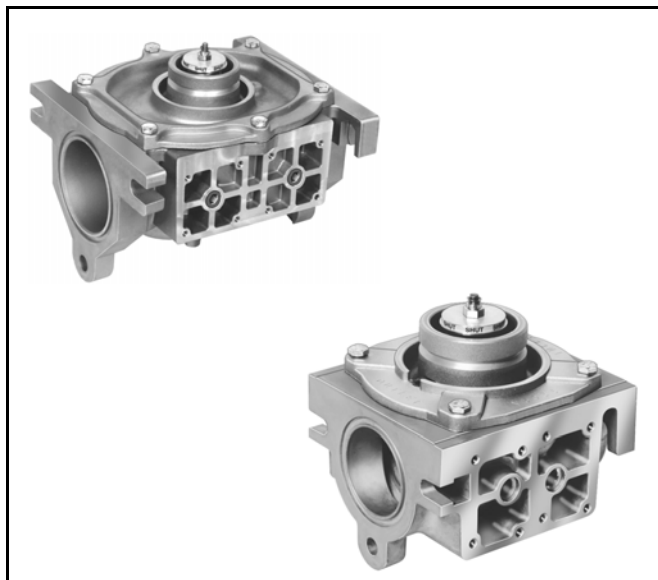


V5097A-E Industrial Gas Valves

PRODUCT DATA



APPLICATION

The V5097A-E Gas Valves are used with the V4055, V4062 and V9055 Fluid Power Actuators to control gas flow to commercial and industrial burners.

NOTICE: Per Industry Standards, the actuator is required a conduit seal or a cable type that is sealed be installed in a device that can result in a flammable liquid flow through a conduit or cable to an electrical ignition source in the event of a seal leakage or diaphragm failure.

FEATURES

- Used with natural or liquefied petroleum (LP) gases.
- V5097 normally closed valves are rated for final shutoff service (safety shutoff).
- V5097A,C,D,E Valves are for On-Off service.
- V5097B Valve has a characterized guide and in combination with the V4055, V4062 and V9055 Fluid Power Actuators, provides slow-opening, HI-LO-OFF, and modulating functions, respectively.

- V5097C,E Valves have a double seal and are used with V4055D,E Fluid Power Actuators to provide proof-of-closure switch and valve seal overtravel interlock.
- V5097D,E Valves are for high pressure applications (see Table 1).
- Two valve body types (small and large) applicable to seven pipe sizes:
 - Small body type for 3/4 in. (19 mm), 1 in. (25 mm), 1-1/4 in. (32 mm), 1-1/2 in. (38 mm) and 2 in. (51 mm) pipes.
 - Large body type for 2 in., 2-1/2 in. and 3 in. pipes.
- Seven pipe adapter sizes (3/4 in. to 3 in.) have NPT or BSP-PL threaded connections.
- V5097 version provides three 1/4 in. upstream and two 1/4 in. downstream taps and plugs. European Community (CE) version provides an additional downstream tap and plug.
- Valve body rating of 75 psi (517.1 kPa); body passes Underwriters Laboratories Inc. burst test.
- Yellow SHUT indicator attached to valve stem indicates valve closed position.
- Unpainted die-cast aluminum body.

SPECIFICATIONS

IMPORTANT:

The specifications given in this publication do not include normal manufacturing tolerances; therefore, an individual unit may not exactly match the listed specifications. Also, this product is tested and calibrated under closely controlled conditions, and some minor differences in performance can be expected if those conditions are changed.

Models (See Table 1):

Type of Gas: Natural or liquefied petroleum (LP) only.

Pipe Size: 3/4 in., 1 in., 1-1/4 in., 1-1/2 in., 2 in., 2-1/2 in., 3 in.

Pipe Threads: NPT or BSP-PL threads (equivalent to ISO R7 and DIN 2999). 3/4 in. to 3 in. pipe adapters available.

Pressure Ratings: See Table 2.



Valve Body Rating: 75 psi (517.1 kPa), passes Underwriters Laboratories Inc. burst test.

Valve Capacities: IAS ratings at 1 in. (0.25 kPa) pressure drop; based on gas with 0.64 specific gravity.

Bolt/Nut Fasteners:

V5097A1004, V5097B10021, V5097C1000, V5097D1008, V5097E1005: 3/8-16 x 1.375 in., Grade 5 bolt.
Metric Equivalent: M8 x 1.25 x 35 mm, Class 9.8.
V5097A1012, V5097B1010, V5097C1008, V5097D1016, V5097E1013: 1/2-13 x 2.00 in., Grade 5 bolt.
Metric Equivalent: M12 x 1.75 x 50 mm, Class 9.8.

Table 1. V5097 Models.

Model	Maximum Operating Differential Pressure		Maximum Close-Off Pressure		IAS Rated Capacity (cfh)	Feature	
	(psi)	(kPa)	(psi)	(kPa)			
V5097A Small Body	5	34.5	15	103.4	1112 to 2487	Low pressure on-off (with quick opening guide).	
V5097B Small Body						Low pressure Characterized guide (provides slowly increasing gas flow on opening).	
V5097C Small Body						Low pressure double seat (use with actuators with valve seal overtravel interlock).	
V5097D Small Body						High pressure On-Off (with quick opening guide).	
V5097E Small Body			High pressure, double seat (use with actuators with valve seal overtravel interlock).				
V5097A Large Body			15	103.4	4625 to 6187	4625 to 6187	Low pressure On-Off (with quick opening guide).
V5097B Large Body							Low pressure characterized guide (provides slowly increasing gas flow on opening).
V5097C Large Body							Low pressure double seat (use with actuators with valve seal overtravel interlock).
V5097D Large Body							High pressure On-Off (with quick opening guide).
V5097E Large Body			45	517.1	517.1	517.1	High pressure, double seat (use with actuators with valve seal overtravel interlock).

Table 2. Pressure Ratings of Valve-Actuator Combinations.

		Standard Pressure Actuators V4055A,D, V40652, V9055						High Pressure Actuators V4055B,E					
		MOPD ^a		MOP ^b		MCOP ^c		MOPD ^a		MOP ^b		MCOP ^c	
		psi	kPa	psi	kPa	psi	kPa	psi	kPa	psi	kPa	psi	kPa
Standard Pressure Valves V5097A,B,C	3/4 in. to 2 in.	5	34	15	103	15	103	15	103	15	103	15	103
	2 to 3 in.	5	34	13	89	15	103	15	103	15	103	15	103
High pressure Valves V5097D,E	3/4 in. to 2 in.	5	34	40	275	75	517	25	172	62	427	75	517
	2 to 3 in.	5	34	13	89	45	310	15	103	21	144	45	310

^a Maximum Operating Pressure Differential. Once open, the valve and actuator operate properly against this pressure at 85% of rated voltage.

^b Maximum Opening Pressure. Actuator opens valve against this pressure at 85% of rated voltage.

^c Maximum Close-Off Pressure. Maximum allowable pressure drop across fully closed valve for no seal leakage. (This is independent of 75 psi valve body rating).

Gas Pressure Limit Switch Mounting: Two 1/4 in. NPT or BSP-PL upstream and downstream tapping and plug.

Upstream Tapping and Plug: 1/4 in. NPT or BSP-PL.

Downstream Tapping and Plug: 1/4 in.

Ambient Operating Temperature Rating: -40°F to +150°F (-40°C to +66°C); -40°F to +125°F (-40°C to +52°C) when used with V9055.

Material: Die-cast aluminum.

Mounting: Directly in the gas supply line.

Dimensions: See Fig. 2 and 3.

Weight:

3/4 in., 1 in., 1-1/4 in., 1-1/2 in. Small Body Valve: 3.68 lb (1.67 kg).

2 in., 2-1/2 in., 3 in. Large body Valve: 8.0 lb (3.64 kg).

3/4 in., 1 in., 1-1/4 in., 1-1/2 in., 2 in. Small Body Valve pipe adapters: 0.67 lb (0.3 kg).

2 in., 2-1/2 in., 3 in. Large Body Valve pipe adapters: 2.125 lb (.97 kg).

Replacement Parts:

133393A Replacement Seal Assembly for 3/4 in., 1 in., 1-1/4 in., 1-1/2 in., 2 in. small valve: Includes valve seal, bonnet seal and tube of lubricant.

133392A Replacement Seal Assembly for 2 in., 2-1/2 in., 3 in. large valve: Includes valve seal, bonnet seal and tube of lubricant.

Replacement Bonnet Assembly (see Product Data sheet, form 60-0230.): Includes complete bonnet assembly, plus the required replacement seal assembly.

Approvals:

The following combination of V5097 Valves (3/4 in. through 3 in.) and V4055, V4062 and V9055 Fluid Power Actuators are approved or found acceptable by these agencies:

Underwriters Laboratories Inc. Listed: File No. MH1639, Guide No. YIOZ:

V4055A,B,D,E/V5097A,B,C,D,E.

V4062/V5097A,B,C,E.

V9055/V5097A,B,C,E.

Industrial Risk Insurers (formerly FLA) Acceptable:

V4055A,B,D,E/V5097A,B,C,D,E.

V9055/V5097A,B,C,E.

Factory Mutual Approved.

International Approval Services (formerly American Gas Association) Design Certified: Report No. 21-1C:

V4055A/V5097A,B

V4055B/V5097D

V4055DV5097C

V4055E/V5097E

V4062/V5097B, C

V9055/V5097B,C

NOTE: IAS does not certify models equipped with BSP threads.

International Approval Services (formerly Canadian Gas Approvals) Certified: Report No. 1029-SSV-4098 (60 Hz actuator models only):

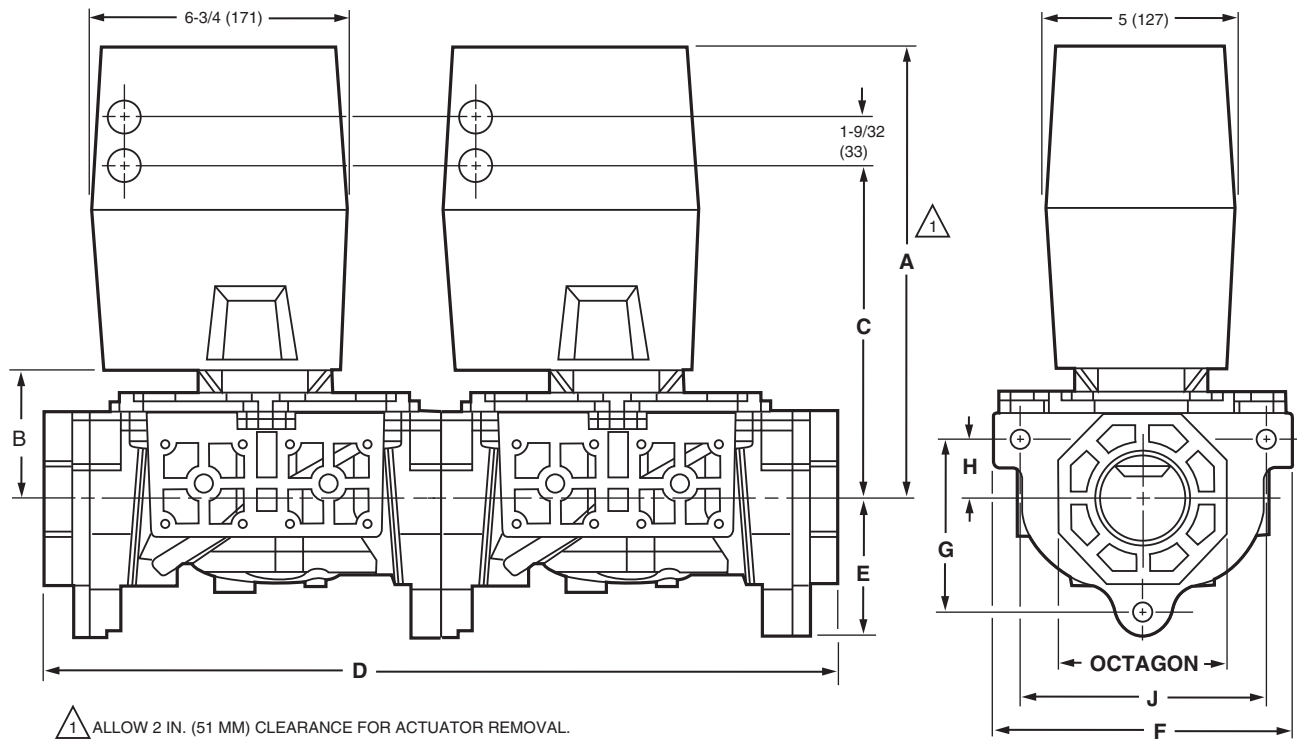
V4055A,B,D,E/V5097A,B,C,D, E

V4062/V5097B.

V9055/V5097B

CSD-1 AFB ASME acceptable:

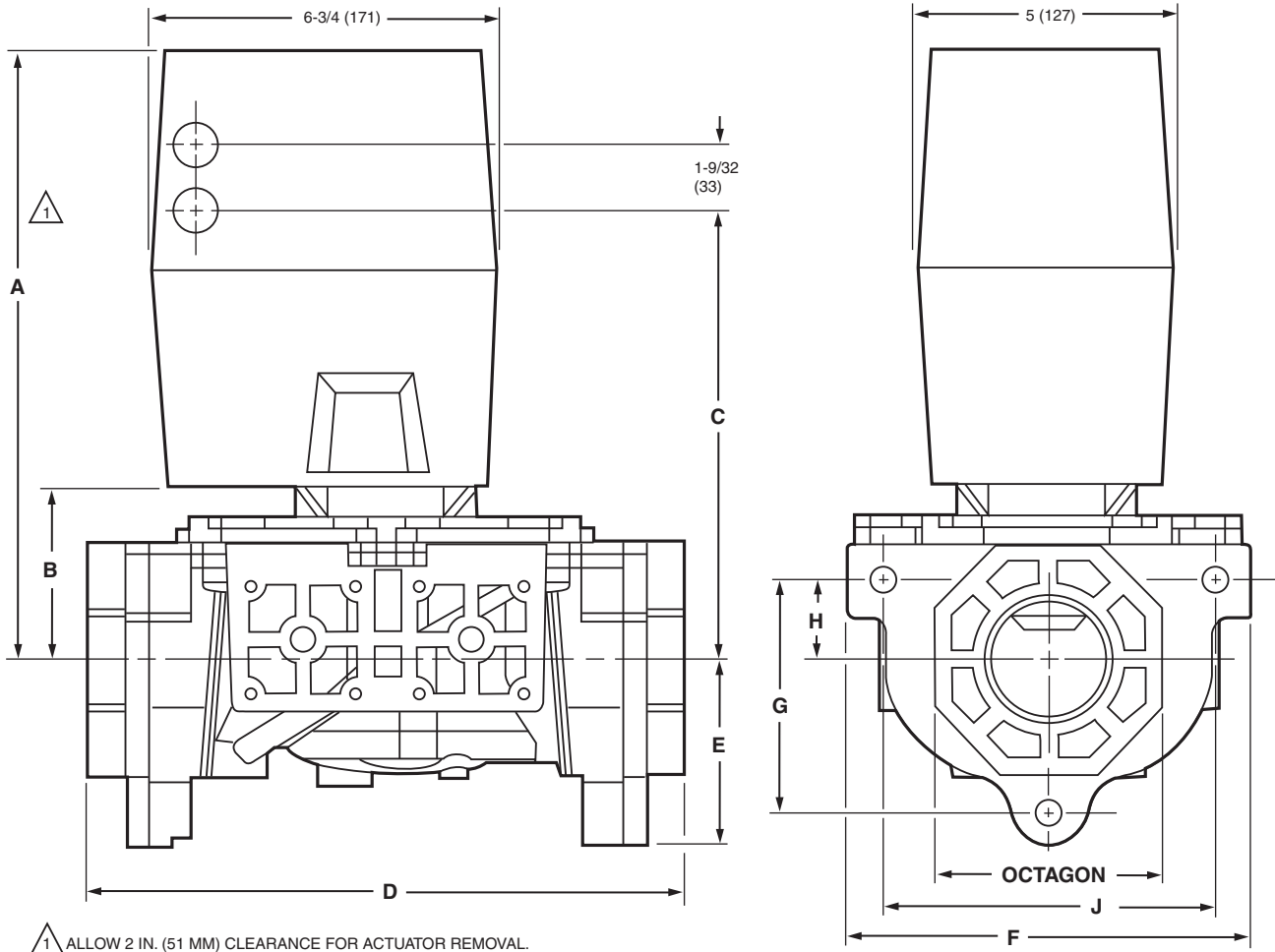
V4055A,B,D,E; V5097A,B,C,D,E.



VALVE SIZE (IN.)	DIM. A		DIM. B		DIM. C		DIM. D		DIM. E		DIM. F		DIM. G		DIM. H		DIM. J		OCTAGON	
	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM
3/4	11-1/8	283	2-3/4	70	8-3/16	208	14	210	2-7/16	62	5	127	2-5/16	58	7/8	23	3-15/16	100	2-13/16	71
1	11-1/8	283	2-3/4	70	8-3/16	208	14	210	2-7/16	62	5	127	2-5/16	58	7/8	23	3-15/16	100	2-13/16	71
1-1/4	11-1/8	283	2-3/4	70	8-3/16	208	14	210	2-7/16	62	5	127	2-5/16	58	7/8	23	3-15/16	100	2-13/16	71
1-1/2	11-1/8	283	2-3/4	70	8-3/16	208	14	210	2-7/16	62	5	127	2-5/16	58	7/8	23	3-15/16	100	2-13/16	71
2	11-3/4	298	3-3/8	86	8-5/16	211	21	298	3-5/8	91	8	203	4-7/16	113	1-1/2	38	6-1/2	165	4-1/2	114
2-1/2	11-3/4	298	3-3/8	86	8-5/16	211	21	298	3-5/8	91	8	203	4-7/16	113	1-1/2	38	6-1/2	165	4-1/2	114
3	11-3/4	298	3-3/8	86	8-5/16	211	21	298	3-5/8	91	8	203	4-7/16	113	1-1/2	38	6-1/2	165	4-1/2	114

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Fig. 1. Approximate dimensions of the 3/4 in. through 3 in. V5097 Valves with valve actuators, in in. (mm).



VALVE SIZE (IN.)	DIM. A		DIM. B		DIM. C		DIM. D		DIM. E		DIM. F		DIM. G		DIM. H		DIM. J		OCTAGON	
	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM
3/4	11-1/8	283	2-3/4	70	8-3/16	208	8-1/4	210	2-7/16	62	5	127	2-5/16	58	7/8	23	3-15/16	100	2-13/16	71
1	11-1/8	283	2-3/4	70	8-3/16	208	8-1/4	210	2-7/16	62	5	127	2-5/16	58	7/8	23	3-15/16	100	2-13/16	71
1-1/4	11-1/8	283	2-3/4	70	8-3/16	208	8-1/4	210	2-7/16	62	5	127	2-5/16	58	7/8	23	3-15/16	100	2-13/16	71
1-1/2	11-1/8	283	2-3/4	70	8-3/16	208	8-1/4	210	2-7/16	62	5	127	2-5/16	58	7/8	23	3-15/16	100	2-13/16	71
2	11-3/4	298	3-3/8	86	8-5/16	211	11-3/4	298	3-5/8	91	8	203	4-7/16	113	1-1/2	38	6-1/2	165	4-1/2	114
2-1/2	11-3/4	298	3-3/8	86	8-5/16	211	11-3/4	298	3-5/8	91	8	203	4-7/16	113	1-1/2	38	6-1/2	165	4-1/2	114
3	11-3/4	298	3-3/8	86	8-5/16	211	11-3/4	298	3-5/8	91	8	203	4-7/16	113	1-1/2	38	6-1/2	165	4-1/2	114

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Fig. 2. Approximate dimensions of the 3/4 in. through 3 in. V5097 Valves with valve actuators, in in. (mm).

Automation and Control Solutions

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