Baomain QE-03

Baomain Pneumatic One Way Quick Exhaust Valve QE-03 Instruction Manual

Model: QE-03

1. Introduction

The Baomain QE-03 is a one-way directional control element designed for pneumatic systems. Its primary function is to facilitate the rapid exhaust of air from an air cylinder, thereby increasing the speed of cylinder movement. This valve is typically installed between an air cylinder and a control valve, allowing air to escape directly through the quick exhaust valve rather than routing back through the control valve.

2. Product Overview



Image 1: Front view of the Baomain QE-03 Quick Exhaust Valve, showing the brand name and model number.

The QE-03 quick exhaust valve is constructed from aluminum and features a compact design. It is engineered for reliable performance in various pneumatic applications.

Key Features:

- **Model:** QE-03
- **Flow Direction:** One Way
- **Working Medium:** Air
- **Inlet/Outlet Ports Diameter:** 15mm
- **Thread Diameter:** 15mm (3/8PT)
- **Operating Pressure:** 0 - 0.8 kgf/cm² (0-0.8 MPa)
- **Working Temperature:** 0-60 Celsius Degree
- **Material:** Aluminum
- **Number of Ports:** 3

3. Installation

Proper installation is crucial for the safe and efficient operation of the quick exhaust valve. Ensure all connections are clean and free of debris before installation.

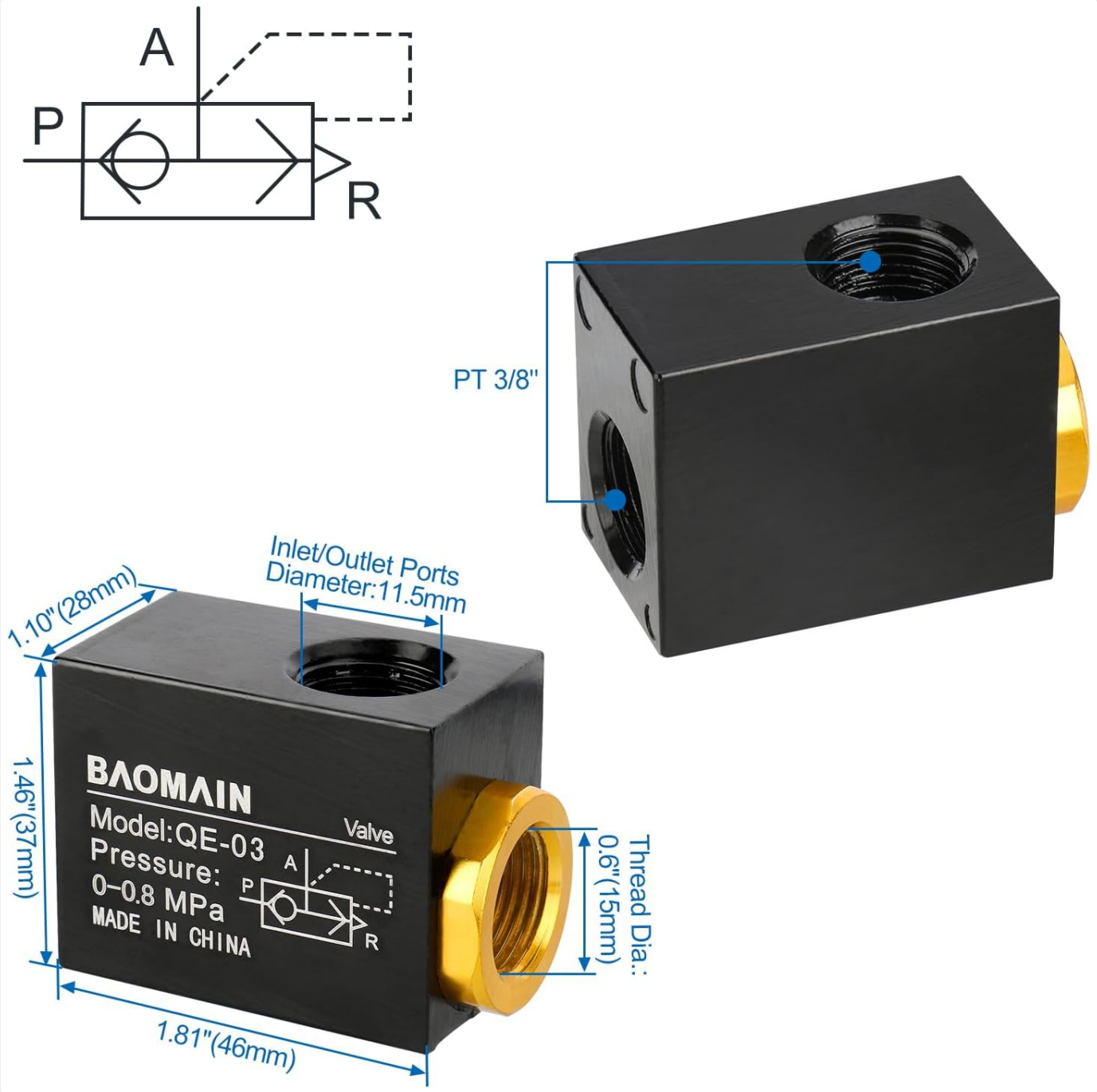


Image 2: Baomain QE-03 Quick Exhaust Valve showing dimensions and port designations (P, A, R).

Installation Steps:

1. **Identify Ports:** Refer to Image 2. The valve has three ports:
    - **P (Pressure Inlet):** Connects to the pressure supply from the control valve.
    - **A (Actuator Port):** Connects to the air cylinder port.
    - **R (Exhaust Port):** This is the exhaust outlet to atmosphere.
2. **Prepare Connections:** Ensure all threaded connections (3/8PT) are clean. Apply appropriate thread sealant (e.g., PTFE tape) to ensure an airtight seal.
3. **Connect to Control Valve:** Thread the 'P' port of the quick exhaust valve to the output port of the control valve that supplies pressure to the cylinder.
4. **Connect to Air Cylinder:** Thread the 'A' port of the quick exhaust valve directly to the air cylinder port.

5. **Exhaust Port:** The 'R' port should be left open to atmosphere or connected to an exhaust muffler if noise reduction is required. Ensure the exhaust path is clear.
6. **Test System:** After installation, slowly pressurize the pneumatic system and check all connections for leaks using a leak detection solution. Observe the cylinder's movement to confirm proper operation.

Safety Note: Always depressurize the pneumatic system before performing any installation or maintenance. Wear appropriate personal protective equipment (PPE).

4. Operation

The Baomain QE-03 valve operates automatically based on pressure differentials within the pneumatic circuit.

Operating Principle:

- When pressure is supplied from the control valve to the 'P' port, the internal mechanism of the QE-03 valve shifts, blocking the 'R' (exhaust) port and allowing air to flow from 'P' to 'A', extending or retracting the air cylinder.
- When the control valve shifts and removes pressure from the 'P' port (e.g., to reverse cylinder direction), the pressure in the 'A' port (from the cylinder) becomes higher than the pressure in the 'P' port. This pressure differential causes the internal mechanism to shift, blocking the 'P' port and opening the 'A' port to the 'R' (exhaust) port.
- This direct exhaust path from the cylinder to atmosphere through the 'R' port allows for a much faster release of air compared to exhausting through the control valve, resulting in quicker cylinder response times.

Ensure the operating pressure and temperature remain within the specified ranges (0-0.8 MPa and 0-60°C) for optimal performance and longevity.

5. Maintenance

The QE-03 quick exhaust valve is designed for minimal maintenance. Regular inspection and adherence to operating conditions will ensure long-term reliability.

Maintenance Guidelines:

- **Regular Inspection:** Periodically inspect the valve and its connections for any signs of damage, wear, or leaks.
- **Cleanliness:** Ensure the air supply is clean and dry to prevent contaminants from entering the valve, which can impair its function. Use appropriate air filters in the pneumatic system.
- **Check for Leaks:** Regularly check all threaded connections for air leaks. Tighten connections as necessary, but do not overtighten.
- **Environmental Conditions:** Ensure the valve operates within its specified temperature range (0-60°C) and is protected from excessive dust, moisture, and corrosive environments.
- **Replacement:** If the valve shows signs of significant wear, damage, or consistent malfunction, it should be replaced with a new unit. Do not attempt to disassemble or repair the valve unless specifically authorized by the manufacturer.

6. Troubleshooting

This section provides solutions to common issues that may arise during the operation of the QE-03 quick exhaust valve.

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
Air cylinder movement is slow.	Quick exhaust valve not exhausting properly. Blocked exhaust port (R). Internal valve malfunction.	Check for obstructions in the 'R' port. Verify correct installation. Replace valve if internal malfunction is suspected.
Air leaks from connections.	Improperly sealed threads. Loose connections. Damaged threads.	Depressurize system. Reapply thread sealant (e.g., PTFE tape) and retighten connections. Replace fittings or valve if threads are damaged.
Valve does not operate (no quick exhaust).	Incorrect port connection. Insufficient pressure differential. Internal valve blockage or damage.	Verify 'P', 'A', and 'R' ports are connected correctly. Ensure adequate pressure supply. Check for clean air supply. Replace valve if damaged.

7. Technical Specifications

Specification	Value
Model	QE-03
Flow Direction	One Way
Working Medium	Air
Inlet/Outlet Ports Diameter	15mm
Thread Diameter	15mm (3/8PT)
Operating Pressure	0 - 0.8 kgf/cm² (0-0.8 MPa)
Working Temperature	0-60 Celsius Degree
Total Size (L*W*T)	52 x 36 x 28mm / 2" x 1.4" x 1.1"
Net Weight	100g
Material	Aluminum
Number of Ports	3
Inlet Connection Type	Threaded
UPC	711811396588

8. Warranty Information

Baomain products are manufactured to high-quality standards. This product is covered by the standard manufacturer's warranty against defects in materials and workmanship. Please refer to your purchase documentation or contact Baomain customer support for specific warranty terms and conditions.

9. Customer Support

For technical assistance, troubleshooting, or inquiries regarding the Baomain QE-03 Quick Exhaust Valve, please contact Baomain customer support through their official website or the retailer from whom the product was purchased. When

contacting support, please have your product model (QE-03) and purchase details available.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question