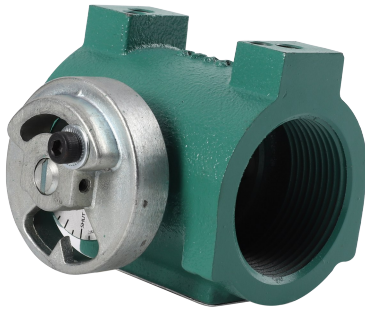


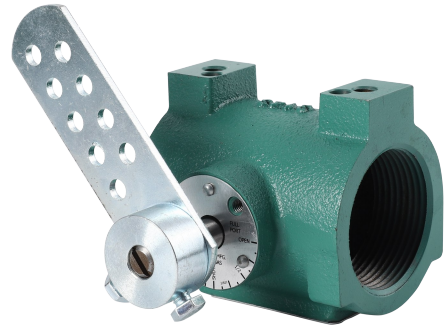
Yammataha Butterfly Valves

Full Port & Reduced Port

Manual Control BV



Automatic Control BV



(Shown with Optional Crank Arm)

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 in pipe sizes 1/2" to 8". Full port, reduced port and high pressure drop constructions are available depending on pipe size and connection.

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.

Disks

Furnished with beveled or non-beveled disks, according to the selection table.

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 disk position.

Control

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

Automatic control butterfly valves can be fitted with an optional crank arm or coupling. 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.

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.

Main Specifications

Parameter	Specifications	
Maximum Operating Pressure	1/2" - 4" (15 - 100 mm)	5 psig (350 mbarg)
	6" - 8" (150 - 200 mm)	3 psig (210 mbarg)
Operating Temperature Range	Rc Version	32 to 140°F (0 to 60°C)
	NPT Version	-40 to 140°F (-40 to 60°C)
Materials of Construction	Body	Powder Coated Cast Iron
	Shaft	Zinc Plated Steel
	Disk	Carbon Steel
	Shaft Packing Seal	Nitrile Rubber (Buna-N)
Approvals	(only 1/2" thru 4" models)	
Typical Application	Control of air or gas flow in a combustion system	
Notes on European Applications	4" thread not acceptable for gas use. 3" thread is acceptable if pressure is limited to 100 mbar (1.5 psig)	

Rc Model Selection

Rc Size	Full Port Valves						Reduced Port Valves					
	Manual		Automatic				Manual		Automatic			
	Non-Beveled Disk 90° Rotation		Beveled Disk 75° Rotation		Non-Beveled Disk 360° Rotation		Non-Beveled Disk 90° Rotation		Beveled Disk 75° Rotation		Non-Beveled Disk 360° Rotation	
	Catalog Number	Item Code	Catalog Number	Item Code	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-AB	101011512	3BVM-A	101248	-	-	-	-	-	-
1"	104BVM	101105	4BVM-AB	101011513	4BVM-A	101249	104BVM-R	101255	4BVM-ARB	101011526	4BVM-AR	101261
1-1/4"	-	-	-	-	-	-	-	-	-	-	-	-
1-1/2"	106BVM	10106	6BVM-AB	101011514	6BVM-A	101250	106BVM-R	101256	6BVM-ARB	101011527	6BVM-AR	101262
2"	108BVM	101107	8BVM-AB	101011515	8BVM-A	101251	108BVM-R	101257	8BVM-ARB	101011528	8BVM-AR	101263
2-1/2"	110BVM	101108	10BVM-AB	101011516	10BVM-A	101252	110BVM-R	101258	10BVM-ARB	101011529	10BVM-AR	101264
3"	112BVM	101109	12BVM-AB	101011517	12BVM-A	101253	112BVM-R	101259	12BVM-ARB	101011530	12BVM-AR	101265
4"	116BVM	101110	16BVM-AB	101011518	16BVM-A	101254	116BVM-R	101260	16BVM-ARB	101011531	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. See dimensions on page 7.											
8" wafer												

* See note below.

Rc Size	High Pressure Drop Valves			
	Manual		Automatic	
	Non-Beveled Disk 90° Rotation		Non-Beveled Disk 360° Rotation	
	Catalog No	Item Code	Catalog No	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

* See note to the right.

***NOTE:** Beveled disks physically stop against the body in the closed position. ALL 1/2" Butterfly Valves (NPT/Rc, Manual/Automatic Beveled/Non-beveled) DO NOT have a mechanical stop limiting the travel to 75° rotation. The effective travel for flow control is 75° but the shaft will rotate 360°. The terms beveled and non-beveled do not apply to any of the 1/2" Butterfly Valves covered in this datasheet.

Rc Model Selection

Rc Size	Flow Coefficient CV-Full Open	Full Port							
		Capacity nm³/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

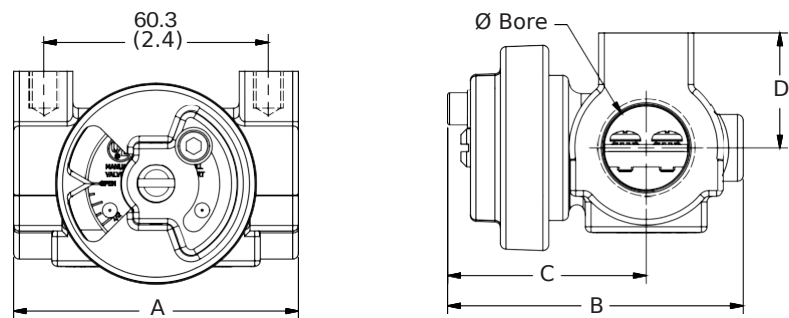
Rc Size	Flow Coefficient Kv-Full Open	Reduced Port							
		Capacity nm³/h air - mbar pressure drop							
		1	2	3	5	8	10	13	15
1"	12.1	11	15	18	24	30	33	38	41
1-1/2"	27.0	24	33	41	53	67	74	85	91
2"	53.9	47	67	82	105	133	148	169	181
2-1/2"	75.9	66	94	115	148	187	209	238	255
3"	128.0	112	158	194	250	315	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	2,100

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

Dimensions, Manual Valves with Rc Threads

Rc Size	Full Port			Reduced Port			High Pressure Drop			Dimensions, mm			
	Non-Beveled Disk 90° Rotation			Non-Beveled Disk 90° Rotation			90° Rotation						
	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	76.5	77.9	52.4	30.2
3/4"	103BVM	101104	22	-	-	-	403BVM-HD	100135	13.9	76.5	77.7	52.2	30.2
1"	104BVM	101105	28	104BVM-R	101255	22	404BVM-HD	100120	2 x 11.1	75.0	84.2	54.2	33.7
1-1/2"	106BVM	101106	42	106BVM-R	101256	30				80.0	97.2	60.2	41.3
2"	108BVM	101107	54	108BVM-R	101257	39				80.0	113.2	68.2	49.3
2-1/2"	110BVM	101108	67	110BVM-R	101258	45				99.0	128.7	78.2	57.1
3"	112BVM	101109	82	112BVM-R	101259	57				100.0	141.7	84.2	63.5
4"	116BVM	101110	106	116BVM-R	101260	71				127.0	168.7	97.2	77.8

* See note below.



Dimensions, Automatic Valves with Rc Threads

Rc Size	Full Port					Reduced Port				
	Beveled Disk 75° Rotation		Non-Beveled Disk 360° Rotation		Bore mm	Beveled Disk 75° Rotation		Non-Beveled Disk 360° Rotation		Bore mm
	Catalog Number	Item Code	Catalog Number	Item Code		Catalog Number	Item Code	Catalog Number	Item Code	
1/2"*	-	-	2BVM-A	202081	15.5	-	-	-	-	-
3/4"	3BVM-AB	101011512	3BVM-A	101248	22	-	-	-	-	-
1"	4BVM-AB	101011513	4BVM-A	101249	28	4BVM-ARB	101011526	4BVM-AR	101261	22
1-1/2"	6BVM-AB	101011514	6BVM-A	101250	42	6BVM-ARB	101011527	6BVM-AR	101262	30
2"	8BVM-AB	101011515	8BVM-A	101251	54	8BVM-ARB	101011528	8BVM-AR	101263	39
2-1/2"	10BVM-AB	101011516	10BVM-A	101252	67	10BVM-ARB	101011529	10BVM-AR	101264	45
3"	12BVM-AB	101011517	12BVM-A	101253	82	12BVM-ARB	101011530	12BVM-AR	101265	57
4"	16BVM-AB	101011518	16BVM-A	101254	106	16BVM-ARB	101011531	16BVM-AR	101266	71

* See note below.

NPT Model Selection

NPT Size	Full Port Valves						Reduced Port Valves			
	Manual		Automatic				Manual		Automatic	
	Beveled Disk 75° Rotation		Beveled Disk 75° Rotation		Non-Beveled Disk 360° Rotation		Beveled Disk 75° Rotation		Beveled Disk 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-AB	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

* See note below.

NPT Size	High Pressure Drop Valves			
	Manual		Automatic	
	Non-Beveled Disk 90° Rotation		Non-Beveled Disk 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

* See note below.

***NOTE:** Beveled disks physically stop against the body in the closed position. ALL 1/2" Butterfly Valves (NPT/Rc, Manual/Automatic, Beveled/Non-beveled) DO NOT have a mechanical stop limiting the travel to 75° rotation. The effective travel for flow control is 75° but the shaft will rotate 360°. The terms beveled and non-beveled do not apply to any of the 1/2" Butterfly Valves covered in this datasheet.

NPT Model Capacities

Multiply Capacity by the Factors Below for Gases Other than Air			
Gas - Sp. Gr.	Natural - .6	Propane - 1.5	Butane - 2.0
Multifactor	1.29	0.81	0.70

NPT Size	Flow Coefficient Cv-Full Open	Full Port								
		Capacity scfh air - "w.c. 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

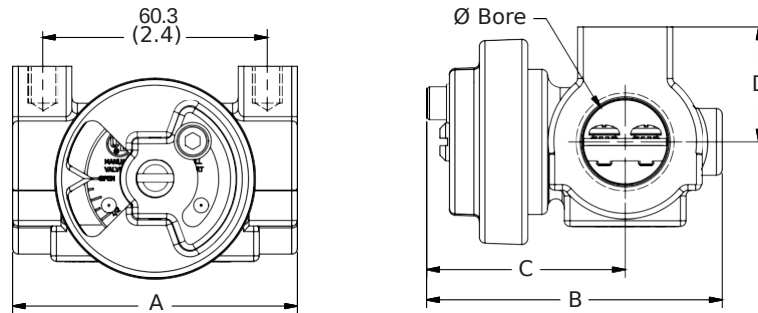
NPT Size	Flow Coefficient Cv-Full Open	Reduced Port								
		Capacity scfh air - "w.c. pressure drop								
		0.5	0.75	1	1.5	2	3	4	6	8
1"	14.1	443	543	626	767	885	1,082	1,248	1,525	1,757
1-1/4"	22.8	717	877	1,013	1,240	1,431	1,750	2,019	2,467	2,842
1-1/2"	31.4	987	1,208	1,395	1,707	1,970	2,410	2,780	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 - "w.c. 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			Reduced Port			High Pressure Drop			Dimensions, Inches			
	Beveled Disk 75° Rotation			Beveled Disk 75° Rotation			90° Rotation						
	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	3.01	3.07	2.06	1.19
3/4"	103BV-B	501215	0.87	-	-	-	403BV-HD	100133	0.55	3.01	3.06	2.06	1.19
1"	104BV-B	501216	1.10	104BV-RB	501208	0.87	404BV-HD	100119	2 x 0.44	2.95	3.32	2.13	1.33
1-1/4"	105BV-B	501217	1.46	105BV-RB	501209	1.02				3.15	3.55	2.25	1.50
1-1/2"	106BV-B	501218	1.65	106BV-RB	501210	1.18				3.15	3.83	2.37	1.63
2"	108BV-B	501219	2.13	108BV-RB	501211	1.54				3.15	4.46	2.69	1.94
2-1/2"	110BV-B	501220	2.64	110BV-RB	501212	1.77				3.90	5.07	3.08	2.25
3"	112BV-B	501221	3.23	112BV-RB	501213	2.24				3.94	5.58	3.32	2.50
4"	116BV-B	501222	4.17	116BV-RB	501214	2.80				5.00	6.64	3.83	3.06

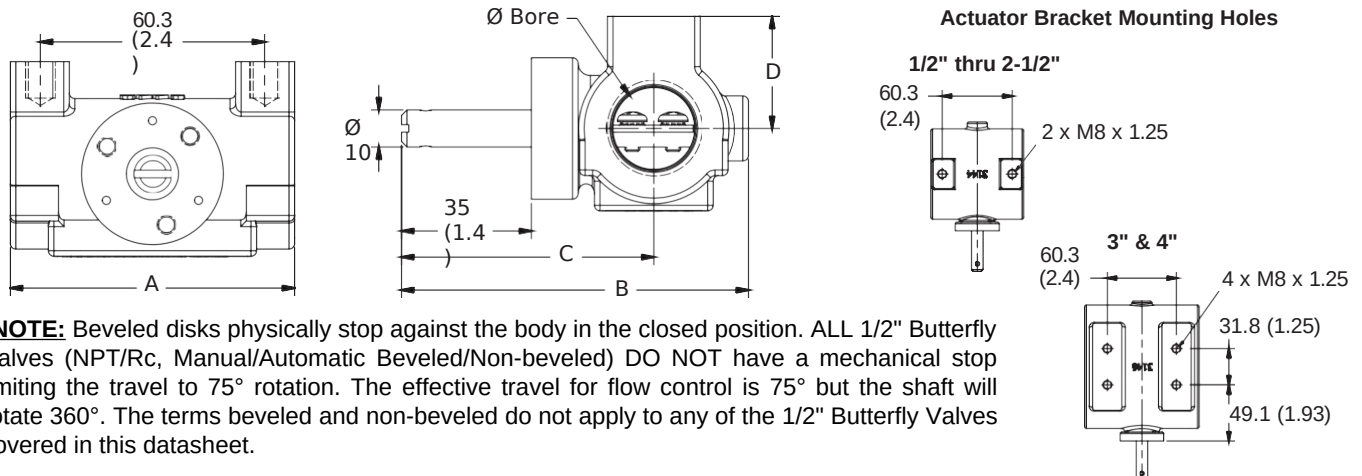
* See note below.



Dimensions, Automatic Valves with NPT Threads

NPT Size	Full Port					Reduced Port			High Pressure Drop			Dimensions, Inches			
	Beveled Disk 75° Rotation		Non-Beveled Disk 360° Rotation		Bore Inches	Beveled Disk 75° Rotation		Bore Inches	360° Rotation		Bore Inches				
	Catalog Number	Item Code	Catalog Number	Item Code		Catalog Number	Item Code		Catalog Number	Item Code					
1/2**	2BV-AB	501239	-	-	0.61	-	-	-	402BV-AHD	100130	0.44	3.01	3.68	2.68	1.19
3/4"	3BV-AB	501223	3BV-A	501200	0.87	-	-	-	403BV-AHD	100134	0.55	3.01	3.68	2.68	1.19
1"	4BV-AB	501224	4BV-A	501201	1.10	4BV-ARB	501231	0.87	404BV-AHD	100123	2 x 0.44	2.95	3.94	2.76	1.33
1-1/4"	5BV-AB	501225	5BV-A	501202	1.46	5BV-ARB	501232	1.02				3.15	4.17	2.76	1.50
1-1/2"	6BV-AB	501226	6BV-A	501203	1.65	6BV-ARB	501233	1.18				3.15	4.45	2.99	1.63
2"	8BV-AB	501227	8BV-A	501204	2.13	8BV-ARB	501234	1.54				3.15	5.08	3.31	1.94
2-1/2"	10BV-AB	501228	10BV-A	501205	2.64	10BV-ARB	501235	1.77				3.90	5.69	3.70	2.25
3"	12BV-AB	501229	12BV-A	501206	3.23	12BV-ARB	501236	2.24				3.94	6.20	3.94	2.50
4"	16BV-AB	501230	16BV-A	501207	4.17	16BV-ARB	501237	2.80				5.00	7.26	4.45	3.06

* See note below.



***NOTE:** Beveled disks physically stop against the body in the closed position. ALL 1/2" Butterfly Valves (NPT/Rc, Manual/Automatic Beveled/Non-beveled) DO NOT have a mechanical stop limiting the travel to 75° rotation. The effective travel for flow control is 75° but the shaft will rotate 360°. The terms beveled and non-beveled do not apply to any of the 1/2" Butterfly Valves covered in this datasheet.

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