



# S301 (AC/DC) -- Service and Installation --

10/27/2023 Rev.1

## DESCRIPTION

The S301 Series Solenoid Valves are 2-way, normally closed, direct acting, general purpose valves. All stainless steel or brass bodies with synthetic seating and sealing materials make them suitable for use with a variety of liquids, oils, and gases. Valves may be mounted in any position. A spring-loaded plunger assures positive shutoff. The S4 solenoid coil is rated at 10 watts.

## OPERATION

S301 Valves are normally closed (N.C.) and open when electrically energized.

## SPECIFICATIONS

Use S301 Valves within the specified operating ranges as indicated on the nameplate and in the complete Catalog Number. (max. psi, voltage, cycle, max. media temperature at F ambient, Cv factor, etc.).

### OPERATING TEMPERATURES

Ambient	Elastomer	Fluid
32° - 125° F	EPR	32° - 295° F
32° - 125° F	Nitrile	32° - 180° F
32° - 125° F	FKM	32° - 230° F
32° - 125° F	PTFE	32° - 366° F

For other applications, consult the factory.

## INSTALLATION

Check valve specifications to make sure of proper application.

1. Clear all lines of foreign matter.
2. Valves are multi-poised and may be mounted in any position. Media flow must be in direction indicated on the valve body. If sediment is a problem, install a fine mesh strainer having adequate capacity ahead of the valve.
3. Do not use the solenoid housing as a handle. Apply thread seal to the male threads only.
4. Provide a clearance for solenoid removal.
5. Wire in accordance with applicable local and national electrical codes.

## MAINTENANCE

### COIL REPLACEMENT

**Turn off the electrical power supply to the solenoid before disconnecting the coil lead wires.**

It is not necessary to remove the valve from the pipeline. Follow Steps 1, 2, and 3 under **VALVE DISASSEMBLY**. Disassemble the solenoid, taking care to note the exact order of placement and quantity of parts.

Incorrect reassembly can cause coil burnout. At all times, take care not to nick, dent, or damage the plunger tube.

## PARTS

The charts that follow cover replaceable coil part numbers and Repair and Rebuild kits for most S301 valves.

When ordering parts/kits, specify the Catalog Number, Serial Number, and Part Name. If your valve's Catalog Number is not listed, obtain the complete Serial Number, and consult the factory.

Incorrect reassembly can cause coil burnout. At all times, take care not to nick, dent, or damage the plunger tube.

## REBUILD KIT

The Rebuild Kit contains a plunger/spring/seat disc assembly, plunger tube assembly, O-rings, and an adapter ring.

## REPAIR KIT

The Repair Kit contains a seat disc and O-rings.

### REBUILD & REPAIR KIT CHART

Valve	Rebuild Kits	Repair Kits
S301AF__C__C1-E1	KS301C-C3	R301C-C3
S301AF__C__E7-F1	KS301C-E7	R301C-E7
S301AF__C__F5-F7	KS301C-F5	R301C-F5
S301AF__N__C1-E1	KS301N-C3	R301N-C3
S301AF__N__E7-F1	KS301N-E7	R301N-E7
S301AF__N__F5-F7	KS301N-F5	R301N-F5
S301AF__T__C1-E1	KS301T-C3	R301T-C3
S301AF__T__E7-F1	KS301T-E7	R301T-E7
S301AF__T__F5-F7	KS301T-F5	R301T-F5
S301AF__V__C1-E1	KS301V-C3	R301V-C3
S301AF__V__E7-F1	KS301V-E7	R301V-E7
S301AF__V__F5-F7	KS301V-F5	R301V-F5

### COIL CHART

Valve	Voltage	DIN Coil	Conduit Coil
S301GF02____	120V 50/60	HS4YN02	HS4GN02A24
S301GF24____	24V 50/60	HS4YN24	HS4GN24A24
S301GF15____	12 VDC	HS4YN15	HS4GN15A24
S301GF16____	24 VDC	HS4YN16	HS4GN16A24

## Cleaning

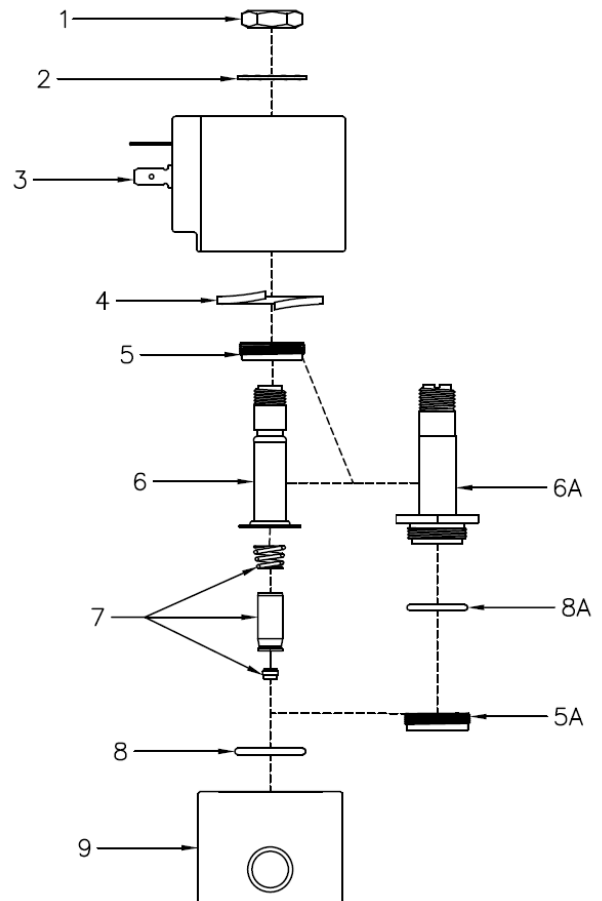
**Cleaning fluid must be compatible with all valve components.** It is recommended that S301 Series Valves be cleaned on a routine basis by qualified personnel. Valves should be cleaned where flow media or service conditions may determine the life of the valve. If excessive leakage occurs or if the operation is sluggish, the unit must be cleaned.

## SERVICE DISASSEMBLY AND KIT INSTALLATION

### WARNING

Disassembly, reassembly, or internal adjustment without factory testing may result in hazardous conditions. If the valve does not operate properly after following the INSTALLATION and MAINTENANCE instructions, the complete valve must be replaced by a trained and experienced service person.

1. Disconnect electrical connections and remove retaining nut (1). Remove with lock washer (2).
2. Lift off coil (3) from the plunger tube.
3. Do not damage the solenoid assembly.
4. Remove split washer (4). **Note – split washer (4) is not required when plunger tube (6A) is used.**
5. Use GC Valves spanner nut (106198E) for items (5&6) or a 1" deep socket to remove item (6A). Do not nick, dent, or damage the plunger tube (6) or valve seating surfaces.
6. Hold plunger tube (6/6A) in position when removing from valve body (9) to prevent loss of internal parts.
7. Carefully remove plunger assembly (7),
8. Check seating surfaces on plunger seat disc (7) and valve body (9) for damage or wear.
9. Replace seat disc (7), body O-ring (8), and other parts as necessary. Consult the "REBUILD & REPAIR KIT CHART" for the correct kit part number.
10. Re-assemble in reverse order from above, taking care to properly install plunger (7), and plunger tube (6/6A).
11. Tighten solenoid base nut (5) or plunger tube (6A) to 50 In/Lbs.
12. Re-connect electrical and test for proper operation.



### TROUBLESHOOTING

If the valve fails to open, check the voltage against the rating on the nameplate, check the voltage at solenoid lead connections, and check the control circuit and solenoid coil for burnout. If the valve fails to close, check the condition of the synthetic seat insert. Also, check for a damaged spring. The valve must be free of dirt to ensure tight shutoff. If media contaminants are a problem, install a fine mesh strainer to ensure proper closing and trouble-free operation.

Buzzing can be caused by low voltage or contaminants between the top of the plunger and the tube head. Check voltage--clean the plunger/interior of the tube assembly.