Hanchen MX-1104-1

Hanchen MX-1104-1 304 Stainless Steel Bypass Valve Instruction Manual

For Instant Hot Water Recirculation Systems

1. Introduction

The Hanchen MX-1104-1 304 Stainless Steel Bypass Valve is designed to work with an instant hot water recirculation system, providing hot water quickly at your faucets and showers. This upgraded stainless steel valve offers enhanced durability and performance compared to older plastic versions, maintaining water temperature at approximately 104°F (40°C) and featuring a detachable filter for easy maintenance. It is intended for indoor use only and specifically for water heaters with a tank.

2. Safety Information

- **Indoor Use Only:** This bypass valve is designed exclusively for indoor plumbing installations.
- **Tank Water Heaters Only:** Ensure your hot water system utilizes a water heater with a tank. This product is not compatible with tankless water heaters.
- **Anti-Freezing:** The valve helps maintain water temperature to prevent freezing in winter conditions when used correctly within a recirculation system.
- **Professional Installation Recommended:** If you are unfamiliar with plumbing installations, it is advisable to consult a qualified plumber.
- **Use with Recirculation Pump:** This bypass valve does not function independently. It must be used in conjunction with a hot water recirculation pump.

Figure 2.1: The bypass valve is designed for indoor use with tank water heaters to prevent freezing.

3. Package Contents

Verify that all components are present before beginning installation:

- 1 x 304 Stainless Steel Bypass Valve
- 2 x 3/8" Adapters
- Rubber Gaskets (various sizes)
- Teflon Tape
- Rubber Clamps (for securing hoses, if applicable)
- Nails/Screws (for securing clamps, if applicable)

Figure 3.1: Included components of the Hanchen Bypass Valve kit.

4. Specifications

Feature	Specification
Model Number	MX-1104-1
Material	304 Stainless Steel
Valve Type	Bypass Valve
Thread Size	3/8 inch NPT
Outlet Connection Size	0.38 Inches
Number of Ports	2
Operating Temperature	Maintains 104°F (40°C)
Filter	Detachable
Dimensions (Approx.)	6 x 2 x 1 inches (Length x Width x Height)

Figure 4.1: Approximate dimensions of the Hanchen Bypass Valve.

5. Setup and Installation

This bypass valve is designed to be installed at the furthest fixture from your hot water heater within a hot water recirculation system. It requires a recirculation pump to function correctly. Ensure you have appropriate 3/8" to 1/2" NPT hoses if your existing plumbing requires them (not included in this kit).

Required Tools (Not Included):

- Adjustable wrench or pipe wrench
- Bucket and towels (for water spills)
- Pipe cutter (if modifying existing pipes)

- Additional hoses (if needed, e.g., 3/8" to 1/2" NPT)

Installation Steps:

1. **Turn Off Water Supply:** Locate the main water shut-off valve for your home and turn it off. Also, turn off the hot water supply to the water heater.
2. **Drain Hot Water Line:** Open the hot water faucet at the fixture where you plan to install the bypass valve to relieve pressure and drain any remaining water from the hot water line.
3. **Identify Connection Points:** At the furthest hot water fixture (e.g., under a sink), identify the hot and cold water supply lines.
4. **Disconnect Existing Lines:** Carefully disconnect the hot and cold water supply lines from the fixture. Be prepared for residual water.
5. **Prepare the Bypass Valve:**
    - Apply Teflon tape to the threaded ends of the 3/8" adapters.
    - Insert a rubber gasket into each adapter.
    - Thread the adapters onto the bypass valve connections. Ensure a snug, leak-free fit.
6. **Connect to Fixture:**
    - Connect the "HOT" side of the bypass valve to the hot water supply line of the fixture.
    - Connect the "COLD" side of the bypass valve to the cold water supply line of the fixture.
    - Use the provided rubber gaskets and Teflon tape on all threaded connections to prevent leaks. Tighten connections firmly but do not overtighten.
7. **Secure the Valve:** If desired, use the rubber clamps and screws to secure the bypass valve to a stable surface, such as the cabinet wall under the sink.
8. **Restore Water Supply:** Slowly turn the main water supply back on. Check all connections for leaks.
9. **Bleed Air:** Open the hot water faucet at the installed fixture to allow air to escape from the lines. Once water flows steadily, close the faucet.
10. **Test System:** Activate your hot water recirculation pump (if not already running) and test the system. Hot water should now arrive quickly at the fixture.

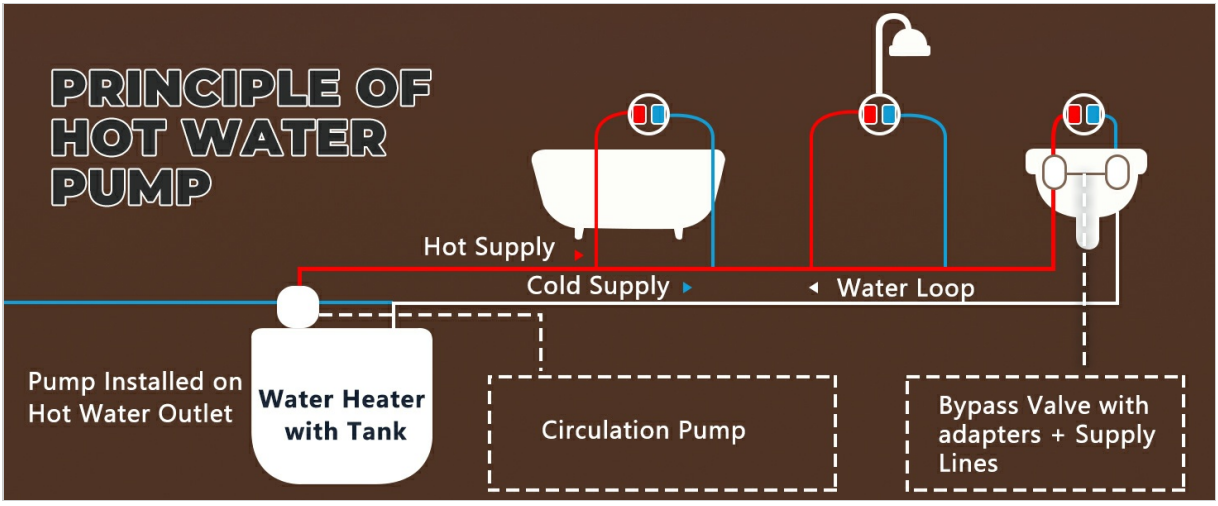

Figure 5.1: Working principle of a hot water recirculation system with bypass valve.

6. Operating Instructions

The Hanchen 304 Stainless Steel Bypass Valve operates automatically in conjunction with your hot water

recirculation pump. When the pump activates, it creates a pressure differential that causes the bypass valve to open. This allows cooler water in the hot water line to flow into the cold water line, returning to the water heater for reheating. Once the water temperature at the valve reaches approximately 104°F (40°C), the valve closes, ensuring hot water is readily available at the fixture.

- **Automatic Operation:** The valve is thermostatic and requires no manual adjustment after installation.
- **Temperature Control:** Designed to maintain a hot water temperature of 104°F (40°C) at the point of installation.
- **Energy Efficiency:** By recirculating water, it reduces the amount of water wasted while waiting for hot water, contributing to water conservation.

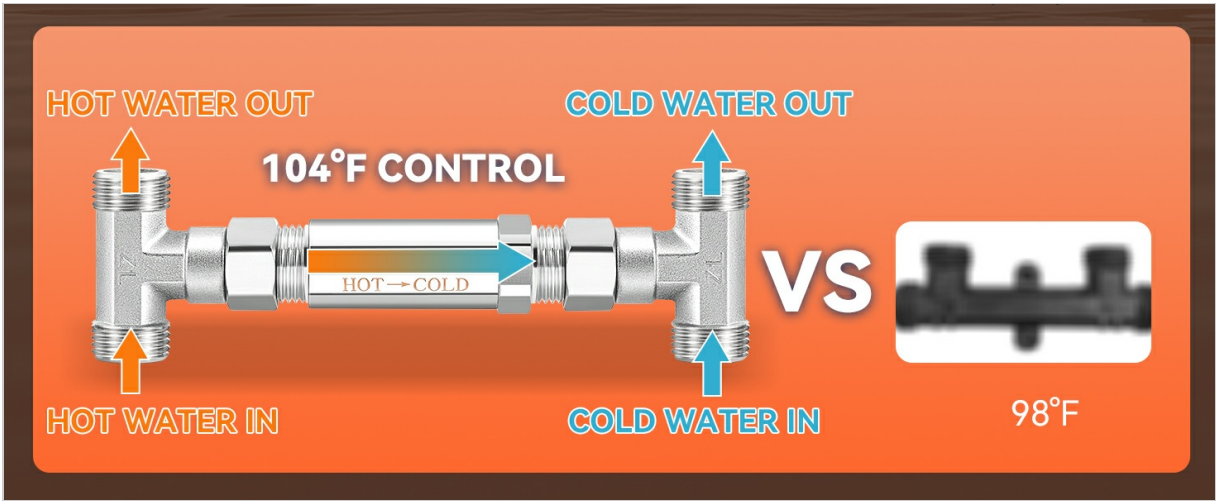

Figure 6.1: The bypass valve controls water flow to maintain 104°F.

7. Maintenance

Regular maintenance ensures optimal performance and longevity of your bypass valve.

Detachable Filter Cleaning/Replacement:

1. **Turn Off Water Supply:** As with installation, turn off the main water supply and drain the hot water line at the fixture.
2. **Disconnect Valve:** Carefully disconnect the bypass valve from the hot and cold supply lines.
3. **Access Filter:** The bypass valve features a detachable filter. Unscrew the appropriate section of the valve to access the filter screen.
4. **Clean or Replace:**
    - Rinse the filter screen under running water to remove any debris or sediment.
    - If the filter is damaged or heavily clogged and cannot be cleaned, replace it with a new one.
5. **Reassemble:** Reinsert the clean or new filter, reassemble the valve, and reconnect it to the plumbing lines. Ensure all gaskets are properly seated and connections are tight.
6. **Restore Water Supply:** Slowly turn the water supply back on and check for leaks.

Note: *The 304 Stainless Steel construction is designed for durability and resistance to corrosion. Unlike older plastic versions, this valve is less prone to material degradation.*

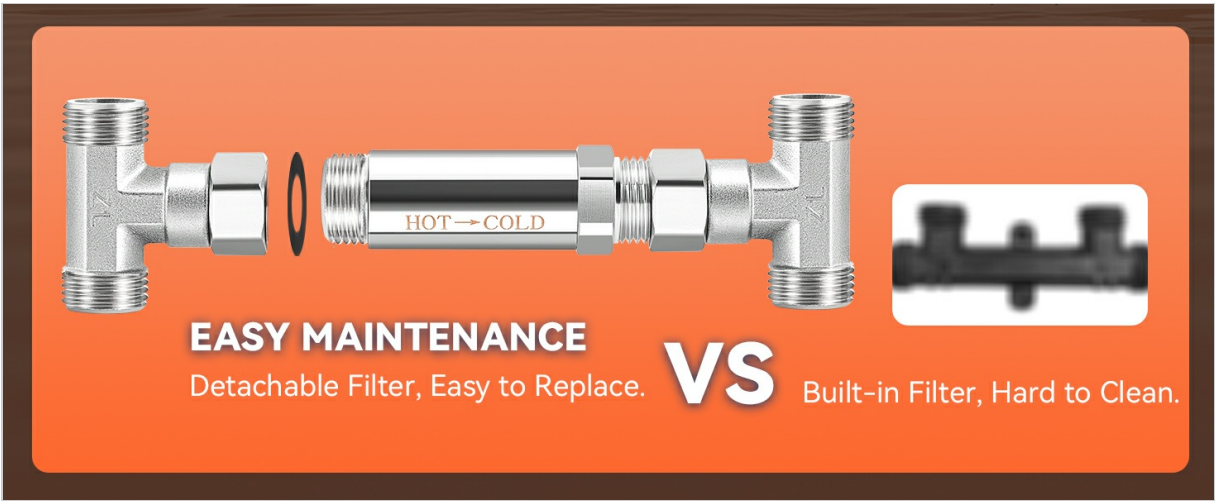

Figure 7.1: The detachable filter allows for easy cleaning and replacement.

8. Troubleshooting

Problem	Possible Cause	Solution
No Hot Water / Slow Hot Water Delivery	• Recirculation pump not operating. • Bypass valve clogged or stuck. • Insufficient water pressure. • Incorrect installation.	• Check power to the recirculation pump and ensure it's functioning. • Inspect and clean the detachable filter (refer to Section 7). • Verify main water supply pressure. • Review installation steps (Section 5) to ensure correct connections.
Water Leakage at Connections	• Loose connections. • Damaged or improperly seated gaskets. • Insufficient Teflon tape.	• Turn off water supply and gently tighten all connections. • Inspect gaskets for damage and ensure they are correctly seated. Replace if necessary. • Reapply Teflon tape to threaded connections, ensuring adequate coverage.
Knocking Noise from Valve/Pipes	• Air in the system. • Water hammer. • Valve malfunction.	• Bleed air from the hot water lines by opening faucets. • Consider installing water hammer arrestors if the problem persists. • If the noise is directly from the valve and other solutions fail, contact customer support.

Problem	Possible Cause	Solution
Valve Not Closing / Cold Water Mixing	• Bypass valve stuck open. • Debris preventing valve closure.	• Inspect and clean the detachable filter and valve mechanism for debris. • If the issue persists after cleaning, the valve may need replacement.

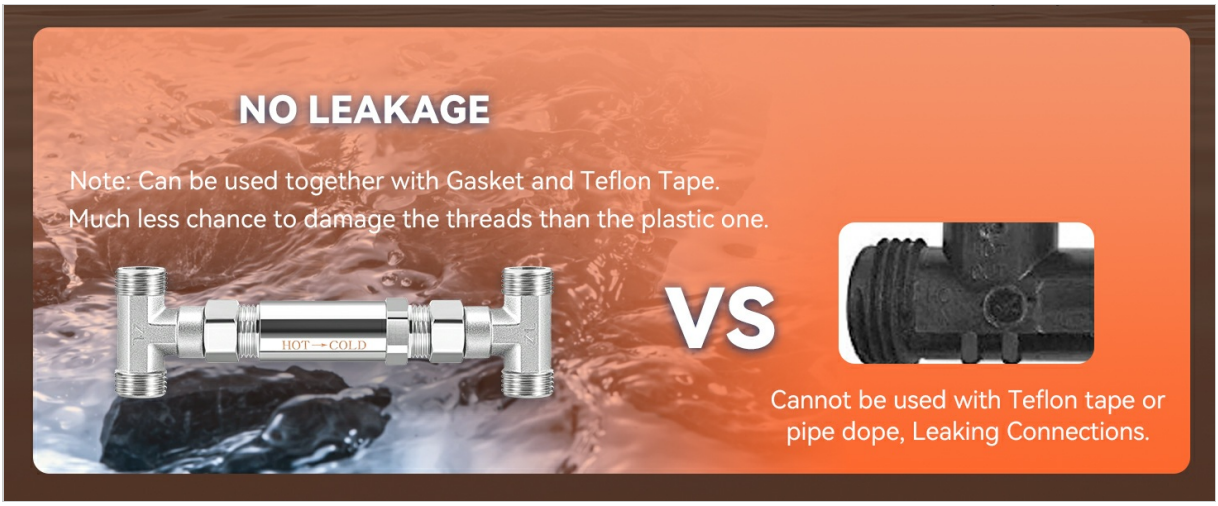

Figure 8.1: Proper installation with gaskets and Teflon tape prevents leakage.

9. Warranty and Support

Hanchen provides the following support for your MX-1104-1 304 Stainless Steel Bypass Valve:

- **1 Year Free Replacement:** In the event of a manufacturing defect or malfunction within one year of purchase, Hanchen offers a free replacement.
- **Lifetime Technical Support:** For any questions regarding installation, operation, maintenance, or troubleshooting, please contact Hanchen customer support for assistance.

For support, please refer to the contact information provided with your purchase or visit the official Hanchen website.