

U.S. Solid USS-MSV00039

U.S. Solid Motorized Ball Valve USS-MSV00039 Instruction Manual

Model: USS-MSV00039 | Brand: U.S. Solid

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your U.S. Solid 3/4" Stainless Steel Motorized Ball Valve, Model USS-MSV00039. Please read these instructions thoroughly before use and retain them for future reference.



Image: Front view of the U.S. Solid 3/4 inch Motorized Ball Valve, showing the blue actuator and stainless steel valve body.

2. SAFETY INFORMATION

- Ensure power is disconnected before installation or maintenance to prevent electrical shock.
- Verify voltage compatibility (9-24V AC/DC) before connecting the valve to a power source.
- Install the valve in an environment suitable for its IP65 rating. If used outdoors, consider additional protection from direct rain or water spray, especially around the manual override knob.
- Do not exceed the maximum operating pressure of 1.0 MPa (145 PSI).
- Ensure proper threading and sealing to prevent leaks.
- This valve is suitable for drinking water applications due to its NSF certification and Stainless Steel 304 construction.

3. PRODUCT OVERVIEW

Key Features:

- **NPT Threading:** 3/4" quality stainless steel thread, manufactured and measured according to National Pipe Thread standards. Full port design with a 3/4" (20mm) bore.
- **Wide Voltage Range:** Operates effectively with 9V-24V AC/DC power.
- **Fast Operation:** Opens or closes the valve in approximately 6-8 seconds.
- **2-Wire Automatic Return Setup:** Simple two-wire connection. Features a limit switch that minimizes power consumption once the valve is fully open. The valve automatically returns to a fully closed position if power is removed, ideal for applications requiring automatic return.
- **Alternative to Solenoid Valves:** Minimizes power consumption after opening, reducing the risk of overheating, making it suitable for applications where the valve needs to remain open for extended periods.
- **Safe and Reliable:** Constructed from Stainless Steel 304 with NSF certification, ensuring safety for drinking water. Estimated life expectancy of 80,000 to 100,000 cycles.

Components:

- Motorized Actuator (Blue housing)
- Stainless Steel 304 Ball Valve Body
- Electrical Wiring (2-wire)
- Manual Override Knob (White, on top of actuator)
- Visual Position Indicator (Red line, on top of actuator)



Image: Top view of the valve actuator, highlighting the manual override knob and the red line position indicator.

4. SPECIFICATIONS

Specification	Value
Model Number	USS-MSV00039
Material	Stainless Steel 304
Size	0.75 Inch (3/4")
Voltage	9-24V AC/DC
Max Power	5 W
Max Torque	2.5 Nm
Open/Close Time	≤ 8 seconds

Specification	Value
IP Rating	IP65
Ambient Temperature	-5~40 °C (23~104 °F)
Medium Temperature	0~100 °C (32~212 °F)
Maximum Operating Pressure	1.0 MPa (145 PSI)
Number of Ports	2
Connection Type	NPT Female (Both Sides)
Certification	NSF Certified
Item Weight	1.1 pounds
Product Dimensions (L x W x H)	3.94 x 3.15 x 3.15 inches
UPC	888107094500



Image: Product dimensions diagram for the U.S. Solid Motorized Ball Valve.

2 Wire Auto Return

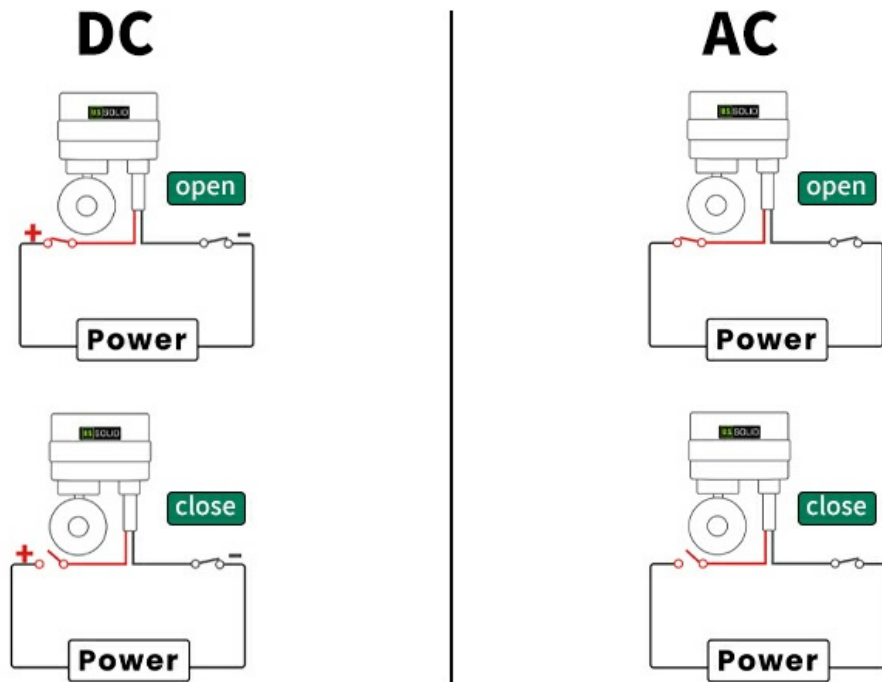


Image: Explanation of the IP65 Ingress Protection rating, indicating dust-tightness and protection against water jets.

5. SETUP AND INSTALLATION

5.1. Mechanical Installation (NPT Threading)

1. Ensure the piping system is depressurized and drained before installation.
2. Apply appropriate thread sealant (e.g., PTFE tape) to the male pipe threads.
3. Screw the valve firmly into the piping system. Avoid overtightening, which can damage threads.
4. Ensure the valve is oriented correctly for your application, considering flow direction and actuator position.



Image: Illustration of applying Teflon tape to pipe threads for a watertight seal.

5.2. Electrical Wiring (2-Wire Auto Return)

The U.S. Solid 2-wire auto return motorized ball valve is designed for simple on/off control. It requires a 9-24V AC/DC power source. The valve will open when power is applied and automatically close when power is removed.

- Connect the two wires from the valve to your 9-24V AC/DC power source. The polarity (positive/negative) does not affect the valve's operation for opening, but consistent wiring is recommended.
- When power is applied, the valve will open. A limit switch inside the actuator will minimize power consumption once the valve is fully open.
- When power is removed, the valve will automatically return to its fully closed position.

For a visual guide on wiring, please refer to the video below:

Your browser does not support the video tag.

Video: "How to wire USSOLID 2-wire auto return Motorized Ball valve?" This video demonstrates the wiring process for the 2-wire auto return motorized ball valve.



Simply wrap the male pipe end in teflon tape to ensure a water tight seal. Screw in firmly and your valve is ready to go.



Threading National Pipe
Thread Both Sides Female

Image: Wiring diagram illustrating the connection for 2-wire auto return operation (DC and AC).

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1.2 lb



Image: Internal view of the actuator's circuit board, showing components.

6. OPERATING INSTRUCTIONS

Automatic Operation:

- To **open** the valve: Apply 9-24V AC/DC power to the two wires. The valve will rotate to the fully open position in 6-8 seconds. Once open, power consumption is minimal.
- To **close** the valve: Remove power from the two wires. The valve will automatically rotate to the fully closed position.



Image: The motorized ball valve shown in the fully open position, allowing fluid flow.



Image: The motorized ball valve shown in the fully closed position, blocking fluid flow.

Manual Override:

In case of power failure or for manual control, the valve can be operated manually:

1. Locate the white manual override knob on top of the blue actuator.
2. Rotate the knob to manually open or close the valve. The red line indicator will show the current valve position.

7. MAINTENANCE

- Regularly inspect the valve and connections for any signs of leaks or damage.
- Keep the actuator free from excessive dust or debris.
- Ensure the electrical connections are secure and free from corrosion.
- No internal lubrication or maintenance is typically required for the valve body or actuator.

8. TROUBLESHOOTING



Problem	Possible Cause	Solution
Valve does not open when power is applied.	No power, incorrect voltage, loose wiring, internal motor issue.	Check power supply and voltage. Verify all electrical connections are secure. Test with a known working power source. If issues persist, contact support.
Valve does not close when power is removed.	Power not fully removed, internal mechanism fault.	Ensure power is completely disconnected. Try manual override. If issues persist, contact support.
Leakage from valve connections.	Improper threading, insufficient sealant, damaged threads.	Ensure proper application of thread sealant (e.g., PTFE tape). Tighten connections appropriately. Inspect threads for damage.
Valve operates slowly or intermittently.	Low voltage, debris in valve, motor wear.	Verify power supply voltage. Flush the system to remove potential debris. If problem persists, contact support.



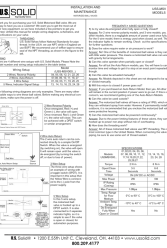

9. WARRANTY AND SUPPORT

U.S. Solid provides a **1-year warranty** for this product, ensuring customer satisfaction. If you encounter any issues or require technical assistance, please contact U.S. Solid customer support.

For more information and support, please visit the official U.S. Solid website: www.ussolid.com

Related Documents - USS-MSV00039

 <p>U.S. Solid Motorized Ball Valve Installation and Maintenance Manual</p>	<p>U.S. Solid Motorized Ball Valve Installation and Maintenance Manual</p> <p>Comprehensive guide for U.S. Solid Motorized Ball Valves, covering installation, wiring schematics, DC/AC operation, manual override, FAQs, environmental protection, warranty, and detailed specifications for models USS-MSV00201-216.</p>
 <p>U.S. Solid Electric Ball Valve (2-Ports) User Manual - USS-EBV Models</p>	<p>U.S. Solid Electric Ball Valve (2-Ports) User Manual - USS-EBV Models</p> <p>Comprehensive user manual for U.S. Solid's Electric Ball Valve (2-Ports), USS-EBV models. Covers threading types, valve body materials, wiring diagrams, product specifications, manual control functions, product models, FAQs, environmental protection, and warranty information.</p>

	<p>U.S. Solid Electric Ball Valve (Two-Way) - USS-EBV Models Instruction Manual</p> <p>Instruction manual for U.S. Solid USS-EBV series electric ball valves, covering product features, specifications, wiring diagrams, manual operation, and frequently asked questions.</p>
	<p>U.S. Solid Motorized Ball Valves: Installation, Maintenance, and Specifications</p> <p>Comprehensive guide to the installation, maintenance, manual operation, and specifications of U.S. Solid Motorized Ball Valves, including wiring schematics and FAQs.</p>
	<p>U.S. Solid Motorized Ball Valve Installation & Maintenance Guide</p> <p>Detailed guide for U.S. Solid USS-MSV motorized ball valves, covering installation, wiring diagrams, specifications, and FAQs. Learn about NPT threading, various wiring setups, and valve operation.</p>
	<p>U.S. Solid Smart Motorized Ball Valve Instruction Manual</p> <p>Comprehensive instruction manual for the U.S. Solid Smart Motorized Ball Valve, detailing its features, specifications, connection, and operation via the Smart Life app, including manual control, power failure protection, scheduling, and countdown functions.</p>