

BVA BUTTERFLY VALVES



WARNING

These instructions are intended for use only by experienced, qualified combustion start-up personnel. Adjustment of this equipment and its components by unqualified personnel can result in fire, explosion, severe personal injury, or even death.

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These instructions are intended to serve as guidelines covering the installation, operation, and maintenance of Hauck equipment. While every attempt has been made to ensure completeness, unforeseen or unspecified applications, details, and variations may preclude covering every possible contingency. **WARNING: TO PREVENT THE POSSIBILITY OF SERIOUS BODILY INJURY, DO NOT USE OR OPERATE ANY EQUIPMENT OR COMPONENT WITH ANY PARTS REMOVED OR ANY PARTS NOT APPROVED BY THE MANUFACTURER.** Should further information be required or desired or should particular problems arise which are not covered sufficiently for the purchaser's purpose, contact Hauck Mfg. Co.



WARNING

This equipment is potentially dangerous with the possibility of serious personal injury and property damage. Hauck Manufacturing Company recommends the use of flame supervisory equipment and fuel safety shutoff valves. Furthermore, Hauck urges rigid adherence to National Fire Protection Association (NFPA) standards and insurance underwriter's requirements. Operation and regular preventative maintenance of this equipment should be performed only by properly trained and qualified personnel. Annual review and upgrading of safety equipment is recommended.

A. GENERAL INFORMATION

Hauck Butterfly Air Valves control the flow of low pressure combustion air or fuel gas to burner systems. Two versions of the valve are available: the BVA series for ambient air and the BVA-H series for preheated air to 800°F (427°C). In systems using a primary air control valve for a group of burners, the butterfly air valve can be used to trim and balance the air to individual burners. The valves provide shutoff (though not tight shutoff) of the air flow. The valves are available for automatic or manual control. They are not suitable for coke oven gas.

B. RECEIVING AND INSPECTION

Upon receipt, check each item on the bill of lading and/or invoice to determine that all equipment has been received. A careful examination of all parts should be made to ascertain if there has been any damage in shipment.

IMPORTANT

If the installation is delayed and the equipment is stored outside, provide adequate protection as dictated by climate and period of exposure. Special care should be given to all motors and bearings, if applicable, to protect them from rain or excessive moisture.

C. CAPACITIES

Air

Valve Model	Pipe Size (NPT)	Wide Open Valve Capacity Air (scfh)			70° Open Valve Capacity Air (scfh)			Valve Leakage @ Fully Closed Position & 1psig Upstream Static Pressure Air (scfh)
		0.5" w.c.Δp	1 osi Δp	C _v	0.5" w.c.Δp	1 osi Δp	C _v	
BVA 110/410	1"	892	1690	28	776	1440	25	≤ 45
BVA 112/412	1¼"	1970	3720	62	1430	2630	45	≤ 105
BVA 115/415	1½"	3580	6640	113	2340	4340	74	≤ 130
BVA 120/420	2"	6320	11800	199	4080	7500	129	≤ 150
BVA 125/425	2½"	10200	18400	322	5310	9770	167	≤ 190
BVA 130/430	3"	12900	23700	405	8000	14600	252	≤ 210
BVA 140/440	4"	29000	53000	913	13900	26000	437	≤ 240
BVA 160/460	6"	95300	182000	3040	36200	68600	1150	≤ 455
BVA 1060/4060	6" FLG	75200	141600	2370	31900	59800	1005	≤ 710
BVA 1080/4080	8" FLG	185000	345000	5770	61000	115000	1910	≤ 710
BVA 1100/4100	10" FLG	242000	451000	7630	98200	182000	3070	≤ 710

Natural Gas

Valve Model	Pipe Size (NPT)	Wide Open Valve Capacity Natural Gas (scfh)			70° Open Valve Capacity Natural Gas (scfh)			Valve Leakage @ Fully Closed Position & 1psig Upstream Static Pressure Nat. Gas (scfh)
		0.5" w.c.Δp	1 osi Δp	C _v	0.5" w.c.Δp	1 osi Δp	C _v	
BVA 110/410	1"	1150	2180	28	1000	1860	25	≤ 60
BVA 112/412	1¼"	2550	4800	62	1840	3400	45	≤ 140
BVA 115/415	1½"	4600	8570	113	3000	5600	74	≤ 95
BVA 120/420	2"	8200	15200	199	5270	9680	129	≤ 195
BVA 125/425	2½"	13200	23900	322	6860	12600	167	≤ 115
BVA 130/430	3"	16600	30700	405	10300	18800	252	≤ 275
BVA 140/440	4"	37500	68400	913	17900	33500	437	≤ 310
BVA 160/460	6"	123000	235000	3040	46800	88600	1150	≤ 590

Notes:

1. Capacities based on air @ 1.0 s.g. and natural gas @ 0.60 s.g., and 60°F fluid temperature.
2. Δp measured across valve.
3. Maximum inlet pressure is **5 psig**, maximum operating temperature is 250°F.
4. 1xx and 1xxx series are manual valves with a short lever and locking screw; 4xx and 4xxx are automatic valves with a long lever and linkage connector.
5. For applications requiring a control motor mounting bracket, specify the motor model number when ordering.

C. CAPACITIES (Continued)

BVA-H SERIES (Hot Air To 800°F)

Valve Model	Pipe Size (NPT)	70° Open Valve Capacity Air (scfh)						C _v	Valve Leakage @ Fully Closed Position & 1psig Upstream Static Pressure Air 60°F (scfh)
		0.5" wc Δp			1 osi Δp				
		400°F	600°F	800°F	400°F	600°F	800°F		
BVA-H 110/410	1"	596	537	493	1080	975	894	24	≤ 305
BVA-H 112/412	1¼"	1090	984	903	2080	1880	1720	44	≤ 445
BVA-H 115/415	1½"	1680	1510	1390	3080	2780	2550	68	≤ 470
BVA-H 120/420	2"	2700	2430	2230	4920	4430	4070	109	≤ 705
BVA-H 125/425	2½"	3360	3030	2770	6290	5660	5200	136	≤ 925
BVA-H 130/430	3"	5570	5020	4600	10500	9490	8700	226	≤ 1470
BVA-H 140/440	4"	9810	8840	8100	18400	16600	15200	400	≤ 2930
BVA-H 160/460	6"	23300	21000	19300	43000	38800	35600	943	≤ 5330

Valve Model	Pipe Size (NPT)	Wide Open Valve Capacity Air (scfh)						C _v	Valve Leakage @ Fully Closed Position & 1psig Upstream Static Pressure Air 60°F (scfh)
		0.5" wc Δp			1 osi Δp				
		400°F	600°F	800°F	400°F	600°F	800°F		
BVA-H 110/410	1"	743	669	614	1350	1220	1110	30	≤ 305
BVA-H 112/412	1¼"	1660	1500	1380	3120	2800	2580	67	≤ 445
BVA-H 115/415	1½"	3000	2700	2480	5620	5070	4640	121	≤ 470
BVA-H 120/420	2"	4550	4100	3760	8420	7580	6950	184	≤ 705
BVA-H 125/425	2½"	8310	7500	6870	15200	13700	12600	336	≤ 925
BVA-H 130/430	3"	11300	10200	9360	21000	18900	17300	459	≤ 1470
BVA-H 140/440	4"	25000	22500	20600	45800	41250	37800	1000	≤ 2930
BVA-H 160/460	6"	96600	87000	79800	179000	161000	147000	3900	≤ 5330

Notes:

1. Capacities based on air at specified temperature.
2. Δp is measured across valve.
3. Maximum inlet pressure is **5 psig**.
4. 1xx and 1xxx are manual operation valves with a short lever; 4xx and 4xxx series are automatic valves with a long lever and linkage connector.
5. For applications that require a control motor mounting bracket, specify the motor model number when ordering.
6. Maximum operating temperature is 800°F.

D. DIMENSIONS

See appropriate Dimension sheet for detailed dimensional information.

E. INSTALLATION

1. The Hauck Butterfly Air Valve can be installed in any position, at any convenient location in the low pressure air line normally not to exceed 5 psi (34.5 kPa). The threaded valves are designed with Female connections threaded for standard pipe. The flanged valves are designed to connect to RPM flanges.
2. When an automatic operation is to be used, a control motor should be mounted to some nearby rigid support. The valve's operating arm moves in a clockwise direction to open the valve over an arc of about 60° at a fixed radius of 4" (101mm) for a flanged valve, or an adjustable radius from 1-1/8" to 4-3/8" (29 to 111mm) for a threaded valve.
 - a. Connect the valve lever to the control motor arm by a 3/8" (9.5mm) rod through the snap connection pin on the valve lever. A setscrew is provided on the snap pin to secure the rod at the proper point.
 - b. Adjust the thumbscrew located on the valve control system to allow the lever to move with the desired resistance.
 - c. Adjust the length of the control motor arm so that the valve pointer moves through the desired range on the valve dial. Be sure that the control motor does not move the valve lever beyond the OFF and RUN points on the dial, as this can damage the valve.
3. The valve is now in place and ready for either automatic or manual operation.

F. OPERATION

If frequent adjustments in the air flow rate are necessary, or when operating in the automatic mode, it is not normally necessary to tighten the thumbscrew as the spring loaded friction pad will maintain the dial at the position desired. However, if frequent adjustments are not necessary, set the dial indicator at the position desired and tighten the thumbscrew securely.

G. MAINTENANCE

Under normal usage no service should be necessary. However, if dial movements should become difficult due to corrosion, add lubricant to the valve stem.

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