Masoneilan™ 77-6 Model

Air Lock-up Valve

Instruction Manual (Rev. C)

Baker Hughes

THESE INSTRUCTIONS PROVIDE THE CUSTOMER/OPERATOR WITH IMPORTANT PROJECT-SPECIFIC REFERENCE INFORMATION IN ADDITION TO THE CUSTOMER/OPERATOR'S NORMAL OPERATION AND MAINTENANCE PROCEDURES. SINCE OPERATION AND MAINTENANCE PHILOSOPHIES VARY, BAKER HUGHES (AND ITS SUBSIDIARIES AND AFFILIATES) DOES NOT ATTEMPT TO DICTATE SPECIFIC PROCEDURES, BUT TO PROVIDE BASIC LIMITATIONS AND REQUIREMENTS CREATED BY THE TYPE OF EQUIPMENT PROVIDED.

THESE INSTRUCTIONS ASSUME THAT OPERATORS ALREADY HAVE A GENERAL UNDERSTANDING OF THE REQUIREMENTS FOR SAFE OPERATION OF MECHANICAL AND ELECTRICAL EQUIPMENT IN POTENTIALLY HAZARDOUS ENVIRONMENTS. THEREFORE, THESE INSTRUCTIONS SHOULD BE INTERPRETED AND APPLIED IN CONJUNCTION WITH THE SAFETY RULES AND REGULATIONS APPLICABLE AT THE SITE AND THE PARTICULAR REQUIREMENTS FOR OPERATION OF OTHER EQUIPMENT AT THE SITE.

THESE INSTRUCTIONS DO NOT PURPORT TO COVER ALL DETAILS OR VARIATIONS IN EQUIPMENT NOR TO PROVIDE FOR EVERY POSSIBLE CONTINGENCY TO BE MET IN CONNECTION WITH INSTALLATION, OPERATION OR MAINTENANCE. SHOULD FURTHER INFORMATION BE DESIRED OR SHOULD PARTICULAR PROBLEMS ARISE WHICH ARE NOT COVERED SUFFICIENTLY FOR THE CUSTOMER/OPERATOR'S PURPOSES THE MATTER SHOULD BE REFERRED TO BAKER HUGHES.

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Safety Information

Important - Please read before installation

These instructions contain **DANGER**, **WARNING**, and **CAUTION** labels, where necessary, to alert you to safety related or other important information. Read the instructions carefully before installing and maintaining your control valve. **DANGER** and **WARNING** hazards are related to personal injury. **CAUTION** hazards involve equipment or property damage. Operation of damaged **equipment can, under certain operational conditions, result in degraded process system performance that can lead to injury or death. Total compliance with all DANGER**, **WARNING**, and **CAUTION** notices is required for safe operation.

This is the safety alert symbol. It alerts you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in serious injury.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

CAUTION

When used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, could result in property damage.

Note: Indicates important facts and conditions.

About this Manual

- The information in this manual is subject to change without prior notice.
- The information contained in this manual, in whole or part, shall not be transcribed or copied without Baker Hughes's written permission.
- Please report any errors or questions about the information in this manual to your local supplier.
- These instructions are written specifically for the 77-6 Model Air Lock-up valve control valves, and do not apply for other valves outside of this product line.

Useful Life Period

The current estimated useful life period for the 77-6 Model Air Lock-up valve control valves is 25+ years. To maximize the useful life of the product, it is essential to conduct annual inspections, routine maintenance and ensure proper installation to avoid any unintended stresses on the product. The specific operating conditions will also impact the useful life of the product. Consult the factory for guidance on specific applications if required prior to installation.

Warranty

Items sold by Baker Hughes are warranted to be free from defects in materials and workmanship for a period of one year from the date of shipment provided said items are used according to Baker Hughes recommended usages. Baker Hughes reserves the right to discontinue manufacture of any product or change product materials, design or specifications without notice.

Note: Prior to installation:

- The valve must be installed, put into service and maintained by qualified and competent professionals who have undergone suitable training.
- All surrounding pipe lines must be thoroughly flushed to ensure all entrained debris has been removed from the system.
- Under certain operating conditions, the use of damaged equipment could cause a degradation of the performance of the system which may lead to personal injury or death.
- Changes to specifications, structure, and components used may not lead to the revision of this manual unless such changes affect the function and performance of the product

⚠ WARNING

Please read these instructions carefully BEFORE this instrument is installed or maintained.

These converters are intended for use in industrial compressed air systems only. Ensure that adequate pressure relief provision is installed if application of system supply pressure could cause downstream equipment to malfunction. Installation should be in accordance with local and national compressed air and instrumentation codes.

Products certified for use in explosion-proof or intrinsically safe installations MUST:

a) Be installed in accordance with local and national codes for hazardous area installations, and in accordance with this manual.

b) Only be used in situations which comply with the certification conditions stated in this handbook.

c) Only be maintained by qualified personnel with adequate training on hazardous area implementation. Before using these products with fluids other than air or for non- industrial applications consult Baker Hughes.

Installation

⚠ CAUTION

Do not use for air pressures exceeding 250 psi.

Prior to installing, clean all lines thoroughly to remove all dirt, scale or other foreign matter. Install the lock-up valve in the controller output line as near to the control valve diaphragm chamber as possible, holding the number of connections to a minimum—so that the air flows through the body in the direction indicated by the words INLET and OUTLET marked on the underside of valve body.

The signal pressure line should be connected upstream of the air supply regulator to provide effective response of the lock-up valve in the event of air failure. Be sure all pipe connections are tight.

⚠ WARNING

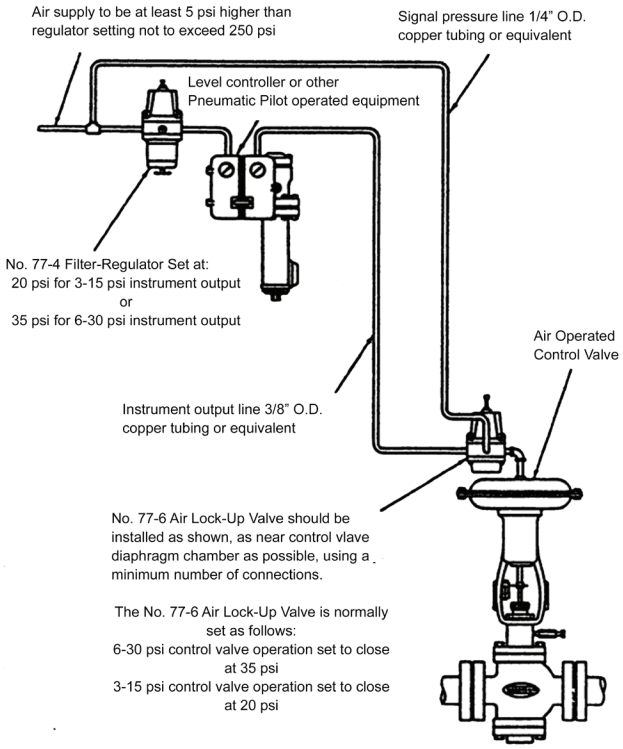
Do not install this Air Lock-up Valve in air lines which exceed 250 psi (1.72 MPa, 17.2 bar) pressure.

Adjustment

The lock-up valve is normally factory set (i.e., 20 psi for 3-15 psi operation or 35 psi for 6-30 psi operation) and should not require adjustment. If, however, it becomes necessary to adjust the setting an air supply, with a gauge and regulator, should be piped to the signal pressure connection after: (1) relieving compression on the range spring of the lock-up valve; and (2) connecting the instrument output line to the inlet connection of the lock-up valve.

Instrument output pressure need be sufficient only to determine the open and closed position of the lock-up valve. Turn the air supply pressure on until the pressure gauge indicates the desired set pressure, then turn the adjusting screw down until no air pressure may be felt coming from the outlet of the lock-up valve. The valve will be fully closed at this point.

Finally, tighten the adjusting screw locknut and connect: (1) the lock-up valve outlet connection to the control valve diaphragm chamber; and (2) the signal pressure line to the signal pressure connection of the lock-up valve. Turn on and set the air supply to operating pressure. Be sure that all pipe connections are tight.



Maintenance

Due to their design and intended application, maintenance difficulties are not expected to be encountered with these valves. If they fail to perform in a satisfactory manner, it may be due to accumulation of dirt in one or more of the parts. If necessary to disassemble, proceed as follows, after: (1) shutting off supply pressure; and (2) relieving spring compression by backing off the adjustment screw.

Remove the four body cap screws (16); body cap (15), body cap O-ring (14), range spring (3), upper spring button (2) and spring case (9) will come free from body (7).

To free diaphragm S/A (10) and inlet valve S/A (12) from the body, place the wrench on the insert retainer (13) and unscrew from the body insert (5). Remove the body insert O-ring (6) and slide the diaphragm S/A, the body insert and the inlet valve S/A from the body. Holding the inlet valve from turning, unscrew inlet valve locknut (4) and remove diaphragm S/A from the inlet valve. Turn the inlet valve out of body insert.

Check all ports to be sure they are clear of dirt. Inspect the diaphragm S/A for rupture or for damage around the edge. If necessary, install a new diaphragm S/A. Check the inlet valve for wear. If the inlet valve is roughed-up or pitted, replace with new one.

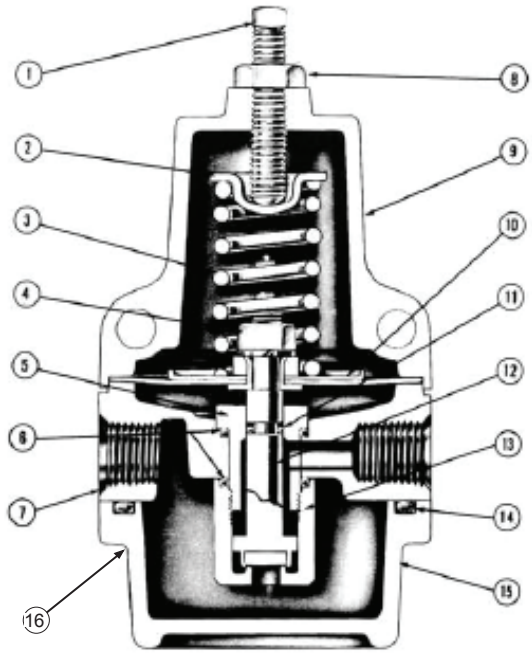
To reassemble the lock-up valve, perform all operations in reverse order to that used in disassembly. Note: The O-ring on the inlet valve stem should be lubricated before the inlet valve is reassembled in the body insert.

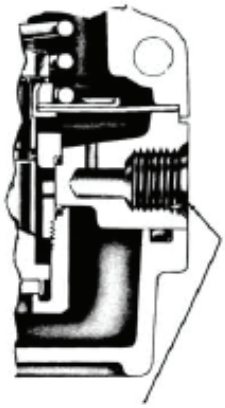
Note: Considering the high labor costs involved in replacing internal parts, it may be more economical to stock complete units.

⚠ WARNING

Prior to performing maintenance on the Air Lock-up Valve, shut off the supply pressure and remove the spring compression by backing off the adjustment screw.

It is recommended that the Air Lock-up Valve be removed from the line for repairs.





Signal Pressure

Ref.	Qty	Part Name	Ref.	Qty	Part Name
1	1	Adjusting Screw	9	1	Spring Case
2	1	Upper Spring Button	10	1	Diaphragm S/A
3	1	Range Spring	11	1	Inlet Valve O-Ring
4	1	Inlet Valve Locknut	12	1	Inlet Valve S/A
5	1	Body Insert	13	1	Insert Retainer
6	2	O-Rings	14	1	Body Cap O-Ring
7	1	Body	15	1	Body Cap
8	1	Locknut	• 16	4	Body Cap Screws

• Not visible in cutaway view.