LEADING IN
PRODUCTION
EFFICIENCY

EcoFlow LPR PS

Low pressure regulator return line, spring supported

Operation manual

MRE00013EN, V03

N26220008, N26220009, N26220010

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Information about the document

This document describes the correct handling of the product.

- Read the document prior to every activity.
- Prepare the document for the application.
- Pass on the product only together with the complete documentation.
- Always follow safety instructions, handling instructions and specifications of every kind.
- Illustrations can deviate from the technical construction.

Validity range of the document

This document describes the following products:

N26220008 EcoFlow LPR PS 16 15 DN25 SST	
N26220009 EcoFlow LPR PS 16 25 DN25 SST	
N26220010 EcoFlow LPR PS 16 30 G3/4" SST	

Hotline and Contact

If you have queries or would like technical information, please contact your dealer or sales partner.

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1 Product overview

1.1 Overview

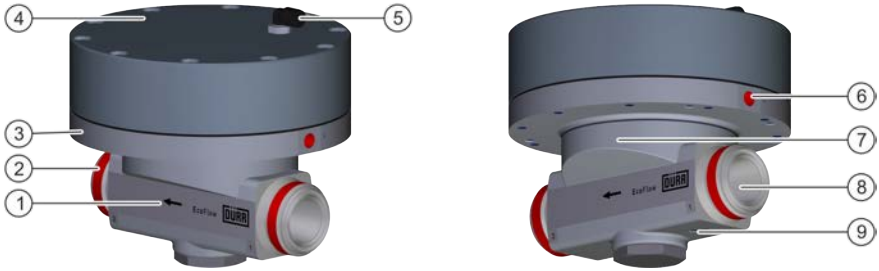


Fig. 1: Product overview

1 Display of flow direction
2 Material outlet (2)
3 Spacer ring
4 Lid
5 Control air connection
6 Leakage connection (L)
7 Regulator housing
8 Material inlet (1)
9 Ground connection

1.2 Short description

The pneumatic low pressure regulator (“regulator") uses control air to control the material pressure in the return line of an application station for fluid coating materials. The regulator provides a constant flow rate to prevent material deposits.

2 Safety

2.1 Presentation of Notes

The following notes can appear in this instruction:

DANGER!

High risk situation that can lead to serious injuries or death.

WARNING!

Medium risk situation that can lead to serious injuries or death.

CAUTION!

Low risk situations that can lead to minor injuries.

NOTICE!

Situations that can lead to material damage.

ENVIRONMENT!

Situations that can lead to environmental damage.

Additional information and recommendations.

2.2 Intended Use

Use

The regulator **Eco**Flow LPR PS serves exclusively for pressure controlling non-flammable and flammable fluid coating materials in the return line of application stations.

The regulator **Eco**Flow LPR PS may only be operated in the industrial range and within the approved technical data ↳ 11 “Technical data”.

Misuse

If used improperly, it can cause serious injuries.

Examples of wrong use are:

- Use in areas with Ex zone 0
- Use of unapproved materials, see safety data sheets
- Making conversions or changes on your own

EX labeling

Ex II 2G Ex h IIA T6 Gb X

II	-	Device group II: all areas except mining
2G	-	Device category: 2 (for gaseous atmosphere)
h	-	Ignition protection category
IIA	-	Explosion group
T6	-	Temperature class
Gb	-	Device protection level: Gb (zone 1)
X	-	Restriction: The device is configured for operation in an ambient temperature of 15°C to 40°C.

2.3 Residual risks

Explosion

Sparks, open flames and hot surfaces can cause explosions in explosive atmospheres. Serious injury and death could be the consequence.

- Before carrying out any work on the product, ensure a non-explosive atmosphere.
- Do not use sources of ignition and open light.
- Do not smoke.
- Ground the product.
- Wear suitable protective equipment.

Flammable coating materials and their detergents and cleaning agents can cause a fire or an explosion.

- Ensure that the flashpoint of the fluid is at least 15K above the ambient temperature.
- Observe explosion group of the coating materials and their detergents and cleaning agents.
- Follow the safety data sheet.
- Ensure that technical ventilation and fire protection equipment are in operation.
- Do not use sources of ignition and open light.
- Do not smoke.
- Ground the product.
- Wear suitable protective equipment.

Danger due to escaping material

Material escaping under pressure can cause serious injuries.

Before the product:

- Switch off the system.
- Disconnect the system from energy and material supply.
- Depressurize the lines.
- Secure the system against switching on again.

2.4 Property damage

Hardening material

If the material in the product hardens, the product will be damaged or destroyed.

- 1K material: Note curing time ↳ 11.9 “Material specification”
- 2K material: Observe pot time ↳ 11.9 “Material specification”
- Purge product ↳ 6.2 “Rinsing”, e.g. in the case of:
  - Production interruptions
  - Production end

2.5 Staff qualification

WARNING!

Inadequate qualification

Wrong estimation of dangers can cause serious injury or death.

- Only sufficiently qualified persons may execute all work.
- Some work requires additional qualification. Additional qualifications of specialized personnel are marked with a “+”.

This document is intended for qualified personnel in industry and craftmanship.

Cleaning staff

The cleaning staff receives regular instructions from the operator about the following contents:

- Using the product
- Handling cleaning tools
- Handling cleaning agents
- Technical Measures for occupational safety and health

Electrician

Electricians assemble, install, service and repair electrical systems in a professional manner.

Furthermore, electrical engineers have the following knowledge:

- Guidelines, Standards and Rules of Engineering
- Local conditions
- Electrical Systems and Their Loading Limits
- Technical Measures for occupational safety and health

Mechanic

The mechanic is trained specifically for the field of work in which he works.

Furthermore, he has the following knowledge:

- Guidelines, Standards and Rules of Engineering
- Local conditions
- Technical Measures for occupational safety and health

The mechanic is responsible for the following activities on equipment and components:

- Assembly
- Waiting
- Maintenance
- Disassembly

+ additional qualification explosion protection
In addition to the knowledge of the various specialist fields, the mechanic has knowledge of regulations and safety measures when working in potentially explosive areas.

Dürr Systems offers special product training for ↳ “Hotline and Contact”.

2.6 Personal protective equipment

When working in explosive areas, the protective clothing, including gloves, must meet the requirements of DIN EN 1149-5. Footwear must meet the requirements of EN ISO 20344 and EN IEC 61340-4-3. The volume resistivity must not exceed 100MΩ.

Wear the specified personal protective equipment when working. Provide the following personal protective equipment:

Eye protection
Protects eyes from dust, paint drops and particles.

Protective gloves
Protect the hands from:

- mechanical forces
- Thermal forces
- Chemical effects

Protective workwear
Tight fitting workwear with low tear strength, tight sleeves and no hanging parts.

Respirator mask
Protects from hazardous gases, vapors, dust and similar materials and media.

Safety boots
Protect feet from crushing, falling items and slipping.

3 Transport, scope of supply and storage

3.1 Transport

NOTICE!

Incorrect Transport

Incorrect Transport can cause property damage.

- Protect Regulator from moisture.
- Protect Regulator from vibrations.
- Protect Regulator from falling down.
- Transport temperature: -30°C to 60°C

3.2 Unpacking

DANGER!

Electrostatically charged plastic films and foils in potentially explosive areas

The foil and the product can charge electrostatically at the time of the unpacking. Electrostatic discharge can cause sparks that in explosive atmosphere can cause a fire or an explosion. Serious injury and death could be the consequence.

- Unpack product outside Ex zones.
- Discharge the product.
- Dispose packaging outside of the Ex zone in accordance with the regulation or store properly for a later return.

3.3 Scope of delivery

The scope of supply includes the following components:

- Regulator

Inspect delivery on receipt for completeness and integrity.

Report defects immediately ↳ “Hotline and Contact”.

3.4 Handling of packaging material

ENVIRONMENT!

Incorrect disposal

Incorrectly disposed packaging material can damage environment.

- Dispose of material no longer required in an environment-friendly manner.
- Observe local disposal specifications.

3.5 Storage

Storage provisions:

- Do not store outdoors.
- Store Regulator only when dry.
- Store in a dust-free place.
- Do not expose to aggressive media.
- Protect from solar radiation.
- Avoid mechanical vibrations.
- Temperature: 10°C to 40°C
- Relative humidity: 35% to 90%

4 Assembly

4.1 Requirements for the Installation point.

- A technical ventilation is required.
- The regulator must to be operated in a closed system.
- The regulator must be integrated in a remote controlled and automated process.
- It should be possible to disconnect the material supply to the regulator and secure it from being switched back on.
- Lines, seals and screw connections must be designed to conform to the requirements of the regulator ↳ 11.4 “Operating values”.
- The control air supply must be adjustable.
- The regulator must be permanently fixed.
- A safety distance of 0.25cm/kV from the high voltage must be kept.

4.2 Assembly

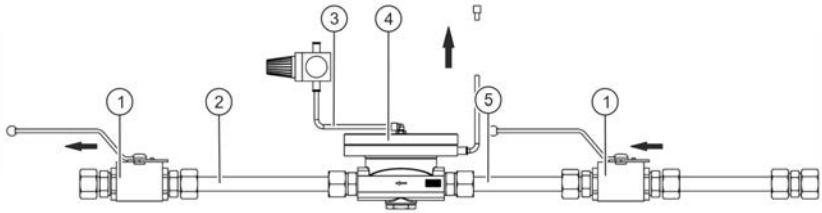


Fig. 2: Assembly drawing

Personnel:
- Mechanic
- + additional qualification explosion protection

Protective equipment:
- Protective workwear
- Eye protection
- Protective gloves
- Safety boots

Observe the following at assembly:
- Ensure a non-explosive atmosphere.
- Install the regulator on the return line between the applicator and the reservoir.
- Alignment: Lid on top, regulator housing at bottom
- Flow direction
- Provide shut off valves (1).
- Maximum tightening torque for screw connections:
  - DN25: 110Nm
  - G3/4": 110Nm

1. Install regulator (4) into the pipeline.
2. Tighten cap nut of material inflow pipe (5) to material inlet.
3. Tighten cap nut of material outflow pipe (2) to material outlet.
4. Connect transparent hose to leakage connection.
5. Connect the control air (3) ↳ 11.4 “Operating values”.

Ground the regulator

Personnel:
- Electrician
- + additional qualification explosion protection

Protective equipment:
- Protective workwear
- Safety boots

1. Ground the regulator (4) via its grounding connection at the bottom.

5 Commissioning

5.1 Safety Instructions

WARNING!

Danger from harmful or irritant substances

Serious injuries or death can result if you come into contact with dangerous fluids or steam.

- Regulator Check regularly for leakage. Observe local regulations and maintenance schedule.
- Ensure that the forced ventilation is operational.
- Follow the safety data sheet.
- Wear specified protective clothing.
- Avoid contact (e.g. with eyes, skin).

WARNING!

Squirting material

Escaping compressed material can cause serious injury.

- Check the product for leakage before commissioning.
- Put the product into operation only if the connections are made professionally.

WARNING!

Sparks due to electrostatic discharge

If the regulator is not grounded, there can be an electrostatic charge on the the regulator. Electrostatic discharge can cause sparks that in explosive atmosphere can cause a fire or an explosion. Serious injury and death could be the consequence.

- Ground Regulator as specified.
- Before carrying out any work, make sure that there is no explosive atmosphere.

NOTICE!

Material damage due to dry run

If the regulator is operated without material, it wears out faster.

- Always operate a regulator with material.

NOTICE!

Material damage due to unsuitable pipe conections

The piepeline or a bracket supports the regulator. A loose pipeline can make the regulator vibrate during operation. It ca nloosen screw connections. Paint or solvent can leak out. This results in property damage.

- Dimension the lines to conform to the regulator requirements .
- If necessary, support the regulator by using a bracket 12.2 “Accessories”.

5.2 Commissioning

The regulator is commissioned along with the system.

Personnel:

- Mechanic
- + additional qualification explosion protection

Protective equipment:

- Protective gloves
- Safety boots
- Protective workwear

1. Set control air pressure (max. 8 bar).
2. Open ball valves in the supply lines.
3. Open the sampling point.
4. Decrease control air pressure slowly until material starts flowing.
5. Leave the sampling point opened until the material escapes without air.
6. Increase control air pressure, based on the following characteristic curve until the required material pressure is reached.

Characteristic curves of the outflow rate

Specification of the characteristic curves:

- Material: Mobil DTE 24
- Input pressure p1: as stated

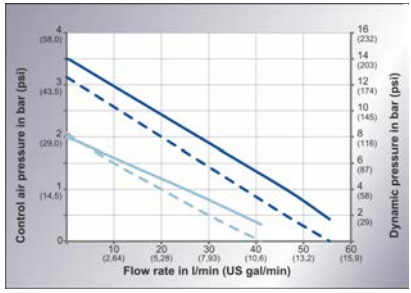


Fig. 3: Characteristic curve input pressure

Dynamic pressure
Control air pressure
8bar
14bar

6 Operation

6.1 Safety recommendations

WARNING!

Sparks due to electrostatic discharge

If the grounding cable is removed during operation, it can cause electrostatic induction. Electrostatic discharge can cause sparks that in explosive atmosphere can cause a fire or an explosion. Serious injury and death could be the consequence.

- Do not remove grounding cable during operation.

WARNING!

Risk of injury due to escaping material and compressed air

Escaping compressed material can cause serious injury.

Before carrying out any work:

- Disconnect the system, in which the regulator is installed, from compressed air and material supply.
- Secure the system against being switched on again.
- Depressurize the lines.

NOTICE!

Hardening material

If the material in the product hardens, the product will be damaged or destroyed.

- Note curing time. ↳ 11.9 “Material specification”
- Rinse product ↳ 6.2 “Rinsing”e.g. for:
  - Production interruptions
  - Production end

6.2 Rinsing

Personnel:

- Mechanic
- + additional qualification explosion protection

Protective equipment:

- Protective workwear
- Eye protection
- Safety boots

NOTICE!

Material damage due to unsuitable rinsing agent

If the rinsing agent reacts chemically with the components or the material, components get damaged.

- Use only the rinsing agents that are compatible with the components and the material.
- Refer to safety data sheet of material manufacturer.

The regulator must be rinsed.

- After end of work
- Before every change of material
- Prior to cleaning
- Prior to dismantling
- Before a long time of non-use
- Before placing in storage

Rinsing intervals depend on the material used.

1. Rinse regulator with low pressure. Possibly. Use rinsing equipment.

6.3 Relieving pressure

Personnel:

- Mechanic
- + additional qualification explosion protection

Protective equipment:

- Protective workwear
- Eye protection
- Protective gloves
- Safety boots

1. Rinse regulator ↳ 6.2 “Rinsing”.
2. Close the ball valve on the material supply line.
   ⇨ Ensure that the ball valve remains closed during the works.
3. Open the sampling point.
4. Open regulator (control air pressure 0bar).
5. Disassemble the regulator

7 Cleaning

7.1 Safety recommendations

WARNING!

Danger of fire and explosion

Flammable coating materials and their detergents and cleaning agents can cause a fire or an explosion.

- Ensure that the flashpoint of the fluid is at least 15K above the ambient temperature.
- Only electrically conductive containers may be used for the cleaning fluid. Containers must be grounded.
- Note explosion group of the fluid.
- Follow the safety data sheet.
- Ensure that forced ventilation and fire protection equipment are in operation.
- Do not use sources of ignition and open light.
- Do not smoke.
- Ground Regulator.

WARNING!

Danger from harmful or irritant substances

Serious injuries or death can result if you come into contact with dangerous fluids or steam.

- Regulator Check regularly for leakage. Observe local regulations and maintenance schedule.
- Ensure that the forced ventilation is operational.
- Follow the safety data sheet.
- Wear specified protective clothing.
- Avoid contact (e.g. with eyes, skin).

NOTICE!

Unsuitable cleaning agents

Unsuitable cleaning agents can damage the product.

- Only use cleaning agents approved by the material manufacturer.
- Follow safety data sheets.
- Place heavily soiled components in a cleaning bath.
  - Only place those parts in the cleaning bath, which are suitable for the cleaning bath.
  - Use only electrically conductive containers.
  - Ground the container.
  - Do not use ultrasound baths.

NOTICE!

Unsuitable Cleaning Tools

Unsuitable cleaning tools can cause damage.

- Only use cloths, soft brushes and paintbrushes.
- Do not use abrasive cleaning tools.
- Do not use compressed air for cleaning.
- Do not use any thinner spray guns.
- Do not use high pressure for cleaning agents.

7.2 Cleaning

Personnel:

- Cleaning staff
- + additional qualification explosion protection

Protective equipment:

- Protective workwear
- Respirator mask
- Eye protection
- Protective gloves
- Safety boots

Requirements:

- Regulator has been purged 6.2 “Rinsing”
- System has been depressurized 6.3 “Relieving pressure”.

1. Clean the regulator carefully using a piece of cloth.

8 Maintenance

8.1 Safety recommendations

WARNING!

Unsuitable tools in explosive areas

Tools that do not have Ex approval can generate sparks and cause a fire or an explosion in Ex zones. It can cause serious injuries or death.

- If possible, carry out cleaning and maintenance work outside the Ex zones.
- For work within the Ex zone, use tools with the corresponding Ex labeling.

WARNING!

Risk of injury due to escaping material and compressed air

Escaping compressed material can cause serious injury.

Before carrying out any work:

- Disconnect the system, in which the regulator is installed, from compressed air and material supply.
- Secure the system against being switched on again.
- Depressurize the lines.

WARNING!

Sparks due to electrostatic discharge

If the regulator is not grounded, there can be an electrostatic charge on the the regulator. Electrostatic discharge can cause sparks that in explosive atmosphere can cause a fire or an explosion. Serious injury and death could be the consequence.

- Ground Regulator as specified.
- Before carrying out any work, make sure that there is no explosive atmosphere.

WARNING!

Danger from harmful or irritant substances

Serious injuries or death can result if you come into contact with dangerous fluids or steam.

- Regulator Check regularly for leakage. Observe local regulations and maintenance schedule.
- Ensure that the forced ventilation is operational.
- Follow the safety data sheet.
- Wear specified protective clothing.
- Avoid contact (e.g. with eyes, skin).

WARNING!

Danger of fire and explosion

Flammable coating materials and their detergents and cleaning agents can cause a fire or an explosion.

- Ensure that the flashpoint of the fluid is at least 15K above the ambient temperature.
- Only electrically conductive containers may be used for the cleaning fluid. Containers must be grounded.
- Note explosion group of the fluid.
- Follow the safety data sheet.
- Ensure that forced ventilation and fire protection equipment are in operation.
- Do not use sources of ignition and open light.
- Do not smoke.
- Ground Regulator.

WARNING!

Unsuitable replacement parts in explosive areas

Replacement parts not compliant with the specifications of the ATEX guidelines can cause explosions in an explosive atmosphere. Serious injury and death could be the consequence.

- Use exclusively original replacement parts.

WARNING!

Risk of injury due to pre-loaded spring

The spring in the regulator is pre-loaded. If the lid of the regulator is disassembled, the lid may tilt and injuries can be the consequence.

- Cautiously loosen the screws of the lid in order to relieve the spring in the lid.

NOTICE!

Damage due to improper maintenance work

Carrying out maintenance work that is not described in this instructions manual can result in errors in assembly and cause material damage.

- Only carry out work mentioned in this instructions manual.

NOTICE!

Material damage due to worn out components

Worn out components can damage the product.

- Observe the maintenance intervals 8.2 “Maintenance schedule”.

ENVIRONMENT!

Environmental damage caused by improper handling

Leaked out operating and auxiliary materials are a threat to the environment.

- Use suitable collector trays during servicing and maintenance work.
- Dispose of operating and auxiliary materials according to the disposal provisions in force.
- In case of doubt, refer to the local disposal authorities.

8.2 Maintenance schedule

If a maintenance assistant is used in the system visualizer, the maintenance intervals of the maintenance assistant are valid.

The maintenance intervals given below are based on experiential values. Adjust maintenance intervals individually if necessary.

Interval	Maintenance work
weekly	Check condition and tightness of the regulator, the connections and lines.
	Check air leak and leakage of liquids.
monthly	Clean regulator ↳ 7.2 “Cleaning”.
semi-annually	Check membrane in contact with material (14), sealing ring (13), membrane chuck (15), valve seat (17) and sealing ring (19), and replace if necessary ↳ 8.3 “Dismantling”.
annually	Check screw connections and fastening.
	Check compression spring (5) and plain bearing (4), replace if necessary ↳ 8.3 “Dismantling”.
every 2 years	Check membrane (7), replace if necessary ↳ 8.3 “Dismantling”.

8.3 Dismantling

Personnel:

- Mechanic
- + additional qualification explosion protection

Protective equipment:

- Protective workwear
- Eye protection
- Protective gloves
- Safety boots

Requirements:

- Regulator has been purged ↳ 6.2 “Rinsing”.
- Regulator has been disassembled ↳ 10.2 “Disassembly”.

You must dismantle the regulator to be able to perform maintenance work and to replace components. The requirement is a clean working place in a workshop.

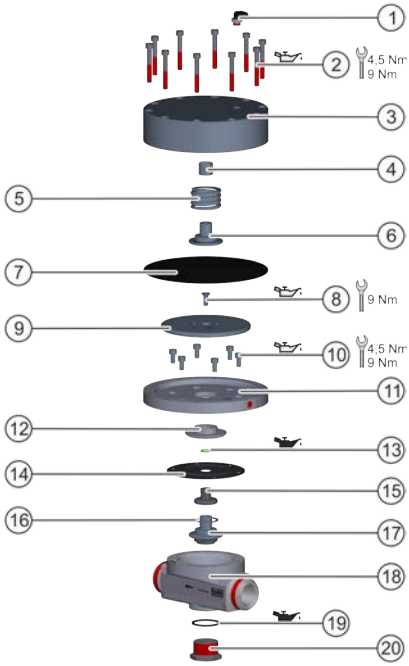


Fig. 4: Exploded view

Molykote TP-42
Klüber Syntheso GLEP 1

1. Clamp the regulator (18) with the lid (3) upward into a vise.

   Use protective jaws.

2. Unscrew control air connection (1).
3. Loosen screws (2) on the lid (3) evenly and remove them.
4. Lift lid (3) with pressed in plain bearing (4).
5. Remove the compression spring (5).
6. Remove compression spring support (6).
7. Mark the top side of the outer membrane (7).
8. Remove the outer membrane (7).
9. **NOTICE!**

   If the plate twists, the membrane can get damaged!

   Use a face spanner to prevent the plate (9) from twisting.
10. Remove the countersunk-head screw (8).
11. Remove plate (9) with twist prevention.
12. Remove screws (10).
13. Remove the spacer ring (11).
14. Remove the pressure disc (12).
15. Remove the inner membrane (14).
16. Remove membrane chuck (15) with O-ring (13) from the regulator housing.
17. Remove retainer ring (16).
18. User pliers to remove the valve seat (17) upwards from the regulator housing.
19. Remove regulator (18) from the vise.
20. Clamp the regulator (18) with the lid (3) downward.

21. Unscrew the sealing screw (20).
22. Remove sealing ring (19).
23. Clean, check and replace all components if damaged. Replace seals.

8.4 Assembly

Personnel:

- Mechanic
- + additional qualification explosion protection

Protective equipment:

- Protective workwear
- Safety boots

1. Clamp the regulator casing (18) with the lid (3) downward into a vise.

   Use protective jaws.

2. Grease and insert the new sealing ring (19).
3. Thread-in sealing screw (20).
4. Remove regulator (18) from the vise.
5. Clamp the regulator casing (18) with the lid (3) upward.
6. Insert valve seat (17) into regulator casing.
7. Using circlip pliers, insert the retainer ring (16) into the groove in the housing.
   ⇨ The valve seat is fixed.
8. Insert membrane chuck (15) with new, greased O-ring (13).
9. Check inner membrane (14) for damage. Replace if necessary.
10. **NOTICE!**

    Particles on the membrane damage it.

    Position inner membrane (14) over the hole pattern. Position with the black side (air side) not facing the regulator housing. Ensure cleanliness.
11. Place pressure disc (12) on the membrane chuck (15).
12. Position the spacer ring (11) over the hole pattern and align it to have the leakage connection point to the desired direction.
13. Insert the greased screws (10). Tighten evenly and cross-wise.
    - Respect tightening torque Fig. 4.
14. Insert plate (9) and ensure it is interlocking with the pressure disc.
15. **NOTICE!**

    If the plate twists, the membrane can get damaged!

    Use a face spanner to prevent the plate (9) from twisting.
16. Tighten the plate (9) with greased countersunk-head screw (8).
    - Respect tightening torque Fig. 4.
17. Insert two screws (2) into the bores in the lid (3).
18. Place lid (3) with pressed in plain bearing (4) onto a flat working surface.
19. Insert compression spring (5) into the lid (3).
20. Insert compression spring support (6) into the lid (3).

21. Check outer membrane (7) for damage. Replace if necessary.

    If the membrane is not replaced, assembly the membrane again with the marking upward. The membrane has been stretched out on one side during operation.

22. Position and place outer membrane (7) on the hole pattern. Ensure cleanliness. Tighten with the two screws in the lid (3).

23. Position regulator casing (15) with the assembled components over the hole pattern. Tighten with the two screws in the lid (3).

24. Insert the greased screws (2). Tighten evenly and cross-wise.
    - Respect tightening torque Fig. 4.

25. Screw control air connection (1) into the lid (3).

9 Faults

9.1 Defects table

Item numbers relate to the ↳ 8.3 “Dismantling”.

For troubleshooting you have to (partly) dismantle the regulator ↳ 8.3 “Dismantling”. If faults cannot be remedied: ↳ “Hotline and Contact”.

Fault description	Cause	Remedy
Regulation not possible	Worn out valve seat (17).	Replace the valve seat.
	Damaged membrane (14)	Replace membrane.
	Damaged membrane chuck (15).	Replace the membrane chuck.
	Air supply fluctuates.	Check the air control. Repair, if necessary.
	Particles between valve seat (17) and membrane chuck (15).	Rinse system and check material quality.
Air or material outlet at spacer ring	Damaged membrane (14)	Replace the membran.
	Damaged O-ring (13)	Replace O-ring.
Loud whistling	Regulator set incorrectly	Adjusting settings ↳ 5 “Commissioning”.
Air is escaping through the leakage hose.	Worn out outer membrane (7).	Replace outer membrane.
Material is escaping through the leakage hose.	Worn out inner membrane (14).	Replace inner membrane.

10 Disassembly and Disposal

10.1 Safety recommendations

WARNING!

Risk of injury due to escaping material and compressed air

Escaping compressed material can cause serious injury.

Before carrying out any work:

- Disconnect the system, in which the regulator is installed, from compressed air and material supply.
- Secure the system against being switched on again.
- Depressurize the lines.

WARNING!

Unsuitable tools in explosive areas

Tools that do not have Ex approval can generate sparks and cause a fire or an explosion in Ex zones. It can cause serious injuries or death.

- If possible, carry out cleaning and maintenance work outside the Ex zones.
- For work within the Ex zone, use tools with the corresponding Ex labeling.

WARNING!

Danger from harmful or irritant substances

Serious injuries or death can result if you come into contact with dangerous fluids or steam.

- Regulator Check regularly for leakage. Observe local regulations and maintenance schedule.
- Ensure that the forced ventilation is operational.
- Follow the safety data sheet.
- Wear specified protective clothing.
- Avoid contact (e.g. with eyes, skin).

10.2 Disassembly

Personnel:

- Mechanic
- + additional qualification explosion protection

Protective equipment:

- Protective workwear
- Eye protection
- Protective gloves
- Safety boots

1. Rinse regulator ↳ 6.2 “Rinsing”.
2. Close material supply line with valve and secure against being switched on again.
3. Depressurize the line ↳ 6.3 “Relieving pressure”.
4. Loosen cap nut of material supply line.
5. Loosen cap nut of material discharge line.

6. Unscrew transparent hose from leakage connection.
7. Unscrew control air line from connection for control air.
8. Remove the regulator.

10.3 Disposal

ENVIRONMENT!

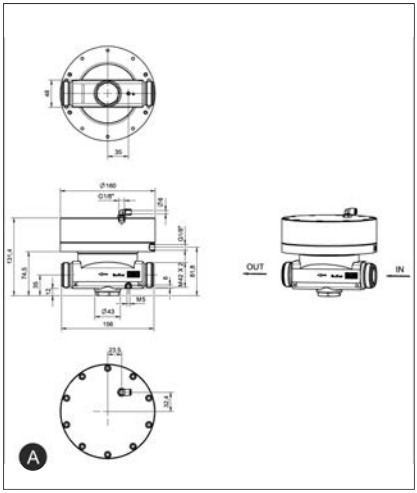
Improper waste disposal

Improper waste disposal threatens the environment and prevents re-use and recycling.

- Clean components before their disposal.
- Always dispose of components in accordance with their characteristics.
  ↳ 11.7 “Materials used”
- Collect leaked out utilities and auxiliaries completely.
- Dispose of work equipment soaked in coating materials or operating substances according to the disposal provisions in force.
- Dispose of utilities and auxiliaries according to the disposal provisions in force.
- In case of doubt, refer to the local disposal authorities.

11 Technical data

11.1 Dimensions and weight



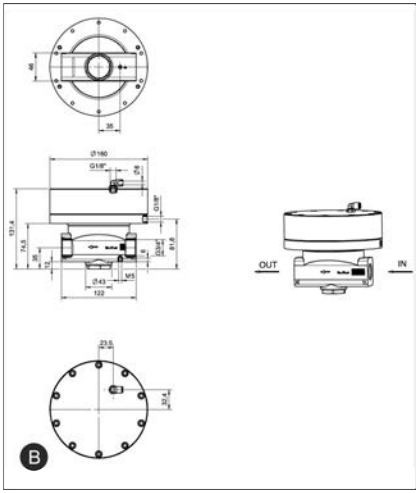


Fig. 5: Dimensions

Detail	N26220008 (A)	N26220009 (A)	N26220010 (B)
Total length	156mm	156mm	122mm
Diameter	160mm	160mm	160mm
Weight	4.25kg	4.25kg	4.05kg

11.2 Connections

Detail	Value
Material	N26220008/ N26220009: DN25 N26220010: G3/4"
Compressed air	G1/8"
Leakage	G1/8"

11.3 Operating conditions

Detail	Value
Operating temperature, min.	15°C
Operating temperature, max.	35°C

Detail	Value
Ambient temperature, min.	15°C
Ambient temperature, max.	40°C

11.4 Operating values

Detail	Value
Control air pressure, min.	1bar
Control air pressure, max.	8bar
Media input pressure, max.	20 bar
Control range	1 to 16bar
Flow rate, max. N26220008	15L/min
Flow rate, max. N26220009	25L/min
Flow rate, max. N26220010	30L/min

11.5 Compressed air quality

- Purity classes following ISO 8573-1::2010 1:3:1 1:4:1
- Limitations for purity class 4 (pressure dew point max.):
  - ≤ -3°C at 7bar absolute
  - ≤ +1°C at 9bar absolute
  - ≤ +3°C at 11bar absolute

11.6 Type plate

The type plate on the regulator housing shows the following details:

- Product name
- Material number
- Year of manufacture
- Serial number
- EX labeling
- Maximum control air pressure
- Maximum material pressure
- Manufacturer
- CE labeling

11.7 Materials used

Materials used

Component	Material
Regulator housing	Stainless steel
Lid	Aluminum
Membrane compressed air side	EPDM
Membrane material side	PTFE/Elastomer
Materials in contact with material	Stainless steel

11.8 Operating and auxiliary materials

Material	Specification
Screw connections lubricant	Molykote TP-42
Seal lubricant	Klüber Syntheso GLEP 1

11.9 Material specification

Suitable Material:

- Flammable fluid coating materials of the explosion group IIA and their approved cleaning agents
- Non-flammable fluid coating materials and their approved detergents

Specification:

- Vapor pressure ≤0.5bar above atmosphere
- Ignition temperature >50°C
- Temperature ≤35°C, always 15K below flashpoint

Viscosity

Detail	Value
Viscosity, min.	10mPa S
Viscosity, max.	250mPa S

12 Replacement parts and accessories

12.1 Spare part

Item numbers relate to the ↳ 8.3 “Dismantling”.

Item	Denomination	Quantity	Material number
1	Plug-in connection G1/8"	1	
2	Cheese-head screw M6 x 20 DIN912 1.4571	10	
3	Lid	1	
4	Plain bearing	1	
5	Compression spring	1	M68010271
6	Compression spring support	1	
7	Membrane flat D160 (control side)	1	Wear part kit: N26960003
8	countersunk-head screw M6 x 16 DIN7991 8.8	1	
9	Plate	1	
10	Cheese-head screw M6 x 12 DIN912 8.8	6	
11	Spacer ring	1	
12	Pressure disc	1	
13	O-Ring 11 x 1.5	1	Wear part kit: N26960003
14	Membrane D100 (material side)	1	
15	Membrane chuck D30/D14	1	M03020033
16	Retainer ring	1	
17	Valve seat N26220008	1	M08150018
	Valve seat N26220009/N26220010	1	M08150020
18	Regulator housing	1	
19	Sealing ring	1	Wear part kit: N26960003
20	Sealing screw M32 x 1.5	1	

12.2 Accessories

Item	Denomination	Quantity	Material no.
-	O-Ring **Eco**Tube	1	M08420004

12.3 Order

WARNING!

Unsuitable replacement parts in explosive areas

Replacement parts not compliant with the specifications of the ATEX guidelines can cause explosions in an explosive atmosphere. Serious injury and death could be the consequence.

- Use exclusively original replacement parts.

WARNING!

Unsuitable replacement parts

Replacement parts of third-party suppliers may possibly not be able to hold the loads. Serious injury and death could be the consequence.

- Use exclusively original replacement parts.

Ordering replacement parts, tools and accessories as well as information on products that are listed without order number ↳ “Hotline and Contact”.

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