

25000 Series Lo-T™ Butterfly Control Valve

A low torque and low noise butterfly valve.

The patented shape of the LO-T™ vane controls the flow by subdividing it into separate streams which are then forced into rapid deceleration of directional change in the downstream body cavity, for a most effective throttling action, diminishing pressure recovery that is mainly responsible for cavitation and noise. This separation is especially effective within the first 50% of travel where the highest pressure drop is encountered.

Angularly offset disk halves combine opposed dynamic torque characteristics, thereby providing a drastic overall torque reduction. This torque reduction allows for a substantial increase in the pressure drop capability of the valve without requiring oversize actuators.

SPECIFICATIONS

- VALVE SIZE:** 2" through 8"
- BODY RATING:** ANSI Class 300
- CONNECTIONS:** Wafer (Flangeless) design installs between ANSI Class 150 and 300 or DIN PN 10 and 25 Line Flanges
- SEAT LEAKAGE:** Less than ANSI/FCI 70-2, Class II (See Table on page 2)
- MATERIAL OF CONSTRUCTION:** Carbon Steel or 316 SS (See Table on page 3)

MODEL NUMBERING SYSTEM:



ACTUATOR SIZE	
54	Pneumatic
90	Electric

BODY MATERIAL	
0	Carbon Steel
1	316 SS



25000 Series Lo-T Butterfly Valve with Handwheel and 3660 Positioner



BAUMANN 25000/25000 3-WAY LO-T™ BUTTERFLY VALVE

For more information see the 25000 3-way bulletin.



25000 Series Butterfly Valve

ALLOWABLE PRESSURE DROPS (PSI)

Air to open or air to close valve action with or without valve positioner.

VALVE SIZE (in)	ACTUATOR TYPE	AIR SUPPLY (PSI)	SPRING RANGE (PSI)	PERCENT OF MAXIMUM Cv (PERCENT VALVE TRAVEL)					
				CLOSED (0)	20 (41)	40 (57)	60 (69)	80 (86)	100 (100)
2	54	25	4-15	720	500	350	300	270	270
3	54	25	4-15	720	325	240	200	170	170
4	54	25	4-15	500	150	100	80	70	70
6	54	40	6-22	200	70	50	40	35	35
*8	54	45	8-35	175	37	29	27	26	26

* For 8 inch valve size, air-to-close action, use 6-22 psi spring range and 30 psi air supply.

INSTRUCTIONS REGARDING USE OF ABOVE TABLE

- Verify that maximum inlet pressure is less than values shown for **closed** position.
- For pressure drop values in the **open** position, use the lower of either the **actual** ($P_1 - P_2$) or the **effective** pressure drop across the valve.

$$\text{Effective } \Delta p \text{ (gas or steam)} = 0.3 P_1$$

$$\text{Effective } \Delta p \text{ (liquids)} = F_L^2 (P_1 - P_v)$$

$$F_L = \text{Recovery Factor (See Capacity Table)}$$

$$P_1 = \text{Inlet Pressure (PSIA)}$$

$$P_2 = \text{Outlet Pressure (PSIA)}$$

$$P_v = \text{Fluid Vapor Pressure @ Flowing Temperature (PSIA)}$$

- Verify that maximum pressure drop in the **closed** position falls within the following operating temperature limitations.

VALVE SIZE (in):	2	3	4	6	8
-320°F TO 250°F	720	720	500	200	175
251°F TO 325°F	600	500	375	150	130
326° F TO 450°F*	400	360	250	100	85

* Consult Baumann representative for temperatures above 450°F.

TYPICAL SEAT LEAKAGE RATES

VALVE SIZE (in):	2	3	4	6	8
% MAXIMUM Cv	.40	.30	.25	.20	.18
MAX. LEAK Cv	.34	.53	.91	1.7	2.9

FLOW CAPACITY (Cv)

% VALVE TRAVEL	5	10	20	30	40	50	60	70	80	90	100	Fp (3)		Fd (4)
(1) FACTOR -F _L	0.72	0.84	0.82	0.80	0.78	0.76	0.75	0.73	0.72	0.71	0.70	D/d 1.5	D/d 2	
(2) COEFFICIENT -K _c	0.33	0.54	0.52	0.50	0.47	0.45	0.43	0.40	0.38	0.35	0.32	D/d 1.5	D/d 2	
2"	2.1	4.2	10	18	27	36	49	58	70	80	85	.90	.89	0.30
3"	4	9	21	35	52	74	96	125	145	164	176	.91	.86	0.25
4"	5	11	27	46	70	103	139	175	218	290	363	.89	.82	0.24
6"	15	32	80	130	190	265	345	440	535	680	825	.89	.82	0.22
8"	20	45	102	195	310	465	695	980	1180	1300	1595	.87	.80	0.18

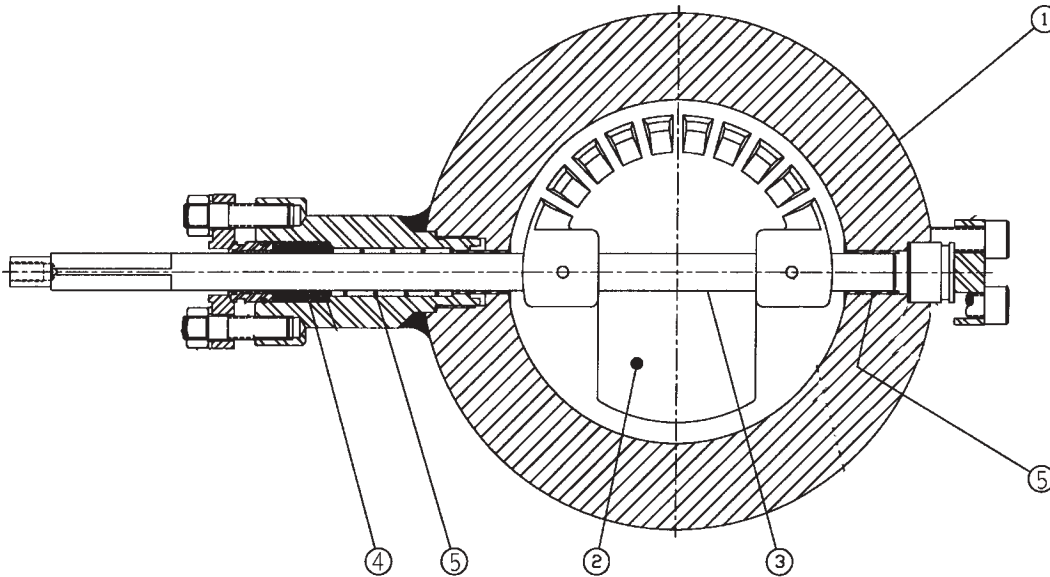
(1) F_L - Pressure Recovery

(2) K_c - Coefficient of incipient cavitation.

(3) F_p - Multiply valve rated Cv by F_p to compensate for reducer losses. (D = line size/d = valve size)

(4) F_d - Valve style modifier.

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CARBON STEEL CONSTRUCTION

TEMPERATURE		-20 °F	450°F
KEY	DESCRIPTION	STANDARD MATERIALS OF CONSTRUCTION	
1	Valve Body	Carbon Steel ASTM A36	
2	Vane (Electroless Nickel Plated)	316 Stainless Steel -ASTM A351 Gr.CF8M (2" size) Cast Steel -ASTM A108 (3" thru 6" sizes) Ductile Iron - ASTM A536 (8" size)	
3	Shaft	17-4 Stainless Steel - ASTM A564, Cond. H1075	
4	Packing	Graphite/Teflon (Standard); Grafoil (Optional)	
5	Bearings	Teflon/Bronze (Standard)	

Note: Optional 316 stainless steel vane with teflon/bronze bearings for maximum operating temperature of 325°F (2 inch size) and 250°F (3 inch through 8 inch sizes).

STAINLESS STEEL CONSTRUCTION

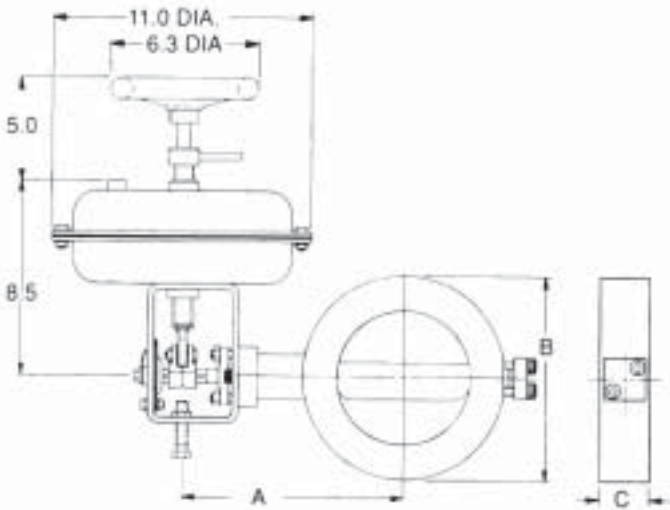
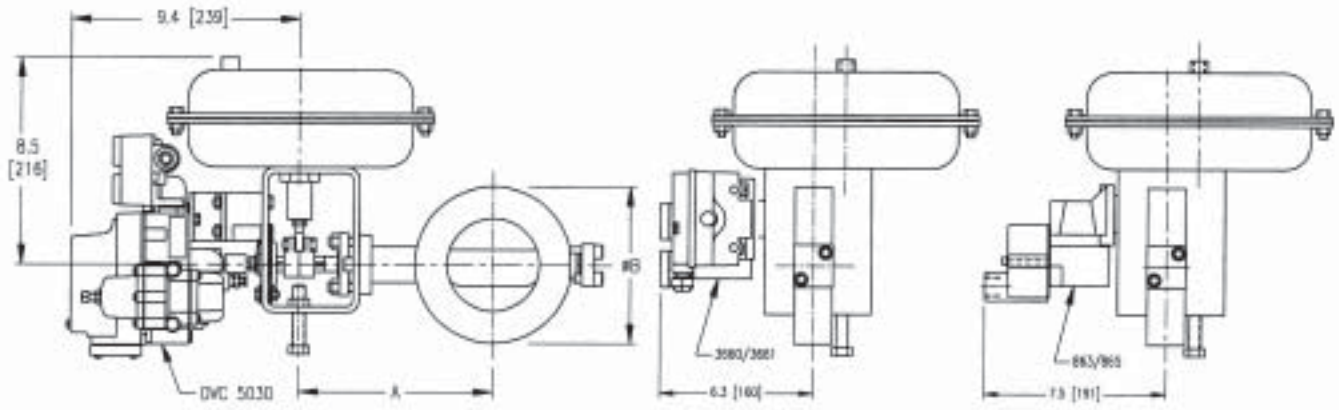
TEMPERATURE		-320 °F	325°F	600°F	750°F
KEY	DESCRIPTION	STANDARD MATERIALS OF CONSTRUCTION			
1	Valve Body	316 Stainless Steel ASTM A276 TY316 (2" through 8")			
2	Vane (Electroless Nickel Plated)	316 Stainless Steel -ASTM A351 Gr.CF8M			
3	Shaft	316 Stainless Steel - ASTM A276 S31600			
4	Packing	Graphite/Teflon		Grafoil	
5	Bearings	Teflon/Fiberglass		Stellite No. 6	

Notes: Special vane clearance required for elevated temperatures above 325°F.
Plain extension bonnet required for cryogenic services below - 60°F.

ACTUATOR SPECIFICATIONS

PNEUMATIC ACTUATOR TYPE	54in ² Spring-Diaphragm
ACTUATOR BRACKET	ASTM A500 Grade A or B Steel, Epoxy Coated
DIAPHRAGM CASES	Carbon Steel, Epoxy Coated
DIAPHRAGM (Note)	Nitril Rubber
BALL BEARING	Fafnir #RA008RRB, Sealed, Permanently Lubricated
LINKAGE	304 Stainless Steel
HANDWHEEL (Optional)	Phenolic Plastic w/ ASTM A276 S21800 Condition A Stainless Steel Stem

NOTE: Ambient temperature range -20 to 160°F; optional silicone diaphragm for -20 to 250°F.

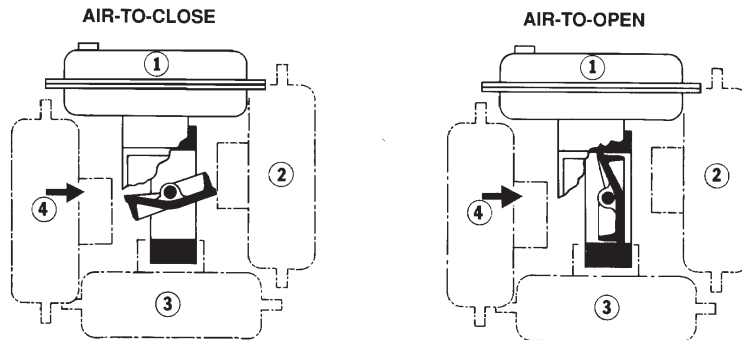


DIMENSIONS

VALVE SIZE (in)	ACTUATOR SIZE (in ²)	A	B	C	WEIGHT (Lbs)
2	54	6.73	4.00	1.56	27
3	54	7.30	5.25	1.56	31
4	54	7.96	6.45	1.56	37
6	54	9.56	8.63	2.00	43
8	54	10.65	10.81	2.50	60

ACTUATOR ORIENTATION IN FRONT OF PIPELINE (POSITION NO. 1 STANDARD)

Actuator can be rotated to accommodate virtually any flow direction of pipeline configuration.



This product may be covered under one or more of the following patents 4,469,305 or under pending patent applications.

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