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› [U.S. Solid](#) /

› [U.S. Solid Motorized Ball Valve - 1" Stainless Steel - Instruction Manual](#)

U.S. Solid USS-MSV00073

U.S. Solid Motorized Ball Valve - 1" Stainless Steel

Model: USS-MSV00073

Brand: U.S. Solid

1. INTRODUCTION

This manual provides detailed instructions for the safe and efficient installation, operation, and maintenance of your U.S. Solid Motorized Ball Valve. This 1-inch stainless steel valve features a full port design, 9-24V AC/DC compatibility, and a 2-wire auto-return setup, making it suitable for various home automation and industrial applications. Please read this manual thoroughly before installation and operation.

2. SAFETY INFORMATION

WARNING: Failure to follow these safety instructions may result in property damage, serious injury, or death.

- Ensure the power supply is disconnected before any installation, maintenance, or troubleshooting.
- Verify that the voltage and current ratings of your power source match the valve's requirements (9-24V AC/DC).
- Install the valve in an environment suitable for its IP65 rating, protecting it from dust and water jets.
- Do not exceed the maximum operating pressure of 10 Bars.
- Ensure proper threading (NPT) and secure connections to prevent leaks.
- This valve is designed for fluid control; do not use it for purposes other than its intended application.

3. PRODUCT FEATURES

- **Safe and Reliable:** Constructed from 304 stainless steel, ensuring durability and an estimated life expectancy of 80,000 to 100,000 cycles.
- **NPT Threading:** Features 1-inch quality 304SS NPT threads, designed to minimize pressure loss with its full port bore.

- **Wide Voltage Range:** Operates effectively across a 9V-24V AC/DC range, opening or closing the valve in 3-5 seconds.
- **2-Wire Automatic Return Setup:** Simple two-wire connection. The valve largely de-energizes after closing and returns to fully open if power is removed.
- **Alternative to Solenoid Valves:** Automatically cuts off power once fully open or fully closed, reducing the likelihood of overheating.

4. SPECIFICATIONS

Specification	Value
Material	Stainless Steel (304SS)
Brand	U.S. Solid
Inlet Connection Size	1 Inch
Inlet Connection Type	National Pipe Tapered (NPT)
Maximum Operating Pressure	10 Bars
Number of Ports	2
Valve Type	Ball Valve
Item Weight	1.65 pounds
Item Model Number	USS-MSV00073
Dimensions (L x W x H)	5.2 x 4.02 x 3.31 inches

5. SETUP AND INSTALLATION

5.1. Unpacking and Inspection

Carefully remove the motorized ball valve from its packaging. Inspect the valve for any signs of damage during transit. Ensure all components are present and intact before proceeding with installation.



Figure 1: Front view of the U.S. Solid Motorized Ball Valve.

5.2. Physical Installation

The valve features NPT threading for secure pipe connections. Apply appropriate thread sealant (e.g., Teflon tape) to the male pipe ends before screwing them into the valve. Ensure connections are firm and watertight to prevent leaks.

2 Wire Auto Return

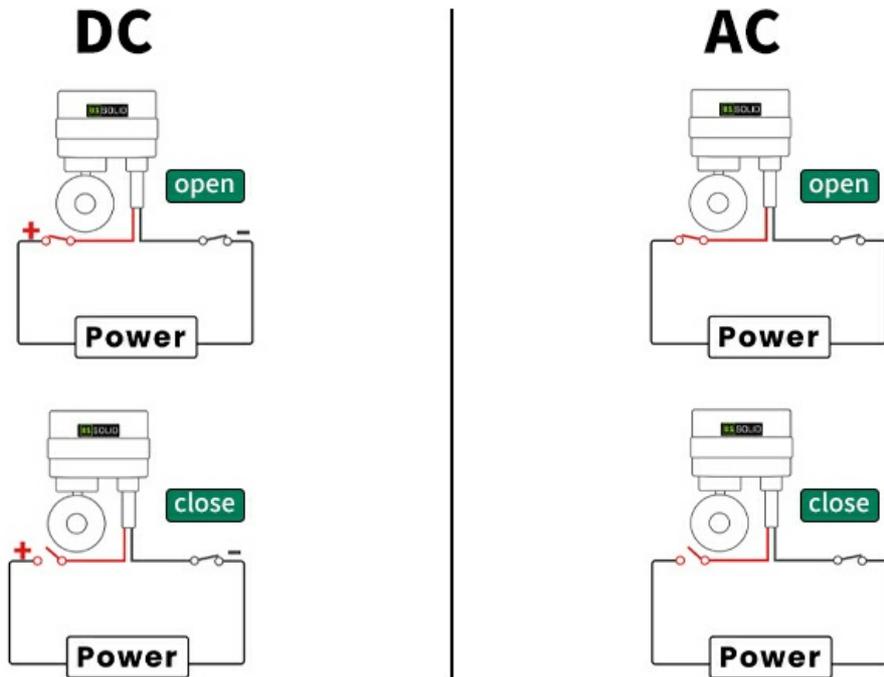


Figure 2: Proper application of Teflon tape for a watertight seal.

5.3. Electrical Wiring (2-Wire Auto Return)

The 2-wire auto return motorized ball valve is designed for simple electrical connection. It operates by energizing one wire to open the valve and de-energizing it to allow the valve to return to its default (open or closed) position. For this model, the valve is normally open and closes when power is applied.

Your browser does not support the video tag.

Video: Detailed instructions on how to wire the U.S. Solid 2-wire auto return Motorized Ball Valve.

Refer to the wiring diagram below for correct connections:



Figure 3: 2-Wire Auto Return Wiring Diagram for DC and AC power sources.

- Connect the red wire to the positive (+) terminal of your power source.
- Connect the green wire to the negative (-) terminal of your power source.
- When power is applied, the valve will close. When power is removed, the valve will automatically return to its fully open position.

6. OPERATING INSTRUCTIONS

6.1. Basic Operation

This motorized ball valve operates on a simple 2-wire auto-return principle. The valve's default state is normally open. When electrical power (9-24V AC/DC) is supplied to the red and green wires, the internal motor activates, rotating the ball to the closed position. Once the valve is fully closed, a limit switch minimizes power consumption. When the power supply is interrupted or removed, the valve automatically returns to its fully open position.

- **To Close the Valve:** Apply 9-24V AC/DC power to the red (positive) and green (negative) wires. The valve will rotate to the closed position in approximately 3-5 seconds.
- **To Open the Valve:** Remove the power supply from the red and green wires. The valve will automatically rotate back to the fully open position.

7. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your motorized ball valve.

- **Periodic Inspection:** Regularly check the valve and connections for any signs of leaks, corrosion, or physical damage.
- **Cleaning:** Keep the exterior of the valve and actuator clean and free from debris. Use a soft, damp cloth for cleaning. Do not use abrasive cleaners or solvents.
- **Electrical Connections:** Periodically inspect electrical wiring for secure connections and insulation integrity.
- **Storage:** If storing the valve for an extended period, ensure it is clean, dry, and stored in a temperate environment.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Valve does not open/close	No power or incorrect wiring.	Check power supply and verify wiring according to Section 5.3.
Valve does not fully open/close	Obstruction in the valve or low voltage.	Inspect the valve for debris. Ensure power supply is within 9-24V AC/DC range.
Leakage from connections	Improperly sealed threads or loose connections.	Disconnect power, reapply thread sealant (Teflon tape), and tighten connections.
Valve makes unusual noise	Internal mechanical issue or debris.	Disconnect power. If noise persists or operation is affected, contact customer support.

9. WARRANTY AND SUPPORT

U.S. Solid stands by the quality of its products. This motorized ball valve comes with **at least a 1-year warranty or money-back promise**, ensuring customer satisfaction. For technical support, warranty claims, or any inquiries regarding your U.S. Solid product, please visit our official website or contact our customer service team.

Website: www.ussolid.com

We are committed to delivering quality and affordability.