

Baomain SC 80 X 200

Baomain Pneumatic Air Cylinder SC 80 x 200 Instruction Manual

Model: SC 80 X 200

1. INTRODUCTION AND OVERVIEW

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your Baomain SC 80 x 200 Pneumatic Air Cylinder. This standard double-acting, single-rod cylinder is designed for industrial automation applications, offering reliable performance with a 3.15-inch (80mm) bore and a 7.87-inch (200mm) stroke.



Figure 1: Overview of the Baomain SC Air Cylinder, highlighting its aluminum alloy construction, airtight design, convenient installation, durability, and performance enhancement features.

2. SAFETY INFORMATION

Read and understand all safety instructions before installing, operating, or performing maintenance on the pneumatic air cylinder. Failure to follow these instructions may result in property damage, serious injury, or death.

- Ensure the air supply is disconnected and pressure is relieved before performing any installation or maintenance.
- Wear appropriate personal protective equipment (PPE), including eye protection.
- Do not exceed the maximum operating pressure specified for the cylinder.
- Ensure all connections are secure and leak-free to prevent unexpected movement.
- Avoid placing hands or body parts in the path of moving cylinder components.
- Only qualified personnel should install and service pneumatic equipment.

3. PRODUCT FEATURES

- **Double-Acting Design:** Provides consistent force for both extending and retracting motions.
- **Single Rod:** Features a single piston rod for linear actuation.
- **M20X1.5 Threaded Piston Rod:** Ensures secure and standardized connection points.
- **Self-Lubricating Bearing:** Integrated for maintenance-free operation.
- **PT 3/8 Inch Air Port:** Standardized port for air connections.
- **Durable Aluminum Alloy Construction:** Lightweight, corrosion-resistant, and built for reliable performance.

- **Cushioning Adjustable Screw:** Allows for fine-tuning of piston deceleration at stroke ends.



Figure 2: Key components of the Baomain SC Air Cylinder, including fittings, fixed tie rods, inlet/outlet air holes, aluminum alloy body, cushioning adjustable screw, thickened fore cover, piston rod, and nut.



Figure 3: Close-up view of the M20X1.5 threaded piston rod, designed for smooth extension and retraction.



Figure 4: Image showing the durable aluminum alloy construction of the cylinder block.

4. SPECIFICATIONS

The following table details the key specifications for the Baomain SC 80 x 200 Pneumatic Air Cylinder.

Specification	Value
Model Number	SC 80 X 200
Bore Size	80mm (3.15 inches)
Stroke Length	200mm (7.87 inches)
Action Type	Double Acting, Single Rod
Piston Rod Thread	M20X1.5
Air Port Size	PT 3/8 inch
Included Fittings	2x Push-in fittings for 8mm OD tubing
Material	Aluminum Alloy
Maximum Operating Pressure	1.0 MPa (145 PSI)
Item Weight	7.61 pounds
Package Dimensions	15.75 x 4.21 x 3.94 inches



Figure 5: Detailed dimensional drawing of the Baomain SC 80 x 200 Pneumatic Air Cylinder, showing bore, stroke, and overall measurements.



Figure 6: General specifications table for various SC series cylinders, including bore and port sizes.



Figure 7: Explanation of the SC series code, detailing how cylinder bore, stroke, and magnetic options are indicated.

5. SETUP AND INSTALLATION

Proper installation is crucial for the performance and longevity of your pneumatic cylinder. Follow these steps carefully:

1. **Mounting:** Securely mount the cylinder using appropriate brackets or mounting plates (optional accessories may be required, see Figure 9). Ensure the mounting surface is stable and can support the cylinder's weight and operating forces.
2. **Air Line Connection:** Connect pneumatic tubing to the PT 3/8 inch air ports. The cylinder includes two push-in fittings compatible with 8mm outer diameter tubing. Ensure tubing ends are cut cleanly and inserted fully into the fittings for a secure, leak-free connection.
3. **Piston Rod Connection:** Attach the M20X1.5 threaded piston rod to your application's load. Ensure the connection is tight and properly aligned to prevent bending or excessive side loads on the rod.
4. **Air Supply:** Connect the air supply system, including any control valves, to the cylinder's air ports.



Figure 8: Image illustrating the standardized PT 3/8 inch threaded ports and the included 8mm push-in fittings for air line connections.



Figure 9: Various optional accessories available for the Baomain SC Air Cylinder, including rod end bearings, connectors, brackets, switch holders, magnetic switches, and mounting flanges.

Your browser does not support the video tag.

Video 1: Demonstration of air line connection and basic operation of a Baomain SC Pneumatic Air Cylinder, showing the piston extending and retracting.

6. OPERATING INSTRUCTIONS

The Baomain SC 80 x 200 is a double-acting cylinder, meaning air pressure is used to extend and retract the piston rod. This provides controlled movement in both directions.

- **Extension:** Apply pressurized air to the rear port (typically marked 'A' or 'R' on control valves) to extend the piston rod. Air from the front port will exhaust.
- **Retraction:** Apply pressurized air to the front port (typically marked 'B' or 'P' on control valves) to retract the piston rod. Air from the rear port will exhaust.
- **Cushioning Adjustment:** The cushioning adjustable screws (located at each end of the cylinder) can be used to control the speed of the piston as it approaches the end of its stroke, reducing impact and noise. Turn the screw clockwise to increase cushioning and counter-clockwise to decrease it. Adjust gradually until desired performance is achieved.

Refer to Video 1 for a visual demonstration of the cylinder's operation.

7. MAINTENANCE

The Baomain SC 80 x 200 Pneumatic Air Cylinder is designed for low maintenance. The integrated self-lubricating bearing minimizes the need for external lubrication.

- **Regular Inspection:** Periodically inspect the cylinder for any signs of wear, damage, or air leaks. Pay close attention to the piston rod seal and air port connections.
- **Cleanliness:** Keep the cylinder and surrounding area clean to prevent contaminants from entering the air system.
- **Air Quality:** Ensure the compressed air supply is clean, dry, and free of particulates. Use appropriate air filters and dryers in your pneumatic system.
- **Tightness:** Check all mounting bolts and air line connections for tightness.

8. TROUBLESHOOTING

If you encounter issues with your pneumatic air cylinder, refer to the following troubleshooting guide:

Problem	Possible Cause	Solution
Cylinder does not move or moves slowly.	Insufficient air pressure; Air leak; Obstruction in air lines or cylinder; Control valve malfunction.	Check air supply pressure; Inspect for leaks and tighten connections; Clear any obstructions; Verify control valve operation.
Air leakage around piston rod.	Worn piston rod seal.	Replace piston rod seal (contact manufacturer for service).
Air leakage from ports or end caps.	Loose fittings; Damaged O-rings or seals.	Tighten fittings; Inspect and replace damaged seals.
Erratic or jerky movement.	Inconsistent air pressure; Excessive friction; Misalignment.	Ensure stable air supply; Check for proper lubrication; Verify cylinder alignment with load.

9. APPLICATIONS

The Baomain SC 80 x 200 Pneumatic Air Cylinder is suitable for a wide range of industrial automation tasks due to its robust design and reliable operation. Common applications include:

- Light industry automation
- Packaging machinery
- Material handling systems
- Robotics
- Precision positioning tasks
- General machinery actuation



Figure 10: Examples of industrial applications where pneumatic air cylinders are commonly used, such as automation, testing equipment, packaging machinery, and material handling.

10. WARRANTY AND SUPPORT

For warranty information, technical support, or replacement parts, please contact Baomain customer service through their official channels. Keep your purchase receipt and product model number (SC 80 X 200) readily available when contacting support. You can find more information and contact details by visiting the [Baomain Store on Amazon](#).

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