Speedaire 13X520

User Manual

Speedaire 13X520 Zero Loss Drain Pilot Operated 1/2 Inch NPT

1. Introduction

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your Speedaire 13X520 Zero Loss Drain. This device is designed to automatically remove condensate from compressed air systems without air loss, ensuring optimal system performance and longevity. Please read this manual thoroughly before installation and operation.

2. Safety Information

WARNING: Failure to follow these safety instructions may result in serious injury or property damage.

- Always depressurize the air system before installing, servicing, or removing the drain.
- Ensure electrical connections are made by a qualified electrician and comply with local codes.
- Verify the voltage supply (90-260V, 50-60Hz) matches the drain's requirements.
- Do not exceed the maximum operating pressure of 230 PSI.
- Wear appropriate personal protective equipment (PPE) during installation and maintenance.
- Ensure the drain outlet is directed to an appropriate waste disposal system.

3. Product Overview

The Speedaire 13X520 is a pilot-operated, automatic condensate drain designed for robust industrial applications. It features an aluminum body and an IP65 enclosure for durability and protection against dust and water ingress.

Figure 1: Speedaire 13X520 Zero Loss Drain. This image shows the external view of the drain unit, highlighting its compact design and robust construction suitable for industrial environments.

4. Setup and Installation

1. **Preparation:** Depressurize and drain the compressed air system completely. Ensure the installation location is stable, accessible for maintenance, and within the specified operating temperature range (36 to 180 °F).
2. **Mounting:** Mount the drain vertically with the condensate inlet at the top and the drain outlet at the bottom. Ensure sufficient clearance for the bowl and electrical connections.
3. **Air Connection:** Connect the 1/2 NPT inlet of the drain to the condensate collection point of your compressed air system. Use appropriate thread sealant. The drain outlet (1/2 inch diameter) should be connected to a suitable waste disposal line.
4. **Electrical Connection:** Connect the drain to a 90-260V, 50-60Hz AC power supply. The drain consumes 0.15 Amps AC. Ensure proper grounding and protection against electrical hazards. Refer to local electrical codes for wiring requirements.
5. **Initial Check:** Once installed, slowly repressurize the air system and check for any leaks at the connections.

5. Operating Instructions

The Speedaire 13X520 Zero Loss Drain operates automatically once installed and powered. It is a pilot-operated drain, meaning an internal pilot mechanism controls the opening and closing of the drain valve based on condensate levels.

- **Automatic Operation:** The drain will sense the condensate level in its 490mL bowl. When the level reaches a predetermined point, the pilot mechanism activates, opening the drain valve to discharge the condensate.
- **Zero Air Loss:** The design ensures that only condensate is discharged, preventing the loss of compressed air during the draining cycle.
- **Pilot Pressure:** The drain requires a minimum pilot pressure of 11.5 PSI and can operate up to 230 PSI. Ensure your system's pressure falls within this range for proper function.
- **Drain Rate:** At 100 PSI, the drain rate is approximately 1.2 GPM (gallons per minute).

6. Maintenance

Regular maintenance ensures the longevity and reliable operation of your Speedaire 13X520 drain.

- **Daily Inspection:** Visually inspect the drain for any signs of leaks, damage, or unusual operation.
- **Weekly Cleaning:** Depressurize the system and disconnect power. Remove the condensate bowl and clean it thoroughly. Inspect the internal components for debris or blockages. Reassemble carefully, ensuring all seals are properly seated.
- **Annual Service:** It is recommended to perform a more thorough inspection annually, checking all connections, electrical wiring, and internal valve components for wear. Replace any worn parts as necessary.

7. Troubleshooting

Refer to the following table for common issues and their solutions.

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
Drain not operating / No condensate discharge	No power supply System pressure too low Drain clogged Faulty pilot mechanism	Check electrical connections and power source. Ensure system pressure is above 11.5 PSI. Depressurize, disconnect power, and clean the drain. Contact qualified service personnel.
Continuous air loss / Drain constantly open	Debris in valve seat Worn valve seal Incorrect installation	Depressurize, disconnect power, and clean the valve area. Replace valve seal. Verify correct vertical mounting and connections.
Leaks from connections	Loose fittings Damaged thread sealant	Tighten connections. Depressurize, remove, reapply thread sealant, and reassemble.

8. Specifications

Feature	Specification
Operation Type	Pilot Operated
Maximum Pressure (PSI)	230
Minimum Pressure (PSI)	11.5
Drain Rate at 100 PSI (GPM)	1.2
Bowl Capacity	490 mL
Pilot Pressure Range	11.5 to 230 psi
Inlet Connection	1/2 NPT
Drain Outlet Diameter	1/2 Inch
Operating Temperature (Min./Max.)	36 to 180 °F
Voltage	90-260V
Frequency	50-60Hz
Amperage	0.15 Amps AC
Enclosure Rating	IP65
Body Material	Aluminum
Height	7 Inches
Width	3 Inches
Depth	7 Inches

9. Warranty and Support

For warranty information or technical support, please refer to the documentation provided with your purchase or contact Speedaire customer service. Keep your purchase receipt for warranty claims.