MOUNTING, OPERATING, TESTING & MAINTENANCE INSTRUCTIONS FOR ROTEX 3/2 AIR OPERATED,UNIVERSAL VALVE MODEL – 33101

All details within this manual and the catalogue are subject to change without manner.

ROTEX will not be responsible for any damage whatsoever arising from the use of the Solenoid Valve, due to misuse or incorrect installation or misinterpretation of the information contained herein.

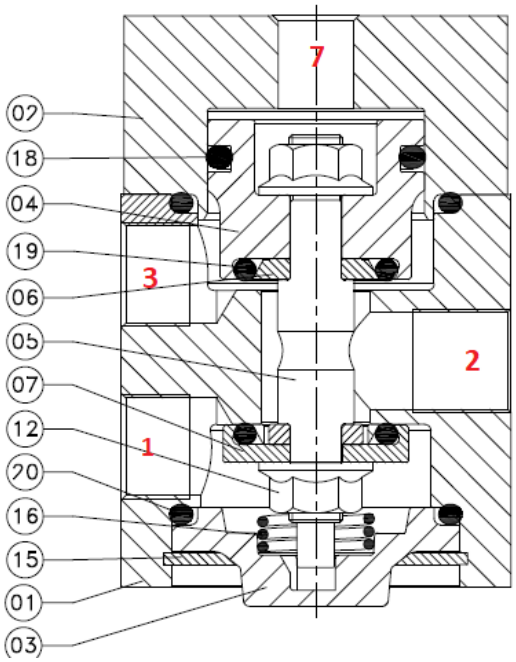
SPECIFICATION OF AIR OPERATED VALVE

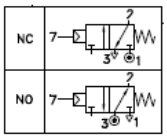
TYPE	:	3 Port 2 Position
OPERATION	:	AIR OPERATED POPPET TYPE VALVE
ORIFICE = NW	:	7mm | 10mm | 16mm | 20mm | 25mm
OPERATING PRESSURE	:	0 – 20 bar,
PILOT PRESSURE	:	1. When valve is used for NC/NO ≥ application, pilot pressure should Be minimum 2 bar or ≥ main fluid pressure whichever is higher. 2. When valve is used for Diverting/Mixing application, pilot pressure should be at least 2 bar or more than main fluid pressure.

(A) OPERATING PRINCIPLE

When the pressurized pilot air is not available at port (7) and pressure applied at the inlet port # 1 media support to spring to move the piston assembly. In this state inlet port # 1 & outlet port # 2 are disconnected and outlet port # 2 and exhaust port # 3 are connected. Media cannot come out from outlet port # 2.

On application of pilot air pressure at pilot inlet port # 7, pilot air acts on the piston assembly thus, pushing the piton assembly downwards. In this state inlet port # 1 and outlet port # 2 are connected. Exhaust port 3 is blocked. Pressure come out from outlet port # 2. The valve retained in normal condition when the pilot pressure from pilot inlet Port (7) is removed.





QTY.	DESCRIPTION	SR.No.	POS.No.
02	BODY "O" RING	13	20
02	SEAT "O" RING	12	19
01	KOLBEN "O" RING	11	18
01	VENTILFEDER	10	16
01	INTERNAL CIRCLIP	09	15
02	NUT	08	12
01	VENTILTELLER	07	07
02	DRUCKSHAIBE	06	06
01	VENTILSHAFT	05	05
01	KOLBEN	04	04
01	VENTILBODEN	03	03
01	DECKEL	02	02
01	GEHAUSE	01	01

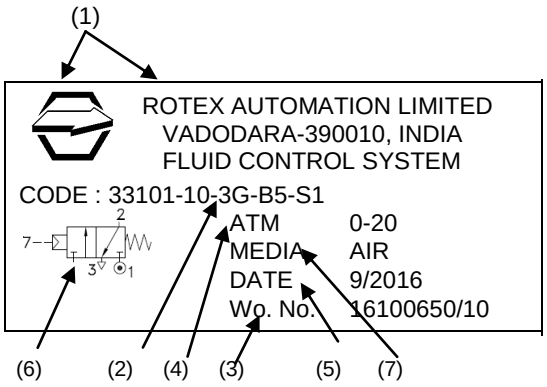
33101

This is a Universal type valve , hence can be used as Normally Close or Normally Open. Only you need to Choose proper port as inlet. Refer below table.

VALVE TYPE	FUNCTION	IN	OUT	EXHAUST	PILOT IN
33101	NC	1	2	3	7
	NO	3	2	1	7
	Diverting	2	1&3	-	7
	Mixing	1&3	2	-	7

IDENTIFICATION ON THE SOLENOID VALVE

Marking on the **ROTEX** Solenoid Valve shows the following details:



(1) Logo + Name & address of the Manufacturer
(2) Valve Type / Code
33101 = Valve Model
Suffix = Nil
10 = Orifice ∅ (mm)
3G = Port Connection 3/8" NPT(F)
B5 = Body Material : SS316
S1 = Seal Material : Viton
Sp. Version = Nil
(3) Work Order reference / Sr. No. of the Valve
(4) Operating Pressure
(5) Month & Year of manufacture
(6) Valve Symbol
(7) Media

(C) MOUNTING/INSTALLATION PROCEDURE:

1. ENSURE THAT:
   a) While storing, keep the valve in cool, dry, dust free area.
   b) On receipt of the valve, in case if the same is to be removed from the sealed plastic bag for inspection/testing, put them back with dust plugs on its ports and sealing the plastic bag as soon as the inspection/testing is over.
   c) The valve should be removed from its card board and/or plastic bag just before the installation.
   d) Flush lines before installing the valve.
   e) To avoid pressure drop and to achieve optimum parameters, Pipe / Tube / Fitting from the source of pressure to the valve and to the connected equipment should have ID which is ≥ NW (Orifice) of the valve.
   f) To avoid pressure, drop, if more than one valve is being operated simultaneously from a common header, then minimum ID of the header can be calculated as under.
   ID Header = $\sqrt{(NW^2 \times n)}$
   n = Number of Valves operating at a time and which are connected to a common header,
   NW = Orifice of the Valve.
   g) Incorporate filter in the line to avoid hard particles entering into the valve.
   h) The valve should be installed for the media for which it is intended for. This is to avoid the malfunction of seals and the valve. In case if you intend to use valve for media other than the one specified on that valve, check compatibility of media to Body Seal material and grease. Consult **ROTEX** in case if any doubt.
   i) Do not try to drill any additional holes or machine, modify any of the valve components.
   j) In case if the valve is used for dangerous fluid gas/liquid then, the user is hereby advised to maintain during operation and maintenance of the valve below LEL or above UEL to avoid explosion due to internal spark as the valves have not been assessed for the same.
   k) Inlet pressure does not exceed rated pressure.
   l) Hemp-Filaments, 'Jute' or even Teflon-Ribbons are normally not required, as the port connections of ROTEX Valve is accurately machined.
   m) To avoid over lap of the Teflon ribbon or cuts generated while tightening, getting carried away into the valve. Do not cover first two thread pitches with Teflon tape or sealant.

2. Provide Dust Cap on the exhaust port or ensure that the valve is mounted such a way that dust particles / rain water / process fluid do not enter into the valve through exhaust port of the valve. You can connect bend pipe of ID ≥ NW of the valve so that the exhaust port is not directly (straight) open into the atmosphere.
3. The process fluid etc.: do not fall on the valve body.
4. In case if the surrounding atmosphere has traces or some other substance other than Air, check its compatibility with the Body material of the valve, Solenoid enclosure & other exposed parts.
5. It is not likely however; the user is advised to protect the valve against lightening as the same is not assessed.
6. Check internal components (wetted) parts for its compatibility with fluid passing through the valve.

TESTING OF THE VALVE AT THE TEST BENCH

Check at least once in 3 years or following your routine maintenance schedule.

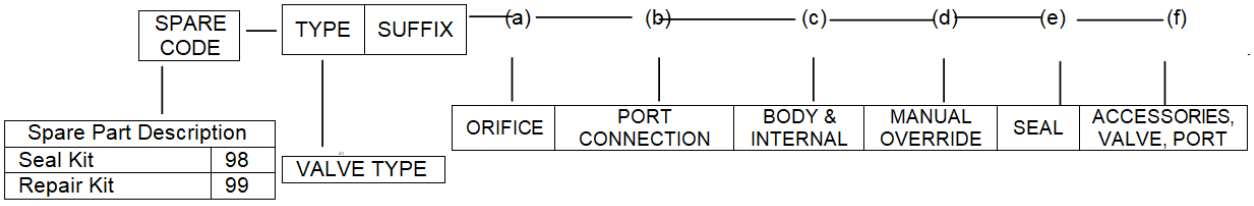
a) Apply rated pressure at inlet port of the valve.
b) Plug outlet port.
c) Check operation of the valve and leakage at the exhaust ports and pilot vent at the rated and minimum working pressure by applying External pilot Air at port 7 equal to or greater than Inlet pressure or minimum 2 bar.
d) While keeping the valve deactivated, check operation and leakage from exhaust of the valve at the rated and minimum working pressure.

MAINTENANCE – GENERAL INSTRUCTION

- It is recommended to replace complete set of O Ring even if one of the O Ring is damaged. This is to ensure trouble free operation of the valve and will avoid its premature failure.
- Using Grease other than Silicon base Molykote M55 will lead to premature failure of O Rings of the **ROTEX** Solenoid valve.
- If necessary to clean the components, **do not use Kerosene, Diesel, Petrol to clean valve as this damages the O Rings and other rubber material. Instead use light Detergent Soap Solution.**
- Ensure that the components are free from dust, dirt, lint and metal burrs.
- Twisting of O Ring should be avoided. Ensure that the twist is removed before fitting matching part.
- While closing the matching part, the matching part should be pushed in a straight line. Turning motion should be avoided.
- Pinching of O Ring at the groove corner at the time of closing gland should be avoided.
- User is requested to use safe practice for maintenance.
- It is important to place the dismantled Valve Parts on a clean paper or cloth in same sequence in which you have dismantled them.
- Ensure to keep all the components of the valve separately to avoid their mixing up. The component appears to be same may have small differences which will cause malfunction if interchanged.
- In case of difficulty you should contact the Agent, Distributor or **ROTEX** directly.
- Using **ROTEX** genuine spares will **Guarantee** you trouble free operation and will avoid premature failure.

RECOMMENDED SPARES

a) Seal Kit (O ring Set)
b) Repair Kit (All part except valve body & Deckel)



RECOMMENDED MAINTENANC **PREVENTIVE**

Replacement of Complete Set of O Ring … … Once in 5 years or 2 million cycle
(Seat O Ring, Piston O Ring, Body O Ring, Pilot O Ring)

REPLACEMENT OF O RINGS

1) Remove Deckel (Cover) (Part 2) by opening four screws.
2) Remove Ventilboden (Valve Bottom) (Part 3) using internal circlip plier.
3) Remove Ventilfeder (Valve Spring) (Part 16).
4) Open Nut (Part 12).
5) Insert rod in hole provide in Ventilschaft (Valve Shaft) (Part 5) to remove Nut (Part 12).
6) Remove all the O Rings [Piston O Ring (Part 18 – 1 No.), Seat O Ring (Part 19-2 Nos.), Body O Ring (Part 20 – 2 Nos.)].
7) Clean components.
8) Fix new O Rings applying light layer of Molykot M55 grease.
9) Ensure that the O Rings and other rubber parts are compatible to the media passing through the valve.
10) Reassemble the valve.
11) Check operation and leakage of the valve.
12) Contact ROTEX in case of any difficulty.

STORING, CLEANING AND MOUNTING OF ELASTOMERS: SYNTHETIC RUBBER PRODUCTS

- Store Plunger, O Ring Set in sealed polyethylene bag, kept in cool, dry, dust free area and avoid direct contact with all light sources emitting ultra violet rays, or contact with fumes, solvents, fuels, lubricants, chemicals, acids, disinfectants.
- Follow Maintenance General Instruction & specific procedures to replace O Ring set as listed above.

Contact:

ROTEX AUTOMATION LIMITED
987/11, GIDC, MAKARPURA, VADODARA – 390010, INDIA
Tel.: +91 265 2638136, 2638746, 2638795 Fax: +91 265 2638130
E-mail: rotexbrd@rotexautomation.com Website: www.rotexautomation.com