



North American Adjustable Port Air Valves Capacities, Dimensions

Specifications 1004/1014

Valves are designed for control of combustion air up to 3 psi. They are not for tight shutoff and cannot be used for gas.

Maximum air temperatures:

1004 (formerly Fig. 4).....300°F

1014 (formerly Fig. 14)900°F

Minimum ambient temperature-20°F

Per Bulletin 1008, Adjustable Port Valve flow characteristics can be set in the field after valve has been installed in the pipe. This is desirable to achieve linear, equal percentage, or other control characteristic.

VALVE SELECTION

Use North American's COMBUSTION HANDBOOK, pipe rule or other source to determine the pipe size for the required flowing volume, piping configuration and allowable pressure loss. Table A lists available valve/body sizes for selected pipe size. Graph 1 is used to determine pressure drop when valve is wide open. As long as valve body is large enough, its curtain can be adjusted for optimum drop under field conditions.

Valve sizes 1/2" through 8" are provided with threaded adapter flanges while optional 8" and 10" through 14" have welding adapters.

PREHEATED AIR

When using 1004 (300 F maximum) or 1014 (900 F maximum) Valves with hot air, multiply scfh by Table B correction factor and use resultant figure for valve sizing from Graph 1.

Table A.

Pipe Size	Valve/Body Sizes
1/2"	-3-B
2"	-4-B, -4-C
2 1/2"	-5-C
3"	-6-C, -6-D
4"	-7-D
6"	-8-D, -8-E
8"	-9-F, -9-FW
10**	-10-FW, -10-GW
12**	-12-GW
14**	-14-GW

* Size "G" is only available for the 1004

Graph 1.

CAPACITIES

scfh air
with curtain and valve wide open

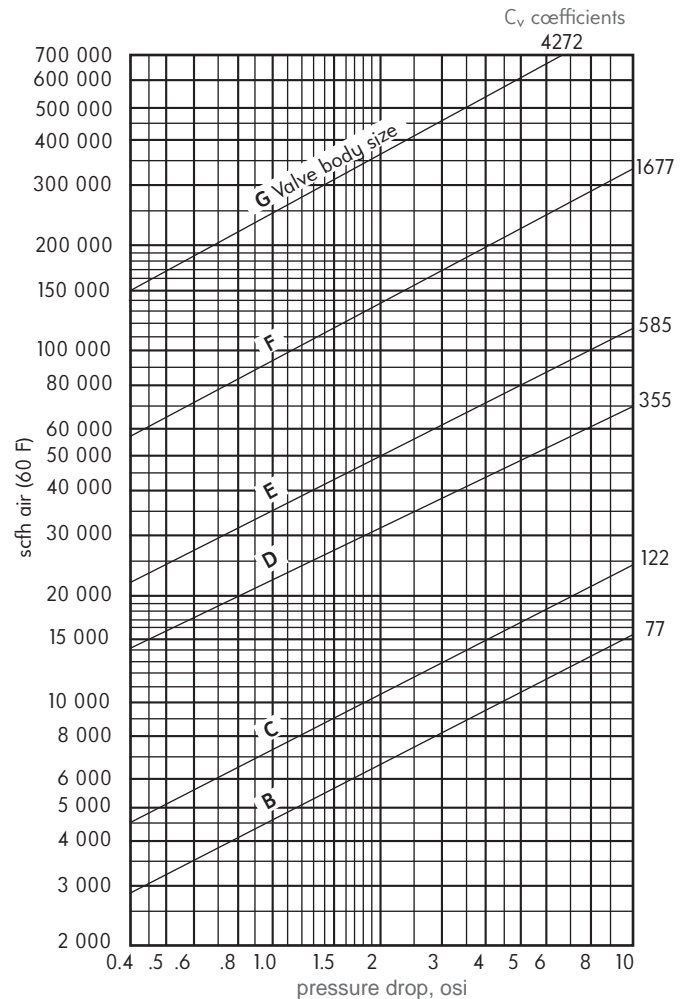


Table B. Air temperature correction factors

Temp. (F)	300	400	500	600	700	800	900
Factor	1.21	1.29	1.36	1.43	1.49	1.56	1.62

Example: Select Adjustable Port Valve for application requiring 3 000 000 Btu/hr input using 600°F air, with available hot air pressure 10 osi or more:

3 000 000 Btu/hr requires 30 000* scfh air.

600 F factor is 1.43: 30 000 × 1.43 = 42 900 (equivalent 60°F air).

Graph 1 indicates an E body would have a 1.5 osi pressure drop or a D body a 4 osi pressure drop. Usual selection would be an E body which is available in only a 6" pipe size.

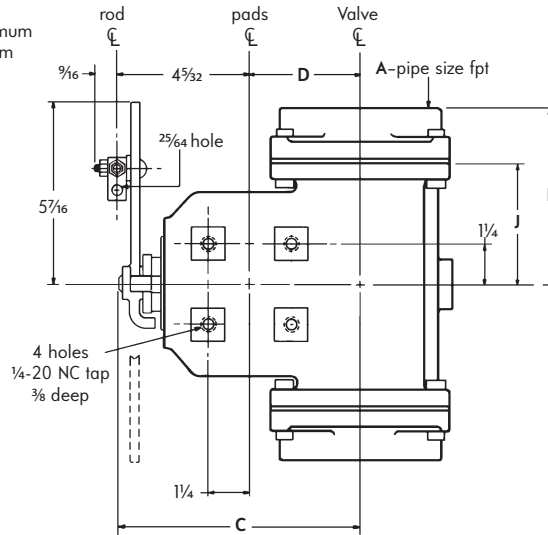
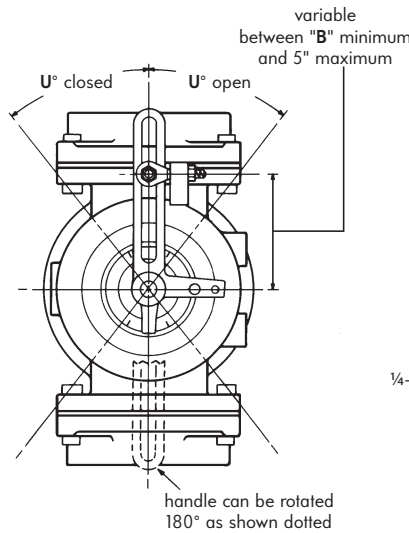
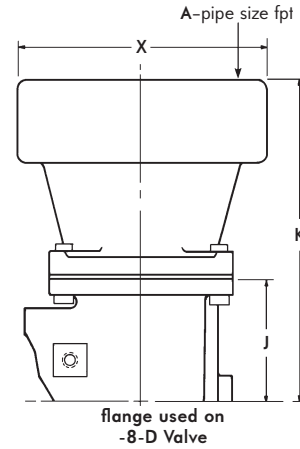
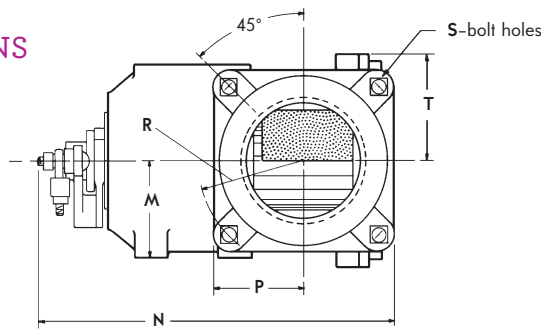
*Excess air requires an additional multiplier (1.1 for 10% XSAir).

Valve	MATERIALS		
	body	internals	shaft
1004	cast iron	aluminum	CRS electroless nickel plated
1014	cast iron	cast iron	stainless steel

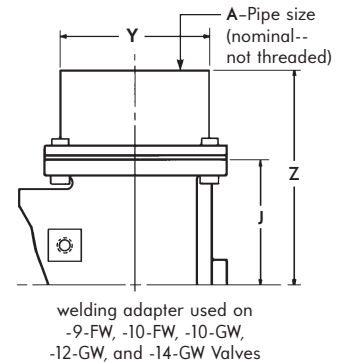
torque requirements
(inch-pounds with 3 psi pressure drop through valve)

Valve size	B	C	D	E	F	G
torque	1.5	4.0	10.0	15.0	20.0	25.0

DIMENSIONS
inches



Valves include threaded companion flanges unless suffix "W" is used, which means welding type companion adapter.



Valve size	dimensions in inches																wt, lb	
	A	B	C	D	J	K	M	N	P	R	T	U°	S	X	Y	Z	1004	1014
-3 or -4-B	1 1/2 or 2	1	4 5/8	1 1/16	2 1/4	3 5/16	1 13/16	7 1/32	1 5/8	1 25/32	1 3/4	37	9/32	—	—	—	14	17
-4 or -5-C	2 or 2 1/2	1	5 9/16	1 9/16	2 1 1/16	3 7/8	2 3/32	8 9/32	2	2 9/32	2 1/4	36	1 1/32	—	—	—	20	24
-6-C	3	1	5 9/16	1 9/16	2 1 1/16	4 5/16	2 3/32	8 9/32	2	2 9/32	2 1/4	36	1 1/32	—	—	—	20	24
-6 or -7-D	3 or 4	1	7 5/16	3 5/16	3 1 1/16	5 1/4	2 29/32	10 25/32	2 3/4	3 3/16	3 3/8	38	1 3/32	—	—	—	36	43
-8-D	6	1	7 5/16	3 5/16	3 1 1/16	9 1/16	2 29/32	10 25/32	2 3/4	3 3/16	3 3/8	38	1 3/32	7 1/2	—	—	62	69
-8-E	6	1 3/8	9 7/16	5 7/16	4 7/8	6 1 1/16	3 25/32	14 9/32	4 1/8	4 5/8	4 1/16	38	1 7/32	—	—	—	75	90
-9-F or -FW	8	1 3/8	13 1/2	9 1/2	7	8 13/16	5 3/8	19 19/32	5 3/8	6 3/16	5 1/2	40	1	—	8 5/8	10 7/8	258	310
-10-FW	10	1 3/8	13 1/2	9 1/2	7	—	5 3/8	19 19/32	5 3/8	6 3/16	5 1/2	40	1	—	10 3/4	10 3/8	333	383
-10-GW*	10	1 7/8	19 3/16	15 3/16	9 7/8	—	8 1/4	27 9/32	7 3/8	8 27/32	8 1/2	40	1 1/32	—	10 3/4	14 5/16	410	—
-12-GW*	12	1 7/8	19 3/16	15 3/16	9 7/8	—	8 1/4	27 9/32	7 3/8	8 27/32	8 1/2	40	1 1/32	—	12 3/4	14 5/16	410	—
-14-GW*	14	1 7/8	19 3/16	15 3/16	9 7/8	—	8 1/4	27 9/32	7 3/8	8 27/32	8 1/2	40	1 1/32	—	14	14 5/16	490	—

* 1004 ONLY

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 any 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. Components in combustion systems may exceed 160°F (71°C) surface temperatures and present hot surface contact hazard. Fives North American Combustion, Inc. suggests the use of combustion systems that are in compliance with all Safety Codes, Standards, Regulations and Directives; and care in operation.



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