

V4055A,B,D,E On-Off Fluid Power Gas Valve Actuator

The V4055 Gas Valve Actuator in combination with a V5055 Gas Valve controls the gas supply to commercial and industrial burners.



- The V4055 Actuator, when used with the V5034 or V5055 Valve, is rated for final safety shutoff service.
- The V4055 Actuator may be used with the characterized guide model of the V5055 gas valve to enhance lightoff smoothness.
- The standard model has an opening time of 26 sec at 60 Hz, or 32 sec at 50 Hz. A fast-opening model, is available with timings of 13 sec at 60 Hz, or 16 sec at 50 Hz.
- Maximum closing time is 1 sec, which meets code/standard/insurer requirements.
- Models with damper shaft available, with or without spring return; shaft extends out both sides and rides in Teflon-like, Delrin bushings; used with standard 7616BR Damper Crank Arm.
- Red OPEN indicator attached to the actuator stem shows when valve is even slightly open; yellow SHUT indicator on valve stem shows only when gas valve is fully closed.
- Ambient temperature rating is -40°F to 150°F [-40°C to 66°C] for 60 Hz models; -10°F to 158°F [-23°C to 70°C] for 50 Hz and 50/60 Hz models.
- Valve and actuator combination may be mounted in any position.
- Models available with factory installed SPDT field adjustable auxiliary switch. Field addable auxiliary switch kits are also available.
- Standard enclosure meets NEMA 1 general purpose requirements; models available with NEMA 4 weather proof enclosure.
- V4055D and high pressure V4055E with proof-of-closure switch and V5055C or E with valve seal overtravel interlock (double seal) to meet specific code/standard/insurer requirements.

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Specifications

MODELS:

V4055A actuator with V5055 gas valves provide on-off control of fuel. With proper adapter (see Accessories), it replaces the V4034 actuator on a V5034 gas valve.

V4055B is a high pressure model of the V4055A.

V4055D is identical to the V4055A but incorporates a proof-of-closure switch. Used with V5055C (double seal) for valve seal overtravel interlock.

V4055E is identical to V4055B but incorporates a proof-of-closure switch. Used with V5055E (double seal) for valve seal overtravel interlock.

NEMA 4 (weatherproof) models available.

PRESSURE RATINGS:

PRESSURE RATINGS OF VALVE-ACTUATOR COMBINATIONS.

Valve	Actuator							
	V4055A,D ^a				V4055B,E ^a			
	Diff ^b		Closeoff ^c		Diff ^b		Closeoff ^c	
	psi	kPa	psi	kPa	psi	kPa	psi	kPa
V5055A,C 3/4 to 3 in.	5	34.5	15	103.4	15	103.4	15	103.4
V5055A,C 4 in.	3	20.7	15	103.4	5	34.5	15	103.4
V5055B 3/4 to 3 in.	5	34.5	15	103.4	15	103.4	15	103.4
V5055B 4 in.	3	20.7	15	103.4	5	34.5	15	103.4
V5055D,E 3/4, 1-1/4, 1-1/2 in.	5	34.5	75	517.1	25	172.4	75	517.1
V5055D,E 2, 2-1/2, 3 in.	5	34.5	45	310.3	15	103.4	45	310.3

^a Use a V4055D or V4055E (with proof-of-closure switch) with a V5055C or V5055E (with double seal) for valve seal overtravel interlock.

^b Maximum operating pressure differential.

^c Maximum closeoff pressure without seat leakage. This is the maximum allowable pressure drop to which a valve may be subjected while fully closed, and is independent of the valve body rating.

NOMINAL OPENING TIME (SECONDS):

Model	50 Hz	60 Hz
Standard	32	26
Fast-opening	16	13

MAXIMUM CLOSING TIME: One second when de-energized.

AMBIENT OPERATING TEMPERATURE RATING:

60 Hz MODELS: -40°F to 150°F [-40°C to 66°C].

50 Hz, 50/60 HZ MODELS: -10°F to 158°F [-23°C to 70°C].

MOUNTING: V4055 attached directly to V5055 valve with two set screws positioned with 90 degrees separation. Combination is multipoise.

Ordering Information

When purchasing replacement and modernization products from your TRADELINE[®] wholesaler or distributor, refer to the Tradeline Catalog or price sheets for complete ordering number, or specify—

1. Order number.
2. Voltage and frequency.
3. Standard or fast opening time.
4. Damper shaft, with or without return spring, if required.
5. NEMA 4 enclosure, if required.
6. Accessories, if desired.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Home and Building Control Sales Office (please check the white pages of your phone directory).
2. Home and Building Control Customer Logistics
 Honeywell, Inc., 1885 Douglas Drive North
 Minneapolis, Minnesota 55422-4386 (612) 951-1000

In Canada—Honeywell Limited/Honeywell Limitée, 740 Ellesmere Road, Scarborough, Ontario M1P2V9. International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

ELECTRICAL RATINGS: V4055A,D:

Voltage and Frequency	Opening (Standard)				Opening (Fast)				Holding		
	Inrush	W	A	VA	Inrush	W	A	VA	W	A	VA
100/50-60 ^a	–	43.0	0.91	91	–	58.0	1.30	130	10.4	0.16	16
100/50-60 ^b	–	33.0	0.67	67	–	43.0	0.91	91	8.4	0.14	14
120/60	3.9	50.0	0.94	115	5.4	71.0	1.33	160	9.5	0.12	14
200/50-60 ^a	–	68.0	0.79	158	–	88.0	1.10	220	10.6	0.09	18
200/50-60 ^b	–	48.0	0.52	104	–	63.0	0.72	144	9.0	0.07	14
220/50	1.6	55.5	0.55	121	3.0	76.0	0.80	176	9.0	0.06	14
240/50	–	81.5	0.79	190	–	95.0	1.00	240	9.1	0.06	14
240/60	2.6	51.0	0.45	115	4.0	71.5	0.68	160	9.2	0.06	14

^a 50 Hz power supply.

^b 60 Hz power supply.

V4055B,E–120V, 60 Hz.

Opening—60W 0.94A (5.4A inrush), 115 VA.

Holding—9.5W, 0.16A, 19 VA.

AUXILIARY SWITCH AND PROOF-OF-CLOSURE

SWITCH RATINGS: 1/2 hp [0.37 kW]^a:

Load	120V	240V
Full Load	9.8A	4.9A
Locked Rotor	58.8A	29.4A

^a Maximum total connected power to both switches (if used) is 1800 VA.

MOUNTING DIMENSIONS: See Fig. 1.

DAMPER SHAFT: Models available with or without integral damper shaft. Shaft is 3/8 in. [9.5 mm] square, for use with 7616 BR Damper Crank Arm (not included). Models available with or without damper shaft return spring. MAXIMUM DAMPER SHAFT ROTATION: 52 angular degrees.

DAMPER SHAFT MAXIMUM FORCE A 2-11/16 in. [68.3 mm] RADIUS FOR 7616 BR DAMPER CRANK ARM (ordered separately):

NOTE: Damper shaft drives damper crank arm in one direction only; optional return spring is available on damper shaft to turn damper crank arm in opposite direction.

V4055 Model	-40°F to 20°F [-40°C to -7°C]		20°F to 150°F [-7°C to 66°C]	
	lb	N	lb	N
Without return spring	5	22.2	20	89.0
With return spring	5	22.2	10	44.5

APPROVALS:

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

Factory Mutual Approved.

International Approval Services (IAS, a joint venture of AGA and CGA): 60 Hz only.

British Gas Corporation and Dutch Gas Institute Approved:

V4055 with several V5055A and V5055B models.

V4055D with V5055C models with an internal screen.

ACCESSORIES:

133533A Short Stem Adapter for mounting actuator on V5034 valve.

133534A Long Stem Adapter for mounting actuator on V5034 valve.

133568 Auxiliary Switch Bag Assembly.

133569 Valve-Closed Indication Switch Bag Assembly (do not use with V5034 valve body).

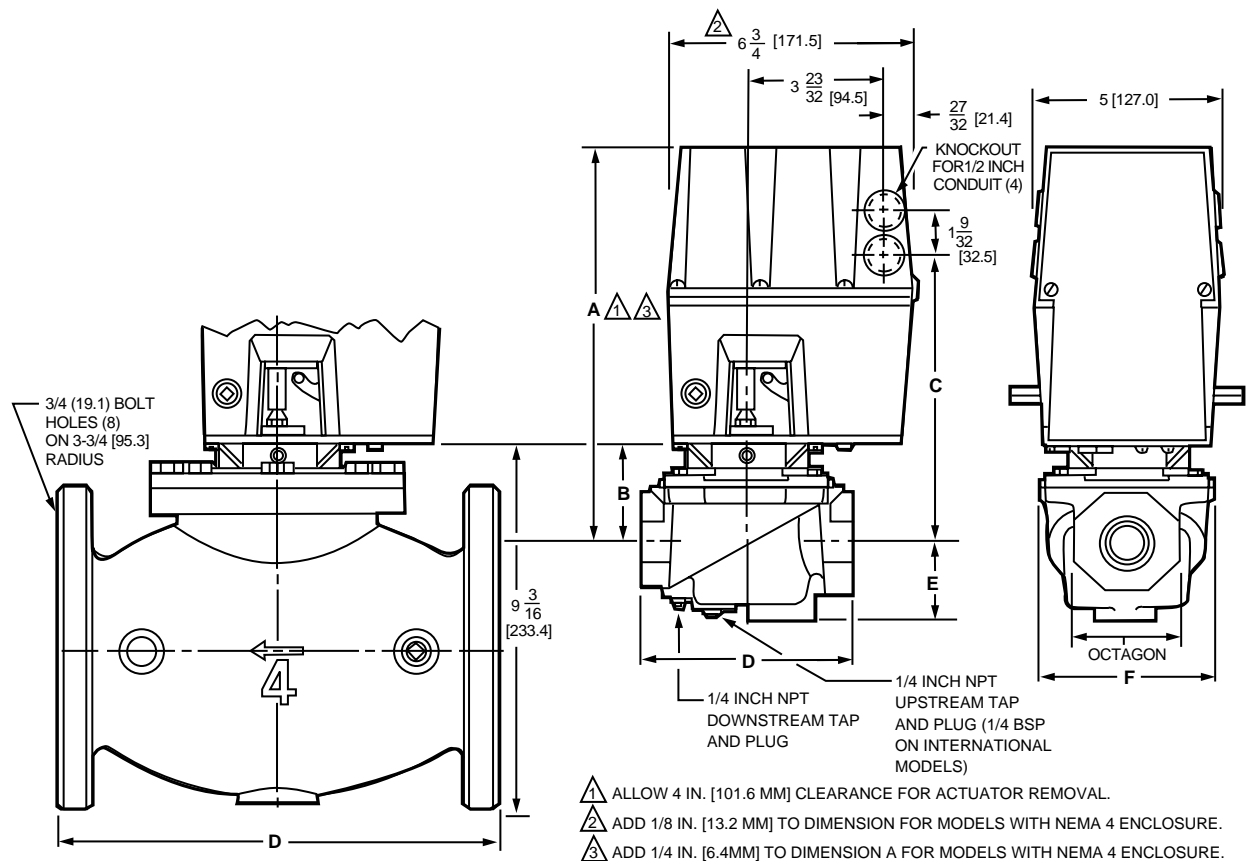
7616BR Damper Crank Arm (damper arm and clip).

Q5055A1001 Adapter Assembly: Adapts ITT General V710 Gas Valve to accept Honeywell gas valve actuators. Replaces ITT General AH2 gas valve actuators.

AVAILABLE MODELS:

V4055 with NEMA 4 enclosure (weatherproof).

Fig. 1—Approximate Mounting Dimensions of V4055 Actuators and V5055 Valves, in in. [mm].



- ⚠ A ALLOW 4 IN. [101.6 MM] CLEARANCE FOR ACTUATOR REMOVAL.
- ⚠ B ADD 1/8 IN. [13.2 MM] TO DIMENSION FOR MODELS WITH NEMA 4 ENCLOSURE.
- ⚠ C ADD 1/4 IN. [6.4MM] TO DIMENSION A FOR MODELS WITH NEMA 4 ENCLOSURE.

VALVE SIZE INCH	DIM A		DIM B		DIM C		DIM D		DIM E		DIM F		OCTAGON	
	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM
3/4	11-1/8	282.6	2-3/4	69.9	8-3/16	208.0	5-3/4	146.1	2-1/4	57.2	4-13/16	122.2	2-13/16	71.4
1	11-1/8	282.6	2-3/4	69.9	8-3/16	208.0	5-3/4	146.1	2-1/4	57.2	4-13/16	122.2	2-13/16	71.4
1-1/4	11-1/8	282.6	2-3/4	69.9	8-3/16	208.0	5-3/4	146.1	2-1/4	57.2	4-13/16	122.2	2-13/16	71.4
1-1/2	11-1/8	282.6	2-3/4	69.9	8-3/16	208.0	5-3/4	146.1	2-1/4	57.2	4-13/16	122.2	2-13/16	71.4
2	11-1/4	285.8	2-7/8	73.0	8-5/16	211.1	8-3/8	212.7	2-3/4	69.9	7-19/32	192.9	3-1/2	88.9
2-1/2	11-3/4	298.5	3-3/8	85.7	8-13/16	223.8	9-1/4	235.0	2-3/4	69.9	7-19/32	192.9	4-1/2	114.3
3	11-3/4	298.5	3-3/8	85.7	8-13/16	223.8	9-1/4	235.0	2-3/4	69.9	7-19/32	192.9	4-1/2	114.3
4	14-1/8	358.8	5-13/16	147.6	11-7/32	285.0	12-1/2	317.5	4-5/8	117.5	—	—	—	—

M7332

Installation

WHEN INSTALLING THIS PRODUCT . . .

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced, flame safe-guard control technician.
4. After installation is complete, check out product operation as provided in these instructions.



CAUTION

1. Disconnect power supply before making wiring connections to prevent electrical shock and equipment damage.
2. Voltage and frequency of the power supply connected to this control must agree with those marked on the device.
3. Maximum total connected load to both switches (if used) must not exceed 1800 VA.

INSTALL VALVE

The actuator is mounted directly on the valve bonnet after the valve is installed in the gas supply line. Refer to the instructions packed with the gas valve for installation details. When installing the valve, assure that:

1. Sufficient clearance is left for installation and service of the actuator.
2. Ambient temperatures at the valve location will remain within -40° to 150°F [-40°C to 66°C] or -10°F to 158°F [-23°C to 70°C] (see Specifications section).
3. Position of the valve permits hookup to the damper if one is controlled.

INSTALL ACCESSORY SWITCHES (IF NEEDED)

A spdt auxiliary switch may be installed to operate a load up to 1/2 hp [0.37 kW]. The switch may be adjusted to operate at any point in the valve stroke.

A proof-of-closure switch may also be installed on any V4055 actuator to provide a valve seal overtravel interlock when used with a V5055C or E valve (with double seal).

The spdt proof-of-closure switch is installed to make or break a circuit when the valve is in the closed position. The switch is not adjustable.

NOTE: Mark the actuator or valve to indicate any changes made.

4. Insert the proof-of-closure switch in the position shown in Fig. 2. The switch mounts against the side of the actuator housing. The mounting holes are spaced to mount the switch only in the correct position. Fasten with two screws through the actuator base. The proof-of-closure switch is not adjustable.

5. If only one switch is used, install the narrow barrier included with the switch in the unused space.

6. Mount the actuator before making wiring connections and adjustments to the auxiliary switch.

MOUNT ACTUATOR ON VALVE

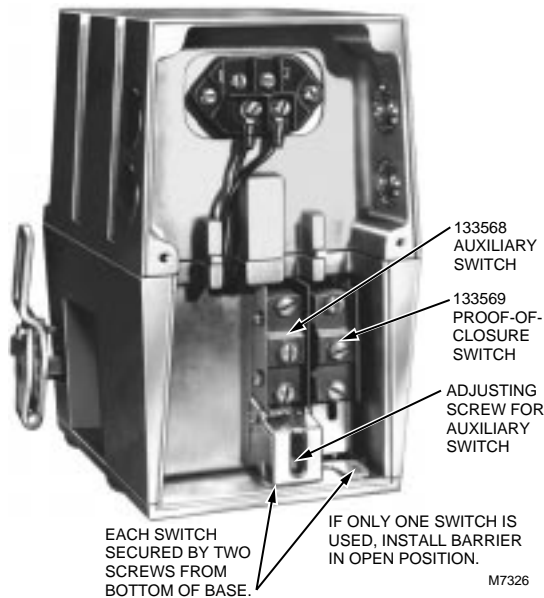
Check the final position of the valve body to be sure that the actuator will be in the proper position when mounted on the valve. This is especially important if the actuator is used to drive a damper.

If two smaller sized valves are mounted very closely together, as in an Industrial Risk Insurers type valve train, it may be necessary to mount the actuator off center to provide adequate clearance.

Slip the bottom collar of the actuator over the valve bonnet assembly. Rotate the actuator to the desired position and use a 5/32 inch Allen wrench to securely tighten the two set screws. (50 to 60 lb/in [5.7 to 6.8 Nm]).

Connect the damper linkage, if used. Refer to the instructions packed with the damper arm.

Fig. 2—V4055 Actuator with cover removed.



To install the switches, proceed as follows:

1. Remove the actuator faceplate (two screws).
2. Remove the silver-colored barrier to expose the actuator stem.
3. Insert the auxiliary switch in the position indicated in Fig. 2. Fasten with two screws through the actuator base.

TO REPLACE A V4034 ACTUATOR ON A V5034 VALVE

IMPORTANT: When replacing a standard (26 sec) V4034 actuator on a V5034 Valve, check the main burner flame-establishing period (MFEP) of the burner primary safety control. If the MFEP is 10 sec, you must use a fast-opening (13 sec) V4055 Actuator on the older V5034 Valve.

The initial action of the V4055 Actuator does not immediately open the V5034 Valve because of a difference in stroke length. The pilot may be shut off before the main burner flame is established. The fast-opening V4055 Actuator will open the V5034 Valve fast enough to establish the main burner flame within the ten second flame-establishing period.

If it is desirable to maintain the slower opening characteristic of the standard V4034 Actuator, both the V4034 Actuator and V5034 Valve should be replaced. Use a standard V4055 Actuator on a V5055 Valve.

Select the correct adapter, depending on whether the V5034 has a long or short stem (Fig. 3). Fasten the adapter to the V5034 Valve bonnet, and then mount the actuator on the adapter. Follow the instructions for mounting the actuator on the valve.

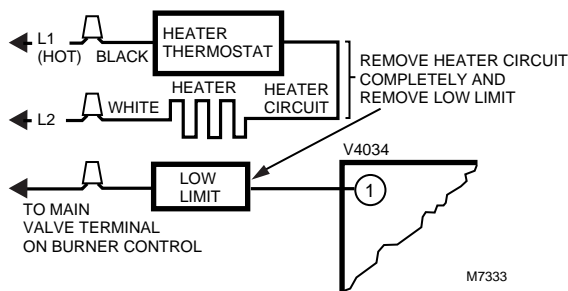
If the V4034 being replaced is equipped with a heater, there will be a low limit control connected in series with the V4034 power supply to prevent actuator operation below 25°F [-4°C]. There will also be a constant source of the line voltage power to the heater and its control thermostat.

Fig. 3—Adapters permit use of V4055 Actuator with V5034 Valve.



The V4055 is rated for ambient temperature down to -40°F [-40°C] for 60 Hz models, or -10°F [-23°] for 50/60 Hz models, and does not require a heater. Remove all the wiring associated with the heater. Disconnect the power supply for the heater at its source and remove the wires. See Fig. 4.

Fig. 4—Remove heater circuits, if installed, when replacing V4034 Actuator.

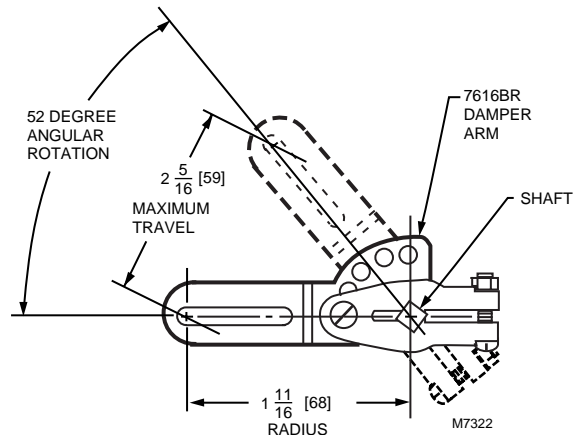


MOUNT AND ADJUST 7616BR DAMPER CRANK ARM (IF USED)

IMPORTANT: When a damper crank arm is used with a NEMA 4 actuator that is exposed to ice or sleet, a suitable shield must be installed to prevent ice or sleet buildup.

Follow installation and adjustment directions included with damper crank arm. Maximum pushrod travel is 2-5/16 in. [58.7 mm] through a stroke of 52 degrees. See Fig. 5.

Fig. 5—7616BR Damper Crank Arm may be attached to actuator shaft to drive a damper when valve is opened.



WIRING

Disconnect power supply before making electrical connections to prevent electrical shock or equipment damage.

Wiring must comply with all applicable electrical codes, ordinances, and regulations. Wiring to the actuator must be NEC Class 1.

Connect the power supply to terminals 1 and 2 on the V4055 terminal strip. Refer to Fig. 6 for auxiliary switch connections. For typical system hookups, refer to Fig. 7 and to instructions packed with device used to control valve.

When all wiring connections are complete, replace the actuator faceplate.



CAUTION

Label all wires prior to disconnection when servicing valves. Wiring errors can cause improper and dangerous operation.

Verify proper operation after servicing.

NOTE: Pipe sealant is required on the conduit threads of actuators with NEMA 4 enclosures.

ADJUST THE AUXILIARY SWITCH (IF USED)

The auxiliary switch is adjustable throughout the stroke of the actuator. With the switch installed in the actuator, turn the adjusting screw (Fig. 2) clockwise  to cause the switch to operate earlier in the stroke or counterclockwise  to cause the switch to operate later in the stroke.

NOTE: The proof-of-closure switch is not adjustable.

Fig. 6—External connections to the V4055 Actuator.

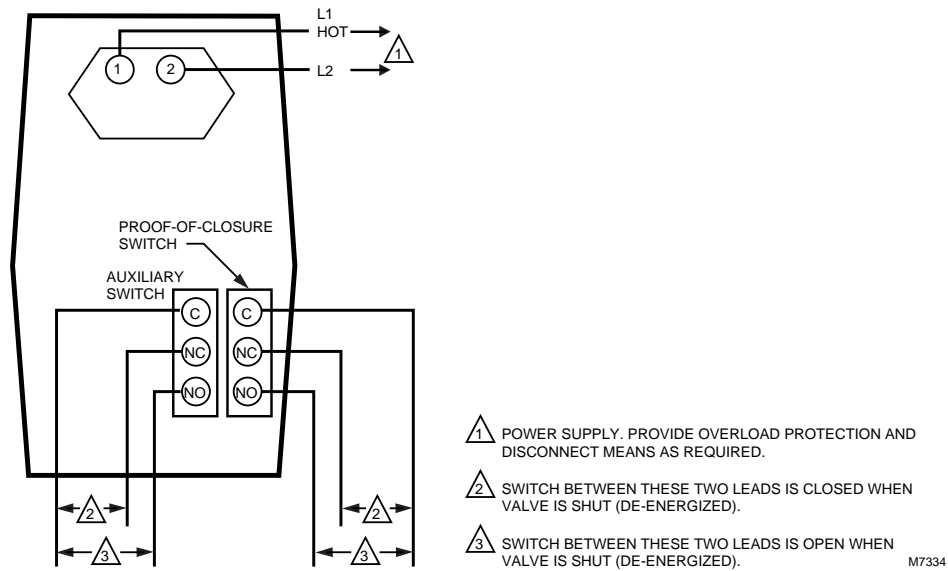
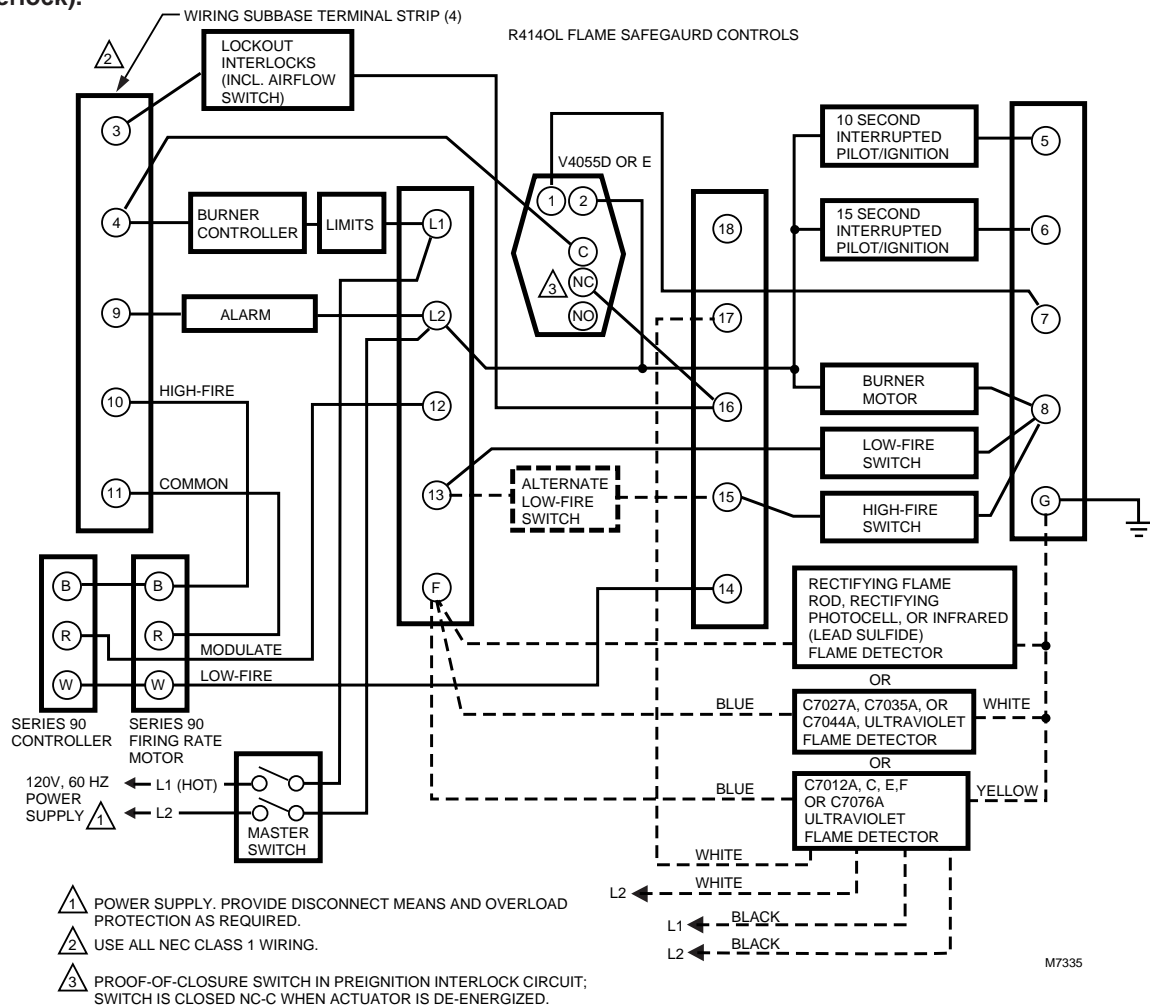


Fig. 7—Typical application of a V4055D/V5055C or V4055E/V5055E combination to meet Factory Mutual or Underwriters Laboratories Inc. Requirements for a proof-of-closure switch (valve seal overtravel interlock).



Checkout and Service



CAUTION

Only a trained, experienced, flame safeguard control service technician should check out and service this control.

CHECKOUT

After the installation is complete, cycle the valve several times with the manual fuel shutoff cock closed before testing the system in actual operation.

SERVICE

The actuator is not field repairable except for replacing the auxiliary switch or proof-of-closure switch. See Installation section for procedure. Do not disassemble the valve actuator.

If the actuator should fail to operate properly, replace it.

Honeywell

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Helping You Control Your World



V5055A-E Industrial Gas Valves

The V5055 Gas Valves are used with the V4055, V4062, and V9055 Fluid Power Actuators to control gas flow to commercial and industrial burners.



- Used with natural or liquefied petroleum (LP) gases.
- V5055 normally closed valves are rated for final shutoff service (safety shutoff).
- V5055A,C,D,E Valves are for On-Off service.
- V5055B 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.
- V5055C,E Valves have a double seal and are used with V4055D,E Actuators to provide proof-of-closure switch and valve seal overtravel interlock.
- V5055D,E Valves are for high pressure applications (see Table 1).
- Seven valve sizes from 3/4 to 3 inches have NPT threaded connections. Models are available with BSP-PL threads. V5055A,B,C Valves are available in a 4 inch size and have flange connections.
- Most models have 1/4 inch upstream and downstream top and plug. BSP-PL thread models have 1/4 inch upstream tap and plug.
- Valve body rating of 75 psi (517.1 kPa).
- Yellow SHUT indicator attached to the valve stem provides an indication of the valve closed position.
- Unpainted, die-cast aluminum body.

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Specifications

MODELS:

- V5055A Industrial Gas Valve for On-Off service.
- V5055B Industrial Gas Valve with characterized guide for slow opening, HI-LO-OFF, or modulating service.
- V5055C: Same as V5055A but incorporates a double seal. Used with the V4055D Actuator to a provide proof-of-closure switch and a valve seal overtravel interlock.
- V5055D: Same as V5055A but for high pressure applications.
- V5055E: Same as V5055C but for high pressure applications.

- TYPE OF GAS:** Natural or liquefied petroleum (LP) only.
- PIPE SIZE:** 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, and 4 in. (only V5055A,B,C available in 4 in. size).
- PIPE THREADS:** NPT or BSP-PL Threads (equivalent to ISO R7 and DIN 2999). Available on inlet and outlet of 3/4 to 3 inch valves. Four inch valves have flange connections.
- PRESSURE RATINGS:** See Table 1.
- VALVE BODY RATING:** 75 psi (517.1 kPa).
- VALVE CAPACITIES:** A.G.A. ratings at 1 in. (0.25 kPa) pressure drop; based on gas with specific gravity of 0.64.

TABLE 1—PRESSURE RATINGS OF VALVE-ACTUATOR COMBINATIONS.

Valve	Actuator											
	V4055A,D ^c				V4055B,E ^c				V4062,V9055 ^c			
	psi	kPa	psi	kPa	psi	kPa	psi	kPa	psi	kPa	psi	kPa
V5055A,C 3/4 to 3 in.	5	34.5	15	103.4	15	103.4	15	103.4	5	34.5	14	103.4
V5055A,C 4 in.	3	20.7	15	103.4	5	34.5	15	103.4	3	20.7	15	103.4
V4055B 3/4 to 3 in.	5	34.5	15	103.4	15	103.4	15	103.4	5	34.5	15	103.4
V5055B 4 in.	3	20.7	15	103.4	5	34.5	15	103.4	3	20.7	15	103.4
V5055D,E 3/4, 1, 1-1/4, 1-1/2 in.	5	34.5	75	517.1	25	172.4	75	517.1	5	34.5	75	517.1
V5055D,E 2, 2-1/2, 3 in.	5	34.5	45	310.3	15	103.4	45	310.3	5	34.5	45	310.3

- ^a Maximum operating pressure differential.
- ^b Maximum close-off pressure without seal leakage. This is the maximum allowable pressure drop to which a valve may be subjected while fully closed, and is independent of the valve body rating.
- ^c Use a V4055D, V4055E, V4062D, or V9055D (with proof-of-closure switch) with a V5055C or E (with double seal) for valve seal overtravel interlock.

Ordering Information

When purchasing replacement and modernization products from your TRADELINE[®] wholesaler or distributor, refer to the TRADELINE[®] Catalog or price sheets for complete ordering number, or specify—

1. Order number
2. Pipe size.
3. NPT or parallel BSP threads (except for 4 in. models with flanges).
4. Optional additional tapping and plug—1/8 in downstream and/or 1/2 in. upstream.
5. Replacement parts, if desired.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Home and Building Control Sales Office (please check the white pages of your phone directory).
2. Home and Building Control Customer Logistics
 Honeywell Inc.
 1885 Douglas Drive North
 Minneapolis, Minnesota 55422-4386 (612) 951-1000

In Canada—Honeywell Limited/Honeywell Limitée, 740 Ellesmere Road, Scarborough, Ontario M1P2V9. International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

Valve Size (in.)	I.A.S. ^a Rated Capacity	
	cf/h	cu m/hr
3/4	665	18.8
1	960	27.2
1-1/4	1406	39.8
1-1/2	1717	48.6
2	3620	102.5
2-1/2	4250	120.3
3	5230	148.1
4 (V5055A)	10200	288.8
4 (V5055B,C)	9180	259.9

^a A joint venture of CGA Approvals Inc. and AGA Laboratories.

UPSTREAM TAPPING AND PLUG: 1/4 in. NPT or BSP-PL is standard.

DOWNSTREAM TAPPING AND PLUG:

1/4 in. NPT on most domestic models.

1/8 in. NPT on V5055C1182.

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: Mounts directly in the gas supply line.

DIMENSIONS: See Fig. 2 and 3.

WEIGHT:

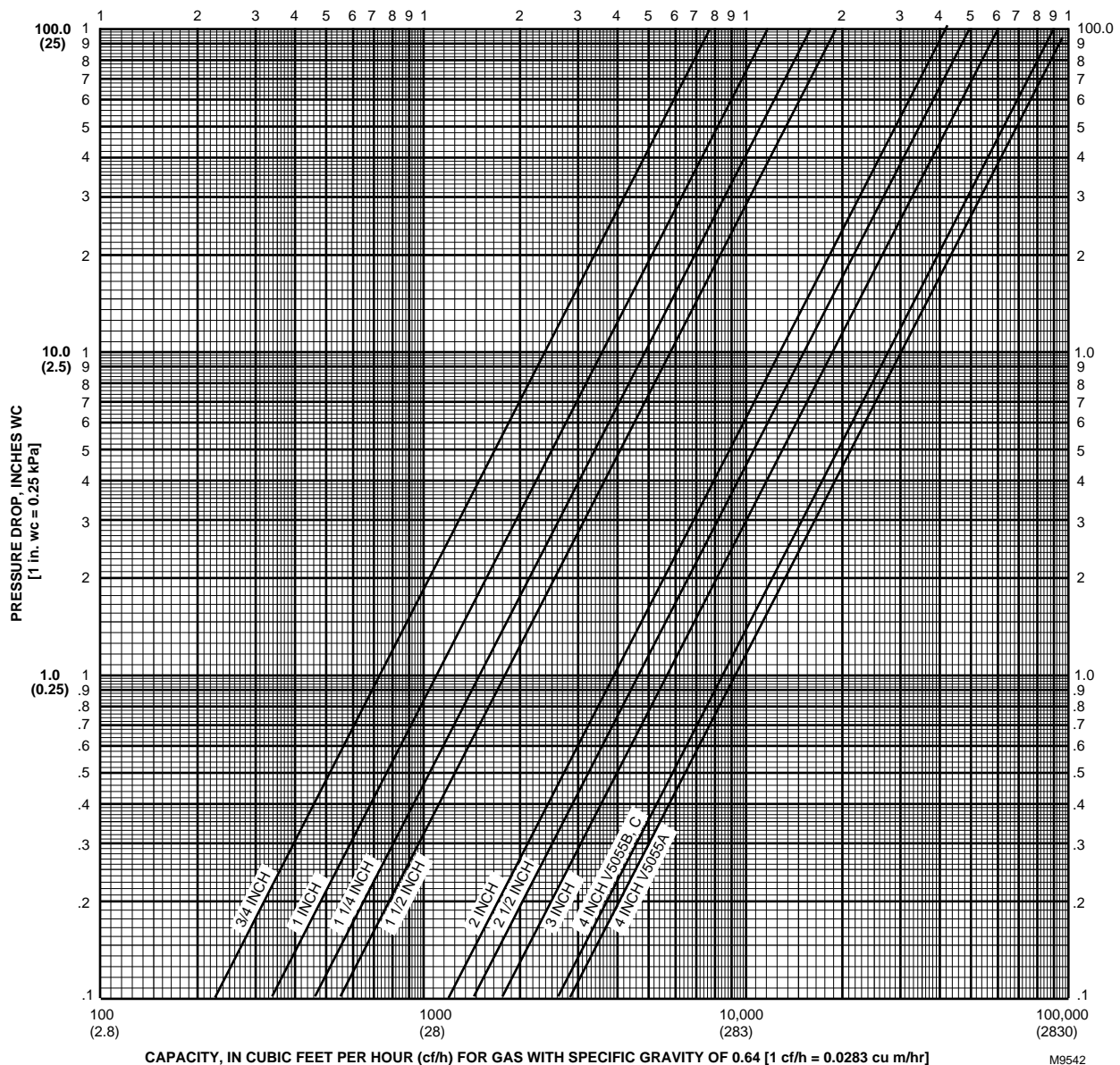
3/4, 1, 1-1/4, 1-1/2, in. valve: 4 lb. (1.8 kg).

2 in. valve: 8 lb. (3.6 kg).

2-1/2, 3 in. valve: 11 lb. (5.0 kg).

4 in. valve: 28 lb. (12.7 kg).

Fig. 1—Flow curves for V5055 Valves.



REPLACEMENT PARTS:

Replacement Seal Assembly: Includes valve seal, bonnet seal, and tube of lubricant.

133393A: for 3/4, 1, 1-1/4, and 1-1/2 in. valves

133392A: for 2, 2-1/2, and 3 in. valves.

137253A: for 4 in. valves.

Replacement Bonnet Assembly: Includes complete bonnet assembly, plus the required replacement seal assembly.

APPROVALS: The following combinations of V5055 Valves (3/4 through 4 in.) and V4055, V4062 and V9055 Fluid Power Actuators are approved by these agencies:

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

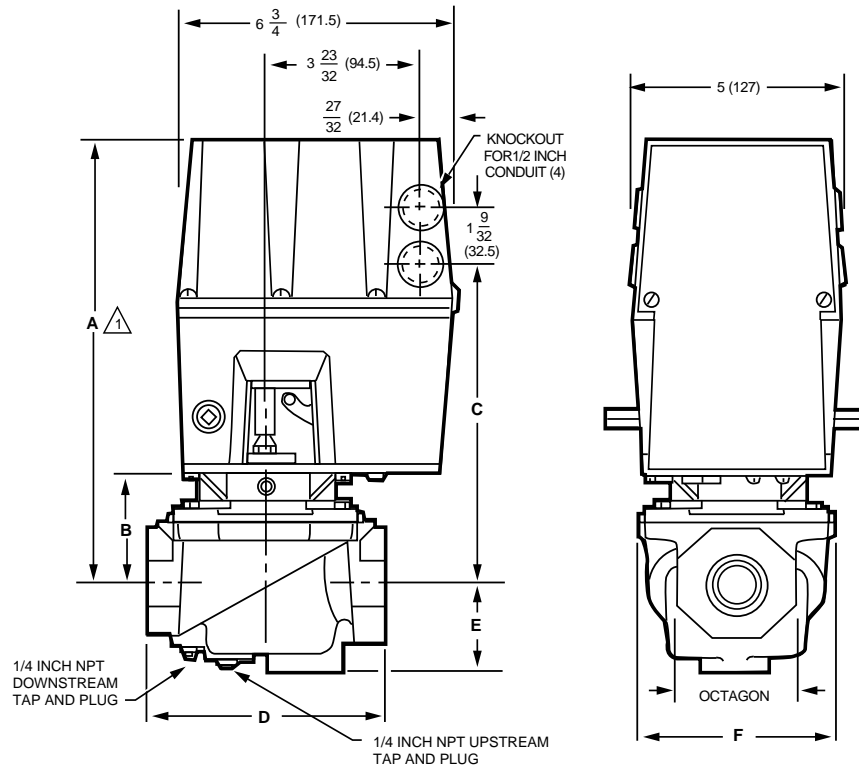
V4055A,B,D,E/V5055A,B,C,D,E

V4062/V5055A,B,C,E

V9055/V5055A,B,C,E

Valve Model	Valve Size (in.)	Replacement Bonnet Assembly
V5055A (On-Off)	3/4, 1, 1-1/4, 1-1/2	133398AA
	2, 2-1/2, 3	133417AA
	4	136911AA
V5055B (Characterized guide)	3/4, 1, 1-1/4, 1-1/2	133398BA
	2, 2-1/2, 3	133417BA
	4	136911BA
V5055C (Valve-closed indicator)	4	136911CA
V5055D (High pressure On-Off)	3/4, 1, 1-1/4, 1-1/2	136308AA
	2, 2-1/2, 3	136307AA

Fig. 2—Approximate dimensions of the 3/4 through 3 in. V5055 Valves with valve actuator in in. (mm).



△ ALLOW 2 IN. (51 mm) CLEARANCE FOR ACTUATOR REMOVAL.

VALVE SIZE INCH	DIM A		DIM B		DIM C		DIM D		DIM E		DIM F		OCTAGON	
	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM
3/4	11-1/8	282.6	2-3/4	69.9	8-3/16	208.0	5-3/4	146.1	2-1/4	57.2	4-13/16	122.2	2-13/16	71.4
1	11-1/8	282.6	2-3/4	69.9	8-3/16	208.0	5-3/4	146.1	2-1/4	57.2	4-13/16	122.2	2-13/16	71.4
1-1/4	11-1/8	282.6	2-3/4	69.9	8-3/16	208.0	5-3/4	146.1	2-1/4	57.2	4-13/16	122.2	2-13/16	71.4
1-1/2	11-1/8	282.6	2-3/4	69.9	8-3/16	208.0	5-3/4	146.1	2-1/4	57.2	4-13/16	122.2	2-13/16	71.4
2	11-1/4	285.8	2-7/8	73.0	8-5/16	211.1	8-3/8	212.7	2-3/4	69.9	7-19/32	192.9	3-1/2	88.9
2-1/2	11-3/4	298.5	3-3/8	85.7	8-13/16	223.8	9-1/4	235.0	2-3/4	69.9	7-19/32	192.9	4-1/2	114.3
3	11-3/4	298.5	3-3/8	85.7	8-13/16	223.8	9-1/4	235.0	2-3/4	69.9	7-19/32	192.9	4-1/2	114.3

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Industrial Risk Insurers (Formerly F.L.A.) Acceptable:

V4055A,B,D,E/V5055A,B,C,D,E
V4062/V5055A,B,C,E
V9055/V5055A,B,C,E

Factory Mutual Approved (Report No. 20698, 20835, 21172, and 24061).

American Gas Association (IAS) Design Certified (Report No. 21 -1 C):

V4055A/V4055A,B V4055E/V5055E
V4055B/V5055D V4062/V5055B,C
V4055D/V5055C V9055/V5055B,C

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

Canadian Gas Approvals Inc. (IAS) Certified (Report No. 1029-SSV-4098, 60 Hz actuator models only):

V4055A,B,D,E/V5055A,B,C,D,E
V4062/V5055B
V9055/V5055B

British Gas Corporation and Dutch Gas Institute Approved:

V4055 or V4062 with V5055; A1145, -A1152, A1160, -A1178, -B1168, -B1184, B1192, -B1200, -B1218.

Australian Gas Association Approved: V5055; -B1267, -B1275, and -B1291.

DIN-DVGW Approved (Germany): V5055, -A1145, -A1152, -A1160, -A1178, -B1168, -B1184, -B1192, -B1200, and -B1218.

GAS VALVE SIZING

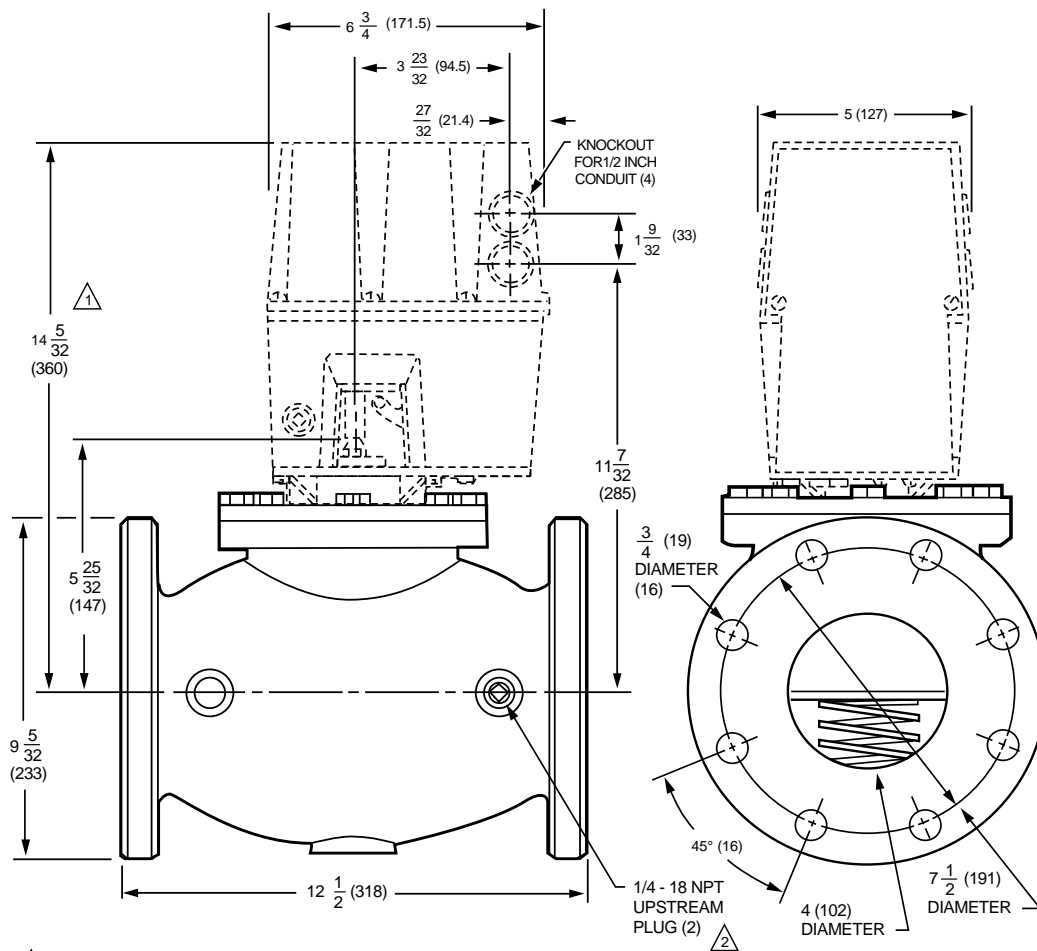
1. Check the burner nameplate for (a) the type of gas used, and (b) the gas flow capacity. The capacity will be listed in Btu/h (Btus per hour) or in cf/h (cubic foot per hour).

2. Call the gas utility for information on (a) the specific gravity (sp gr) and (b) Btu per cubic foot (Btu/cu ft) for type of gas used.

3. Find the capacity in cf/h. If the capacity is listed in Btu/h, convert to cfh by the following formula:

$$\text{Capacity in cf/h} = \frac{\text{Btu/h (from burner nameplate)}}{\text{Btu/cu ft (from gas utility)}}$$

Fig. 3—Approximate dimensions of the 4 in. V5055 Valves with valve actuator in in. (mm).



△1 ALLOW 2 IN. (51 mm) CLEARANCE ABOVE V4055 SO IT MAY BE REMOVED FROM VALVE.

△2 DIMENSIONS ON DIN-APPROVED VALVES: 1/4 - 19 BSP.PL UPSTREAM PLUG (2), .71 IN (18 mm) DIAMETER BOLT HOLE (16), 7.087 IN (180 mm) DIAMETER BOLT CIRCLE.

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4. For gases with specific gravities other than 0.64, multiply the burner cfh by the proper conversion factor:

Type of Gas	sp gr (average)	Multiply cf/h by
LP—Propane	1.53	0.647
LP—Butane	1.98	0.569

5. Use the corrected capacity in cf/h when determining the gas valve size in Fig. 1.

6. Determine the maximum pressure drop across the valve and draw a horizontal line at this pressure in Fig. 1.

7. Draw a vertical line in Fig. 1 at the capacity (cf/h) previously determined. *Use the corrected capacity for a gas with a specific gravity other than 0.64.*

8. Use the valve size at the intersection of the horizontal and vertical lines. If the intersection is between valve sizes, use the next higher size to the right.

TO SIZE TWO IDENTICAL VALVES PIPED IN SERIES

1. Find the cf/h for the type of gas used.
2. Consider both valves as one unit. Determine the total maximum pressure drop across the unit.
3. Find the pressure drop across the first valve by assuming it to be 45 percent of the total pressure drop.
4. Find the valve size from Fig. 1.
5. The second valve will be the same size as the first valve.

Installation

IMPORTANT: *The V5055 Valve is designed to provide control of gaseous fuel (natural and LP gas) flow in applications in which there is minimal exposure to water. V5055 Valves used in maritime, beverage, food processing, outdoor and other installations in which occasional exposure to water is experienced may be subject to valve stem and spring corrosion. The presence of corrosion decreases the operating life of the valve. V5055 Valves used in such installations should be inspected at least annually and should have the valve bonnets replaced if corrosion is noted.*

A V4055 Valve Actuator with a NEMA 4 rating is also recommended for such installations. The water-tight design of the NEMA 4 rated V4055 Actuator prevents water from entering the V4055 valve stem and spring chamber through the actuator. Under certain conditions, some water may be retained by the external upper portion of the valve body. The retained water is effectively excluded from the valve stem and spring chamber by a functional seal that is incorporated into the NEMA 4 rated actuator.

WHEN INSTALLING THIS PRODUCT...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced, flame safe-guard control technician.
4. After installation is complete, check out product operations as provided in these instructions.



CAUTION

1. Turn off gas supply before starting installation.
2. Disconnect power supply for valve actuator before beginning installation to prevent electrical shock and equipment damage.
3. Be sure the valve is installed so the arrow on the valve points in the direction of gas flow. (Gas pressure helps to close the valve.)

LOCATION

Install the valve in the gas supply line downstream from the pressure regulator. The valve and actuator may be mounted in any position that allows sufficient clearance for installation and for repair or replacement.

1. The valve position indicators should be easily visible with the valve and actuator in the final position.
2. The final position of the valve and actuator must allow for damper linkage, if used.

IMPORTANT: *Allow room for turning the valve body (actuator not attached) onto the gas piping. Swing dimensions, measured from the center of the pipe are:*

- 3/4 through 1-1/2 in. valves: 4 in. (101.6 mm).*
- 2 through 3 in. valves: 5 in. (127.0 mm).*
- 4 in. valves: 7 in. (177.8 mm).*

MOUNTING (Figs. 4 through 6)

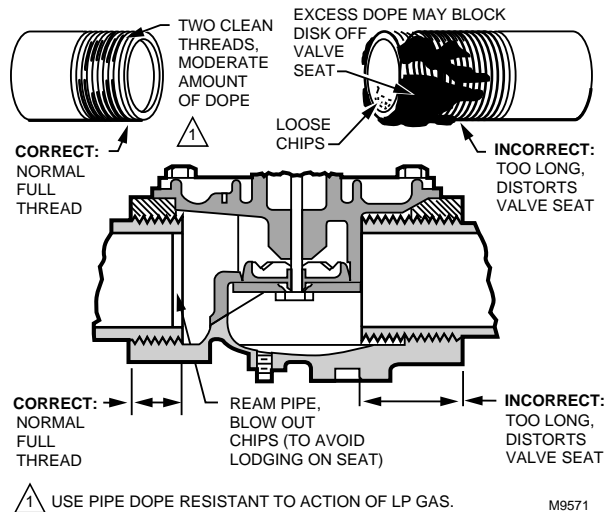


WARNING

If flow is not in the direction of the arrow on the valve body, the valve may not shut off.

1. Use new, properly reamed, pipe, free from chips.
2. Do not thread pipe too far (Fig. 4). Valve distortion or malfunction may result from excess pipe in the valve.

Fig. 4—Preparing the pipes.



3. Remove the protective caps from the ends of the valve. Do not attach the valve actuator until the valve body installation is complete.
4. Apply good quality pipe dope resistant to action of LP gas, putting a moderate amount on the male threads only. Use dope sparingly; if pipe dope lodges on the valve seat, it will prevent proper closure.
5. Install valve with the gas flow in the direction indicated by the arrow on the casting.
6. Apply a parallel jaw wrench only to the flat next to the pipe being inserted (Fig. 5). A wrench applied to the valve body itself, or to the end farthest from the pipe being inserted, may distort the casting, causing a malfunction. Do not use the valve for a lever.
7. Be sure the gas flow is in the same direction as the arrow on the bottom of the valve body.

8. Use two threaded companion flanges, two gaskets (included with valve), and 16 bolts (with washers and nuts) for mounting a 4 in.-V5055 Valve. Mount a threaded flange and gasket on each end of the valve as shown in Fig. 6. Then screw the pipes into the threaded flanges. Apply dope sparingly, and use wrenches and vises properly as shown in Fig. 4 and 5.

9. Make sure the power supply is disconnected from the valve actuator. Then mount the actuator on the valve body and complete the electrical and linkage connections following the instructions packed with the actuator.

Fig. 5—Installing a 3/4 through 3 in. V5055 Valve.

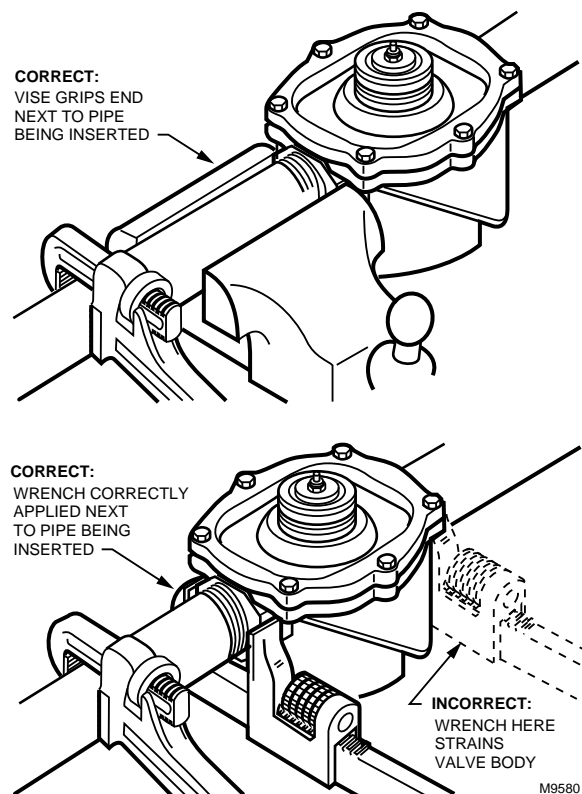
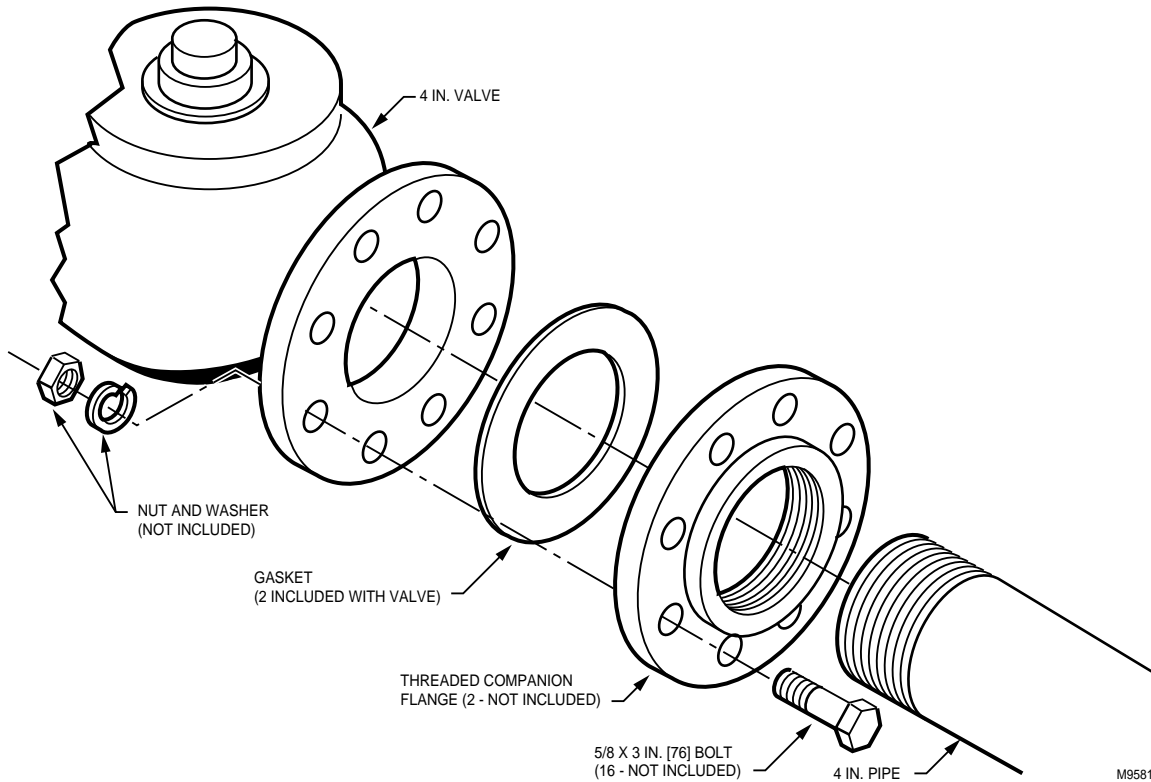


Fig. 6—Installing a 4 in. V5055 Valve.



Operation and Checkout

OPERATION

A V5055 Industrial Gas Valve is operated by a V4055, V4062, or V9055 Fluid Power Gas Valve Actuator. The valve opens when the actuator is energized, and closes when power is removed. When closed, the valve seals off against the rated close-off pressure with no power applied. For further information, refer to the Instructions for the actuator.

CHECKOUT



WARNING

Do not allow fuel to accumulate in the combustion chamber. If fuel is allowed to enter the chamber for longer than a few seconds without igniting, an explosive mixture could result.



CAUTION

1. Do not put the system into service until you have satisfactorily completed the following Valve Leak Test, all applicable tests described in the Checkout section of the Instructions for the flame safeguard control, and any other tests required by the burner manufacturer.
2. All tests must be performed by a trained, experienced flame safeguard control technician.
3. Close all manual fuel shutoff valves as soon as trouble occurs.

After the installation is complete, cycle the valve several times with the manual fuel shutoff cock closed. Make sure the valve and actuator function properly. Also perform the Valve Leak Test that follows before putting the valve into service.

VALVE LEAK TEST (Fig. 7)

This is a test for checking the closure tightness of a gas safety shutoff valve. It should be performed by qualified personnel during the initial startup of a burner system, or whenever the valve or valve bonnet is replaced (see Service Information section). It is recommended that this test also be included in the scheduled inspection and maintenance procedures. For a periodic inspection test, follow steps 1, 3, 4, 5, 8, 9, 10, 12, 13, 16, and 17.

1. De-energize the control system to assure that there is no power to the safety shutoff valve (C) shown in Fig. 7.

2. Close the upstream manual gas cock (A).

3. Make sure the manual test petcock (F) is closed in the leak test tap assembly (D).

4. Remove the leak test tap plug and connect the test apparatus to the Leak Tap (D).

5. Close the downstream manual gas cock (E).

6. Open the upstream manual gas cock (A).

7. Run the safety shutoff valve (C) to its fully open position (through the safety system); then immediately de-energize the system to close the valve.

8. Immerse a 1/4 in. tube vertically 1/2 in. (12.7 mm) into a jar of water.

9. Slowly open the test petcock (F).

10. When the rate of bubbles coming through the water stabilizes, count the number of bubbles appearing during a ten-second period. Each bubble appearing during a ten-second period represents a flow rate of approximately 0.001 cfh.

To meet U.S. requirements, leakage must not exceed the following values:

V5055 Pipe Size (in.)	Allowable Leakage (cc/hr) ^a	Number of bubbles per 10 sec
3/4, 1, 1-1/4, 1-1/2	458	16
2, 2-1/2, 3	752	26
4	1003	35

^a Based on air at standard conditions, test pressures provided by ANSI Z21.21, Section 2.4.2 and a maximum of 235 cc/hr per inch of seal-off diameter. Seal-off diameter is not to be confused with pipe size.

NOTE: For international leak test requirements, contact the office of the appropriate approval agency.

AFTER THE TEST:

11. Close the upstream manual gas cock (A).

12. Close the test petcock (F), remove the test apparatus, and replace the leak test tap plug (D).

13. Open the upstream manual gas cock (A) and energize the safety shutoff valve (C).

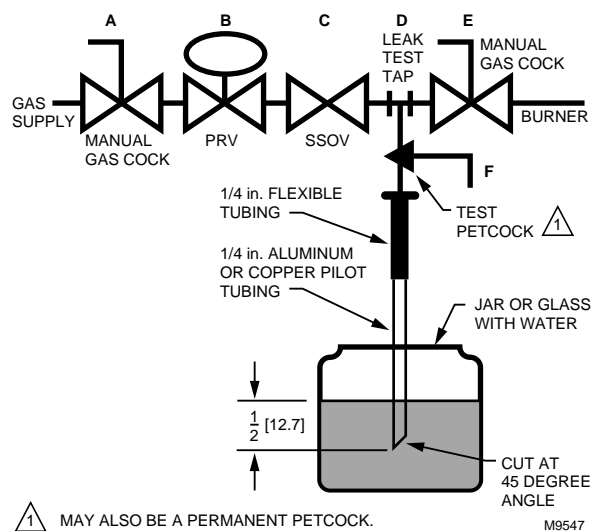
14. Test with soap bubbles to assure that there is no leak at the test tap (D).

15. De-energize the safety shutoff valve (C).

16. Open the downstream manual gas cock (E).

17. Restore the system to normal operation. If two safety shutoff valves are utilized, each 550V valve is to be checked for tightness of closure.

Fig. 7—Valve Leak Test.



Service Information



CAUTION

1. Before servicing, turn off the gas supply and disconnect all electrical power to the valve actuator.
2. Only qualified service technicians should attempt to service or repair flame safeguard controls and burner systems.
3. Do not disassemble the valve bonnet assembly; the valve seat is not replaceable.
4. Failure to properly position and seat the seals in the valve body may result in a hazardous gas leak.

SCHEDULED INSPECTION AND MAINTENANCE

Setup and follow a schedule for periodic inspection and maintenance, including the burner, all other controls, and the valve(s). It is recommended that the Valve Leak Test in the Checkout section be included in this schedule. Refer to the Instructions for the primary safety control for more information.

VALVE BONNET REPLACEMENT

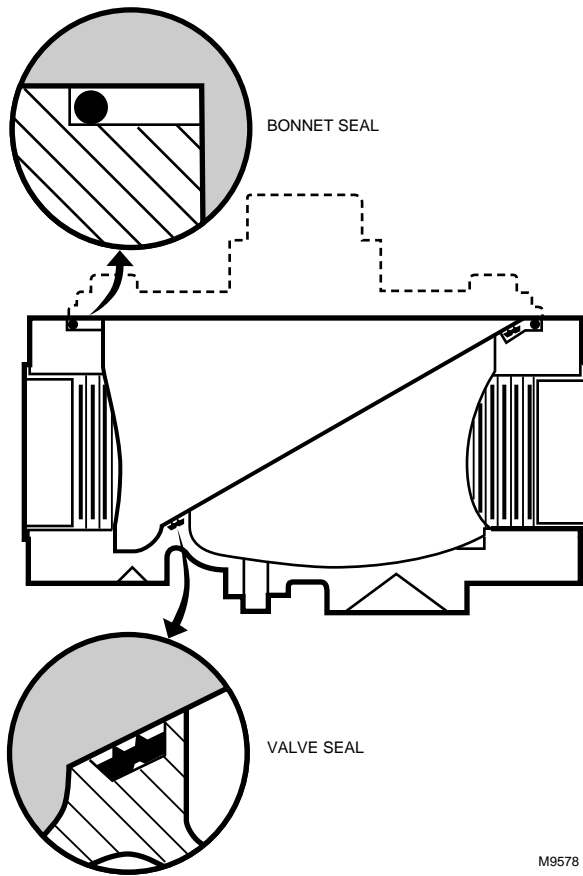
The entire valve bonnet may be replaced without removing the valve body from the gas line. Do not disassemble the valve bonnet assembly; the valve seat is not replaceable.

For part numbers, refer to Replacement Parts in the Specifications section. Complete instructions for replacing the bonnet assembly are included with the replacement part.

REPLACEMENT OF SEALS (Fig. 8 or 9)

When removing the bonnet to inspect and clean the valve, install new seals (see Replacement Parts in Specifications section). Coat the new seals with the grease provided, and position them in the valve body as shown in Fig. 8 or 9.

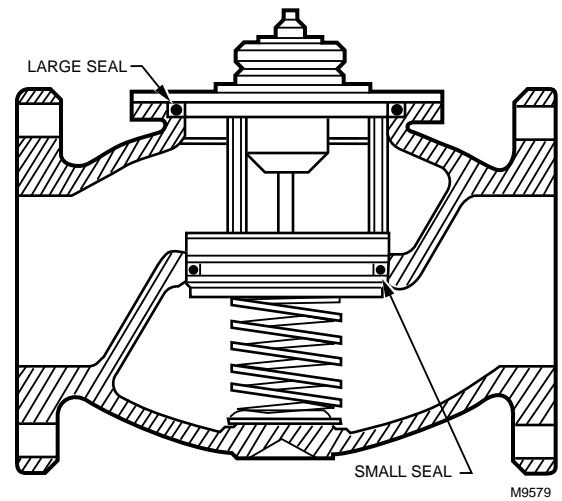
Fig. 8—Proper positions of valve and bonnet seals in 3/4 through 3 in. valves.



Failure to properly position and seat the seals in the valve body may result in a hazardous gas leak.

After the new bonnet assembly is installed, or the bonnet is removed for any reason, check for gas leakage around the bonnet seal. Turn on the gas at the manual valve. Paint the seal area with a rich soap and water solution. Bubbles indicate a gas leak. If a leak is detected, check to see that the bonnet screws are tight. If necessary, turn off the gas again and remove the bonnet to be sure the seals are properly seated.

Fig. 9—Proper positions of valve and bonnet seals in 4 in. valve.



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