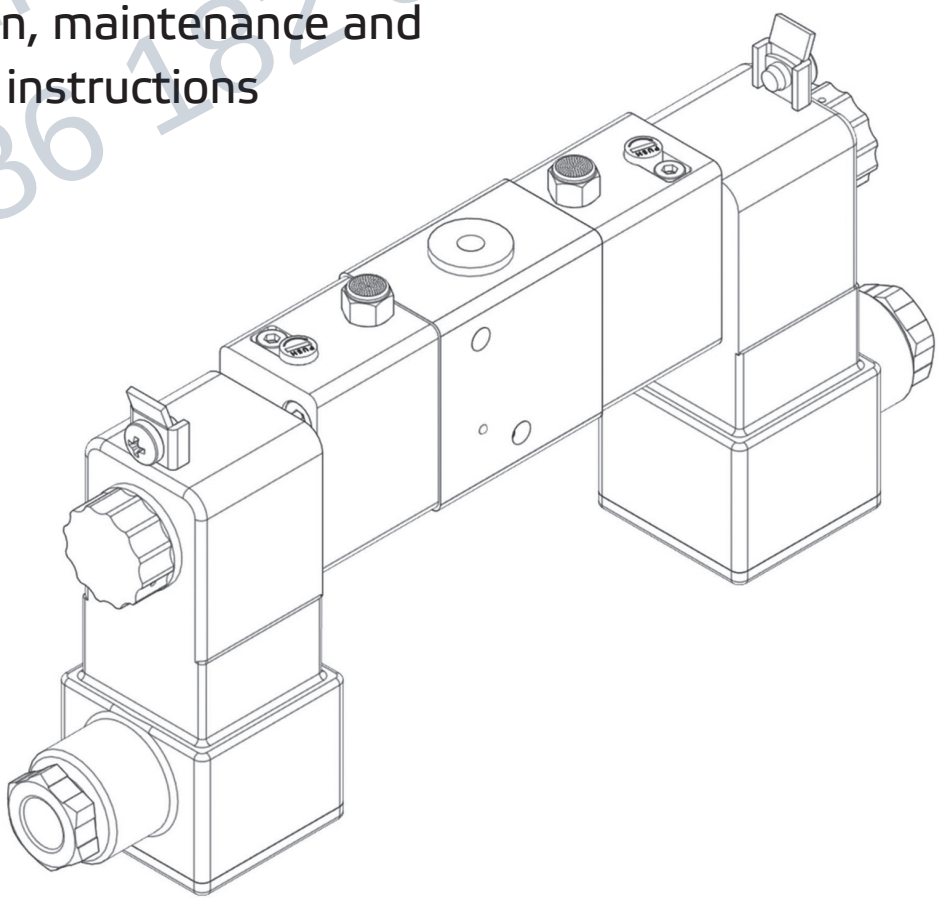
# Spool valve
# DSQ114 / DSQ 214
# (SPOOL VALVE WITH EXD COIL)

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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 DSQ214 SPOOL VALVE.

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

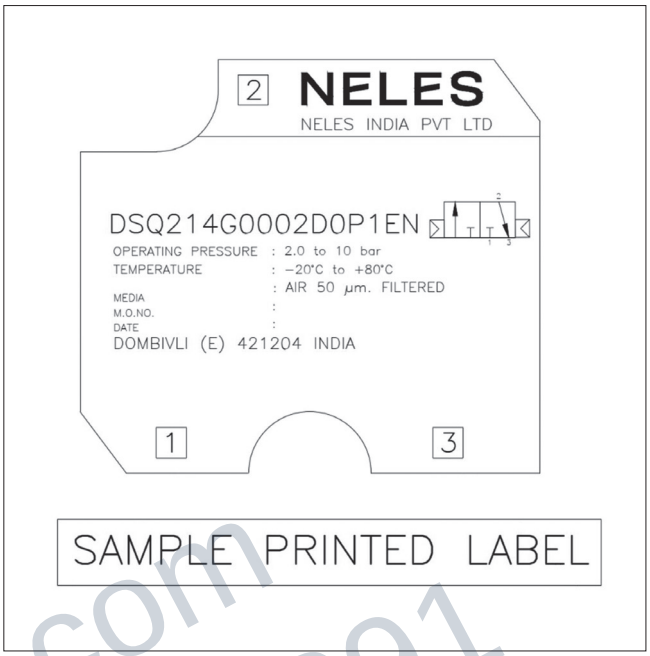
## 1.1 DEFINITIONS

**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. LABEL DESCRIPTION




Label of the DSQ214-2G defines the precise feature. This description is written below the company logo and is as follow.

| | | |
|---|---|---|
| Model no.: | DSQ | SPOOL VALVE 3/2 valve. |
| | 2 | 1/4" |
| | 14 | 2 Position, solenoid operated |
| Air pressure | 2 to 10 bar. | |
| Temperature | -20°C to +50°C | |
| S.O. NO. | Sales order number. | |
| DATE | Date of manufacturing. | |

Dombivli – 421204 INDIA Brief address.

# 3. INSTALLATION PROCEDURE

**CAUTION:** Blow out air lines and fittings before installation. Use dry and oil free air. Do not dismantle the DSQ214 while operation is in line. Do not allow dirty air or fluids to get into the DSQ214. 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 DSQ214 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 DSQ214, possible damage of the DSQ214 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 DSQ214. These may happen during transportation/ erection/ mishandling.

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# 4. TECHNICAL SPECIFICATION

| Model | DSQ114/ DSQ214 |
|---|---|
| Operation type | Internal Pilot operated |
| Type | 3/2 Double solenoid |
| Port | 1/8" BSP/ 1/8" NPT/1/4" BSP / 1/4" NPT |
| Operating Pressure | 2 to 10 kg/cm$^2$ |
| IP Rating | IP 66 |
| Coil temperature range | -10 to 50 °C |
| Valve body temperature range | -10 to 70 °C |

# 5. COIL DETAIL

TYPE: 30XDM

GROUP: II

CATEGORY: 2G and 2D

**GAS AND COMBUSTIBLE DUST ATMOSPHERE EQUIPMENT**

EXPLOSION PROTECTION FOR :

1.) GAS ATMOSPHERE — encapsulation "m", level mb flameproof enclosure "d"

2.) COMBUSTIBLE DUST — enclosure "t", level tb

CERTIFICATE NUMBER: TÜV IT 13 ATEX 040

VOLTAGE TOLERANCE: ±10%

DUTY CYCLE: 100% ED

AMBIENT TEMPERATURE: -20°C ÷ +50°C

## 5.1 INSTRUCTION FOR USE

The 30XDM Exdm coils are approved for installation in areas in which explosive atmospheres caused by air/gas mixture are likely to occur and, in those areas, sparks produced by electrostatic charges could cause explosions.

During installation, maintenance and use it is mandatory to take preventive measures to avoid electrostatic discharges.

In particular, during the installation and maintenance operations it is recommended:

- To discharge their own electrostatic charge by touching grounded metal parts:
- To avoid rubbing the surface of the case;
- To use dissipative shoes and/or equivalent equipment;
- To use wet cloths or antistatic products to clean the coil surface.
- Do not open the cover when energized.
- Electrical installation should only be performed by qualified personnel.

The electrical connection is done in the connection box on connector terminals. The introduction of the cable into the connection box passes through the built-in Cable Gland.

Utilize a cable with a minimum diameter of 6mm (0.236") and a maximum diameter of 8mm (0.315").

The coil is Certified whit the Cable Gland and Cable Clamp annexed. In case of utilizing of different components, be sure that they are ATEX certified and that satisfies the ambient thermal condition.

The coil is NOT a resetting device. When a failure occurs and the internal thermal protection break off, the coil is no longer functioning.

The integrated O-ring (Ø30x1.5mm), the Cable gland and the 4 cover attachment screws assure the compliance with IP66 requirements. Take particular attention to avoid dirty or dust in these areas during the operation of assembling/dis-assembling.

The replacement of the 4 cover screws is not allowed.

# 6. MAINTENANCE

**NOTE:** The DSQ214 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:**

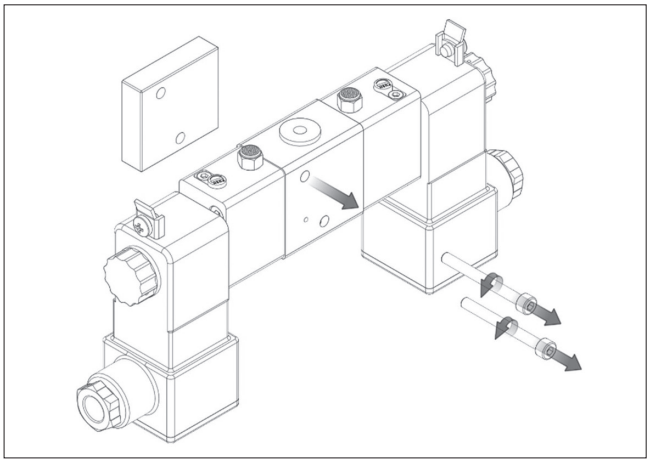
ALL ELECTRIC AND PNEUMATIC CONNECTIONS SHOULD BE REMOVED BEFORE STARTING DISASSEMBLY.

**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.

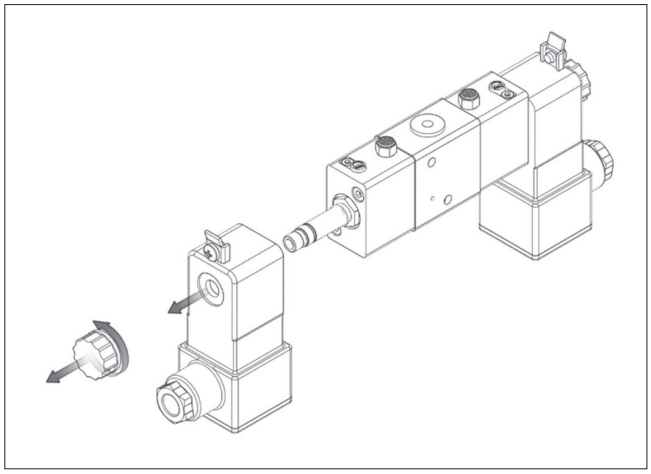
## 7.1 DISASSEMBLY OF DSQ 214 SPOOL VALVE WITH EXD COIL

1. Remove the 2 Screw (33) for removing the spool valve & intermediate plate (32) from the panel.
   **NOTE:** If the Spool Valve is mounted on Panel, then follow the disassembly procedure no. (1). Otherwise start the disassembly procedure from point no. (2).

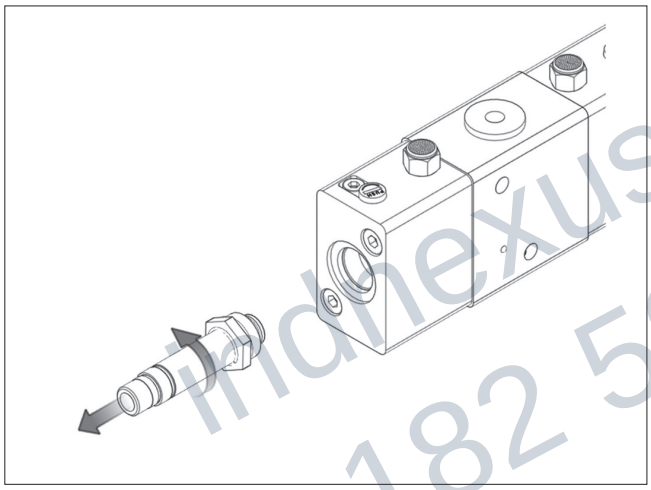


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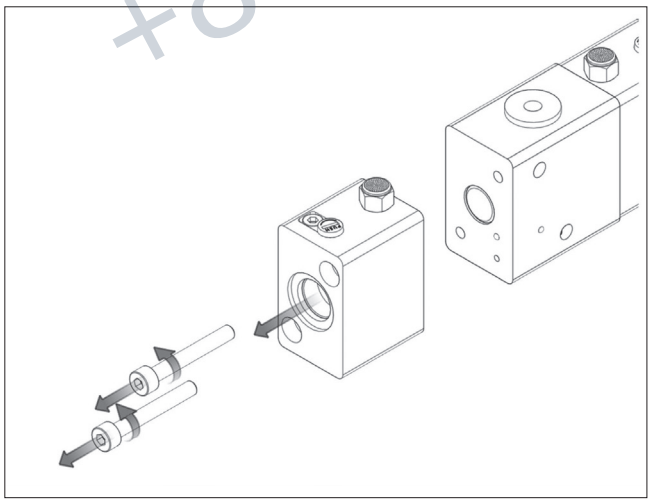
2. Remove coil nut (26), after that remove solenoid coil (25).



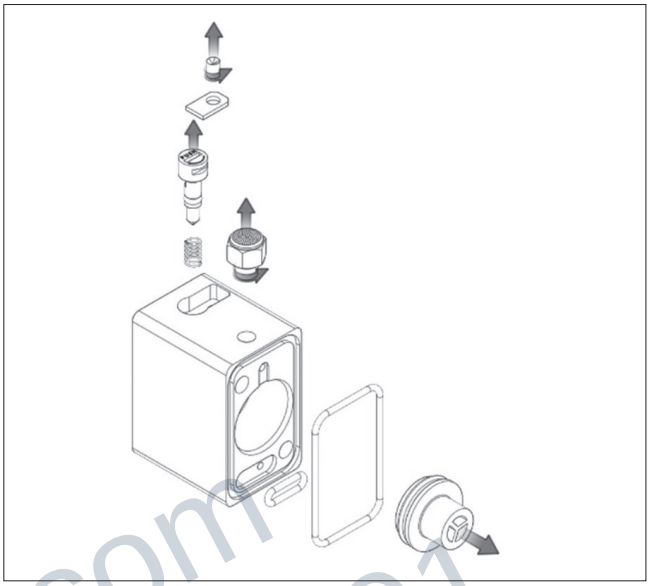
3. Remove the Guide plunger assembly (9) by loosening them from the EL Cover (2)



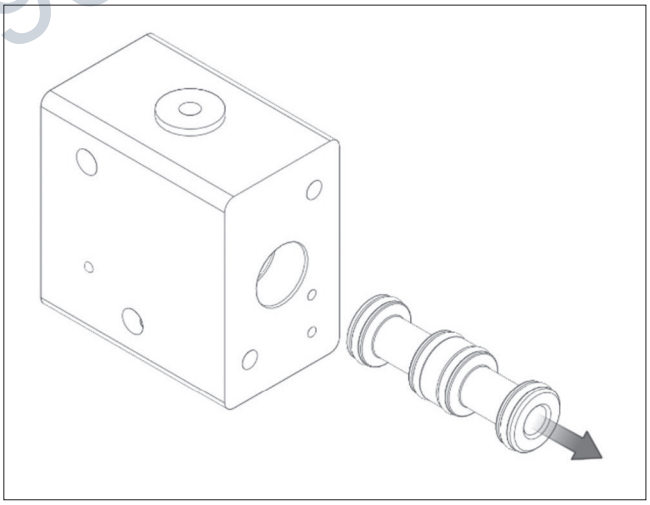
4. Remove the 2 Screw (19) by loosening them from El Cover (2) and simultaneously remover the EL Cover (2) afterwards.



5. For removing the Manual Override (6), remove the Screw (31), Strip (7). Then remove the Manual Override (6), MA Spring (11) & O-Ring (17). Afterwards remove Seal (29), O-ring (30), Helping Piston (4), Lip Seal (14) & Silencer (22).

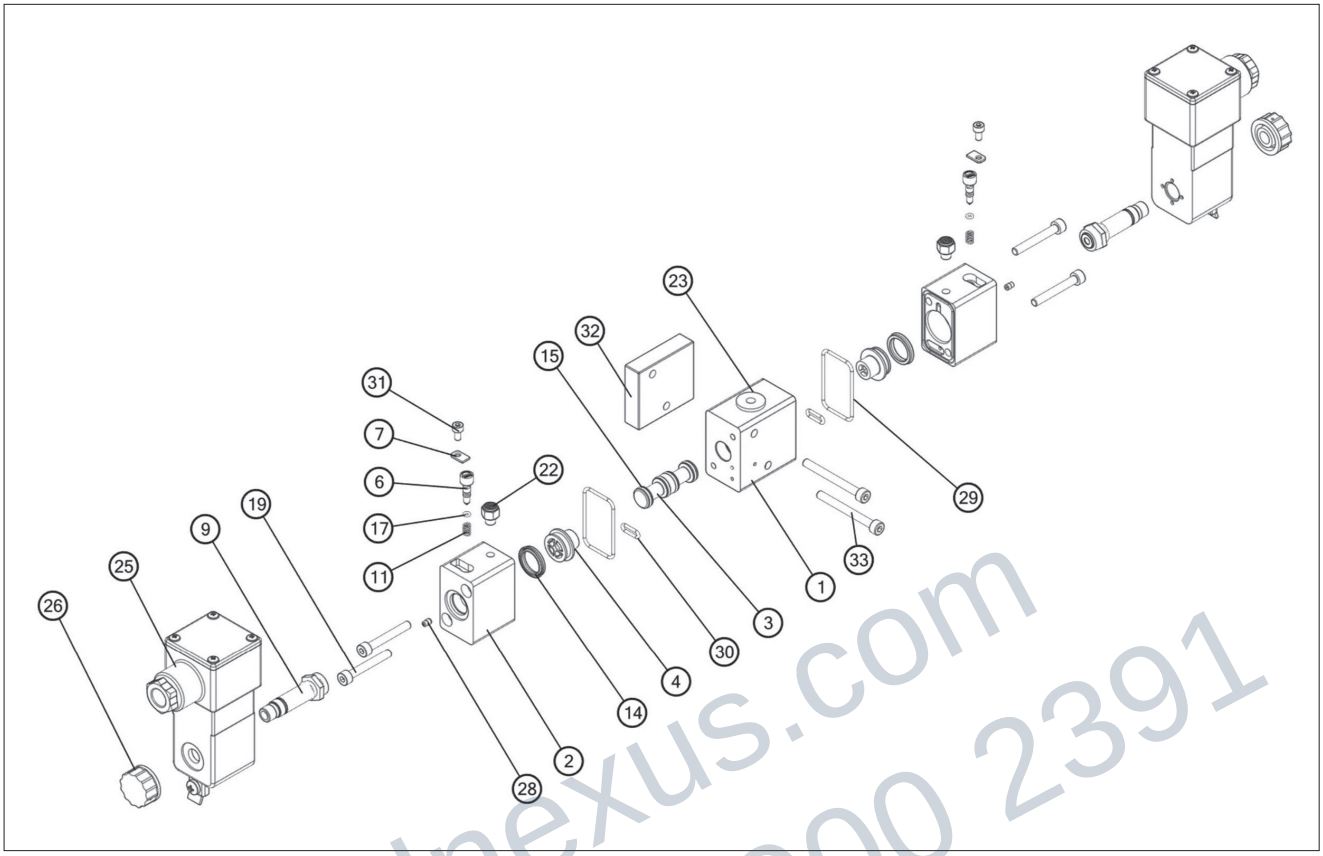


6. Repeat the above procedure 2,3,4 & 5 for removing the remaining parts of DSQ 214 as it is same on both sides.
7. As both covers are removed, spool kit is disengaged, pull spool kit gently out of the valve body.
**NOTE:** Remove spool kit gently with nonmetallic hammer, do not hammer heavily on the spool, by this spool may get jammed in bore during this operation.



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## 7.2 EXPLODED VIEW

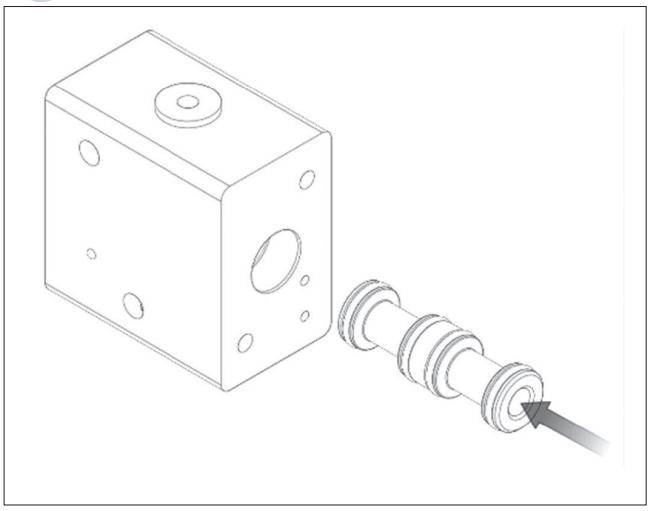



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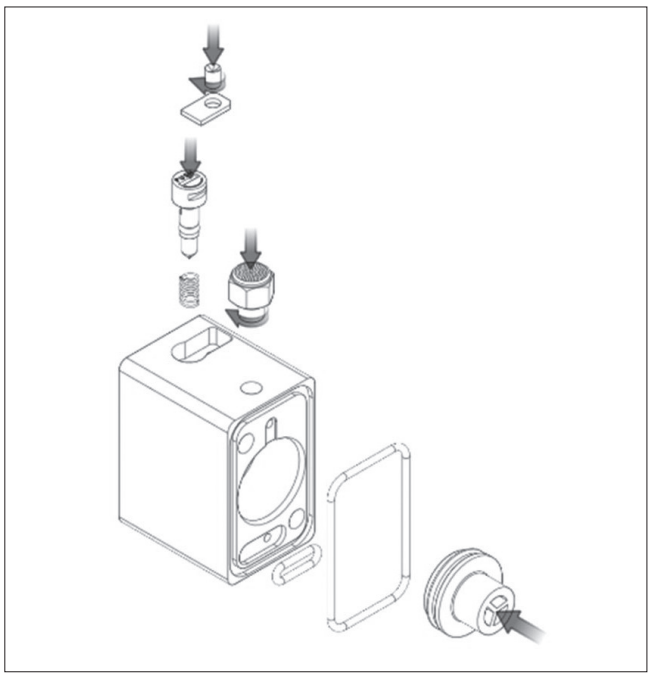
# 8. ASSEMBLY OF DSQ 213 SPOOL VALVE WITH EXD COIL

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

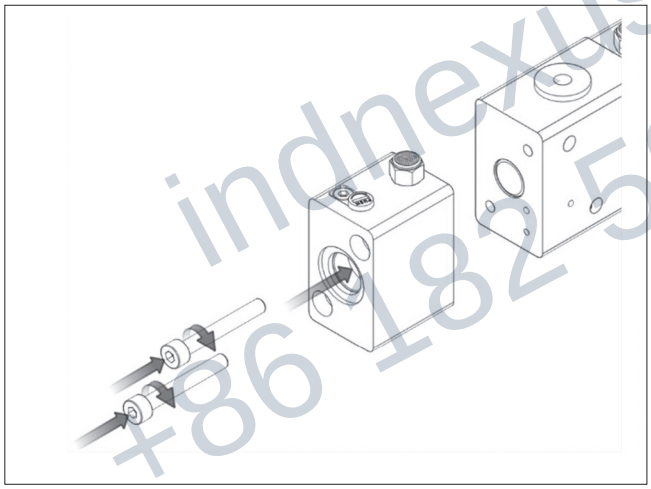
1. Clean all parts with soap water and dry.
2. Apply a layer of Valmet recommended grease to the inner face of the body (1). (Grease: NELES m 55).
3. Insert seal (15) on the spool (3).
4. While inserting spool into the body applies a thin layer of grease on the seal.
5. Insert the lip seal (14) on the piston (4) apply a thin layer of grease on the lip seal.
6. Insert the spool kit (3) inside the valve Body (1).



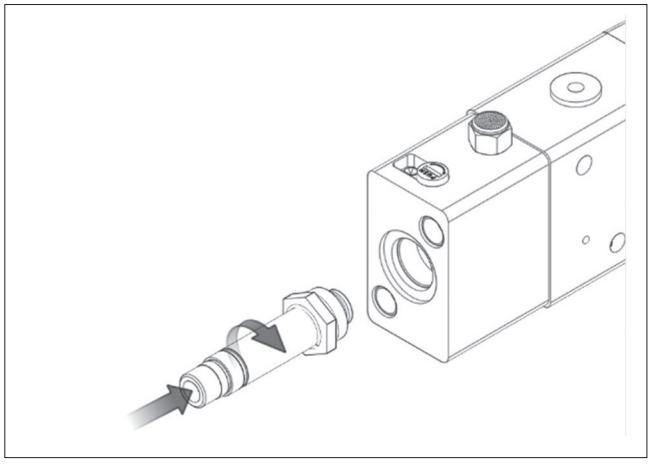
7. Separately make the assembly of El Cover (2), fit the Manual Override (6) on EL Cover (2) with O-Ring (17) and Spring (11) and fix it with Strip (7) & Screw (31). And finally screw the Silencer (22) on the EL Cover (2).
8. Insert the Assembly of Piston (4) & Lip Seal (14) into the EL Cover (2). And Place the Seal (31) & O-Ring (30) in respective groove of EL Cover (2).



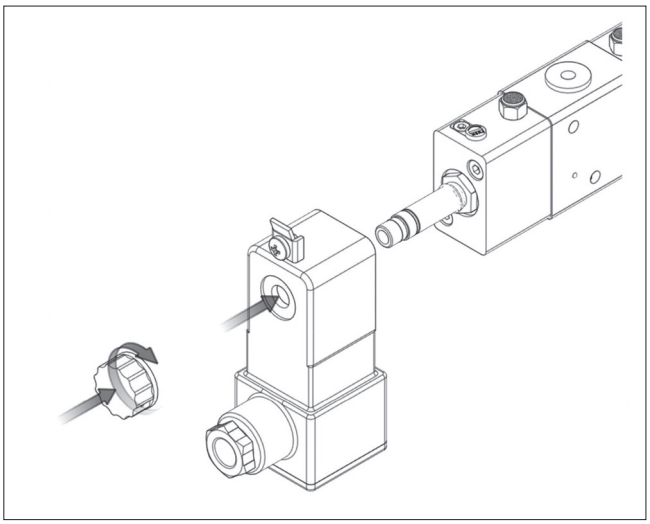
9. Place EL Cover (2) on the Body (1) and screw it with the help of 2 Screws (19).



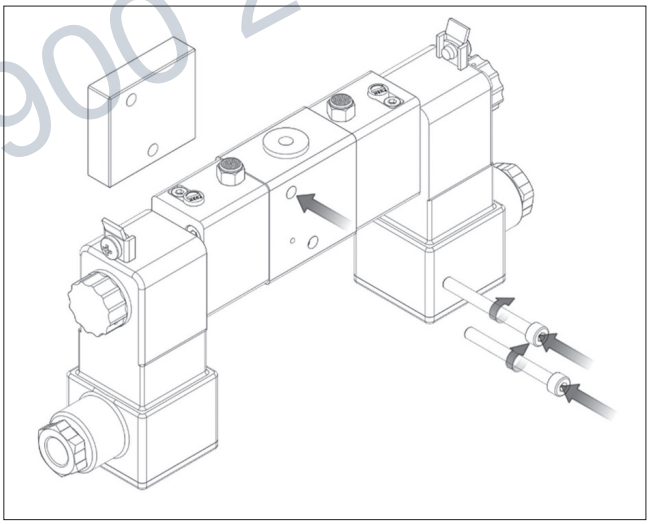
10. Screw the Guide Plunger Assembly (9) on the EL Cover (2).



11. Insert Solenoid Coil (25) and screw it with the Coil Nut (26).



12. Repeat the steps 7,8,9,10 & 11 for assembly of remaining parts of DSQ 214 as it is similar on both sides.
13. Place intermediate plate (32) & Spool Valve on panel by screwing 2 Screw (33).
**NOTE:** If the Spool Valve is mounted on Panel, then follow the disassembly procedure no. (12). Otherwise, the disassembly procedure completed on procedure no. (11)



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## 8.1 PART LIST

| Sr.No.: | Name | Quantity |
|---|---|---|
| 1 | BODY | 1 |
| 2 | EL COVER | 2 |
| 3 | SPOOL | 1 |
| 4 | HELPING PISTON | 2 |
| 6 | MA | 2 |
| 7 | LOCKING PLATE FOR MA | 2 |
| 9 | GUIDE PLUNGER (THRD.) | 2 |
| 11 | SPRING FOR MA | 2 |
| 14 | PISTON LIP SEAL | 2 |
| 15 | SEAL | 4 |
| 17 | O-RING 2.00 x 1.25 | 2 |
| 19 | DIN 912 M4 x 30 | 4 |
| 21 | BALL DIA 2 IS 2898 | 7 |
| 22 | SILENCER M5 x 0.5 THRD. | 2 |
| 23 | DUST CAP | 3 |
| 25 | COIL | 2 |
| 26 | NUT | 2 |
| 28 | ORIFICE | 2 |
| 29 | SEAL | 2 |
| 30 | O-RING 7.20 x 1.40 | 2 |
| 31 | DIN 912 M3 x 6 | 2 |
| 32 | PLATE FOR DSQ 213 SERIES | 1 |
| 33 | DIN 912 M4 x 45 | 2 |

# 9. PACKAGING & STORE

1. When not in use, DSQ214 ASSEMBLY should be kept in a sealed plastic bag in a cardboard box to prevent moisture or dust from contacting product.
2. DSQ214 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.

# 10. ASSISTANCE

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

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