

**Econotrol Series 09
Butterfly Valve
2" thru 14" for
125/150 lb. Flanging**



General Description:

The PDC "Econotrol" series butterfly valve is available in sizes from 2" thru 14" in a combination of materials and optional features suitable for most mid-range differential pressures and service conditions.

Features:

- Inboard bushings of graphited bronze for long life, non-freezing, low torque characteristics.
- Close tolerance machining for minimal leakage and dependable flow characteristics.
- Adjustable packing-Graphited TEFLON® Braid. Valves can be repacked without removal from line.
- Rugged mounting pads drilled and tapped for ease of installing actuating equipment and accessories.
- Flatted, keywayed or hexed ends on shafts are available to facilitate factory or field mounting of all types of actuating equipment. (Flatted shaft shown).
- Lightweight, solid ring, wafer design for ease of installation. Four holes to insure proper alignment without transfer of pipe stresses to the valve body.
- Contoured bore improves flow characteristics.

Standard Materials and Seat Construction:

Body:	Cast Iron
Disc:	Cast Iron
Shaft	416 Stainless Steel
Seat:	Swing-thru
Bushing:	Graphited Bronze (2"-14")
Packing:	Graphited Teflon Braid
Packing Nut:	Brass

Optional Materials and Seat Construction:

Body:	Carbon Steel, 316 Stainless Steel, 304 Stainless Steel
Disc:	Carbon Steel, 316 Stainless Steel, 304 Stainless Steel
Shaft	316 Stainless Steel, 304 Stainless Steel, Incoloy, Monel
Seat:	No Option
Bushing:	316 Stainless Steel, 304 Stainless Steel, Glass Filled Teflon, Metcar, Macor
Packing:	Pure Teflon Braid, Teflon V-Ring
Packing Nut:	316 Stainless Steel

Temperature:

To 450°F with standard materials.

PDC Valve Coatings:

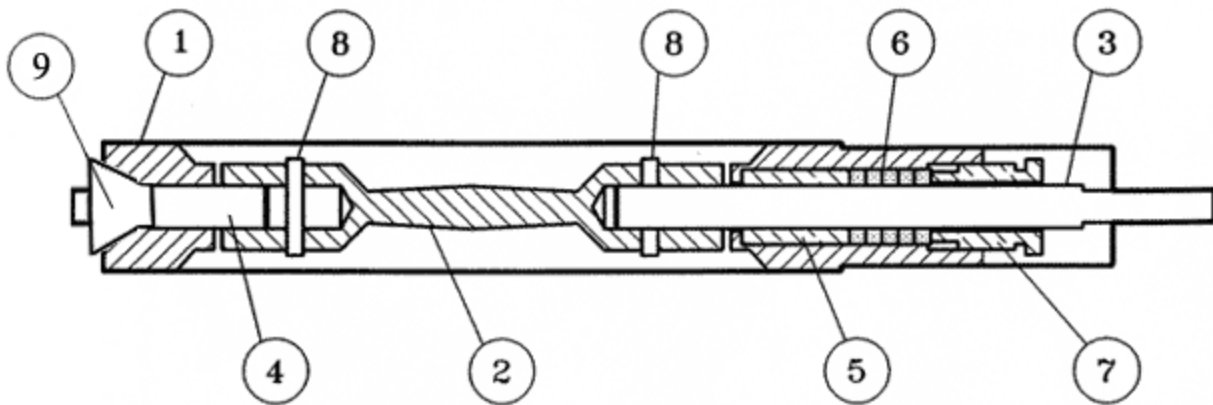
Consult Factory

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Cross-section Data

Item	Description	Qty.
1	Body	1
2	Disc	1
3	Power Shaft	1
4	Idle Shaft	1
5	Bushing	1
6	Braided Packing	5
7	Adjustable Packing Nut	1
8	Shaft Retaining Pin	2
9	Pipe Plug (sealed)	1



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***Torque, Lb-In, Required for
PDC Swing Thru Butterfly Valves
with Disc in Closed Position for
Temperatures up to 450° Fahrenheit**

*Below torques only apply to normal clean service conditions.

VALVE SIZE	PRESSURE DROP ACROSS DISC IN CLOSED POSITION, PSI																
	0.5	1	5	10	15	20	25	30	40	50	60	70	80	90	100	125	150
2	50	50	52	53	55	56	58	59	62	65	65	71	74	77	80	88	95
2.5	50	51	53	55	58	60	63	65	70	75	80	85	90	95	100	113	125
3	50	51	54	57	61	64	68	71	78	85	92	99	106	113	120	138	155
4	51	52	59	67	76	84	93	101	118	135	152	169	186	203	220	263	-
5	51	53	63	75	88	100	113	125	150	175	200	225	250	275	300	-	-
6	52	54	69	88	107	126	145	164	202	240	278	316	354	-	-	-	-
8L	54	58	88	125	163	200	238	-	-	-	-	-	-	-	-	-	-
8H	124	128	158	195	233	270	308	345	420	495	570	645	720	795	-	-	-

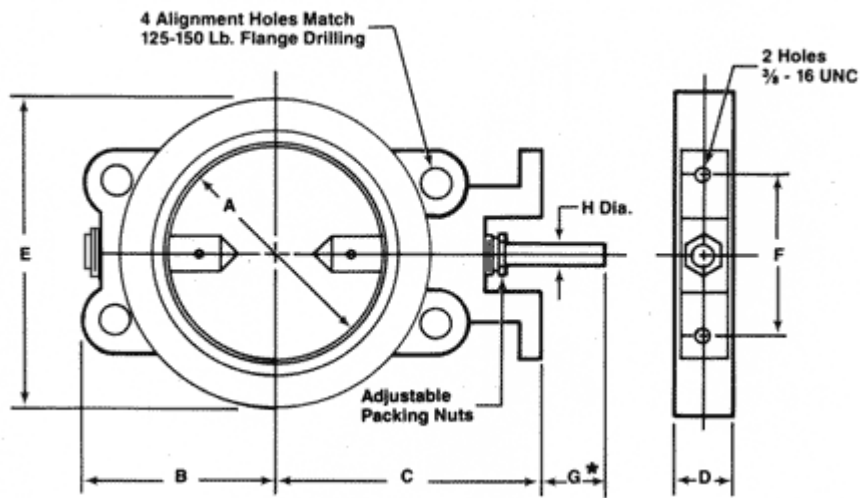
VALVE SIZE	PRESSURE DROP ACROSS DISC IN CLOSED POSITION, PSI																
	0.5	1	3	5	8	10	13	15	20	25	30	35	40	45	50	60	70
10	129	137	171	205	256	290	341	375	460	545	630	715	800	885	970	1,140	1,310
12	132	143	189	235	304	350	419	465	580	695	810	925	1,040	1,155	1,270	-	-
14	139	157	231	305	416	490	601	675	860	1,045	1,230	-	-	-	-	-	-

While this information is presented in good faith and believed to be accurate, PDC inc. does not guarantee results from reliance upon such information. Nothing contained herein is to be construed as a warranty or guarantee, expressed or implied, regarding the merchantability, fitness or any other matter with respect to the products. PDC Inc. reserves the right, without notice, to alter or improve the designs of the products herein.

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Typical Dimensions: 2" thru 14"



Size	A	B	C	D	E	F	H	Max. Δ P	Approx. Wt. (LB.)
2"	2	2-3/4	5-3/8	1-1/2	3-7/8	4-1/4	1/2	150	9#
2"-1/2	2-1/2	3	5-5/8	1-1/2	4-5/8	4-1/4	1/2	150	10#
3"	3	3-1/8	5-7/8	1-1/2	5-1/4	4-1/4	1/2	150	11#
4"	4	4-1/4	6-3/8	1-1/2	6-3/8	4-1/4	1/2	125	12#
5"	5	4-7/8	6-7/8	1-1/2	7-1/2	4-1/4	1/2	100	15#
6"	6	5-3/8	7-3/8	1-1/2	8-1/2	4-1/4	1/2	80	17#
8"L	8	6-1/2	8-3/8	1-1/2	10-3/4	5-1/8	1/2	25	23#
8"H	8	6-1/2	9-5/8	1-7/8	10-3/4	5-1/8	3/4	90	32#
10"	10	8	10-5/8	1-7/8	13	5-1/8	3/4	70	40#
12"	12	9-1/2	11-5/8	1-7/8	15-1/4	5-1/8	3/4	50	50#
14"	13-1/8	10-1/2	12-1/8	1-7/8	16-1/2	5-1/8	3/4	30	70#

* **"G"** Length and configuration of the shaft end will vary to accommodate specific actuators. Refer to the accessory section for typical flatted, keywayed, and hexed end configurations available.

MAX. ΔP is based on 0° disc position, using standard materials of construction at a maximum temperature of 450° Fahrenheit.

Consult factory for MAX. ΔP for elevated temperatures.

Process Development & Control, Inc. reserves the right to make design improvements and/or change dimensions without notice.

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**Cv Values for Econotrol series 09
Swing Thru Butterfly Valves**

By definition, Cv is the flow coefficient of a control device or flow restriction. Cv is defined as the number of US gallons of 60°F water per minute which will flow through the given restriction with a one pound per square inch pressure drop.

Cv Values

(Flow in GPM of 60°F water at 1 psi pressure drop, specific gravity=1)

Valves Size	Disc Angles, Degrees								
	10	20	30	40	50	60	70	80	90
2"	2	5	11	20	34	49	64	83	90
2.5"	4	8	20	34	56	84	126	178	194
3"	6	14	30	51	85	132	202	279	370
4"	13	28	54	98	159	257	391	550	747
5"	21	43	88	158	265	429	636	913	1,272
6"	30	63	126	228	382	632	955	1,370	1,999
8"L	53	111	225	406	680	1,125	1,698	2,591	3,853
8"H	53	111	225	406	680	1,125	1,698	2,591	3,853
10"	83	174	351	635	1,063	1,758	2,655	4,051	6,362
12"	120	251	506	915	1,531	2,533	3,825	5,835	9,165
14"	143	301	606	1,096	1,835	3,035	4,583	6,992	10,982

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How To Order

*Material Option Followed By an Asterisk, May Not be Routinely Carried in Inventory, and May Result in Longer Deliveries Than Normal.

Use the following table to determine your part number.

Example: to code an ECONOTROL 8" swing thru butterfly valve with cast iron body, cast iron disc, 416 stainless steel shaft, glass filled Teflon bushing, Teflon v-ring packing, brass packing nut, and cataloged flatted shaft would be as follows:

09-0080-1-1-1-1-4-4-1-CF-1

When "other " materials are selected, be sure to completely describe on purchase order.

Please provide the following information:

- **Flow Media**
- **Operating Temperature F°**
- **No. of [open/close] cycles/day**
- **Line Pressure (PSIG) = _____.**
- **Delta P = _____.**

Valve Series 09

Nominal Size Code	Seat Code	Body Material	Disc Material	Shaft Material	Bushing Material	Packing Material	Packing Nut	Shaft End Configuration	Operators
0020 = 2.0"	1= swing thru	1=Cast Iron	1=Cast Iron	1 = 416 S/S	1 = Graphited Bronze	1 = Graphited Teflon Braid	1 = Brass	CH = Catalog Hex	1= None
0025 = 2.5"			2 = Carbon Steel*	2 = 316 S/S	3 = Metcar	3=Pure Teflon Braid	2 = 316 S/S	CK = Catalog Keyed	2= 10 position Lock Lever
0030 = 3.0"			3 = 316 S/S	3 = Incoloy	4 = Glass Filled Teflon	4=V-Ring Teflon™		CF = Catalog Flat	3= Gear Operator
0040 = 4.0"			7 = 304 S/S*	4 = Monel*	6 = 316 S/S*			CR = Catalog Round	4= Double Acting Pneumatic
0050 = 5.0"				8 = 304 S/S*	7 = 304 S/S*			SH = Special Hex*	5= Electric
0060 = 6.0"								SK = Special Keyed*	6= Spring Return Pneumatic
0080 = 8.0"L								SF = Special Flat	
0081 = 8.0"H								SR = Special Round	
0100 = 10.0"									
0120 = 12.0"									
0140 = 14.0"			X2=Other	X3=Other	X4=Other	X5=Other	X6=Other	X7=Other	X8=Other