

V4055F,G Fluid Power Actuator with Manual Control

PRODUCT DATA



FEATURES

- Fast opening time of 13 seconds at 120 V, 60 Hz.
- Maximum closing time, is 1 second, which meets approval body requirements.
- Unit available with FM approved proof of closure switch.
- Red “OPEN” indicator attached to the actuator piston will show if the valve is even slightly open; yellow “SHUT” indicator on the valve stem will show only when the gas valve is fully closed.
- Ambient temperature rating of -40°F to +150°F (-40°C to +66°C).
- Valve and actuator may be mounted in any position.
- Optional, field-adjustable, spdt auxiliary switch, rated at 112 hp (0.37 kW), may be added in the field.
- Standard enclosure meets NEMA 1 (IP30) general purpose requirements.
- Red light indicates when valve is ready to open.
- Rocker switch allows manual operation of valve.
- Valve closes on power loss.

APPLICATION

The V4055F and G fluid power gas valve actuators are for use with the V5055 valve for gas safety shutoff applications to control the gas supply of commercial and industrial burners.

SPECIFICATIONS

Models:
 V4055G Fluid Power Actuator with Manual Control-for use with the V5055 valve. Provides ON-OFF control. Rated for 5 PSI.
 V4055F-Same as V4055G except: for use with V5055C only. Meets UL and FM proof of closure requirements.

Contents

Application	1
Specifications	1
Operation	2
Ordering Information	2
Installation	3
Wiring	5
Checkout and Service	5



**Table 1. Auxiliary Switch And Valve-closed Indication
Switch Ratings: 112 hp (0.37 kW)^a**

LOAD	120 V	240 V
Full Load	9.8 A	4.9A
Locked Rotor	58.5 A	29.4 A

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

Nominal Opening Time: 13 seconds:

Closing Time: 1 sec maximum when de-energized.

Ambient Operating Temperature Rating:

-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.

Mounting Means:

Actuator mounts directly to valve bonnet with 2 setscrews, positioned 90 angular degrees apart. Valve and actuator can be mounted in any position.

Mounting Dimensions: See Fig. 1.

Replacement Parts:

130928 Red Indicator Lamp.

Accessories:

133568 Auxiliary Switch Bag Assembly.

133569 Valve-Closed Indication Switch Bag Assembly.

Approvals: UL and FM. IRI Approvable.

Electrical Ratings: See Table 2.

Table 2. Electrical Ratings.

Voltage and Frequency	Opening (Fast)				Holding		
	Inrush	W	A	VA	W	A	VA
120/60	5.4	71.0	1.33	160	9.5	0.12	14

OPERATION

1. The red READY TO OPEN light will be on if there is power to the actuator and the rocker switch is in the center position.
2. To open the valve depress the rocker switch to the VALVE OPEN position and hold until the valve is open (Red READY TO OPEN light turns off). The valve will close if the rocker switch is released from the VALVE OPEN position with the red READY TO OPEN light on.
3. To close the valve depress rocker switch to VALVE CLOSED position. The rocker switch stays in the valve closed position when released.
4. The valve automatically closes on power loss. It must be manually reopened using the rocker switch.

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.

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 Honeywell Automation and Control Products Sales Office (check white pages of your phone directory).
2. Honeywell Customer Care
1885 Douglas Drive North
Minneapolis, Minnesota 55422-4386

In Canada—Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Toronto, Ontario M1V 4Z9.

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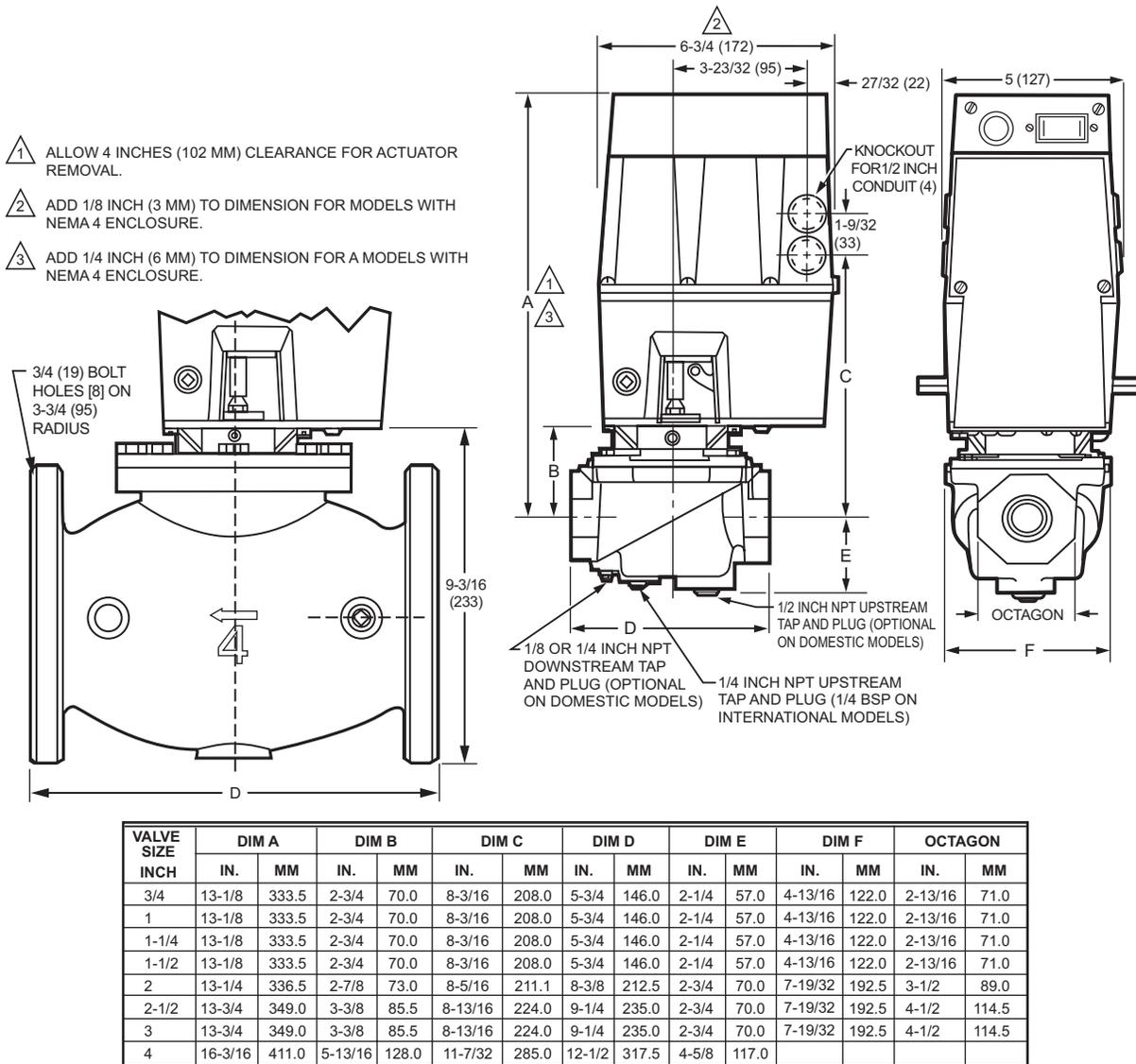


Fig. 1. Approximate mounting dimensions of V4055 actuators and V5055 valves, in. (mm).

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 safeguard control technician.
4. After installation is complete, check out product operation as provided in these instructions.

CAUTION

Electrical Shock and Equipment Damage Hazard. Can cause serious injury or death.

1. Disconnect power supply before making wiring connections to prevent electrical shock and equipment damage.
2. All wiring must comply with all applicable electrical codes, ordinances and regulations. All wiring must be NEC Class 1.
3. Voltage and frequency of the power supply connected to this control must agree with those marked on the device.
4. Maximum total connected load to both switches (if used) must not exceed 1800 VA.

! WARNING

Explosion Hazard.

Can cause explosion, serious injury or death.

1. Turn off gas supply before starting installation.
2. Disconnect power supply for valve actuator before beginning installation.
3. Install the valve so the arrow on the valve body points in the gas flow direction.

Install Valve

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

1. Sufficient clearance is left for installation and service of the actuator.
2. Ambient temperatures at the valve location will remain within -40°F to +150°F (-40°C to +66°C).

Install Accessory Switches (If Needed)

A SPDT switch may be installed to operate an auxiliary load up to 1/2 hp (0.37 kW). The switch may be adjusted to operate at any point in the valve stroke.

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

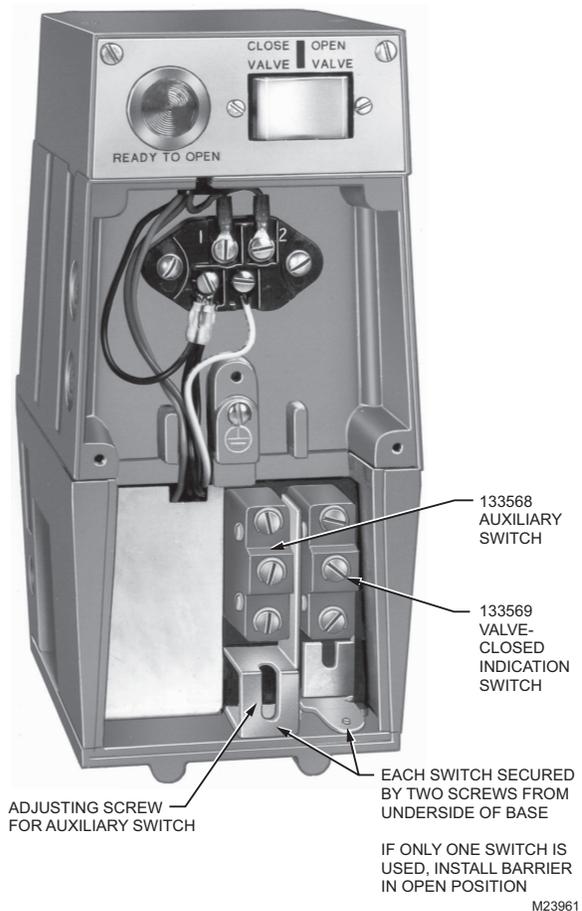


Fig. 2. V4055 actuator with cover removed.

NOTE: A V5055A, B or D valve can also be fitted with a bonnet assembly with 2 seals to provide a valve seal overtravel interlock.

The SPDT valve-closed indication 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.

To install the switches, proceed as follows:

1. Remove the actuator faceplate (2 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 2 screws through the actuator base.
4. Insert the valve-closed indication switch in the position shown in Fig. 2. The valve-closed indication 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 2 screws through the actuator base.
5. If only 1 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 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.

If two smaller size valves are mounted very close together, as in an Industrial Risk Insurers (formerly F.I.A.) type valve train, it may be necessary to mount the actuator “off center” to provide adequate clearance.

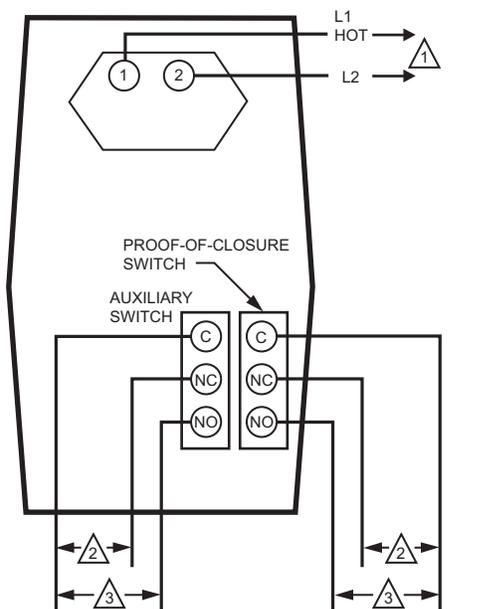
Slip the bottom collar of the actuator over the valve bonnet assembly. Rotate the actuator to the desired position and use a 5/32 inch Allen wrench to tighten the two setscrews securely (50 to 60 lb.-in. [5.7 to 6.8 N.m]).

WIRING

Disconnect power supply before making wiring connections to prevent electrical shock and 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. 3 for auxiliary switch connections. For typical system hookups, refer to instructions packed with device used to control valve.

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



△ 1 POWER SUPPLY. PROVIDE OVERLOAD PROTECTION AND DISCONNECT MEANS AS REQUIRED.

△ 2 SWITCH BETWEEN THESE TWO LEADS IS CLOSED WHEN VALVE IS SHUT (DE-ENERGIZED).

△ 3 SWITCH BETWEEN THESE TWO LEADS IS OPEN WHEN VALVE IS SHUT (DE-ENERGIZED).

M7334A

Fig. 3. External connections to the V4055 actuator.

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 valve-closed indication switch is not adjustable.

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, valve-closed indication switch, and READY TO OPEN light. See INSTALLATION section for procedure. Do not disassemble the valve actuator.

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

1. Turn off the gas supply at the manual shutoff valve located upstream from the valve(s) being serviced.
2. Shut off all electrical power to the valve actuator(s).
3. Mark and disconnect the wires from the actuator terminals. Remove conduit and disengage the damper linkage assembly (if applicable).
4. Loosen the two set screws from the valve to lift off the actuator.
5. If the actuator is to be replaced and it did not leak hydraulic fluid, skip to Step 11.

NOTE: It is good practice to inspect the inside of the valve whenever the actuator is replaced. To do so, remove the bonnet assembly, inspect the valve and bonnet. If all is well, proceed to Step 7.

6. If the actuator leaked hydraulic fluid onto the valve (the fluid is red), it must be cleaned off from the valve and bonnet assembly.
 - a. Wipe off the outer valve body.
 - b. Remove the valve bonnet bolts and lift off the bonnet.

NOTE: V5055/V5097C and E Valves have additional internal springs that will push the bonnet up as the bolts are loosened.

- c. Inspect the inside of the valve.

IMPORTANT

If fluid is present on the inside surfaces of the valve body or bonnet surfaces, the bonnet assembly or entire valve must be replaced. See Table 3 below for the bonnet assembly part number.

- d. If the inside surfaces are clear of hydraulic fluid, clean the bonnet assembly and be sure to remove all hydraulic fluid from the inside and outside of the actuator mounting curb. This is the "cup-like" area around the valve stem. Avoid using a cleaning solution as it may damage the rubber seals used in the valve.
- 7. If the valve bonnet assembly is in good condition and is not replaced, replace the bonnet seal. Do not reuse the old bonnet seal. See Table 4 below for the seal number.
- 8. Coat seals with grease provided and position in valve body/bonnet assembly.
- 9. Carefully seat the bonnet assembly on the valve body. Be sure the seals are in their proper position. On those valves with a spring below the disc, be sure the spring is centered in the indentation on the inside of the valve body.
- 10. After positioning the bonnet assembly, replace the screws removed earlier.

NOTE: When replacing the bonnet assembly on the 4-inch valve, draw it evenly into the valve body. Finger-tighten the eight bolts. Draw the bonnet assembly into the valve by tightening, in order, bolts 1, 5, 7 and 3 (two turns each). Repeat until the bonnet assembly is seated. Tighten the remaining bolts. Torque the bolts as follows:

Valve Size	Torque
3/4 in. (19 mm) to 1-1/2 in. (38 mm)	55 in.-lb.
2 in. (51 mm) to 4 in. (102 mm)	75 in.-lb.

- 11. Remount the actuator on the bonnet assembly. Tighten the two set screws (50-60 inch pounds).
- 12. Replace the damper crank arm assembly.
- 13. Re-attach the wires removed from the actuator terminals and turn on the electrical power.
- 14. With the gas still off, cycle the actuator to check for proper mechanical operation.

 **CAUTION**

Be sure to perform a bonnet seal and seat leak check after installation.
Be sure to read and follow all instructions that come with the actuators, valves, seal and bonnet kits.

Replacing The Ready To Open Light (Red)

- 1. Disconnect power.
- 2. Pop out light with screwdriver.
- 3. Connect wires to new light and push light into hole.

Table 3. Replacement Bonnets for V5055/V5097 Gas Valves.

Replacement Bonnet	Valve		Valve Size (in in.)
133398AA	V5055A	V5097A	3/4, 1, 1-1/4, 1-1/2
133417AA			2, 2-1/2, 3
136911AA			(On-Off)
133398BA	V5055B	V5097B	3/4, 1, 1-1/4, 1-1/2
133417BA			2, 2-1/2, 3
136911BA			(Characterized Guide)
133398CA	V5055C	V5097C	3/4, 1, 1-1/4, 1-1/2
133417CA			2, 2-1/2, 3
136911CA			(Proof of Closure)
136308AA	V5055D	V5097D	3/4, 1, 1-1/4, 1-1/2
136307AA			2, 2-1/2, 3
136308BA			V5055E
136307BA	2, 2-1/2, 3		

Each replacement assembly contains the bonnet assembly, two rubber seals, and a tube of grease. It must be used only on the type of valve indicated above.

Table 4. Gas Valve Replacement Seals.

Replacement Seal Assy #	Valve Size (in in.)
133393A	3/4, 1, 1-1/4, 1-1/2
133392A	2, 2-1/2, 3
137253A	4

Replacing the Ready to Open Light (Red)

- 1. Disconnect power.
- 2. Pop out light with screwdriver.
- 3. Connect wires to new light and push light into hole.

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Honeywell International Inc.
1985 Douglas Drive North
Golden Valley, MN 55422
customer.honeywell.com

Honeywell Limited-Honeywell Limitée
35 Dynamic Drive
Toronto, Ontario M1V 4Z9

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