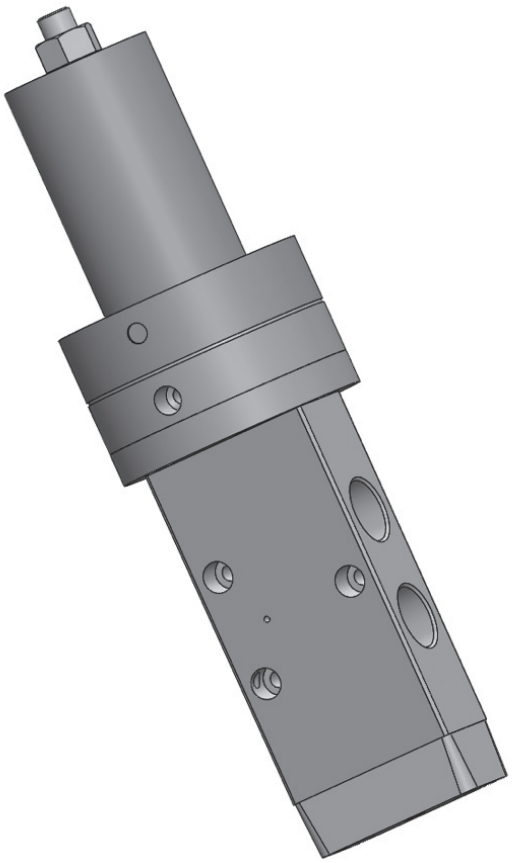
Air lock relay SENALR-5

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Installation, maintenance and operating instructions



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READ THESE INSTRUCTIONS FIRST!

These instructions provide information about safe handling and operation of the valve.

If you require additional assistance, please contact the manufacturer or manufacturer's representative.

SAVE THESE INSTRUCTIONS!

Addresses and phone numbers are printed on the back cover.

1. INTRODUCTION

Thank you for choosing Valmet product. Each product is fully inspected after the production to offer you the highest quality. In order to fully utilize the product, we strongly recommend users to read this manual carefully and understood. This manual provides information on installation, operation and maintenance procedures and related instructions for the Neles brand ALR.

The aim of this literature is to support the use of products in correct manner, and all the technical information provided in the catalogue.

The manual should be given to the end user.

The manual can be changed or revised without any prior notice. Any changes in product's specification, structure, and/or any components may not result immediate revised version of the manual.

The manual should not be duplicated or reproduced for any purpose without any consent of Valmet Flow Control INDIA PVT. LTD., INDIA.

MANUFACTURER WARRANTY

For the safety, it is vital to follow instructions in the manual. It is not Valmet liability for any damages which caused by users' negligence.

It is not Valmet liability for any damages or accidents which resulted by any alteration or modification of the product and parts. If alteration or modification is necessary, please contact the Valmet directly.

Valmet warrants the product from the date of original retail purchase of the product for one (1) year, except as otherwise stated.

Valmet warranty will not cover the products that the product have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; damages that occurs in shipment, failure due to power surge, and cosmetic damage. Improper or incorrectly performed maintenance or report voids this Limited Warranty.

For detailed warranty information, please contact :
Valmet Flow Control INDIA PVT. LTD., Manapada road, Dombivli (E), Maharashtra, India, Pin - 421204

1.1 DEFINITIONS

WARNING:

IF NOT OBSERVED, USER INCURS A HIGH RISK OF SEVERE DAMAGE TO PRODUCT AND/OR FATAL INJURY TO PERSONNEL.

CAUTION: If not observed, user may incur damage to product and/or injury to personnel.

NOTE: Advisory and information comments provided to assist maintenance personnel to carry out maintenance procedures.

2. OPERATION PRINCIPLE

Whether the valve is set for direct or reverse action is determined by considerations to hold the valve position in the event of failure, to maintain the safety of process either by opening or closing the control valve.

When pilot supply pressure drops down past a preset value, the device automatically locks the air piping between the instrument and the control valve, and causes the control valve to hold its position until the air failure is rectified.

2.1 CONNECTION

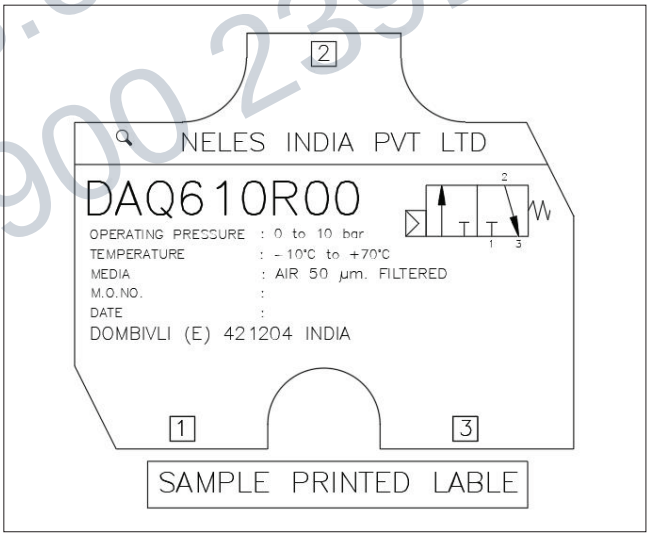
Case-1

Air lock relay 3/2 SENALR is connected between actuator & solenoid valve. On drop of pilot pressure below set pressure it locks actuator in position & unless pressure resumes it maintains position (Assumption that actuator & fittings have no leakage).

Case-2

When pilot supply pressure drops down past a preset value, the device automatically locks the air piping between the instrument and the control valve, and causes the control valve to hold its position until the air failure is rectified.

3. LABEL DESCRIPTION



Label of the ALR defines the precise feature. This description is written below the company logo and is as follow.

Model no.:	- SENALR	AIR LOCK RELAY
	3	No. of ports
	2R	1/4" NPT
External air pressure	3 to 10 Bar	
Main air pressure	0 to 10 Bar	
Temperature	-10°C to +70°C	
S.O. NO.	Sale order number	
DATE	Date of manufacturing	
Dombivli – 421204 INDIA	Brief address	

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4. INSTALLATION PROCEDURE

CAUTION: Blow out air lines and fittings before installation. Use dry and oil free air. Do not dismantle the ALR while operation is in line. Do not allow dirty air or fluids to get into the ALR. Use filter unit (filter size 40µm, 3°C) for dust and moisture removal.

NOTE: Ensure the installation meets the legal and regulatory requirements of the country and state of use. The ALR assembly should be left in the original packing until it is required for the use.

1. Hemp filaments, jute or even Teflon ribbons are normally not required, As the part connections are accurately threaded. By chance, if any of these or any other tightening medium get into the operational area inside the ALR, possible damage of the ALR could not be ruled out.
2. Clean all pipes and tube fittings thoroughly with suitable means. As even when brand new pipes are fitted, unclean interior are quite covered with dirt and dust.
3. Avoid impact on the ALR. These may happen during transportation/ erection/ mishandling.

5. TECHNICAL SPECIFICATION

External (Pilot) Air supply	03-10 bar
Main Air Supply	0-10 bar
Sensing Pressure(adjustable)	03-10 bar
Sensitivity	0.5 bar
Response	0.5 bar
Body material	SS316 / Aluminium
Seals	NBR O-ring with PTFE glide ring
Fasteners	SS304/SS316
Connections	1/4" BSP / 1/4" NPT
*Pilot supply pressure can be changed as per customer requirements.	

6. MAINTENANCE

NOTE: The ALR must be removed from installation prior to maintenance. All the connections/ports have to be disconnected prior to disassembly. All the mountings, accessories and spare parts used or replaced must be original from Valmet.

Valmet recommends “NELES M 55” grease for greasing. Apply the grease with soft brush or similar. In case of any difficulty consult Valmet distributor.

1. Install, operate and maintain as per the instructions and recommendations of this manual.
2. Any deviation from the above will cease the responsibilities of Valmet.

7. DISASSEMBLY

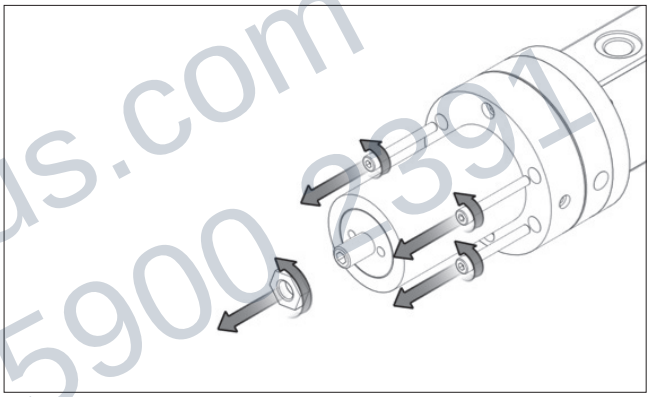
WARNING:
ALL ELECTRIC AND PNEUMATIC CONNECTIONS SHOULD BE REMOVED BEFORE STARTING DISASSEMBLY.

CAUTION: Do not place dismantled part on any diary/work bench but keep it on clean paper/cloth in same sequence as you have dismantled it.

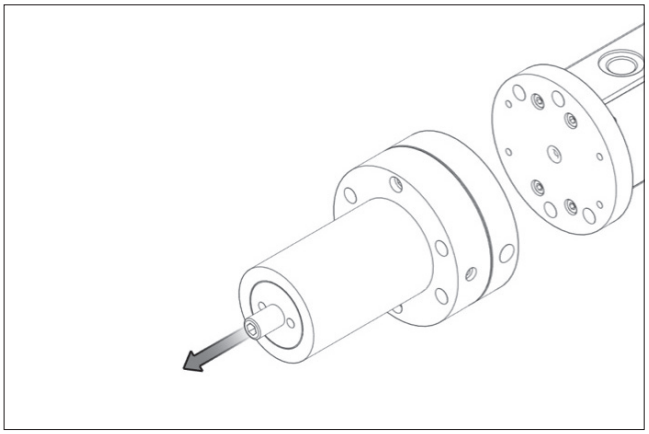
NOTE: It is advisable to replace all the rubber parts using genuine NELES spare kit. Numbers in parentheses, ( ) indicate the bubble number (reference number) used on the NELES Assembly details and Part List.

7.1 DISASSEMBLY OF SENALR

1. Remove lock nut (19) from the adjustment screw (18).
2. Remove the 4 bolts (23) by loosening them carefully.



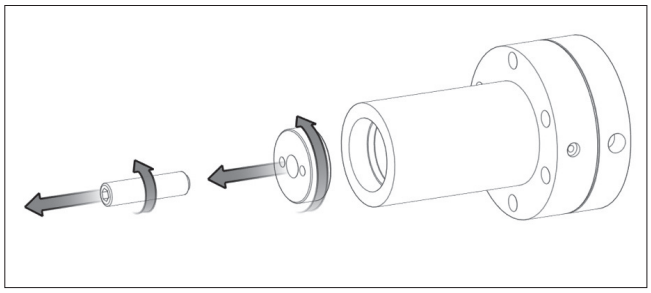
3. Separate the whole part 2 assembly from part 1 assembly.



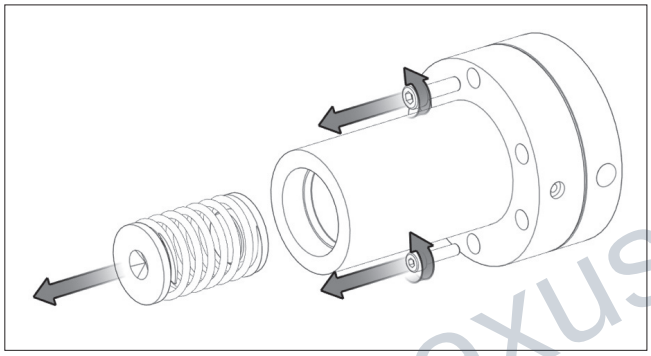
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4. **Part 2 disassembly**

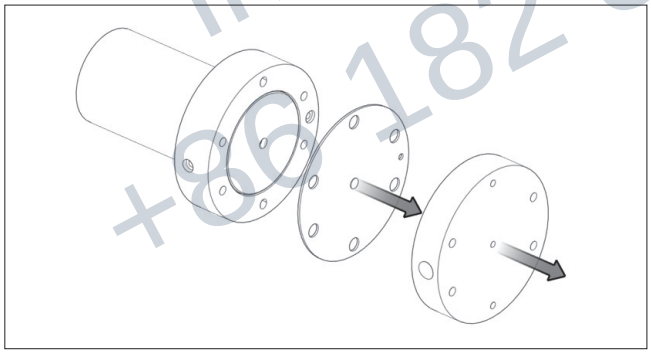
1. Remove adjustment screw (18) from adjustment nut (7) and then remove adjustment nut (7) from cover1 (3).

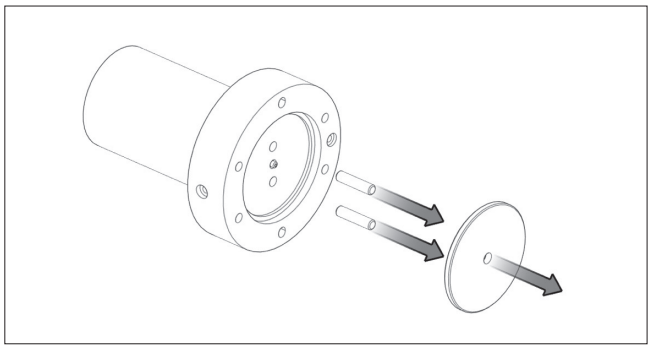


2. Remove the two bolts (22) by loosening them carefully thereby making both cover1 and cover2 free. Take out spring (13) with spring seat (11) from cover1 (3).



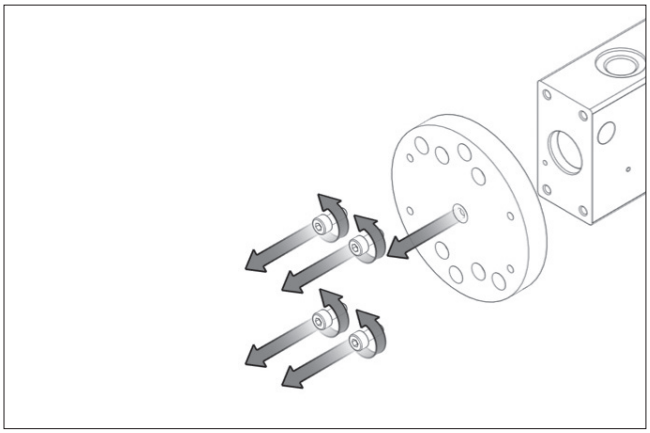
3. As both cover1 and cover2 are free, hence cover2 can be removed and diaphragm (27) can also be separated from the cover1.
4. Remove 2 pins (8) and disc (6) from cover1 (3).



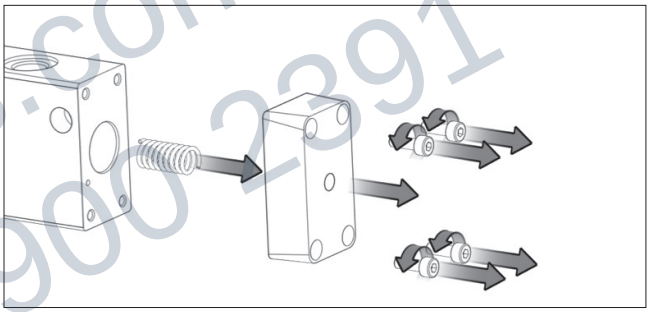


5. **Part 1 disassembly**

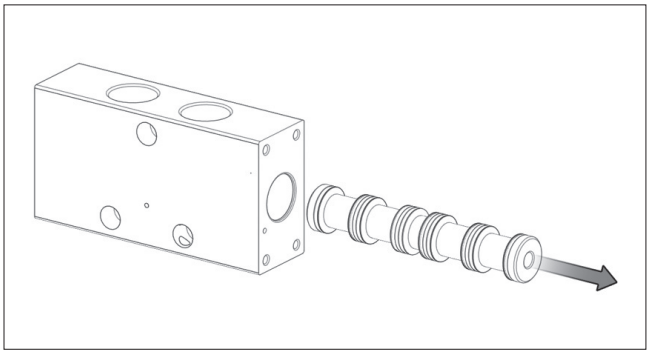
1. Remove the O-ring (16) from centre of cover3 (5)
2. Remove the 4 bolts (20) by loosening them.
3. Remove cover3 (5) from top part of the spool body.



4. Remove spring cover (3) from spool's bottom part by loosening 4 bolts () and remove the spring (22).



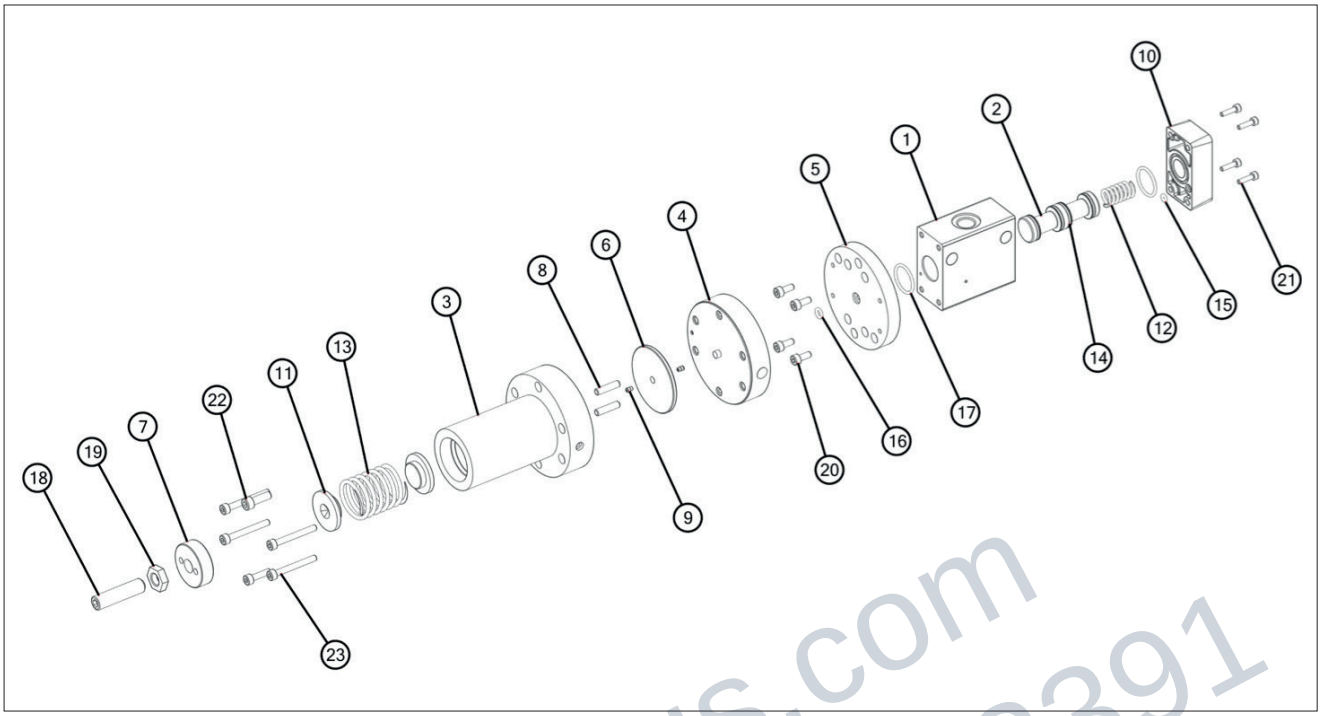
5. As both covers are removed, spool kit is disengaged, pull spool kit gently out of the valve body.



NOTE: remove spool kit gently with non-metallic hammer, do not hammer heavily on the spool, by this spool may get jammed in bore during this operation.

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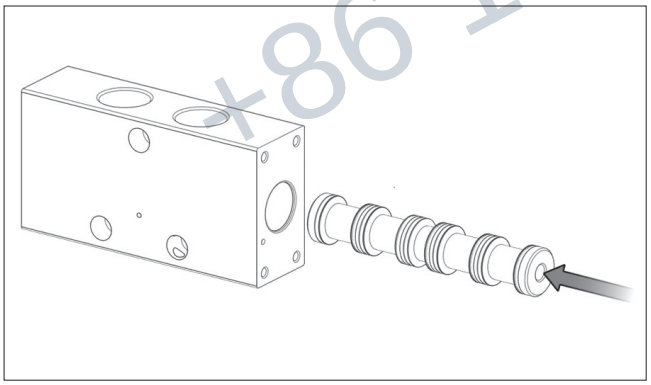
8. EXPLODED VIEW



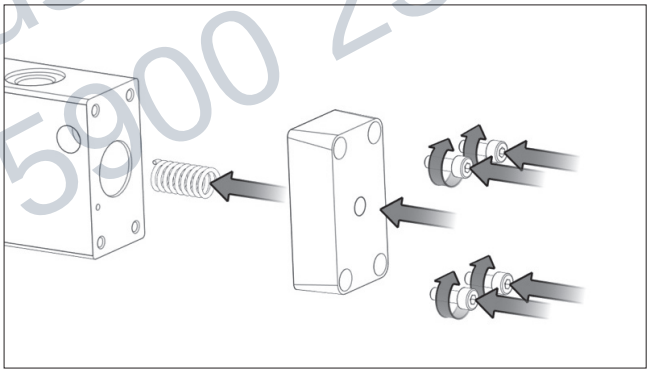
9. ASSEMBLY

NOTE: Follow the sequence as given below to ensure proper assembly.

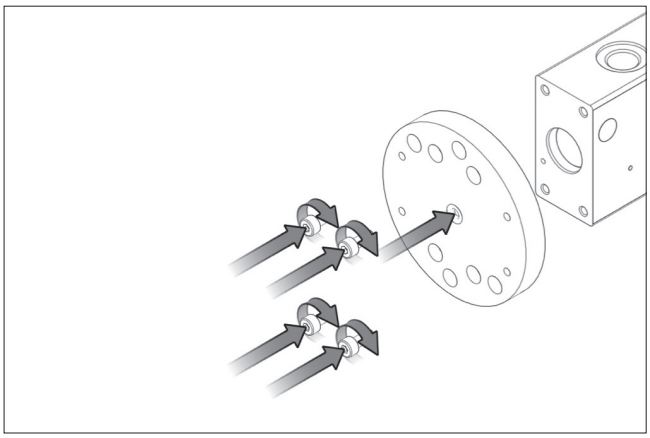
1. **Part 1**
    1. Clean all parts with soap water and dry.
    2. Apply a layer of Valmet recommended grease to the inner face of the ALR body (1). (Grease: NELES M 55).
    3. While inserting spool into the body, apply grease layer on the seal (14).



4. Insert the spring (12) & place spring cover (10) on the spool's bottom part (B) and tighten the 4 bolts (21).



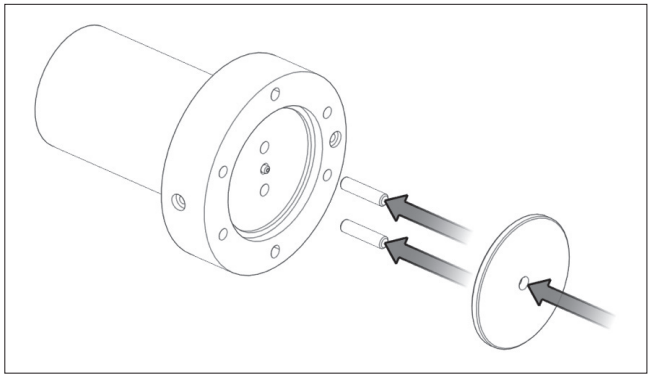
5. Place cover3 (5) on top part (A) of the spool body. Tighten the 4 screws equally (20). At last, put an O-ring (16) at centre of cover3 (5).



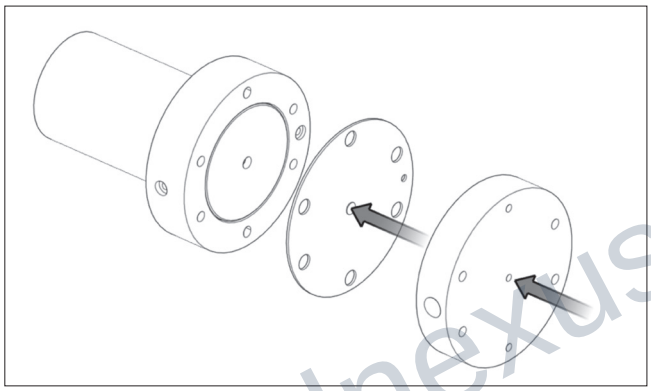
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2. **Part 2**

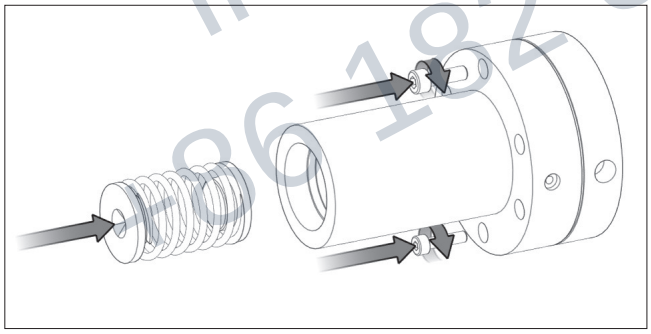
1. Insert 2 pins (8) in the cover1(3) and fit disc (6) in cover1(3).



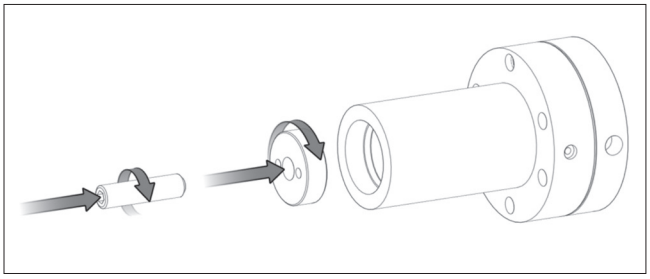
2. Now insert diaphragm (27) and cover2 (4) into the cover1(3).



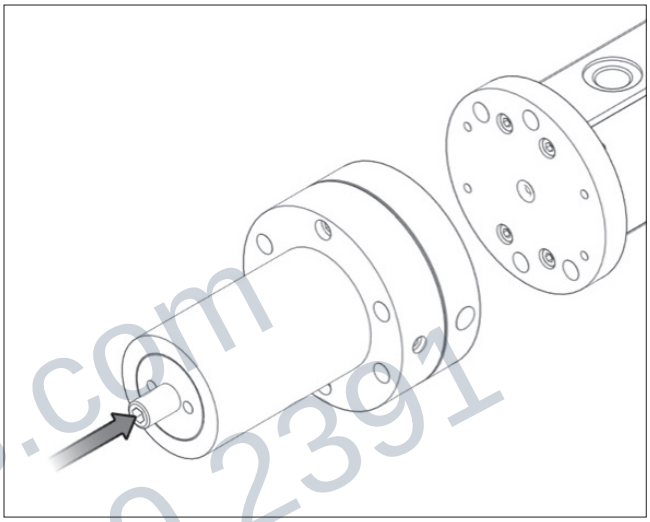
3. Now, tighten the two bolts (22) then put spring (13) with spring seat (11) in cover1 (3).



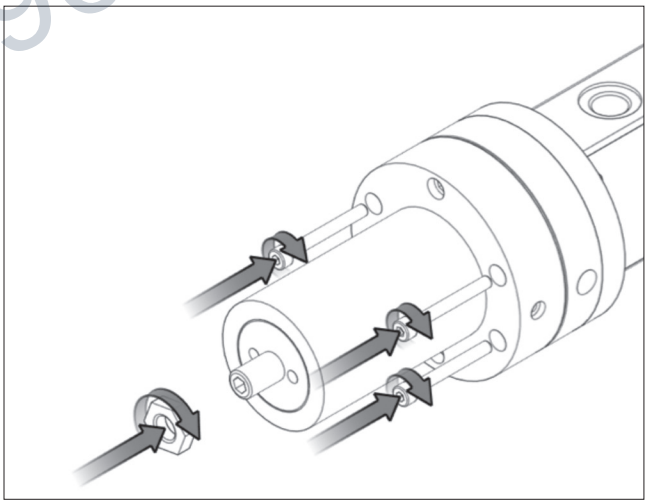
4. Insert adjustment nut (7) in cover1.
5. Insert adjustment screw (18) in adjustment nut (7).



3. **Keep the whole part 2 assembly upon part 1 assembly.**



4. **Insert a lock nut (19) on adjustment screw (18) and tighten the 4 bolts (23).**



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10. TESTING PROCEDURE

1. Provide (0-10) bar pressure to inlet port.
2. Provide (3-10) bar pressure to pilot port.
3. Connect outlet port to either solenoid valve or to the actuator, as required.
4. Slowly increase the pilot pressure, ALR will be set and will allow inlet port to get connected to outlet port.
5. On decreasing pilot pressure, the valve will cut off.
6. The pilot pressure adjustment

   To increase pressure - rotate adjustment screw (25) in clockwise direction.

   To decrease pressure - rotate adjustment screw (25) in counter clockwise direction.

11. PART LIST

Sr.No	Description	Quantity
1	BODY	1
2	SPOOL	1
3	COVER1	1
4	COVER2	1
5	COVER3	1
6	DISC	1
7	ADJUSTMENT NUT	1
8	PIN	2
9	ORIFICE	2
10	SPRING COVER	1
11	SPRING SEAT	2
12	SPRING	1
13	SPRING	2
14	SEAL FOR SPOOL	4
15	ORING 2.57 x 1.78	1
16	ORING 4.48 x 1.78	1
17	ORING 18.77 x 1.78	2
18	DIN 913 M10 x 50 - 50	1
19	DIN 934 M10	1
20	DIN 912 M4 x 10 -10	4
21	DIN 912 M4 x 12 -12	4
22	DIN 912 M4 x 16 - 16	2
23	DIN 912 M4 x 35 - 20	4
24	BALL DIA 3.2 IS 2898	2
25	BALL DIA 2.4 IS 2898	1
26	BALL DIA 2 IS 2898	2
27	DIAPHRAGM	1

12. PACKAGING & STORE

1. When not in use, ALR ASSEMBLY should be kept in a sealed plastic bag in a cardboard box to prevent moisture or dust from contacting product.
2. ALR ASSEMBLY should be stored in a dry place free from water and dust.
3. Store at temperature between 40°F and 120°F (4°C and 49°C).
4. Locate in an area to avoid damage by impact.

13. ASSISTANCE

For technical questions or assistance, contact any authorized distributor of Valmet Flow Control India Private limited or:

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