

Description

The Bray Series 63 high-flow solenoid valves have an aluminum body and mounting interface pattern conforming to NAMUR for direct installation. The Bray Series 63 is IP65 for DIN model (Figure 1) or NEMA 4, 4x for flying leads model (Figure 2).

The Bray Series 63 solenoid can be used either with Single Acting/Spring Return or Double Acting/Direct Acting actuators. Double Acting actuators use the 5/2 configuration (Figure 3) and requires no adapter kit. Spring Return actuators use the 3/2 configuration (Figure 4) and require the use of a conversion kit included in the package. This kit includes an airflow plate, O-ring seal and longer screws.



Installation and maintenance of the solenoid valve must be carried out by qualified personnel only.

Electrical connections are only to be made by trained personnel and in accordance with the applicable regulations and standards.

Storage

Bray Series 63 is not weatherproof until the unit is properly installed, or all conduits and applicable port connections are sealed off and prepared for storage. The units may be shipped with temporary covers to prevent foreign matter from entering through the conduit openings; however, the user is responsible for replacing with the proper sealing plugs to support its NEMA/IP ratings.

To prevent condensation from forming inside the unit, maintain a near constant external temperature and store indoors in a well ventilated, clean, dry room. The temperature shall be between 40°F (4°C) and 85°F (29°C), with a relative humidity less than 70%. Store units away from vibration and direct sunlight exposure, and place units on a shelf or wooden pallet in order to protect against dampness. Keep units covered to protect against dust and dirt; if storing for long term, placing the unit inside a plastic sealed bag may be preferred.

Bray cannot accept responsibility for deterioration caused on-site once the cover is removed or due to improper storage.

Installation

Valves are designed to be operated within the technical characteristics specified on the nameplate. Bray reserves the right to change or modify product design without prior notice.

These valves are pilot operated and require a minimum supply air pressure of 22 psi (1.5 bar) to function. Do not exceed the maximum allowable pressure of 130 psi (9 bar). These valves are designed to operate with filtered air or inert gas (e.g. Nitrogen). Operating ambient temperature range is -13°F to +140°F (-25°C to +60°C).

Before mounting the solenoid spool valve assembly on the actuator, it must be configured for the required function.

- For 5/2 Double Acting/Direct Acting 4-Way:

The solenoid spool valve assembly mounts directly to the actuator with 2 screws (#10-32 x 1 1/8" length or M5x.8 x 30mm length, depending on actuator drilling) screws and O-rings as shown in Figure 3. No conversion kit is required.

- For 3/2 Single Acting/Spring Return 3-Way:

Use the 4-way to 3-way conversion kit (flow plate, O-ring and 2 longer screws (#10-32 x 1 3/8" length or M5x.8 x 35mm length, depending on actuator drilling). Install the kit between the solenoid pilot valve and actuator as shown in Figure 4. The 4-way solenoid configuration may be used without the conversion kit to operate a Single Acting actuator – and would result in an “air assisted” spring return action.



Connect pipes with the required functions in accordance with this documentation and port markings on the valve. Make sure no foreign matter enters the system. Use of a coalescing filter regulator is recommended.

Correctly support the supply piping to avoid subjecting the solenoid spool valve assembly to mechanical stress, when tightening, avoid using the valve as a lever. Use proper tools and locate wrenches as close as possible to the connection point. To avoid damage of the equipment, **DO NOT OVER TIGHTEN** pipe connections.

Pneumatic Connections

- Connect supply pipes in accordance with the markings on the nameplate
 - **5/2 Double Acting/Direct Acting configuration: Supply pressure to Port 1 (1/4" NPT). Exhaust both Ports 3 and 5 (1/4" NPT). Refer to Figure 5 for the 5/2 schematic.**
 - **3/2 Single Acting/Spring Return configuration: Supply pressure to Port 1 (1/4" NPT), Exhaust to Port 3 (1/4" NPT). It is recommended to protect Port 5 (when not used) with a vented pipe plug or screen, do not plug completely. Refer to Figure 6 for the 3/2 schematic.**
 - **NOTE: The DIN model is also available with G1/4" metric ports.**

Manual Override

The solenoid is equipped with a Manual Override. Please refer to Figure 1 and 2 for the location of the manual override button.

To engage the Override, depress the red manual override button and rotate 90° clockwise. The override will lock in place, causing the spool valve to activate. The button can also be pressed to activate the spool momentarily.

To disengage the Override, rotate the red manual override button counterclockwise 90°. The manual override button will pop out, and the spool will deactivate and return to the normal position.



To prevent injury or damage and to ensure correct operation of the solenoid valve, the Manual Override button must be returned to the normal (disengaged) position by rotating it 90° counterclockwise.

Electrical Connections



Depending on the voltage, electrical components must be provided with a ground/earth connection and satisfy local regulations and standards.

- 3-wire flying leads coil (NEMA 4, 4X)
 - **2 red wires for power, 1 yellow/green wire for ground/earth**
- DIN type coil (IP65)
 - **3 prong DIN 43650 Connector Form B Type I**



Before work, switch off the electrical power supply to de-energize all components.

The Bray Series 63 solenoid valve is designed for continuous duty service. To avoid any possibility of damage or injury, do not touch the solenoid which can become hot under normal operating conditions.

If the solenoid valve is easily accessible, the installer must provide protection against accidental contact.

Maintenance



Prior to any maintenance work or returning to operation, shut off supply to the pilot solenoid valve, depressurize and vent the valve in order to prevent injury or damage.

- **Cleaning:** Maintenance of the valve depends on the operating conditions. They must be cleaned at regular intervals. During servicing, the components must be checked for excessive wear. If operation cycle is slow, ensure proper supply pressure and that there is no unusual noise or leak detected.
- **Sound Emission:** The sound emission depends on the application, supply medium and nature of the equipment used. Exact determination of the sound level can only be carried out by the user having the valve installed in their system.
- **Preventive Maintenance:** Operate the pilot solenoid valve monthly to check function. Should any difficulties or questions arise during installation and maintenance, please contact a Bray representative.

Troubleshooting:

- Incorrect exhaust pressure:
 - **Check that the air supply is within the minimum (22 psi, 1.5 bar) and maximum (130 psi, 9 bar) operating pressure.**
 - **Use a filter regulator if the air supply is not consistent.**
- Pilot valve does not operate:
 - **Check that the manual override is disengaged.**
 - **Ensure that the air supply meets the minimum pressure.**

Tools Required

- Phillips cross drive (#2) screwdriver, to assemble the solenoid coil to the pilot valve.
- Small flat blade (3/16") screwdriver, to engage or disengage the manual red close button.
- 5/32" or 4mm hex screwdriver (Allen wrench), to fasten the solenoid pilot valve to the pneumatic actuator.

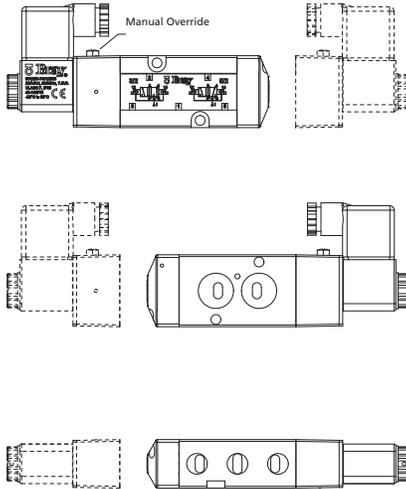


Figure 1: DIN Solenoid

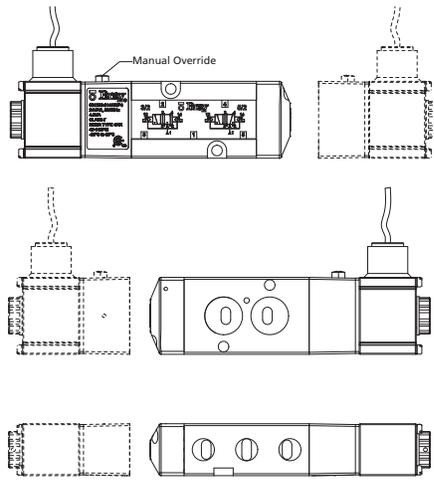


Figure 2: NEMA Solenoid

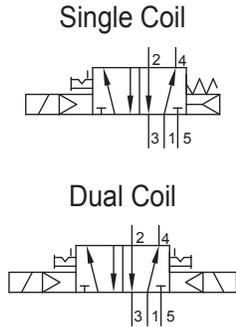


Figure 5: Schematics for 5/2

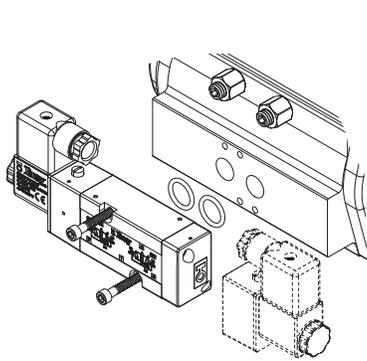


Figure 3: 5/2 Installation

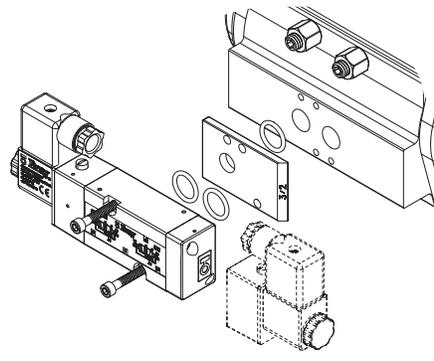


Figure 4: 3/2 Installation

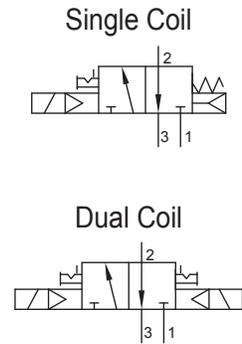


Figure 6: Schematics for 3/2