



# Air/Oil Lubrication Valves & Manifold

0006704  
0006705  
0006706  
3071260

## INSTRUCTION AND PRODUCT DATA SHEET

ENGLISH

### 1. DESCRIPTION:

The new compact Air/Oil manifold and valves have been designed for diverse Air/Oil lubrication applications offering a wide range of oil discharges with modular scale-ability not previously available.

It is possible to install up-to four oil metering devices in each Manifold. Manifolds can be fastened together to produce a larger assembly. The manifold incorporates an anti-turbulence fitting to optimize the injection of the lubricant into the air stream, avoid nebulization of the oil and improve repeatability when using high air flows.

The air/oil manifold can accept either Injector valve cartridges for intermittent lubrication where precisely metered quantities of oil are required such as high speed bearings or Orifice (metering) units when a constant supply of oil into the air stream is more desirable such as dry-machining applications.

### 2. SPECIFICATION:

#### Air/Oil Manifold:

|                         |                                  |
|-------------------------|----------------------------------|
| Dimensions              | 65 x 44,5 x 55 mm.               |
| Inlet :                 | 2 Air 1/4" NPT<br>2 Oil 1/4" NPT |
| Outlets:                | 4 x 1/8" NPT Air/Oil             |
| Injector Oil Pressure:  | Min. 20 Bar.<br>Max.40 Bar.      |
| Orifice Metering Units: | Min 1 Bar.<br>Max 10 Bar.        |
| Air Pressure:           | Min 1 Bar.<br>Max 6 Bar.         |

#### Injector Valve Cartridges.

0.1 to 0.5 cc/cycle with fixed discharge.  
Min. Release time : 10 seconds

#### Orifice cartridges.

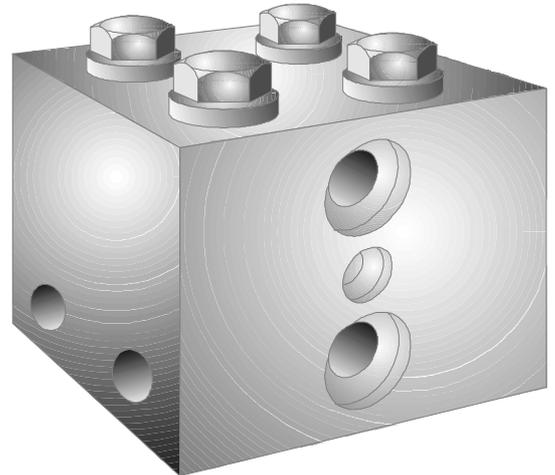
Standard 01 units for inserts.  
0.025 - 1.05 cc / min (average conditions)

### 3. INSTALLATION & OPERATION.

#### 3.1 Assembling Manifolds (ref: Fig. 2.)

The manifolds are joined using a screw arrangement and a location pin (supplied). Ensure that the O-rings

(supplied) are placed between the two manifolds in the the 1/4" air and the oil



cross-ports.

#### 3.2 Installing an injector valve cartridge. (ref: Fig. 2.)

To install an injector valve (6704, 6705 or 6706) ensure that the two O-rings (18820 and 18807) are positioned correctly as shown in diagram 2. and gently insert it into the cartridge port. When installed correctly the upper O-ring should not be visible. If the cartridge does not fully insert, remove and ensure that the upper and lower section of the valve cartridge has not become loose; tighten if necessary.

#### 3.3 Installing an Orifice metering unit. (ref: Fig. 2.)

Tightly screw the metering unit into the bottom of the cartridge port using a screwdriver. Install the plug (p/n 3234228) to close the cartridge port.

#### 3.4 System Design.

##### It is important to note:

- orifice metering units and injector valves can not be used on the same system, even if installed in separate manifolds.
- When using injector valves, the pressure must be released to under 2 bar in order for the valves to re-charge for the subsequent cycle.
- when mixing different injector valves, the longest release times must be used.

- Air pressure can influence the discharge of the orifice metering units.

- Hydraulic guidelines should be followed (e.g. filtration, pressure drop etc)

### 3.5 System Priming

It is imperative to remove all Air from the Oil circuit to ensure reliable operation of the injector valves.

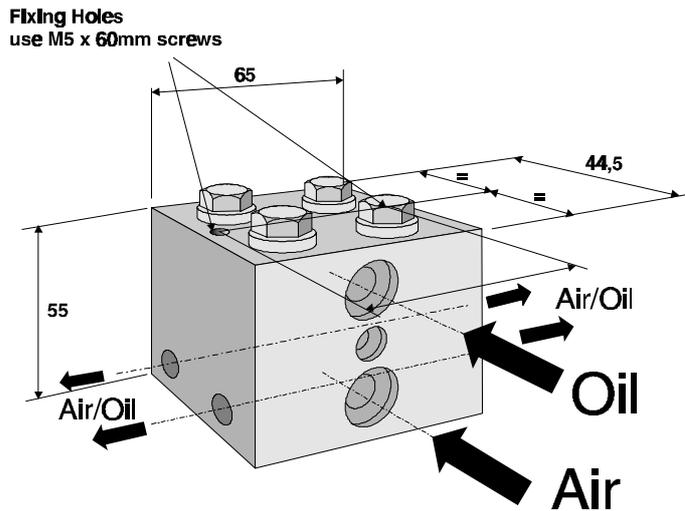


Fig. 1.

To achieve this, the system should be cycled repeatedly. To assist in expelling the air, the adjustment screws on the top of the cartridge valves may be partially unscrewed.

## 4. TEST PROCEDURES:

### 4.1 System Functional test.

During normal operation a pressure switch should be installed on the Oil line (preferably after the filter) to monitor that correct operating pressure has been reached.

### 4.2. Measuring the injector valve discharges.

The following procedure is used to test volume discharge from the injector valves during manufacture (on assembled manifolds)

- Purge oil from assembly by cycling the system for several times and ensuring that there is no air present in the Oil line.
- Fit a short length (30 cm) of nylon tube on each air/oil outlet.
- Apply 5 bar air pressure on the Air Inlet and allow

the oil to purge from Air section of the manifold. This may take several minutes and the nylon tube should be clear.

- Reduce the air pressure to under 0.5 Bar.
- Place a graded measuring test tube on each outlet with the nylon tube positioned at the top of the test tube.
- Pressurize the injectors for 5 seconds. Release pressure for specified min. pause time and then repeat for a set number of cycles.
- After completing the cycles, leave the measuring tubes for another several minutes.
- Remove the tubes and allow the oil to settle for several minutes before taking measurements.

### 4.3 O-Ring seal leakage test on Injector valve Cartridges.

**Note:** This test can not be used for Orifice metering units.

- Block the Air/Oil Outlets.
- Apply 5 bar pressure to the Air Inlet
- Monitor the Oil line and ensure that air is not causing back-flow.

## 5. ORDERING INFORMATION:

| Part No.    | Description  |
|-------------|--|
| 3071260     | 4 Cartridge Manifold complete with joining screws, O-rings & location pin. |
| 519071      | 1/4"NPT Plug for Air and Oil Inlets  |
| 0006704     | 0.01 cc/cycle injector valve.  |
| 0006705     | 0.02 cc/cycle injector valve.  |
| 0006706     | 0.50 cc/cycle injector valve.  |
| 3234228     | Orifice Plug   |
| 35801-35807 | Injectors (see page 15 of 01 catalogue)                                    |
| 3234226     | Plug for unused ports  |
| 3234233     | 1/8" NPT Gauge/Pressure Switch adaptor plug for cartridge port.            |
| 3085244     | 1/8" NPTF Push-in fitting for 4mm. tube.                                   |

Please specify if parts are required assembled when ordering, listing components in each assembly.

## 6. SPARES

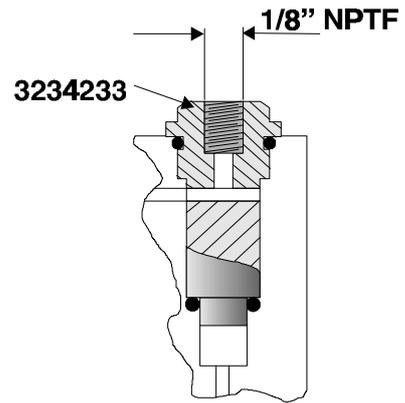
Refer to assembly diagram 5.

## 7. SAFETY REQUIREMENTS

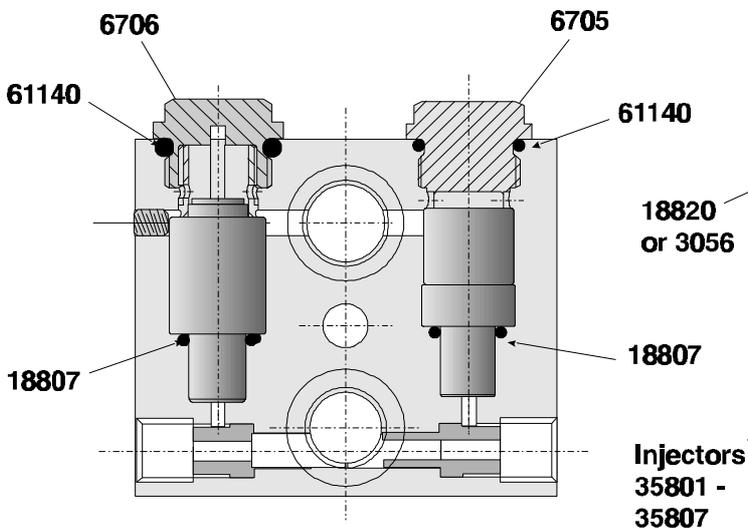
All components illustrated must be installed and operated in accordance with the requirements of this Instruction Sheet. They should not be used for any purpose other than as specified without the agreement of the supplier.

### Injector Valve Cartridges

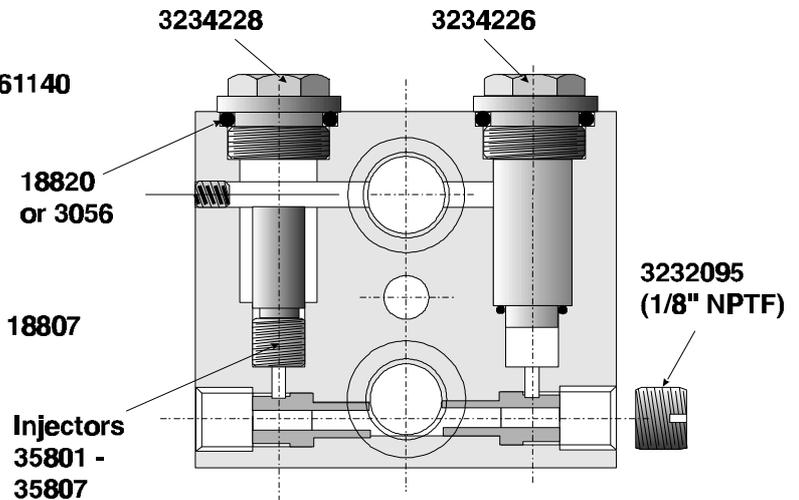
| Part No. | Discharge in cc/stroke |
|----------|------------------------|
| 6704     | 0.01                   |
| 6705     | 0.02                   |
| 6706     | 0.50                   |



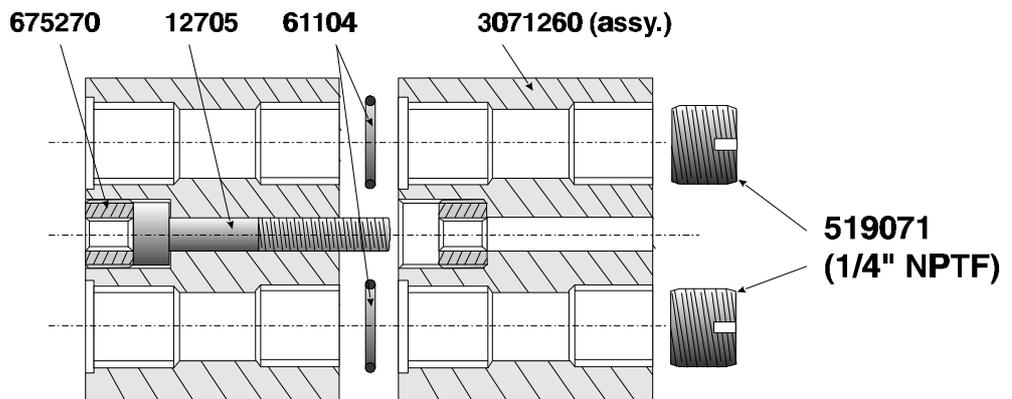
Part view of Gauge/Pressure Switch Adaptor Plug



Installation of Cartridge Injector Valves



Installation of O1 System Injectors



Side Cross-Section

Fig. 2.

Follow general hydraulic safety precautions. In particular, make sure that all pressure and control equipment is disconnected before servicing any part of a lubrication system. Wear suitable protection when operating in areas with hydraulic circuits under pressure.

## 8. OPERATING ENVIRONMENT

Do not operate in excessively corrosive or aggressive environment. If in doubt please contact our technical office.

## 9. DIAGNOSTIC TABLE

| Problem   | Possible cause  | Remedy   |
|---|---|--|
| No lubricant is discharged                            | Filter in oil circuit is blocked                          | Check & replace filter.  |
|   | Low Pressure in system.                                   | Ensure correct pressure is being achieved.   |
| Incorrect quantities discharged from injector valves. | Air in oil circuit.                                       | Follow purging procedures.   |
|   | O-Ring Seals or check-valves are not working effectively. | Check and replace if necessary.  |
| Oil discharge is very high.                           | System is not pressurized within 1 second.                | Ensure that the flow is sufficient to cover valve requirements in under 1 second. Take into account loss due to restrictions in circuit. |
|   | Air in oil circuit  | see above.   |



## AN ISO 9001 APPROVED COMPANY

**U.K.**  
Dropsa (UK) Ltd.  
Unit 6, Egham Business Village,  
Egham,  
Surrey, TW20 8RB  
Tel: (+44) 01784 - 431177  
Fax: (+44) 01784 - 438598  
E-mail: salesuk@dropsa.com

**U.S.A.**  
Dropsa Corporation  
50679 Wing Drive  
Utica,  
Michigan 48315.  
Tel: (+1) 810-566-1540  
Fax: (+1) 810-566-1541  
E-mail: salesusa@dropsa.com

**AUSTRALIA**  
Dropsa Australia Pty.  
No. 7 Warringah Road  
Dee Why  
NSW 2099  
Tel: (+61) 2 9905 0410  
Fax: (+61) 2 99394142  
E-mail: sales@dropsa.com

**GERMANY**  
Dropsa Gmbh.  
Volmerswerther Strasse 80  
40221 Dusseldorf 1,  
Deutschland  
Tel: (+49) 0211-394-011  
Fax: (+49) 0211-394-013  
E-mail: sales@dropsa.de

**ITALY**  
Dropsa Spa  
Via B. Croce, 1 - 20090  
Vimodrone (MI)  
Tel: (+39) 02 - 250.79.1  
Fax: (+39) 02 - 250.79.767  
E-mail: sales@dropsa.it (Export)  
E-mail: vendite@dropsa.it (National)

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