

Assembly and operating manual

PRIOAIR RDA-SD-V

Last updated: 09/2023
EP.A.11242EN

Dear customer,

Thank you for purchasing a high-quality PRIORIT product.

To ensure we can guarantee that the entire system will function free from errors, please carefully observe the following operating manual.

Failure to observe this manual will void any warranty guarantees.

We expressly reserve the right to make technical changes for the purpose of improving our product, or as required by changes to the law – including without any separate notification.

This operating / assembly manual may not be reprinted or duplicated in whole or in part without the written approval of PRIORIT AG.

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Important notes



The product must be installed and fitted flush and level!
During assembly, it is imperative to use a cross laser.



When storing individual parts, do not place them on the corners and cover the storage area with soft material beforehand, e.g. with a packing blanket!



May be installed by qualified personnel only!

Permitted installation

- See declaration of performance

Information in this manual

- This manual is not a manufacturer's declaration or a declaration of performance.
- The information in this manual applies to a wide range of different products.
- Binding technical and approval-related information can only be found in the declaration of performance.

Transportation

- If the packaging is damaged then the freight carrier must be notified of this in writing on the delivery slip – a “simple acknowledgement” provided to the delivering freight company will exclude recognition of damage in transit. The same applies if any packages are missing according to the delivery slip.
- The pallet must always be picked up from the narrow side with forks inserted fully to the end of the pallet.
- Attention: Per sqm of surface are incl. frame approx. 70 kg.
- Attention: Risk of injury!
- Attention: When opening the packaging, the product may be damaged if pointed or sharp objects such as knives are used.

General information

- This assembly manual is no substitute for a basic level of knowledge and skills with regard to the installation of doors in general and of smoke dampers in particular.
- To ensure correct shoring and the required level of quality of the installation, the smoke dampers should only be installed by qualified specialists.
- Do not install damaged parts.
- Always observe building law regulations and guidelines, as well as instructions from the responsible building authority and the responsible commissioned fire protection expert.

Intellectual property rights

- In order to protect innovations and the design, utility model specifications have been submitted to the German Patent Office.

General safety information

- This operating / assembly manual must always be stored at the location where the product will be used.
- Legally required safety information must be posted in an area visible to users.
- All safety and hazard notices and the type plate must be kept in legible condition.
- Only use products that are in proper working order.
- Observe the technical information in our catalogue or data sheet for the respective product.
- Improper installation may impair the protective function.
- Observe all instructions in these operating and maintenance instructions.
- The locking systems must not be changed or replaced.
- May be installed by qualified personnel only.

Intended use

- The products described in these operating/assembly instructions are manufactured in accordance with the state of the art and the recognised safety regulations.
- They may only be:
 - used as intended indoors and
 - used when they are safe and in good working order
- PRIOAIR is a large-format, single-leaf, fire-resistant smoke damper, specially designed to seal off outflow shafts as part of a smoke pressure system. The goal of using these is to keep safety stairwells free from smoke. In case of a fire, the controller of the on-site smoke pressure system opens the smoke damper automatically.
- Any other use is not deemed proper use.
PRIORIT is not liable for the resulting damage and consequential damage.

Functional test, safety check, care and maintenance

- An interval of 6 months is recommended for the functional test. If two consecutive functional tests do not reveal any faults, the functional test can take place annually. This interval of a maximum of one year should not be exceeded. Shorter intervals may be necessary depending on the risk assessment.
- We recommend that you complete a functional test and visual inspection every month. The safety check can only be carried out with the necessary level of care and attention by a qualified employee, as sufficient experience and a comprehensive level of knowledge are indispensable for this.
- Visual inspection of the door leaves and frame for mechanical damage, replace damaged parts if necessary.
- Visual inspection for corrosion damage, replacement of the assemblies affected if necessary.
- Visual inspection of the door leaves, frame and fittings for contamination, clean if necessary.
- Visual inspection of the smoke and fire protection seals for damage and completeness, replace seals if necessary.
- Common, mild household cleaners can be used for external cleaning of the smoke damper (only for decorative surfaces such as HPL/CPL; PRIOPAINT and veneered surfaces are excluded).

- The product must be protected against water, moisture penetration, or water spray.
- If safety-relevant damage is detected, they must be repaired with original parts before further use.

Building material/Surface

- Building material incl. surface coating A2-s1, d0: not flammable
- Building material incl. surface with high chemical resistance (PRIOPOAINT and veneered surfaces excluded), mechanical strength and stability.

Warranty, transfer declaration

In order to ensure the optimal function of our products, the assembly instructions must always be observed.

PRIORIT's warranty applies to the delivered products.

The installer/setup technician must provide a guarantee for all assembly work.

Any warranty or liability claims for personal injury or property damage are excluded if they were caused by one or more of the following:

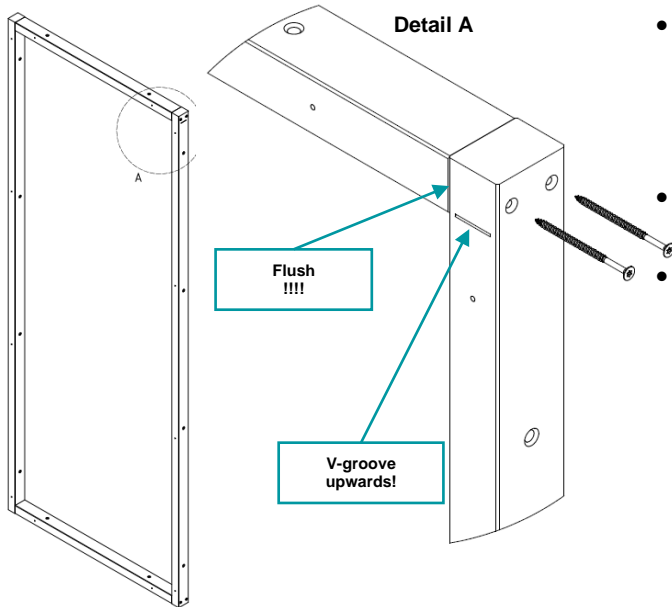
- The product is not used according to its intended purpose
- Improper assembly, commissioning, operation, and maintenance.
- Failure to observe the instructions on transportation, storage, operation, and assembly.
- Unauthorised structural modification to the product
- Improper repairs.
- Catastrophes caused by third parties or force majeure.

Assembly / scope of delivery – General information

- Observe the accident prevention guidelines and the workplace directive.
- For the assessment of fire protection and structural engineering aspects, the respective LBO must be observed.
- Only use products that are in proper working order.
- We cannot accept any liability for damage and malfunctions that occur due to improper transport or installation.
- The swivel or closing range of the doors must be kept clear at all times.
- Improper installation may impair the protective function.
- Screw connections to the structure may only be made with approved, suitable screws/dowels.
- The suitability of the screws/dowels must be checked depending on the building and in advance.
- Required fastening material must be coordinated with the building structure and the corresponding load and, if necessary, supplemented. Any fastening material supplied only meets part of the requirements.

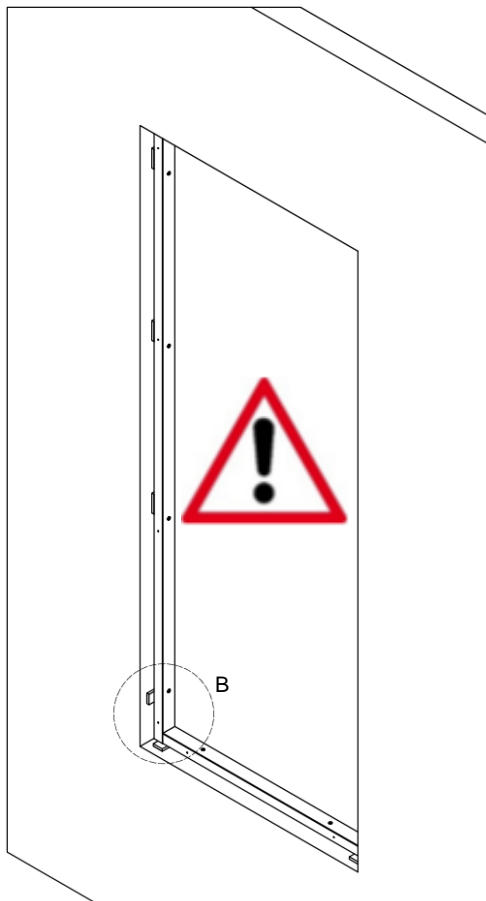
1 Installation

1.1 Assembly of the mounting frame

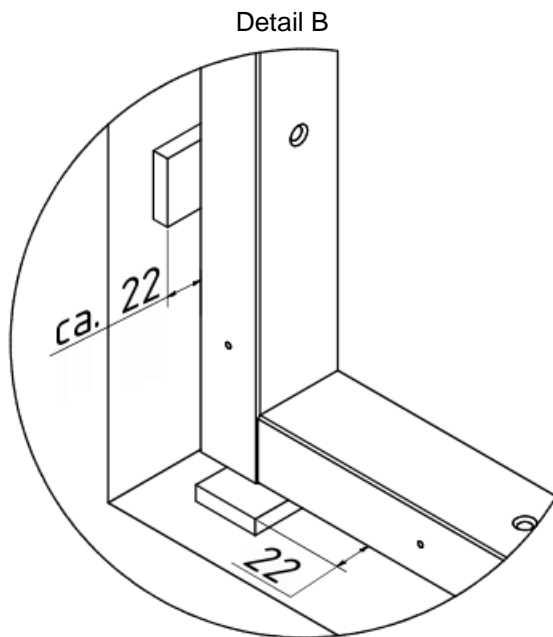


- Screw the upright and transverse frame parts of the mounting frame together using the enclosed countersunk screws 4.5 x 80 mm. Avoid overtightening the screws.
- Ensure that the **surfaces are flush!** See Detail A
- V-groove upwards!

1.2 Installing the mounting frame



- **Attention shaft work: Protect yourself, the material and your tools against falling down!**
- Place the mounting frame in the wall opening.
- Align plumb and level.
- Evenly convey the circumferential opening gap.
- Underlay the screw connection points with non-flammable underlay material. (Not included in the scope of delivery)
- Leave the underlay material protruding crosswise at the bottom, it will later serve as a contact surface for the door element (see Detail B).
- Underlay vertical frames.
- Secure against falling out!



Design shows DIN R; for DIN L, design mirror-inverted!

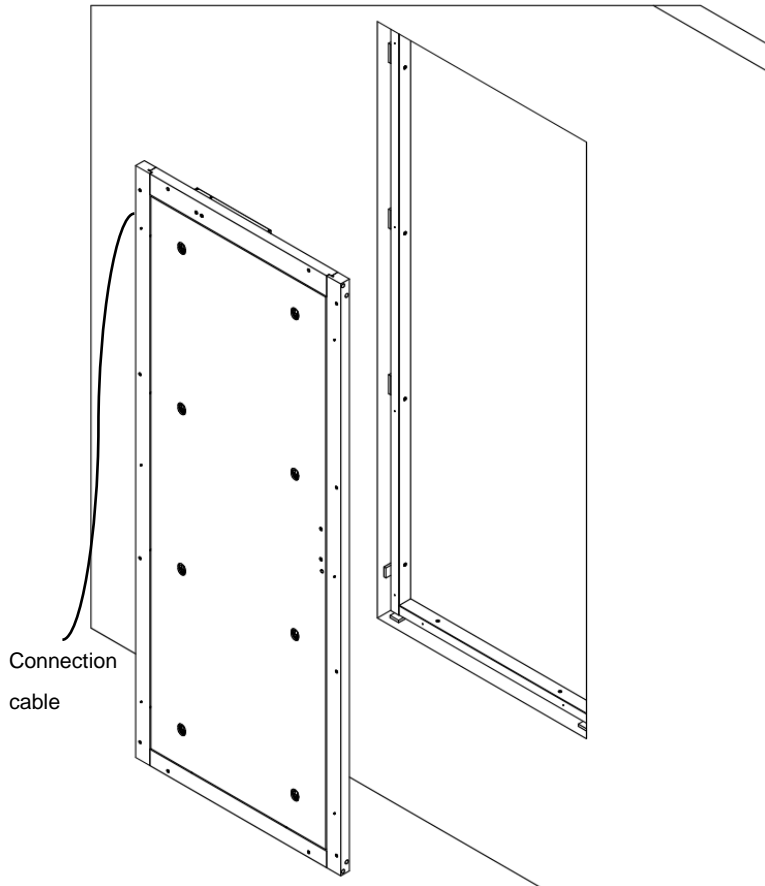
- Select fastening material according to "2 Installation details".
- Underlay screw connection points.
- **Underlay vertical frames.**
- Fill the cavity between the mounting frame and the wall opening with plaster (e.g. Knauf Uniflott) over the entire surface and all around.

For the installation of the product, we recommend our underlay blocks made of non-combustible PRIODEK H. Available in our range under article number "UK-60.6.5.4.3.2". Or in a handy plastic case - available under article number "UK-K-6.5.4.3.2".

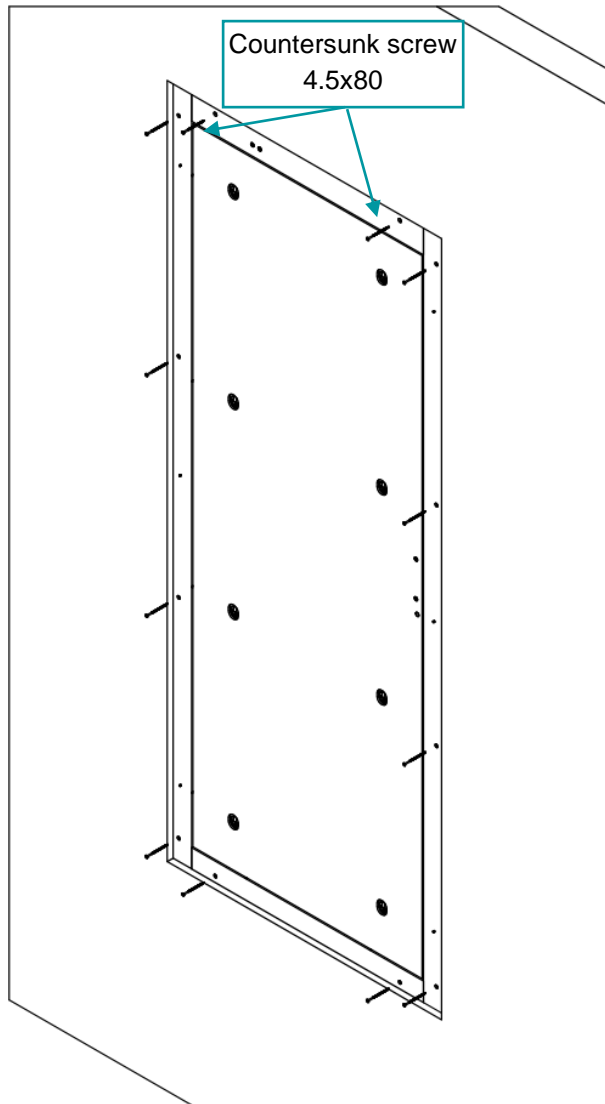


- The mounting frame and the frames should always be installed plumb and level. It is mandatory to use a cross laser for this purpose

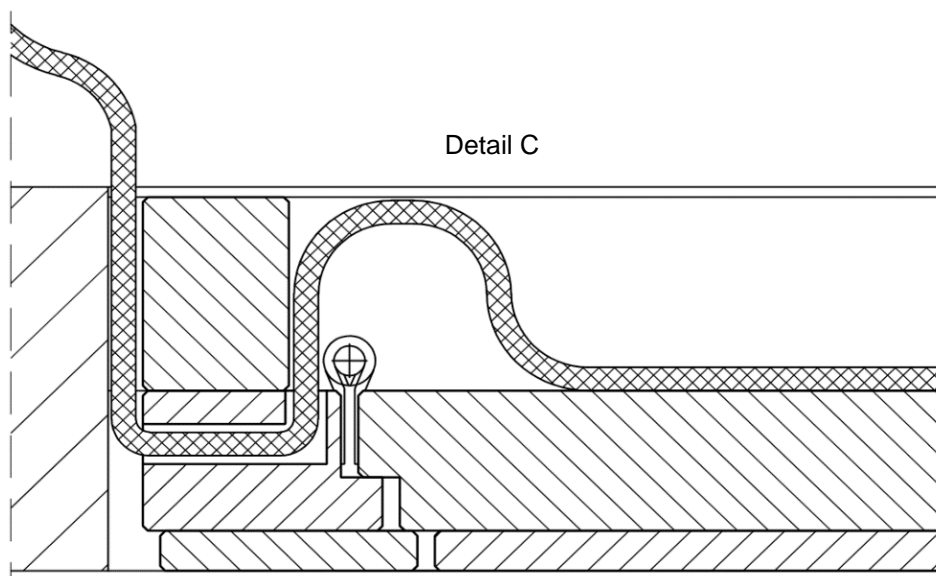
1.3 Installing the door element

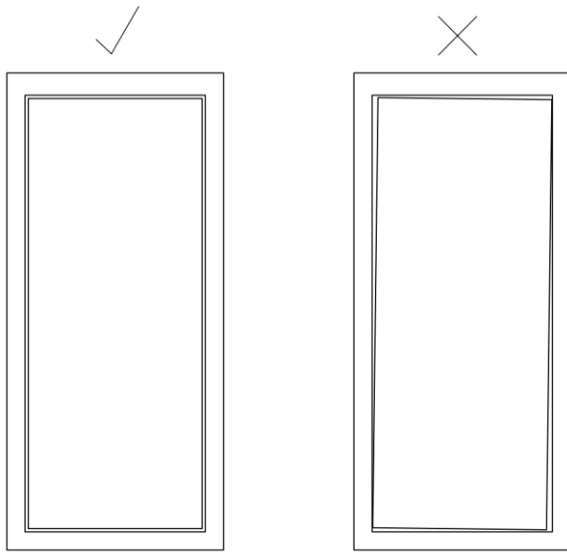


- Turn the door element (includes pre-assembled flap incl. frame) into the installation position and place it in front of the wall opening.
- Guide the connection cable hanging on the hinge side to the front and let it hang.
- Lift the door element into the wall opening and place it on the underlay material protruding below.
- First the door element must be pushed against the lower lateral underlay material (see Detail B on page 9).
- Align the door element flush with the mounting frame, secure against falling out and tilting!



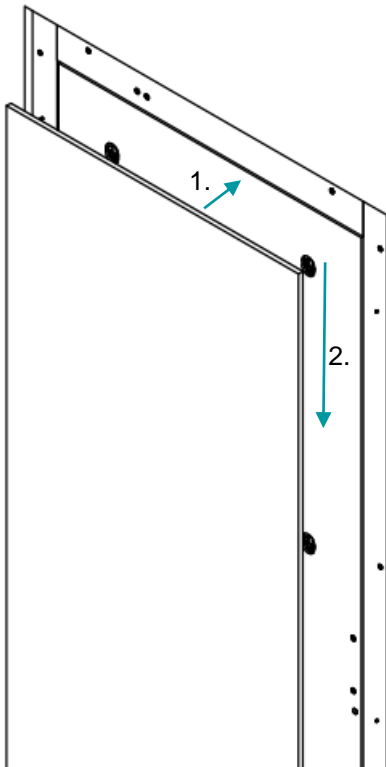
- Then tighten the four lower countersunk screws 4.5 x 80mm and subsequently align the door element with the cross laser. **Ensure that the gap is even!**
- Use the remaining fastening screws to screw the door element to the mounting frame.
- Avoid overtightening the screws!
- After the door element has been screwed to the mounting frame, the door leaf can be opened.
- A 24V power supply unit or a test device is required for this. Cable white +24V, cable brown -24V.
- Screw the type plate to the mounting frame with a panhead screw 4.5 x 20mm in the middle of the opening side.
- After the function test has been completed, lay the connection cable between the mounting frame and the wall in the shaft (see Detail C).
- Drill a hole between the mounting frame and the wall at the height of the exit position of the connection cable (see Detail C).
- Ensure that the connection cable is **not** damaged during drilling.
- Feed the connection cable through the hole into the shaft.



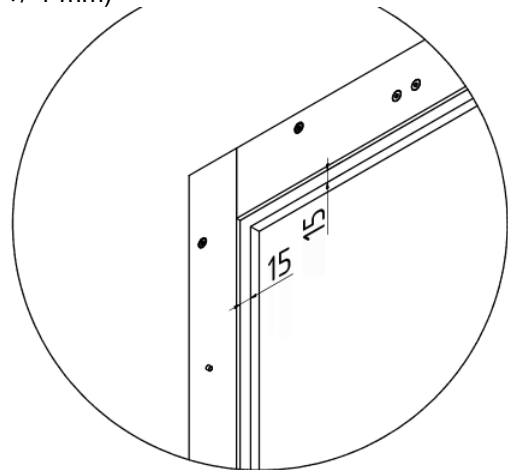


- **Ensure that the gap is even!**

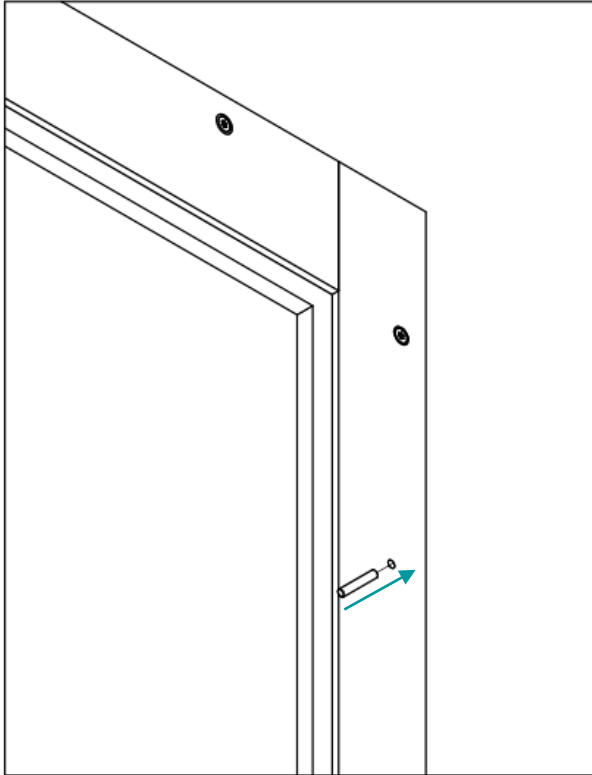
1.4 Installing the sash shutter



- Sash shutter is hung by means of suspension fittings.
- Place the sash shutter against the door leaf from the front and then let it slide into the suspension connectors.
- Check that the distance to the door leaf is the same everywhere (15 mm; +/-1 mm)

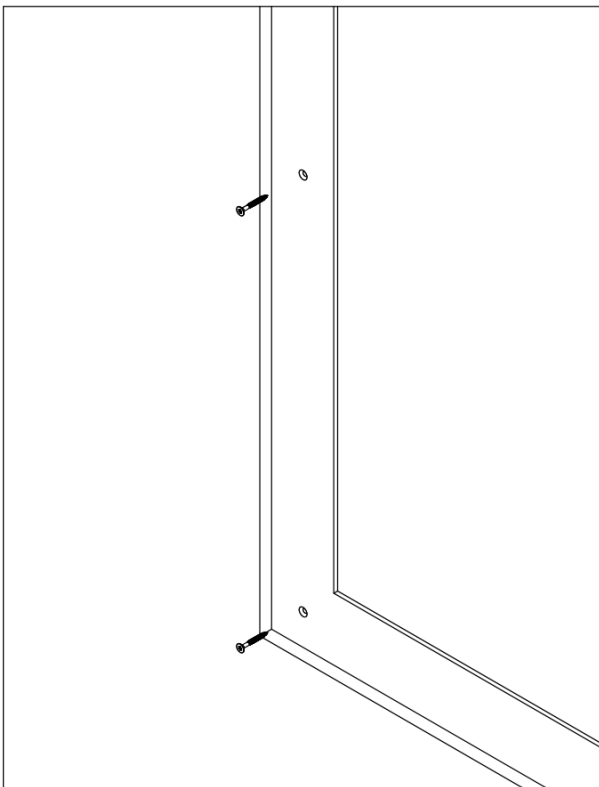


1.5 Installing the door frame



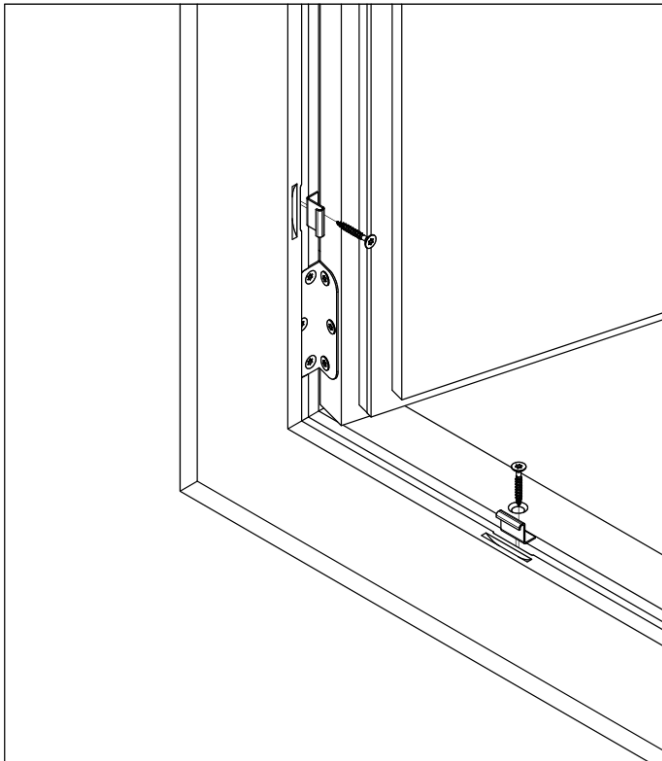
- Insert 6 dowel pins into the holes.
- The dowel pins serve as an installation aid for positioning the door frame.
- Further procedure described depending on the suspension type of the door frame. Visible fastening see 1.5.1; invisible fastening see 1.5.2

1.5.1 Visible fastening by means of countersunk screws



- Fit the door frame onto the dowel pins. Secure against falling.
- Screw together with the enclosed 4.5 x 35 mm countersunk screws. Avoid overtightening the screws! All screw connection points are to be used.

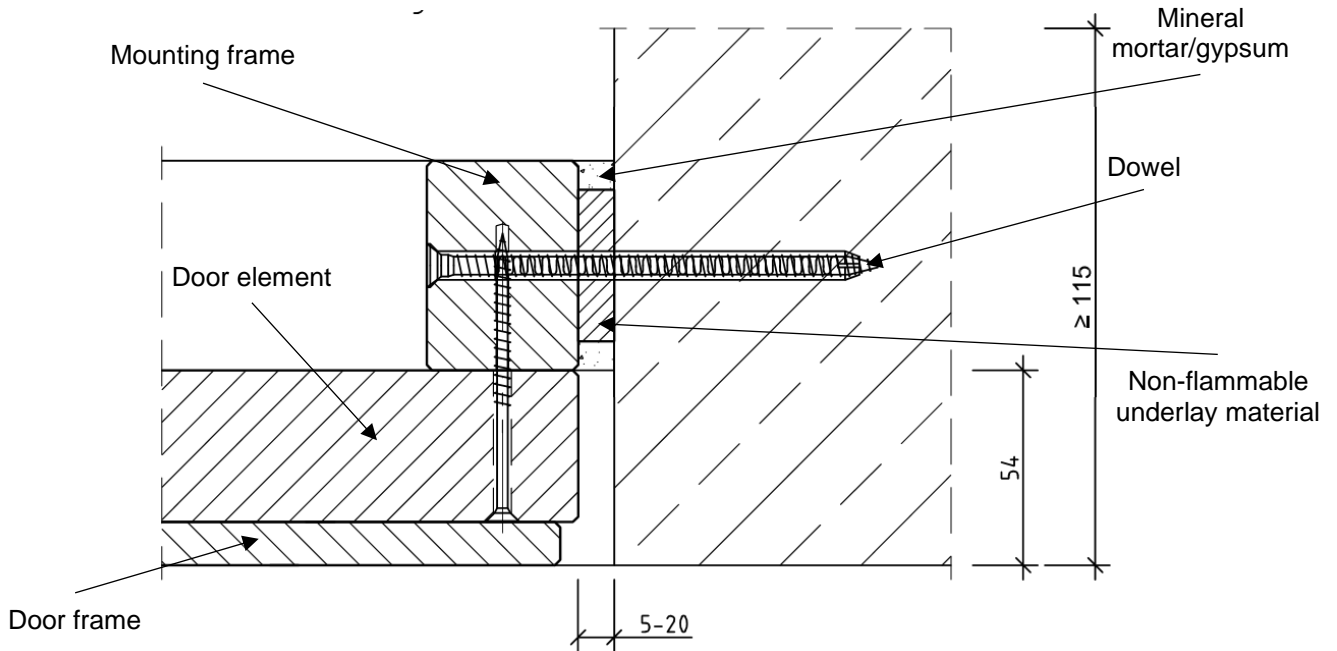
1.5.2 Invisible fastening by means of suspension fitting



- Fit the door frame onto the dowel pins. Secure against falling.
- Open the smoke damper as far as possible.
- Insert the door frame fitting into the groove provided and then screw it into the frame using a 4.0x30 mm countersunk screw. Avoid overtightening the screws!
- All screw connection points are to be used.

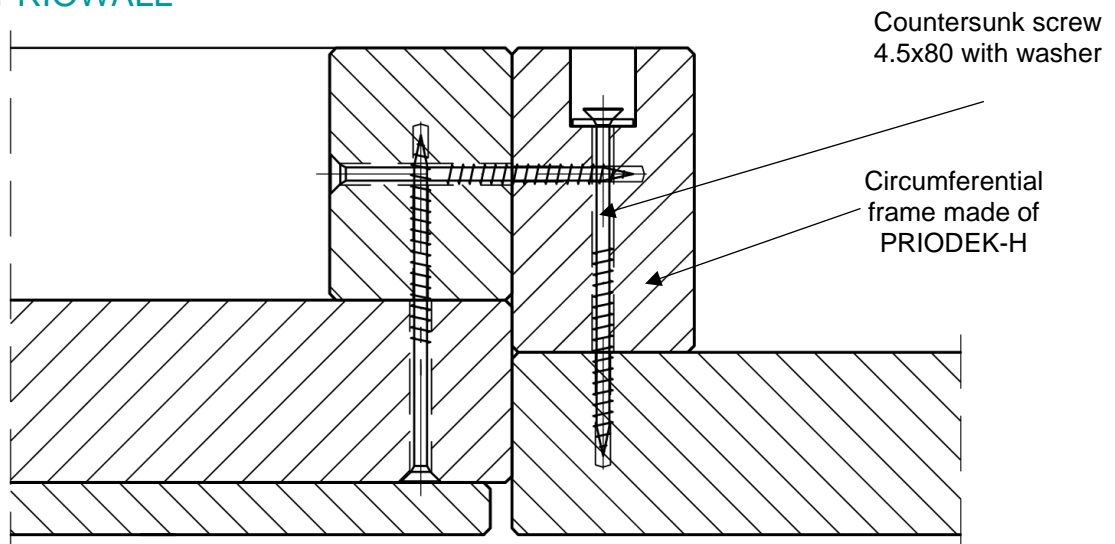
2 Installation details

2.1 in solid wall



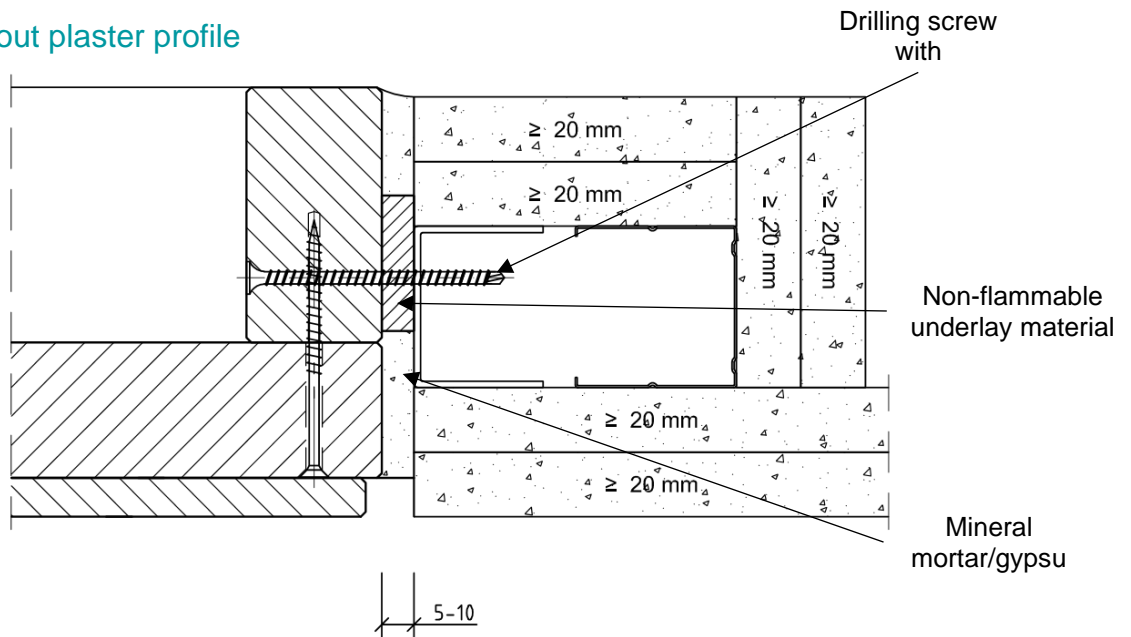
Fill the mounting frame over the entire surface and all around!

2.2 in PRIOWALL



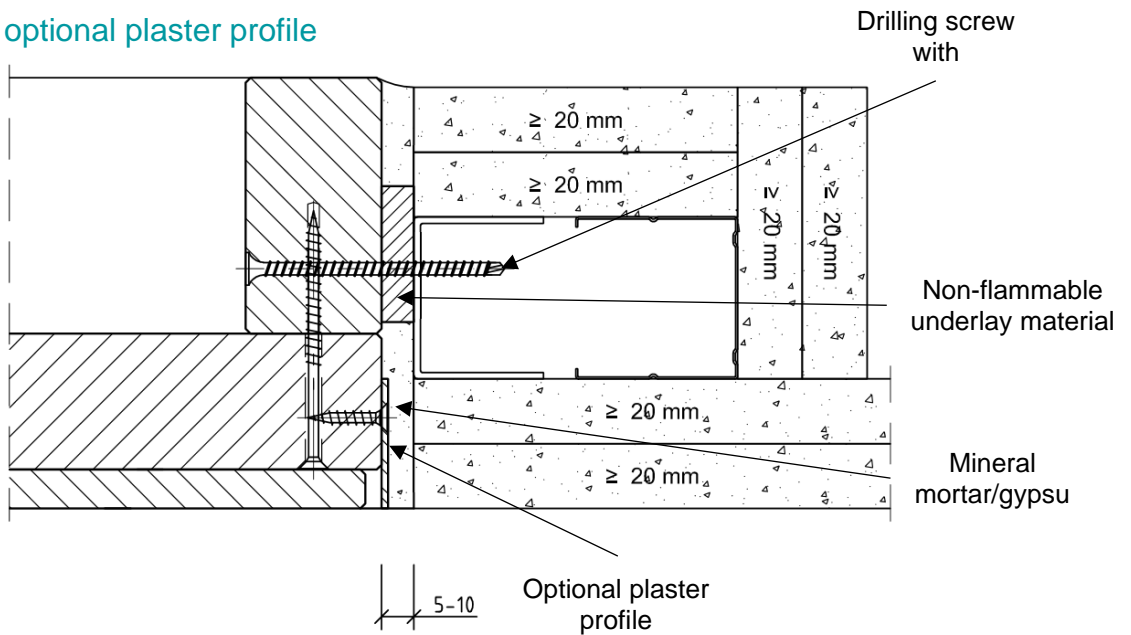
2.3 in installation shaft

2.3.1 without plaster profile



Fill the frame and mounting frame over the entire surface and all around!

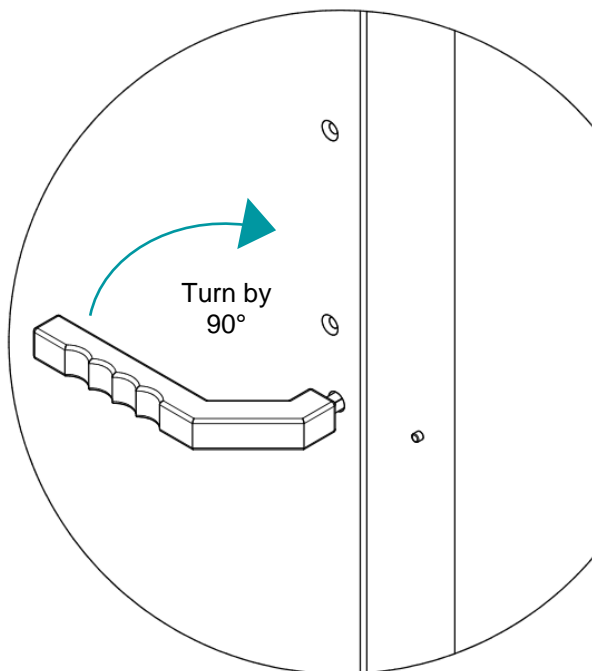
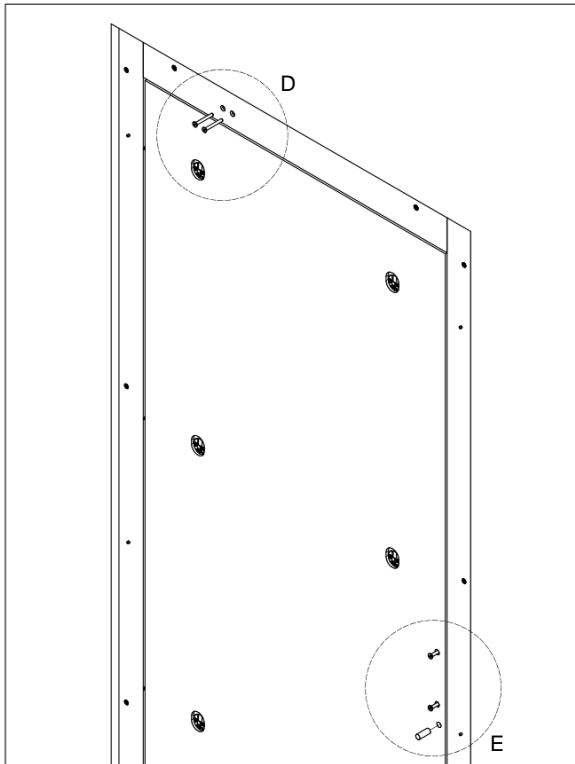
2.3.2 with optional plaster profile



Fill the frame and mounting frame over the entire surface and all around!

3 Emergency opening

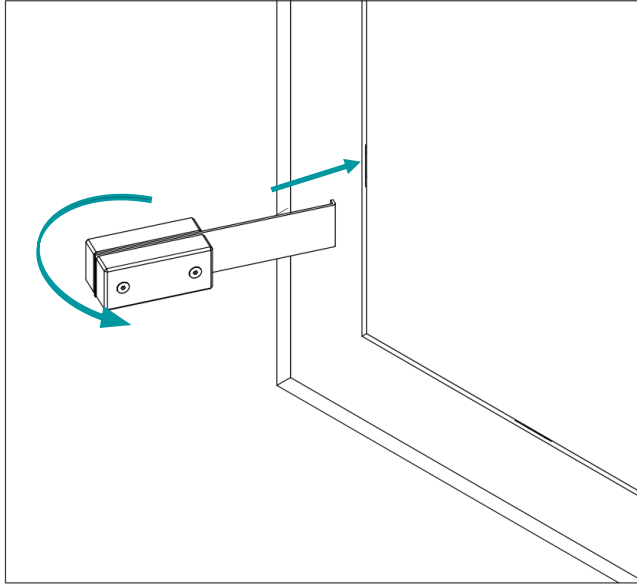
3.1 of the door element with visible fastening by means of countersunk screws



- Disassemble the screwed door frame and the sash shutter in the opposite order as described in 1.4 and 1.5. If the door frame is fastened invisibly - observe Item 3.2 beforehand!
- As described in Detail E, unscrew the 2 fastening screws approx. 20 mm and press the screws into the hole. This removes the drive tongue from the mushroom head and the locking gear moves freely.
- Then remove the fire stopper that is in the hole - e.g. using needle-nose pliers.
- As shown in Detail D, unscrew the two fastening screws and put them aside.
- Opening the locking gear using an inspection handle
- Move the door manually in the direction of the shaft.
- Repair or replace the chain actuator or the bolt drive, if necessary.
- Extend chain drive and fasten chain coupler to hinge bracket. Push in the fastening bolt to secure it.
- Refasten the hinge bracket using the M6x50 mm countersunk screws that were screwed out.
- Refasten the locking motor using the M6x80 mm countersunk screws that were screwed out.
- Carry out a functional test!
- Then fasten the shutters as described in 1.4 and 1.5.

Revision set available under article number "PA-REVISET"

3.2 of the door element with invisible fastening



- Press the dismantling tool into the gap between the sash shutter and the door frame and lever the frame out of the suspension fittings.
- Secure against falling!
- Lever out all suspension fittings
- The door frame can then be dismantled.

Check the door frame for damage before fresh installation! Do not use the door frame if it is damaged!

4 Classification

EI90(vedw-i<-->o)S1000C10000 AA multi

5 Technical information on the chain drive

The power supplies and electrical control equipment are to be operated exclusively with components approved by the manufacturer.

RWA chain drive LM EasyDrive PRIORIT®	
Electrical properties	
Rated voltage:	24 V DC
Permissible voltage range:	- 20% / + 25% of the rated voltage
Permissible ripple of the nominal voltage:	2 V _{ss}
Rated current:	Approx. 0.65 A at 200 N
Shutdown On via:	Integrated electronic load cut-off
Shutdown Off via:	Integrated electronic load cut-off
Shutdown in any position:	Yes
Current consumption at shutdown moment:	0.7 A
Current consumption after shutdown (quiescent current):	15 mA
Protection class:	Class III according to DIN EN 61140 (VDE 0140-1)

Mechanical properties	
Stroke length:	20 – 350 mm
Compressive force:	Up to 300 mm opening width: max. 200 N Up to 350 mm opening width: max. 150 N
Tensile force:	Max. 200 N
Locking force:	Max. 3000 N
Running speed:	4 – 10 mm/s
Dimensions: (L x H x D):	360.5 x 40.8 x 30 mm
Weight:	Approx. 1.3 kg
Connection and operation	
Connection line:	Preinstalled
Electr. connection:	Preinstalled; 6-pin connector; 4-pin connector ¹
Connection:	See page 23
Connection terminals:	Spring-cage plug 6 and 4-pin for max. cable cross-section of 1.5 mm ¹
Pause times for change of direction:	≥ 100 ms
Duty cycle (ED):	30% ED related to 10 min= 3 min ON; 7 min OFF
Opening and closing procedure:	Reversing the polarity of the operating voltage ¹
Life cycle:	> 10,000 cycles
Multiple control against end position:	Suitable
Continuous voltage*:	Suitable
Maintenance:	See maintenance notes

¹ deviating for BUS-capable drives! See separate BUS manual

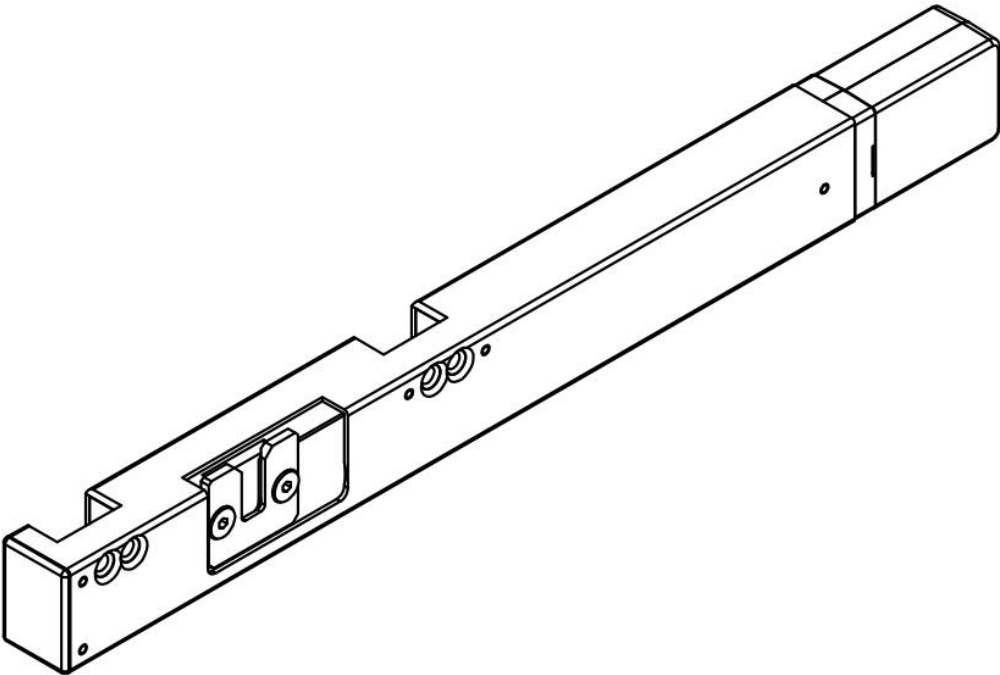
Installation and ambient conditions	
Rated temperature:	20°C
Ambient temperature range:	-10°C to +60°C
Suitable for installation and function in flues and natural ventilation:	Suitable
Suitable for outdoor installation:	Not suitable
Degree of protection:	IP 20 coordinating to DIN EN 60529
Approvals and verifications	
CE-conform:	According to EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC
Type tested:	-/-
Acoustic message:	Optional - to be seen on hinge side
Material	
Housing:	Zinc die-cast; rectangular profile
Opening mechanism:	Stainless steel chain
End caps:	-/-
Colour (standard):	Powder coated; RAL9006
Connection cable halogen-free:	No
Connection cable silicone-free:	No
Connection cable RoHS-conform:	yes

* for reasons of energy saving, we recommend configuring the control (power supply) so that the motor voltage is switched off after a predefined time (depending on the stroke lengths and running speed of the drives).

Depending on the control units used, increased currents in the starting torque must be expected when dimensioning the power supply and for dimensioning the cable cross-sections of the motor supply lines.

Functionally reliable operation is guaranteed when connected to corresponding controls from the same manufacturer. When operating on controls from other manufacturers, enquire about conformity with regard to functional safety.

6 Technical information on the bolt drive

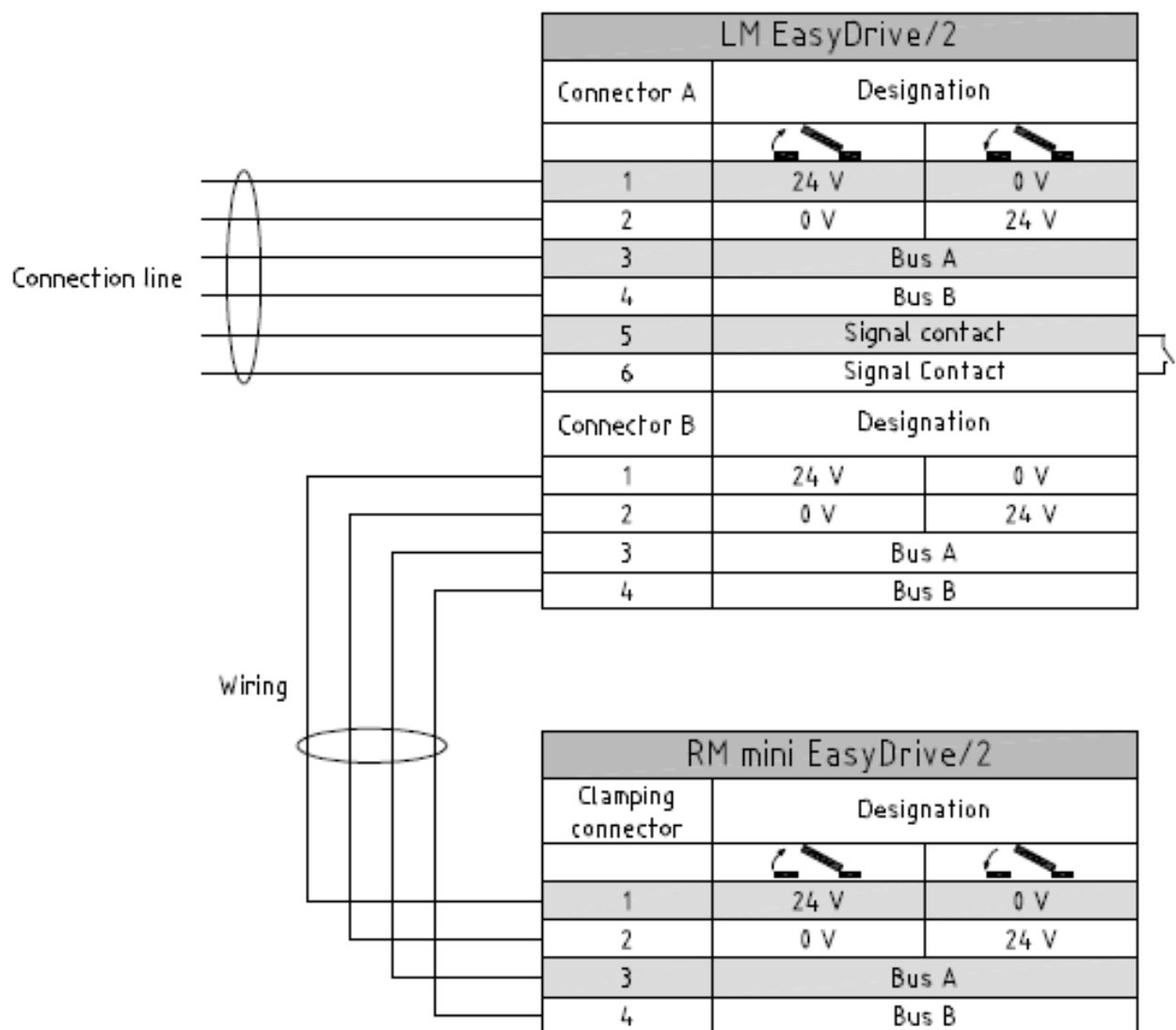
RWA bolt drive EasyDrive PRIORIT®	
Electrical properties	
Rated voltage:	24 V DC
Permissible voltage range:	- 20% / + 25% of the rated voltage
Permissible ripple of the nominal voltage:	2 V _{ss}
Rated current:	Approx. 0.6 A
Standby power:	0.2 W
Cut-off current OPEN:	0.8 A
Cut-off current Closed:	0.8 A
Shutdown device OPEN:	Limit switch
Shutdown device CLOSED:	Limit switch
Protection class:	III
	

Mechanical properties	
Stroke length:	18 mm
Compressive force:	600 N
Tensile force:	600 N
Rated locking force pull:	Max. 2000 N
Speed:	2.5 mm/s
Dimensions: (L x H x D):	368 x 25 x 25 mm
Weight:	Approx.
Connection and operation	
Connection line:	Preinstalled
Connection terminals:	8-pin plug-in screw terminal; preinstalled
Pause times for change of direction:	≥ 100 ms
Duty cycle (ED):	30% ED related to 10 min= 3 min ON; 7 min OFF
Cycles:	15 ²
Life cycle:	> 10,000 cycles
Multiple control against end position:	Suitable
Maintenance:	See maintenance notes
Installation and ambient conditions	
Ambient temperature:	-5°C to + 60°C
Degree of protection:	IP20
Approvals and verifications	
CE-conform:	Yes
	< 70 db(A)

² Number of cycles OPEN/CLOSED that may be run consecutively (without pause). Repeat cycles after one hour

Material	
Housing:	Aluminium
Opening mechanism:	Steel actuator
End caps:	Polyamide, glass-filled
Colour:	Black
Halogen-free:	No
Silicone-free:	No
RoHS-conform:	Yes

7 Electrical installation



Deviating for BUS-capable drives! See separate BUS manual!

8 Recommended inspections

Maintenance record PRIOAIR SD-RDA-V			
Project name:		Customer	
Address / Location:		Order number:	
Article number:		Serial number:	
Date of inspection:		Next inspection:	
General assessment			
Cleanliness:			
Labelling:			
Accessibility:			

Maintenance work				
POS	Maintenance tasks	OK	Fault-laden	Fault remedied
1	Checking the wiring of the drive for damage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	If limit switch is present: Checking the wiring of the limit switch for damage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Checking the cleanliness of the smoke damper and cleaning if necessary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Checking the condition of the leaves and seals, repairing if necessary and preparing the corresponding report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Confirmation that the smoke damper opens and closes by using the control system and observation of the smoke damper, repairing if necessary and preparation of the corresponding report.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Confirmation of the OPEN and CLOSED positions of the limit switches, repairing if necessary and preparation of the corresponding report.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Confirmation that the smoke damper fulfils its function as part of the smoke extraction system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Confirmation that the smoke damper has been left in its standby position.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Checking chain and bolt drive for function	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Greasing the gear rail ¹	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NOTE:

A smoke damper is generally part of a smoke extraction system. For this reason, as regulated by the operation and maintenance requirement for the plant, the entire plant should be checked.

¹ Lubricate moving parts with acid- and resin-free oil or grease; no silicone spray

Visual inspections				
POS	Description	OK	Fault-laden	Fault remedied
1	Visual inspection of the door leaves and frame for mechanical damage, replace damaged parts if necessary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Visual inspection for corrosion damage, replacement of the assemblies affected if necessary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Visual inspection of the door leaves, frame and fittings for contamination, clean if necessary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Visual inspection of the smoke and fire protection seals for damage and completeness, replace seal if necessary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Remarks

Final remark			
Plant condition	<input type="checkbox"/> New	<input type="checkbox"/> Good	<input type="checkbox"/> Bad
Plant operational	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Executing person:

Date / Name / Signature

With my signature I confirm that I have been trained (and tested) as a competent person in fire protection, safety and ventilation technology as well as in the relevant, state occupational health and safety laws, the BGR regulations and the generally recognised rules of technology and that I am authorised by the manufacturer PRIORIT AG to carry out the maintenance.

9 Fault rectification

Fault	Potential cause	Potential remedy
Smoke damper does not work.	The green six-pin standard connector may not be plugged together correctly. Or - the connectors inside the actuators are not plugged together properly.	Plug the connector together properly until it clicks into place. Check the connectors inside the actuators and plug them together.
Smoke damper does not function after connection to the control system (on site).	There is no 24V voltage on site. Incorrect wiring on site.	Check the voltage on the supply line. Check smoke damper with external power source. Check wiring on site.
Smoke damper does not lock.	Locking motor does not lock.	Form a set using the EasyDrive software.
Smoke damper does not lock completely.	Leaf landing pressure setting too high.	Check perpendicularity! Loosen leaf pressure using the adjusting key.
Smoke damper does not open, close properly or does not work after checking the above points.	Fault in the chain drive.	Perform a hard reset while the chain drive is under tension. To do this, bridge the 1st cable (white) and the 3rd cable (green) for 2 seconds. The chain length and the end position may then need to be readjusted by a qualified company. A drive set may need to be formed again afterwards.
Smoke damper does not work after replacing the chain drive.	The green six-pin standard plug is incorrectly assigned.	Check whether the two connector parts are correctly assigned (see page 24).

10 Notes