



Butterfly Valves

Full Port & Reduced Port

version 2

Product Description

Eclipse Butterfly Valves are designed to control air and gas flow to all types of combustion systems. They **should not** be used as tight shut-off valves.

Types available

Valves are available for either manual or automatic control and in either full port or reduced port construction in 1/2" through 4", with NPT or Rc threads. High pressure drop valves are also available in 1/2", 3/4" and 1". Wafer type valves are available in 6" and 8".

Thread Connections

The 1/2" through 4" valves are available with either NPT or Rc threads. The 6" and 8" valves are wafer type butterfly valves designed to be sandwiched between flanges on connecting pipes.

Shutters

NPT versions: Furnished with beveled or nonbeveled shutters.

Rc versions: Furnished with nonbeveled shutters.

Indication

All Eclipse butterfly valves feature an easy to read indicator plate and a slot on the end of the shaft to provide visual indication of the disc position.

Control

Manual butterfly valves 4" and smaller have an adjusting cover for setting disc position. A locking screw secures the cover at the desired setting.

Automatic control butterfly valves are furnished with a control arm that can be attached to the shaft. This allows integration with a variety of position control devices.

Manual wafer butterfly valves are adjusted by rotating a control arm which can be locked to the indicating plate after positioning.



Manual
Control BV



Automatic
Control BV

Accessories

Eclipse stocks a selection of electric operators and mounting kits which can be ordered separately. The extended shaft length on the automatic butterfly valves allows the addition of either a second control arm for simultaneous automatic operation in dual valve applications, or a cam for a high/low fire microswitch arrangement.



Note:

ALL 1/2" Butterfly Valves (NPT/Rc, Manual/Automatic Beveled/Non-beveled) DO NOT have a "separate" shutter. The shutter is part of the shaft. The terms beveled and non-beveled do not apply to any of the 1/2" Butterfly Valves covered in this Data Sheet.


Main Specifications

PARAMETER		SPECIFICATIONS	
Maximum operating pressure:	1/2" thru 4" 6" & 8"	5 psig 3 psig	350 mbar 210 mbar
Operating temperature range:	NPT version Rc version	-40 to 140° F. 32 to 140° F.	-40 to 60° C. 0 to 60° C.
Materials of construction:	Body: Shaft: Shutter: Shaft Packing Seal:	Powder Coated Cast Iron Zinc plated steel Carbon steel Nitrile rubber (Buna-N)	
Approvals:	All models		Rc 1/2 thru Rc 3 models only
Typical application:	Control of air or gas flow in combustion system		
Notes on European applications:	4" screwed not acceptable for gas use. 3" screwed is acceptable if pressure is limited to 100 mbar (1.5 psig).		

NPT Model Selection and Capacities

NPT Size	Full Port Valves						Reduced Port Valves			
	Manual		Automatic				Manual		Automatic	
	Beveled shutter 75° rotation		Beveled shutter 75° rotation		Nonbeveled shutter 360° rotation		Beveled shutter 75° rotation		Beveled shutter 75° rotation	
	Catalog Number	Item Code	Catalog Number	Item Code	Catalog Number	Item Code	Catalog Number	Item Code	Catalog Number	Item Code
1/2"	102BV-B	501238	-----	-----	2BV-A	501239	-----	-----	-----	-----
3/4"	103BV-B	501215	3BV-AB	501223	3BV-A	501200	-----	-----	-----	-----
1"	104BV-B	501216	4BV-AB	501224	4BV-A	501201	104BV-RB	501208	4BV-ARB	501231
1-1/4"	105BV-B	501217	5BV-AB	501225	5BV-A	501202	105BV-RB	501209	5BV-ARB	501232
1-1/2"	106BV-B	501218	6BV-AB	501226	6BV-A	501203	106BV-RB	501210	6BV-ARB	501233
2"	108BV-B	501219	8BV-AB	501227	8BV-A	501204	108BV-RB	501211	8BV-ARB	501234
2-1/2"	110BV-B	501220	10BV-AB	501228	10BV-A	501205	110BV-RB	501212	10BV-ARB	501235
3"	112BV-B	501221	12BV-AB	501229	12BV-A	501206	112BV-RB	501213	12BV-ARB	501236
4"	116BV-B	501222	16BV-AB	501230	16BV-A	501207	116BV-RB	501214	16BV-ARB	501237
6" wafer	124BV-B	500915	24BV-AB	500998	-----	-----	124BV-RB	500690	24BV-ARB	500975
8" wafer	132BV-B	500913	32BV-AB	500999	-----	-----	132BV-RB	500691	32BV-ARB	500976

High Pressure Drop Valve				
NPT Size	Manual		Automatic	
	Nonbeveled shutter 90° rotation		Nonbeveled shutter 360° rotation	
	Catalog Number	Item Code	Catalog Number	Item Code
1/2"	402BV-HD	100129	402BV-AHD	100130
3/4"	403BV-HD	100133	403BV-AHD	100134
1"	404BV-HD	100119	404BV-AHD	100123

 **Note:** Wafer Butterfly Valves are not threaded.
For dimensional information, see page 6.

Multifactors for gases other than air

Gas - Sp. Gr.	Natural - .6	Propane - 1.5	Butane - 2.0
Multifactor	1.29	.81	.70

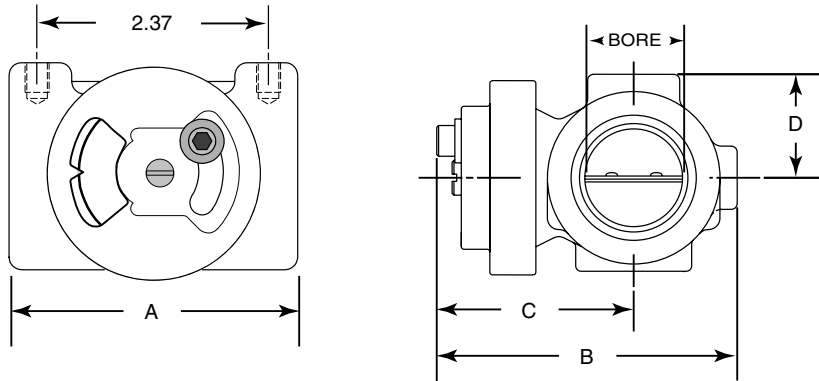
NPT Size	Flow Coefficient Cv-Full Open	Full Port								
		Capacity scfh air - "wc pressure drop								
		0.5	0.75	1	1.5	2	3	4	6	8
1/2"	5.5	173	212	244	299	345	422	487	595	685
3/4"	15.9	500	612	706	865	998	1,221	1,408	1,720	1,982
1"	29.7	933	1,143	1,319	1,615	1,864	2,280	2,630	3,213	3,702
1-1/4"	65.9	2,071	2,536	2,927	3,583	4,135	5,059	5,835	7,129	8,213
1-1/2"	111.0	3,489	4,272	4,931	6,036	6,965	8,521	9,828	12,009	13,834
2"	180.0	5,657	6,927	7,996	9,788	11,295	13,818	15,937	19,473	22,433
2-1/2"	322.0	10,121	12,391	14,304	17,509	20,206	24,719	28,510	34,836	40,131
3"	457.0	14,364	17,587	20,301	24,850	28,677	35,082	40,462	49,441	56,956
4"	819.0	25,741	31,517	36,383	44,534	51,394	62,871	72,513	88,604	102,072
6" wafer	2600.0	81,718	100,055	115,501	141,377	163,154	199,591	230,201	281,283	324,039
8" wafer	4200.0	132,007	161,628	186,578	228,379	263,557	322,417	371,864	454,380	523,448

NPT Size	Flow Coefficient Cv-Full Open	Reduced Port								
		Capacity scfh air - "wc pressure drop								
		0.5	0.75	1	1.5	2	3	4	6	8
1"	14.1	443	543	626	767	885	1,082	1,248	1,525	1,757
1-1/4"	22.8	717	877	1,013	1,240	1,431	1,750	2,019	2,467	2,842
1-1/2"	31.4	987	1,208	1,395	1,707	1,970	2,410	2,780	3,397	3,913
2"	62.7	1,971	2,413	2,785	3,409	3,935	4,813	5,551	6,783	7,814
2-1/2"	87.9	2,763	3,383	3,905	4,780	5,516	6,748	7,783	9,510	10,955
3"	149.0	4,683	5,734	6,619	8,102	9,350	11,438	13,192	16,120	18,570
4"	244.0	7,669	9,390	10,839	13,268	15,311	18,731	21,604	26,397	30,410
6" wafer	553.0	17,381	21,281	24,566	30,070	34,702	42,452	48,962	59,827	68,921
8" wafer	721.5	22,677	27,765	32,051	39,232	45,275	55,387	63,881	78,056	89,921

NPT Size	Flow Coefficient Cv-Full Open	High Pressure Drop								
		Capacity scfh air - "wc pressure drop								
		0.5	0.75	1	1.5	2	3	4	6	8
1/2"	2.7	85	104	120	147	169	207	239	292	337
3/4"	3.2	101	123	142	174	201	246	283	346	399
1"	4.2	132	162	187	228	264	322	372	454	523

Dimensions, Manual Valves with NPT threads

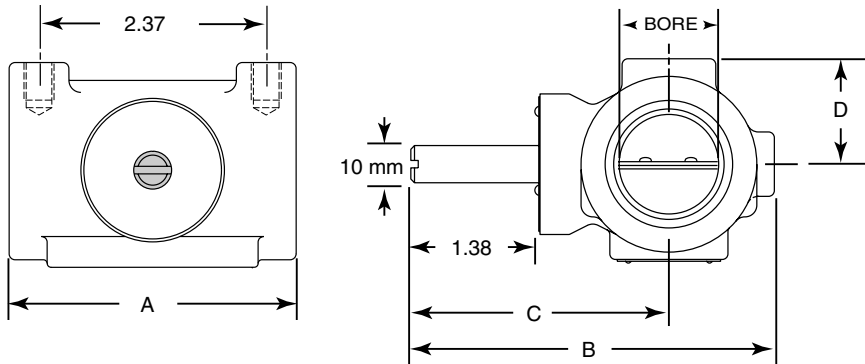
NPT Size	FULL PORT Beveled shutter 75° rotation			REDUCED PORT Beveled shutter 75° rotation			HIGH PRESSURE DROP 90° rotation			Dimensions, inches			
	Catalog Number	Item Code	BORE Inches	Catalog Number	Item Code	BORE Inches	Catalog Number	Item Code	BORE Inches	A	B	C	D
1/2	102BV-B	501238	0.61	-	-	-	402BV-HD	100129	0.44	3.00	3.05	2.05	1.19
3/4	103BV-B	501215	0.87	-	-	-	403BV-HD	100133	0.55	3.00	3.07	2.07	1.06
1	104BV-B	501216	1.10	104BV-RB	501208	0.87	404BV-HD	100119	2 x 0.44	2.87	3.33	2.14	1.31
1-1/4	105BV-B	501217	3.12	105BV-RB	501209	1.02				3.12	3.58	2.26	1.50
1-1/2	106BV-B	501218	1.46	106BV-RB	501210	1.18				3.12	3.82	2.38	1.63
2	108BV-B	501219	2.13	108BV-RB	501211	1.53				3.12	4.45	2.70	1.94
2-1/2	110BV-B	501220	2.64	110BV-RB	501212	1.77				3.87	5.09	3.09	2.25
3	112BV-B	501221	3.23	112BV-RB	501213	2.24				3.87	5.58	3.33	2.50
4	116BV-B	501222	4.17	116BV-RB	501214	2.80				5.00	6.65	3.84	3.06



Dim: inches

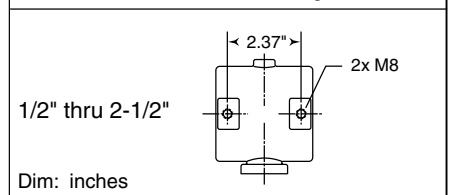
Dimensions, Automatic Valves with NPT threads

NPT Size	FULL PORT			REDUCED PORT			HIGH PRESSURE DROP			Dimensions, inches					
	Beveled shutter 75° rotation		Nonbeveled shutter 360° rotation		Beveled shutter 75° rotation		360° rotation			A	B	C	D		
	Catalog No.	Item Code	Catalog No.	Item Code	BORE In.	Catalog No.	Item Code	BORE In.	Catalog Number	Item Code	BORE In.				
1/2	2BV-AB	501239	-	-	0.61	-	-	-	402BV-AHD	100130	0.44	3.00	3.66	2.66	1.19
3/4	3BV-AB	501223	3BV-A	501200	0.87	-	-	-	403BV-AHD	100134	0.55	3.00	3.60	2.60	1.06
1	4BV-AB	501224	4BV-A	501201	1.10	4BV-ARB	501231	0.87	404BV-AHD	100123	2 x 0.44	2.87	3.90	2.78	1.31
1-1/4	5BV-AB	501225	5BV-A	501202	1.46	5BV-ARB	501232	1.02				3.12	4.22	2.90	1.50
1-1/2	6BV-AB	501226	6BV-A	501203	1.65	6BV-ARB	501233	1.18				3.12	4.47	3.03	1.63
2	8BV-AB	501227	8BV-A	501204	2.13	8BV-ARB	501234	1.54				3.12	5.09	3.34	1.94
2-1/2	10BV-AB	501228	10BV-A	501205	2.64	10BV-ARB	501235	1.77				3.87	5.72	3.72	2.25
3	12BV-AB	501229	12BV-A	501206	3.23	12BV-ARB	501236	2.24				3.87	6.22	3.97	2.50
4	16BV-AB	501230	16BV-A	501207	4.17	16BV-ARB	501237	2.80				5.00	7.28	4.47	3.06



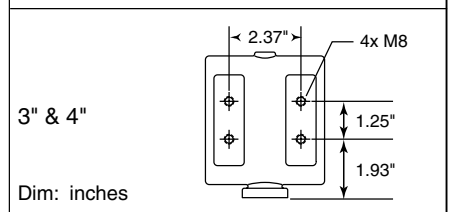
Dim: inches

Actuator Bracket Mounting Holes



1/2" thru 2-1/2"

Dim: inches




3" & 4"

Dim: inches

Rc Model Selection and Capacities

Rc Size	Full Port Valves				Reduced Port Valves			
	Manual		Automatic		Manual		Automatic	
	Nonbeveled shutter 90° rotation		Nonbeveled shutter 360° rotation		Nonbeveled shutter 90° rotation		Nonbeveled shutter 360° rotation	
	Catalog Number	Item Code	Catalog Number	Item Code	Catalog Number	Item Code	Catalog Number	Item Code
1/2	102BVM	101103	2BVM-A	202081	-----	-----	-----	-----
3/4	103BVM	101104	3BVM-A	101248	-----	-----	-----	-----
1	104BVM	101105	4BVM-A	101249	104BVM-R	101255	4BVM-AR	101261
1-1/4	-----	-----	-----	-----	-----	-----	-----	-----
1-1/2	106BVM	101106	6BVM-A	101250	106BVM-R	101256	6BVM-AR	101262
2	108BVM	101107	8BVM-A	101251	108BVM-R	101257	8BVM-AR	101263
2-1/2	110BVM	101108	10BVM-A	101252	110BVM-R	101258	10BVM-AR	101264
3	112BVM	101109	12BVM-A	101253	112BVM-R	101259	12BVM-AR	101265
4*	116BVM	101110	16BVM-A	101254	116BVM-R	101260	16BVM-AR	101266

6" wafer  *Note: Selection information for these valves appears on page 2. Wafer BV Valves are not threaded and may be used with DN 150 and DN 200 flanged fittings. Dimensions page 6.*
 8" wafer

Rc Size	High Pressure Drop Valve			
	Manual		Automatic	
	Nonbeveled shutter 90° rotation		Nonbeveled shutter 360° rotation	
	Catalog Number	Item Code	Catalog Number	Item Code
1/2	402BVM-HD	100131	402BVM-AHD	100132
3/4	403BVM-HD	100135	403BVM-AHD	100136
1	404BVM-HD	100120	404BVM-AHD	100100

Multifactors for gases other than air

Gas - Sp. Gr.	Natural - .6	Propane - 1.5	Butane - 2.0
Multifactor	1.29	.81	.70

Rc Size	Flow Coefficient Kv-Full Open	Full Port							
		Capacity nm ³ /h air - mbar pressure drop							
		1	2	3	5	8	10	13	15
1/2"	4.7	4	6	7	9	12	13	15	16
3/4"	13.7	12	17	21	27	34	38	43	46
1"	25.5	22	32	39	50	63	70	80	86
1-1/2"	95.8	84	118	145	187	236	264	300	322
2"	155.0	136	192	234	302	382	427	486	521
2-1/2"	277.0	242	342	419	541	683	763	868	932
3"	393.0	344	486	595	767	969	1,082	1,232	1,322
4**	704.0	615	870	1,065	1,374	1,735	1,938	2,207	2,368
6" wafer*	2251.0	1,968	2,782	3,405	4,392	5,548	6,197	7,056	7,572
8" wafer*	3637.0	3,180	4,495	5,502	7,097	8,964	10,013	11,400	12,234

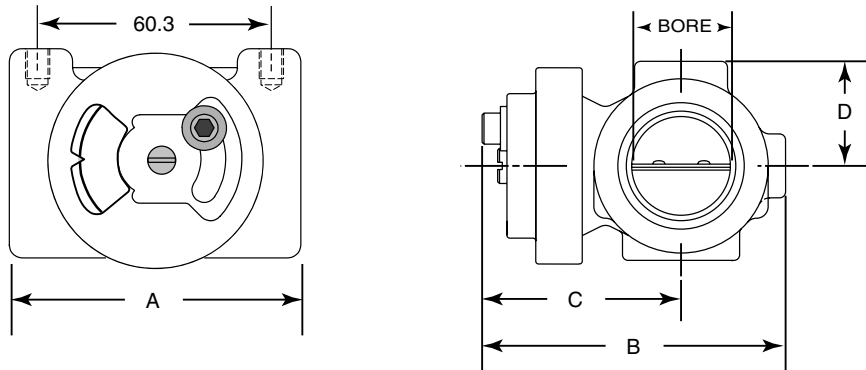
Rc Size	Flow Coefficient Kv-Full Open	Reduced Port							
		Capacity nm ³ /h air - mbar pressure drop							
		1	2	3	5	8	10	13	15
1"	12.1	11	15	18	24	30	33	38	41
1-1/2"	27.0	24	33	41	53	67	74	85	91
2"	53.9	47	67	82	105	133	148	169	181
2-1/2"	75.9	66	94	115	148	187	209	238	255
3"	128.0	112	158	194	250	315	352	401	431
4**	210.0	184	260	318	410	518	578	658	706
6" wafer*	479.0	419	592	725	935	1,181	1,319	1,501	1,611
8" wafer*	625.0	546	772	946	1,220	1,540	1,721	1,959	2,102

Rc Size	Flow Coefficient Kv-Full Open	High Pressure Drop							
		Capacity nm ³ /h air - mbar pressure drop							
		1	2	3	5	8	10	13	15
1/2"	2.3	2.0	2.8	3.5	4.5	5.7	6.3	7.2	7.7
3/4"	2.8	2.4	3.5	4.2	5.5	6.9	7.7	8.8	9.4
1"	3.6	3.1	4.4	5.4	7.0	8.9	9.9	11.3	12.1

* 4" screwed valve not approved for European use.
 6" and 8" wafer type may be used with DN150 and DN200 flanged fittings.

Dimensions, Manual Valves with Rc threads

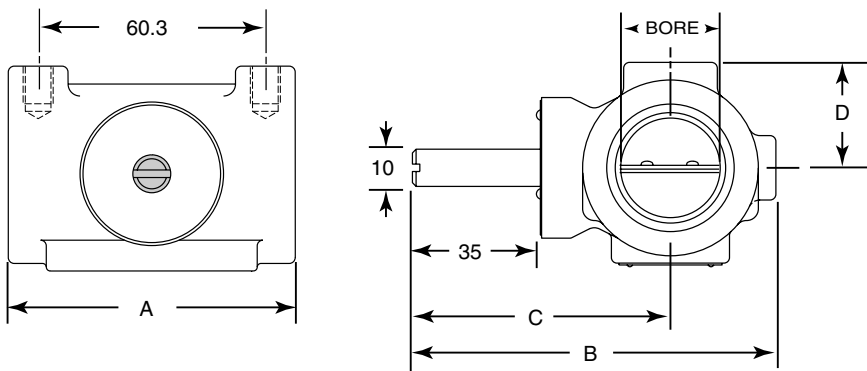
Rc Size	FULL PORT Nonbeveled shutter 90° rotation			REDUCED PORT Nonbeveled shutter 90° rotation			HIGH PRESSURE DROP 90° rotation			Dimensions, mm			
	Catalog Number	Item Code	BORE mm	Catalog Number	Item Code	BORE mm	Catalog Number	Item Code	BORE mm	A	B	C	D
1/2	102BVM	101103	15.5	-	-	-	402BVM-HD	100131	11.1	76.2	77.5	52.1	30.2
3/4	103BVM	101104	22	-	-	-	403BVM-HD	100135	13.9	76.2	77.9	52.5	27.0
1	104BVM	101105	28	104BVM-R	101255	22	404BVM-HD	100120	2 x 11.1	73.0	84.7	54.5	33.3
1-1/2	106BVM	101106	42	106BVM-R	101256	30				79.4	97.0	60.5	41.3
2	108BVM	101107	54	108BVM-R	101257	39				79.4	113.0	68.5	49.2
2-1/2	110BVM	101108	67	110BVM-R	101258	45				98.4	129.2	78.5	57.2
3	112BVM	101109	82	112BVM-R	101259	57				98.4	141.7	84.5	63.5
4	116BVM	101110	106	116BVM-R	101260	71				127.0	168.9	97.5	77.8



Dim: mm

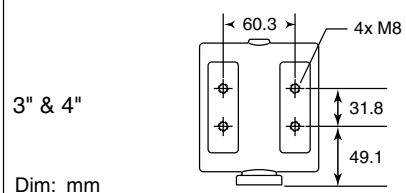
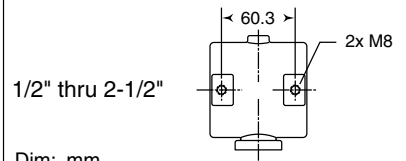
Dimensions, Automatic Valves with Rc Threads

Rc Size	FULL PORT Nonbeveled shutter 360° rotation			REDUCED PORT Nonbeveled shutter 360° rotation			HIGH PRESSURE DROP 360° rotation			Dimensions, mm			
	Catalog Number	Item Code	BORE mm	Catalog Number	Item Code	BORE mm	Catalog Number	Item Code	BORE mm	A	B	C	D
1/2	2BVM-A	202081	15.5	-	-	-	402BVM-AHD	100132	11.1	76.2	93.0	67.7	30.2
3/4	3BVM-A	101248	22	-	-	-	403BVM-AHD	100136	13.9	76.2	91.3	65.9	27.0
1	4BVM-A	101249	28	4BVM-AR	101261	22	404BVM-AHD	100100	2 x 11.1	73.0	99.2	70.6	33.3
1-1/2	6BVM-A	101250	42	6BVM-AR	101262	30				79.4	113.5	77.0	41.3
2	8BVM-A	101251	54	8BVM-AR	101263	39				79.4	129.4	84.9	49.2
2-1/2	10BVM-A	101252	67	10BVM-AR	101264	45				98.4	145.3	94.5	57.2
3	12BVM-A	101253	82	12BVM-AR	101265	57				98.4	158.0	100.8	63.5
4	16BVM-A	101254	106	16BVM-AR	101266	71				127.0	184.9	113.5	77.8



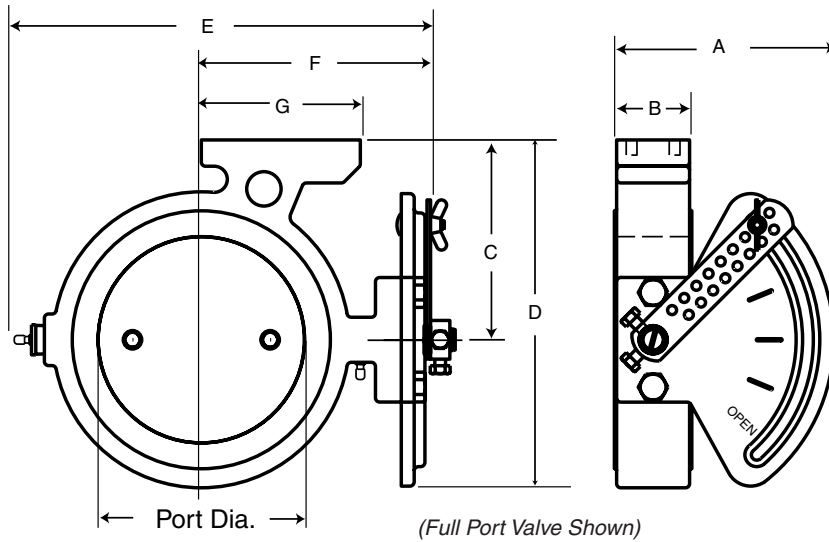
Dim: mm

Actuator Bracket Mounting Holes



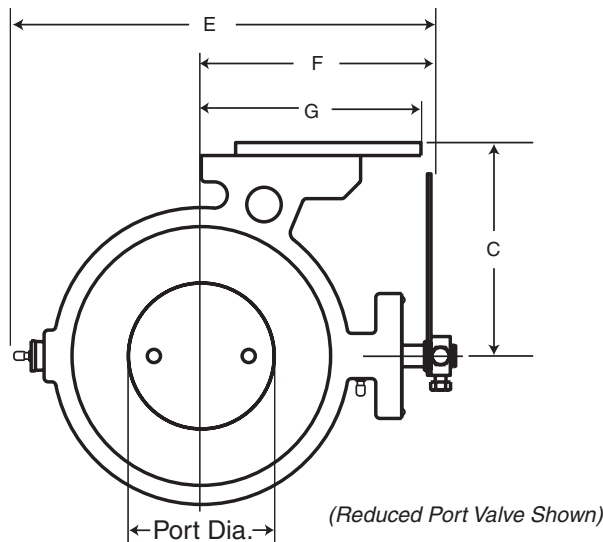
Dimensions, Wafer type valves

Manual valves



Size	Cat. No.	Item Code	Dimensions mm (in)							Port Dia.	Approx Wgt. kg (lb)
			A	B	C	D	E	F	G		
Full Port Manual											
6"	124BV-B	500915	162 (6.38)	57 (2.25)	148 (5.81)	257 (10.13)	289 (11.38)	97 (3.81)	117 (4.63)	152 (6.00)	13 (28)
8"	132BV-B	500913	162 (6.38)	57 (2.25)	178 (7.00)	317 (12.47)	351 (13.81)	206 (8.13)	130 (5.13)	203 (8.00)	16 (36)
Reduced Port Manual											
6"	124BV-RB	500690	162 (6.38)	57 (2.25)	148 (5.81)	257 (10.13)	289 (11.38)	97 (3.81)	117 (4.63)	108 (4.25)	16 (35)
8"	132BV-RB	500691	162 (6.38)	57 (2.25)	178 (7.00)	317 (12.47)	351 (13.81)	206 (8.13)	130 (5.13)	130 (5.12)	23 (50)

Automatic Valves



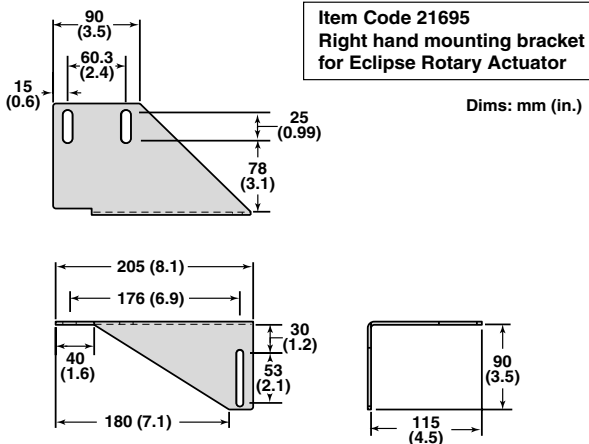
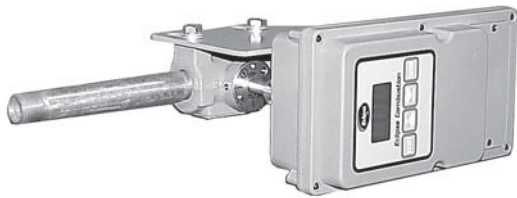
Size	Cat. No.	Item Code	Dimensions mm (in)							Port Dia.	Approx Wgt. kg (lb)
			A	B	C	D	E	F	G		
Full Port Auto											
6"	24BV-AB	500998	162 (6.38)	83 (3.25)	157 (6.18)	257 (10.13)	289 (11.38)	97 (3.81)	162 (6.38)	152 (6.00)	13 (28)
8"	32BV-AB	500999	162 (6.38)	83 (3.25)	187 (7.38)	317 (12.47)	351 (13.83)	206 (8.13)	193 (7.60)	203 (8.00)	16 (36)
Reduced Port Auto											
6"	24BV-ARB	500975	162 (6.38)	83 (3.25)	157 (6.18)	257 (10.13)	289 (11.38)	97 (3.81)	162 (6.38)	108 (4.25)	16 (35)
8"	32BV-ARB	500976	162 (6.38)	83 (3.25)	187 (7.38)	317 (12.47)	351 (13.81)	206 (8.13)	193 (7.60)	130 (5.12)	23 (50)

Accessories for automatic BV's

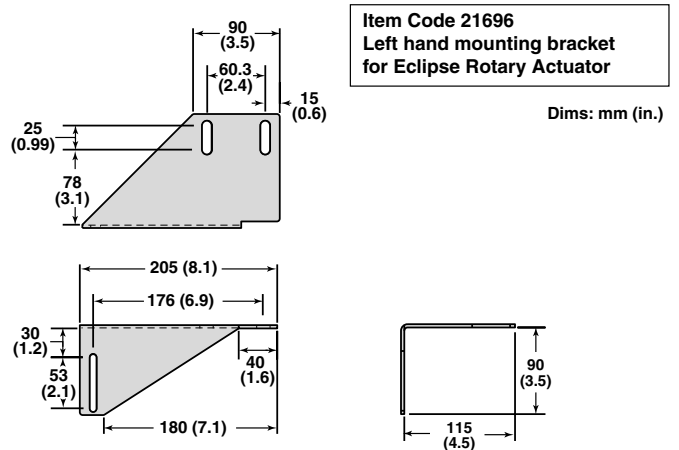
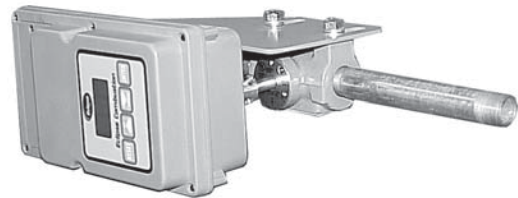
Control Motor Mounting Kits	Kit Item Code	Major Components			
		Bracket	Control Rod	Coupling	Crank Arm
Eclipse Rotary Actuator					
RH mount, 1/2 thru 4, ver. 1	100124	21695	Rod not required	20697	Crank arms not required
LH mount, 1/2 thru 4, ver. 1	100125	21696		20697	
RH mount, 1/2 thru 4, ver. 2	100127	21695		21048	
LH mount, 1/2 thru 4, ver. 2	100128	21696		21048	
Perpendicular mount, 1/2 thru 1-1/2, ver. 2	100190	21934		21048	
Perpendicular mount, 2 & 2-1/2, ver. 2	100191	21935		21048	
Perpendicular mount, 3 & 4, ver. 2	100192	21936		21048	
EMP/EMA, Honeywell					
1/2 thru 4 ver. 1	500928	13095	12730-1	14264	500527
1/2 thru 4 ver. 2	100099	13095	12730-1	14264	102265
6 and 8 valves	500928-1	13095	12730-2	14264	500537
Honeywell M640 & M940					
1/2 thru 4 ver. 1	500758	13095 & 12758	12730-1	14264	500527
1/2 thru 4 ver. 2	120079	13095 & 12758	12730-1	14264	102265

Notes:

- Each Eclipse ver. 2 automatic BV is sold with a Control Motor Arm, Item Code 102265.
- Control Motor Mounting Kits contain brackets, couplings and misc. screws & washers.
- The kits used with EMP/EMA and Honeywell valves also contain a control rod and crank arm.
- These mounting kits are designed to work with a majority of installations. Some applications may require special components.
- Not all kit components are available for individual sale.
- Contact the factory or your Eclipse representative for more detailed information.



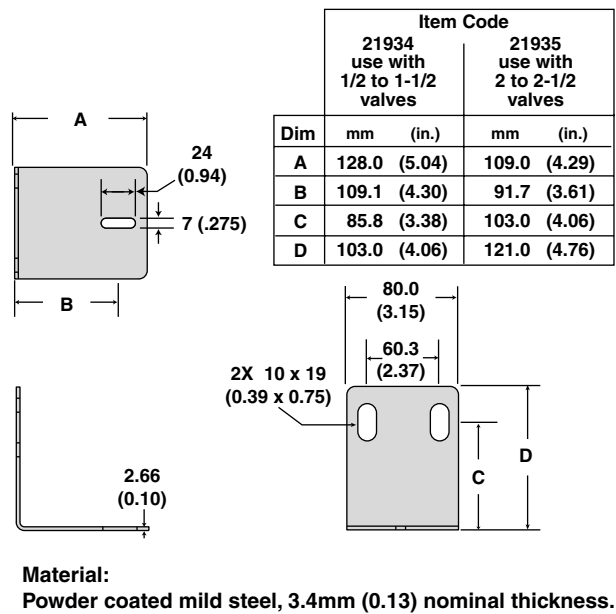
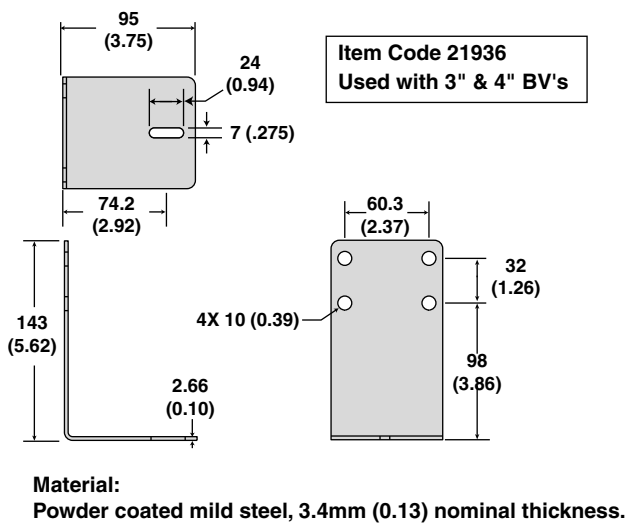
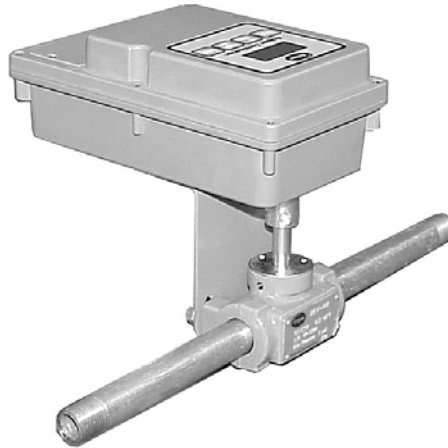
Material:
Powder coated mild steel, 3.4mm (0.13) nominal thickness.



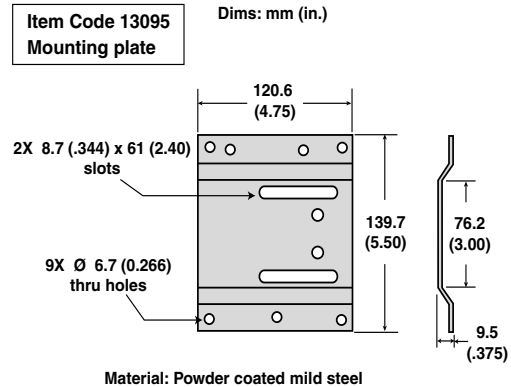
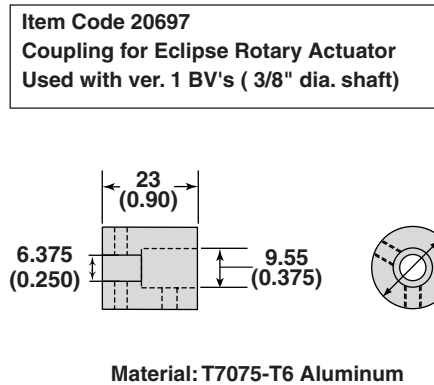
Material:
Powder coated mild steel, 3.4mm (0.13) nominal thickness.

Accessories for automatic BV's (continued)

Perpendicular Brackets for Eclipse Rotary Actuator



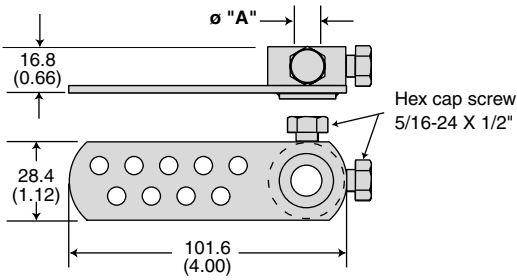
Couplings for Eclipse Rotary Actuator



Accessories for automatic BV's (continued)

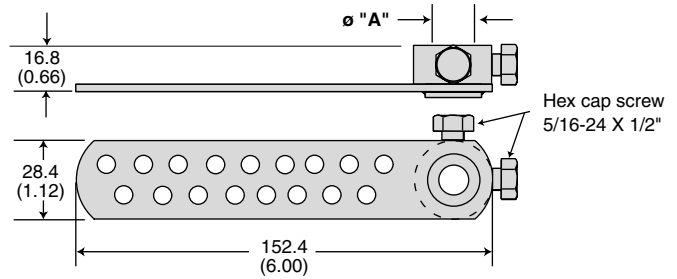
Crank arms for general use

Crank Arm Item Code	DIM "A"	
	mm	(in.)
500527	9.6	(0.380)
500535	12.8	(0.505)
500536	16.0	(0.630)



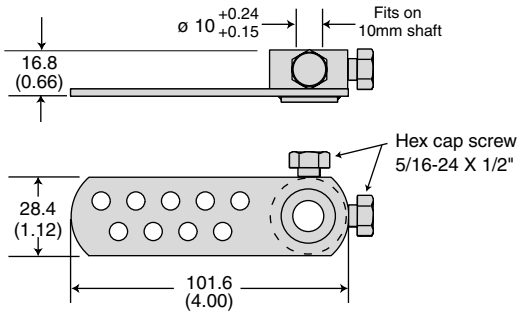
Materials: Zinc plated carbon steel

Crank Arm Item Code	DIM "A"	
	mm	(in.)
500537	16.0	(0.630)
500538	9.6	(0.380)
500539	12.8	(0.505)



Materials: Zinc plated carbon steel

Item Code 102265 Dims: mm (in.)

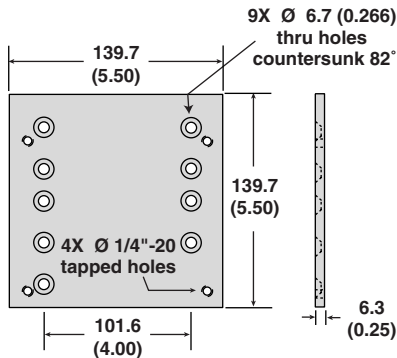


Materials: Zinc plated carbon steel

Linkage control rods			Dia. Inches	Item Code	Length		
Zinc plated cold rolled steel					In.	mm	
Dia. Inches	Item Code	Length In.	1/2	10175-1	12	(305)	
				10175-2	15	(381)	
5/16	12730	8	1/2	10175-3	18	(457)	
		10		10175-4	24	(610)	
		12730-1		10	10175-5	30	(762)
		12730-2		15	10175-6	36	(914)
		12730-3		24	10175-7	48	(1219)
		12730-4		6	10175-8	60	(1524)
		12730-5		6	10175-9	72	(1829)

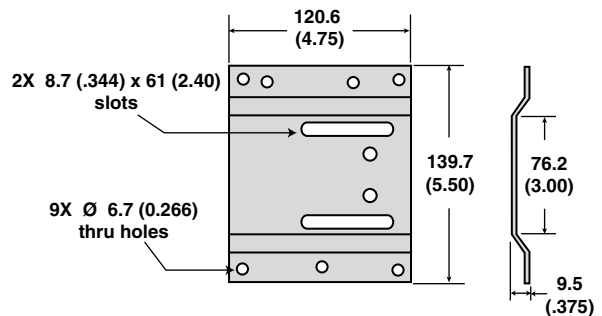
Mounting plates for Honeywell and EMP/EMA actuators

Item Code 12758 Dims: mm (in.)
Mounting plate



Material: Powder coated mild steel

Item Code 13095 Dims: mm (in.)
Mounting plate



Material: Powder coated mild steel

Control Motors

Model	Eclipse Item Code	Stroke Degrees	Timing Seconds	Torque in-Lb	Electrical			Auxiliary Switch ³	Crank Arm	
					Volts	Hertz	Amps		Item Code	Included w/Motor
Eclipse Rotary Actuator										
Std. keypad	ACT004A1A1A1AX	90	18	30	110/120	50/60	.04	2	Mounts directly to shaft	
Keypad inverted 180°	ACT004A2A1A1AX	90	18	30	110/120	50/60	.04	2		
Two Position										
EMA										
EMA-405	12616	180	20	16	120	60	.4	No	15181	Yes
EMA-405-1	10916	90	10	16	120	60	.4	No	15181	Yes
EMA-418-1	10912	90	10	60	120	60	.9	No	15181	Yes
Honeywell M6184 A 1015	10826	90	30	150	24	60	.9	No	18093	No
Position Proportioning with Slidewire Feedback										
EMP										
EMP-423-1 ¹	12618	90	12	60	120	60	.65	Yes	15181	Yes
EMP-424-1 ¹	12622	90	12 ²	60	120	60	.65	Yes	15181	Yes
EMP-453-1 ¹	12632	90	40	220	120	60	.65	Yes	15181	Yes
EMP-454-1 ¹	12634	90	40 ²	220	120	60	1.80	Yes	15181	Yes
Potentiometer Slaved Proportioning										
EMP										
EMP-423-2	12640	90	12	60	120	60	.65	Yes	15181	Yes
EMP-424-2	12642	90	12 ²	60	120	60	.65	Yes	15181	Yes
EMP-453-2	12646	90	40	220	120	60	.65	Yes	15181	Yes
EMP-454-2	12651	90	40 ²	220	120	60	.65	Yes	15181	Yes
Honeywell										
M9494 D 1000 ⁴	16107	90/160	60/120	300	24	50/60	0.8	No	18093	No
M9484 D 1002 ⁴	15800-4	90/160	15/30	75	24	50/60	0.8	No	18093	No
M9484 D 1028 ⁴	17997	90/160	30/60	150	24	50/60	0.8	No	18093	No
Proportioning, 4-20mA, Weathertight										
EMP										
EMP-423-4	22755	90	12	60	120	60	.65	Yes	15181	Yes
EMP-424-4	22735	90	12 ²	60	120	60	.65	Yes	15181	Yes
EMP-453-4	22756	90	40	220	120	60	.65	Yes	15181	Yes
EMP-454-4	22757	90	40 ²	220	120	60	.65	Yes	15181	Yes
Honeywell										
M7284 A 1004	12200	90	30	150	120	50/60	.65	No	18093	No





Notes:

- ¹ Can be used as two position if internal slidewire is not connected
- ² Timing can be increased (slower rotation) up to approximately ten times this rating by turning a slotted adjustment screw located on the outside of the case.
- ³ Rotary actuator=SPST, 120VAC, 0.2A inductive, 0.4 non-inductive
EMP=SPDT, 120VAC, 5.8A inductive, 12A non-inductive. 240VAC, 2.9A inductive, 6A non-inductive
- ⁴ Can be used with 4-20mA signal with Item Code 12740 resistor kit.



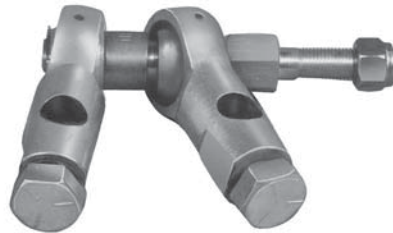
Control Motor Accessories

Eclipse Item Code	Description	Eclipse Item Code	Description
EMP/EMA Only		Honeywell Only	
12674	Auxiliary slidewire kit.	14892	120 to 24VAC transformer. Mounts ininternally
12670	Auxiliary switch kit.	16291	Transformer, step down 120/50/60/25V secondary 40 VA
12676	Weather resistant cover.	11946	Adapter bracket
12677	Paralleling relay.	12659	Screw terminal kit
12707	135 ohm, 90° slidewire.	12740	Resistor kit
15766-2	Converter, 4-20mA, for EMP		

Swivel Connectors for 5/16" Diameter Control Rods

 <p>Item Code 500558 is a rotating swivel block connector assembly for joining control rod to control arm. It allows 360° rotation.</p>	 <p>Item Code 500569 serves to connect two control rods to one control arm and also allows 360° rotation.</p>
 <p>Item Code 14316 swivel connector allows 360° rotation. It provides a 20° flex from the swivel center line to accommodate an angular approach of a linkage control rod, but immediacy of response is less positive than Item Code 14264 (at right).</p>	 <p>Item Code 14264 is a non-flexing swivel connector that allows 360° rotation around swivel center line. It provides a more positive positioning and immediacy of response than Item Code 14316 (at left).</p>

for 1/2" Diameter Control Rods

 <p>Item Code 500542 is a swivel block that rotates 360°</p>	 <p>Item Code 500543 is a single ball swivel that rotates 360° while permitting an angular approach of rod toward control arm.</p>	 <p>Item Code 500544 is a double ball swivel that connects two rods to one control arm. Allows angular approach of rod to arm, rotates 360°.</p>
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