

# Instruction Manual

## Smoke PROtec Multiple Roller

**BA-RSV-52xxx-10-en**

**Instruction manual for automatic textile Smoke Curtains.**

Valid for following item numbers:

- RSV 52110
- RSV 52111
- RSV 52120
- RSV 52121
- RSV 52210
- RSV 52211
- RSV 52220
- RSV 52221



Copyright by SIMON RWA Systeme GmbH  
Subject to technical modifications without notice; errors excepted.

# Safely Control Spread of Fire

Smoke PROtec® - Smoke curtains

# **Instruction Manual**

Smoke PROtec Multiple Roller



---

**BA-RSV-52xxx-10-en**

---

Copyright by SIMON RWA Systeme GmbH  
Subject to technical modifications without notice; errors excepted.

---

### **Table of contents**

---

1. Table of contents .....	3
2. General .....	5
2.1. Forward to this manual .....	5
3. Description of product .....	5
3.1. Curtain sizes .....	5
3.2. Electrical control panel type RSV-500 .....	6
3.3. Technical data .....	6
3.3.1. Smoke curtain .....	6
3.3.2. Electrical control panel .....	7
4. Safety regulations .....	7
5. Variants .....	8
5.1. Multiple roller side by side .....	8
5.2. Multiple roller over/under .....	9
6. Images .....	10
6.1. Multiple roller side by side .....	10
6.2. Multiple roller over/under .....	14
7. Clearances .....	18
8. Installation .....	20
8.1. Installation variants .....	21
8.1.1. Multiple roller side by side .....	21
8.1.2. Multiple roller over/under .....	22
8.2. Mounting of the housing box .....	23
8.3. Mounting of the housing box multiple roller side by side .....	24
8.4. Mounting of the housing box multiple roller over/under .....	25
8.5. Installing roller assembly .....	25
8.5.1. Mounting of the roller assembly multiple roller side by side .....	26
8.5.2. Mounting of the roller assembly multiple roller over/under .....	27
8.6. Installing main switch .....	29
8.7. Control panel RSV 500 .....	31
8.8. Installing control panel RSV 500 .....	31
8.9. Connecting components to the RSV 500 control panel .....	32
8.9.1. Rotation direction adjustment (2nd Drive unit) .....	35
8.9.2. Connect second RSV 500 (Slave). .....	35
8.9.3. DIP-switch setting .....	36
8.9.3.a. DIP switch 1 .....	37

---

### **Table of contents**

---

8.9.3.b. DIP switch 2 .....	37
8.9.3.c. DIP switch 3 .....	37
8.9.3.d. DIP switch 4 .....	37
8.9.4. Installing backup battery .....	38
8.10. Complete the installation .....	39
8.11. Mounting of the support bracket multiple roller side by side .....	39
8.12. Mounting of the support bracket and frontline plate multiple roller over/under .....	41
8.13. Mounting of the cover plate .....	43
8.14. Mounting of the Ballast round bar .....	44
8.15. Mounting of the bottom bar .....	45
8.16. Install side guides (optional) .....	47
8.17. installing bottom bar .....	50
9. Start up .....	51
9.1. Implement the programming .....	53
9.1.1. Program drop position (unwind length) with two-step descent .....	53
9.1.2. Program drop position (unwind length) without two-step descent: .....	53
10. Attach installation retainer .....	54
11. Care and maintenance .....	54
11.1. Functional check .....	54
11.2. Maintenance .....	54
11.2.1. Maintenance check list .....	55
11.3. Clean curtain material .....	56
11.4. Check backup battery .....	56
11.5. Repair and exchange .....	56
11.6. Warranty conditions .....	56
12. Fault finding .....	57
13. Appendix .....	58
13.1. EC Manufacturer's declaration .....	58
13.2. Company addresses .....	58
13.3. Germany: .....	58
13.4. Austria: .....	58
13.5. Switzerland: .....	58

### General

## 2. General

### 2.1 Forward to this manual

This manual has been created for the purposes of proper operation, installation and maintenance by trained, experienced specialist personnel (e.g. electrician) and/or specialist personnel with knowledge involving the installation of electrical devices.

Read the instruction manual carefully and follow the prescribed sequence. Retain the operating manual for later use/maintenance. Please precisely observe the pin assignment, the minimum and maximum performance data (see 3.3 "Technical data" on Page 6) and the installation instructions. Incorrect usage or improper operation/assembly can cause the loss of system functions and result in damage to property and/or persons.

You will find the following symbols in this manual:



#### INFORMATION

This information provides you with additional tips!



#### ATTENTION

A warning draws your attention to potential dangers for the product.



#### DANGER

This warning draws your attention to possible risks to your life or health!



#### ENVIRONMENTAL WARNING

A warning draws your attention to potential dangers for the environment!

- This is how operating procedures are identified.
- Consequences are represented this way.
- *Buttons* or *switches* to be activated are indicated in italics.
- "Displays" are placed in quotation marks.

## 3. Description of product

The smoke curtain system Smoke PROtec<sup>®</sup> consists of a high-grade textile glass fabric, which is rolled up in a compact head box and normally not visible. The smoke curtains work basically according to the "fail-safe" principle, i.e. in case of failure of all energy sources, in case of fault or disconnection, the smoke curtain descends in a controlled manner within maximum 60 seconds into the fire alarm position.

Thus the system fulfils highest safety requirements. The weights brought in the bottom bar provide the necessary energy for unwinding by gravitational force. The winding up takes place via a 24 V DC tubular motor. An external electronic system ensures a controlled winding up and down till the relevant end positions. This technology conforms to the highest security level according to DIN EN 12101-1.

The smoke curtain system Smoke PROtec<sup>®</sup> is according to DIN EN 12101-1 graded into the classification ASB 3<sup>1</sup>, D120.

Clearances are reduced to a minimum by the special construction of the system even in use of multiple rolling. Special solutions are possible at any time e.g. diagonally across (90°). By the optimal use of side guides the clearances can be avoided at the edges. Moreover, through that the deflection of the smoke curtain in critical application areas, as e.g. in subway stations, is avoided.

The automatic smoke curtain systems Smoke PROtec<sup>®</sup> comply with the newest state-of-the art technology and fulfil the requirements according to DIN EN 12101-1.

### 3.1 Curtain sizes

For curtain larger than 5960 mm, multiple roller were used, which are placed in a continuous housing optional side by side or over/under. The rollers have an overlap of 300 mm.

The maximum width of the smoke curtain is 30 000 mm (Multiple roller overlapping). The maximum drop length is 6000 mm.

1. ASB 3 denotes smoke curtains which move "fail-safe" in a controlled manner within 60 seconds in their fire alarm position when all primary and auxiliary energy sources are disconnected through wiring breaks or other system errors or any combination thereof.

Automatic smoke curtains (Type ASB3 and ASB4) which are installed in critical areas of buildings e.g. emergency exits, entrances and exits of escalators, stairwells, etc., must have a speed range of 0.06 to 0.15 m/s. Smoke curtains with the classification ASB3 are also suitable for cases of operation which must fulfil a life-saving function.

### Description of product

The production is externally monitored by a DIBT<sup>2</sup> notified body!

#### 3.2 Electrical control panel type RSV-500

The control panel RSV 500 is equipped with a switch-mode power supply (optional with emergency power supply) and contains the entire control and regulation electronics for the operation of smoke curtains. The connecting cables for the trigger elements like manual trigger button, smoke detector and contact of a central fire alarm system (FAS) are automatically monitored by the RSV 500.

#### 3.3 Technical data

##### 3.3.1 Smoke curtain

**Table 1: technical data of smoke curtain**

Fabric	One-sided PU-coated glass fabric, 570 g/m <sup>2</sup> , colour grey, Non-flammable according to DIN 4102-1, A2
Unwind	By force of gravity (gravity fail safe)
Windup	Via planetary geared-motor, 24 V DC, engine speed sensor, maximum torque 4 Nm, integrated into the winding shaft, including 2 m connection cable.
Installation	Ceiling, wall, vertical unwinding
System size <sup>1</sup>	System width ≤ 5960 mm (Single roller) System width ≤ 30000 mm (Multiple roller) Unwinding length ≤ 6000 mm
Head box	Sheet steel 1.0 mm powder-coated in RAL 7035 <sup>2</sup> Single roller (to approx. 6 m width)
End section	Sheet steel 1.0 mm powder-coated in RAL 7035 <sup>2</sup> with integrated unwind weights in fabric bag.

**Table 1: technical data of smoke curtain**

Classification/Standardization	EN 12101-1, ASB 3, D120 (fail-safe)
Fire resistance time	2 hours at 600° C (in accordance with DIN EN12101-1)
Side guides	Optional feasible in critical applications, where great deflections must be taken into account (e.g. subway station). Steel 1.5 mm powder-coated in RAL 7035 <sup>2</sup> , dimensions (W × D) 50 × 100 mm. In case of use of side guides the curtain material will be delivered with a restraint system. In this way, it prevents the curtain material being pulled out sideways from the tracks in case of deflection by pressurization (e.g. excess pressure by fire).

1. Special size upon request.
2. Special color upon request.

<sup>2</sup>Note: DIBt is the only German approval body for construction products and types of construction.

### Safety regulations

#### 3.3.2 Electrical control panel

**Table 2: electrical control panel type RSV 500**

Input voltage	230 V AC / 50 Hz
Max. pre-fuse	≤ 16 A / Characteristic C
Output voltage	24 V DC
Max. load current	2,5 A
Emergency battery (optional)	NiMH (durability approx. 4 years)
Protection type	IP 54
Housing (W× H×D)	Plastic housing, grey 220 × 145 × 55 mm
Fuses	Power input fuse (1A slow-blowing)
LED indicators (at main emergency button type HE - 075)	- power indicator "yellow" - ready for use "green" - smoke curtain released "red"
Main and secondary control panel	RESET button "wind-up curtain"
Operating temperature range	-5° C to 40° C
Weight	approx. 1,0 kg
Multifunction indicators (in RSV 500)	- yellow - red

#### 4. Safety regulations



##### **DANGER**

The VDE 0833 for hazard alarm system, VDE 100 for electrical systems, DIN 18232 for RWA systems, the regulations of the local fire service, the EVU (power company) for the power supply line as well as BGV A3 (Regulation for the Prevention of Industrial Accidents, "Electrical Systems and Equipment") and BG Rule BGR 232 (Directive for Power-driven Windows, Doors and Gates) are to be considered.



##### **DANGER**

Power supplies and electrical control devices of fire protection systems must be easily accessible.

### Variants

#### 5. Variants

##### 5.1 Multiple roller side by side

Figure 1:

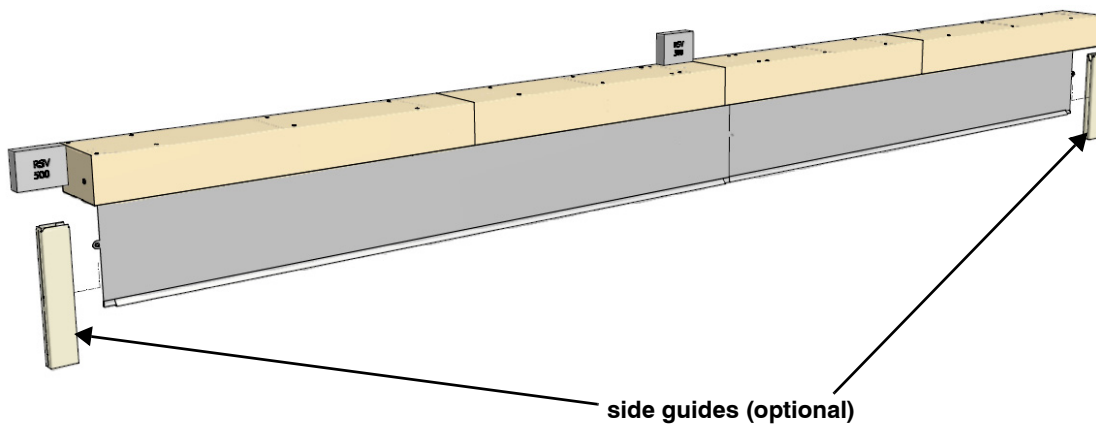
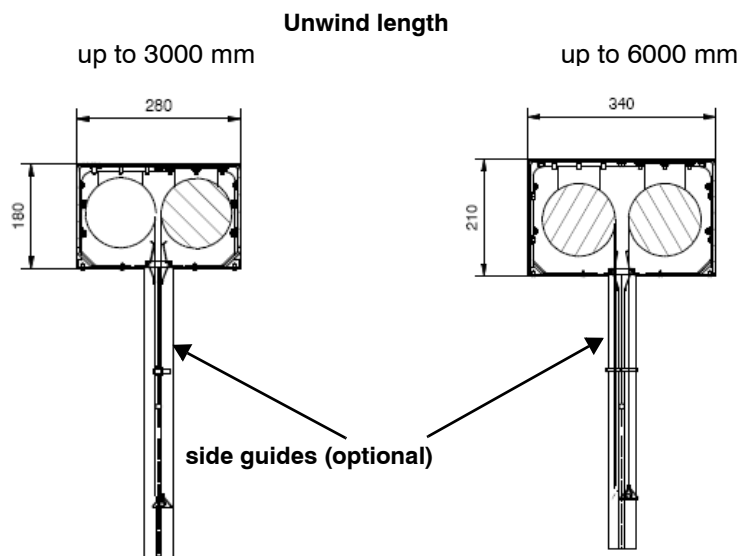


Figure 2:





### Variants

#### 5.2 Multiple roller over/under

Figure 3:

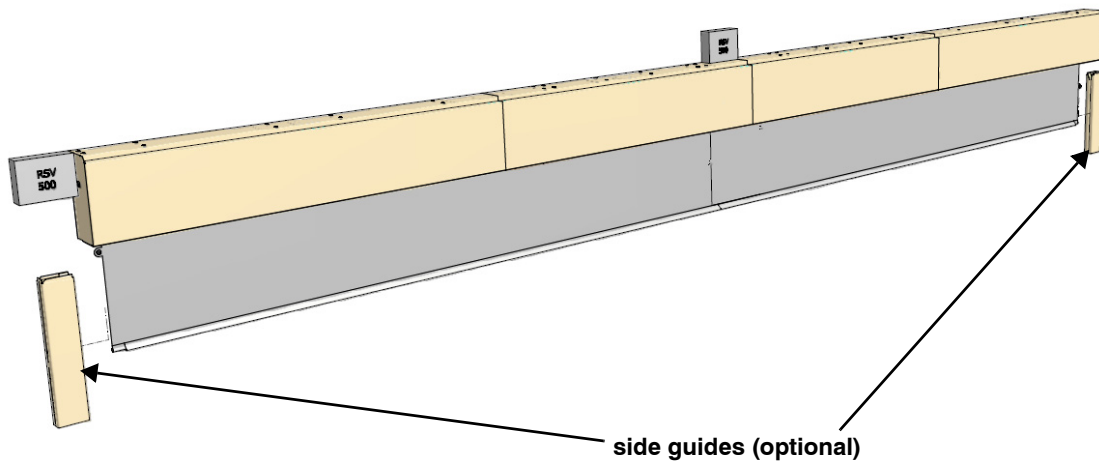
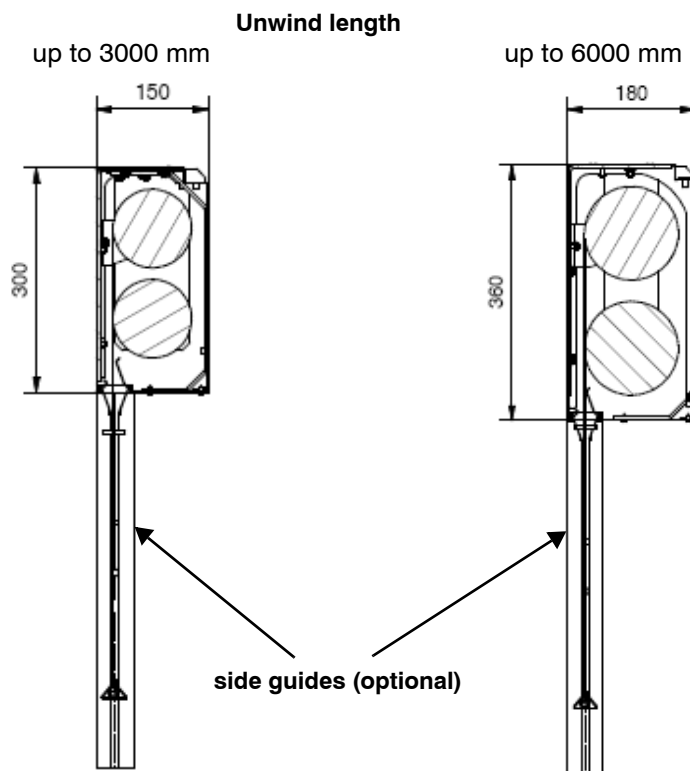


Figure 4:



### Images

#### 6. Images

##### 6.1 Multiple roller side by side

Figure 5: housing box on the left multiple roller side by side

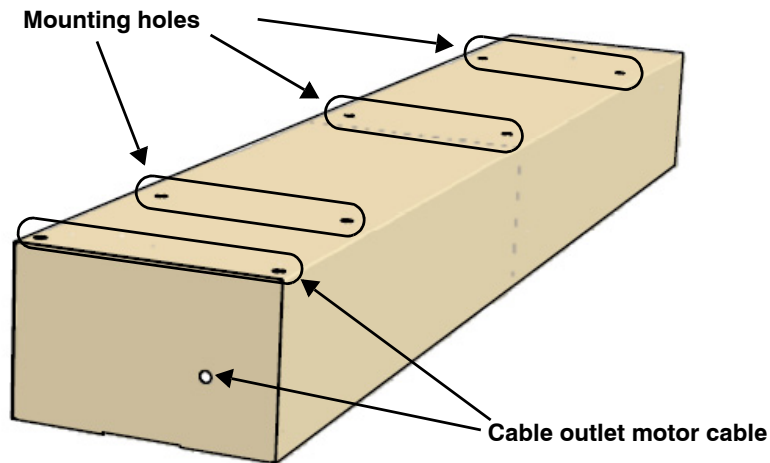
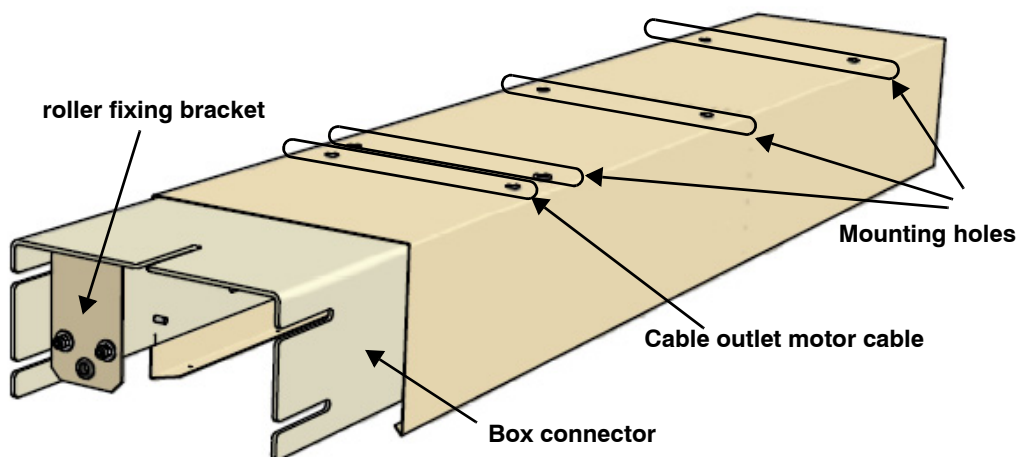


Figure 6: housing box on the central multiple roller side by side



### Images

Figure 7: housing box on the right multiple roller side by side

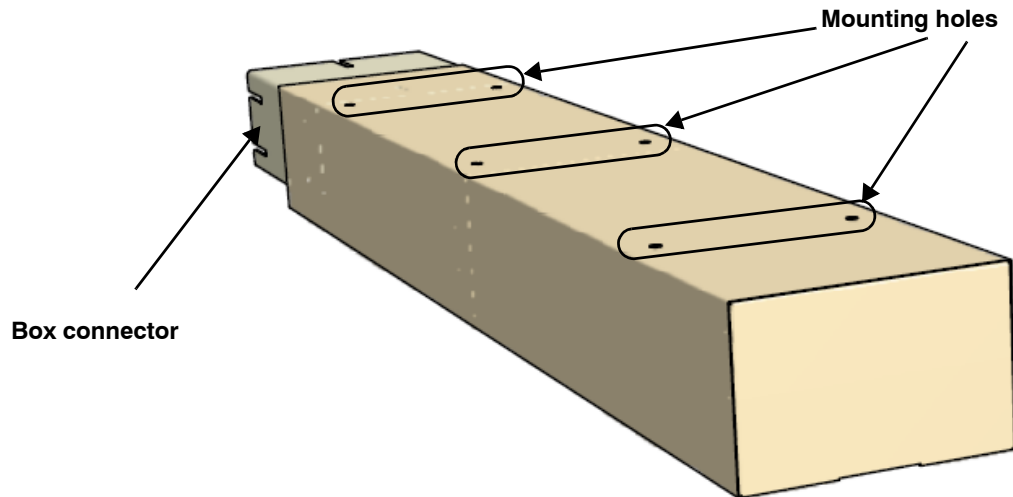


Figure 8: roller assemblies

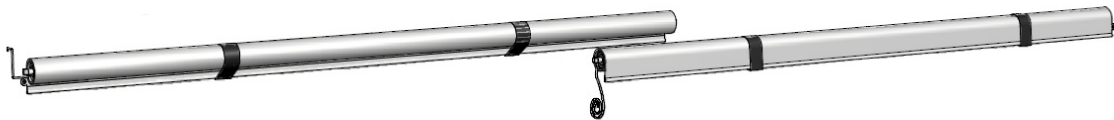


Figure 9: support bracket multiple roller side by side

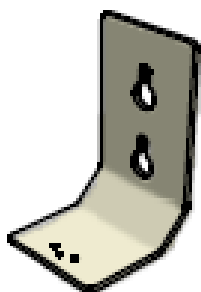
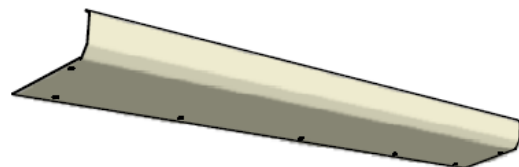


Figure 10: cover plate left, middle, right-version without side guides

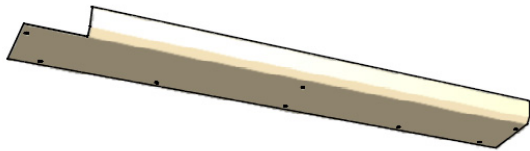


---

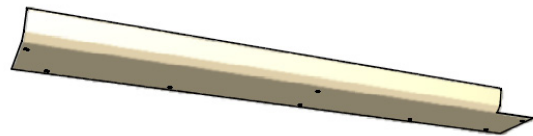
### Images

---

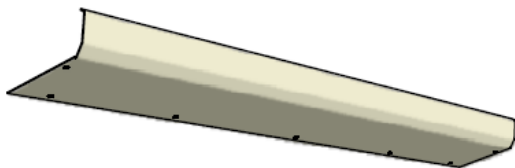
**Figure 11: cover plate on the left-version with side guides**



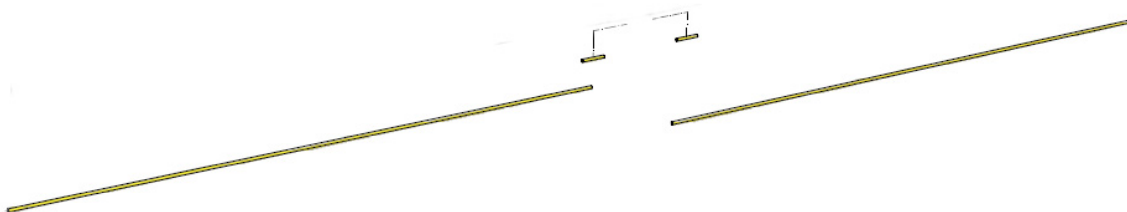
**Figure 13: cover plate on the right-version with side guides**



**Figure 12: cover plate on the middle**



**Figure 14: Ballast round bar**



### Images

Figure 15: bottom bar

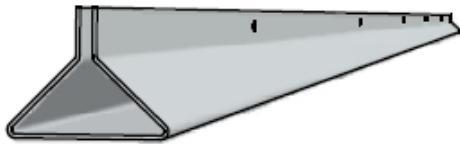


Figure 18: side guides (2 pieces) (optional)

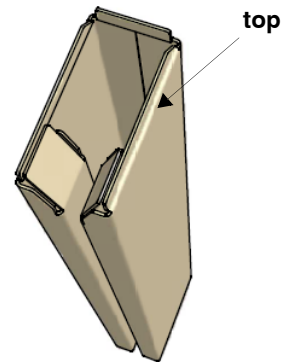


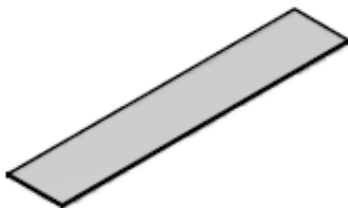
Figure 16: bottom bar two-parts (optional)



Figure 19: installation retainer



Figure 17: connecting plate for bottom bar



### Images

#### 6.2 Multiple roller over/under

Figure 20: housing box on the left multiple roller over/under

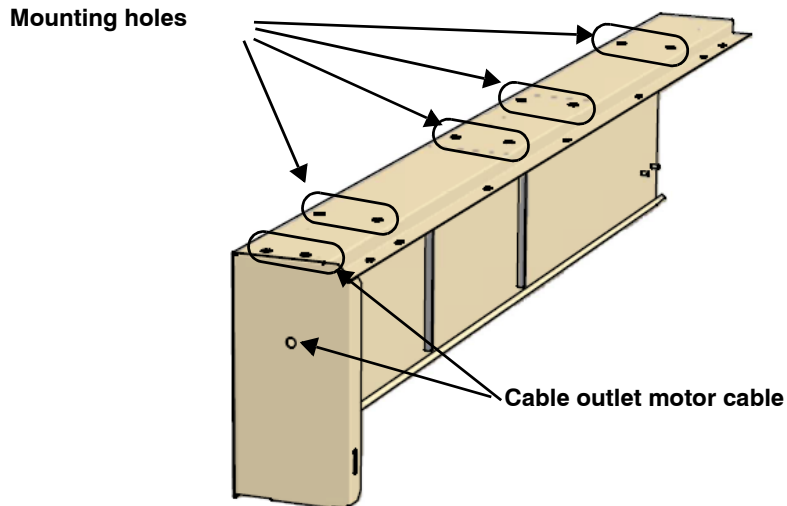
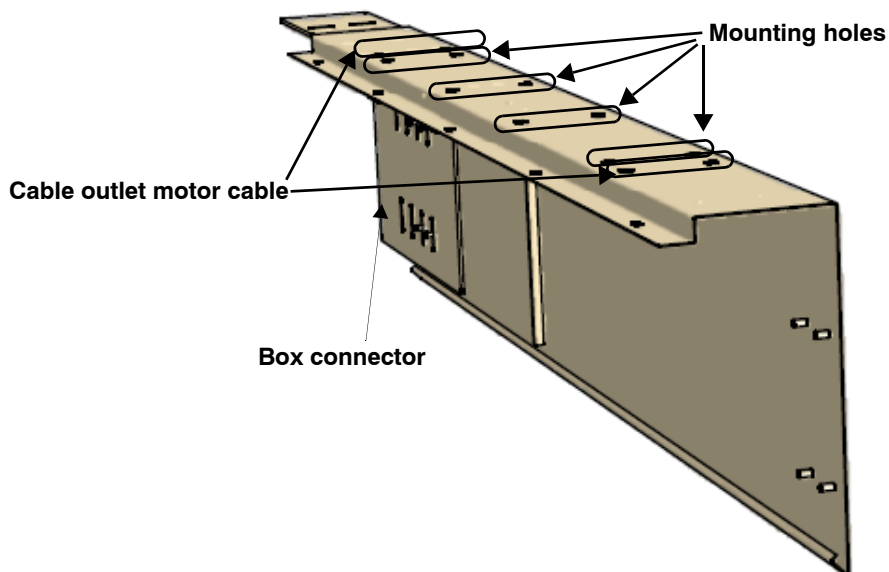


Figure 21: housing box central multiple roller over/under



### Images

Figure 22: housing box on the multiple roller over/under

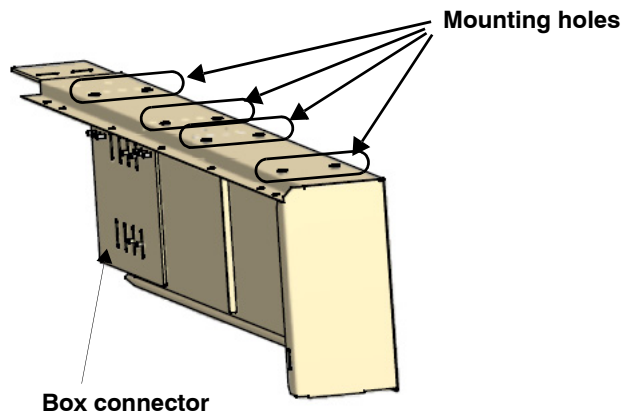


Figure 23: roller assemblies

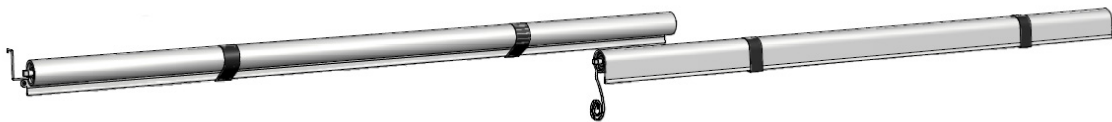
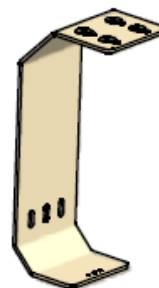


Figure 24: roller fixing bracket multiple roller over/under

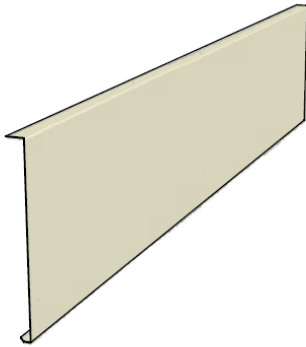


Figure 25: support bracket multiple roller over/under

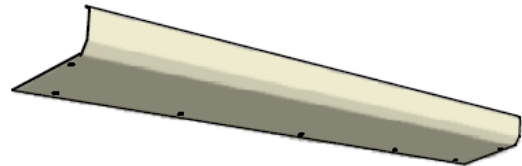


### Images

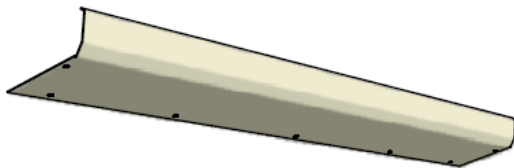
**Figure 26: frontline plate multiple roller over/under**



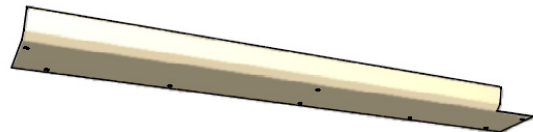
**Figure 29: cover plate on the middle-version with side guides**



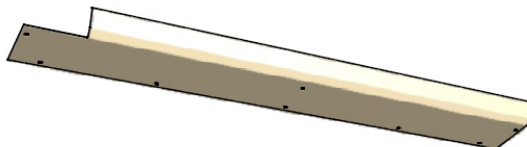
**Figure 27: cover plate on the left, middle, right-version without side guides**



**Figure 30: cover plate on the right-version with side guides**



**Figure 28: cover plate on the left-version with side guides**





### Images

Figure 31: Ballast round bar

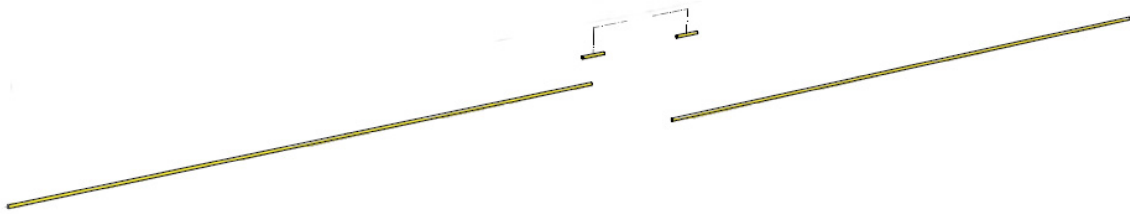


Figure 32: bottom bar

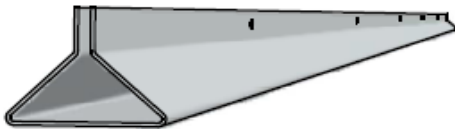


Figure 35: side guides (2 pieces) (optional)

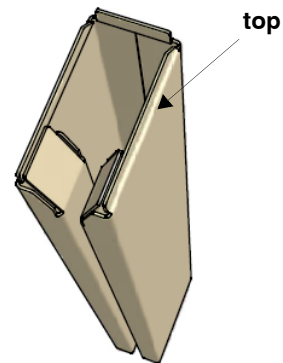


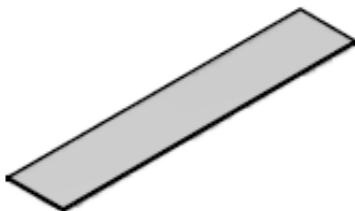
Figure 33: bottom bar two-piece (optional)



Figure 36: installation retainer



Figure 34: connecting plate for bottom bar

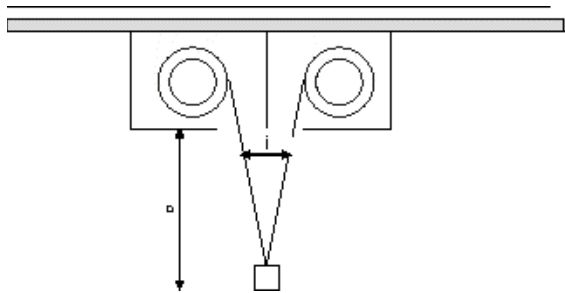


### Clearances

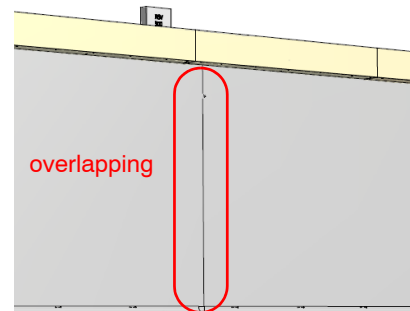
#### 7. Clearances

Following clearances (allowed gaps) in accordance with the DIN EN 12101-1.

**Figure 37: Multiple roller side by side (side-view)**

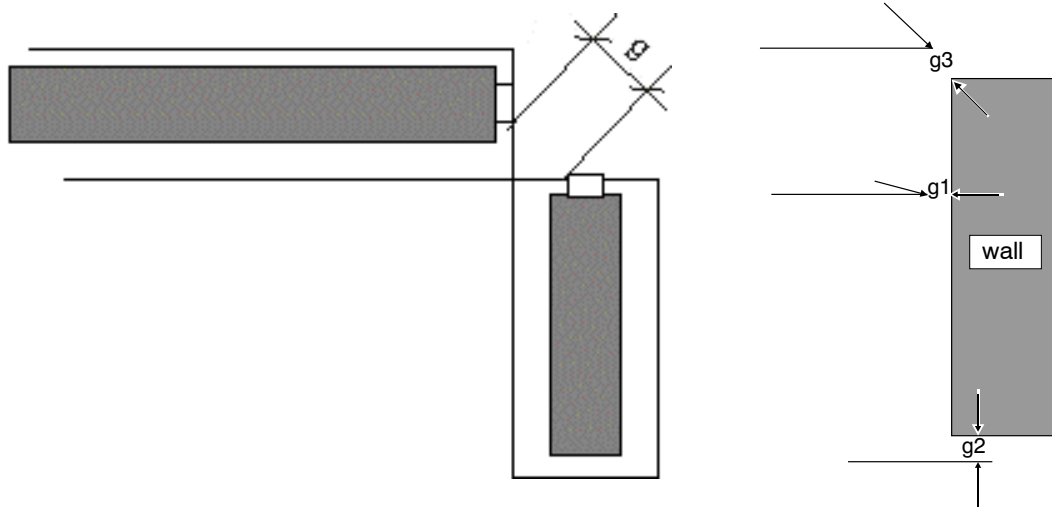


**Figure 38: Multiple roller side by side (top-view)**



The clearance "g" is nonexistent, because the curtains are overlapping!

**Figure 39: arrangement (top view)**



### Clearances

Figure 40: box system clearance

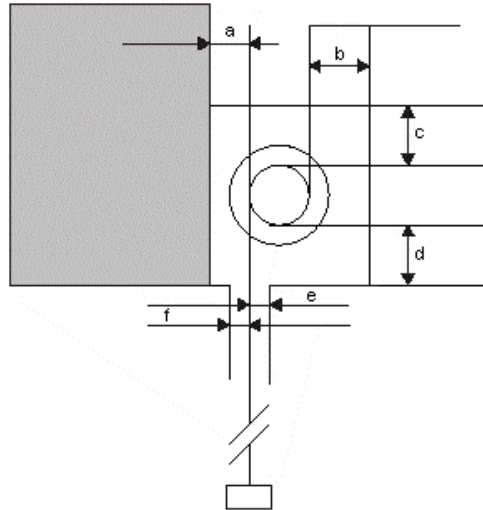


Table 3: clearances (allowed gaps)

Variant	Head boxes						Edges		
	a	b	c	d	e	f	g1	g2	g3
150 x 180 - SFS	39	39	45	63	-	9	0	0	0
150 x 180	39	39	45	63	-	9	22,5	30	37,5
150 x 180 - XL	39	39	45	63	-	9	22,5	30	37,5
150 x 180 - XL - SFS	39	39	45	63	-	9	0	0	0
180 x 210 - SFS	51,5	51,5	66,5	66,5	-	9	0	0	0
180 x 210	51,5	51,5	66,5	66,5	-	9	25	31	39
180 x 210 - XL	51,5	51,5	66,5	66,5	-	9	25	31	39
180 x 210 - XL - SFS	51,5	51,5	66,5	66,5	-	9	0	0	0
180 x 210 - XL - SFS1	51,5	51,5	66,5	66,5	-	9	25	31	39
180 x 210 - XL - SFS2	51,5	51,5	66,5	66,5	-	9	0	0	0

The specifications of the clearances in mm.



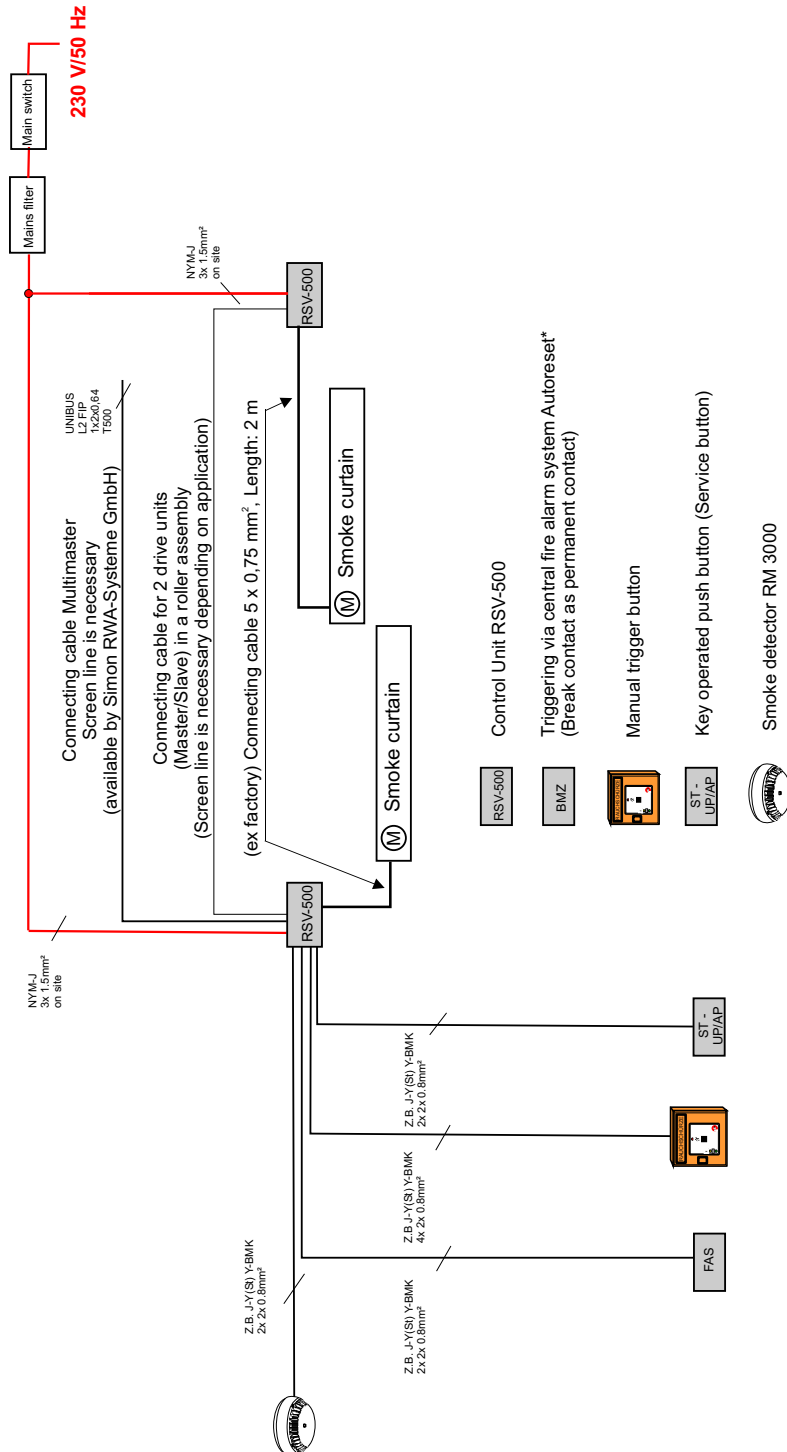
#### INFORMATION

For the calculation of open surfaces please refer to the smallest measurement in each case!

### Installation

#### 8. Installation

Figure 41: connection example



### Installation



#### DANGER

The installation may be carried out only by competent personnel (qualified electrician according to DIN VDE 1000-10 or BGV A3.)

In case an installation has not been done properly there is a danger of an electrical shock. Comply with the applicable safety regulations at all costs.



#### ATTENTION

The installation of the smoke curtains requires technical knowledge and adequate care in dealing with movable as well as electronic components by assembly personnel. Depending on installation situation and design the installation steps can differ from one another. In case of doubt you should fall back on the experience of a mechanic of the Simon RWA® System GmbH or a qualified dealer authorized and trained by the manufacturer.

For the installation of automatic smoke curtains you must observe the European Draft Standard CEN/TR 12101-4. In particular the permissible clearances must be taken into account. (see 7. "Clearances" on Page 18) Only those fasteners are permitted which are designed for an at least 60 minute thermal stress of 600° C. The surface to which it is to be attached must accordingly be able to take the load. According to DIN EN 12101-1 is not necessary to install fire rated cables for ASB 3 systems.

The fixing of the head box can take place in different ways (see 8.1 "Installation variants" on Page 21).



#### ATTENTION

The mounting aids are not included in the standard scope of supply. The distance of the fixing points parallel to the head box amounts to 1200 mm.

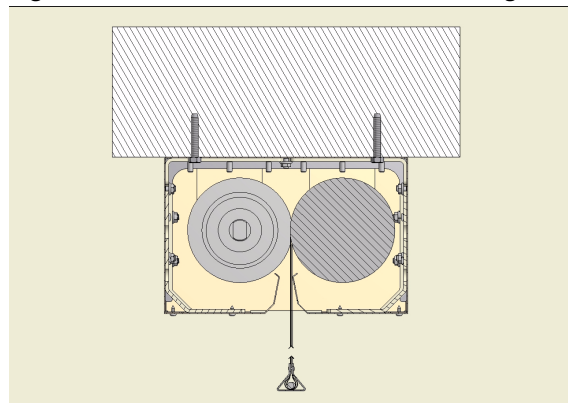
The fixing material is allowed to extend only maximum 15 mm into the head box. Otherwise the material of the smoke curtain comes into contact during wind-up or unwinding process and damaged for this reason.

According to sub-surface we recommend e.g. concrete F30, impact anchor e.g. M10 x 25.

#### 8.1 Installation variants

##### 8.1.1 Multiple roller side by side

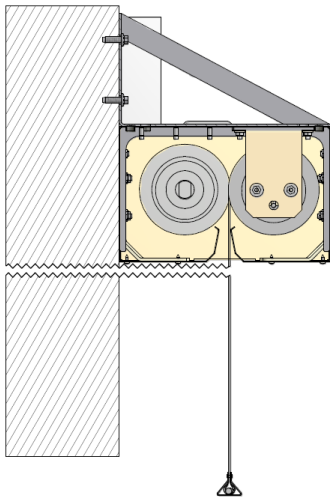
Figure 42: direct installation to on the ceiling



- On the upper side of the housing box, holes are provided for direct installation to on a ceiling.

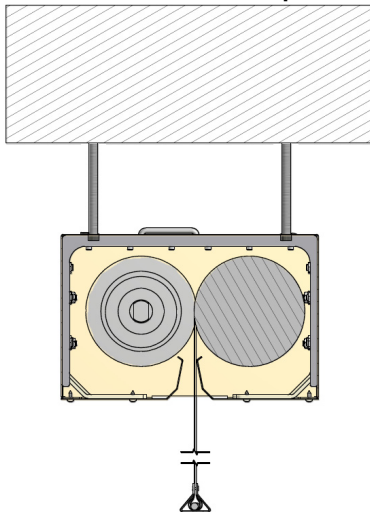
### Installation

**Figure 43: installation direct on the wall**



- By this mounting variant an angle has to be mounted additionally. The angle is not included in the standard delivery contents!

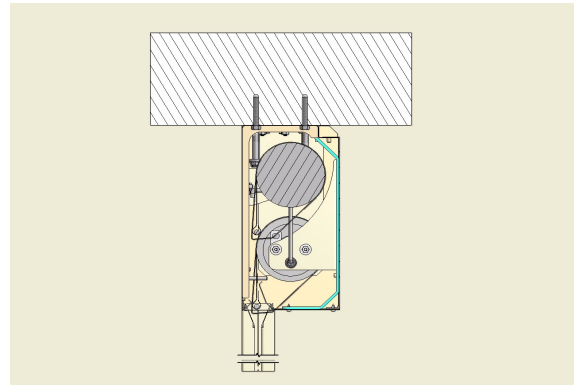
**Figure 44: installation above suspension**



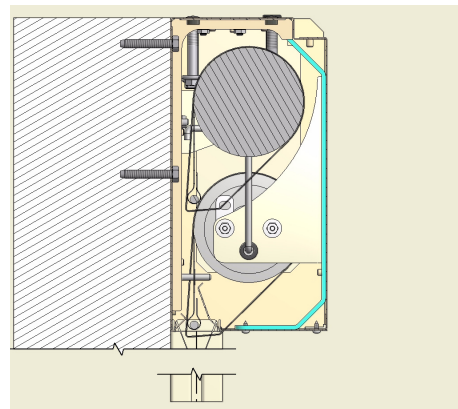
- Installation above suspension. The threaded rods (spindle) and the fixing plate are not in the standard delivery contents.

#### 8.1.2 Multiple roller over/under

**Figure 45: installation direct on the ceiling**

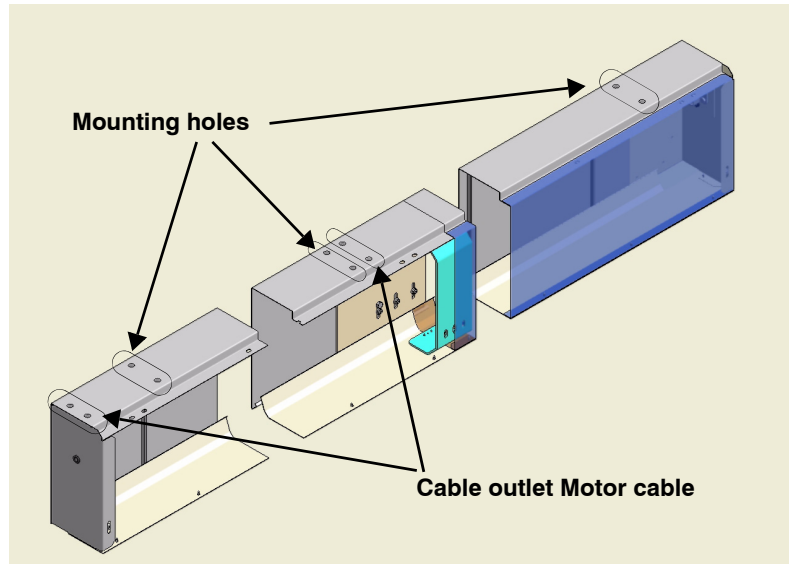


**Figure 46: installation direct on the wall**



- Therefore appropriate holes have to be drilled in the housing box. Drill the holes in the same distance as the factory made holes.
- The holes on the upper side, which are not used, have got to be closed suitably.

### Installation



- Make the drilling holes.



#### ATTENTION

Please take care that fixings, angle, suspensions etc. are fire rated in the same as the curtain system itself.

#### 8.2 Mounting of the housing box

The housing box is mounted without roller assembly, support bracket, frontline plates, cover plates and corresponding screws are enclosed to the smoke curtain.

- Please proof the marking of the components and the labelling of the connecting parts.



#### ATTENTION

The making of the fixing holes in the supporting structure must be carried out with greatest caution as otherwise a proper functioning of the curtain is not ensured.

The complete box system must be mounted horizontally and in an alignment. Crookedly mounted boxes or box parts lead to faults and damages to the curtain material!

- Mark the drill holes.



#### ATTENTION

Use only fixing material or fixing aids which comply with the regulations. Do not use any impact anchor made of unsuitable materials (e.g. synthetic).

- Attach the fixing material.



#### ATTENTION

Please remember that the head box is not symmetrical in the cross-section. That means that the curtain material unwinds one side of the head box. The other side is covered with the cover plate from the bottom up. Likewise the outlet port of the connecting cable from the head box is determined from this alignment of the head box. The head box is to be aligned correctly in accordance with these conditions.

- Install the head box with the help of the fixtures provided.

### Installation



#### ATTENTION

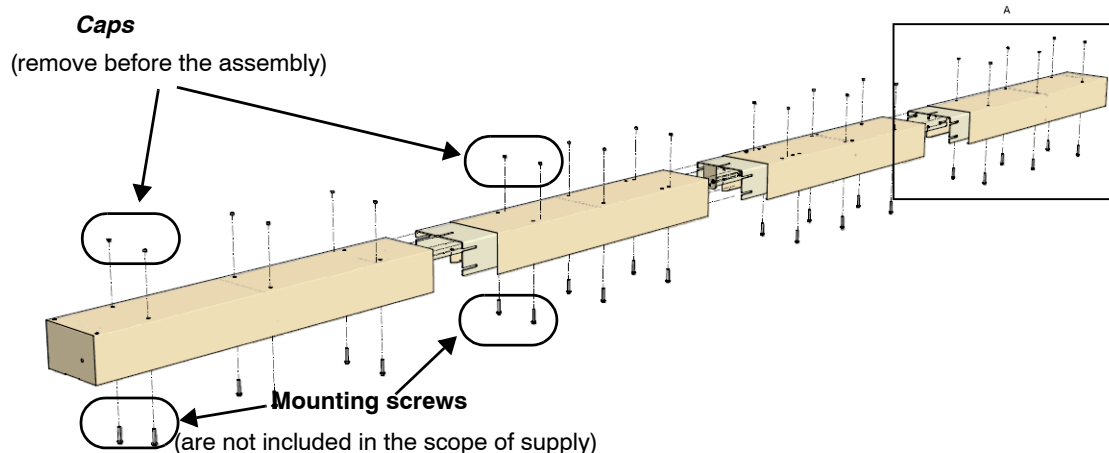
The self-locking nuts must be tightened with a torque of 4 Nm. In case of too high torques the welded studs can come off.<sup>1</sup>

1. Should a welded stud come off at the time of Installation, this can be replaced by a pin contained in the repair kit. (The repair kit is enclosed with the box system)

- Please follow for multiple roller side by side the instructions among: 8.3 "Mounting of the housing box multiple roller side by side" on Page 24

- Please follow for multiple roller over/under the instructions among: 8.4 "Mounting of the housing box multiple roller over/under" on Page 25

#### 8.3 Mounting of the housing box multiple roller side by side



All individual parts and joints are marked. The individual parts must then be joined together as marked.

It has got to be started at the side, where the box connector is located (housing box on the right)

- Install the right head box on the ceiling.
- Push together the "Housing box central" and the "Housing box on the right", according to the marking, fix it on the ceiling and bolt them together.
- Repeat this step until all „housing boxes central“ were installed.
- Push together the "housing box on the left" and the "housing box central" according to the marking, fix it on the ceiling and bolt them together.
- Straighten the housing boxes horizontally and aligning and fix them.



### Installation

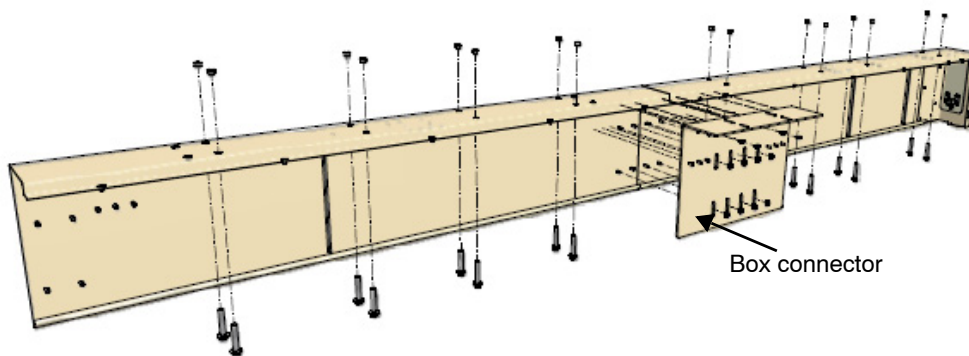


#### ATTENTION

Complete the installation of the box system with a check on horizontal and aligned complete installation.

- Mount the roller assembly continuing with "Mounting of the roller assembly multiple roller side by side" on page 26.

#### 8.4 Mounting of the housing box multiple roller over/under



All components and connecting parts are marked. The components have got to be joined together, according to the marking.

- Mount the right housing box on the ceiling.
- Set the "housing box central" according to the marking on the "housing box on the right" and fix it on the ceiling. Insert the box connector, according to the marking and bolt them together.
- Repeat this step, until all "housing boxes central" were installed.
- Set the "housing box on the left", according to the marking on the "housing box central", and fix it on the ceiling. Insert the box connector according to the marking and bolt them together.
- Align the head boxes horizontally and flush and attach these.



#### ATTENTION

Complete the installation of the box system with a check on horizontal and aligned complete installation.

#### 8.5 Installing roller assembly



#### ATTENTION

The smoke curtain may be operated only connected with the control panel RSV-500 even during the installation, since otherwise the drive unit may be destroyed.

### Installation



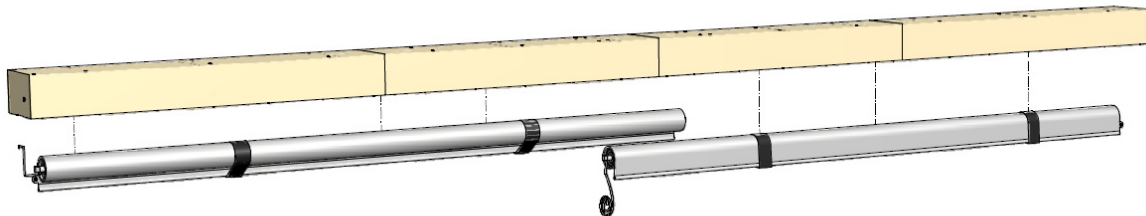
#### DANGER

The unwind protection (adhesive tape) of the roller assembly must be in place. Only after connection of the RSV 500 to the mains voltage may the unwind protection be removed. In case of non-observance, the curtain unwinds in an uncontrolled manner and the electronic components are destroyed.

- For multiple roller over/under continuing with "Mounting of the roller assembly multiple roller over/under" on page 27.

#### 8.5.1 Mounting of the roller assembly multiple roller side by side

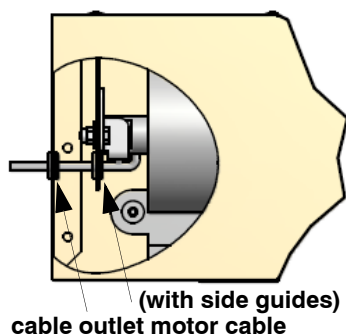
Figure 47:



- Insert the posterior roller assembly into the housing box with the help of a second person (or suitable lifting means).
- Remove cable ties of the access line.

- Lead through the access line across the cable lead-through of the roller fixing bracket.
- Lead outwards the access line across the cable lead-through of the housing box.
- If further posterior roller assemblies are available, repeat the steps for the mounting of the posterior roller assemblies until all are mounted.
- Repeat the steps for the mounting of the anterior roller assemblies.
- For the mounting of the main switch continuing with "Installing main switch" on page 29.

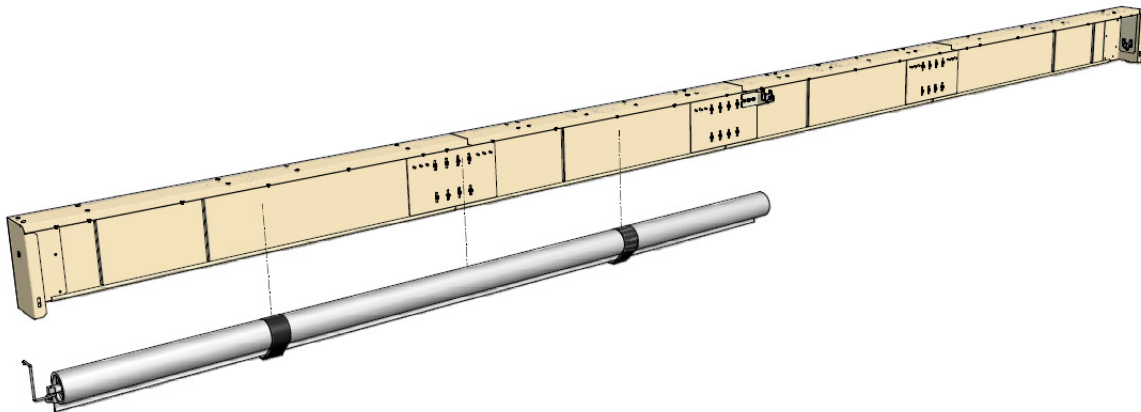
Figure 48: cable lead-trough



### Installation

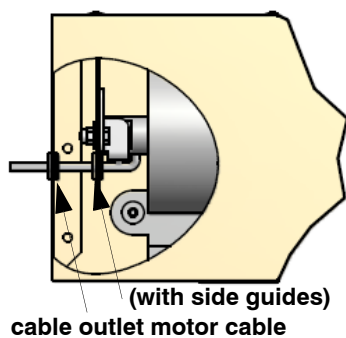
#### 8.5.2 Mounting of the roller assembly multiple roller over/under

Figure 49: mounting of the upper roller assembly



- Insert the upper roller assembly into the housing box with the help of a second person (or suitable lifting means).
- Remove cable ties of the access line.

Figure 50: cable lead-trough



- Lead through the access line across the cable lead-through of the roller fixing bracket.
- Lead outwards the access line across the cable lead-through of the housing box.

### Installation

- Mount complete roller fixing brackets for the lower roller assemblies, according to the marking,

Figure 51:

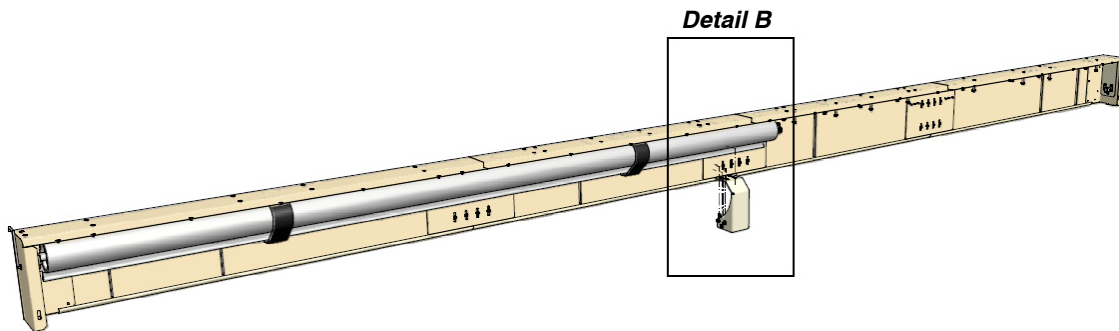
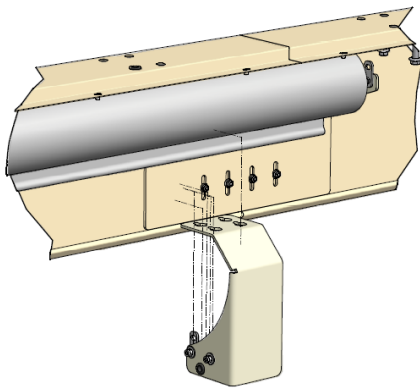
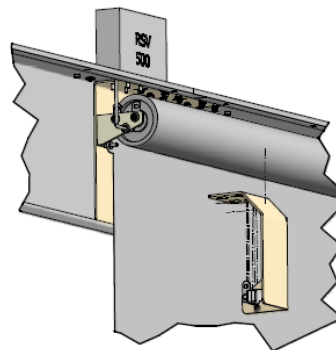


Figure 52: Detail B



- If more than 3 rollers then the roller fixing bracket has to be fixed additionally (see Figure 53: "roller fixing bracket on the right" on Page 28).

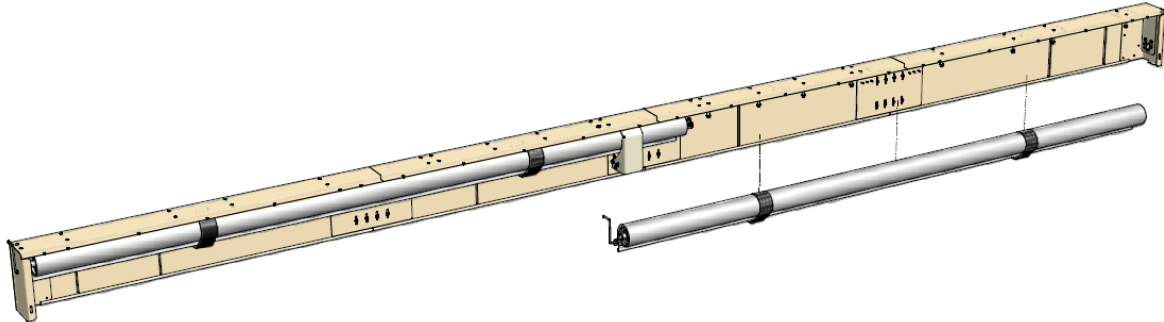
Figure 53: roller fixing bracket on the right



- Insert the lower roller assembly into the housing box with the help of a second person (or suitable lifting means).
- Remove cable ties of the access line.
- Lead through the access line across the cable lead-through of the roller fixing bracket.
- Lead outwards the access line across the cable lead-through of the housing box.

### Installation

Figure 54: mounting of the lower roller assembly



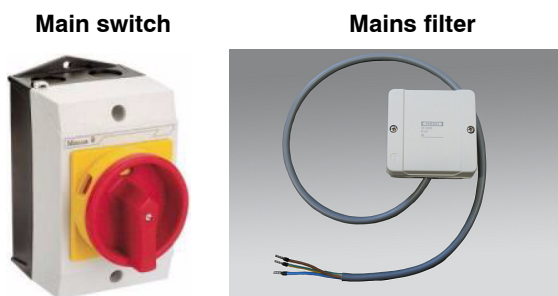
#### ATTENTION

After that the cable must not have any loops in the head box. That can lead to collision with the curtain, and as a result damage of the connecting cable as well as the curtain.

#### 8.6 Installing main switch

The main switch is generally installed before the first RSV 500 (see Figure 56: "install main switch and mains filter" on Page 30). As a result the system can if necessary be disconnected from the mains.

Figure 55: main switch/ mains filter



Main switch

Mains filter



#### DANGER

Turn connection on neutral.  
Provide a safeguard to prevent unintentional re-start.  
The unit must be de-energized.  
Cover or shield adjacent current-carrying parts.  
If necessary, grounding and short-circuiting.

- Fix the main switch to the place provided for it. Use only a suitable fixing material.
- Connect the main switch.



#### INFORMATION

If the system Smoke PROtec® is used in the industrial area or in areas with greater interference sources (e.g. large crane installations) there can be cable-related electrical interferences in spite of all in-built protective devices. These interferences of the distribution network via the mains cable cause possibly faulty activations of the system.



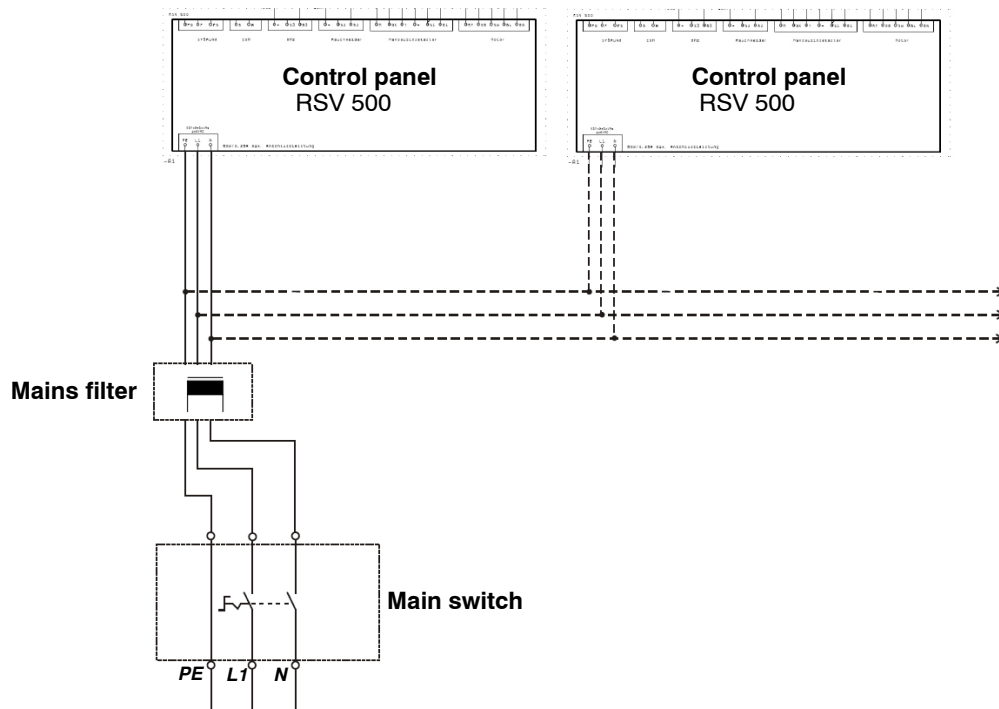
#### ATTENTION

In order to exclude faulty activation by cable-related interference factors it is necessary to fix the Mains filter included in the delivery (see Figure 55: "main switch/ mains filter" on Page 29) before the 230 Volt feed-in of the RSV 500.

### Installation

- Fix the box of the mains filter near the main switch.
- Connect the end of the line piece provided with the mains filter to the main switch.
- Connect the RSV 500 in the further installation to the mains filter (see Figure 56: "install main switch and mains filter" on Page 30).

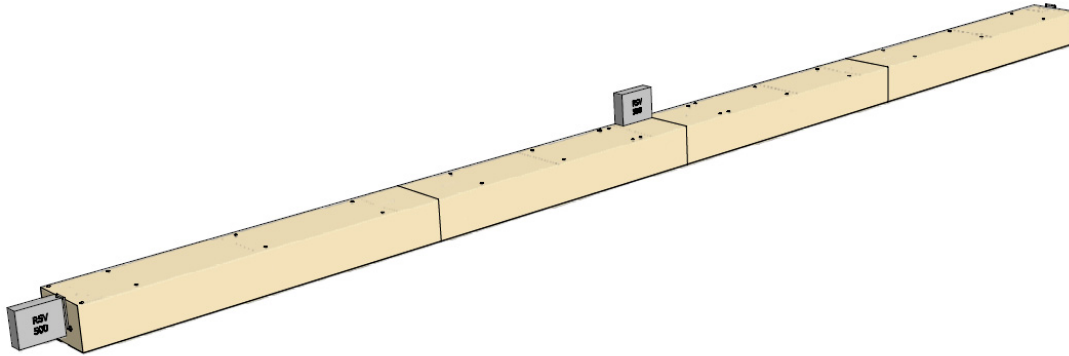
**Figure 56: install main switch and mains filter**



### Installation

#### 8.7 Control panel RSV 500

Figure 57: head box with connected RSV 500



#### INFORMATION

The control panel is delivered in service mode!  
DIP Switch 3 is in position: ON!  
You can wind up and unwind the curtain with the Service buttons (red and yellow)!



#### ATTENTION

Connect external devices and additional modules according to wiring diagram!

#### 8.8 Installing control panel RSV 500



#### DANGER

Disconnect the connecting cable on all poles from the mains. The connection of the RSV 500 may take place only without mains!



#### ATTENTION



The control is equipped with electronics and micro-processors which can be destroyed by faulty connection or improper handling. ESD regulations are to be complied with.



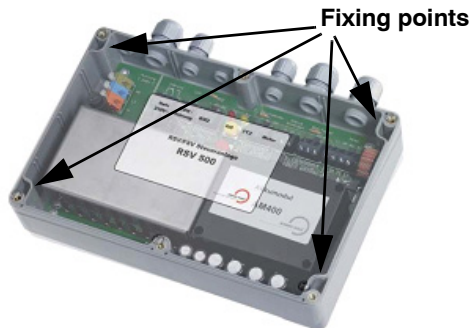
#### ATTENTION

The installation of the control unit should take place near the drive unit (max. 2 m). The drive unit is equipped with a 2 m connecting cable (5 x 0.75 mm) by the manufacturer. Please note the marking Master/Slave in two control panels.

- Mark the four drilling holes at installation location of the RSV 500 Control panel (Master).
- Make the fixing holes for RSV 500.
- Install the RSV 500 Control panel.

### Installation

Figure 58: RSV 500



- Install the RSV 500 (slave) as described previously.

#### 8.9 Connecting components to the RSV 500 control panel



#### DANGER

During connection of the separate components the RSV 500 must be disconnected from the mains! Please observe the safety regulations.

- Insert the cables into the housing of the RSV 500 (Master).



#### ATTENTION

If a signal (FAS) provided by the customer is available, check that this signal is potential-free. Potentials provided by the customer inevitably lead to destruction of the control.

- Connect all the peripheral devices like emergency button, Smoke detector, FAS, Contact failure or Service button to the RSV 500 (see also Figure 63: "complete wiring diagram" on Page 34).

Figure 59: wiring diagram of emergency button

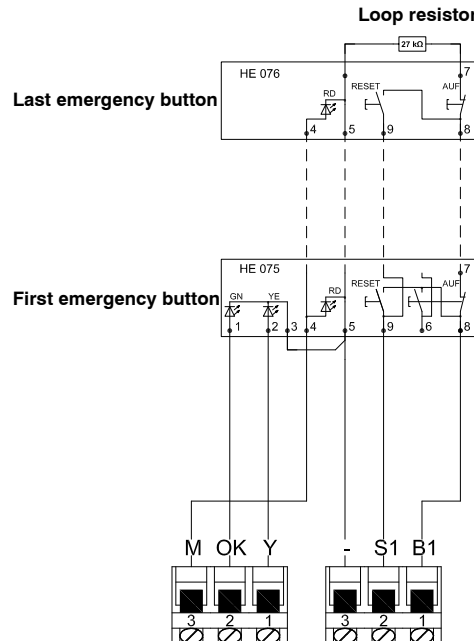
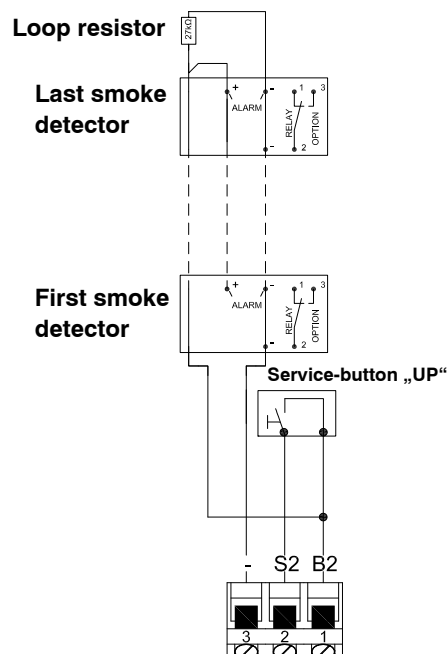


Figure 60: wiring diagram of smoke detector





### Installation

Figure 61: wiring diagram of fire alarm system (FAS)

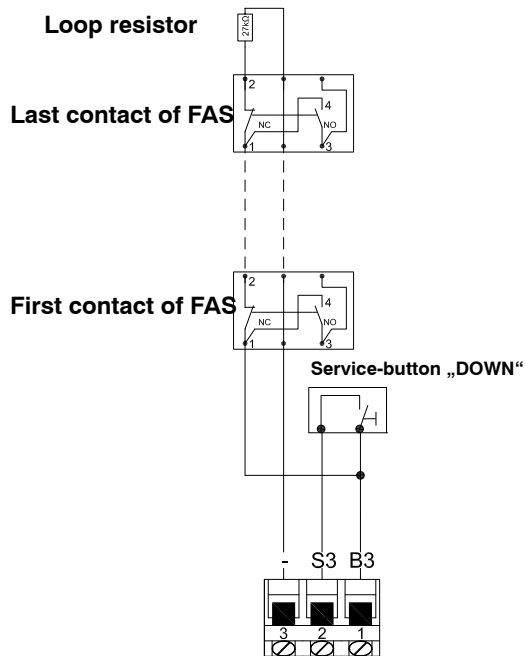
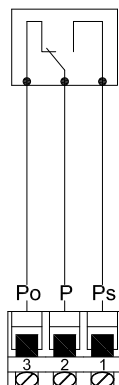


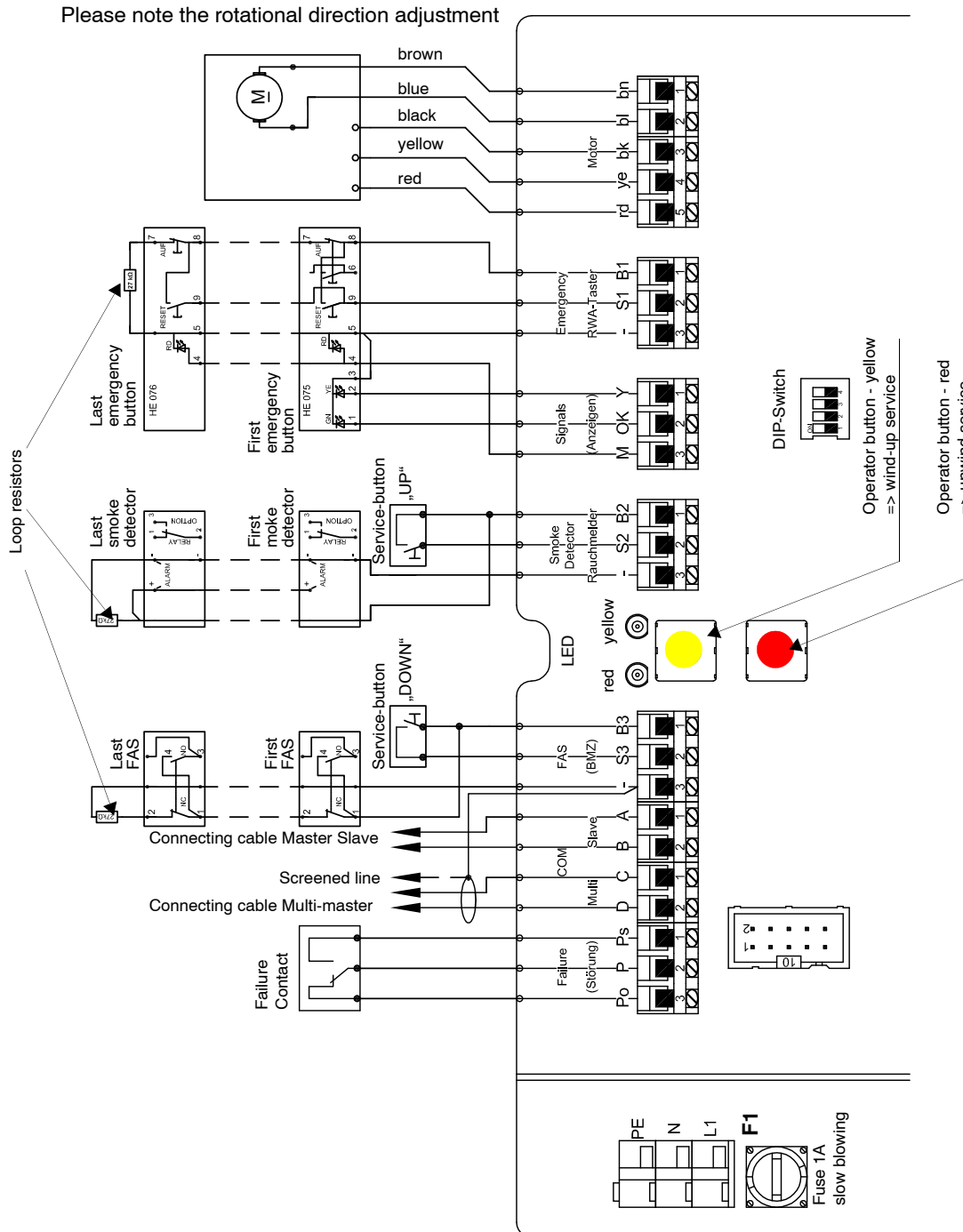
Figure 62: wiring diagram of “potential-free contact”

#### Potential-free contact



### Installation

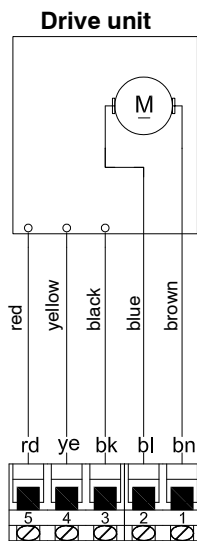
Figure 63: complete wiring diagram



### Installation

- Attach the terminating resistors (see Figure 63: "complete wiring diagram" on Page 34). If no external peripheral devices are connected in a loop the terminating resistor must be connected in the RSV 500.
- Connect the drive unit to the connecting cable according to the schematic diagram on the adhesive label.

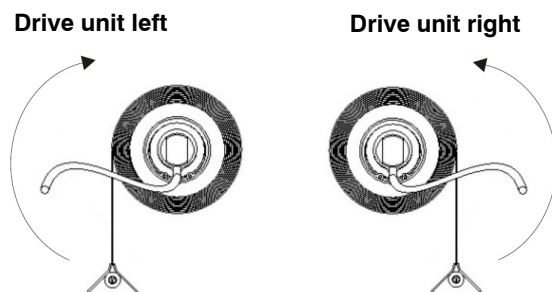
**Figure 64: standard rotational direction**



#### 8.9.1 Rotation direction adjustment (2nd Drive unit)

The adjustment of rotation direction is necessary in roller assemblies with two drive units.

**Figure 65: rotation direction adjustment**

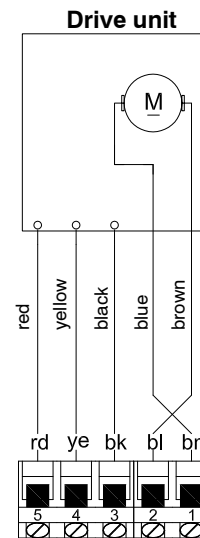


To change the rotation direction the wires blue and red must be transposed (see Figure 66: "rotation direction with reversed polarity" on Page 35).

Connection of motor cable:

- Blue core at terminal bn
- Brown core at terminal bl

**Figure 66: rotation direction with reversed polarity**



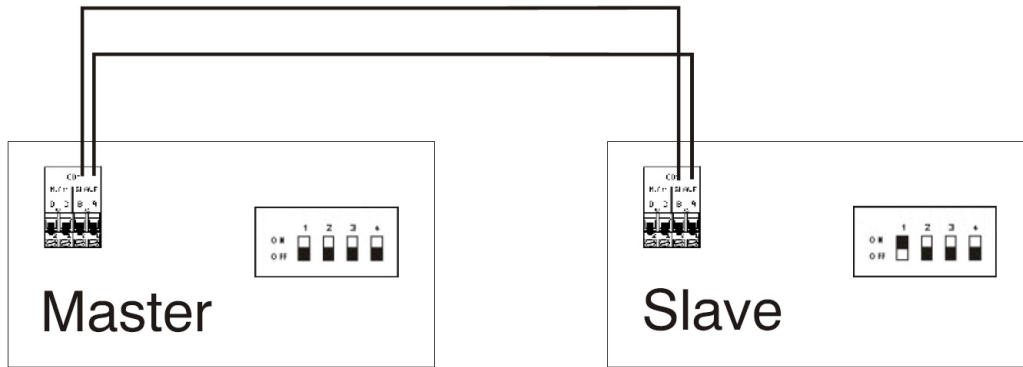
#### 8.9.2 Connect second RSV 500 (Slave).

When two RSV 500 control panels are used one control panel must be set as Master and the second control panel as Slave. Both the control panels are to be connected with a cable (see Figure 41: "connection example" on Page 20).

- Install the second control panel as described previously (see 8.8 "Installing control panel RSV 500" on Page 31).
- Insert the COM cable in both the control panels.
- Connect the COM cable. Please adhere to the correct polarity.

### Installation

Figure 67: wiring diagram of RSV 500



➤ Set the DIP switches:

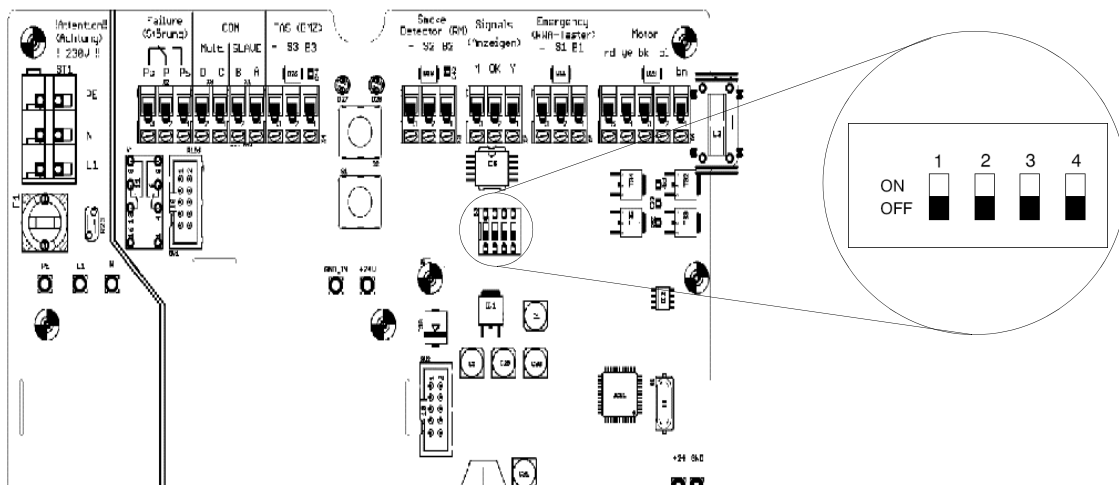
#### 8.9.3 DIP-switch setting



#### ATTENTION

The DIP switches must be switched on only when it is in voltage-free state. In addition it is to be noted that the backup battery must not be connected!

Figure 68: DIP switches panel

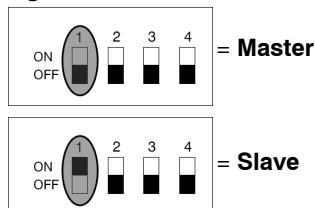


### Installation

#### 8.9.3.a DIP switch 1

**Master/Slave configuration:** Define one of the RSV 500 as Master (DIP switch 1 on OFF) and all other control panels connected to this Master as Slave (DIP switch 1 on ON). If one master control panel is defined the triggering mechanism (emergency button, FAS, smoke detector) can be connected just there. For the Slave the signal lines are without function.

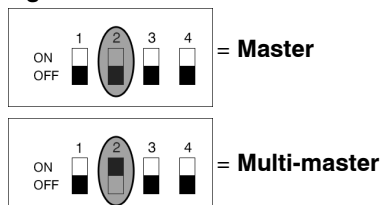
**Figure 69: Master / Slave**



#### 8.9.3.b DIP switch 2

**Multi-master configuration:** This configuration makes it possible to control several curtain systems with one trigger signal. In the process one of the control panels RSV 500 is a "Multi-master" and the remaining control panels RSV 500 Master (or Slave) (see Figure 73: "overview of bus monitoring" on Page 38).

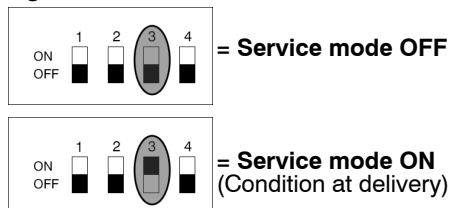
**Figure 70: Multi-master**



#### 8.9.3.c DIP switch 3

**Service mode:** No automatic operation takes place in Service mode ON. The curtain can be moved up or down with internal Service buttons (red and yellow) or the external service switch. Parameterization with the programming device RSV 020 can be done only in this mode.

**Figure 71: service mode**



#### ATTENTION

Service mode function:

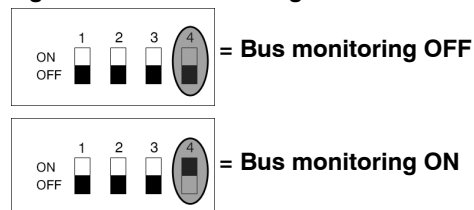
- Button UP (yellow) 1x=> Curtain winds up
- Button UP (yellow) again=> Curtain stops
- Button DOWN (red) as UP=> for unwinding

#### 8.9.3.d DIP switch 4

**Configuration of Bus monitoring:** If a multi-master system is designed all DIP switches 4 of the master control panels must be switched in "ON".

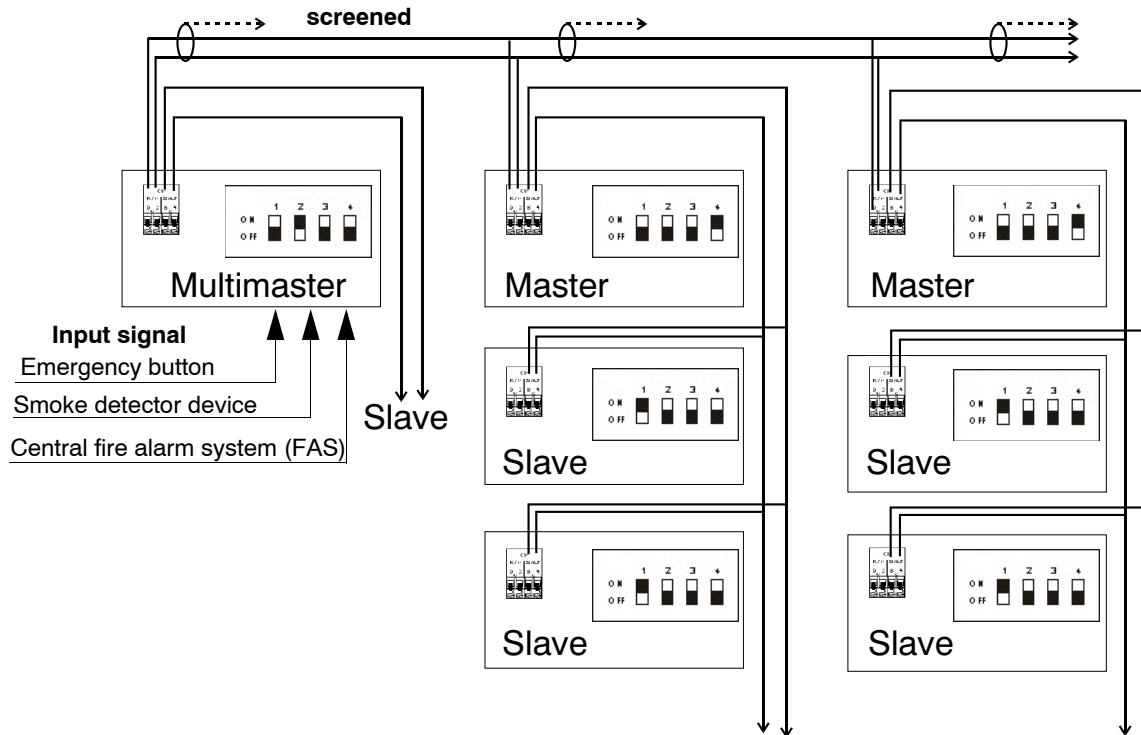
At all masters of a multi-master system DIP-switch 4 must be switched in "ON" for monitoring the connecting cable between the systems for short circuit or interruption. This function will be activated when all control panels are connected together and the system is put into operation. If DIP switch 4 is "ON" and the control panel is not connected to the multi-master the curtain will drop down in alarm.

**Figure 72: bus monitoring**



### Installation

Figure 73: overview of bus monitoring



The control panel must be programmed for operation. For this purpose please follow the putting into operation of the control panel (see 9. "Start up" on Page 51). For each drive unit there is a separate control panel of the type RSV 500. In case of several drive units in a roller assembly these must be connected with a bus line for the purpose of synchronization (see Figure 63: "complete wiring diagram" on Page 34).

- Connect the ferrite core or the mains supply to the RSV 500 control panel.
- After completion of all connections the mains supply (230 volts) can be connected. The curtain can now be rolled up or rolled down via the service button (The DIP switch 3 must be switched to ON). Stop function takes place by re-activation of the relevant button.

#### 8.9.4 Installing backup battery

The backup battery is used only for short-term power failures or fluctuations in mains voltage. An operation of the curtain in the backup battery operation is not possible. In case of power failure of longer duration the backup battery is automatically disconnected in order to avoid a deep discharge.



#### ATTENTION

The backup battery may only be used if all tasks of putting into operation are completed and uninterrupted mains supply is available.

### Installation

#### 8.10 Complete the installation

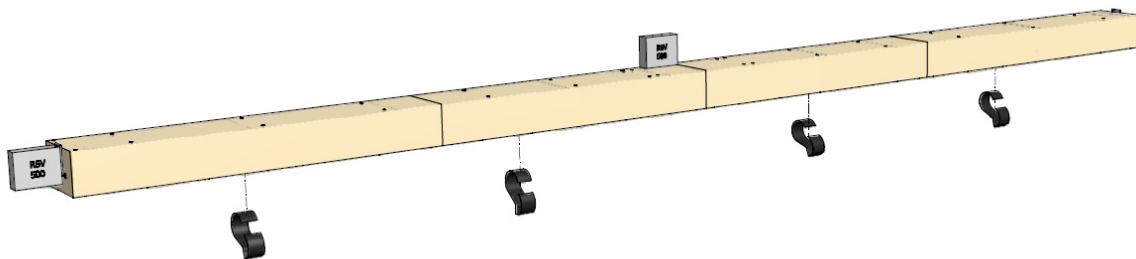


#### DANGER

Before removing the unwinding protection of the roller assemblies please make sure that the rollers are connected to the control panels RSV 500 and the 230 V mains are connected.

- Remove the installation retainer of the roller assembly and allow the curtain to unwind slightly. Use therefore the service buttons (yellow/red) in the RSV 500 or the external service buttons.

Figure 74: removing of unwinding protection



- For multiple roller side by side continuing with "Mounting of the support bracket multiple roller side by side" on page 39.
- For multiple roller over/under continuing with "Mounting of the support bracket and frontline plate multiple roller over/under" on page 41.

#### 8.11 Mounting of the support bracket multiple roller side by side

- Now mount the support bracket according to the marking. And tighten the screw with a torque of 4 Nm.

### Installation

Figure 75: Mounting of the support bracket

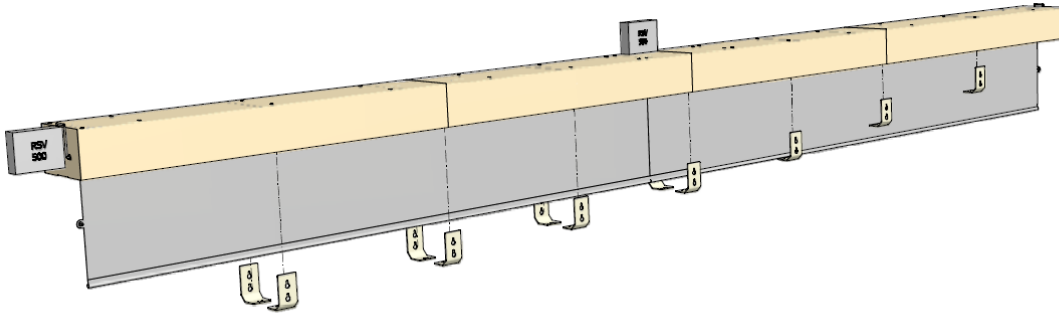


Figure 76: mounting of the support bracket on the Bbox connector

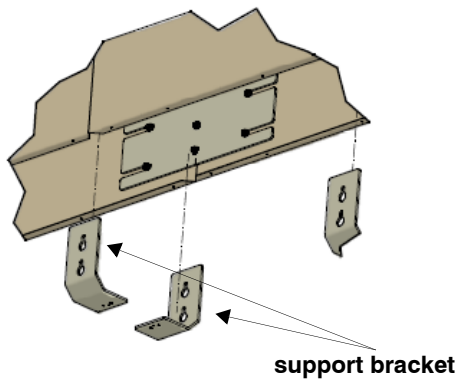
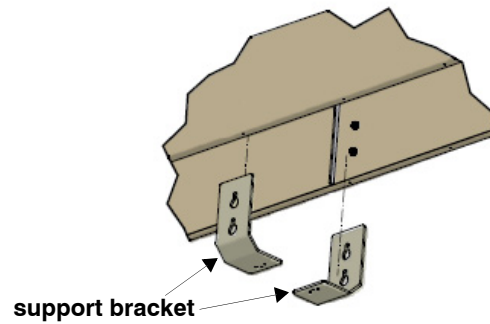


Figure 77: mounting of the support bracket on the housing box



- Mounting of the cover plate continuing with "Mounting of the cover plate" on page 43.



### Installation

#### 8.12 Mounting of the support bracket and frontline plate multiple roller over/under

Figure 78: mounting of the support bracket

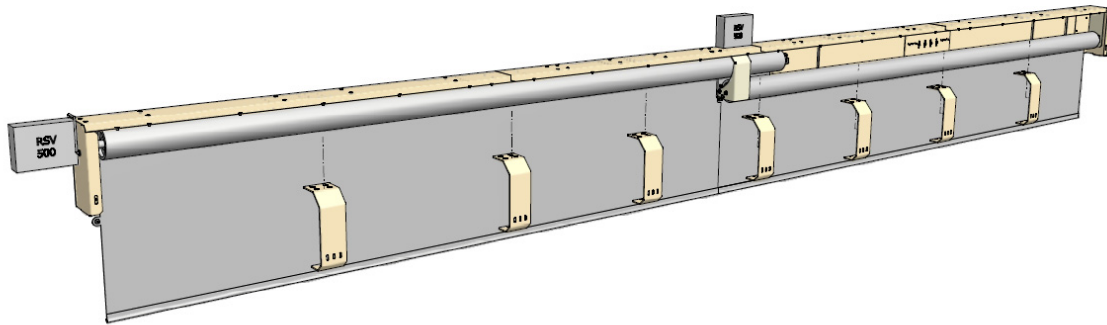


Figure 79: mounting of the support bracket on the box connector

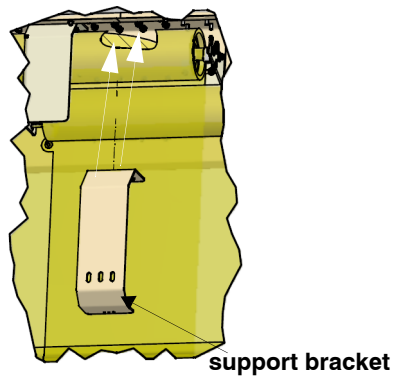
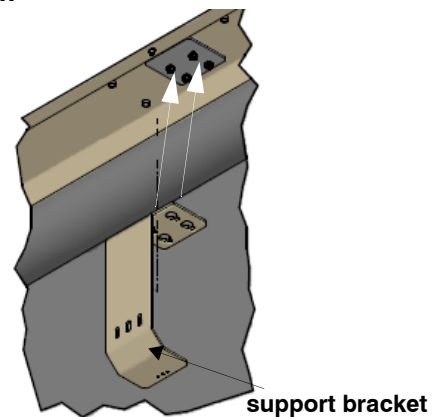
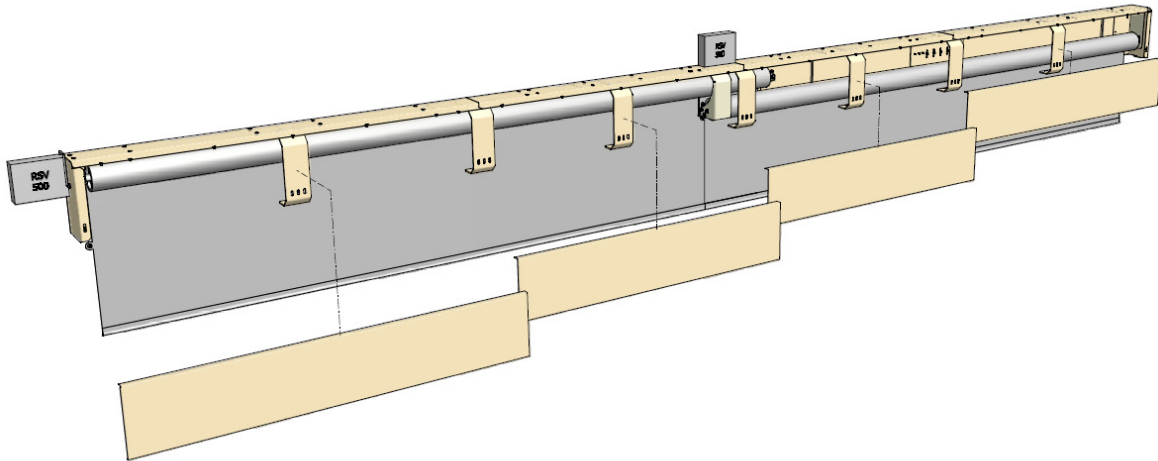


Figure 80: mounting of the support bracket on the housing box



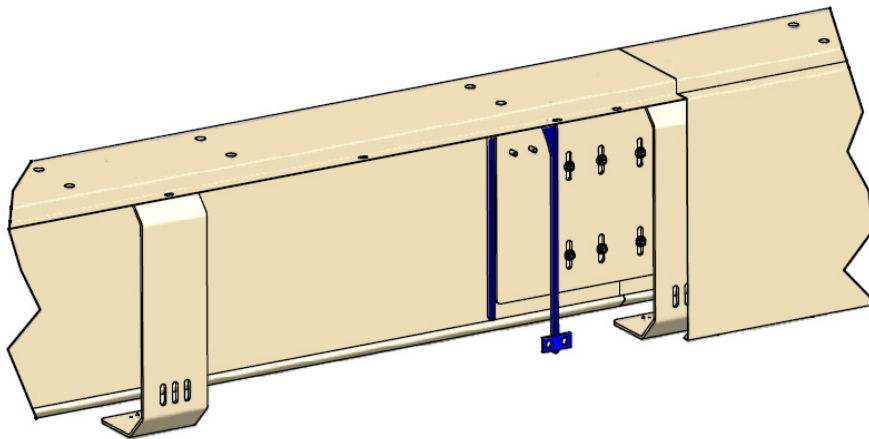
### Installation

Figure 81: mounting of the frontline plates



- Mount the frontline plates according to the marking.
- Fit the self-locking nuts onto the stud bolt and fix the screw with a torque of 4 Nm.
- For Headbox systems 180 mm x 360 mm there are additionally support ribs to be fixed in the same way as the support brackets (see Figure 82: "support rib" on Page 42).

Figure 82: support rib



- Mounting of the cover plate continuing with "Mounting of the cover plate" on page 43.

### Installation

#### 8.13 Mounting of the cover plate

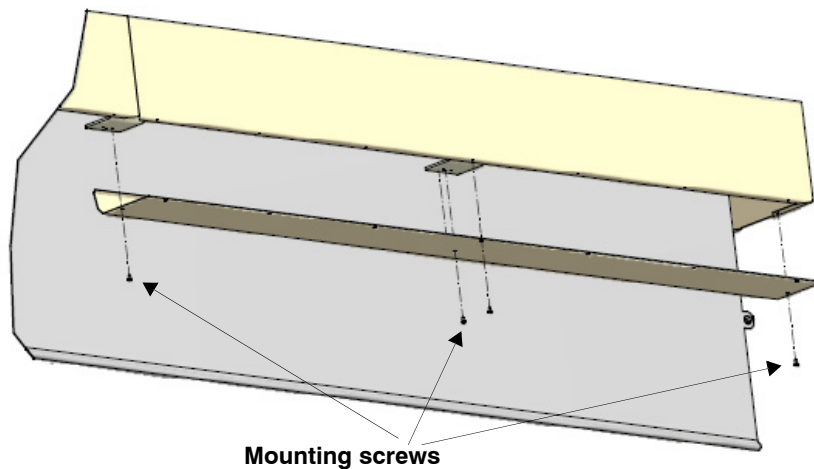
- Fix the cover plates according to the marking. The curtain must drop down for approx 500 mm.
- At first mount the exterior and the central screw (do not tie up yet).



#### INFORMATION

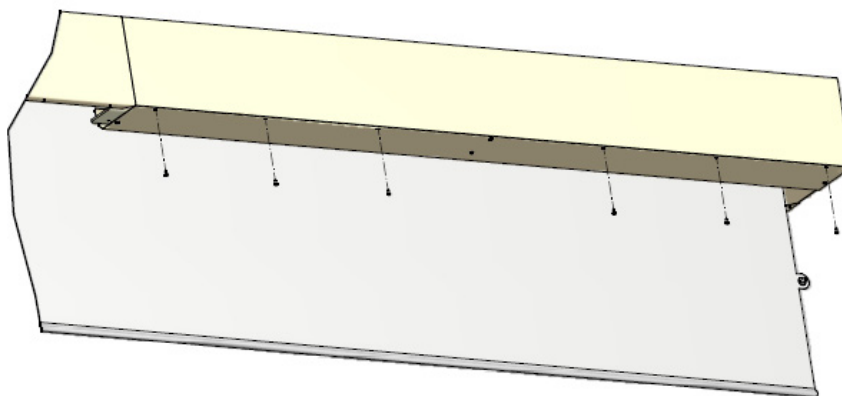
Fix the screws where the support bracket are located!

Figure 83: fix cover plate



- Fix the remaining screws. Align the cover sheet and tighten the screws.

Figure 84: fix cover plate

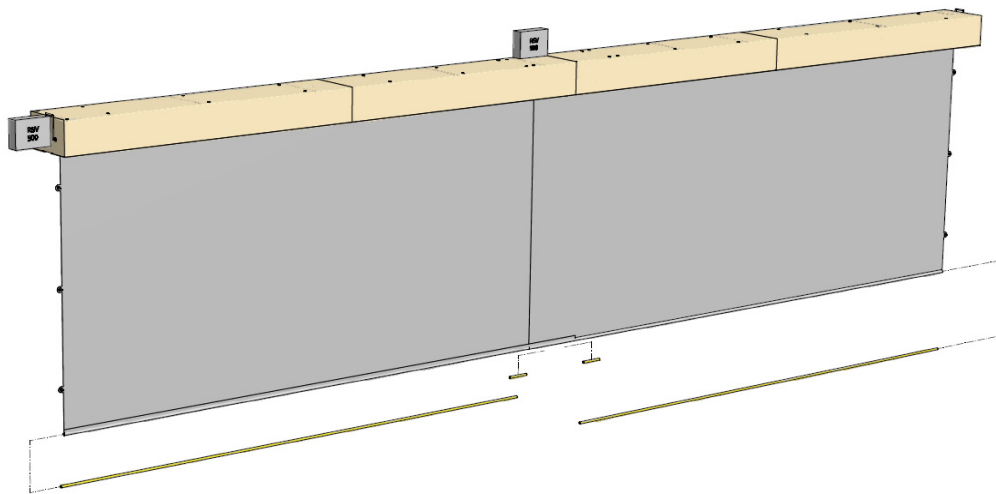


### Installation

#### 8.14 Mounting of the Ballast round bar

- Drop down the curtain for approx 500 mm. Maybe it is necessary to help by hand.
- Mount the short ballast round bar, where the curtains overlap.
- Let the ballast round bar close shortly with the curtain.
- Mount the long ballast round bar by the right and the left and let them close outside shortly with the curtain material.
- The ballast round bar must be flush at both ends of the curtain to allow installation of bottom bar.

Figure 85: mounting of the ballast round bar



### Installation

#### 8.15 Mounting of the bottom bar

Figure 86: Marking of the bottom bar

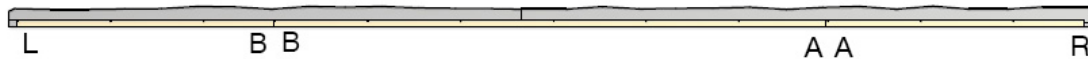


Figure 87: Mounting of the bottom bar

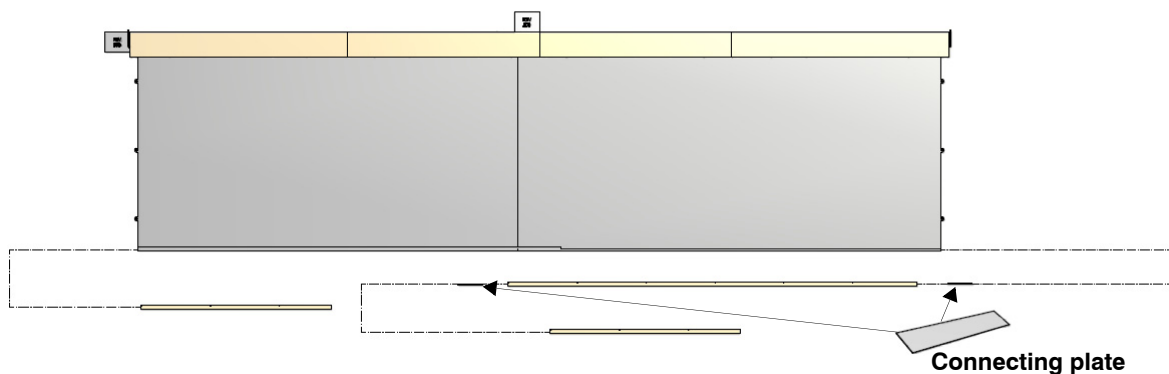
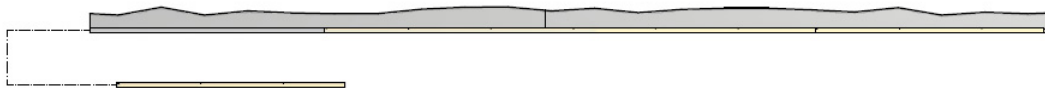


Figure 88:

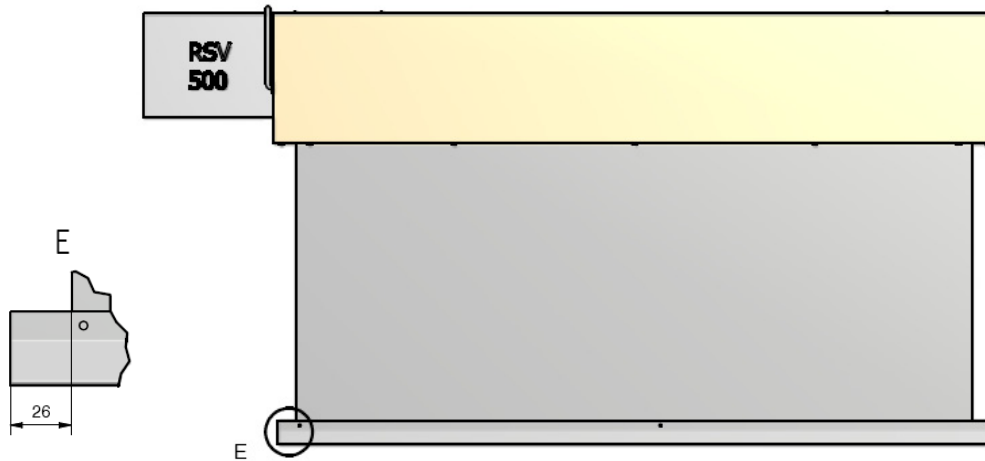


- Mount the bottom bar in the given order. Use the connecting plates.
- Put off the first bottom bar.
- Push the connecting plate between curtain and the bottom bar and let the connecting plate overlap halfway-through.
- Put off now one by one the further bottom bars. Thereby the connecting plate must not move.

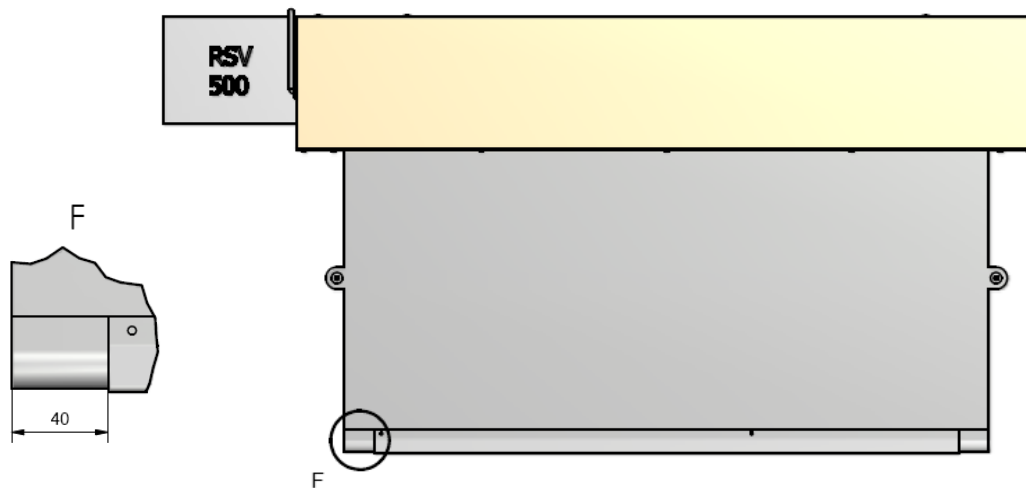
### Installation

- Align the bottom bar (see Figure 89: "Smoke curtain without side guides" on Page 46) (see also Figure 90: "Smoke curtain with side guides" on Page 46).

**Figure 89: Smoke curtain without side guides**



**Figure 90: Smoke curtain with side guides**



- For curtain systems without side guides continuing with "installing bottom bar" on page 50.

### Installation

#### 8.16 Install side guides (optional)

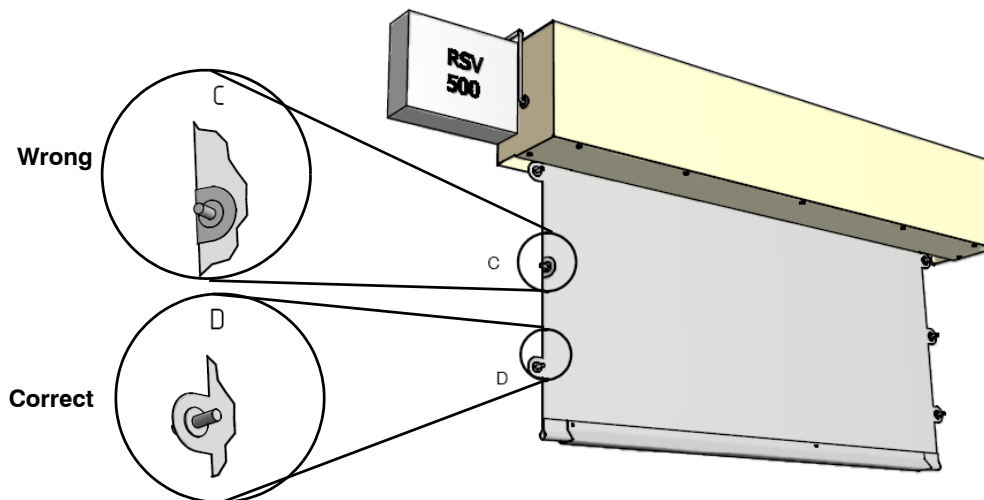
- Allow the curtain to unwind completely and align the plates!



#### INFORMATION

If your curtain system does not have any side guides, you can skip this chapter.

Figure 91: align plates of the restraint system

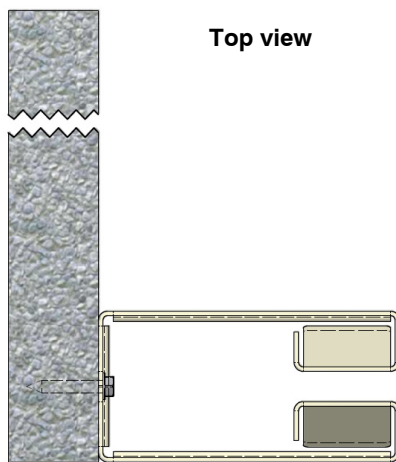


### Installation

The fixing of the side guides can be done in various ways.

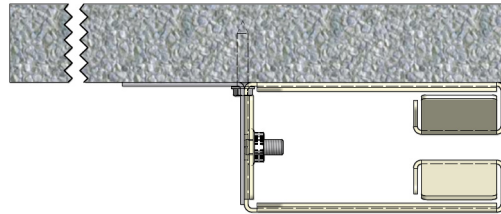
- For direct fixing in a reveal the existing slots on the back side of the side guides can be used (see Figure 92: "direct fixing in the reveal" on Page 48).
- Likewise the installation can take place indirectly via an angle on a wall. For this optionally angle plates are screwed or welded to the side guides. (see Figure 93: "installation via an angle" on Page 48).

**Figure 92: direct fixing in the reveal**



**Top view**

**Figure 93: installation via an angle**



**Top view**

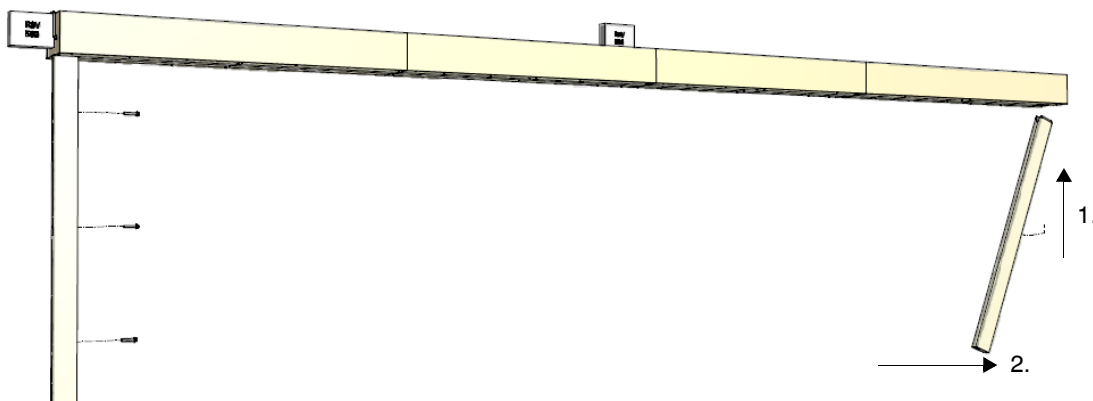
- Allow the curtain to roll up fully and install the side guides by inserting the side guides into the head box and then aligning vertically.



#### **ATTENTION**

Consider the installation position! The running-in funnel (see Figure 18: "side guides (2 pieces) (optional)" on Page 13) must show upwards to the housing box.

**Figure 94: set side guides**

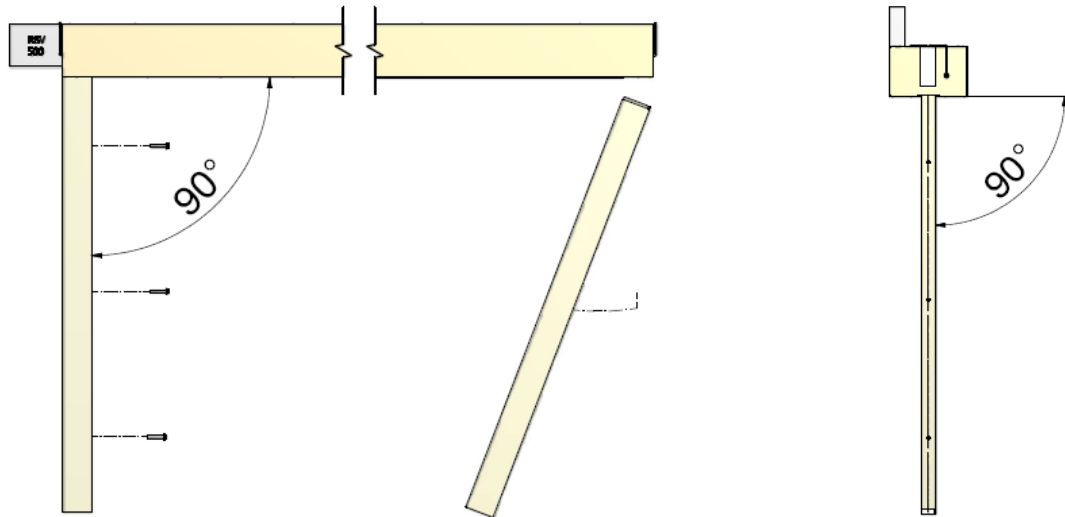




### Installation

- Align the side guides. The side guides must be lined up flush and at right angle with the edge of the head box and likewise flush and at right angle with the outer ends of the head box.

Figure 95: align side guides



- Mark the installation holes.
- Make the installation holes.
- Fix the side guides.



#### ATTENTION

After the installation of the side guides please check that these are aligned absolutely vertically and right angle to the head box. The plates of the restraint system on the curtain can otherwise come off.

### Installation

#### 8.17 installing bottom bar

- If necessary, adjust the bottom bar again.

Fix the bottom bar by using the provided rivets at the existing bore holes. (The fabric has to be bored at this point.)

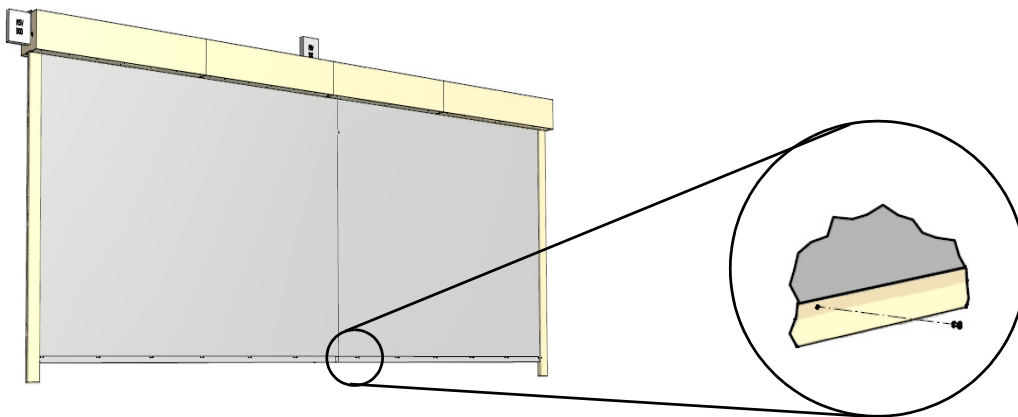


#### INFORMATION

Before fixing the rivets please proof if the bottom bar closes shortly with the cover plate. Smaller variations can be compensated by corresponding aligning of the bottom bar, before riveting.

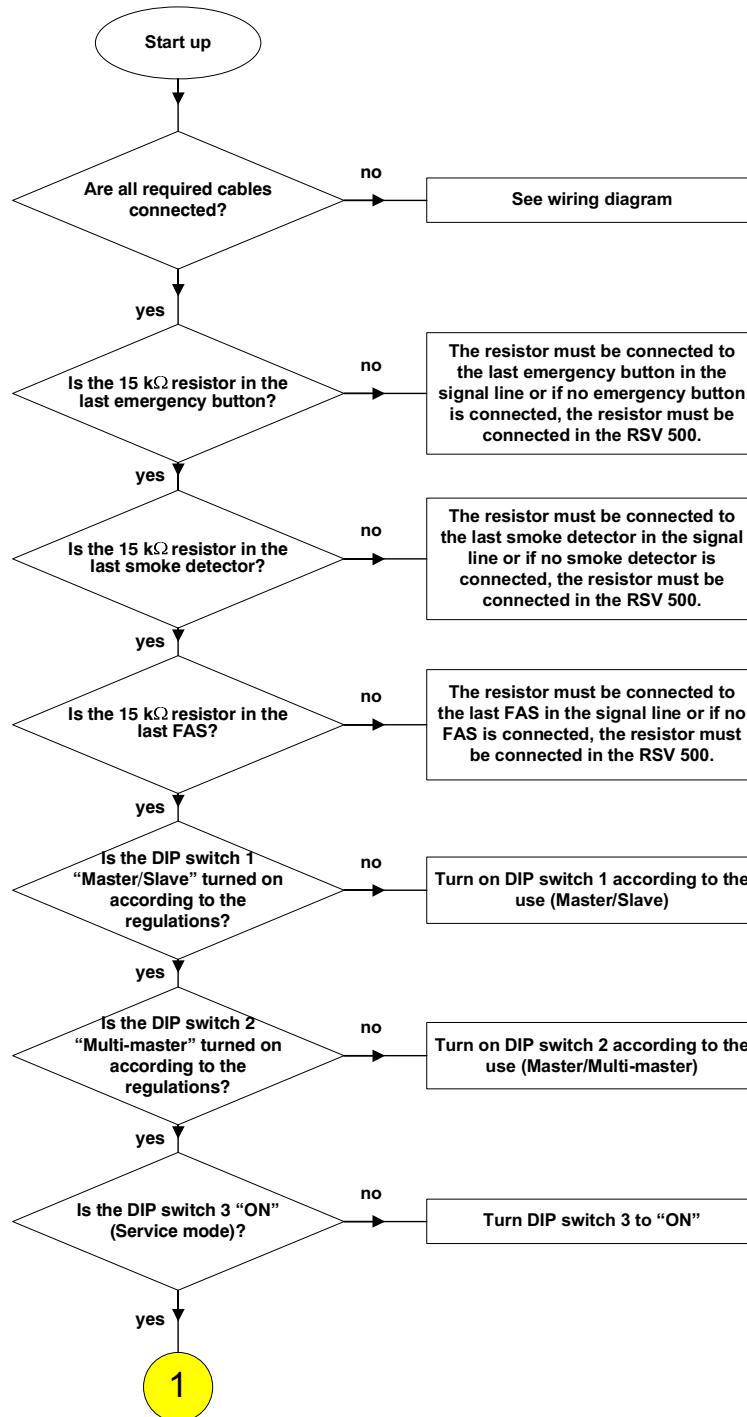
- Fix the bottom bar with the therefore provided blind rivets (contained in the delivery contents).

Figure 96: installing bottom bar

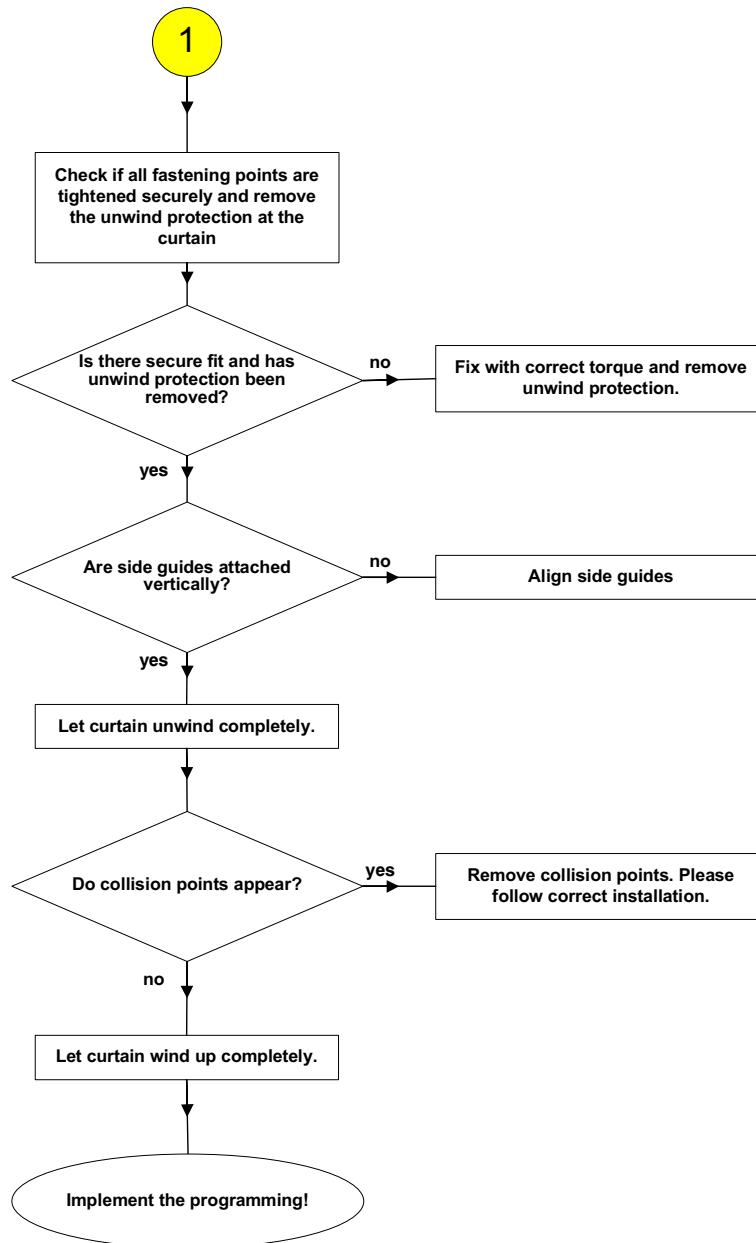


### Start up

#### 9. Start up



### Start up



(see 9.1 "Implement the programming" on Page 53)

### Start up

#### 9.1 Implement the programming

There is an option to program the drop position (unwind length) with or without two-step descent.



#### INFORMATION

The two step descent is channelling of the smoke during the evacuation time. The curtain remains therefore in the programmed position for 10 minutes, before it drops completely.

- (see 9.1.1 "Program drop position (unwind length) with two-step descent" on Page 53)
- (see 9.1.2 "Program drop position (unwind length) without two-step descent:" on Page 53)

#### 9.1.1 Program drop position (unwind length) with two-step descent

- Turn Dip switch 3 at the control to "OFF". (The Service mode is switched off).
- ✚ Curtain goes automatically into end position "UP".
- Unwind curtain 300 to 500 mm. (Red button 1x; red button again=> STOP)
- Press yellow button and then immediately the red button as well at the control panel RSV 500. Keep both buttons pressed approx 2 seconds and then release.
- ✚ "LED yellow" lights up --> "LED red" flashes if both buttons were released.
- Press red button at the RSV 500 control panel.
- ✚ Curtain moves into end position "UP" and then unwinds automatically.
- If the curtain has reached the requested position (Alarm position 1) of the two-step descent, press yellow button.
- ✚ Position (two-step descent) was programmed. The curtain unwinds further automatically.
- If the curtain has been unrolled to the required position (Alarm position 2) press red button.
- ✚ Position of unwind length was programmed and the curtain returns to the end position "UP".
- Press red button to check the programming.
- ✚ Curtain unwinds and remains at the programmed position.

#### 9.1.2 Program drop position (unwind length) without two-step descent:

- Turn Dip switch 3 at the control to OFF. (The Service mode is switched off)
- ✚ Curtain goes automatically into end position "UP".
- Unwind curtain 300 to 500 mm. Red button 1x; red button again=> Stop).
- Press yellow button and then immediately the red button as well at the control panel RSV 500. Keep both buttons pressed approx 2 seconds and then release.
- ✚ LED yellow lights up--> LED red flashes if both buttons were released.
- Press red button at the RSV 500 control panel.
- ✚ Curtain goes into End position "UP" and then unwinds automatically.
- If the curtain has been unrolled to the requested position, press red button.
- ✚ Position of unwind length was programmed and the curtain returns into the end position "UP".
- Press the red button to check the programming.
- ✚ Curtain unwinds and remains at the programmed position.



#### INFORMATION

The programming operation can be repeated unlimited!

### Attach installation retainer

#### 10. Attach installation retainer



#### ATTENTION

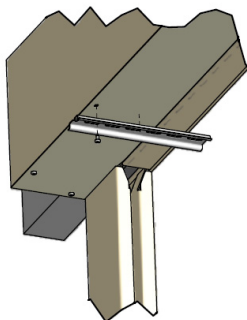
Until the final putting into operation the curtain has to be secured by the installation retainer. Because the curtain unwinds automatically when power line is switched off, it could be damaged.

- Attach the enclosed installation retainer as shown.

Figure 97: installation retainer



Figure 98: installation retainer (schema)



#### ATTENTION

The installation retainer must be removed before the final putting into operation of the system.

#### 11. Care and maintenance

##### 11.1 Functional check

The functioning of the system must be checked regularly by the operator. In case of a possible defect the manufacturing company is to be notified immediately. Damaged parts are to be replaced immediately.

The functioning of the smoke curtain should be checked monthly. For this purpose the following steps are necessary:

- Make sure that the unwind area is always free from obstructions.
- Let the curtain unwind via manual trigger button or service button.
- Carry out a visual inspection of the attachments and material.
- Let the curtain wind up again (via reset button of the manual trigger button or service button).
- Check if the curtain winds up properly and remains in this position.

##### 11.2 Maintenance



#### DANGER

Fire protection equipments serve to protect human lives and must therefore be serviced regularly – at least once a year – by a specialist company authorized by the manufacturer.

The maintenance is done according to a maintenance check list specified by the manufacturer (see 11.2.1 "Maintenance check list" on Page 55). (or download at [www.simon-rwa.de](http://www.simon-rwa.de)).

### Care and maintenance

#### 11.2.1 Maintenance check list

Year of maintenance \_\_\_\_\_  
Date \_\_\_\_\_  
Mounting staff \_\_\_\_\_  
Name / Signature \_\_\_\_\_

Building project \_\_\_\_\_  
System description \_\_\_\_\_  
Kind of mounting (e. g. ceiling / wall) \_\_\_\_\_  
Serial number / year of manufacture \_\_\_\_\_  
Battery year of manufacture<sup>(1)</sup> \_\_\_\_\_

(1) The backup battery must be changed every four years!

No.	Check points	Test o.k.	Notes
<b>1.0</b>	<b>Optical inspection</b>		
1.1	Check the smoke curtain for damaging, contamination, oxidation	<input type="checkbox"/> yes <input type="checkbox"/> no	
<b>2.0</b>	<b>Electrical inspection</b>		
2.1	Check, if the electrical supply lines are connected properly and fixed well at the actuator	<input type="checkbox"/> yes <input type="checkbox"/> no	
2.2	Check, if the wiring to the actuators has been laid according to the valid VDE-commandments and to the manufacturers' instructions (wire cross section, etc.).	<input type="checkbox"/> yes <input type="checkbox"/> no	
<b>3.0</b>	<b>Functional inspection</b>		
3.1	<b>Attention!</b> Check the operating voltage (according to manufacturers' instructions).	<input type="checkbox"/> yes <input type="checkbox"/> no	
3.2	Let the smoke curtain move in its alarm position and check if the curtain descends completely. Ensure that the roll-off area is free of obstacles.	<input type="checkbox"/> yes <input type="checkbox"/> no	
3.3	Reset the curtain. Ensure that the curtain moves duly in its end position.	<input type="checkbox"/> yes <input type="checkbox"/> no	
<b>4.0</b>	<b>Inspection of the mechanical parts</b>		
4.1	Check the fastening of the head box and of the side guides (optional)	<input type="checkbox"/> yes <input type="checkbox"/> no	
4.2	Check the bearing of the roll shaft.	<input type="checkbox"/> yes <input type="checkbox"/> no	

---

### **Care and maintenance**

---

#### **11.3 Clean curtain material**



##### **ATTENTION**

The curtain material is washable with mild commercial disinfectant or warm water. The curtain material must not be soaked or washed by machine, since otherwise the backing fabric will be damaged and glass filaments can come off.

#### **11.4 Check backup battery**

For maintenance of the emergency power supply the built-in backup batteries must be checked regularly and if necessary replaced by new backup batteries.

You have the option to acquire the battery pack as complete exchange pack. Contact the manufacturer or the distribution partner.



##### **ENVIRONMENTAL WARNING**

Old backup batteries do not belong to residual waste. Contact your waste disposal firm in case of any queries.

#### **11.5 Repair and exchange**

The electrical control panel RSV 500 may be repaired only by the manufacturer. In case of a failure the complete control panel is to be exchanged.

#### **11.6 Warranty conditions**

Concerning the warranty please refer to: "General Conditions for the supply of Products and Services of the Electrical and Electronics industry" (Green Terms of Delivery" – GL)".

This is available to you on our web site [www.simon-rwa.de](http://www.simon-rwa.de). We shall be glad to send you a copy on request.



### Fault finding

#### 12. Fault finding

Table 4:

Error description	Possible cause	Course of action
Fault indication (Y) active or signalling contact. Curtain is rolled out in an intermediate position	Curtain is not fully rolled in.	Roll up the curtain (e.g. via Service button). If the curtain is rolled up the fault indication must switch off.
Fault indication (Y) active or signalling contact. Curtain is completely rolled down and cannot be rolled up any more (e.g. Reset).	There is a tripping of one of the signal lines.	Check signal line in the control panel. If necessary clamp terminating resistors in the control panel in order to check which current loop has tripped.
Fault indication (Y) active or signalling contact. Curtain is completely rolled down and cannot be rolled up any more (e.g. Reset).	There is a power failure or the mains fuse is defective.	Check mains fuse for continuity. Check 230 V supply with measuring device. Green LED in the housing of switching power supply (cover plate) must be on.
Fault indication (Y) active or signalling contact. Curtain is rolled up and can be also moved normally.	Backup battery defect or not fully charged.	Take out backup battery and check battery voltage at the multipoint connector of the battery. The support battery voltage should be over 4.5 V.
RSV 500 Control panel cannot be transferred into programming mode.	RSV 500 Control panel is in Service Mode (DIP switch 3 "ON")	Switch on the control panel in normal operation (DIP switch 3). Await complete wind up process and only then start again with programming mode.
Curtain unwinds in an uncontrolled manner (too high speed).	Speed sensor of the drive unit is defective.	Measure with a measuring device (frequency measurement) the speed signal (0-5 digital) at both terminals (bk) and (ye) (motor connection) during the uncontrolled unwinding. If there is no speed signal during the unwinding, the speed sensor in the drive unit is defective and must be replaced.

---

## Appendix

---

### 13. Appendix

#### 13.1 EC Manufacturer's declaration



We hereby declare the conformity of the product with the guidelines applicable for it. The declaration of conformity can be examined in the firm and shall be sent to you on request.

Any alteration which may be made without our prior consent will make this declaration invalid.

#### 13.2 Company addresses

##### 13.3 Germany:

Simon RWA® Systeme GmbH  
Medienstr. 8  
D - 94036 Passau  
Tel.: +49 (0)851 98870 - 0  
Fax: +49 (0)851 98870-70  
E-Mail: [info@simon-rwa.de](mailto:info@simon-rwa.de)  
Internet: [www.simon-rwa.de](http://www.simon-rwa.de)

##### 13.4 Austria:

Simon RWA® Systeme GmbH  
Aumühlweg 21 Top 313/314  
A - 2544 Leobersdorf  
Tel.: +43 (0)2256 64001  
Fax: +43 (0)2256 64070  
E-Mail: [info@simon-rwa.at](mailto:info@simon-rwa.at)  
Internet: [www.simon-rwa.at](http://www.simon-rwa.at)

##### 13.5 Switzerland:

Simon RWA® Systeme AG  
Allmendstrasse 8  
CH - 8320 Fehraltorf  
Tel.: +41 (0)44 956 50 30  
Fax: +41 (0)44 956 50 40  
E-Mail: [info@simon-rwa.ch](mailto:info@simon-rwa.ch)  
Internet: [www.simon-rwa.ch](http://www.simon-rwa.ch)

---

### Appendix

---

Note:

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

# **Instruction Manual**

Smoke PROtec Multiple Roller



---

**BA-RSV-52xxx-10-en**

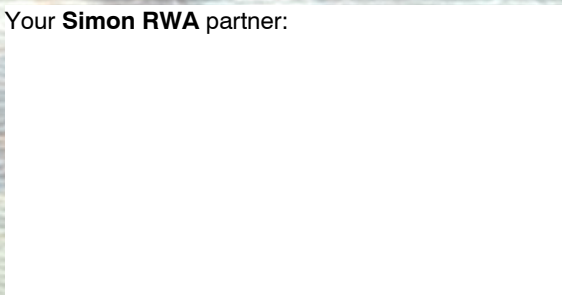
---

## **General conditions of business and terms of delivery**

The currently valid conditions for products and services of the electrical and electronics industry (green delivery terms) apply for deliveries and services, including the supplementary clause "Extended retention of title". These are published by ZVEI Frankfurt. If you are not familiar with these, we would be happy to send them to you. The agreements are also available for download at [www.simon-rwa.de](http://www.simon-rwa.de).

Passau is the established legal venue.

Your **Simon RWA** partner:



Copyright by SIMON RWA Systeme GmbH  
Subject to technical changes and errors.