	10.24	6.50	2R500SR
8	20.95	8.31	1.18	10.24	6.89	2R850SR
9	20.95	8.31	1.18	11.50	6.89	2R850SR
10	22.68	9.17	1.18	11.50	7.60	2R1200SR
11	22.68	9.17	1.18	13.27	7.60	2R1200SR
12	24.37	10.12	1.18	13.27	8.31	2R1750SR
13	10.87	4.88	0.79	6.89	4.69	2R130SR
14	10.87	4.88	0.79	7.13	4.69	2R130SR
15	11.46	5.28	0.79	7.13	5.06	2R200SR
16	13.90	6.18	0.79	7.87	5.91	2R300SR
17	15.16	6.93	1.18	8.90	6.50	2R500SR
18	20.95	8.31	1.18	8.90	6.89	2R850SR
19	22.68	9.17	1.18	10.24	7.60	2R1200SR
20	24.37	10.12	1.18	11.50	8.31	2R1750SR

Pneumatic Spring Return actuators above are sized with 5 springs per side, fail close.

CONSULT FACTORY FOR ACTUATOR SIZING ON VALVES LARGER THAN 12"

OC/OS Series Spring Return Dimensions



SELECT "WET" OR "DRY" MEDIUM APPLICATION AND THE CORRESPONDING PRESSURE DROP VALUE. THEN SELECT THE VALVE SIZE AND REFERENCE THE CORRECT ACTUATOR DIMENSION SET BELOW. *PTFE Seats: Use Dry Actuator Sizing Only.*

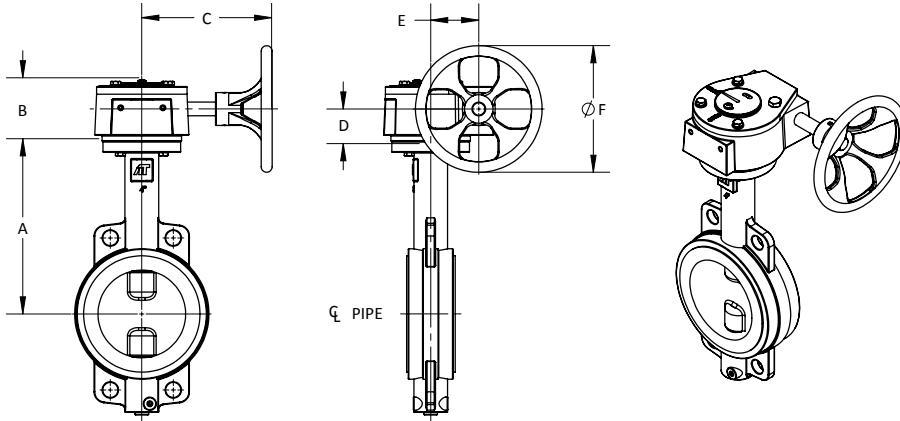
VALVE SIZE	WET			DRY & PTFE		
	PRESSURE DROP					
	50	100	150	50	100	150
ACTUATOR DIMENSION SET						
	#	#	#	#	#	#
1-1/2"	#	#	#	#	#	#
2"	1	1	1	1	1	1
2-1/2"	2	2	2	2	2	2
3"	3	3	3	3	3	3
4"	4	4	4	12	12	12
5"	6	6	6	13	13	13
6"	7	7	7	7	7	14
8"	8	9	9	15	15	15
10"	10	10	10	16	16	16
12"	11	11	11	18	18	18

DIMENSION SET	A	B	C	D	ACTUATOR
#	5.14	10.49	6.46	5.47	KE-440*
1	5.14	11.47	6.46	5.47	KE-440*
2	5.14	12.02	6.46	5.47	KE-440*
3	5.14	12.26	6.46	5.47	KE-440*
4	5.31	13.18	7.37	6.30	KE-880*
6	8.66	17.04	6.69	10.16	WE-690
7	10.24	19.13	9.02	13.31	WE-1350
8	10.24	20.47	9.02	13.31	WE-1350
9	10.24	20.47	9.02	13.31	WE-1700
10	11.42	22.91	10.20	14.49	WE-2640
11	11.42	24.68	10.20	14.49	WE-4400
12	8.66	16.53	6.69	10.16	WE-690
13	10.24	18.62	9.02	13.31	WE-1350
14	10.24	19.13	9.02	13.31	WE-1700
15	11.42	21.65	10.20	14.49	WE-2640
16	11.42	22.91	10.20	14.49	WE-4400
17	11.42	24.68	10.20	14.49	WE-5200
18	12.40	25.66	11.69	16.14	WE-6900

CONSULT FACTORY FOR ACTUATOR SIZING ON VALVES LARGER THAN 12"  
 \*KE Series actuator recommended; WE-500 may be substituted



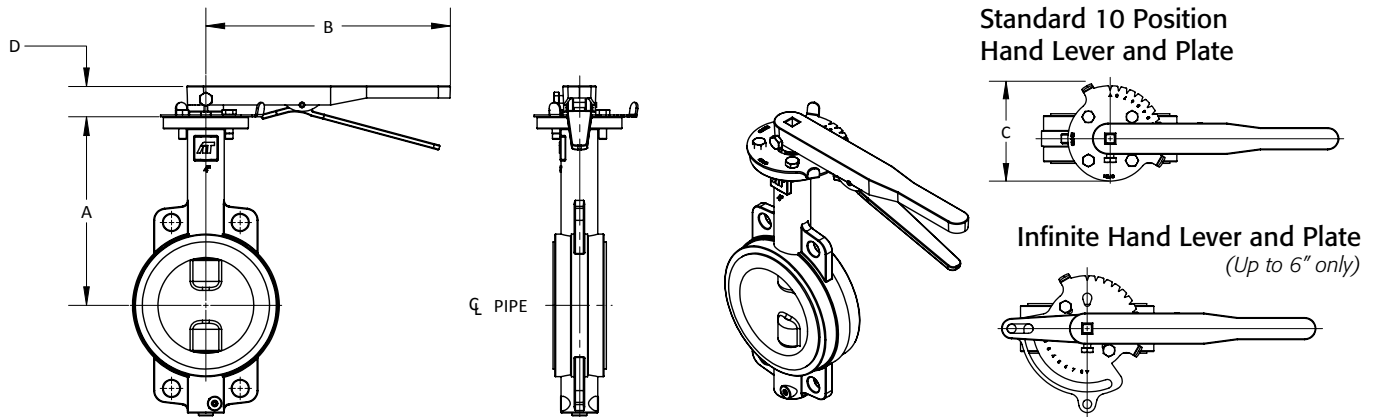
## Gear Operator



SIZE	A	B	C	D	E	F
1-1/2"	5.35	2.79	6.00	1.48	1.77	5.87
2"	6.38	2.79	6.00	1.48	1.77	5.87
2-1/2"	6.88	2.79	6.00	1.48	1.77	5.87
3"	7.13	2.79	6.00	1.48	1.77	5.87
4"	7.88	2.79	6.00	1.48	1.77	5.87
5"	8.38	2.79	6.00	1.48	1.77	5.87
6"	8.88	2.79	6.00	1.48	1.77	5.87
8"	10.25	3.30	8.75	1.57	2.60	11.62
10"	11.50	3.30	8.75	1.57	2.60	11.62
12"	13.25	3.30	8.75	1.57	3.01	11.62

CONSULT FACTORY FOR GEAR ACTUATOR SIZING ON VALVES LARGER THAN 12"

## Hand Lever



SIZE	A	B - Ductile Iron	B - Stainless Steel	C	D
1-1/2"	5.35	10.51	10.24	4.45	1.18
2"	6.38	10.51	10.24	4.45	1.18
2-1/2"	6.88	10.51	10.24	4.45	1.18
3"	7.13	10.51	10.24	4.45	1.18
4"	7.88	10.51	10.24	4.45	1.18
5"	8.38	10.51	10.24	4.45	1.18
6"	8.88	10.51	14.65	4.45	1.18
8"	10.25	14.13	22.08	6.63	1.32
10"	11.50	14.13	22.08	6.63	1.32
12"	13.25	20.75	22.08	6.63	1.44





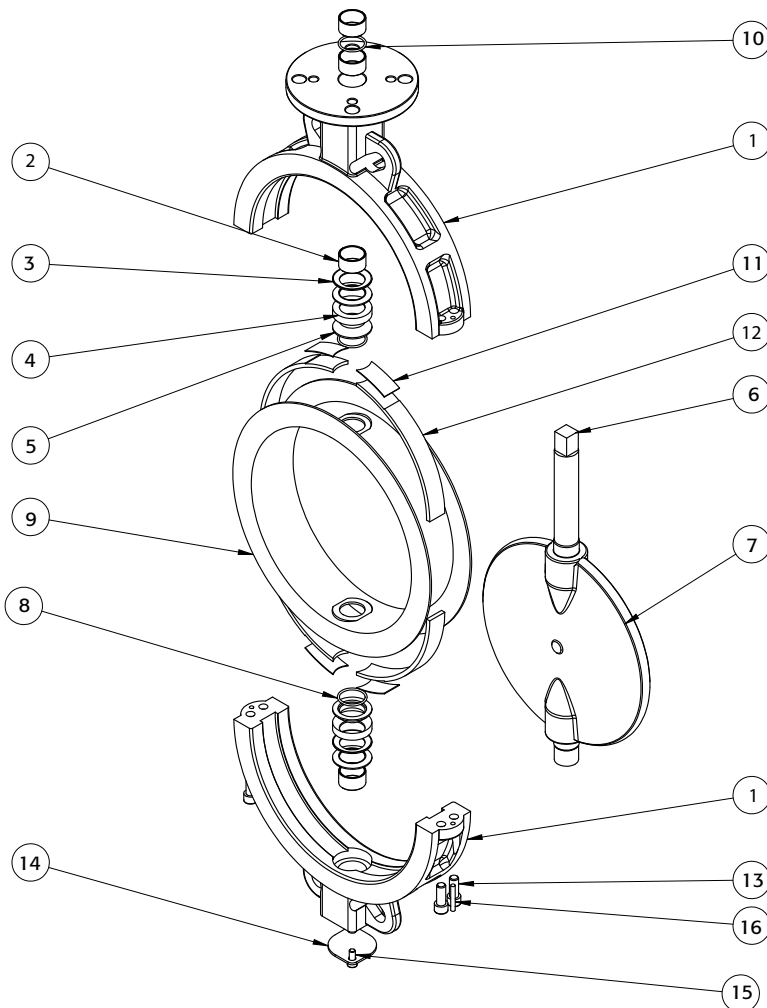
**AS Series butterfly valves** are PFA lined (encapsulated) for superior corrosion resistance against severe chemicals and corrosive services.

- Bi-directional, bubble tight shut-off
- Rated to 150 psi
- Live Loaded packing
- Blow out proof stem
- 2-piece wafer or lug bodies are epoxy coated
- Resilient back up liner
- Multiple safety seals
- Operating Temp: -20°F to 355°F
- Sizes 2" - 24"

**STANDARDS**

Design	API 609
Pressure Testing	API 598
End Connections	ANSI/ASME B16.5
Face to Face Dimensions	ANSI/ASME B16.10
Mounting Dimensions	ISO 5211
Material Certification	EN 10204-3.1 MTR
Quality Assurance	ISO 9001:2015

AS Series Bill of Materials



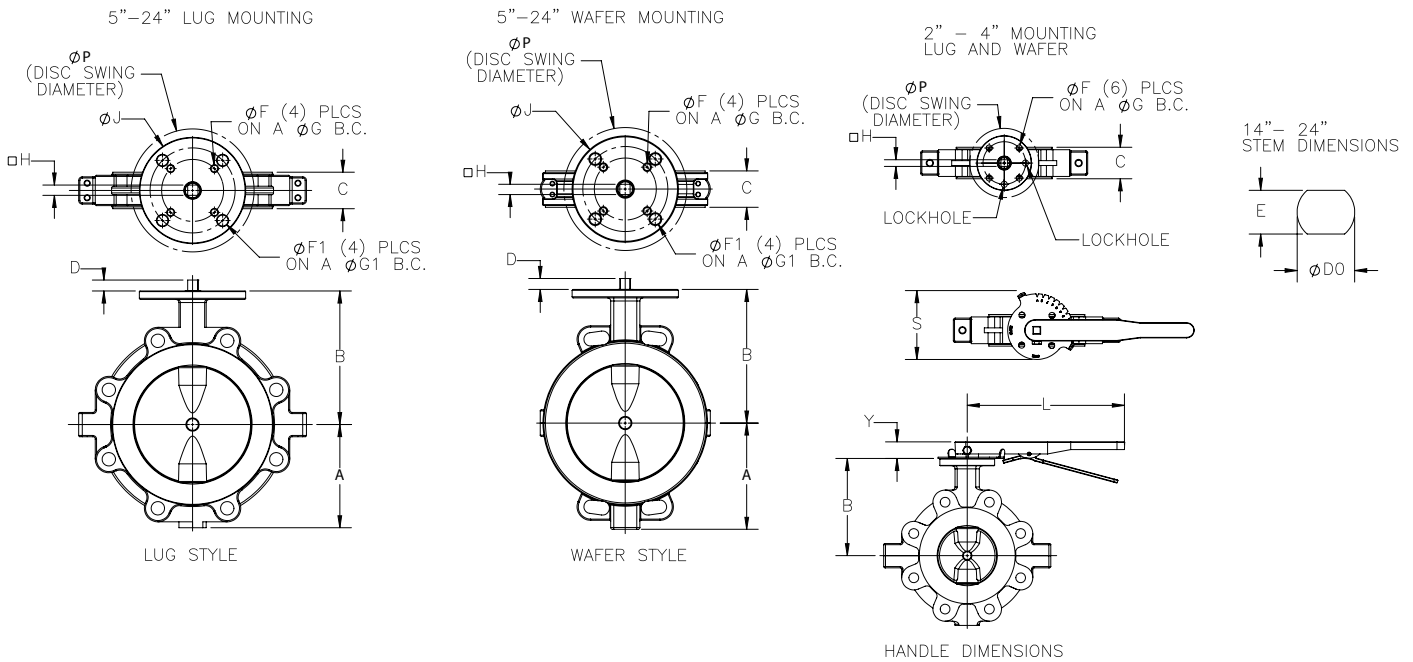
ITEM NO.	PART NUMBER	QTY.	MATERIAL
1	BODY	1	ASTM A216 GRADE WCB ASTM A351 GRADE CF8M
2	BUSHING	4	PTFE/CS BUSHING
3	BELLEVILLE WASHER	4	AISI 304
4	V-SEAL GLAND	2	AISI 304
5	V-SEAL RING	2	PTFE
6	STEM	1	17-4® PH
7	DISC	1	PFA/ASTM A351 GRADE CF8
8	LOWER O-RING	2	VITON® (non-wetted part)
9	SEAT	1	PTFE
10	UPPER O-RING	1	VITON® (non-wetted part)
11	PAD ENERGIZER	4	COMPOSITE
12	RESILIENT PAD	4	SILICONE RUBBER
13	BODY BOLT	*	ISO 3506-1 A2-70
14	COVER**	1	ASTM A1020 CARBON STEEL
15	COVER BOLT**	2	ISO 3506-1 A2-70
16	PIN***	2	CARBON STEEL

\*QTY 2 FOR 2" - 5" VALVES; QTY 4 FOR 6" - 12" VALVES  
 \*\*ONLY PRESENT ON 10" AND 12" VALVES, AND 8" LUG VALVE  
 \*\*\*ONLY PRESENT ON 12" WAFER VALVE



SIZE	OPERATING TORQUE In-lbs (150 PSIG Air)	C <sub>v</sub> (Fully Open)
2"	166	210
2½"	228	210
3"	332	410
4"	531	710
5"	597	1,150
6"	863	1,750
8"	1,195	3,550
10"	2,655	5,100
12"	4,049	8,870
14"	7,523	9,200
16"	10,356	14,500
18"	13,808	20,100
20"	16,109	22,000
24"	26,465	31,000

Torques include 15% safety.



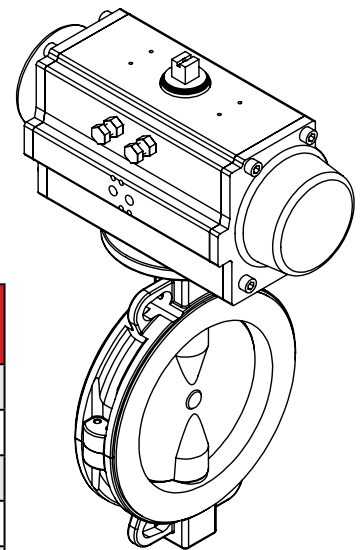
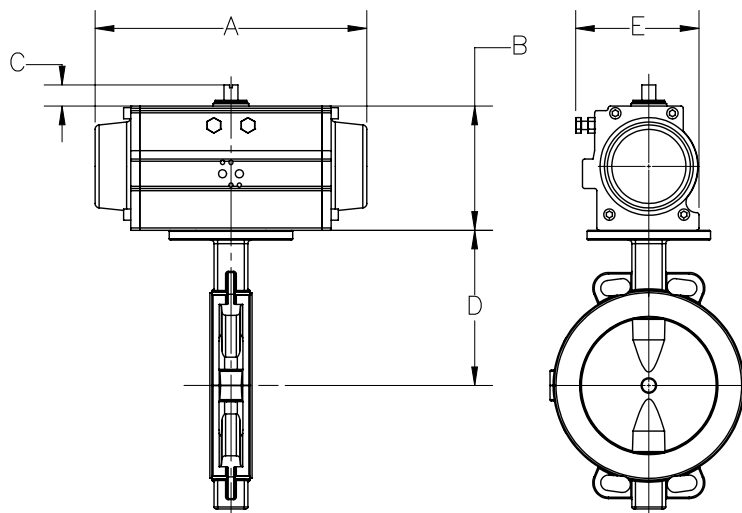
SIZE	A	B	C	D	ØD0	E	ØF	ØF1	ØG	ØG1	□H	ØJ	L	ØP	S	Y	END CONNECTIONS	ISO 5211	Lug (lbs)	Wafer (lbs)
2"	2.76*	4.53	1.75	0.67	N/A	N/A	0.38	N/A	2.756	N/A	0.433	3.54	10.51	2.45	4.45	1.18	ANSI B16.5 CLASS 150	F07	13.89	4.85
2½"	2.95*	4.53	1.75	0.67	N/A	N/A	0.38	N/A	2.756	N/A	0.433	3.54	10.51	2.45	4.45	1.18	ANSI B16.5 CLASS 150	F07	15.43	4.85
3"	3.15**	5.22**	1.81	0.67	N/A	N/A	0.38	N/A	2.756	N/A	0.433	3.54	10.51	3.23	4.45	1.18	ANSI B16.5 CLASS 150	F07	18.74	9.26
4"	4.53	6.30	2.10	0.67	N/A	N/A	0.38	N/A	2.756	N/A	0.433	3.54	10.51	4.06	4.45	1.18	ANSI B16.5 CLASS 150	F07	28.66	14.10
5"	5.12	6.89	2.23	0.71	N/A	N/A	0.38	N/A	2.756	N/A	0.551	3.54	CF	5.01	CF	CF	ANSI B16.5 CLASS 150	F07	37.48	17.42
6"	5.71	7.56	2.25	0.71	N/A	N/A	0.38	0.44	2.756	4.016	0.551	4.92	CF	6.03	CF	CF	ANSI B16.5 CLASS 150	F07/F10	50.04	22.93
8"	6.89	8.66	2.50	0.71	N/A	N/A	0.44	0.71	4.016	5.512	0.669	6.88	CF	7.94	CF	CF	ANSI B16.5 CLASS 150	F10/F14	67.24	37.48
10"	8.46	10.83	2.75	1.02	N/A	N/A	0.44	0.71	4.016	5.512	0.748	6.88	CF	9.83	CF	CF	ANSI B16.5 CLASS 150	F10/F14	113.54	55.12
12"	9.84	12.20	3.13	1.18	N/A	N/A	0.44	0.71	4.016	5.512	0.866	6.88	CF	11.95	CF	CF	ANSI B16.5 CLASS 150	F10/F14	140.21	76.06
14"	11.22	14.17	3.07	1.77	1.244	0.945	0.71	N/A	5.512	N/A	N/A	6.88	N/A	13.78	N/A	N/A	ANSI B16.5 CLASS 150	F14	CF	CF
16"	12.60	15.55	4.02	2.02	1.305	1.063	0.71	N/A	5.512	N/A	N/A	6.88	N/A	15.59	N/A	N/A	ANSI B16.5 CLASS 150	F14	CF	CF
18"	14.17	17.13	4.49	2.02	1.494	1.063	0.71	N/A	5.512	N/A	N/A	6.88	N/A	17.64	N/A	N/A	ANSI B16.5 CLASS 150	F14	CF	CF
20"	15.16	17.91	5.00	2.53	1.619	1.260	0.71	N/A	5.512	N/A	N/A	6.88	N/A	19.25	N/A	N/A	ANSI B16.5 CLASS 150	F14	CF	CF
24"	17.52	20.67	6.06	2.76	1.993	1.417	0.87	N/A	6.496	N/A	N/A	8.27	N/A	23.23	N/A	N/A	ANSI B16.5 CLASS 150	F16	CF	CF

\* Dimension A is 2.36 for Wafer Valves, size 2" and 2½"

\*\* For 3" Wafer valves, dimension A is 3.39 and dimension B is 5.91

A-T Controls reserves the right to change product designs and technical/dimensional specifications without notice. See website for updates.

AS Series Dimensions / Torques



### DIMENSIONS - AS Series Double Acting Package

SIZE	A	B	C	D	E	Actuator Size
2"	7.95	3.43	0.79	4.53	3.21	2R40
2½"	7.95	3.43	0.79	4.53	3.21	2R40
3"	9.29	4.49	0.79	5.22*	4.17	2R80
4"	9.29	4.49	0.79	6.30	4.17	2R80
5"	9.29	4.49	0.79	6.89	4.17	2R80
6"	10.87	4.88	0.79	7.56	4.83	2R130
8"	11.46	5.28	0.79	8.66	5.19	2R200
10"	15.16	6.93	1.18	10.83	6.69	2R500
12"	20.95	8.31	1.18	12.20	7.64	2R850

ACTUATOR SIZED FOR 80 PSI

\* Dimension *D* is 5.91 for Wafer Valves, size 3"

### DIMENSIONS - AS Series Spring Return Package

SIZE	A	B	C	D	E	Actuator Size
2"	9.29	4.49	0.79	4.53	4.17	2R80
2½"	10.87	4.88	0.79	4.53	4.83	2R130
3"	11.46	5.28	0.79	5.22*	5.19	2R200
4"	13.90	6.18	0.79	6.30	6.05	2R300
5"	13.90	6.18	0.79	6.89	6.05	2R300
6"	15.16	6.93	1.18	7.56	6.69	2R500
8"	15.16	6.93	1.18	8.66	6.69	2R500
10"	24.37	10.12	1.18	10.83	9.29	2R1750
12"	27.38	10.12	1.18	12.20	9.38	2R2500

ACTUATOR SIZED FOR 80 PSI. STANDARD 5 SPRINGS PER SIDE, FAIL CLOSE.

\* Dimension *D* is 5.91 for Wafer Valves, size 3"

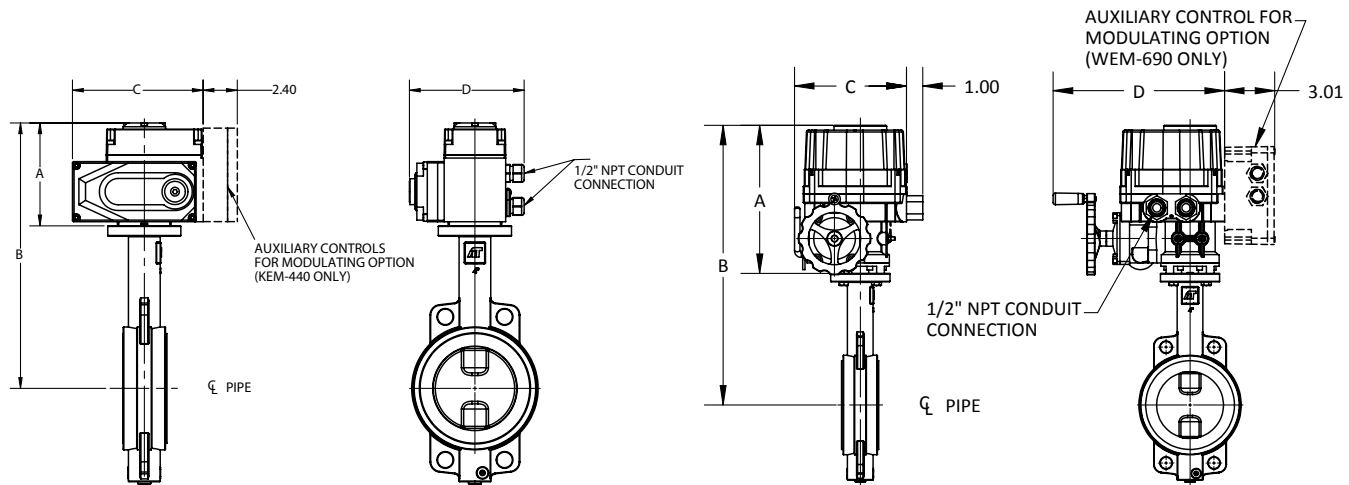
Consult factory for sizing automated packages with valves 14" and larger.

## DIMENSIONS - AS Series Electric Automated Package

SIZE	A	B	C	D	On-Off Actuator	Modulating Actuator
2"	5.14	9.67	6.46	5.47	KE-440*	KEM-440*
2½"	5.14	9.67	6.46	5.47	KE-440*	KEM-440*
3"	5.14	10.36**	6.46	5.47	KE-440*	KEM-440*
4"	8.66	14.96	6.69	10.16	WE-690	WEM-690
5"	8.66	15.55	6.69	10.16	WE-690	WEM-690
6"	10.24	17.80	9.02	13.31	WE-1350	WEM-1350
8"	10.24	18.90	9.02	13.31	WE-1350	WEM-1700
10"	11.42	21.85	10.20	14.49	WE-4400	WEM-4400
12"	11.42	23.62	10.20	14.49	WE-4400	WEM-5200

\*\* Dimension B is 11.05 for Wafer Valves, size 3"

\* MAY BE SUBSTITUTED WITH WE-500  
DIMENSIONS BASED UPON ON/OFF APPLICATIONS



## Triac KE Series Actuators

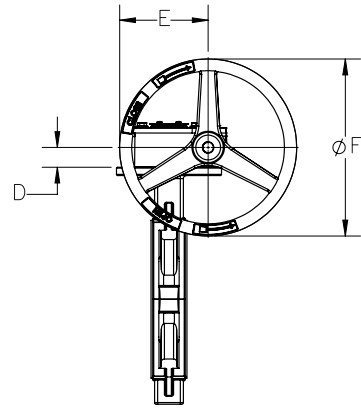
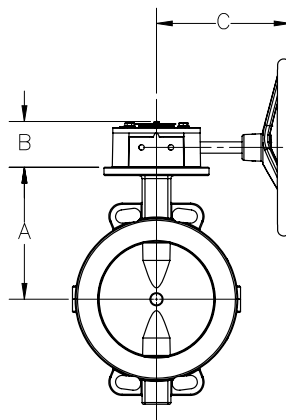
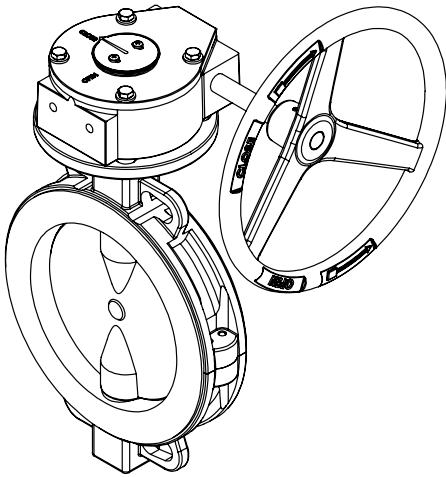
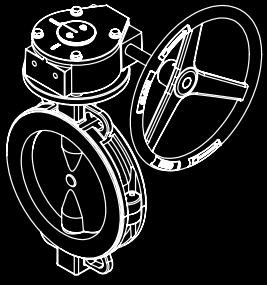
The Triac KE Series electric actuators are the perfect match for resilient or high-performance butterfly valves and dampers because of the self-locking worm drive. The KE Series actuators are used to control rotary valves, such as butterfly valves, ball valves, plug valves, etc. Widely used in applications such as petroleum, chemical, water treatment, ship, paper, power stations, heating supply, building automation, light industry etc.

### Standard Features

- Convex lens visual position indicator makes it easier to observe without water collecting on the surface of the indicator
- Anti-condensation heater and thermostat
- Two auxiliary limit switches
- Self-locking gear train
- Manual override with wrench
- Available motor voltages: 12VDC, 24VDC, 120VAC & 220VAC
- Optional 4-20mA & 0-10 VDC proportional control



*Unique low profile actuator,  
ideal for tight spaces*



**DIMENSIONS - Gear Operator with AS Series valve**

SIZE	A	B	C	D	E	F
2"	4.53	2.79	6.00	1.48	1.77	5.87
2½"	4.53	2.79	6.00	1.48	1.77	5.87
3"	5.22*	2.79	6.00	1.48	1.77	5.87
4"	6.30	2.79	6.00	1.48	1.77	5.87
5"	6.89	2.79	6.00	1.48	1.77	5.87
6"	7.56	2.79	6.00	1.48	1.77	5.87
8"	8.66	3.30	8.75	1.57	2.60	11.62
10"	10.83	3.30	8.75	1.57	2.60	11.62
12"	12.20	3.30	8.75	1.57	3.01	11.62

\* Dimension A is 5.91 for Wafer Valves, size 3"  
 CONSULT FACTORY FOR GEAR ACTUATOR SIZING ON VALVES LARGER THAN 12"

## Part Number Matrix for A-T Controls Resilient Seated Butterfly Valves

1 Valve Series	
OC	A-T BFV with DD Stem (14-24") or Keyed Stem (30-48")
OS	A-T BFV with Square Stem (up to 12") (Standard)

2 Body Material	
blank	(No Designation)= Stainless Steel (SST) Body
B	Ductile Iron (Standard)

3 End Connection	
L1	125/150# Lug
W1	125/150# Wafer with Guide Holes
W2	125/150# Wafer (no Guide Holes)

4 Valve Size					
0150	1-1/2"	1400	14"	3000	30"
0200	2"	1600	16"	3200	32"
0250	2-1/2"	1800	18"	3600	36"
0300	3"	2000	20"	4000	40"
0400	4"	2400	24"	4200	42"
0500	5"			4800	48"
0600	6"				
0800	8"				
1000	10"				
1200	12"				

5 Seat Material/Style			
B	Buna	P	PTFE
E	EPDM	V	Viton®
H	High Temp EPDM		
F	Food Grade (FDA compliant) EPDM		(up to 12" only)

6 Disc Material/Style	
B	Aluminum Bronze
D	Ductile Iron (Nickel Plated)
N	Nylon Coated Ductile Iron
S	316 SST
U	Undercut Aluminum Bronze (6" and larger only)
W	Polished 316 SST
Y	Undercut Polished 316 SST (6" and larger only)
Z	Undercut 316 SST (6" and larger only)

7 Stem Bushing	
R	PTFE (Standard)
B	Lubricated Bronze

8 Operator Designation	
X	Bare Stem
H	Standard 10 point Handle
S	Stainless Steel 10 point Handle
I	Infinite Adjustment Handle (up to 6" only)
G	Gear Operator

9 Stem	
E	420 SST Upper and Lower Stem (Standard with DI body)
F	431 SST Upper Stem, 316 SST Lower Stem (Standard with PTFE seat or SST body)
A	17-4 PH® Upper stem, 316 SST Lower Stem

PTFE seat: F or A stem options only

HOW TO ORDER MANUAL RESILIENT SEATED BUTTERFLY VALVES								
1	2	-	3	-	4	-	5	6 7 - 8 9
↓	↓		↓		↓		↓	↓
OSB	-	W1	-	0200	-	EDR	-	X E

HOW TO ORDER AUTOMATED RESILIENT SEATED BUTTERFLY VALVES										
1	2	-	3	-	4	-	5	6 7 - 8 9 / actuator size - options		
↓	↓		↓		↓		↓	↓	↓	↓
OSB	-	W1	-	0200	-	EDR	-	X E /	2R3S	- XX
(see Actuator Size Legend)										

## AS Series Lined Resilient Seated Butterfly Valves

1 Valve Series	
AS	A-T Split Body Lined Butterfly Valve
2 Body Material	
blank	(No Designation) Stainless Steel (SST) Body
C	Carbon Steel (ASTM A216 Grade WCB)
3 End Connection	
L1	125/150# Lug
W1	125/150# Wafer
4 Valve Size	
0150	1-1/2" 1400 14"
0200	2" 1600 16"
0250	2-1/2" 1800 18"
0300	3" 2000 20"
0400	4" 2400 24"
0500	5"
0600	6"
0800	8"
1000	10"
1200	12"
5 Seat Material/Style	
P	PTFE
6 Disc Material/Style	
F	PFA Encapsulated over 304 SST (standard with WCB body)
M	PFA Encapsulated over 316 SST (standard with SST body)
7 Stem Bushing	
R	PTFE
8 Operator Designation	
X	Bare Stem
H	Standard 10 point Handle
S	Stainless Steel 10 point Handle
G	Gear Operator
9 Stem	
A	17-4 PH® Stem

### EXAMPLE:

ASC-L1-0600-PFR-XA

6" A-T Controls Split Body Lined Butterfly Valve, ASTM A216 Grade WCB Body, 150# Lug Style, PTFE Seat, PFA Encapsulated over 304 SST Disc, PTFE Stem Bushing, 17-4 PH Stem.

## Series NS

NSF 61 & 372 rated, Dead-End Service  
Manual and Automated Butterfly Valves  
Lug or Wafer body, ANSI 125/150 flanges

- Bi-directional, bubble tight shutoff for full pressure differential
- Vulcanized Molded rubber seat design
- ASTM A395 DI & A351 CF8M body materials
- Multiple seat and disc materials available
- Square stems and ISO 5211 mounting pad for direct mounting

### STANDARDS

DESIGN	API 609, ASME B16.34, ASME B16.42, MSS SP-67
FACE TO FACE	API 609
END CONNECTION	ASME B16.5 (Class 150), PN 10/16 (Wafer only)
PRESSURE TESTING	API 598
MOUNTING	ISO 5211
MARKINGS	API 609, ASME B16.34, MSS SP-25
MATERIAL CERTIFICATION	EN 10204-3.1 MTR
QUALITY ASSURANCE	ISO 9001:2015

### CERTIFICATIONS

DRINKING WATER SYSTEM COMPONENTS	NSF/ANSI 61 & 372 Health Effects & Lead Content
CANADA REGISTRATION	CRN OC20682.5
ABS APPROVAL	(Pending)



### Page Reference: NS Series Resilient Butterfly Valves

Page 16.....Product Details and Standards

Page 17.....Bill of Materials 2"-14" and 16"-24"

Page 18.....Cv Values, Operating Torques and Pressure & Temperature Ratings

Page 19.....Dimensions 2"-24"

Page 20.....Automated Pneumatic NS Series Sizing

Page 21.....Automated Electric NS Series Sizing

Page 22.....Handles and Gear Operator Sizing

Page 23.....How To Order: NS Series Part Number Matrix



## Bill of Materials (2"-14")

ITEM	DESCRIPTION	MATERIAL	QTY.
1	Body	ASTM A395 / A351 CF8M	1
2	Seat	EPDM (NSF) / Buna-N / FKM	1
3	Disc	A351 CF8M (NSF) / Nylon Coated DI (NSF) / Aluminum Bronze	1
4	Upper Stem*	17-4 PH®	1
5	Lower Stem*	17-4 PH®	1
6	Flange Bushing	Brass	2
7	Bushing	Brass	3**
8	O-Ring	Buna-N	1
9	X-Ring	Buna-N	1
10	Bushing	PTFE	1
11	Stem Retainer	ASTM A276 304	1
12	Thrust Washer	ASTM A276 304	1
13	Snap Ring	SK7 Steel	1

\*2"-3" valves have a one-piece stem

\*\*one bushing(7) is not shown; it is located below lower stem flange bushing(6)



## Bill of Materials (16"-24")

ITEM	DESCRIPTION	MATERIAL	QTY.
1	Body	ASTM A395 / A351 CF8M	1
2	Seat	EPDM (NSF) / Buna-N / FKM	1
3	Disc	A351 CF8M (NSF) / Nylon Coated DI (NSF) / Aluminum Bronze	1
4	Upper Stem	17-4 PH®	1
5	Lower Stem	17-4 PH®	1
6	Bottom Cover Bolt	A2-70	4*
7	Bottom Cover Lock Washer	ASTM A276 304	4*
8	Bottom Cover Flat Washer	ASTM A276 304	4*
9	Bottom Cover O-Ring	Buna-N	1
10	Bottom Cover	ASTM A395 / A351 CF8M	1
11	Flange Bushing	Brass	2
12	Long Bushing	Brass	2
13	Short Bushing	PTFE	2
14	Packing	Buna-N	1
15	Gland	WCB / ASTM A276 316	1
16	Gland Bolt	ASTM A276 304	4

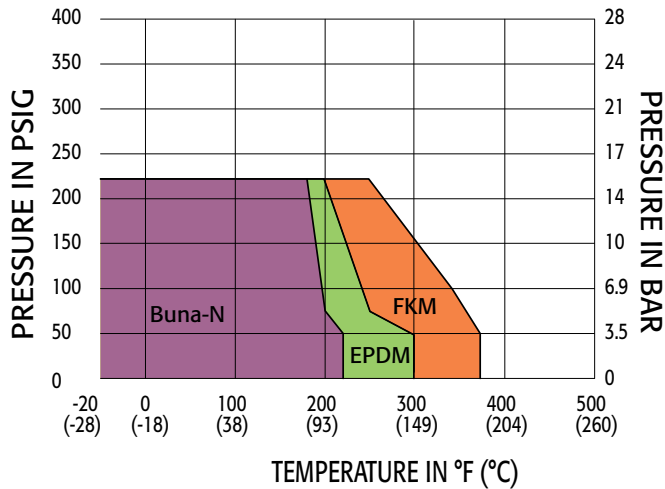
\*16"-20" valves have quantity 2



## NS Series Butterfly Valve Cv Values (US-GPM @ 1 Δ P) - Rated Flow Coefficients

Valve Size	10°	20°	30°	40°	50°	60°	70°	80°	90°
2"	0.1	5	12	24	45	64	90	125	135
2-1/2"	1	8	20	37	65	98	144	204	220
3"	2	12	22	39	70	116	183	275	302
4"	3	17	36	78	139	230	364	546	600
5"	5	29	61	133	237	392	620	930	1,022
6"	8	45	95	205	366	605	958	1,437	1,579
8"	13	89	188	408	727	1,202	1,903	2,854	3,136
10"	21	151	320	694	1,237	2,047	3,240	4,859	5,340
12"	30	234	495	1,072	1,911	3,162	5,005	7,507	8,250
14"	40	338	715	1,549	2,761	4,568	7,230	10,844	11,917
16"	50	464	983	2,130	3,797	6,282	9,942	14,913	16,388
18"	72	615	1,302	2,822	5,028	8,320	13,168	19,752	21,705
20"	86	971	1,674	3,628	6,465	10,698	16,931	25,396	27,908
24"	256	1,222	2,587	5,605	9,989	16,528	26,157	39,236	43,116

Pressure vs. Temperature Chart for NS Butterfly Valves 2"-12"



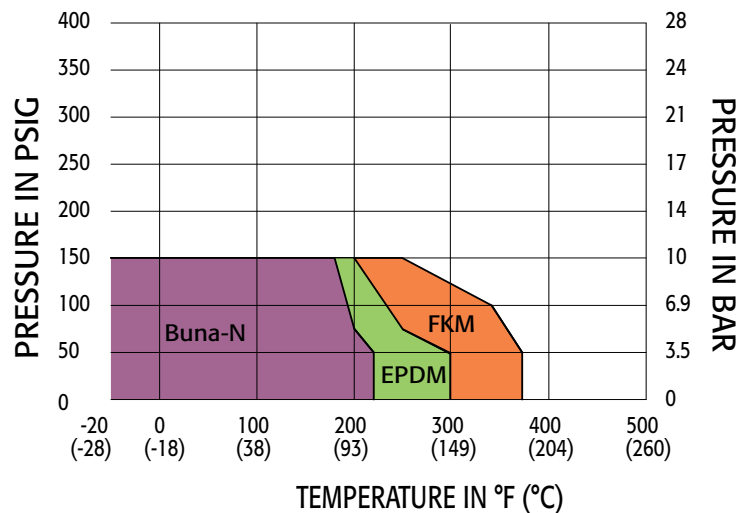
## Approximate Operating Torque (In-lbs)

SIZE	50 PSID		100 PSID		150 PSID		225 PSID	
	WET	DRY	WET	DRY	WET	DRY	WET	DRY
2"	105	175	115	184	126	198	140	205
2-1/2"	112	219	134	235	138	265	154	285
3"	170	333	176	363	201	365	221	387
4"	275	506	303	585	345	610	365	635
5"	433	755	482	830	532	889	556	899
6"	680	1,189	754	1,317	886	1,465	1,065	1,512
8"	1,215	2,089	1,365	2,398	1,592	2,636	1,947	2,730
10"	1,903	3,263	2,204	3,864	2,532	4,312	2,920	4,642
12"	2,784	4,535	3,285	5,454	3,813	6,185	4,602	6,480
14"	3,658	5,366	4,212	6,218	4,872	7,409	-	-
16"	4,516	6,655	5,914	8,390	6,855	10,120	-	-
18"	5,832	8,679	7,758	11,215	9,524	13,450	-	-
20"	7,632	11,226	10,620	14,890	13,650	18,560	-	-
24"	12,340	17,980	15,340	22,290	19,870	28,160	-	-

## Seat Temperature Ratings

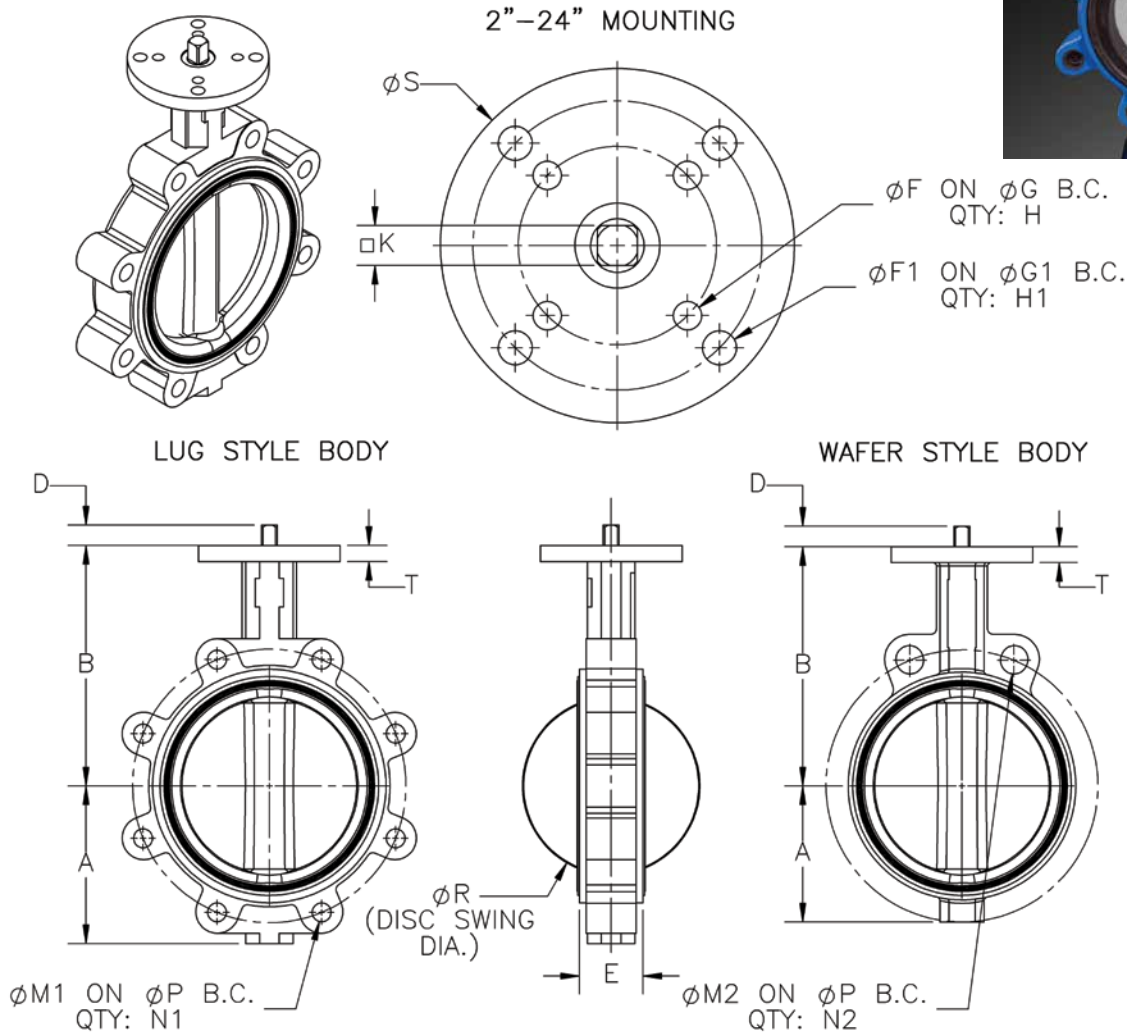
Seat	Temperature °F	2" - 12" Pressure (PSIG)	14" - 24" Pressure (PSIG)
EPDM	-20°	225 PSIG	150 PSIG
	100°	225 PSIG	150 PSIG
	200°	225 PSIG	150 PSIG
	250°	75 PSIG	75 PSIG
	300°	50 PSIG	50 PSIG
Buna-N	0°	225 PSIG	150 PSIG
	100°	225 PSIG	150 PSIG
	180°	225 PSIG	150 PSIG
	200°	75 PSIG	75 PSIG
	220°	50 PSIG	50 PSIG
FKM	-10°	225 PSIG	150 PSIG
	100°	225 PSIG	150 PSIG
	250°	225 PSIG	150 PSIG
	325°	100 PSIG	100 PSIG
	360°	50 PSIG	50 PSIG

Pressure vs. Temperature Chart for NS Butterfly Valves 14"-24"





## Dimensions | 2" - 24"



### ANSI/ASME Class 150

Size	A		B		D	E	$\phi F$	$\phi G$	H	$\phi F1$	$\phi G1$	H1	K	$\phi M1$	N1	$\phi M2$		N2			$\phi P$			$\phi R$	$\phi S$	T	Lug (lbs)	Wafer (lbs)	
	Lug	Wafer	Lug	Wafer												Class 150	PN 10 (mm)	PN 16 (mm)	Class 150	PN 10	PN 16	Class 150	PN 10 (mm)						PN 16 (mm)
2"	3.15	2.40	5.51	5.51	0.63	1.69	0.39	2.756 (F07)	4	-	-	-	0.354	5/8 - 11	4	0.79	19	19	2	2	2	4.75	125	125	2.07	3.54	0.51	8	6
2-1/2"	3.50	2.68	5.91	5.91	0.63	1.81	0.39	2.756 (F07)	4	-	-	-	0.354	5/8 - 11	4	0.79	19	19	2	2	2	5.50	145	145	2.53	3.54	0.51	9	7
3"	3.74	2.99	6.22	6.22	0.63	1.81	0.39	2.756 (F07)	4	-	-	-	0.354	5/8 - 11	4	0.79	19	19	2	2	2	6.00	160	160	3.10	3.54	0.51	11	8
4"	4.49	3.62	6.93	6.93	0.63	2.05	0.39	2.756 (F07)	4	-	-	-	0.433	5/8 - 11	8	0.79	19	19	2	2	2	7.50	180	180	4.09	3.54	0.55	19	12
5"	5.00	4.21	7.48	7.48	0.71	2.20	0.39	2.756 (F07)	4	-	-	-	0.551	3/4 - 10	8	0.91	19	19	2	2	2	8.50	210	210	4.85	3.54	0.55	25	16
6"	5.47	4.72	8.35	8.31	0.71	2.20	0.39	2.756 (F07)	4	0.47	4.016 (F10)	4	0.551	3/4 - 10	8	0.91	23	23	2	2	2	9.50	240	240	6.13	4.92	0.55	30	18
8"	6.85	5.94	9.29	9.25	0.71	2.36	0.47	4.016 (F10)	4	0.71	5.512 (F14)	4	0.669	3/4 - 10	8	0.91	23	23	2	2	2	11.75	295	295	7.97	6.89	0.63	45	31
10"	7.99	7.32	10.43	10.43	0.94	2.68	0.47	4.016 (F10)	4	0.71	5.512 (F14)	4	0.866	7/8 - 9	12	1.02	23	28	2	2	2	14.25	350	355	9.86	6.89	0.63	69	49
12"	9.53	8.31	12.01	12.01	0.94	3.07	0.47	4.016 (F10)	4	0.71	5.512 (F14)	4	0.866	7/8 - 9	12	1.02	23	28	2	2	2	17.00	400	410	11.87	6.89	0.71	102	69
14"	10.51	10.63	14.49	14.49	0.94	3.07	0.47	4.016 (F10)	4	0.71	5.512 (F14)	4	0.866	1 - 8	12	1.14	23	28	4	4	4	18.75	460	470	13.13	6.89	0.79	128	85
16"	13.10	13.10	15.75	15.75	1.42	4.02	0.71	5.512 (F14)	4	0.87	6.496 (F16)	4	1.063	1 - 8	16	1.14	28	31	4	4	4	21.25	515	525	15.34	8.27	0.87	210	139
18"	14.28	14.28	16.61	16.61	1.42	4.49	0.71	5.512 (F14)	4	0.87	6.496 (F16)	4	1.063	1-1/8 - 7	16	1.26	28	31	4	4	4	22.75	565	585	17.34	8.27	0.98	231	163
20"	15.26	15.26	17.91	17.40	1.42	5.00	0.71	5.512 (F14)	4	0.87	6.496 (F16)	4	1.417	1-1/8 - 7	20	1.26	28	34	4	4	4	25.00	620	650	19.35	8.27	1.06	344	231
24"	18.69	18.80	22.24	22.24	1.81	6.06	0.87	6.496 (F16)	4	-	-	-	1.417	1-1/4 - 7	20	1.38	31	37	4	4	4	29.50	725	770	23.33	8.27	1.26	485	412

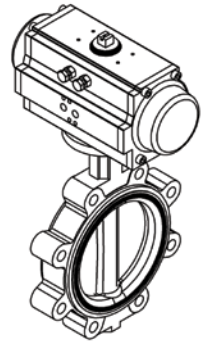
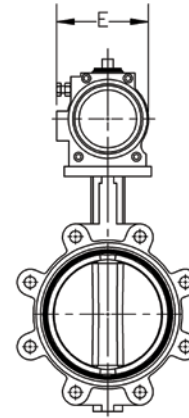
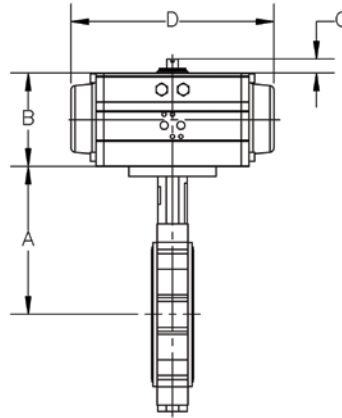
- Unless otherwise specified, all dimensions are in inches.
- Face-To-Face dimensions (E) are across the body flats (metal-to-metal). Approximately 1/16" of the rubber seat protrudes from each side for flange sealing.
- 2" - 24" Lug valve end connections conform to ANSI B16.5 Class 150, Wafer valve end connections conform to ANSI B16.5 Class 150 and EN1092-2 PN 10/16.

A-T Controls reserves the right to change product designs and technical/dimensional specifications without notice. See website for updates.

# Series NS RESILIENT SEATED BUTTERFLY

## Valve Dimensions

Valve Size	A	
	LUG	WAFER
2"	5.51	5.51
2-1/2"	5.91	5.91
3"	6.22	6.22
4"	6.93	6.93
5"	7.48	7.48
6"	8.35	8.31
8"	9.29	9.25
10"	10.43	10.43
12"	12.01	12.01



## Dimensions Double Acting Actuator

Actuator Size	B	C	D	E
2R40DA	3.43	0.787	7.95	3.29
2R80DA	4.49	0.787	9.29	4.41
2R130DA	4.88	0.787	10.87	4.69
2R200DA	5.28	0.787	11.46	5.06
2R300DA	6.18	0.787	13.90	5.91
2R500DA	6.93	1.181	15.16	6.50
2R850DA	8.31	1.181	20.95	6.89
2R1200DA	9.17	1.181	22.68	7.60

## Dimensions Spring Return Actuator

Actuator Size	B	C	D	E
2R80SR	4.49	0.787	9.29	4.41
2R130SR	4.88	0.787	10.87	4.69
2R200SR	5.28	0.787	11.46	5.06
2R300SR	6.18	0.787	13.90	5.91
2R500SR	6.93	1.181	15.16	6.50
2R850SR	8.31	1.181	20.95	6.89
2R1200SR	9.17	1.181	22.68	7.60
2R1750SR	10.12	1.181	24.37	8.31



For more actuator information, please see the complete actuator catalog

For more actuator information, please see the complete actuator catalog

## Pneumatic Double Acting Actuator Sizing

NS Valve Size	WET				DRY			
	50 PSID	100 PSID	150 PSID	225 PSID	50 PSID	100 PSID	150 PSID	225 PSID
2"	2R40DA	2R40DA	2R40DA	2R40DA	2R40DA	2R40DA	2R40DA	2R40DA
2-1/2"	2R40DA	2R40DA	2R40DA	2R40DA	2R40DA	2R40DA	2R40DA	2R40DA
3"	2R40DA	2R40DA	2R40DA	2R40DA	2R80DA	2R80DA	2R80DA	2R80DA
4"	2R40DA	2R80DA	2R80DA	2R80DA	2R80DA	2R80DA	2R80DA	2R80DA
5"	2R80DA	2R80DA	2R80DA	2R80DA	2R130DA	2R130DA	2R130DA	2R130DA
6"	2R130DA	2R130DA	2R130DA	2R200DA	2R200DA	2R200DA	2R300DA	2R300DA
8"	2R200DA	2R300DA	2R300DA	2R300DA	2R300DA	2R500DA	2R500DA	2R500DA
10"	2R300DA	2R500DA	2R500DA	2R500DA	2R850DA	2R850DA	2R850DA	2R850DA
12"	2R500DA	2R500DA	2R850DA	2R850DA	2R850DA	2R850DA	2R850DA	2R1200DA

Pneumatic Double Acting actuators above are sized with 80 PSIG supply. Consult factory for actuator sizing on valves larger than 12".

## Pneumatic Spring Return Actuator Sizing

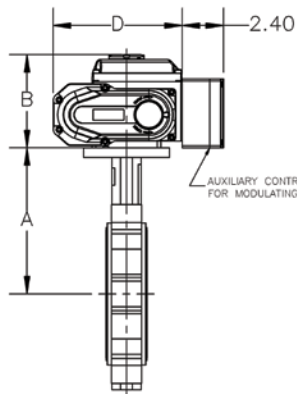
NS Valve Size	WET				DRY			
	50 PSID	100 PSID	150 PSID	225 PSID	50 PSID	100 PSID	150 PSID	225 PSID
2"	2R80SR	2R80SR	2R80SR	2R80SR	2R80SR	2R80SR	2R80SR	2R130SR
2-1/2"	2R80SR	2R80SR	2R80SR	2R80SR	2R130SR	2R130SR	2R130SR	2R130SR
3"	2R80SR	2R80SR	2R80SR	2R130SR	2R200SR	2R200SR	2R200SR	2R200SR
4"	2R200SR	2R200SR	2R200SR	2R200SR	2R300SR	2R300SR	2R300SR	2R300SR
5"	2R300SR	2R300SR	2R300SR	2R300SR	2R300SR	2R300SR	CF	CF
6"	2R300SR	2R300SR	2R500SR	2R500SR	2R500SR	2R850SR	2R850SR	2R850SR
8"	2R500SR	2R850SR	2R850SR	2R1200SR	2R1200SR	2R1200SR	2R1750SR	2R1750SR
10"	2R1200SR	2R1200SR	2R1750SR	2R1750SR	2R1750SR	CF	CF	CF
12"	2R1750SR	2R1750SR	CF	CF	CF	CF	CF	CF

Pneumatic Spring Return actuators above are sized with 5 springs per side, fail close. Consult factory for actuator sizing on valves larger than 12".

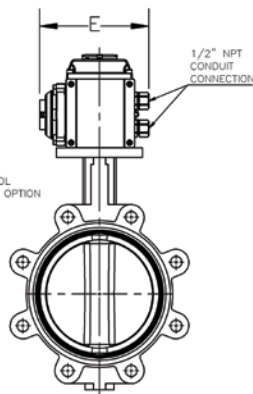
CF - Consult Factory



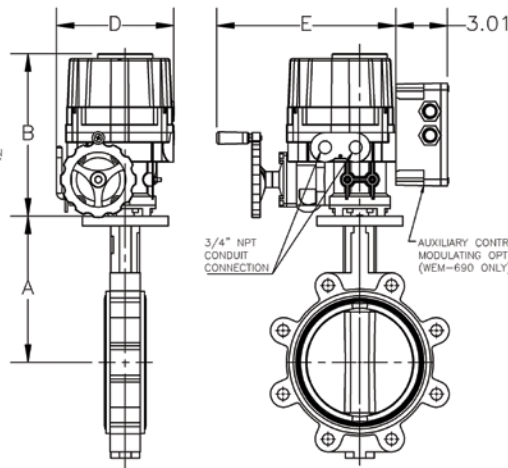
Pneumatic Actuator Sizing: NS Series



KE SERIES ELECTRIC



WE SERIES ELECTRIC



### Valve Dimensions

Valve Size	A	
	LUG	WAFER
2"	5.51	5.51
2-1/2"	5.91	5.91
3"	6.22	6.22
4"	6.93	6.93
5"	7.48	7.48
6"	8.35	8.31
8"	9.29	9.25
10"	10.43	10.43
12"	12.01	12.01

### Dimensions Electric Actuator

Actuator Size	B	D	E
KE-440	5.14	6.74	5.44
KE-880	5.31	7.69	6.24
WE-690	9.25	6.69	10.16
WE-1350	10.55	9.02	13.31
WE-1700	10.55	9.02	13.31
WE-2640	11.42	10.2	14.49
WE-4400	11.97	10.2	14.49
WE-5200	11.97	10.2	14.49
WE-6900	12.99	11.69	16.14
WE-10500	12.99	11.69	16.14

For more actuator information, please see the complete actuator catalog

### Electric (On/Off) Actuator Sizing

NS BFV	WET				DRY			
	50 PSID	100 PSID	150 PSID	225 PSID	50 PSID	100 PSID	150 PSID	225 PSID
2"	KE-440	KE-440	KE-440	KE-440	KE-440	KE-440	KE-440	KE-440
2-1/2"	KE-440	KE-440	KE-440	KE-440	KE-440	KE-440	KE-440	KE-440
3"	KE-440	KE-440	KE-440	KE-440	KE-440	KE-440	KE-440	KE-440
4"	KE-440	KE-440	KE-440	KE-440	KE-880	KE-880	KE-880	KE-880
5"	WE-690	WE-690	WE-690	WE-690	WE-1350	WE-1350	WE-1350	WE-1350
6"	WE-1350	WE-1350	WE-1350	WE-1350	WE-1350	WE-1700	WE-1700	WE-1700
8"	WE-1350	WE-1700	WE-1700	WE-2640	WE-2640	WE-2640	WE-4400	WE-4400
10"	WE-2640	WE-2640	WE-4400	WE-4400	WE-4400	WE-4400	WE-5200	WE-5200
12"	WE-4400	WE-4400	WE-4400	WE-5200	WE-5200	WE-6900	WE-6900	WE-6900

Consult factory for actuator sizing larger than 12".

### Electric (Modulating) Actuator Sizing

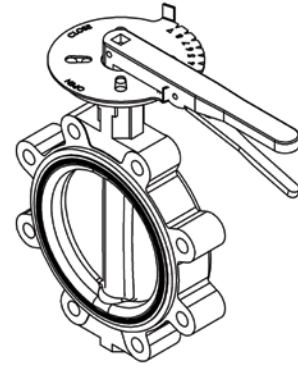
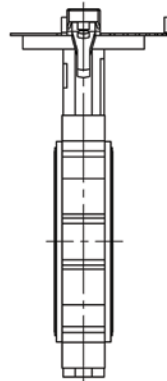
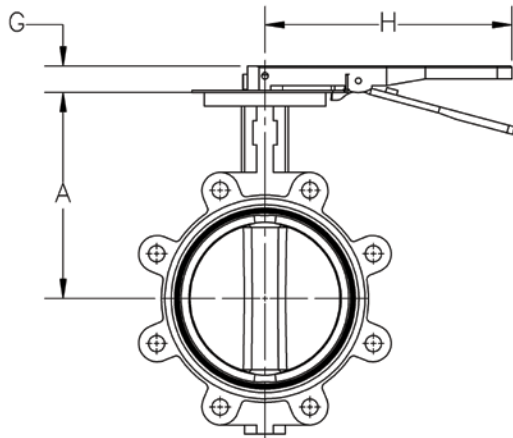
NS BFV	WET				DRY			
	50 PSID	100 PSID	150 PSID	225 PSID	50 PSID	100 PSID	150 PSID	225 PSID
2"	KEM-440	KEM-440	KEM-440	KEM-440	KEM-440	KEM-440	KEM-440	KEM-440
2-1/2"	KEM-440	KEM-440	KEM-440	KEM-440	KEM-440	KEM-440	KEM-440	KEM-440
3"	KEM-440	KEM-440	KEM-440	KEM-440	KEM-440	KEM-880	KEM-880	KEM-880
4"	KEM-440	KEM-440	KEM-440	KEM-880	KEM-880	KEM-880	KEM-880	KEM-880
5"	WEM-690	WEM-690	WEM-690	WEM-1350	WEM-1350	WEM-1350	WEM-1350	WEM-1350
6"	WEM-1350	WEM-1350	WEM-1350	WEM-1350	WEM-1700	WEM-1700	WEM-2640	WEM-2640
8"	WEM-1700	WEM-2640	WEM-2640	WEM-2640	WEM-2640	WEM-4400	WEM-4400	WEM-4400
10"	WEM-2640	WEM-4400	WEM-4400	WEM-4400	WEM-4400	WEM-5200	WEM-6900	WEM-6900
12"	WEM-4400	WEM-4400	WEM-5200	WEM-6900	WEM-6900	WEM-6900	WEM-10500	WEM-10500

Consult factory for actuator sizing larger than 12".

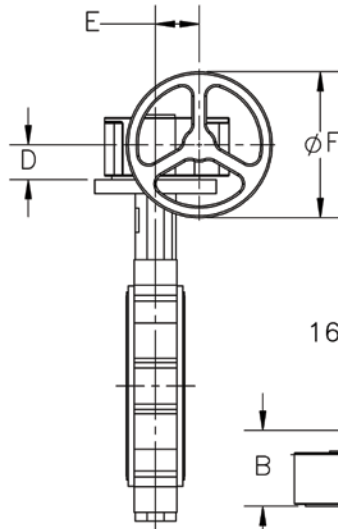
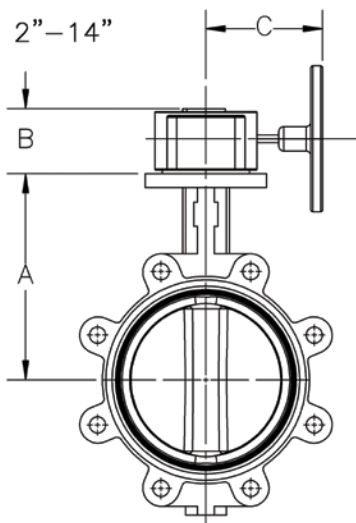
Electric Actuator Sizing: NS Series

## Handle and Gear Operator Sizing

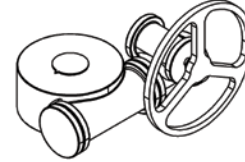
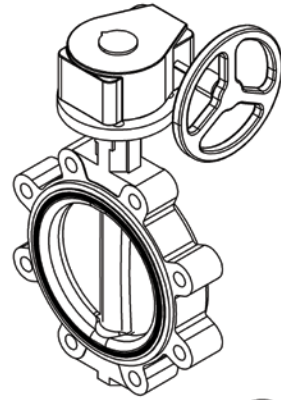
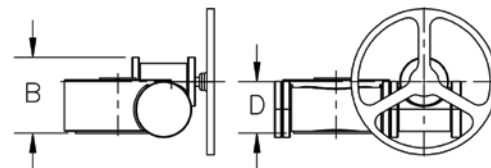
### HANDLE (2"-6" ONLY)



### GEAR OPERATOR



16"-24"



SIZE	A		GEAR OPERATOR					HANDLE	
	Lug	Wafer	B	C	D	E	ØF	G	H
2"	5.51	5.51	2.64	4.74	1.42	1.78	6.00	1.05	10.25
2-1/2"	5.91	5.91							
3"	6.22	6.22							
4"	6.93	6.93							
5"	7.48	7.48							
6"	8.35	8.31							
8"	9.29	9.25	3.27	7.09	1.81	2.48	-	-	
10"	10.43	10.43							
12"	12.01	12.01							
14"	14.49	14.49							
16"	15.75	15.75							
18"	16.61	16.61							
20"	17.91	17.40	6.14	7.80	4.17	7.13	-	-	
24"	22.24	22.24							
24"	22.24	22.24	7.21	11.85	5.04	7.87	12.00	-	-

Part Number Matrix for

A-T Controls **Dead-End Service** and **NSF/ANSI 61 & 372 Certified** Valves

A-T Controls **NS Series** Butterfly Valves

1 Valve Series	
NS	A-T NSF 61 & 372 / Dead-End Service Butterfly Valve
2 Body Material	
blank	A351 CF8M (No Designation)
P	A395 Ductile Iron (Standard)
3 End Connection	
L1	125/150# Lug
W1	125/150# Wafer
4 Valve Size	
0200	2" 1400 14"
0250	2-1/2" 1600 16"
0300	3" 1800 18"
0400	4" 2000 20"
0500	5" 2400 24"
0600	6"
0800	8"
1000	10"
1200	12"
5 Seat Material/Style	
B	Buna-N (Dead-End Service only)
N	EPDM (NSF 61 & 372 and Dead-End Service)
V	FKM (Dead-End Service only)
6 Disc Material/Style	
N	Nylon Coated Ductile Iron (NSF 61 & 372)
S	A351 CF8M (NSF 61 & 372)
B	Aluminum Bronze



7 Stem Bushing	
R	PTFE/Brass
8 Operator Designation	
X	Bare Stem
S	Stainless Steel 10 position Handle
L	Locking Handle -10 position (up to 6")
G	Gear Operator
9 Stem	
A	17-4 PH® Stem

**NOTE:** In order for a complete valve to be NSF 61 & 372 rated, it must have a NSF 61 & 372 rated seat and a NSF 61 & 372 disc.

**EXAMPLE:**

**NS-L1-0400-NBR-XA**

4" NS Series RSBFV, Class 125/150 Lug Style, A351 CF8M Body, EPDM Dead-End Service Seat, Aluminum Bronze Disc, PTFE Stem Bushing, 17-4 PH Square Stem, Bare Stem.

**NS-L1-0400-NSR-XA**

NSF 61 & 372 Approved 4" NS Series RSBFV, Class 125/150 Lug Style, A351 CF8M Body, EPDM Dead-End Service Seat, A351 CF8M Disc, PTFE Stem Bushing, 17-4 PH Square Stem, Bare Stem.

HOW TO ORDER MANUAL NS SERIES BUTTERFLY VALVES									
<b>1</b>	<b>2</b>	-	<b>3</b>	-	<b>4</b>	-	<b>5 6 7</b>	-	<b>8 9</b>
↓↓			↓		↓		↓↓↓		↓↓
NS			L1		0400		NBR		X A

# Automated Tee Assemblies

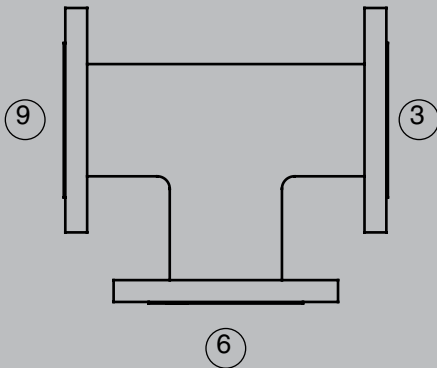
## Butterfly Valve Tee Assemblies



A-T Controls' Butterfly Valve Tee Assemblies provide a cost-effective, alternative to a 3-way valve solution. Available for lug style butterfly valves, these unique tee assemblies can be customized to fit your application. Consult factory for valve selection and assembly options.

- Sizes 2" - 36"
- Lug style Ductile Iron body
- Various Seat Options for special applications

When ordering please specify actuator and valve position:



Choose position:

Actuator (Primary):

3     6     9

Valve (Secondary) Location:

3     6     9

Valve Position:

- Primary Closed (CW) - Secondary Open (CCW)
- Primary Open (CCW) - Secondary Closed (CW)
- Primary Open (CCW) - Secondary Open (CCW)
- Primary Closed (CW) - Secondary Closed (CW)

### Example:

Actuator (Primary): Position 3, Closed

Valve (Secondary): Position 6, Open

*Flange bolting is the responsibility of the customer. Temporary flange bolts are supplied for shipping purposes only.*



**A-T Controls, Inc.**

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