

## 1124 and 1126 Motor Operated and 1123 Manual



Butterfly valves have no appreciable pressure drop when wide open in full size pipe, handling flows and velocities of **normal combustion systems**. Therefore, capacity ratings usually are not a factor when selecting **manual** valves for individual burners or systems.

A motorized butterfly valve of the same pipe size as the air connection on a conventional industrial burner does not have these flow characteristics--burner "resistance" causes far more pressure drop than the valve at maximum burner air flow, and the valve may pass that flow when only 50% open.

### VALVE CAPACITIES

Air capacities listed below (wide open and 70° open) are under full flow conditions: The valve installed in a pipe run of the same size as the valve with a pipe velocity of 70 ft/sec.

**Butterfly valve capacities (see box above)  
 scfh air at 1"wc pressure drop (70 F air; 6 osig  
 upstream pressure)**

Valve designation	Pipe size inches	wide open	70° open
-0	¾	500	255
-1	1	940	680
-2	1¼	1 900	1 130
-3	1½	2 800	1 450
-4	2	5 320	2 900
-5	2½	8 350	4 570
-6	3	14 500	7 560
-7	4	29 100	15 200
-8	6	78 100	45 800
-9	8	167 000	66 100
-10	10	245 000	107 000
-12	12	360 000	162 000
-14	14	429 000	209 000
-16	16	570 000	271 000

If valve flow control characteristics are important, valve sizing should take into consideration:

- total cfm required at high and low fire;
- available air pressure drop;
- piping configuration between control valve and burners;
- effect of the ratio of pressure drops in the complete system vs. those through the control valve.

Where a motorized butterfly control valve serves a group of burners, system pressure drops determined by pipe size, lengths, fittings, etc. affect valve size selection in critical applications.

One "rule of thumb" has been to size valve (70° open) for pressure drop equal to 1/5 - 1/6 of total drop in system including, of course, drop across burners.

**TORQUE.** Torques required to operate Butterfly Valves with 3 psi inlet pressure are:

Valve size designation	Torque lb-in.	Valve size designation	Torque lb-in.
-0 thru -5	2.8	-10	123
-6	5.8	-12	177
-7	10.0	-14	242
-8	22.8	-16	317
-9	79.0		

# STANDARD VALVES

(See also Bulletins 1122 [Manual], 1180 [Motorized], and 1154 [Resilient Seat Wafer])

**1124 Motorized**

**1126 Motorized**

**1126 (H) Hot Air Motorized**

**1123 Manual**

Standard butterfly valves have female pipe threads in ¾" through 6" pipe sizes; larger valves are flanged<sup>①</sup>, as are 1126-F in 3", 4", and 6" sizes. Motorized valves can be ordered with bracket, motor arm, and linkage for standard control motor or actuator. 1123 Manual valves have a locking handle and are available in 8" to 16" sizes. For ¾" through 6" sizes see Bulletin 1122

1126 and 1123 Valves have a swing-through disc.

1124 Valves have a beveled disc for tighter shutoff; spring-loaded linkage is furnished when an electric operator is specified (see Instructions 1230).

All standard valves (except 1126- -H) can be used on gas. However, if UL approval is required for -0 through -8 sizes, a "G" suffix is added to the designation.

Standard 1122<sup>③</sup>, 1123, 1124, and 1126 Valves are suitable for air heated to 400 F. For 400 to 700 F, specify the 1122 (H)<sup>③</sup>, 1124 (H), or 1126 (H) Valve with Grafoil seal.

## SPECIFICATIONS/CONSTRUCTION

Valve designation	Maximum inlet pressure, psi	Maximum temperature, F	Body	Disc	Shaft
<b>1122<sup>③</sup>, 1123, 1124, 1126: -0 thru -4</b>	25	400 <sup>②</sup>	cast iron threaded	steel	303 stainless steel
<b>-5 thru -8</b>	15	400 <sup>②</sup>	"	"	"
<b>-6-F thru -8-F<sup>①</sup></b>	15	400 <sup>②</sup>	cast iron flanged	"	"
<b>-9 thru -16<sup>①</sup></b>	5	400	"	cast iron	416 stainless steel

**Caution:**

<sup>①</sup> Flanged Valves: Use flat flanges and full face gaskets when installing this equipment. Raised face flanges can damage the valve body.

**Additional Notes:**

<sup>②</sup> 700 F for 1122-(H), 1124-(H) and 1126-(H) which have Grafoil seals.

<sup>③</sup> See Bulletin 1122.

## AIR TEMPERATURE CORRECTION FACTORS FOR ALL VALVES

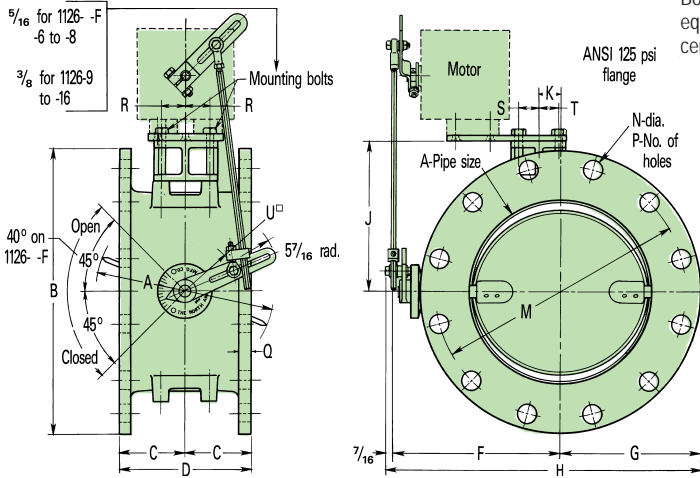
Multiply scfh in table by air temperature factor to get scfh air at that temperature.

F	factor	F	factor	F	factor
60	1.0	300	0.83	800	0.64
100	0.96	400	0.78	900	0.62
150	0.92	500	0.74	1000	0.60
200	0.89	600	0.70	1100	0.58
250	0.86	700	0.67		

# STANDARD VALVES

(dimensions apply also to "G" valves)

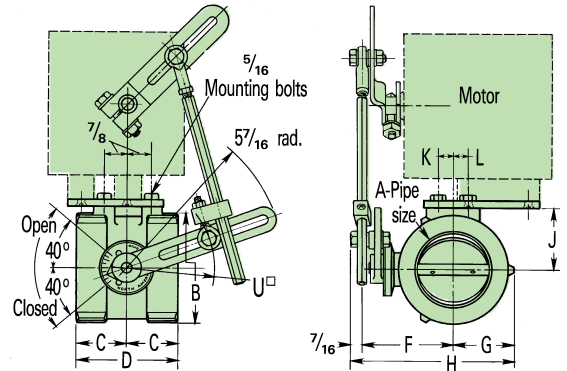
## Dimensions inches



Bolt holes on all flanged models are equally spaced and straddle valve centerlines.

### ORDER MUST SPECIFY:

- 1) Valve designation (for all valves).
- 2) Motor selected (for 1124 and 1126 Valves).

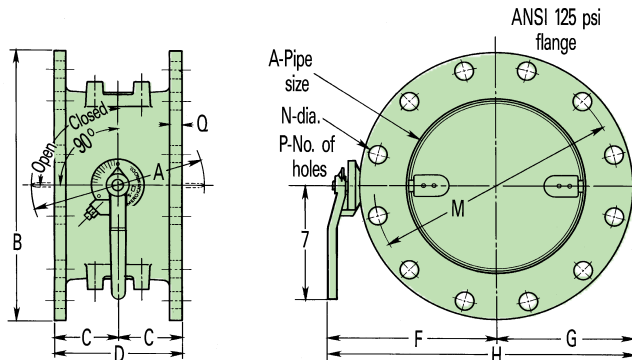


**1126-9 thru -16**  
**1126-6-F thru 1126-8-F**①

**1124, 1126-0 thru -8**

Valve designation	dimensions in inches																	Wt, lb	
	A	B	C	D	F	G	H	J	K	L	M	N	P	Q	R	S	T		U
<b>1124, 1126-0</b>	3/4	2 1/16	1 3/16	2 3/8	2 5/16	1 3/16	3 15/16	1 1/4	-	1/4	-	-	-	-	-	-	-	1 3/8	5
<b>1124, 1126-1</b>	1	2 1/16	1 3/16	2 3/8	2 5/16	1 3/16	3 15/16	1 1/4	-	1/4	-	-	-	-	-	-	-	1 3/8	5
<b>1124, 1126-2</b>	1 1/4	2 5/16	1 1/16	2 1/8	2 3/8	1 5/16	4 1/16	1 3/8	-	3/4	-	-	-	-	-	-	-	1 3/8	5 1/4
<b>1124, 1126-3</b>	1 1/2	2 9/16	1 5/16	2 5/8	2 1/2	1 7/16	4 3/8	1 1/2	-	1/16	-	-	-	-	-	-	-	1 3/8	5 1/2
<b>1124, 1126-4</b>	2	3 3/16	1 1/2	3	2 13/16	1 3/4	5	1 13/16	1/4	-	-	-	-	-	-	-	-	1 3/8	6 1/2
<b>1124, 1126-5</b>	2 1/2	3 13/16	1 3/4	3 1/2	3 1/8	2 1/8	5 11/16	2 1/8	9/16	-	-	-	-	-	-	-	-	1 3/8	8 1/2
<b>1124, 1126-6</b>	3	4 1/2	1 5/16	3 7/8	3 3/4	2 1/16	6 5/8	2 3/8	1 3/16	-	-	-	-	-	-	-	-	1 3/8	11
<b>1124, 1126-7</b>	4	5 5/8	2 1/4	4 1/2	4 5/16	3	7 3/4	2 5/16	1 3/4	-	-	-	-	-	-	-	-	1 3/8	15 1/2
<b>1124, 1126-8</b>	6	7 7/8	2 9/16	5 1/8	5 7/16	4 1/8	10	4 1/16	2 7/8	-	-	-	-	-	-	-	-	1 3/8	27
<b>1124, 1126-6-F</b>	3	7 1/2	2	4	5 1/16	3 3/4	9 1/4	5 1/16	1	-	6	3/4	4	1/2	7/8	1 1/2	-	1 3/8	20
<b>1124, 1126-7-F</b>	4	9	2 1/4	4 1/2	5 13/16	4 1/2	10 3/4	4 5/8	1 3/4	-	7 1/2	3/4	8	9/16	7/8	1 1/2	-	1 3/8	24
<b>1124, 1126-8-F</b>	6	11	2 1/2	5	6 13/16	5 1/2	12 3/4	5 5/8	2 3/4	-	9 1/2	7/8	8	9/16	7/8	1 1/2	-	1 3/8	34
<b>1126-9</b>	8	13 1/2	2 3/4	5 1/2	8 1/4	6 3/4	15 11/16	7 5/16	-	-	11 3/4	7/8	8	9/16	1 3/8	1 1/8	1 1/8	1 5/8	55
<b>1126-10</b>	10	16	3 3/4	7 1/2	9 1/2	8	18 3/16	8 7/16	1 1/4	-	14 1/4	1	12	3/4	1 3/8	1 1/8	1 1/8	1 5/8	94
<b>1126-12</b>	12	19	4	8	11	9 1/2	21 3/16	9 3/16	2 3/4	-	17	1	12	3/4	1 3/8	1 1/8	1 1/8	1 5/8	128
<b>1126-14</b>	14	21	4	8	12	10 1/2	23 3/16	10 3/4	3 3/4	-	18 3/4	1 1/8	12	3/4	1 3/8	1 1/8	1 1/8	1 5/8	152
<b>1126-16</b>	16	23 1/2	4 1/4	8 1/2	13 1/4	11 3/4	25 11/16	12 1/8	5	-	21 1/4	1 1/8	16	7/8	1 3/8	1 1/8	1 1/8	1 5/8	188
<b>1123-9</b>	8	13 1/2	2 3/4	5 1/2	8 1/2	6 3/4	15 1/4	-	-	-	11 3/4	7/8	8	9/16	-	-	-	-	52
<b>1123-10</b>	10	16	3 3/4	7 1/2	9 3/4	8	17 3/4	-	-	-	14 1/4	1	12	3/4	-	-	-	-	91
<b>1123-12</b>	12	19	4	8	11 1/4	9 1/2	20 3/4	-	-	-	17	1	12	3/4	-	-	-	-	125
<b>1123-14</b>	14	21	4	8	12 1/4	10 1/2	22 3/4	-	-	-	18 3/4	1 1/8	12	3/4	-	-	-	-	149
<b>1123-16</b>	16	23 1/2	4 1/4	8 1/2	13 1/4	11 3/4	25 1/4	-	-	-	21 1/4	1 1/8	16	7/8	-	-	-	-	185

### 1123① Manual Valves (-9 thru -16)



① Minimum valve arm radius for attaching linkage is U, maximum is 5".



DIMENSIONS SHOWN ARE SUBJECT TO CHANGE. PLEASE OBTAIN CERTIFIED PRINTS FROM FIVES NORTH AMERICAN COMBUSTION, INC.  
IF SPACE LIMITATIONS OR OTHER CONSIDERATIONS MAKE EXACT DIMENSION(S) CRITICAL.

**WARNING:** Situations dangerous to personnel and property may exist with the operation and maintenance of an combustion equipment. The presence of fuels, oxidants, hot and cold combustion products, hot surfaces, electrical power in control and ignition circuits, etc., are inherent with any combustion application. Parts of this product may exceed 160F in operation and present a contact hazard. Fives North American urges compliance with National Safety Standards and insurance Underwriters recommendations, and care in operation.

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