Operating instructions

Explosion isolation flap valve
REDEX® Flap DN450 – DN710

The original operating instructions were written in German

rico CERTIFIED SAFETY

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Read the instructions prior to performing any task!

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1 General information

1.1 Manufacturer

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1.2 Purpose of the operating instructions

The purpose of the operating instructions is to provide the personnel employed by the operator with the necessary knowledge to safely handle the product. Safe handling includes (in addition to operation) all the phases of the product's life cycle described in these operating instructions, such as commissioning, set-up, use, cleaning, maintenance, decommissioning, transport, disposal etc.

1.3 Target group

The target group for these operating instructions includes the operator and certified service personnel.

Assembly, operation, maintenance and repair of the product may only be carried out by certified, specialist personnel.

Specialist personnel can only be certified by RICO Sicherheitstechnik AG or service partners authorised by RICO Sicherheitstechnik AG and certification must be renewed every two years.

1.4 Scope of application and use of the operating instructions

These operating instructions form an integral component of the product. Knowledge of the information contained therein is indispensable for safe and problem-free handling. The manufacturer waives any liability for damage to materials or injury to persons resulting from a lack of knowledge of, or non-adherence to, the operating instructions.

The operator is responsible for ensuring that he and all persons authorised for the respective activity on the product have fully read and understood the operating instructions before commissioning.

Any questions or unclear points should be raised with the manufacturer or your competent sales representative.

1.5 Warranty and warranty conditions

The product is designed according to state-of-the-art knowledge, constructed from high-quality materials and carefully checked and tested in the manufacturer's plant before delivery. However, should you identify any faults or damage during commissioning, operation, cleaning, maintenance, decommissioning or storage, please inform the manufacturer of these in writing immediately. The manufacturer will provide a replacement for the faulty or defective parts in the delivered equipment as part of the General Terms and Conditions of Sale and Delivery.

There shall be no warranty for damages resulting from:

- A lack of knowledge of, or non-adherence to, the operating instructions
- Use contrary to the intended use
- Inadequate maintenance
- Use of unsuitable replacement parts (only original replacement parts may be used)
- Use of unsuitable accessories
- Work performed by uncertified personnel

For warranty claims to be accepted, the damaged parts must be returned to the manufacturer together with a description of the defect and the serial number.

Material subject to warranty shall be replaced as quickly as possible ex works.

1.6 Storage

The operator is always responsible for the storage location of the operating instructions. The operating instructions must be available at all times to all persons employed by the operator in case they are required.

The operating instructions must be stored carefully for the entire 10 years of the product's service life, and if required, updated with subsequent information from the manufacturer.

If the product is sold or decommissioned, the operating instructions must be handed over to the new operator or disposal company.

Lost operating instructions can be re-ordered from the manufacturer by stating the serial number.

1.7 Copyright notice

1.8 Typographical conventions

Bold mark-up

Important information is marked in **bold** in order to draw the target group's attention.

1.9 Definition of terms

The explosion protection components VENTEX® ESI, VENTEX® ESI-P, explosion protection slide valve RSV, REDEX® Slide or REDEX® Flap are referred to as "product," "valve", "slide valve" or "flap" in these operating instructions.

2 General safety advice

Handling-related safety instructions/information *provide warnings of risks and risk points associated with handling and are visible immediately* ***before the respective step****.*

2.1 Manufacturer’s area of responsibility

The manufacturer is responsible for the flawless delivery of the product from a technical safety perspective, including the operating instructions.

2.2 Operator’s area of responsibility

Assembly, operation, maintenance and repair of the product may only be carried out by certified, specialist personnel.

The operator and the certified specialists must have fully read and understood the operating instructions.

2.2.1 Training, expertise

The operator shall ensure that all activities carried out on the product are performed by certified specialist personnel.

2.2.2 Protective equipment

The operator shall ensure the provision of personal protective equipment appropriate to the situation for its employees (e.g. gloves, respiratory protection, hearing protection etc.).

2.2.3 Duty of maintenance and due diligence

The operator shall ensure that the product is maintained and operated in a technically perfect condition. The operator shall carry out the stipulated checks and inspections and the required maintenance work and shall authorise/organise all service and repair work, which can only be carried out by a certified specialist.

2.3 Intended use

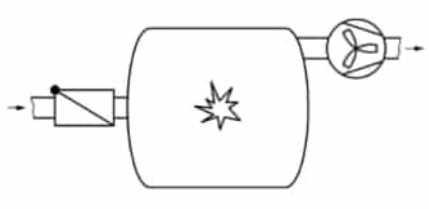


Fig. 1: Pull configuration, source EN 16447:2014 (3.4)

- The explosion isolation flap valve is built into pipes. It may only be used for the media, temperatures, pressures, installation position and internal pipe diameter specified in the order confirmation and the installation guideline. The RICO Sicherheitstechnik AG order confirmation is authoritative in the event of doubt.
- The flap is designed for lines through which **only dust** flows.
- The flap is certified for **pull configurations** as per EN 16447:2014.
- The flap is **single-acting** and works according to the recoil principle. The direction of flow and the direction of explosion are opposing.
- The flap may only be used in combination with pressure-relieved containers equipped with pressure-relief devices that cannot be reclosed.
- The flap may only be installed horizontally or in a horizontal pipeline. See ↬ *Chapter 5.5.1 'Horizontal installation position' on page 20* in this regard.

Limit values

The limit values to be observed are stated in the installation guideline FT0019DE/GB, which is available for planning purposes, and in the technical data sheet, which is included in the scope of delivery for the flap.

2.3.1 Process conditions

Intended use

It is imperative to ensure that the flap valve is used as intended at all times.

In processes with dust, it must always be ensured that the closing mechanism is never impaired during operation. For this reason, the following applies:

- The flow rate in the flap valve in processes with dust must not exceed 35 m/s. It must be ensured that no dust deposits that could impair flap closure form.
- The air must be dry. No condensate is to form.
- In order to ensure that functional safety is not impaired in the long term, the maximum dust load of the medium that flows through must not exceed 100 g/m^3.
- Service must be carried out at short intervals (3–5 days) after commissioning. If the function is ensured, the time interval can be increased in accordance with the operating instructions. See ↬ *Chapter 6.1 'Maintenance intervals to be observed' on page 22* in this regard.

- Suitable measures must be taken for dusts that may cause caking. The risk of caking is assessed by the customer and/or an expert.
- The dust must not cause any caking and/or clogging that could impair flap valve closure. It must be possible for the caking to be removed by the available flow rate once the caking reaches a certain size. If this is not the case, organisational and/or constructive measures are to be defined and taken.

  Potential measures:
  - Reducing the dust load: Lower dust loads reduce the risk of impermissible caking and/or blockages.
  - Adjustment of the flow rate: Depending on the medium flowing through, higher or lower flow rates can reduce the risk of impermissible caking.
  - Elimination of solids or large dust particles.
  - Shortening the maintenance interval: Manual removal of caking and deposits before they affect the closing mechanism.
  - Design engineering: Regularly shake off or blow off the dust deposits using a suitable device.
- If no measures can be taken to ensure the intended use, please switch to another RICO product (e.g. REDEX® Slide or explosion protection slide valve RSV). Please note that these are active systems (slide valve, control and detection). There is a fee for replacing the flap valve.

2.4 Types of safety information

DANGER!
Designates an **imminent danger**. If this danger is not avoided, **it will result in death or serious, irreversible injury**.

WARNING!
Designates a **potentially dangerous situation**. If this dangerous situation is not avoided, **it may result in death or serious, irreversible injury**.

CAUTION!
Designates a **potentially dangerous situation**. If this dangerous situation is not avoided, **it may result in minor or minimal, irreversible injury**.

NOTICE!
Designates a **potentially harmful situation**. If this potentially harmful situation is not avoided, **the product or something in its vicinity may be damaged**.

2.4.1 Symbols used

Warning symbol, suspended load

Fig. 2: Warning symbol, suspended load

Warning symbol, explosive atmosphere

Fig. 3: Warning symbol, explosive atmosphere

Warning symbol, harmful substances

Fig. 4: Warning symbol, harmful substances

Warning symbol, hot surface

Fig. 5: Warning symbol, hot surface

Warning symbol, hand injuries

Fig. 6: Warning symbol, hand injuries

Mandatory symbol, wear foot protection

Fig. 7: Mandatory symbol, wear foot protection

Mandatory symbol, wear ear protection

Fig. 8: Mandatory symbol, wear ear protection

2.4.2 User information

Information that refers to technical and commercial requirements. Non-adherence can lead to faults and production down-time.

2.5 Special dangers

Fig. 9: Warning symbol, explosive atmosphere

DANGER!

Insufficient functioning of the product due to improper assembly, maintenance or inspection. Danger to life due to spreading substances or materials that are explosive and/or harmful to health!

Fig. 10: Warning symbol, harmful substances

CAUTION!

Preparation for assembly, function test, revision and/or maintenance

- A **decontamination declaration** must be completed prior to inspection and/or maintenance work and must confirm that the product has been cleaned and no longer contains any residual substances or materials that are harmful to health.
- If the product comes into contact with substances or materials that are harmful to health, these substance or materials must be entered in the decontamination declaration.
- The decontamination declaration may only be filled out and signed by the operator's authorised specialists.
- The decontamination declaration must be sent to RICO before the start of maintenance and/or revision work (if activities are performed by RICO).
- Before carrying out any work on the product, it must be ensured that the product has cooled down.

Fig. 11: Warning symbol, hand injuries

Fig. 12: Warning symbol, hot surface

3 Product description

3.1 Functional principle

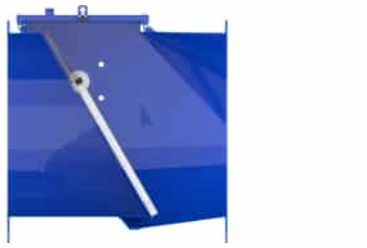


Fig. 13: REDEX® Flap rest position

The flap is in the rest position (no flow present) in a stationary position, but it is not locked.

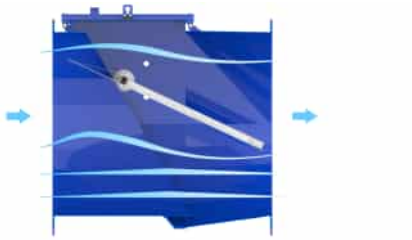


Fig. 14: REDEX® Flap normal operation

The flap plate is moved to the open position by the flow, i.e. in normal operation. This allows the medium to flow through the flap.

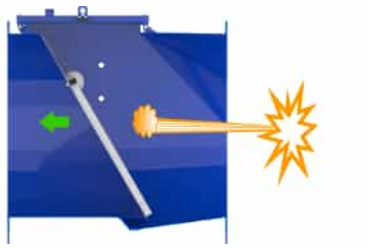


Fig. 15: REDEX® Flap explosive event

In the event of an explosion, the pressure wave moves the flap plate to the closed and locked position. This successfully decouples the explosion. The locking mechanism ensures that the flap plate remains closed even in the event of negative pressure.

3.2 Standard

*The explosion isolation flap valve is compliant with standard **EN 16447:2014**.*

3.3 ATEX approval

Fig. 16: Ex mark

- Test number: **GEX 19 ATEX 1000X**
- Equipment group: II
- Equipment category: 1D / 2D
- Protection system: D
- Corresponds to zone inside: 20, 21, 22
- Corresponds to zone outside: 21, 22 (as per name plate and switch data sheet)

3.4 Explosion pressure, process and ambient temperature

- Maximum permissible reduced explosion pressure: $P_{red\ max}$ as per installation guideline FT0019DE/GB or as per the name plate.
- Maximum process temperature: +100 °C or as per the specification on the technical data sheet or name plate.
  - The process temperature simultaneously determines the maximum surface temperature of the REDEX® Flap on the housing. For a zone 21 or 22 in the outdoor area, this must therefore be taken into account.
- Minimum process temperature: +1 °C, note *Chapter 5.8 'Temperatures < +1 °C' on page 20* in this regard.
- Maximum ambient temperature: +80 °C or as per the specification on the technical data sheet, the name plate or the approval for the switches.
- Minimum ambient temperature: -20 °C

3.5 Media

NOTICE!

The flap is designed and intended for use with organic dusts. Consequently, the flap must **not be operated with fluids, gases, hybrid mixtures or metallic dusts**.

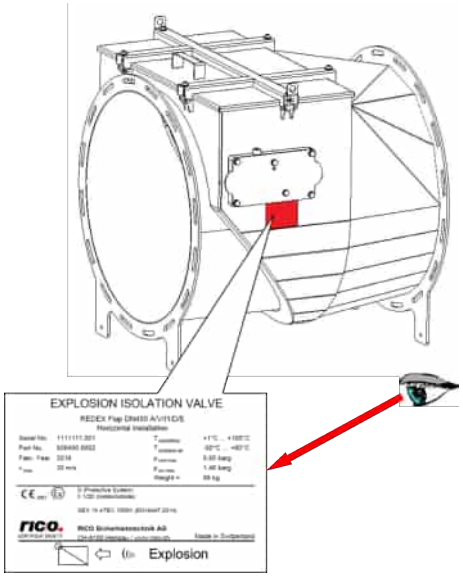
3.6 Technical data

3.6.1 Technical data sheet & installation guideline

The scope of delivery for each flap includes a corresponding **technical data sheet**, which contains supplementary technical data.

It is imperative that **installation guideline FT0019DE** for German or **FT0019GB** for English be adhered to. If this guideline is not available, please contact us at *info@rico.ch*.

3.6.2 Name plate

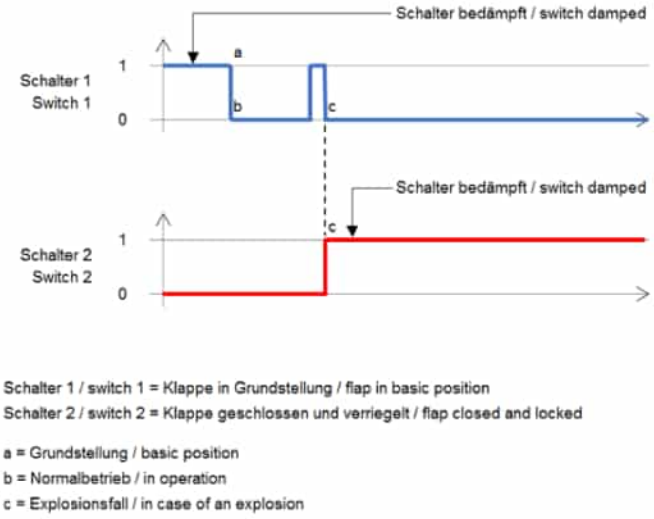


A name plate is attached to every flap. This contains the following data:

- Manufacturer
- Classification
- Serial number
- Fabrication year
- Part number
- Permissible application temperature range
- Permissible ambient temperatures
- ATEX approval
- Direction of explosion
- Standard marking

3.6.3 Switches

The flap has two switches which detect the rest position (1) and the locked position (2). See *Chapter 3.1 'Functional principle' on page 14* in this regard. Additional information can be found in the manufacturer's description of the switches.



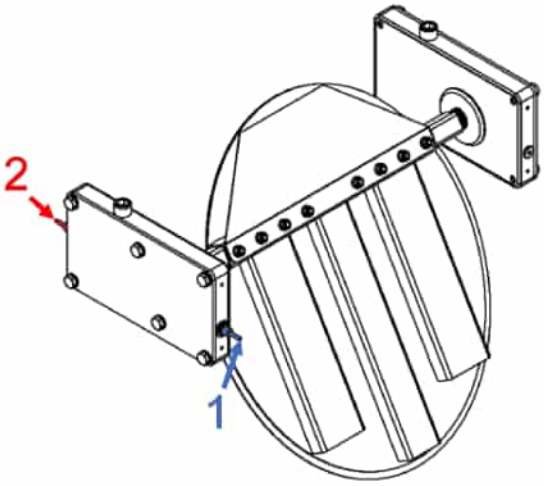


Fig. 17: Circuit diagram

Operation without monitoring

If no switches are used, additional organisational measures must be taken to ensure functional safety and the intended use.

4 Functional test during commissioning

4.1 Functional test in an unmounted state

The following functional test of the explosion isolation flap valve is to be conducted in an unmounted state. Put the flap in the position in which it will subsequently be mounted.

1. Flap plate
   ⇨ Check whether the flap plate automatically falls from the “Open” position to the “Rest” position due to its own weight.
2. “Rest position” switch function (1)
   ⇨ Check in conjunction with step 3 whether the switch for the “rest position” emits a signal. See *Chapter 3.6.3 ‘Switches’ on page 16*.
3. “Locked” switch function (2)
   ⇨ Check the signal from the “locked” position switch by closing the flap manually. To this end, unscrew the cylinder head screws completely and loosen the locking pin (by approx. five turns). Once you have done this, close the flap plate by hand to the limit stop. Switch 2 (see *Chapter 3.6.3 ‘Switches’ on page 16*) should now emit a signal.
   Upon completion of the test, screw the locking pin back to the correct tightening torque in accordance with *Chapter 4.3 ‘Screw tightening torques (reference values)’ on page 18*.
4. Cover
   ⇨ Check that the cover is tight and that the M8 screws are tightened in accordance with *Chapter 4.3 ‘Screw tightening torques (reference values)’ on page 18*.

4.2 Functional test in a mounted state

The following functional test of the explosion isolation flap valve is to be conducted in a mounted state.

1. Installation position
   ⇨ Check that the flap is installed in the horizontal installation position. Please refer to installation guideline FT0019DE/GB for the tolerances.
2. Direction of explosion
   ⇨ Check that the direction of explosion indicated on the name plate corresponds to the actual direction of explosion.
3. Earthing
   ⇨ Check that the flap is sufficiently earthed.

If the functional test has been completed successfully, the flap can be put into operation. If the functional test has not been completed successfully, maintenance must be carried out on the flap or the flap needs to be inspected.

4.3 Screw tightening torques (reference values)

Screw	Torque [Nm]
M6	6 Nm
M8	14 Nm
M10*	---
M12	48 Nm
M16	96 Nm

*
Different tightening torques apply to M10 screws:

1. The reference value for the screws coloured **red** is **35 Nm**.
2. The reference value for the screws coloured **blue** is **28 Nm**.

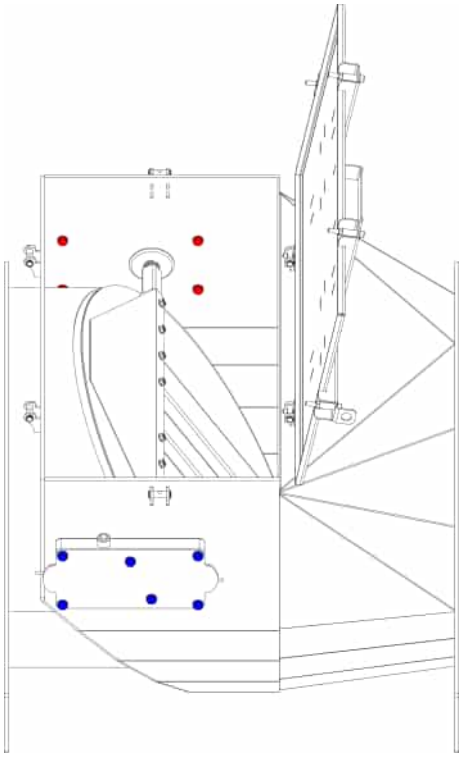


Fig. 18: M10 screw tightening torques

5 Commissioning

NOTICE!
Please note and follow *Chapter 4 'Functional test during commissioning' on page 17*.

5.1 Assembly advice

During assembly, ensure good access and easy disassembly possibilities for inspections. The pipeline must be permanently installed upstream and downstream of the flap so that the flap can be dismantled separately.

If the flap valve is installed at an open pipe end, at least one 1 m pipe section must be installed on the side of the flap valve facing away from the explosion. This pipe section must be supported.

5.2 Swivel direction of the housing cover

Please note the swivel direction of the housing cover during assembly. This can be changed if it is not suitable.

5.3 Pipeline and flange connection

5.3.1 Pipeline

The pipeline upstream and downstream of the flap must withstand the pressure requirements.

5.3.2 Flange connection

The connection flanges of the flap conform to standard **DIN 24154 Part 2**.

5.4 Direction of explosion

The flap is single-acting and works according to the recoil principle. It is therefore necessary to note the direction of explosion that is indicated on the name plate.

5.5 Installation position

5.5.1 Horizontal installation position

The installation position of the flap is horizontal. Please refer to installation guideline FT0019DE/GB for the tolerances. The housing cover of the flap must face upwards when in the closed position.

5.6 Tightening torques

NOTICE!

Use a torque wrench for assembly and pay attention to the permissible tightening torques of the screw connections. These tightening torques can be found in the technical data sheet or *Chapter 4.3 'Screw tightening torques (reference values)' on page 18*.

5.7 Earthing

The flap must be earthed to the system. A suitable connection is located on the right side of the bearing in the direction of flow. This is marked with an earthing symbol.

Fig. 19: Earthing

5.8 Temperatures < +1 °C

At temperatures < +1 °C, there is a risk that the mechanical parts of the flap may become icy if the air is humid. Therefore, condensate must not be present or form inside the flap in such operating conditions.

Temperatures < +1 °C

DANGER!
If mechanical parts become icy, this impairs the function of the flap.

6 Maintenance

- *The explosion isolation flap valve **must** undergo maintenance three to five days after commissioning and at least once a year thereafter. This maintenance must be carried out be RICO-certified personnel. The seals must be replaced after five years.*
- *Maintenance work that has been carried out is to be logged in the Service app.*
- *The maintenance intervals are dependent on the operating conditions of the flap. See ↳ Chapter 6.1 'Maintenance intervals to be observed' on page 22 in this regard.*

6.1 Maintenance intervals to be observed

Interval	Maintenance task	Remarks
a) Three to five days after commissioning (mandatory)	Visual inspection	Check that the process corresponds to the intended use and that the function of the flap is guaranteed.
	Check for wear	
	Functional test (↳ Chapter 4 'Functional test during commissioning' on page 17)	
b) Six weeks after commissioning (depending on process requirements)	Visual inspection	
	Check for wear	
c) Six months after commissioning (depending on process requirements)	Visual inspection	The maintenance work after six months is used as the basis for determining the maintenance intervals, whereby the intervals are adapted to process requirements.
	Check for wear	
d) Yearly (mandatory)	Visual inspection	
	Check for wear	
	Functional test (↳ Chapter 4 'Functional test during commissioning' on page 17)	
c) Every five years (mandatory)	All seals must be replaced no later than after five years.	

6.2 Recurring maintenance

6.2.1 Visual inspection

1. Open the housing cover

NOTICE!
When opening the housing cover, observe the swivel direction and the swivel range to ensure that the housing cover does not close.

2. Corrosion
   - ⇨ Check whether the housing and/or the flap plate are corroded.
3. Dust deposits
   - ⇨ Check whether there are any dust deposits inside the flap.
4. Condensate formation/moisture
   - ⇨ Check whether there is any condensate formation or moisture inside the flap.

DANGER!
Corrosion
Stability is no longer guaranteed if there is corrosion. The corroded parts must be replaced in such cases.

WARNING!
Dust deposits and condensate formation
- Dust deposits can adversely affect the function of the flap. Any dust deposits must be removed. In addition, check whether the maintenance interval needs to be shortened.
- Condensate formation can lead to corrosion.

6.2.2 Check for wear

Open the housing cover and check the housing and the flap plate for wear.

NOTICE!

When opening the housing cover, observe the swivel direction and the swivel range to ensure that the housing cover is not able to close.

DANGER!

Flap stability is no longer guaranteed if there is excessive wear. The flap or the flap plate must be replaced in such cases.

Wear

– *If the bare metal of the housing is visible and/or if the coating has been removed in some areas by the medium, the material thickness must be measured and/or checked. If the material thickness of the housing has reduced by > 0.5 mm, the flap needs to be replaced.*

7 Inspection

Please note ↬ Chapter 5 ‘Commissioning’ on page 19 before you begin the inspection.

NOTICE!

Explosive event

The flap must be **inspected after every explosion**, if it shows **signs of wear** or **after five years**. Otherwise the function of the flap cannot be ensured.

Inspections that have been carried out are to be logged in the Service app.

7.1 Unlocking the flap

1. Open the housing cover
   ⇨ Loosen the screws and then open the housing cover.

NOTICE!

When opening the housing cover, observe the swivel direction and the swivel range to ensure that the housing cover does not close.

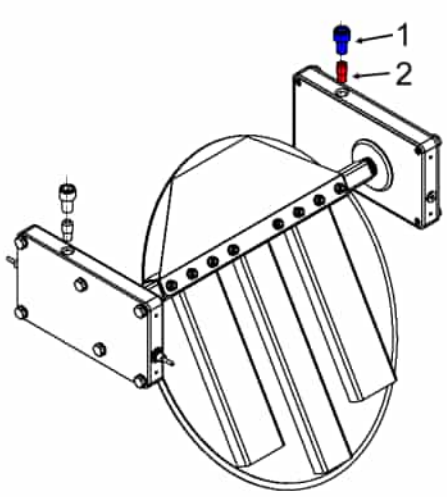


Fig. 20: Unlocking

2. Unlock the flap

   ⇨ Remove the cylinder head screws (with hexagon socket) (1). Next, loosen the locking pins (2). The flap plate now moves to the rest position automatically.

3. Check freedom of movement

   ⇨ Check whether the flap plate can be removed without resistance.

   Yes, the flap plate can be moved freely and without any noticeable resistance: Screw in the locking pins up to the limit stop when the flap plate is in the rest position and tighten them in accordance with the tightening torque for M16 screws (*Chapter 4.3 'Screw tightening torques (reference values)' on page 18*). Then screw the cylinder head screw into the bearing (observing the tightening torques).

   No, the flap plate cannot be moved freely and cannot be moved without noticeable resistance: Replace the bearing and/or the flap plate or get in touch with the competent sales organisation.

4. Close the housing cover

   ⇨ Close the housing cover and secure it with the screws.

7.2 Replacing the flap plate

1. Open the housing cover

   ⇨ Loosen the screws and then open the housing cover.

> **NOTICE!**
> When opening the housing cover, observe the swivel direction and the swivel range to ensure that the housing cover does not close.

2. Remove the flap plate (orange)

   ⇨ Unlock the flap (*Chapter 7.1 'Unlocking the flap' on page 25*). Then remove the cover plate (purple) of the bearing and completely loosen all the screws (yellow) on the flap plate. After completing the steps described above, slide the axles (blue) towards the centre of the flap plate and, in doing so, remove the gaskets (red) and compression springs (green). Lift the flap plate up and out of the housing with the axles pushed in. Then remove the cams from the bearing on both sides.

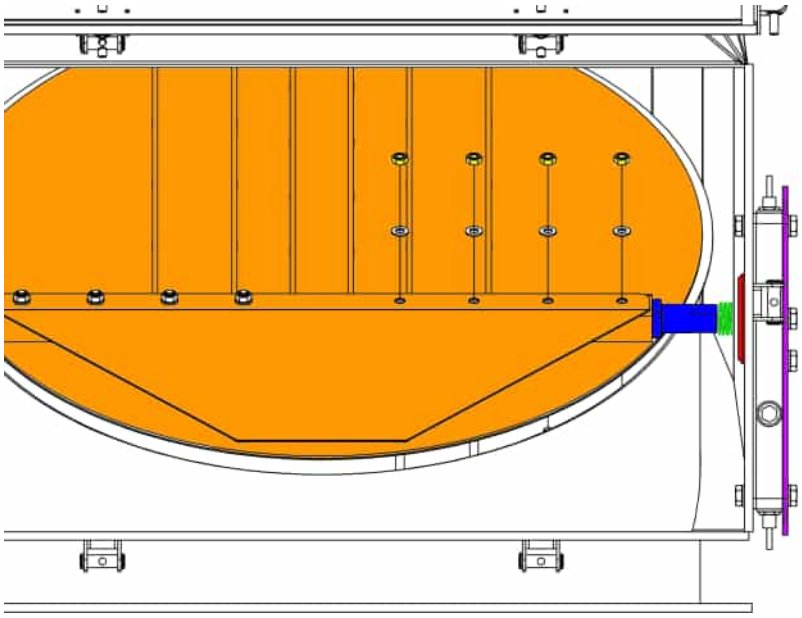


Fig. 21: Replacing the flap plate

3. Clean the bearing

4. Mount the flap plate

   ⇨ Insert the axles into the new flap plate laterally and lift the flap plate into the housing with the axles pushed in. Carefully pull out the axles and insert the left and right compression springs and the left and right gaskets onto the axle. Ensure that the gaskets are positioned correctly. Pull the axles out into the bearings and screw the axles onto the flap plate. Next, mount the cams on both sides of the bearing. In doing so, make sure to observe the alignment of the cams: the balls on the cam must be aligned with the locking pin. Then mount the cover plate of the bearing on both sides.

5. Check the gap dimensions

⇨

Check the following items:

– *Freedom of movement of the flap plate. It must be possible to turn and move the flap plate **without any noticeable resistance**. If necessary, the bearings need to be loosened and adjusted to enable this.*
– *Check the gap dimensions between the housing opening and the flap plate in the locked position around the entire circumference. **Gap dimensions ≥ 4 mm are not permissible for DN 450 – DN 710.***
In the area of the axis, the flap plate must rest against the housing opening.
In the event of an explosion, the gaps are compensated by the layered design of the flap plate.

6. Close the housing cover

⇨ Close the housing cover and secure it with the screws.

7.3 Replacing the seals

7.3.1 List of seals

- Cover seal
- Gasket
- Housing cover seal
- Bearing seal
- Switch seal
- Locking seal

7.3.2 Replacing the seals

Replacing the cover seal

1. Remove the cover plate by loosening the hexagon screws.
2. Remove the old seal from the bearing.
3. Next, insert the new seal into the groove of the bearing.
4. Then mount the cover plate again (for screw tightening torques, see *Chapter 4.3 'Screw tightening torques (reference values)' on page 18*).

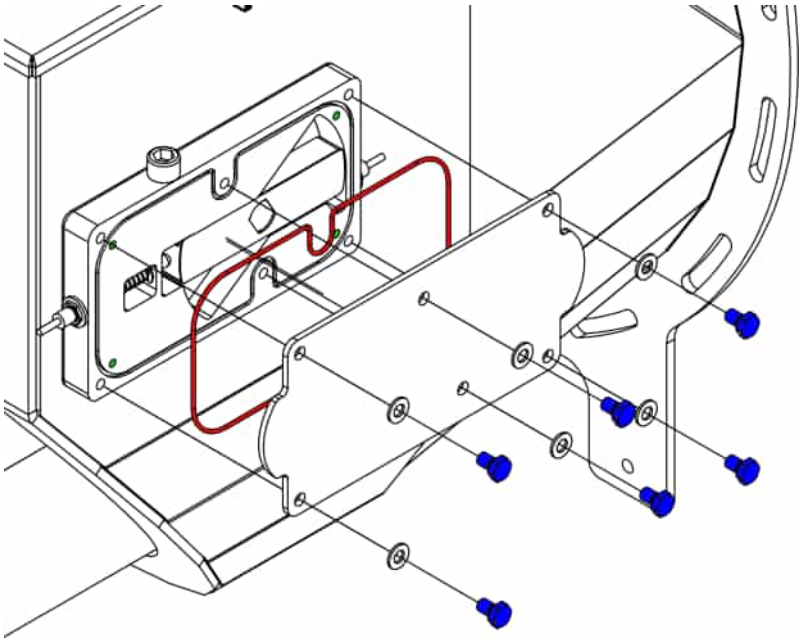


Fig. 22: Replacing the cover seal

Replacing the gasket

→ Proceed as per *Chapter 7.2 'Replacing the flap plate' on page 26*.

Replacing the housing cover seal

1. Open the housing cover
   ⇨ Loosen the screws and open the housing cover.

> **NOTICE!**
> When opening the housing cover, observe the swivel direction and the swivel range to ensure that the housing cover does not close.

2. Remove the housing cover seal

   ⇨ Remove the housing cover seal in such a way that no residue remains on the housing cover. If any residue remains on the housing cover, remove it using suitable tools or cleaning agents.

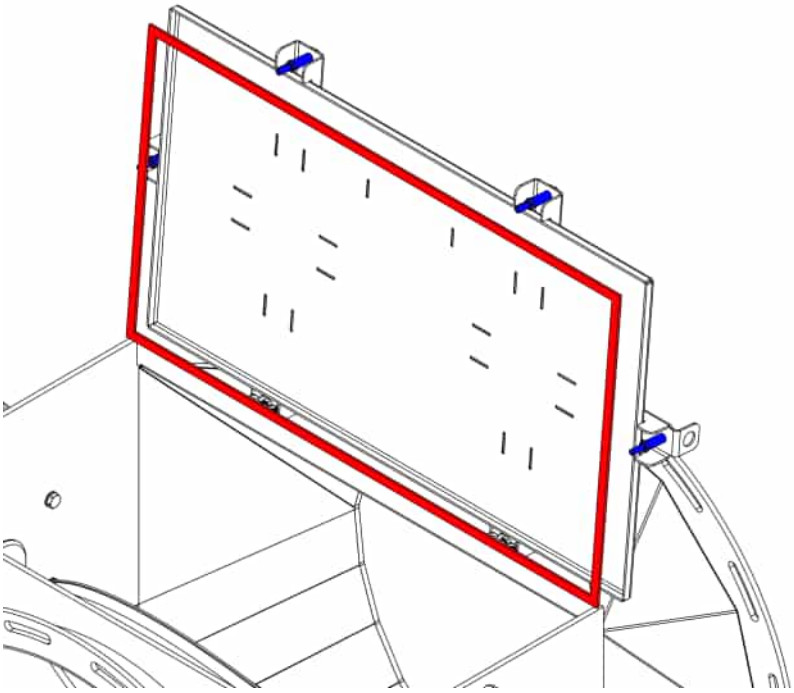


Fig. 23: Replacing the housing cover seal

3. Prepare the adhesive surface

   ⇨ Clean the prepared surface and the housing cover seal.

4. Glue

   ⇨ Carefully glue the self-adhesive seal to the housing cover and fit it in place.

5. Close the housing cover

   ⇨ Close the housing cover and secure it with the screws.

Replacing the bearing seal

1. Open the housing cover

   ⇨ Loosen the screws and then open the housing cover.

> **NOTICE!**
> When opening the housing cover, observe the swivel direction and the swivel range to ensure that the housing cover does not close.

2. Loosen the hexagon screws for fastening the bearing by a few turns.

3. Remove the old bearing seal using a suitable tool (e.g. plastic lever).
4. Position the new bearing seal in the space between the bearing and the housing and, in doing so, ensure that it is seated correctly. If necessary, loosen the hexagon screws for fastening the bearing a few more turns.
5. Tighten the hexagon screws for fastening the bearing to 35 Nm.
6. Check the freedom of movement of the flap plate. It must be possible to turn and move the flap plate without any noticeable resistance. If necessary, the bearings need to be loosened and adjusted to enable this. Fine adjustment can be carried out with the threaded pins (coloured green in figure 23).

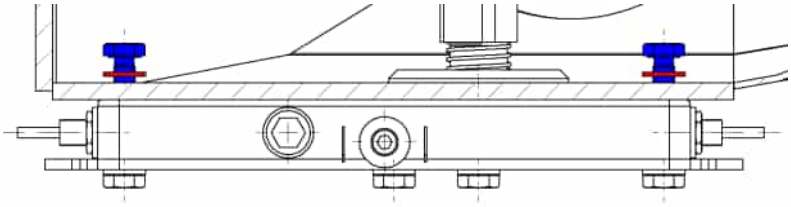


Fig. 24: Loosening the bearing fasteners

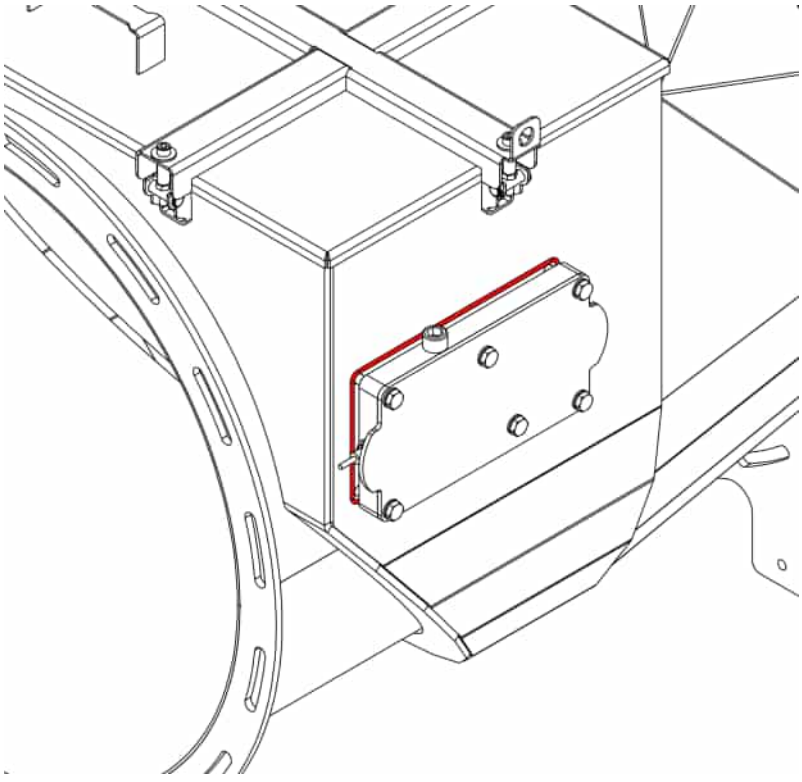


Fig. 25: Replacing the bearing seal

Replacing the switch seal

1. Loosen the fastening nut of the switch.
2. Remove the washer.
3. Mark the screw-in depth of the switch on the thread.
4. Unscrew the switch.
5. Remove the old switch seal and install a new switch seal.
6. Screw in the switch as far as the marking, put the washer in position and counter with a fastening nut.

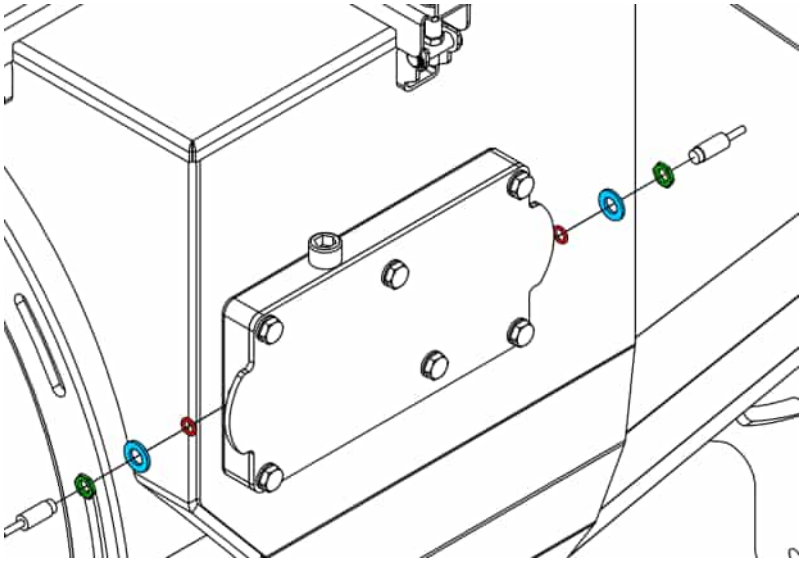


Fig. 26: Replacing the switch seal

Replacing the locking seal

1. Loosen the cylinder head screw on the bearing.
2. Remove the locking seal from the cylinder head screw.
3. Put the new locking seal in position on the cylinder head screw.
4. Screw the cylinder head screw into the bearing.

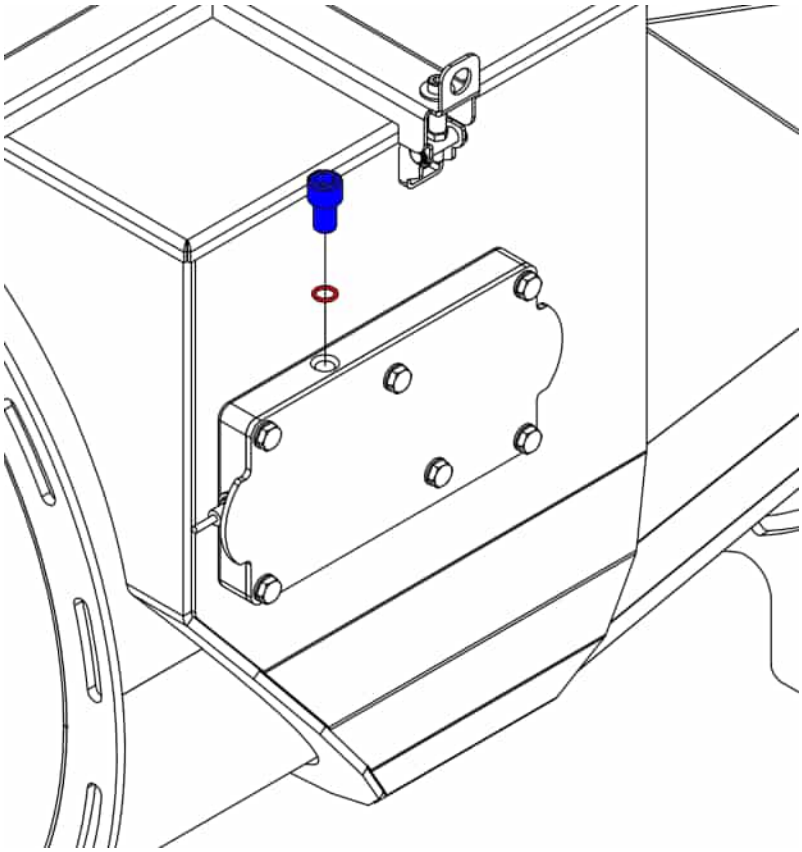


Fig. 27: Replacing the locking seal

8 Disposal

The product is to be handed over to a specialised disposal company that is able to recycle the separated materials in accordance with the locally applicable disposal regulations. A copy of the operating instructions must be given to the disposal company. The manufacturer bears no liability for damage to people, material or the environment resulting from improper disposal of the product.

9 Maintenance book

Maintenance book

Maintenance book

Customer / Kunde / Client:	
Type / Typ / Modèle: Fabrication no. / Fabrikations-Nr. / No. de fabrication:	
Installed at / Installiert in Anlage / Installée chez:	
Date of delivery / Lieferdatum / Date de livraison: Date valve was put into service / Inbetriebnahme / Date de mise en service:	

Date / Datum	Visit / Besuch / Visite		Time / Zeit / Heure	Objection / Beanstandung / Constatation
	Service/Wartung			
	Repair / Reperatur / Réparation	Solved / erledigt / éxecution		
	Fault / Störung / Défault			
	Service/Wartung			
	Repair / Reperatur / Réparation	Solved / erledigt / éxecution		
	Fault / Störung / Défault			
	Service/Wartung			
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	Service/Wartung			
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	Service/Wartung			
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	Fault / Störung / Défault			
	Service/Wartung			
	Repair / Reperatur / Réparation	Solved / erledigt / éxecution		
	Fault / Störung / Défault			

Reason / Ursache / Cause	Repair / Behebung / Réparation	Spare Parts / Ersatzteile / Pièce de rechange	Engineer. / Techn. / Ing.

Date / Datum	Visit / Besuch / Visite		Time / Zeit / Heure	Objection / Beanstandung / Constatation
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	Repair / Reperatur / Réparation	Solved / erledigt / éxecution		
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Reason / Ursache / Cause	Repair / Behebung / Réparation	Spare Parts / Ersatzteile / Pièce de rechange	Engineer. / Techn. / Ing.

Date / Datum	Visit / Besuch / Visite		Time / Zeit / Heure	Objection / Beanstandung / Constatation
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	Service/Wartung			
	Repair / Reperatur / Réparation	Solved / erledigt / éxecution		
	Fault / Störung / Défault			

Reason / Ursache / Cause	Repair / Behebung / Réparation	Spare Parts / Ersatzteile / Pièce de rechange	Engineer. / Techn. / Ing.

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