OPERATION AND MAINTENANCE INSTRUCTIONS
Press Double Valves

Series XSz
Size 32

Brochure N-270

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: 15º F to 140º F.
Operating Pressure: 30 to 120 psig.
Operating Frequency: 165 cycles per min.
Weight: 17 lb.

CONSTRUCTION:

The XSz Double Valve has three sections. The top of the valve 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.

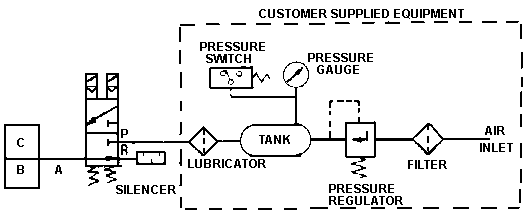

Fig. 1 **Typical Installation**

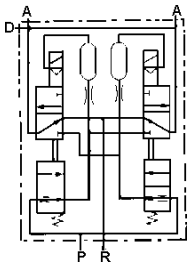

Fig. 2 **Press Double Valve**

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 installed 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, lubricator 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. Ref. 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:

<u>CAUTION:</u> 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. A malfunction is described as a <u>continuous</u> 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-32 valve is **HERION** model No. 0801. The connector conforms to DIN 43650 Form A and the combination solenoid / connector meets classification NEMA 4. This **HERION** solenoid is rated at 100% duty cycle and complies with insulation class "F" (155º C).

POWER CONSUMPTION (0801 SOLENOID)

DC: 16 W
AC: 50 VA (Inrush) / **33 VA** (Holding).

VALVE DATA (XSz-32)

Port Size **:** 1(P) = 1", 2(A) = 1", 3(R) = 1 1/2"
C_v **:** 1(P) → 2(A) = 12
: 2(A) → 3(R) = 23.3 (Exhaust)

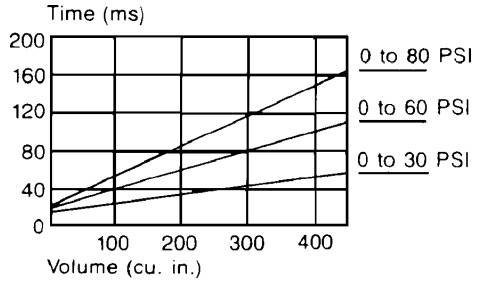

Fig. 3 **Pressure Build-up Time**

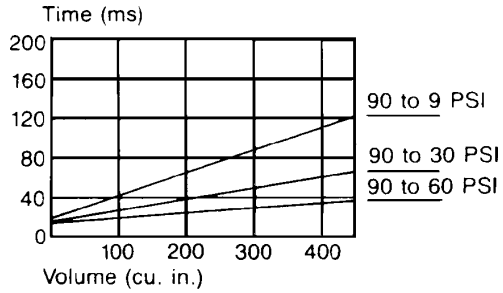

Fig. 4 **Pressure Exhaust Time**

PARTS LIST

Note: Parts in **BOLD FACE PRINT** (ITEMS 1 - 13) comprise the **spare parts kit, part no. 81-112-82.** Quantities for all parts in the kit are shown in parenthesis.

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

14. Hex Nut for cover
15. Cover
16. Pilot Valve Nut (06-501-46)
17. Connector
18. Solenoid
19. Pilot Valve Housing
20. Socket Head Cap Screws (metric)
21. Bushing
22. Piston
23. Spacer
24. Housing
25. Socket Head Cap Screws (metric)
26. Spring Guide
27. Orifice Hole
28. Socket Head Cap Screws (metric)
29. Spring Flange
30. Retainer Plate

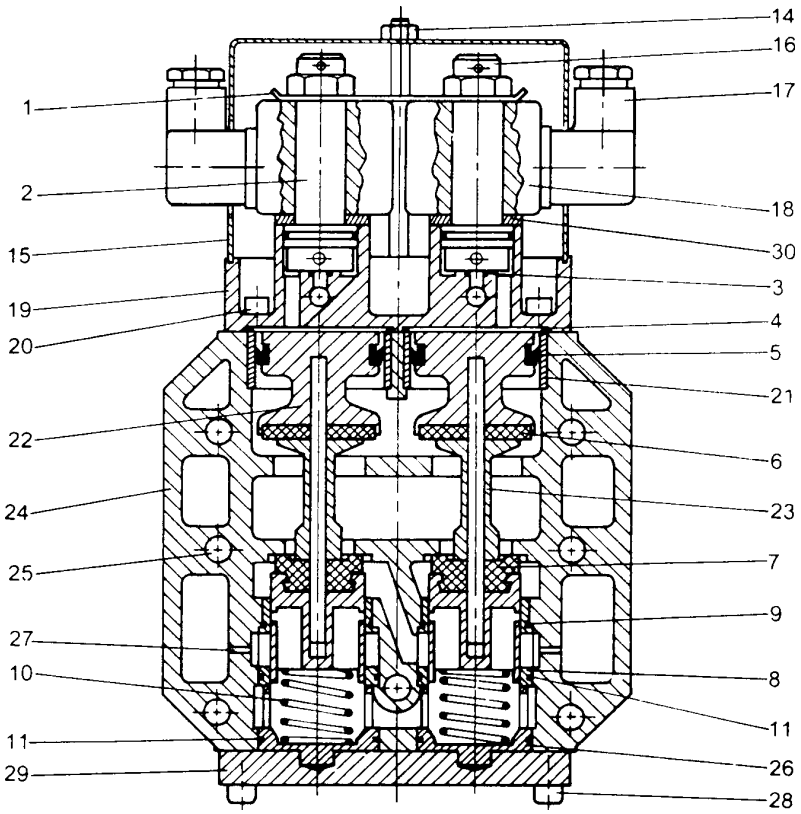

Fig. 5 **Main Valve Section**

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 07-050-91X02.

A. SEPARATE VALVE BODY FROM BASE:

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

1. Using a 6 mm hex wrench remove 7 cap screws [25] to separate the front half of the valve from the back section. The front half is the main valve housing [24]. The back is the valve base. Always replace the gasket [12] once the two halves have been separated.

B. DISASSEMBLY OF PILOT VALVE SECTION:

1. Remove two hex nuts [14] using a 10 mm wrench. Remove cover [15]. Bend down the tabs on the safety lock washer [1]. Remove the pilot valve nuts [16], solenoids [18] and connectors [17]. **Note:** On older valves, each solenoid has a separate safety washer.
2. Remove 4 Phillips head screws (not shown) from both retaining plates [30]. Remove the retaining plates [30], pilot valves [2], and O-rings (3).
3. Using a 5 mm hex wrench remove 4 cap screws [20] to separate the pilot valve flange [19] from the main valve housing [24].
4. Remove O-rings [4] and [3] from under the pilot valve flange.

C. DISASSEMBLY OF MAIN VALVE SECTION:

1. **Using a 5 mm hex wrench**, remove 4 cap screws [28] and separate the spring flange [29] from the housing.
2. **The main valves "poppets"** are comprised of stacked assemblies and they will come apart. Through Port "R" pry up on the lower side of the pistons [22]. Remove the pistons, lip rings [5], top seals [6], and spacers [23] through the top of the valve housing. Examine the bushings [21] for any signs of wear.
3. **Remove the lower seal assemblies** [7], the springs [10], spring guides [26], and O-rings [11] through the bottom of the valve. Place your palm under each valve chamber to catch the parts as you push on the top of the lower seal assembly. Push with a wooden dowel or similar material to prevent damage to the valve bores and seats.
4. **Remove the sleeves** [8] and O-rings [9] and [11] through the bottom of the valve housing. Be careful not to damage the valve bores.
5. **Clean** the base and the valve housing using degreaser and a soft bristle brush. Dry all parts before reassembly.
6. **Examine** the main valve housing for wear at the valve bores and seating surfaces. Deep scratches or pitting requires valve replacement.
7. **Examine** the orifice holes [27] found on the back side of the valve housing. Assure that they are open using shop air.

D. SILENCERS:

Silencers should be removed and inspected for clogging, dirt, etc. Follow the manufacturer's instructions for disassembly and proper cleaning. (Note: **HERION** Safety Silencers should not be disassembled but may be cleaned by dipping in solvent). If there is any concern with contamination or reduced flow, install a new silencer. See brochure 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. **Do not** reuse the old parts.
2. **Lightly** lubricate parts before assembly.
3. **Tighten the pilot valve nuts** to 7 ft/lbs. max and re-crimp the tabs on the safety washer.

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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