Installation & Maintenance Instructions

3–WAY, 2–POSITION DIRECT–ACTING SOLENOID VALVES
NORMALLY CLOSED, NORMALLY OPEN OR UNIVERSAL OPERATION
1/4″ NPT – 1/4″ ORIFICE – BRASS OR STAINLESS STEEL CONSTRUCTION

SERIES
8327
Form No.V6943R1

NOTICE: See separate solenoid installation and maintenance instructions for information on: Wiring, Solenoid Temperature, Cause of Improper Operation and Solenoid Replacement.

DESCRIPTION

Series 8327 valves are 3–way, 2–position (3/2) solenoid valves designed for general service. Valves are made of rugged brass or stainless steel. Series 8327 valves may be provided with a general purpose or explosionproof/watertight solenoid.

OPERATION

Normally Closed: Applies pressure when solenoid is energized.

Solenoid De–energized: Flow is from Port 2 to Port 1. Port 3 is closed.

Solenoid Energized: Flow is from Port 3 to Port 2. Port 1 is closed.

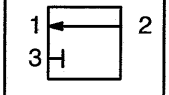
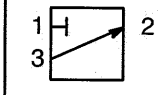
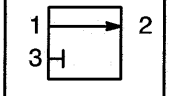
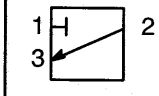
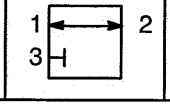
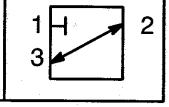
Normally Open: Applies pressure when solenoid is de–energized.
Solenoid De–energized: Flow is from Port 1 to Port 2. Port 3 is closed.

Solenoid Energized: Flow is from Port 2 to Port 3. Port 1 is closed.

Universal

For normally closed, normally open, selection or diversion flow. Pressure can be applied at any port.

Flow Diagrams

OPERATION	DE–ENERGIZED	ENERGIZED
NORMALLY CLOSED PRESSURE AT 3		
NORMALLY OPEN PRESSURE AT 1		
UNIVERSAL PRESSURE AT ANY PORT		

INSTALLATION

Check nameplate for correct catalog number, pressure, voltage, frequency, and service. Never apply incompatible fluids or exceed pressure rating of the valve. Installation and valve maintenance to be performed by qualified personnel.

Future Service Considerations

Provision should be made for performing seat leakage, external leakage, and operational tests on the valve with a nonhazardous, noncombustible fluid after disassembly and reassembly.

Temperature Limitations

Temperature Ranges	
Ambient	Catalog No. 8327G1 & 8321G2 –4°F (–20°C) to 131°F (55°C)
Fluid	Catalog No. 8327G1 –4°F (–20°C) to 176°F (80°C)
	Catalog No 8327G2 –4°F (–20°C) to 248°F (120°C)
Ambient & Fluid	Catalog No. 8327G11 & 8327G12 –40°F (–40°C) to 131°F (55°C)

Positioning

This valve is designed to perform properly when mounted in any position. However, for optimum life and performance, the solenoid should be mounted vertically and upright to reduce the possibility of foreign matter accumulating in the solenoid base sub–assembly area.

Mounting

For mounting dimensions, refer to Figure 1.

Piping

Connect piping to valve according to markings on valve body. Apply pipe compound sparingly to male pipe threads only. If applied to valve threads, the compound may enter the valve and cause operational difficulty. Avoid pipe strain by properly supporting and aligning piping. When tightening the pipe, do not use valve or solenoid as a lever. Locate wrenches applied to valve body or piping as close as possible to connection point.

⚠ CAUTION: To protect the solenoid valve, install a strainer or filter suitable for the service involved in the inlet side as close to the valve as possible. Clean periodically depending on service conditions. See ASCO Series 8600, 8601 and 8602 for strainers.

MAINTENANCE

⚠ WARNING: To prevent the possibility of death, serious injury or property damage, turn off electrical power, depressurize valve, and vent fluid to a safe area before servicing the valve.

NOTE: It is not necessary to remove the valve from the pipeline for repairs.

Cleaning

All solenoid valves should be cleaned periodically. The time between cleanings will vary depending on the medium and service conditions. In general, if the voltage to the coil is correct, sluggish valve operation, excessive noise or leakage will indicate that cleaning is required. In the extreme case, faulty valve operation will occur and the valve may fail to shift. Clean strainer or filter when cleaning the valve.

Preventive Maintenance

- Keep the medium flowing through the valve as free from dirt and foreign material as possible.

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- While in service, the valve should be operated at least once a month to insure proper opening and closing.
- Depending on the medium and service conditions, periodic inspection of internal valve parts for damage or excessive wear is recommended. Thoroughly clean all parts. If parts are worn or damaged, install a complete ASCO Rebuild Kit.

Causes of Improper Operation

- **Incorrect Pressure:** Check valve pressure. Pressure to valve must be within range specified on nameplate.
- **Excessive Leakage:** Disassemble valve and clean all parts. If parts are worn or damaged, install a complete ASCO Rebuild Kit.

Valve Disassembly

1. Disassemble valve in an orderly fashion using exploded views for identification and placement of parts.
2. Remove solenoid, see separate instructions.
3. Unscrew solenoid base sub–assembly from valve body and remove solenoid base gasket.
4. Remove core spring from top of core/insert sub–assembly.
5. Pull core/insert sub–assembly from valve body cavity and remove insert gasket.
6. All parts are now accessible for cleaning or replacement. If parts are worn or damaged, install a complete ASCO Rebuild Kit.

Valve Reassembly

1. Lubricate all gaskets with DOW CORNING® 111 Compound lubricant or an equivalent high–grade silicone grease.
2. Snap insert gasket into the groove of the core/insert sub–assembly. Be sure to use the proper size gasket.
3. Install core/insert sub–assembly into body cavity and push it gently down until the gasket of the insert just seals in the cavity of the body.
4. Install core spring in top of core/insert sub–assembly. Close end of core spring protrudes from top of core.
5. Install solenoid base gasket and solenoid base sub–assembly. Torque solenoid base sub–assembly to 260 ± 25 in–lbs [30 ±3 Nm].
6. Install solenoid. See separate instructions.

⚠ WARNING: To prevent the possibility of death, serious injury or property damage, check valve for proper operation before returning to service. Also perform internal seat and external leakage tests with a nonhazardous, noncombustible fluid.

7. Restore line pressure and electrical power supply to valve.
8. After maintenance is completed, operate the valve a few times to be sure of proper operation. A metallic *click* signifies the solenoid is operating.

ORDERING INFORMATION FOR ASCO REBUILD KITS

Parts marked with an asterisk (*) in the exploded view are supplied in Rebuild Kits. When Ordering Rebuild Kits for ASCO valves, order the Rebuild Kit number stamped on the valve nameplate. If the number of the kit is not visible, order by indicating the number of kits required, and the Catalog Number and Serial Number of the valve(s) for which they are intended.

Torque Chart

Part Name	Torque Value Inch–Pounds	Torque Value Newton–Meters
Solenoid base sub–assembly	260 ± 25	30 ± 3

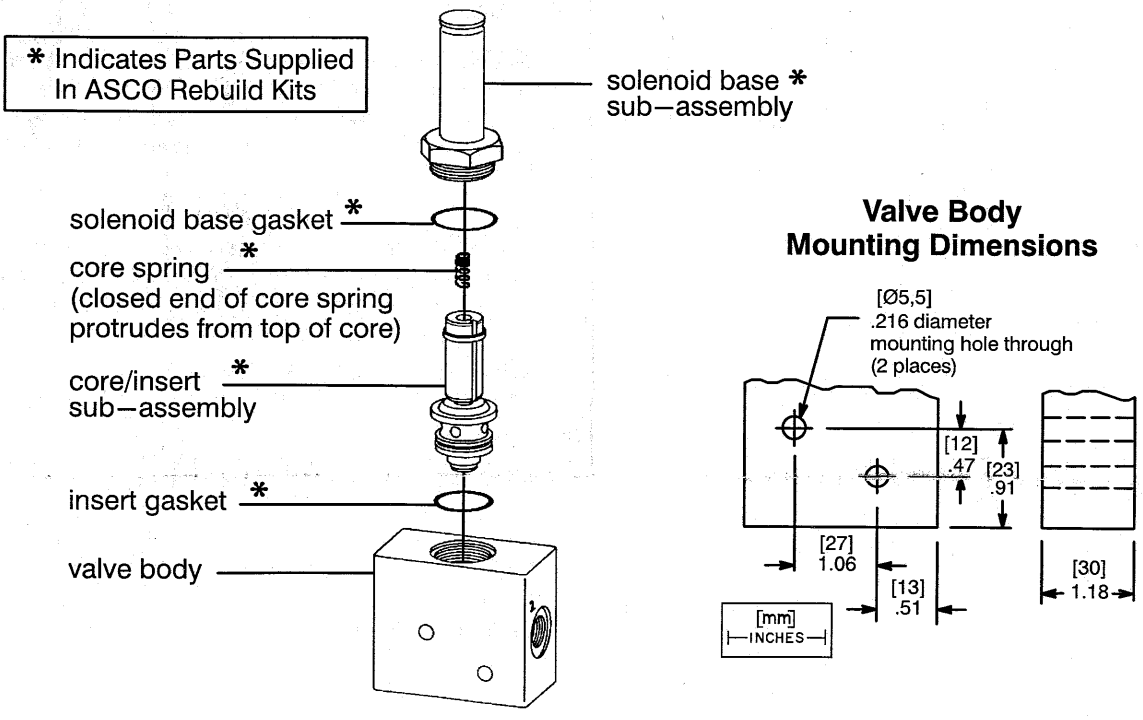


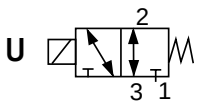
Figure 1. Series 8327 valve without solenoid.

ASCO Valves Automatic Switch Co. 50–60 Hanover Road, Florham Park, New Jersey 07932

Balanced Poppet Type

High Flow Direct Acting Valves

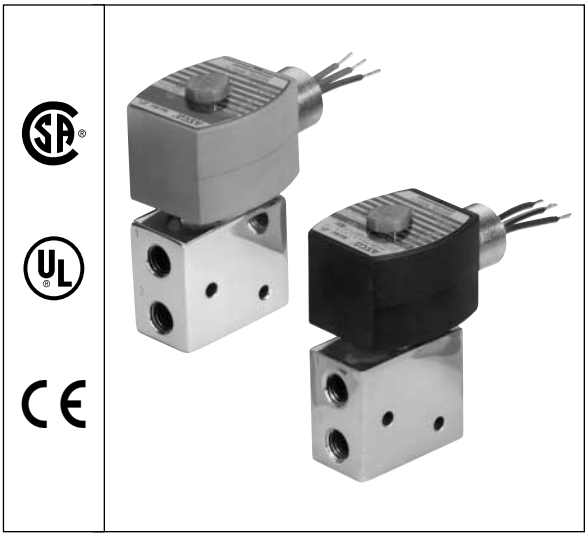
Brass and 316 Stainless Steel Bodies • 1/4" NPT

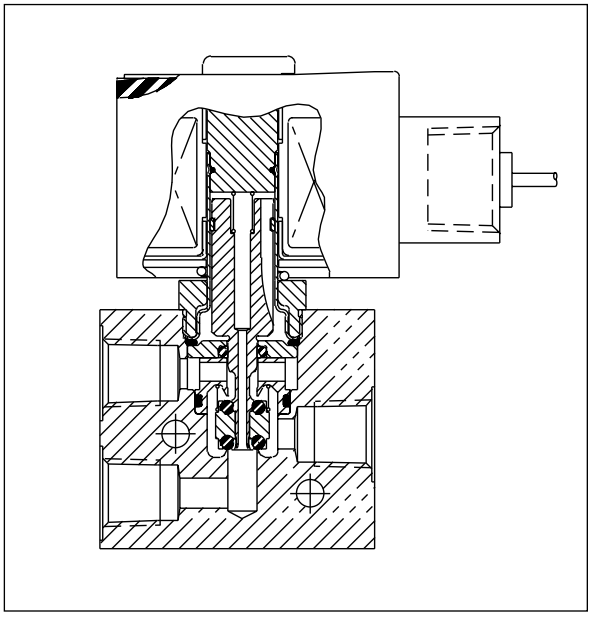


3/2 SERIES 8327

Features

- Designed for high flow piloting with no minimum operating pressure required; e.g., power plants, refineries, chemical processing.
- Balanced Poppet construction for high flow at minimum power levels.
- PTFE rider rings and graphite-filled seals reduce friction and eliminate sticking to provide exceptional service life.
- 316 Stainless Steel construction for highly corrosive atmospheres.
- Available with manual reset. *See Special Service Section.*





Construction

Valve Parts in Contact with Fluids		
Body	Brass	316 Stainless Steel
Core Tube	305 Stainless Steel	
Stem and Insert	303 Stainless Steel	
Core and Plugnut	430F Stainless Steel	
O-ring Holder	430F Stainless Steel	
Springs	302 Stainless Steel	
Seals and Discs	NBR	FKM
	VMQ (Low-Temperature Construction)	
Rider Ring	PTFE	

Electrical

Standard Coil and Class of Insulation	Watt Rating and Power Consumption				Spare Coil Part Number			
		AC			General Purpose		Explosionproof	
	DC Watts	Watts	VA Holding	VA Inrush	AC	DC	AC	DC
F	11.6	12	24	24	276000	238710	276002	238714
Standard Voltages: 24/50-60, 120/50-60, 240/50-60, and 480/50-60, or 6, 12, 24, 120, and 240 DC.								

Solenoid Enclosures

Standard: For Brass Valves: Standard Solenoid enclosure is Types, 1, 2, 3, 3S, 4, and 4X.
For 316 Stainless Steel valves: Standard Solenoid enclosure is Explosionproof and Watertight Types 3, 3S, 4, 4X, 6, and 6P.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" or, for Explosionproof Stainless Steel trim and hub on Brass-Bodied valves, add "EV" to catalog number.)
See Optional Features Section for other available options.

Nominal Ambient Temperature Ranges:

8327G41,-42, -21, -22, -31, -32: -4˚F to 131˚F (-20˚C to 55˚C)

8327G51 and -52: -40˚F to 131˚F (-40˚C to 55˚C)
Refer to Engineering Section for details.

Approvals:

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives.
Refer to Engineering Section for details.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor		Maximum Operating Pressure Differential (psi)			Max. Fluid Temp. °F	Brass Body	316 Stainless Steel Body	Constr. Ref. No.	Watt Rating/ Class of Coil Insulation	
		Ports 1-2	Ports 2-3	Air- Inert Gas	Water	Light Oil @ 300 SSU		Catalog Number	Catalog Number		AC	DC
UNIVERSAL OPERATION (Pressure at any port)												
1/4	1/4	.49	.56	150	150	150	176	8327G41	—	1	12.0/F	11.6/F
1/4	1/4	.49	.56	150	150	150	248	—	EV8327G42	1	12.0/F	11.6/F
UNIVERSAL LOW-TEMPERATURE OPERATION (Pressure at any port)												
1/4	1/4	.49	.56	150	—	—	131	8327G51	—	1	12.0F	11.6/F
1/4	1/4	.49	.56	150	—	—	131	—	EV8327G52	1	12.0/F	11.6/F

Specifications (Metric units)

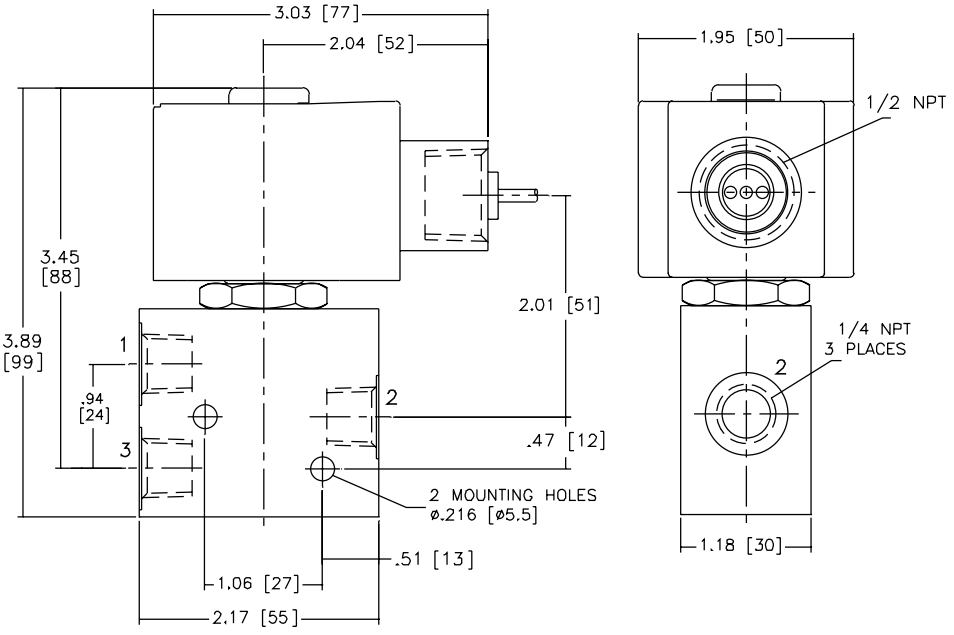
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor m3/h		Maximum Operating Pressure Differential (bar)			Max. Fluid Temp. °C	Brass Body	316 Stainless Steel Body	Constr. Ref. No.	Watt Rating/ Class of Coil Insulation	
		Ports 1-2	Ports 2-3	Air- Inert Gas	Water	Light Oil @ 300 SSU		Catalog Number	Catalog Number		AC	DC
UNIVERSAL OPERATION (Pressure at any port)												
1/4	6	.42	.48	10	10	10	79	8327G41	—	1	12.0/F	11.6/F
1/4	6	.42	.48	10	10	10	119	—	EV832742	1	12.0/F	11.6/F
UNIVERSAL LOW-TEMPERATURE OPERATION (Pressure at any port)												
1/4	6	.42	.48	10	—	—	54	8327G51	—	1	12.0/F	11.6/F
1/4	6	.42	.48	10	—	—	54	—	EV8327G52	1	12.0/F	11.6/F

Dimensions: inches (mm)

FLOW DIAGRAMS

OPERATION	DE-ENERGIZED	ENERGIZED
NORMALLY CLOSED PRESSURE AT 3		
NORMALLY OPEN PRESSURE AT 1		
UNIVERSAL PRESSURE AT ANY PORT		

Constr. Ref. 1



IMPORTANT: Valves may be mounted in any position.