NS301 Service and Installation

11/1/2016

DESCRIPTION
The NS301 Series Solenoid Valves are 2-way, normally closed, direct acting, general purpose valves specifically designed for drinking water and other food products. All stainless steel construction 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 positions. A spring loaded plunger assures positive shutoff. The S4 solenoid coil is rated at 10 watts.

OPERATION
NS301 Valves are normally closed (N.C.) and open when electrically energized.

SPECIFICATIONS
Use NS301 Valves within the specified operating ranges as indicated on the nameplate and in the complete Catalog Number. (min./max. psi, voltage, cycle, maximum media temperature at F ambient, Cv factor, etc.).

OPERATING TEMPERATURES

Ambient	32° - 125° F	Fluid	32° - 295° 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 multipoised and may be mounted in any position. 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

Cleaning
Cleaning fluid must be compatible with all valve components.
It is recommended that NS301 Series Valves be cleaned on a routine basis by qualified personnel. Valves should be cleaned where flow media or service conditions may determine life of valve. Apply correct voltage. If excessive leakage occurs or if the operation is sluggish, the unit must be cleaned.

PARTS
The charts which follow cover replaceable coil part numbers, Repair and Rebuild kits for most NS301 valves.

When ordering parts/kits, specify 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.

COIL REPLACEMENT
Turn off the electrical power supply to the solenoid before disconnecting the coil lead wires.
Incorrect coil reassembly can cause coil burnout. At all times, take care not to nick, dent, or damage the plunger tube.

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

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

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

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

REBUILD & REPAIR KIT CHART

Valve	Rebuild Kits	Repair Kits
NS301YF02C3BE7	KS301AF02E7-NSF	K301E7-NSF
NS301YF02C3BD5	KS301AF02C3-NSF	K301C3-NSF
NS301YF02C3BC9	KS301AF02C3-NSF	K301C3-NSF
NS301YF24C3BE7	KS301AF02E7-NSF	K301E7-NSF
NS301YF24C3BD5	KS301AF02C3-NSF	K301C3-NSF
NS301YF24C3BC9	KS301AF02C3-NSF	K301C3-NSF
NS301YF16C3BE7	KS301AF02E7-NSF	K301E7-NSF
NS301YF16C3BD5	KS301AF02C3-NSF	K301C3-NSF
NS301YF16C3BC9	KS301AF02C3-NSF	K301C3-NSF

COIL CHART

Valve	Voltage	DIN Coil	Conduit Coil
NS301YF02C3BE7	120V 50/60	HS4YN02	HS4GN02A24
NS301YF02C3BD5	120V 50/60	HS4YN02	HS4GN02A24
NS301YF02C3BC9	120V 50/60	HS4YN02	HS4GN02A24
NS301YF24C3BE7	24V 50/60	HS4YN24	HS4GN24A24
NS301YF24C3BD5	24V 50/60	HS4YN24	HS4GN24A24
NS301YF24C3BC9	24V 50/60	HS4YN24	HS4GN24A24
NS301YF16C3BE7	24 VDC	HS4YN16	HS4GN16A24
NS301YF16C3BD5	24 VDC	HS4YN16	HS4GN16A24
NS301YF16C3BC9	24 VDC	HS4YN16	HS4GN16A24

SERVICE

DISASSEMBLY AND REPAIR KIT INSTALLATION

WARNING

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

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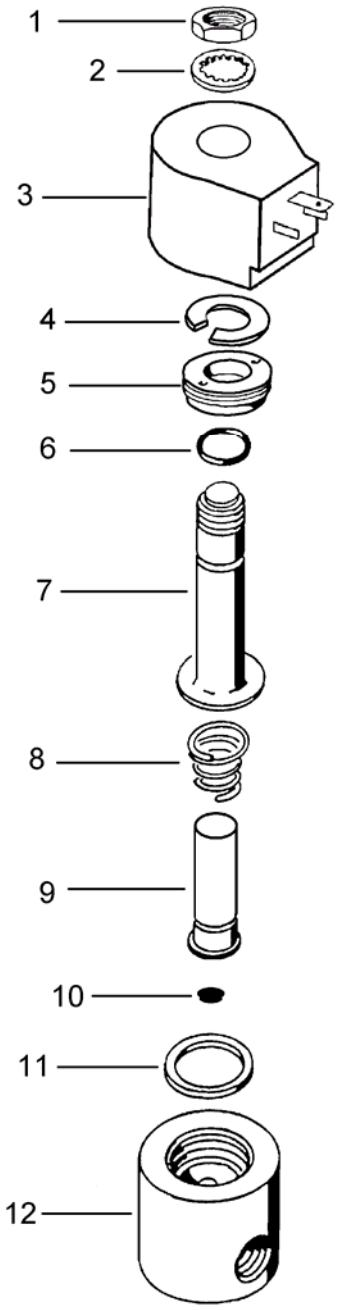
1. Unscrew the hex nut (1). Remove with lockwasher (2).
2. Lift off the coil (3) from the plunger tube.
3. Do not damage the solenoid assembly.
4. Use GC Valves spanner nut (106198E) or similar tool to remove solenoid base nut (5) and plunger tube (7). Do not nick dent or damage plunger tube (7) or valve seating surfaces.
5. Hold plunger tube (7) in position when removing from valve body (12) to prevent loss of internal parts.
6. Carefully remove the plunger/spring/seat disc assembly (8, 9 & 10),
7. Check seating surfaces on the seat disc (10) and valve body (12) for damage or wear.
8. Replace seat disc (10) body O-ring (11) and other parts as necessary.
9. Re-assemble in reverse order from above taking care to properly install the seat disc (10), plunger (9) and plunger tube (7).
10. Tighten solenoid base nut (5) to 25 In/Lbs.
11. Re-connect electrical and test for proper operation.



REBUILD KIT INSTALLATION AND ASSEMBLY

WARNING

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

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1. Carefully install seat disc (9) and spring (7) on the plunger (8).
2. Place body O-ring (10) in valve body (11) operator cavity..
3. Place tube O-ring (5) on plunger tube (4) base.
4. Thread adapter ring (6) on plunger tube (4) base.
5. Place plunger assembly (7, 8 & 9) in valve body (11) cavity.
6. Carefully thread plunger tube assembly (4, 5 & 6) into valve body (11).
7. Use a 1" spanner to tighten solenoid base nut and plunger tube (4). Do not nick, dent, or damage plunger tube (4) or valve seating surfaces.
8. Tighten plunger tube base nut (4) to 24 In/Lbs.
9. Replace coil (3), lockwasher (2) and top nut (1). Tighten to approximately 25 In/Lbs.
11. Re-connect electrical and test for proper operation.

TROUBLE-SHOOTING

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

Buzzing or chattering can be caused by low voltage or dirt or chips between top of plunger and tube head. Check voltage--clean plunger and interior of tube and base assembly.