



APOLLO

MOTORIZED VALVE

USER MANUAL

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1. SAFETY PRECAUTIONS

- ⚠ Before installing or operating the valve, read this manual carefully to ensure safe and correct use.
- ⚠ Installation and wiring must be performed only by qualified personnel in accordance with local electrical and plumbing codes.
- ⚠ Always disconnect power before wiring, servicing, or removing the actuator.
- ⚠ Do not disassemble or modify the actuator, as it contains no user-serviceable parts.
- ⚠ Avoid exposure to water, high humidity, or corrosive environments.
- ⚠ Ensure the system is depressurized and cooled before maintenance.
- ⚠ Dispose of electrical components and packaging materials according to local environmental regulations.

2. INTRODUCTION

The **APOLLO 3-Way Motorized Ball Valve** is designed for reliable and precise control of water flow in HVAC systems, including underfloor heating, radiators, and fan coil applications. Built for efficiency and durability, this valve offers proportional or switch control operation, low noise performance, and easy installation.

Engineered with a brushless motor and stainless steel internal components, it ensures long service life and stable flow regulation in residential and commercial hydronic systems.

3. FEATURES

- Low noise and long service life.
- Easy installation and manual adjustment mode.
- Supports 0–10V proportional control or switch control.
- Brushless motor for precise operation.
- Nickel-plated valve body with low pressure drop.
- Stainless steel ball and valve stem.
- Compact actuator with IP54 protection rating.

4. APPLICATIONS

The APOLLO Motorized 3-Way Ball Valve is designed for precise flow control in heating, cooling, and hydronic distribution systems. It can be used to direct, mix, or shut off water circuits in residential, commercial, or industrial installations.

Common applications include:

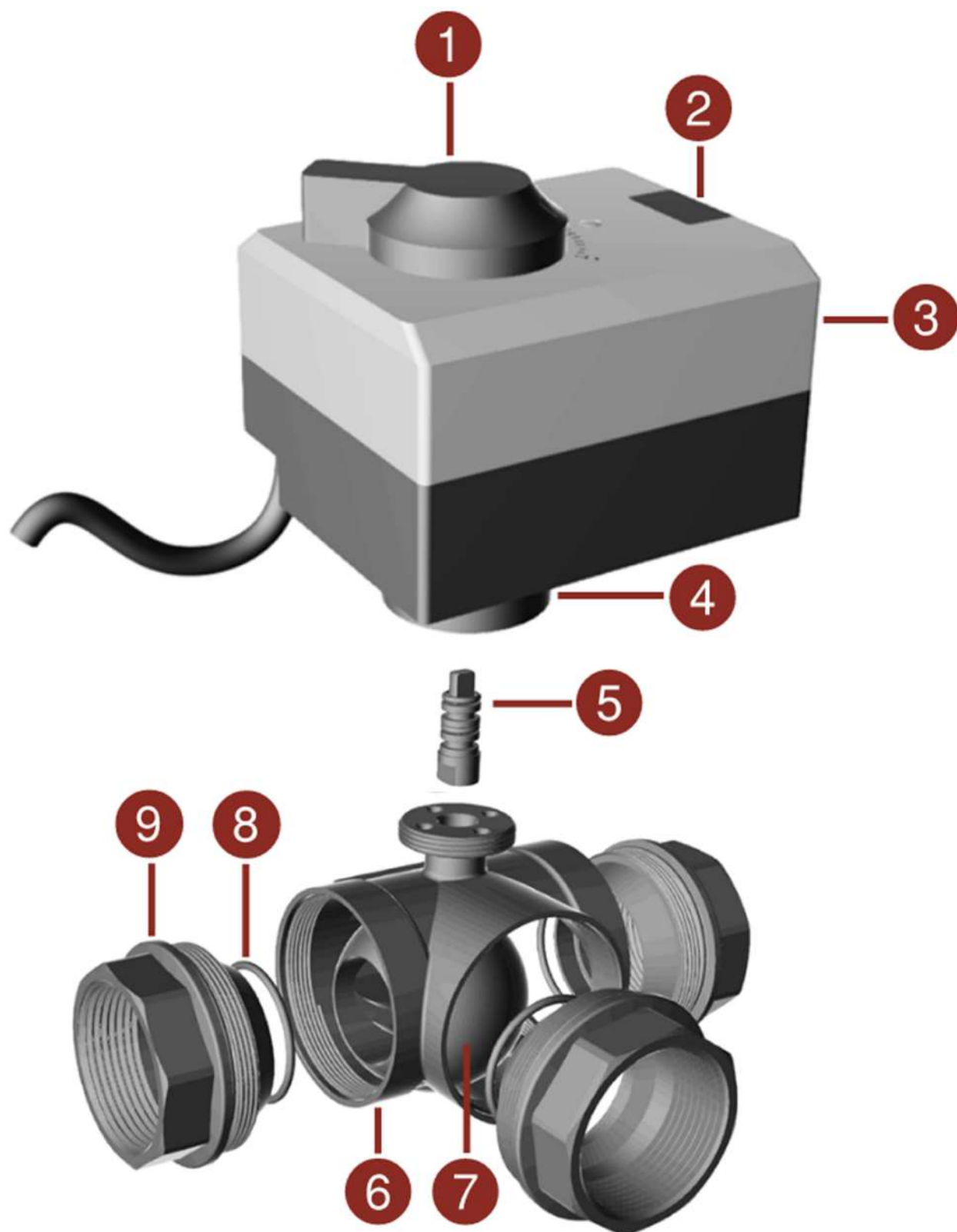
- Underfloor heating manifolds
- Fan coil units
- Radiator loops
- Geothermal units
- Heat pump systems
- Chilled or hot water distribution lines.

Its compact design and reliable actuator make it ideal for both new installations and retrofit projects where efficient zone control is required.

5. TECHNICAL SPECIFICATIONS

Function	0–10V proportional or switch control
Power Supply	230V AC or 24V AC/DC
Power Consumption	5W running / 1W holding
Fluid	Chilled or hot water, up to 60% glycol
Frequency	50/60 Hz
Manual Override	External push button
Torque	10 N·m
Running Time	90 s / 90°
Protection Class	IP54
Connection Thread	BSPT
Cable	3 × 20 AWG, 1,6 ft PVC

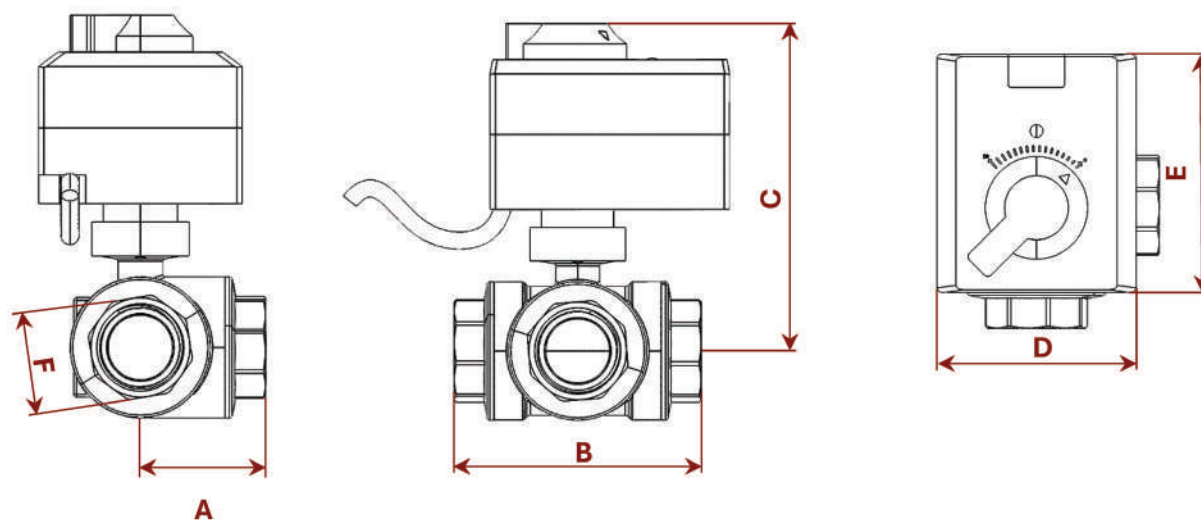
6. ASSEMBLY DRAWING



MOTORIZED VALVE

No.	Part Name	Description
1	knob	The knob acts as a position indicator. Can also be rotated to manually open or close the valve during installation or power loss.
2	Manual Adjustment button	Allows manual control of the valve position when power is disconnected. Engages directly with the actuator gear to open or close the valve manually.
3	Actuator Housing	Encloses the control board, motor, and internal gearing. Provides structural rigidity and mounting points for the actuator cover.
4	Mounting Base / Coupling Interface	The bottom section that connects the actuator securely to the valve stem. Ensures proper alignment and torque transfer between the actuator and valve.
5	Actuator Stem Adapter	Transfers the actuator's rotation to the valve ball. Connects directly to the motorized actuator shaft.
6	Valve Body	The main housing made of nickel-plated brass or stainless steel. Contains the internal flow passages connecting ports A, B, and C.
7	Ball Element	Precision-machined stainless steel ball with an internal bore that controls water direction between ports. Rotates 90° for A-C or B-C flow.
8	Sealing O-Rings	Elastomer seals ensuring a watertight connection between body and union nuts. Prevent leaks under pressure.
9	Union Connectors / End Caps	Threaded female BSPT fittings used to connect the valve to the piping system, allowing for easy installation and removal.

7. DIMENSIONS



G	G1"	G 1 ¼"	G 1 ½"	G 2"
A	1 ⅝	2	2 ⅝	2 9/16
B	3 13/16	4	4 ⅝	5 3/16
C	5	5	5 3/16	5 5/16
D	3	3	3	3
E	3 11/16	3 11/16	3 11/16	3 11/16
F	1 ½	1 ⅝	2 ⅛	2 9/16

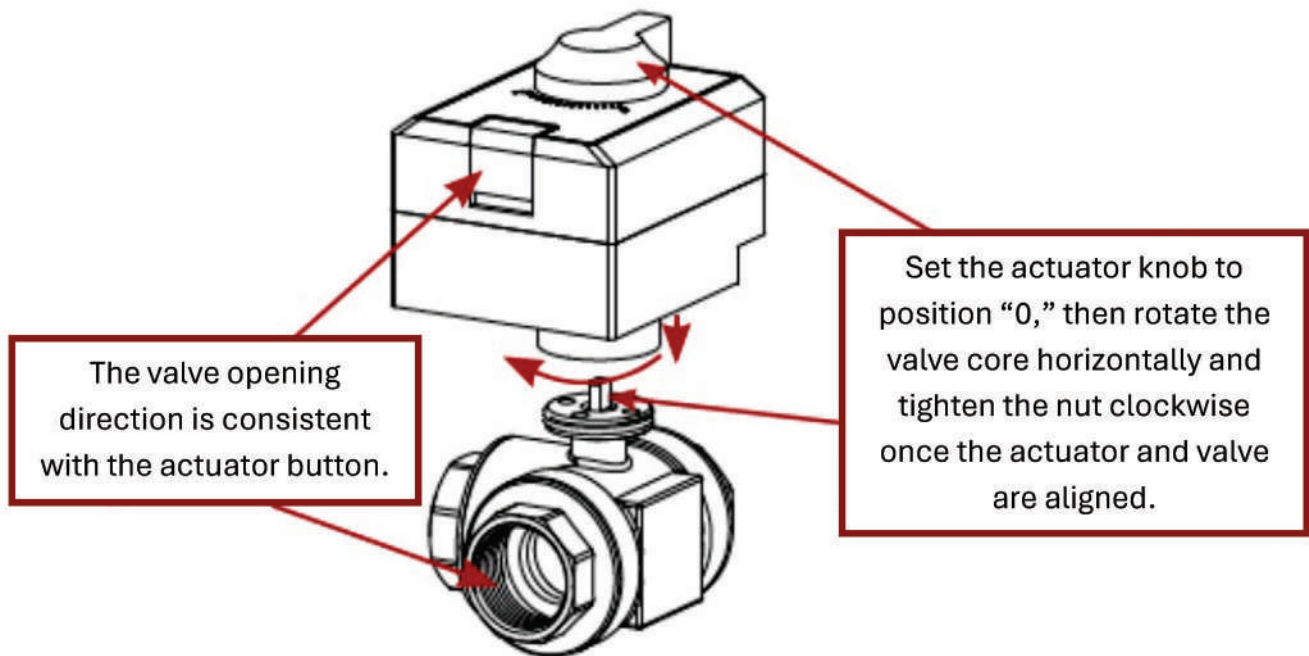
8. INSTALLATION & MANUAL OPERATION

8.1. Safety Recommendations

- Installation must be performed by qualified personnel.
- Disconnect power before wiring or servicing.
- Do not disassemble the actuator – no user-serviceable parts inside.
- Ensure compliance with local electrical and plumbing codes.
- Dispose of electronic components per local regulations.

8.2. Valve Installation

Before installation, ensure the pipeline is clean and free of debris. Mount the valve in the correct flow direction, as indicated on the valve body. Secure it firmly using the appropriate fittings or threads, avoiding excessive torque that may damage the housing. When attaching the actuator, make sure the valve core is in the horizontal position and the actuator knob is set to “0” before tightening the connection nut. After installation, check that the valve operates smoothly by performing a manual adjustment before connecting power.



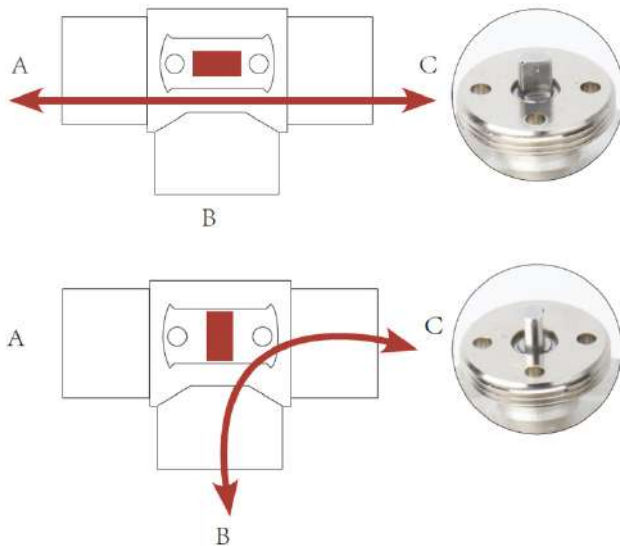
8.3. Actuator Stem

The actuator stem (shown in the photo) transfers the motor's rotation to the valve ball. It defines the open or closed position of the valve by aligning the internal passage between ports. During assembly, ensure the actuator stem is aligned according to the valve position marks (A, B, C) before tightening the actuator nut.



8.4. Valve Flow Direction

The diagrams illustrate the internal flow paths of the APOLLO 3-Way Motorized Ball Valve.



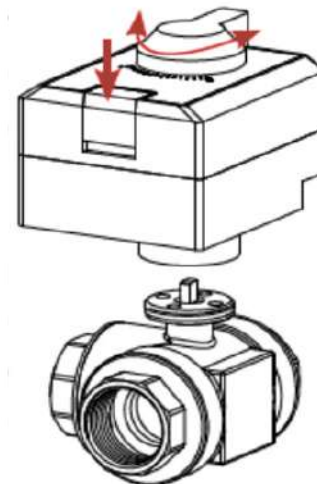
- **Upper image:** When the actuator outputs the **open valve** signal, **ports A and C are connected**. The water flows straight through the valve body.
- **Lower image:** When the actuator outputs the **close valve** signal, **ports B and C are connected**, redirecting the water flow at a right angle.

The red arrows indicate the direction of water flow between ports.

This configuration allows the valve to switch water circulation paths between two circuits, maintaining efficient flow control in heating and cooling systems.

8.5. Manual Adjustment Mode

In case of a power failure or during system maintenance, the valve can be operated manually. Press the **manual adjustment button** on the actuator and turn the **knob** to open or close the valve as needed. If the system pressure prevents manual turning, remove the cap on the knob and use a **10 mm hex key** to rotate the actuator stem. After adjustment, ensure the actuator is returned to its normal position before restoring power to avoid misalignment between the motor and valve position.



9. WIRING DIAGRAMS

	230V AC	24V AC/DC
Switch Control Actuator		
Modulating (0-10V) Actuator		

10. MAINTENANCE

To ensure reliable operation, inspect the valve periodically for leaks, dirt buildup, or unusual noise during movement. Clean the exterior using a soft, dry cloth — avoid solvents or water exposure on the actuator housing. Check that all electrical connections remain tight and corrosion-free. If the system water contains impurities, consider installing a filter upstream of the valve to prevent clogging and extend service life.

11. TROUBLESHOOTING

No.	Part Name		Description
1	Valve does not respond	No power supply or blown fuse	Check power connection and replace fuse if needed
2	Valve operates in reverse direction	Incorrect wiring of control signal	Verify wiring according to the correct diagram
3	Valve moves slowly or stops midway	Foreign particles or excessive pressure in pipeline	Clean the system and ensure normal pressure conditions
4	Actuator makes abnormal noise	Internal mechanical obstruction or worn components	Disconnect power and inspect actuator mechanism
5	No response to 0–10V signal	Signal cable disconnected or voltage out of range	Check control signal connection and verify voltage level
6	Water leakage around valve body	Damaged seal or improper installation	Replace sealing components and reinstall properly

For technical assistance, contact:
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