JRU CONTTROL PVT LTD

(FORMERLY PLACKA INSTRUMENTS & CONTTROL PVT LTD)

An 1SO 9001:2000
COMPANY

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Reg No: RQ91/4527

TYPE JALV INSTRUCTION MANUAL
AIR LOCK-UP VALVE

CONTENTS

No person may install, operate, or maintain a Type JALV Series AIR LOCK-UP VALVE without first (1) being fully trained and qualified in valve, actuator and accessory installation, operation and maintenance, and (2) carefully reading and understanding the contents of this manual. If you have any questions regarding these instructions, contact your JRU Conttrol sales office before proceeding.

INTRODUCTION

Scope of Manual

This instruction manual provides installation, operation, maintenance, and parts information for the type JALV Series AIR LOCK-UP VALVE (Figure 1).

NOTE

JRU Conttrol does not assume responsibility for the selection, use, or maintenance of any product.

Responsibility for the selection, use, or maintenance of any JRU Conttrol product remains with the purchaser and end-user.

Table: 1

SPECIFICATIONS	
Proof Pressure	Max.9.9 Kgf/Sq.cm
Signal Pressure	1.4 – 7 kgf/Sq.cm, 20~100 Psi, 0.14 ~0.7 MPa
Line Pressure	Max.7 kgf/Sq.cm
Effective Orifice (Cv)	17 mm^2 (0.9)
Ambient and fluid temperature	-5 to 60^0c
Connections	¼ ,½
Setpoint differential	0.04 kgf/Sq.cm
Hysterisis	Within 0.1 kgf/Sq.cm

DESCRIPTION

The types JALV Series AIR LOCK-UP VALVE are used in conjunction with a positioner on a control valve to maintain on state position during fallers of air supply. The air lock-up valve is adjustable for various pressure ranges. In addition, the air Lock – up valve incorporates soft-seat construction due to which correct actuator position is maintained when supply fails. An integral blow of valve is present which make the air lock-up valve sensitive to differential of 0.04 kg/sq.cm which eliminates wide differential that can occur with AIR LOCK-UP VALVE that do not have these features. Wide Cv makes air lock-up valve to maintain changes from the positioner without sacrificing accuracy.

SPECIFICATIONS:

Specifications for the Type JALV Series AIR LOCK-UP VALVE are listed in table 1. Information for an individual unit as it comes from the factory appears on the name plate figure 1)

Figure 1

JRU CONTTROL PVT LTD..,
AIR LOCK UP VALVE
Set Pressure -1.4~7 kg/cm²
20~100psi / 0.14~0.7Mpa
End Connection :1/4" NPT
MODEL NO: JALV -500
SERIAL NO: 818

Model Nos.

Model	Weight	Note	Connection
ALV-S-6	430gf	Single acting	¼" / 6mm
ALV-D-6	640gf	Double acting	¼" / 6mm
ALV-S-12	425gf	Single acting	½" / 12mm
ALV-D-12	635gf	Double acting	½" / 12mm

Approximate weight:
Single stage: 500 gms
Double stage: 800 gms

INSTALLATION:

WARNING

Always wear protective clothing and eyewear when performing any maintenance procedure to avoid personal injury.

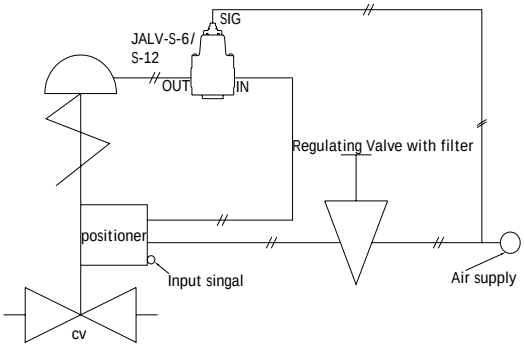
System damage may result if a AIR LOCK-UP VALVE is installed in a way that it can be physically damaged.

Personal injury or system damage may result when service conditions exceed booster or other equipment ratings. Exceeding the pressure specified in specifications may cause leakage, part damage, or personal injury due to bursting of pressure – containing parts or explosion of accumulated gas.

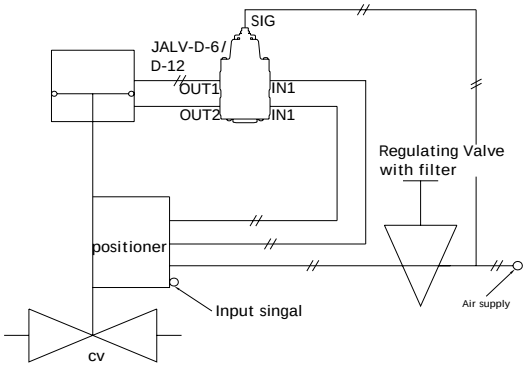
Check with your process or safety engineer for any additional measures that must be taken to protect against process media.

Always pipe the positioner and the AIR LOCK-UP VALVE with one common supply. See figure 2 for typical installation examples. A type JALV series regulator is required to provide sufficient capacity to supply both components. A high-capacity filter, such as the type FTB should be installed in the supply line to the Regulator.

Figure 2



JALV-S-6/S12 installation example



JALV-D-6/D12 installation example

PRESSURE CONNECTIONS:

The input signal connection is ¼" NPT. The supply and output connections are ¼" & ½" NPT (pipe size recommended for nipple mounting is ½" NPT). Connections to the AIR LOCK-UP VALVE should be made as indicated in figure 2. Connections for two typical applications are shown in figure2. Ensure that the piping is of proper size to meet the capacity demands of the booster and that you equip the actuator with properly sized input connections.

Supply pressure

Supply pressure must be clean dry air or non corrosive gas (2), and it should be filtered.

WARNING

If a flammable or hazardous gas is to be used as the supply pressure medium, personal injury, property damage or equipment damage could result from fire or explosion of accumulated gas or from contact with hazardous gas. The AIR LOCK-UP VALVE has no provision for piping away the vented exhaust gas. Therefore, do not use Flammable or otherwise hazardous gas as a supply medium unless the unit is in a well – ventilated area.

Exhaust Ports

Exhaust to the atmosphere is through exhaust ports in the side of the unit. Keep the exhaust ports free of any obstructions or foreign materials that might clog them.

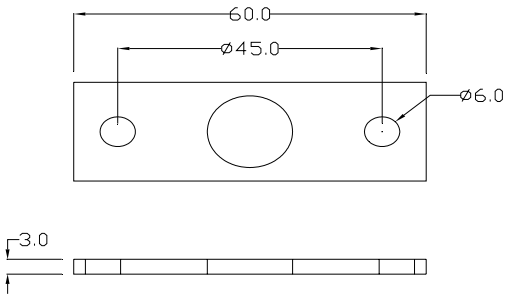
OPERATING INFORMATION

The only operating requirement of the AIR LOCK-UP VALVE is the adjustment of the setting screw.
Prior to operation, turn the setting screw four or five turns clockwise from the fully opened position. With the actuator in operation, slowly turn the setting screw clockwise until required supply pressure is set .

MOUNTING

The AIR LOCK-UP VALVE is typically nipple – mounted between the pneumatic supply source and the actuator, and may be used with piston or diaphragm actuators.

Figure3



The booster may also be directly mounted to the actuator by using an actuator yoke mounting bracket (see figure 3)

PRINCIPLE OF OPERATION:

Safe signal pressure enters the upper diaphragm chamber 1 and compresses the adjusting spring 3 and moves the upper diaphragm 2 upward. It also closes the exhaust valve 4. Signal pressures also enter the lower diaphragm chamber 5 and exert a downward force on the valve 8. This opens the flow path from 'IN' and 'OUT' ports for flow in either direction. When malfunction in the control signal circuit occurs pressure holding the lower diaphragm downwards is lost through the exhaust valve 4. Valve 8 closes with spring return and the circuit is sealed. For double acting lock-up valve above operation is extended by an extra valve movement allow two separate circuits to be protected.

MAINTENANCE:

These air lock–up valves does not require any maintain for long years. However any diaphragm change and valve change procedure is given below.

WARNING

Always wear protective clothing and eyewear when performing any maintenance procedures to avoid personal injury.

Maintenance requires taking the AIR LOCK-UP VALVE out of service. To avoid personal injury or equipment damage, disconnect or bypass any pressure lines to the air lock-up valve, and vent any pressure locked in the unit before you begin maintenance.

Check with your process or safety engineer for any additional measures that must be taken to protect against process media.

DIAPHRAGM ASSEMBLY REPLACEMENT

1. Remove the air lock-up valve screw (key 3).
2. Remove the top casting (key 4) separately.

CAUTION

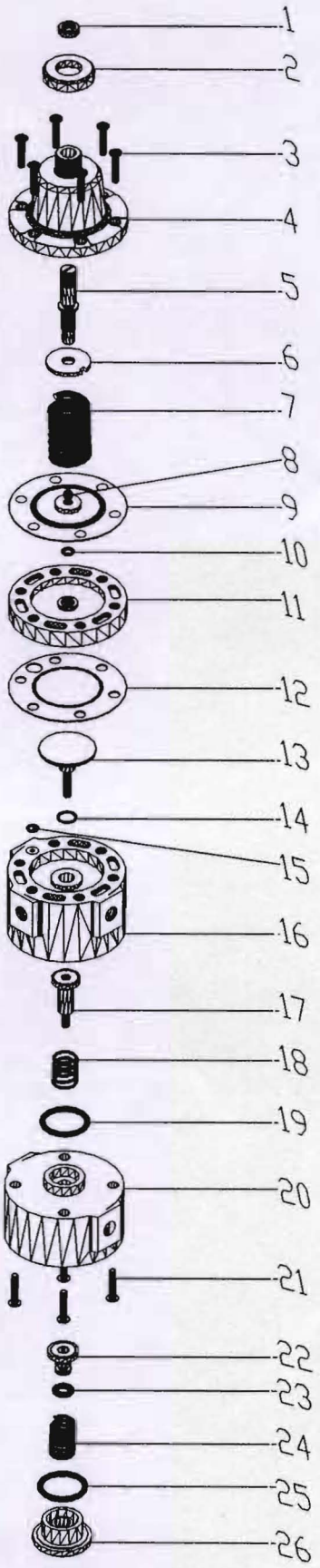
Before moving the screw, depressulise the Chambers .LOOSEN the set pressure screw (Key 5) .Do not remove the lock nut (key 1) of Set pressure screw.

3. Remove the adjustment spring (key 7).
4. Carefully remove the exhaust valve (key 8).
5. Take the upper diaphragm assembly (key 9) and clean with clear water. Do not use any solvent for cleaning Replace with new diaphragm assembly (key9)(spare part no ALV/TDA/01 if the diaphragm is torn/punctured/cracked.
6. For remove the lower diaphragm (key 12). Remove the exhaust sealing "o"ring (key10) and the plate (key 11) .Be careful in not losing the exhaust valve of the "o" ring.
7. Take the lower diaphragm assembly and clean with clear water. Do not use any solvents for cleaning. Replace with new diaphragm assembly (key 12)(spare part no:ALV/LDA/02) if the diaphragm is torn/punctured/cracked.
8. Reassembly in the same way removed.

VALVE ASSEMBLY REPLACEMENT

CAUTION

1. Remove the four screws (key 28) for double acting (key 22) valve seat nut for single acting.
2. Remove the valve (key 18)
3. Clean the valve seating area with clean water.
4. if any damage or deep impression is present replace with new valve (spare part no: ALV/TV/03 for Double acting top valve and spare part no :ALV/BV/04 Bottom valve for single acting & Double acting valve)
5. if the valve spring (key 19,25) has detoured change the valve spring (spare pert no: ALV/VS/05).
6. Remove the valve (key 18)
7. Clean the valve seating area with clean water.
8. if any damage or deep impression is present replace with new valve (spare part no: ALV/TV/03 for Double acting top valve and spare part no :ALV/BV/04 Bottom valve for single acting & Double acting valve)
9. If the valve spring (key 19,25) has detoured change the valve spring (spare pert no: ALV/VS/05).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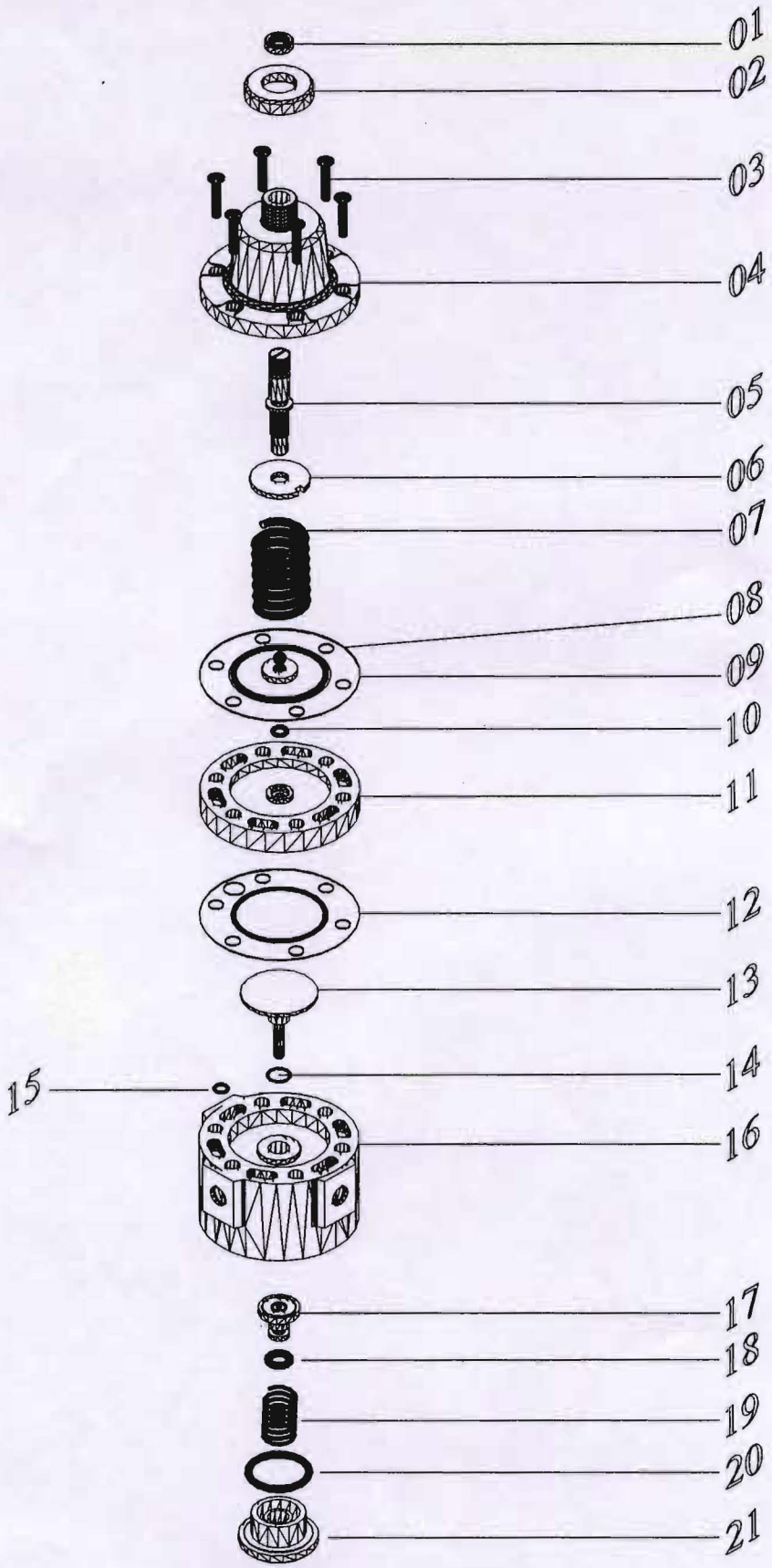
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