

# OPERATION AND MAINTENANCE INSTRUCTIONS

## Press Double Valves



Series XSz  
Size 50

Brochure N-271

**HERION'S** Series XSz Double Valves use a dynamic monitoring system consisting of air logic with integral volume chambers and orifices.

In addition to the Double Valve a complete system may contain additional components such as a silencer or fault indicator. For additional information reference **HERION** brochure **No. 1101**.

### TECHNICAL DATA:

**Construction:** Solenoid actuated, internally pilot operated, poppet valve.

**Fluid:** Compressed air, filtered, lubricated or non-lubricated.

**Temperature Range:** 15° F to 140° F.

**Operating Pressure:** 30 to 120 psig.

**Operating Frequency:** 165 cycles per min.

**Weight:** 34 lb.

### CONSTRUCTION:

The XSz Double Valve has three sections. The top section is the pilot valve assembly. The bottom half is divided into the main valve assembly and the valve base. The base has no moving parts and can be left on the machine when servicing the other sections.

The valve body is aluminum. Poppets are constructed of Delrin 500. The seals are made of polyurethane. The solenoid is a pressure molded encapsulation.

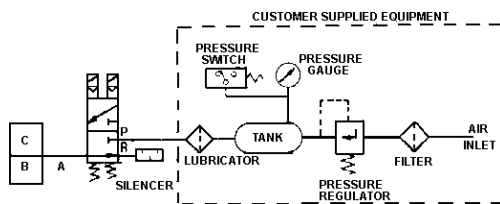


Fig. 1 Typical Installation

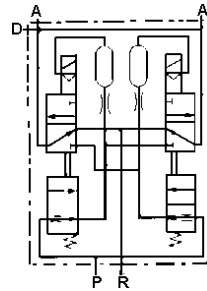


Fig. 2 Press Double Valve

### INSTALLATION:

The preferred orientation of the Double Valve is with the poppets or spindles vertical. Distance between the Double Valve and the clutch or brake should be kept to a minimum. For safety reasons **HERION** recommends that no other components be used between the Double Valve and the Brake or Clutch.

Care must be taken to avoid particles like metal chips, sealing compound or scale in the piping, which may cause valve failures. The size of pressure regulator, lubricators and filters must be consistent with the inlet port size. An accumulator tank is recommended between the pressure regulator and the Double Valve. The operating pressure must not drop below 30 psig and the use of a pressure switch is suggested. Refer to Fig. 1.

**DO NOT** restrict the exhaust port. Use a muffler or silencer which is resistant to clogging and has a flow capacity at least as great as the exhaust capacity of the Double Valve. Silencer contamination or clogging can increase back pressure and reduce flow. **HERION** expressly disclaims any responsibility for unsatisfactory performance caused by the use of the wrong type, size, or inadequately maintained silencers.

## WIRING:

The correct power supply voltage and frequency is indicated on the solenoid labels. For proper operation of the dynamic, air-logic monitor; both solenoids (2) should be electrically connected in such a way they are energized simultaneously. It is the responsibility of the user, purchaser or installer to comply with OSHA control and redundancy requirements. Consult your local press controls supplier for additional help.

## TESTING:

After installing, or rebuilding a Double Valve, it is very important that it be tested for proper operation prior to being placed in service.

## TEST CONDITIONS:

Fluid: Compressed Air  
Test Pressure: 30 and 120 psig  
Test Voltage: Per solenoid nameplate less 15%

It is recommended that a Variac be used to obtain the reduced voltage. Reducing the voltage by 15% for the test assures that the valve will operate properly, if voltage fluctuations occur after the valve is placed in service.

## TEST PROCEDURE:

**CAUTION:** The solenoid is powered through a three prong (2 power, 1 ground) connector. Check the solenoid nameplate for the proper voltage prior to making the electrical connection.

1. Plug Port "A" with a pipe plug or gauge. Make sure that the muffler or silencer is installed in Port "R".
2. Connect 30 psig air supply to Port "P".
3. Energize both solenoids simultaneously. Pressure should reach Port "A" without air flow through Port "R". De-energize both solenoids allowing air to exhaust through Port "R". Do this several times. No malfunction should occur. malfunction is described as a continuous flow of air through Port "R".
4. Energize only the left hand solenoid. Unit will malfunction.

5. Energize only the right hand solenoid. Unit will malfunction.
  6. Energize both solenoids then de-energize the left solenoid. Unit will malfunction.
  7. Energize both solenoids then de-energize the right solenoid. Unit will malfunction.
- Repeat steps 2 to 7 using 120 psig at Port "P".**

## SERVICE DATA:

The standard solenoid for the XSz-50 valve is **HERION** model No. 0801. The connector conforms to DIN 43650 Form "B" and the combination solenoid/connector meets classification NEMA 4. This **HERION** solenoid is rated at 100% duty cycle and complies with insulation class "F" (155° C).

## POWER CONSUMPTION (0801 SOLENOID)

DC : 16 W  
AC : 50 VA (Inrush) / 27 VA (Holding)

## VALVE DATA (XSz-50)

Port Size : 1 (P) = 1 1/2", 2 (A) = 2", 3 (R) = 2".  
C<sub>v</sub> : 1 (P) → 2 (A) = 20.4  
: 2 (A) → 3 (R) = 62.4

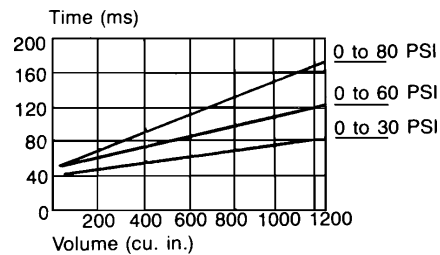


Fig. 3 Pressure Build-up Time

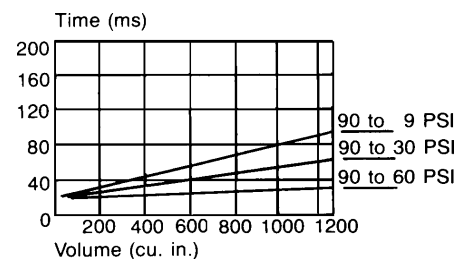


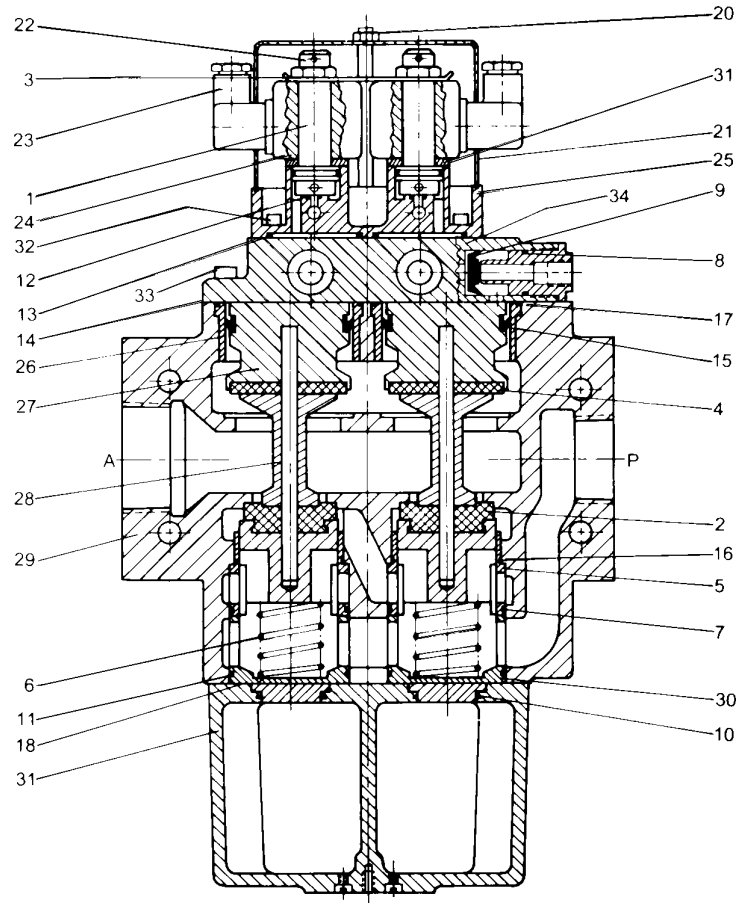
Fig. 4 Pressure Exhaust Time

**PARTS LIST**

- 1. **Pilot Valve (2)**
- 2. **Lower Seal Assembly (2)**
- 3. **Safety Washer (1)**
- 4. **Top Seal (2)**
- 5. **Sleeve (2)**
- 6. **Spring (2)**
- 7. **O-Ring (2)**
- 8. **O-Ring (2)**
- 9. **Lip Seal (2)**
- 10. **O-Ring (2)**
- 11. **O-Ring (2)**
- 12. **O-Ring (4)**
- 13. **O-Ring (2)**
- 14. **O-Ring (2)**
- 15. **Lip Ring (2)**
- 16. **O-Ring (2)**
- 17. **O-Ring (2)**
- 18. **O-Ring (2)**
- 19. **Lubricant (1) not shown**

- 20. Hex Nut
- 21. Solenoid Cover
- 22. Pilot Valve Nut
- 23. Connector
- 24. Solenoid
- 25. Pilot Valve Housing
- 26. Bushing
- 27. Piston
- 28. Spacer
- 29. Housing
- 30. Spring Guide
- 31. Bottom Cover
- 32. Socket Head Cap Screws (metric)
- 33. Socket Head Cap Screws (metric)
- 34. Top Plate

**Note:** Parts in **Bold Face Print** (items 1 - 19) comprise the **spare parts kit, part. no.: 8111283.** Quantities for all parts in the kit are shown in parenthesis.



**Fig. 5 Main Valve Section**

**WARNING:**

HERION recommends that any reconditioning required on the Press Double Valve should be performed by **HERION USA, Inc.** or its authorized distributor. Call 800.8HERION for help. Customer repairs should only be performed by skilled, trained and qualified personnel following the operating and test instructions.

**INSTALLATION OF SPARE PARTS:**

**CAUTION:**

Before attempting any service work on the valve, disconnect all electric power and compressed air. Be careful to prevent any damage to the seals, O-rings, and sealing surfaces of the valve housing during assembly or disassembly. All moving parts, such as lip seals and pistons should be lubricated with **HERION** lubricant 0705091X01

**A. SEPARATE VALVE BODY FROM BASE:**

**[Numbers in brackets refer to the cross section and parts list shown above]**

- 1. Using a 8mm hex wrench remove the P and A port flanges (not shown). Pull the flange and pipe joints back and remove the valve assembly from the press.

## B. DISASSEMBLY OF PILOT VALVE SECTION:

1. **Remove two hex nuts** [20] using a 10mm wrench and remove the solenoid cover [21].
2. **Bend down the tabs** on the safety washer [3] and remove bronze pilot valve nuts [22], solenoids [24], and connectors [23].
3. **Remove “Phillips” head screws** (not shown) from the retaining plates [31] under the solenoids, and remove the pilot valves [1], and the O-rings [12].
4. **Remove 4 socket head screws** [32] using a 5mm hex wrench. Remove the complete pilot section [25] and O-rings [13].

## C. DISASSEMBLY OF MAIN VALVE SECTION:

1. **Remove quick exhaust screws** (not shown) with a 3mm wrench. Take out O-rings [8] and lip seals [9].
2. **Remove 4 cap screws** [33] and top plate [34]. Remove O-rings [14] and [17].
3. **Remove 4 cap screws** (not shown) from the bottom cover using a 6mm hex wrench.
4. Through the R-port **pry up** on the lower side of the piston [27]. Remove pistons, lip rings [15], top seals [4], and spacers [28] through the top of the valve. Examine the bushings [26] for any signs of wear.
5. **Push down** on the lower half of the poppets through the top of the valve. Remove seal assembly [2], spring [6], spring guide [30], and O-ring [11] using a wooden dowel of similar material that won't damage the valve bores. Cup the spring retainer side with the palm of your hand to catch the parts.
6. **Clean** the base and the valve housing using degreaser and a soft bristle brush. Dry all parts before reassembly.
7. **Examine** the main valve housing for wear at the valve bores and seating surfaces. Deep scratches or pitting requires valve replacement.
8. **Assure** that orifice holes (not shown) are open using shop air.

## D. SILENCERS:

**HERION** silencers should not be disassembled but may be cleaned by dipping in solvent if required. See brochure no. 1081.

## E. ASSEMBLY:

1. **Assemble** components in reverse order of disassembly. Replace **all** old components for which there are replacements in the spare parts kit. Replace the pilot valves [1]. **Do not** reuse the old parts. Replace old safety washers with the newer style [3].
2. **Lightly** lubricate parts before assembly.
3. **Note** the larger end of the spacer [28]. The large end goes toward the top of the valve.
4. **Remember** to crimp the tabs of safety washer [3] after tightening the bronze nuts.  
**CAUTION:** Maximum torque of 7 ft/lbs. Excess torque will damage the pilot valves.

## F. TEST:

Test the valve according to the test procedure outlined on page 2.

## FACTORY SUPPORT, SERVICE OR TRAINING:

1. New or rebuilt valves available within 24 hours.
2. Call 800.8HERION (800.843.7466) for technical support or service.

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