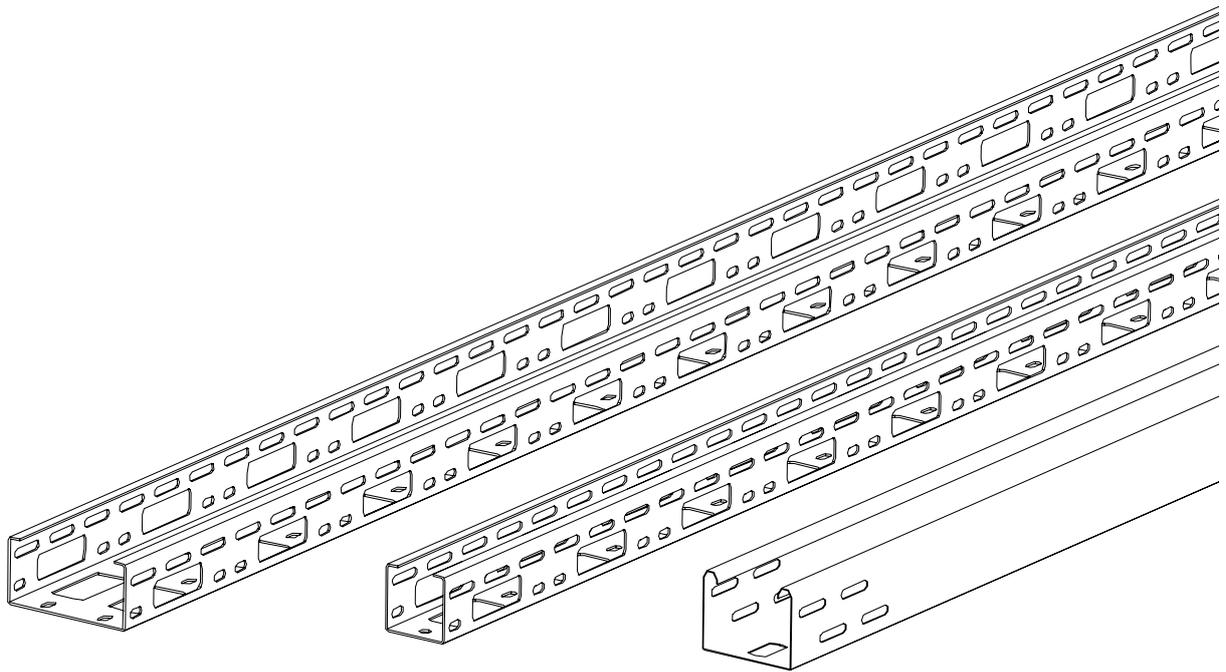


# Luminaire support systems

*Mounting instructions*



**Building Connections**

## **Luminaire support systems**

Mounting instructions

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# 1 About these instructions

## 1.1 Target group



These instructions are intended for the following target groups:

- Engineers and architects charged with the planning of luminaire support systems.
- Electrically trained specialists charged with installing luminaire support systems.

Electrical work may only be carried out by specialist personnel with electrical training.

## 1.2 Using these instructions

- These instructions are based on the standards valid at the time of compilation (December 2020).
- We will not accept any warranty claims for damage caused through non-observance of these instructions.
- Any images are intended merely as examples. Mounting results may look different.

## 1.3 Types of warning information



### Type of risk!

Shows a risky situation. If the safety instruction is not observed, then serious or fatal injuries may occur.



### Type of risk!

Shows a risky situation. If the safety instruction is not observed, then medium or minor injuries may occur.

**ATTENTION**

### Type of risk!

Shows a hazardous situation. If the safety instruction is not observed, then damage to the product or the surroundings may occur.

**Note!** *Indicates important information or assistance.*

## 1.4 Correct use

The luminaire support system is used for the installation of lighting systems in indoor areas without special corrosion protection requirements, as well as for supporting and routing cables for power and data supply to machines and workstations.

The luminaire support system is suitable for use at ambient temperatures of - 20 °C to + 120 °C. At temperatures below - 20 °C, the material will become brittle and may not be processed further.

The luminaire support system is not designed for any other purpose than the one described here. If the luminaire support system is used for another purpose, any liability, warranty or damage claims shall be rendered null and void.

### **1.5 Applicable documents**

KTS mounting instructions – applicable for all OBO cable support systems:

[https://www.obo.de/out/media/04\\_KTS-V11\\_2012-05-29\\_de.pdf](https://www.obo.de/out/media/04_KTS-V11_2012-05-29_de.pdf)

### **1.6 Basic standards and regulations**

The luminaire support system fulfils the requirements of DIN EN 61537 VDE 0639:2007-09 – Cable management – Cable tray systems and cable ladder systems.

## **2 General safety information**

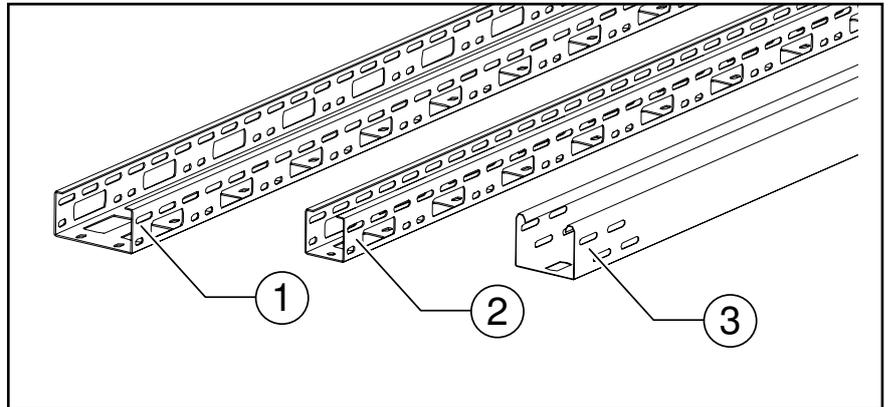
Observe the following general safety information on handling the luminaire support system:

- Follow applicable working, accident and environmental protection regulations.
- Protective gloves must be worn during all mechanical mounting work.
- The luminaire support system must be included in the protection measures and/or the equipotential bonding.
- The inclusion in the equipotential bonding of the overall system must be performed by specialist personnel.
- The luminaire support system must be designed according to the loads to be expected.
- The maximum load capacity of the luminaire support system may not be exceeded, the maximum support spacing must be observed.

### 3 System overview

#### 3.1 Product description

The OBO luminaire support system simplifies the installation of lighting systems and enables the optimal positioning of luminaires for machines and workplaces. The luminaire support system is comprised of luminaire rails in 2 widths and the luminaire support tray:



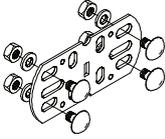
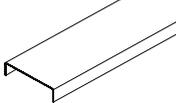
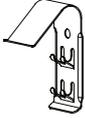
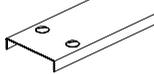
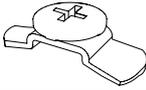
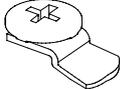
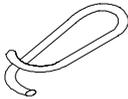
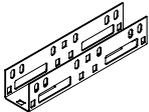
**Fig. 1:** Luminaire support system overview

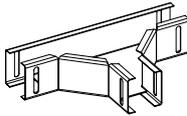
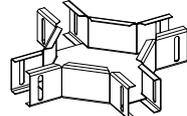
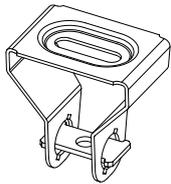
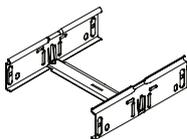
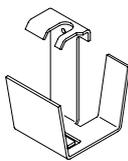
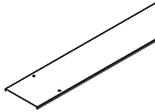
- ① Luminaire support rail 100
- ② Luminaire support rail 50
- ③ Luminaire support tray

The luminaire support rails are suitable for heavy-duty installations and can be mounted with a chain suspension using the continuous side perforations. The luminaire support tray is suitable for light-weight installations and mounting with centre suspension, such as on trapezoidal ceilings. The continuous base perforations allow the flexible installation of luminaires.

**Note!** *The approved load capacity and maximum support spacing of the luminaire support rails and luminaire support tray can be found in the respective load diagrams in the current planner catalogue.*

### 3.2 System accessories

Designation	Figure	Function	LTS 50	LTS 100	LTR
VF AZK straight and angle connector		Creating a straight connection, a horizontal angle connection or a vertical angle connection.	x	x	
KSR cable protection ring		Protecting cables when being fed through base or side perforations of luminaire support rails. A range of sizes for different perforations.		x	
Cover Type AZDU		Unperforated cover for luminaire support rails.	x	x	
Cover clamp, type DKU		Fastening AZDU and AZDG covers to luminaire support rails without screws.	x	x	
Cover Type AZDMD		Cover with turn buckles for fastening to luminaire support rails.		x	
Turn buckle Type AZDR 50		Turn buckle for installation in the AZD cover with a width of 50 mm.		x	
Turn buckle Type AZDR 100		Turn buckle for installation in the AZD cover with a width from 100 mm.		x	
Suspension bracket Type AHB		Fastening luminaire support rails to a ceiling suspension.	x	x	
Ceiling hook Type 948 TG 6		Installing a chain suspension for luminaire support rails.		x	
Suspension chain Type LTK-K		Suspending luminaire support rails.	x	x	
Quick link		For connecting the suspension chain LTK.	x	x	
Truss-head bolt Type FRSB		Creating screw connections.	x	x	x
Straight connector type VF AZK 50		Creating a straight connection of LTS 050.	x		
90° bend Type LTS B DD		Creating a 90° bend for LTS 050.	x		

Designation	Figure	Function	LTS 50	LTS 100	LTR
T piece Type LTS T DD		Creating a T branch for LTS 050.	x		
Cross-over LTS K DD		Creating a cross-over for LTS 050.	x		
Ceiling bracket DB FT		Installing a threaded rod suspension.			x
Ceiling bracket, variable DBV FS		Installing a threaded rod suspension with infinite angle adjustment.			x
Threaded rod		Installing a threaded rod suspension.			x
Trapezoidal fastening TPB 100 FS		For fastening to standard trapezoidal ceilings.			x
Latch for trapezoidal fastening TPB R FS		For fastening and securing ceiling brackets to trapezoidal ceilings.			x
Straight connector set RV 607 FS		Creating a screwless straight connection of luminaire support trays.			x
Centre suspension MAH LTR FS		Installing a threaded rod suspension.			x
Cover with turn buckle DRL 075 FS		Cover with turn buckles for fastening to a luminaire support tray.			x

## 4 Wall and ceiling mounting

The luminaire support rails can be mounted on the wall using wall and support brackets from the OBO mounting systems range, for example types AW 15 or MWA 12. Detailed information on wall and ceiling mounting can be obtained from the OBO mounting systems area.

**Note!** *Observe the permissible load capacity and maximum support spacing for the individual luminaire support rails. These can be taken from the respective load diagrams in the current planner catalogue.*

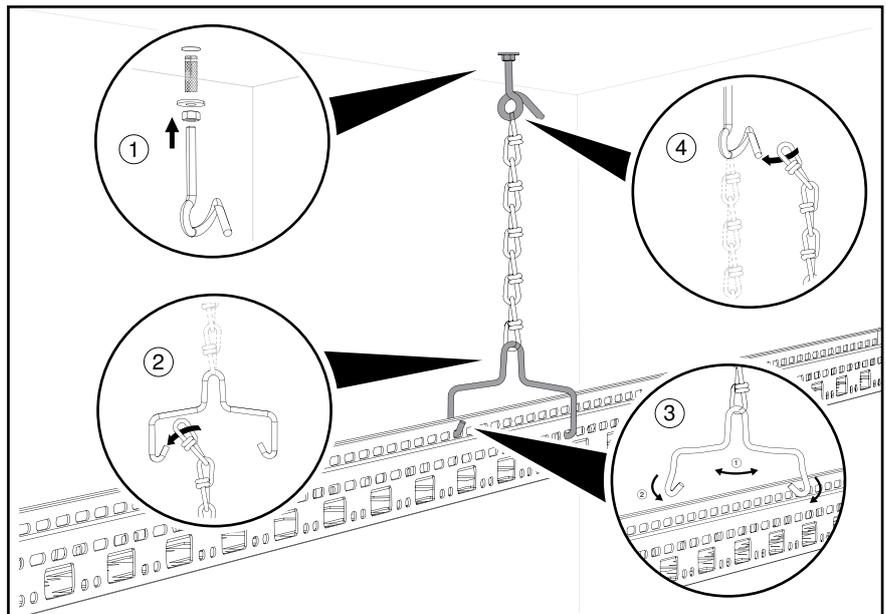
### 4.1 Mounting the luminaire support rail on the ceiling

Alternatively, the luminaire support rails can be mounted on the ceiling using chain suspensions. Select support spacing according to the respective load diagram.



#### **Danger due to high working height!**

When installing at height, there is a risk of falling and/or that parts may fall. Use fall protection during installation and secure the area beneath the installation site. Wear safety gloves and a helmet.



**Fig. 2:** Mounting chain suspension

1. Fasten a ceiling hook type 948 TG 6 to the ceiling using a suitable anchor (M6) ①.
2. Pull the LTK-K 25 G suspension chain onto the suspension bracket ②.
3. Fasten the suspension bracket AHB on the luminaire support rail ③.
4. Suspend the suspension chain with bracket and luminaire support rail on the ceiling hook ④.

## 4.2 Mounting the luminaire support tray on the ceiling

The luminaire support tray can also be fastened on the ceiling using centre suspension type MAH LTR FS. For ceiling mounting, the ceiling bracket DB FT, variable ceiling bracket DBV FS or trapezoidal fastening TPB 100 FS can be used with latch TPB R FS. Select support spacing according to the respective load diagram.



### WARNING

#### Danger due to high working height!

When installing at height, there is a risk of falling and/or that parts may fall. Use fall protection during installation and secure the area beneath the installation site. Wear safety gloves and a helmet.

### 4.2.1 Mounting a ceiling bracket

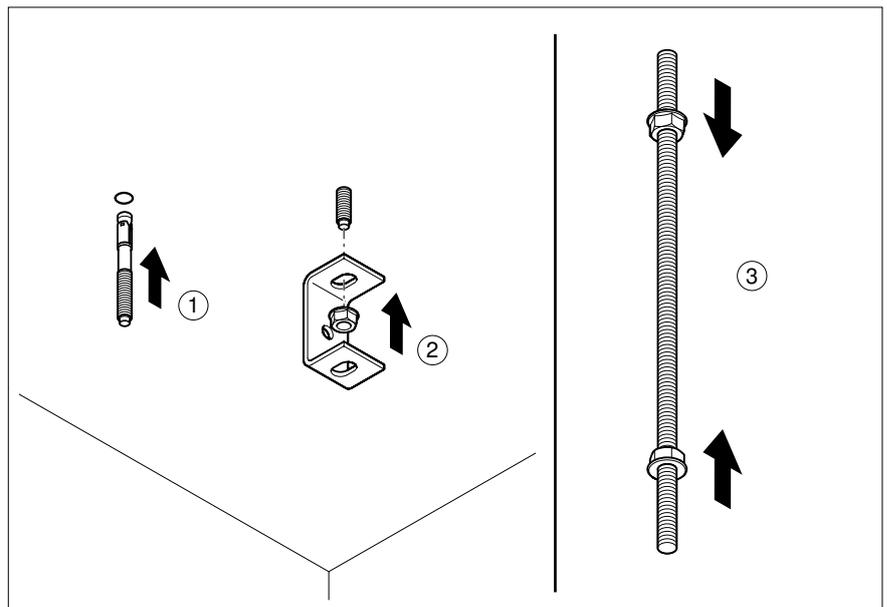


Fig. 3: Mounting a ceiling bracket

1. Drill and blow out the anchor hole.
2. Knock in the bolt tie ①.
3. Attach the ceiling bracket to the bolt thread and screw together from below with a combination nut ②.
4. Shorten the threaded rod (M10) for suspending the luminaire support tray to the required length and screw on two combination nuts to lock it ③.

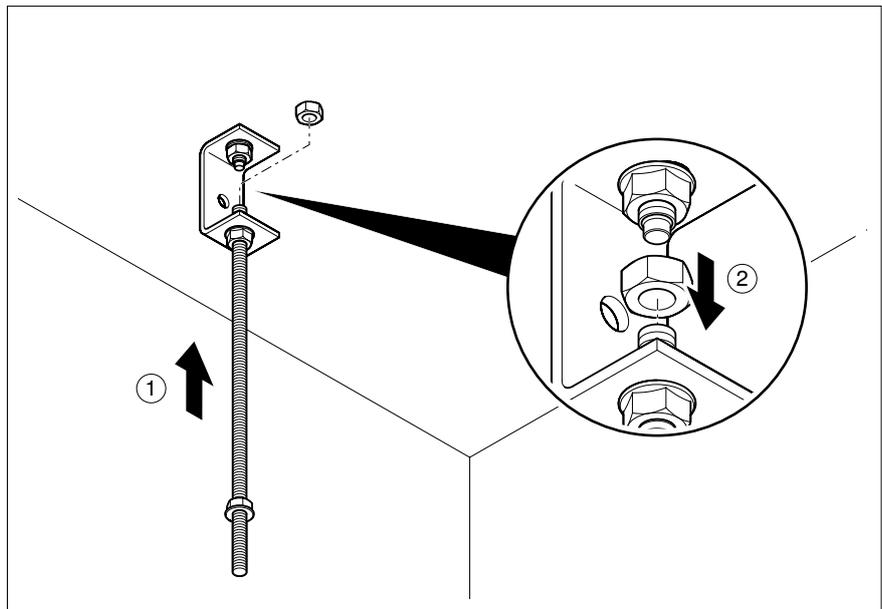


Fig. 4: Mounting the threaded rod

5. Insert the threaded rods into the ceiling bracket ①.
6. Screw the threaded rods tight from above with nuts ②.

#### 4.2.2 Mounting a variable ceiling bracket

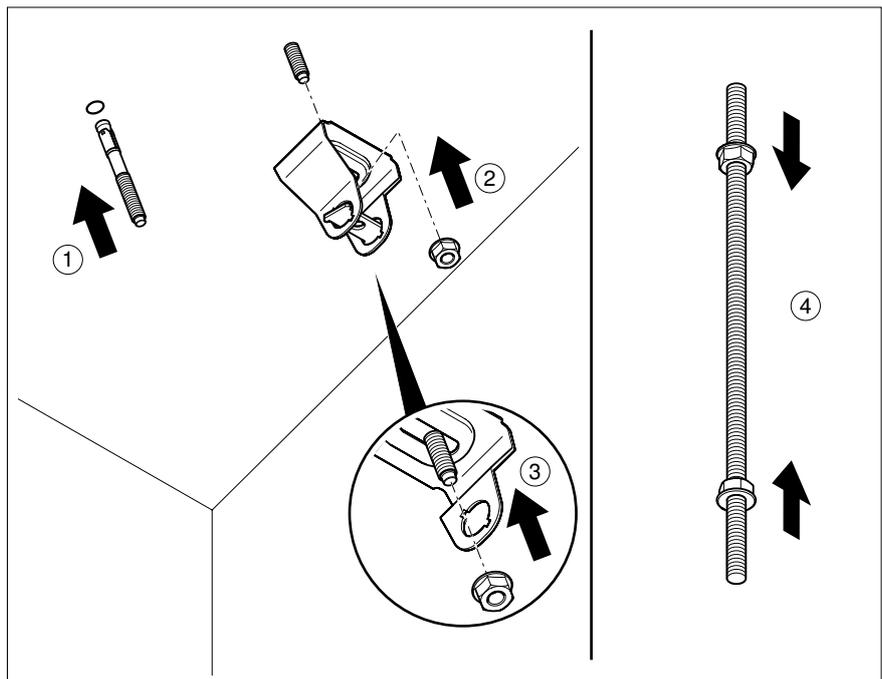
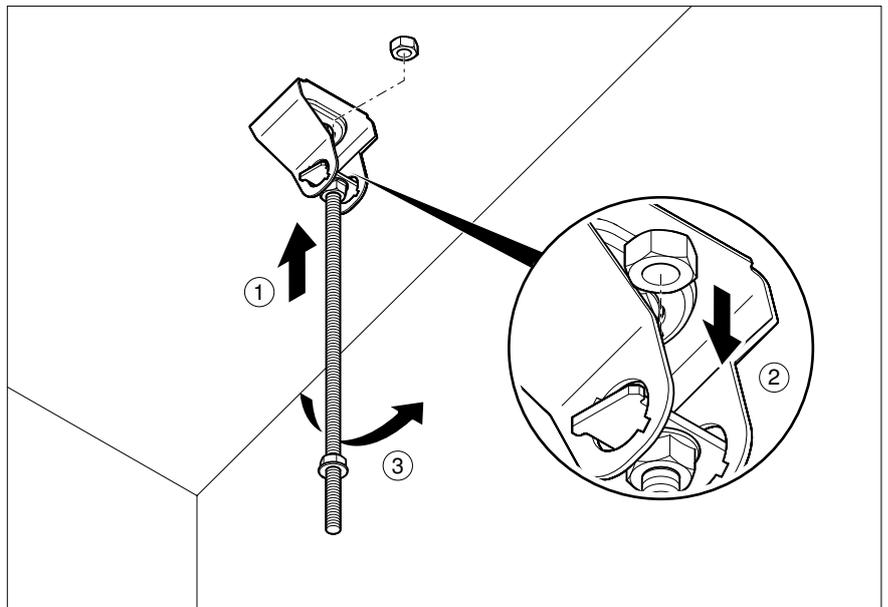


Fig. 5: Mounting a variable ceiling bracket

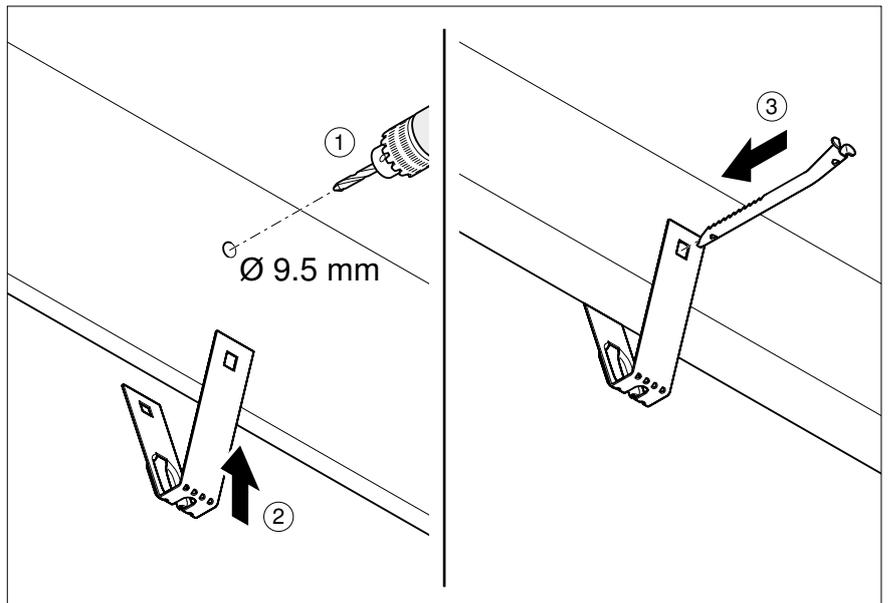
1. Drill and blow out the anchor hole.
2. Knock in the bolt tie ①.
3. Attach the variable ceiling bracket to the bolt thread ② and screw together from below with a combination nut ③.
4. Shorten the threaded rod (M10) for suspending the luminaire support tray to the required length and screw on two combination nuts to lock it ④.



**Fig. 6:** Mounting the threaded rod

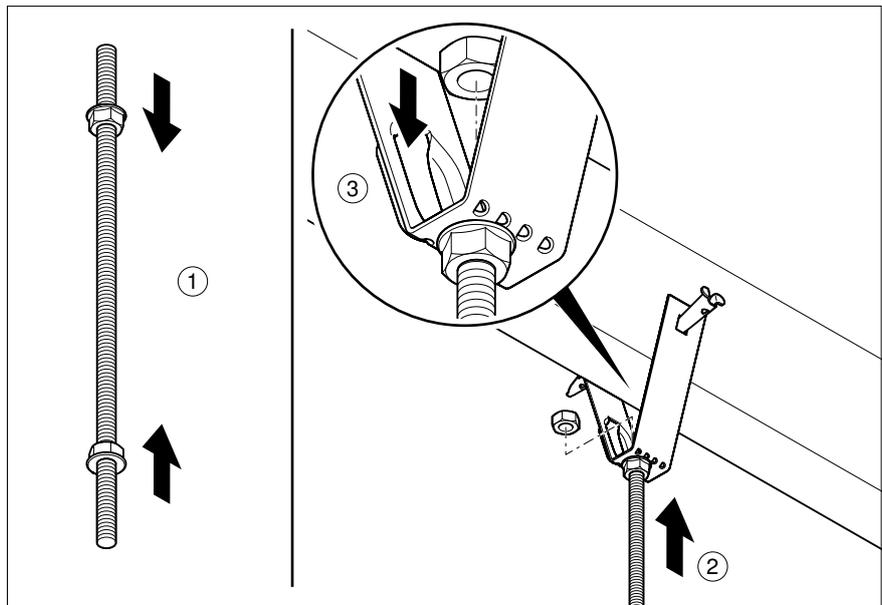
5. Insert the threaded rod in the threaded rod mount of the variable ceiling bracket ① and screw tight from above with a nut ②.
6. Vertically align the threaded rod mount with threaded rod ③.

#### 4.2.3 Mounting a trapezoidal fastening with latch



**Fig. 7:** Mounting a trapezoidal fastening with latch

1. Drill the hole for the latch through the trapezoidal ceiling ( $\varnothing$  9.5 mm) ①.
2. Place the trapezoidal fastening over the hole in the trapezoidal ceiling ②.
3. Secure the trapezoidal fastening with a latch ③.

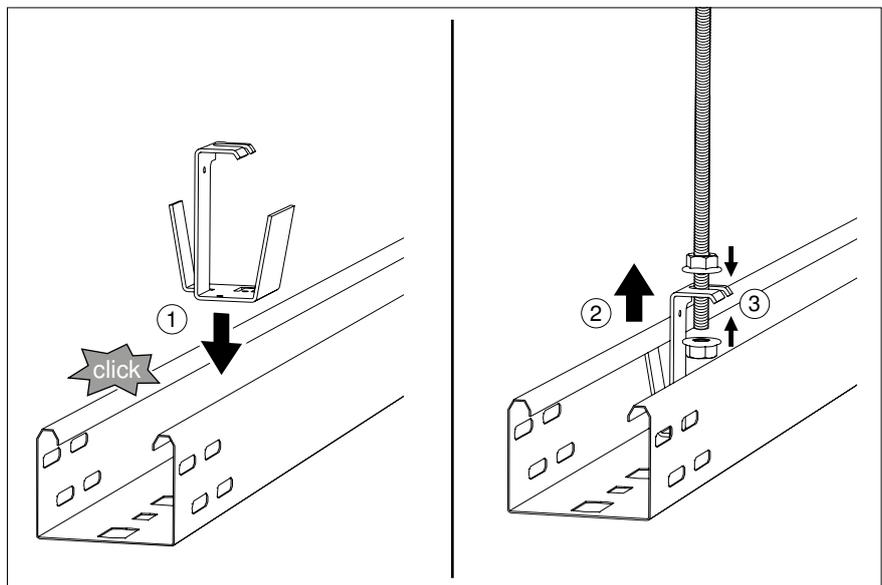


**Fig. 8:** Mounting the threaded rod

4. Shorten the threaded rod (M10) for suspending the luminaire support tray to the required length and screw on two combination nuts to lock it (1).
5. Insert the threaded rod in the trapezoidal fastening (2).
6. Secure the threaded rod from above with a nut (3).

#### 4.2.4 Mounting the centre suspension

Before mounting the centre suspension, a suspension with threaded rod must be mounted (see chapters 4.2.1, 4.2.2 and 4.2.3).



**Fig. 9:** Mounting the centre suspension

1. Push the centre suspension MAH into the luminaire support tray from above, until it locks under the side edges (1).
2. Place the luminaire support tray with centre suspension on the suspended threaded rod (2).
3. Fasten the centre suspension to the threaded rod from below using a combination nut and lock it from above using a combination nut (3).

### 4.3 Creating a straight connection

#### ATTENTION

#### Cable damage through incorrectly set screw connections!

Sharp-edged threads can damage cables.

Always insert bolts from the inside to the outside and screw on the nut from outside.

#### 4.3.1 With VF AZK straight and angle connectors

##### Note!

*This installation method can also be used for the luminaire support tray. Installation is carried out in the same way as for the luminaire support rail.*

To create a straight connection, two VF AZK straight and angle connectors are required:

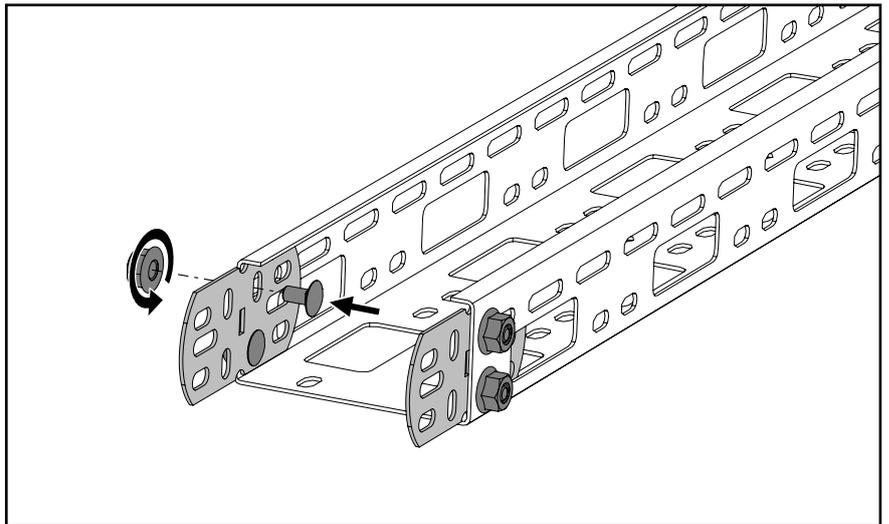


Fig. 10: Mounting a straight connector

1. Place the VF AZK straight and angle connectors up to halfway into the side rails of the luminaire support rail from the inside.
2. Mount the straight connectors with 2 screw connections each.

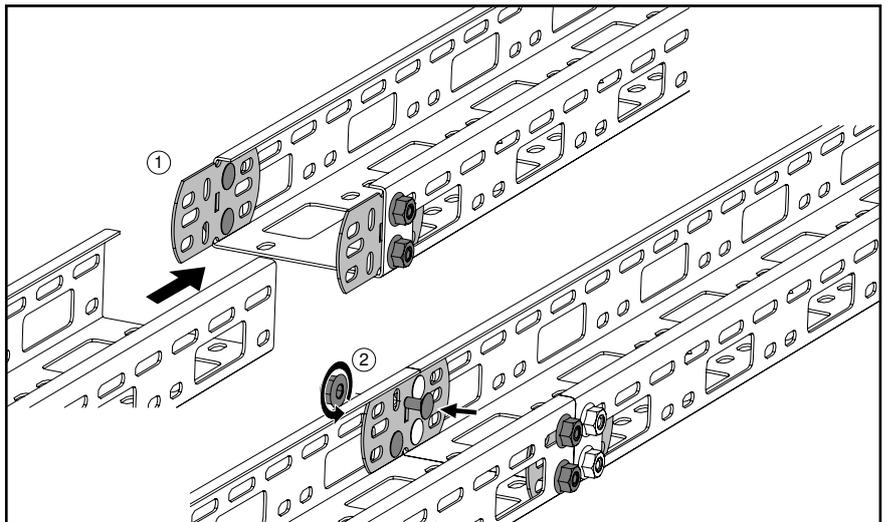
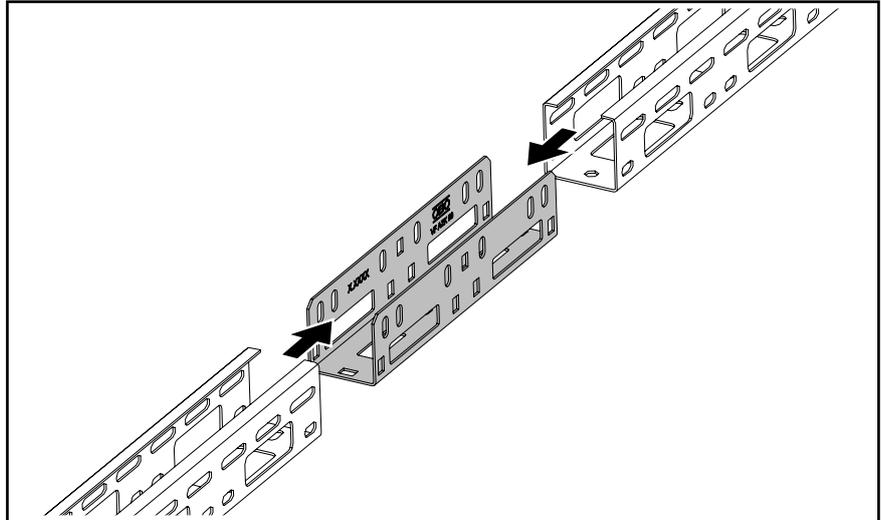


Fig. 11: Connecting the luminaire support rails

3. Push a second luminaire support rail onto the connectors at the joint ①.
4. Fasten the luminaire support rail to the connectors with 2 screw connections each ②.

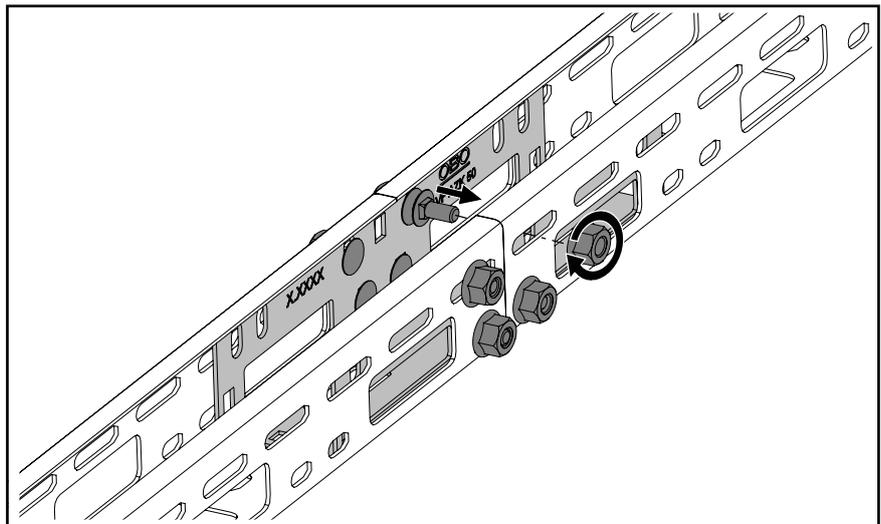
#### 4.3.2 With straight connector for luminaire support rail 050

For the luminaire support rail 050, a straight connection can also be created using a VF AZK 50 straight connector:



**Fig. 12:** Positioning a straight connector

1. Push the LTS 050 luminaire support rails up to the middle of the straight connector.

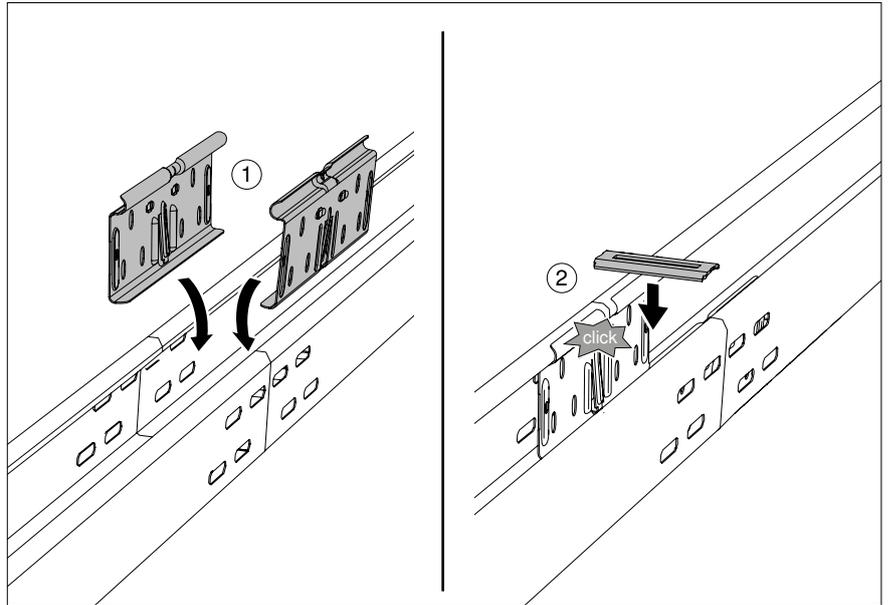


**Fig. 13:** Mounting a straight connector

2. Mount the luminaire support rails with 4 screw connections each.

### 4.3.3 With straight connector set for luminaire support tray

A screwless straight connection can be created for the luminaire support tray using the straight connector set RV 607 FS.



**Fig. 14:** Mounting a straight connection

1. Position 2 luminaire support trays so that they abut.
2. Clamp the side parts of the connector in the centre of the joint under the rail ①.
3. Clamp the centre piece of the connector to the base of the luminaire support tray between the side parts to fix them in place ②.

## 4.4 Creating angle connections

### ATTENTION

#### Cable damage through incorrectly set screw connections!

Sharp-edged threads can damage cables.

Always insert bolts from the inside to the outside and screw on the nut from outside.

### 4.4.1 Creating a 90° corner with VF AZK straight and angle connectors

#### Note!

*This installation method can also be used for the luminaire support tray. Installation is carried out in the same way as for the luminaire support rail.*

To create a 90° corner, 2 VF-AZK straight and angle connectors are required. The luminaire support rails must be cut before mounting:

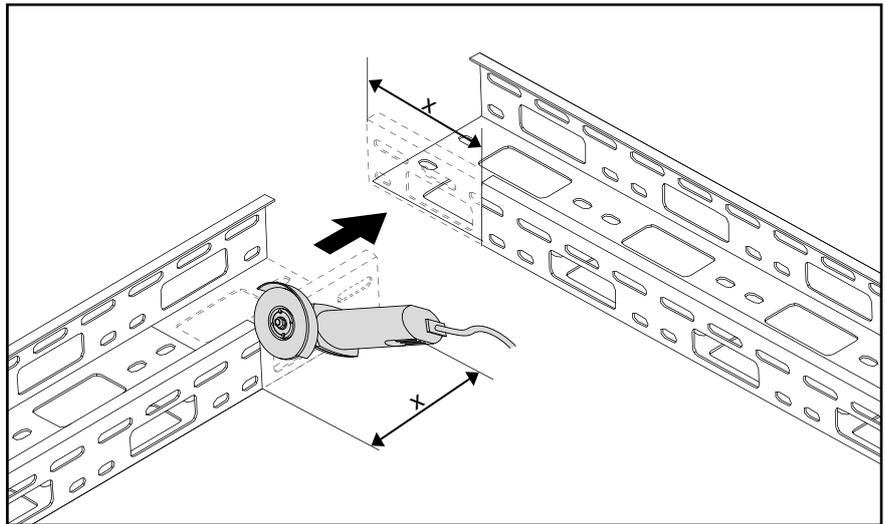


### CAUTION

#### Risk of cutting!

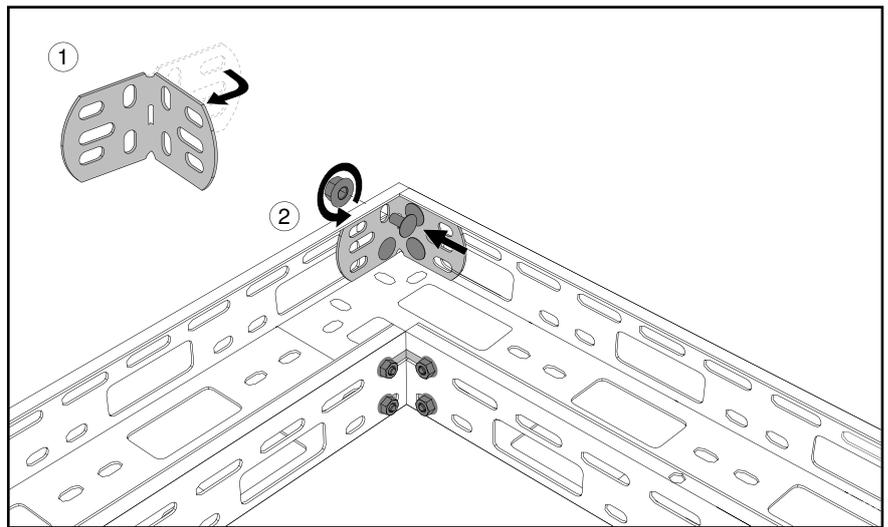
During cutting work, metal chips or sharp cut edges can cause injuries to eyes and hands!

Wear protective glasses and gloves.



**Fig. 15:** Cutting luminaire support rails for 90° corners.

1. Cut the luminaire support rails. The width X corresponds to the rail width.
2. Position the luminaire support rails so that they abut.

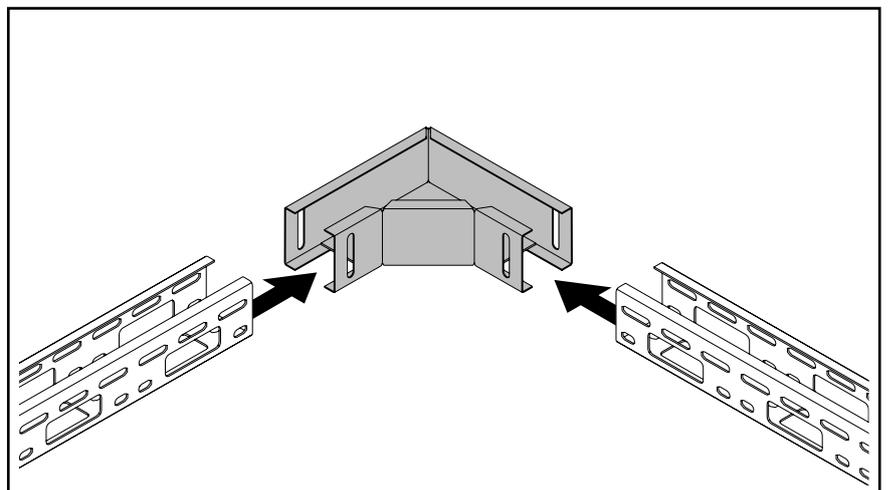


**Fig. 16:** Mounting a 90° corner.

3. Bend the VF AZK straight and angle connectors by 90° to create an angle connector ①.
4. Place the angle connectors at the joints from the inside ②.
5. Mount the angle connectors with 4 screw connections each.

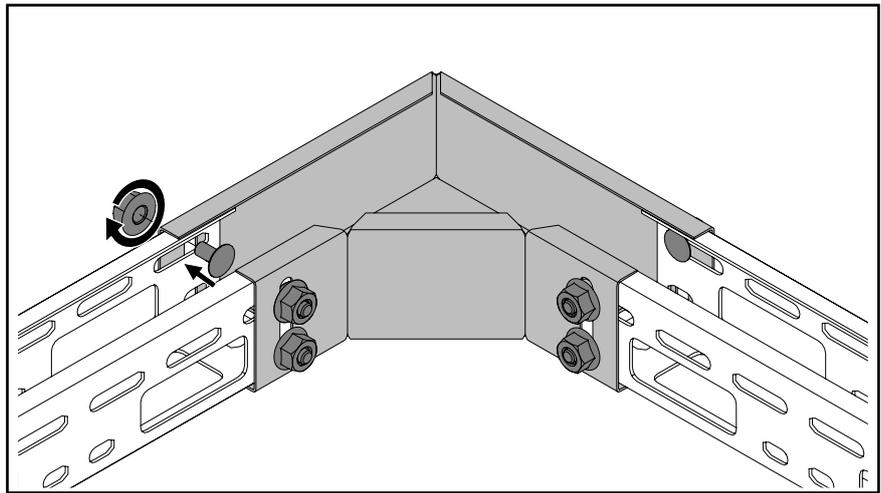
#### 4.4.2 Creating a 90° corner with fitting for luminaire support rail 050

For the luminaire support rail LTS 050, a 90° bend can also be created using a fitting. The luminaire support rails do not need to be cut when using fittings.



**Fig. 17:** Positioning a 90° bend

1. Position two luminaire support rails at an angle of 90° to each other.
2. Push the luminaire support rails into the 90° bend fitting, lining up the perforations.



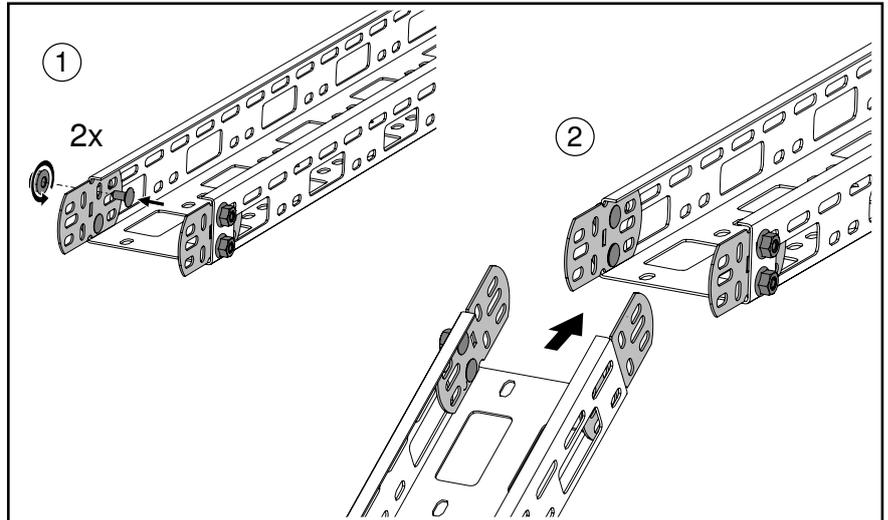
**Fig. 18:** Mounting a 90° corner

3. Mount the luminaire support rails with 4 screw connections each.

### 4.4.3 Creating a vertical adjustable connection

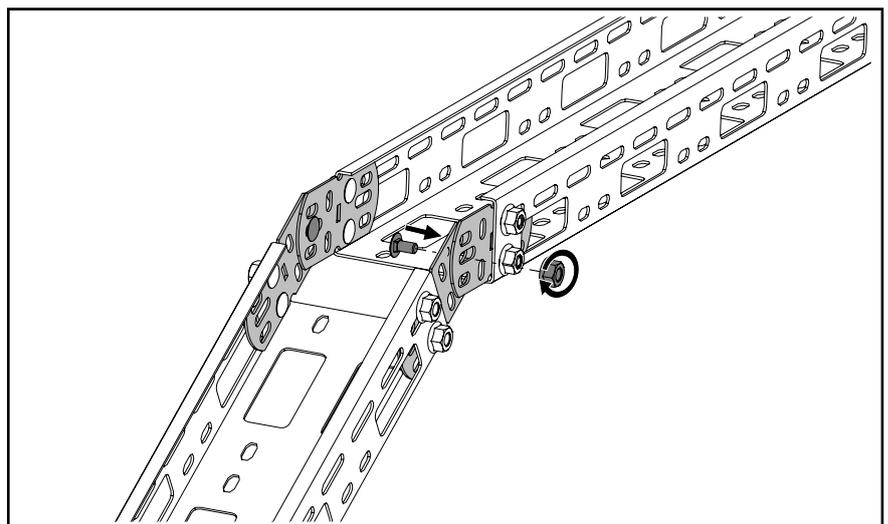
**Note!** *This installation method can also be used for the luminaire support tray. Installation is carried out in the same way as for the luminaire support rail.*

Two straight and angle connectors can be combined into one adjustable connector. Rising and falling vertical connections can be created using the adjustable connector:



**Fig. 19:** Mounting straight and angle connectors

1. Place the VF AZK straight and angle connectors up to halfway into the side rails of the luminaire support rails from the inside ①.
2. Mount the straight connectors with 2 screw connections each.
3. Position the luminaire support rails at the desired angle ②.



**Fig. 20:** Mounting an adjustable connection

4. Connect 2 straight connectors to the adjustable connector with one screw connection each.

## 4.5 Creating a T branch

### ATTENTION

#### **Cable damage through incorrectly set screw connections!**

Sharp-edged threads can damage cables.

Always insert bolts from the inside to the outside and screw on the nut from outside.

### 4.5.1 With VF AZK angle connectors

#### **Note!**

*This installation method can also be used for a luminaire support tray. The luminaire support tray is mounted instead of the second luminaire support rail.*

To create a T branch, 2 VF-AZK straight and angle connectors are required. Before mounting, the side rail of the first luminaire support rail must be cut:

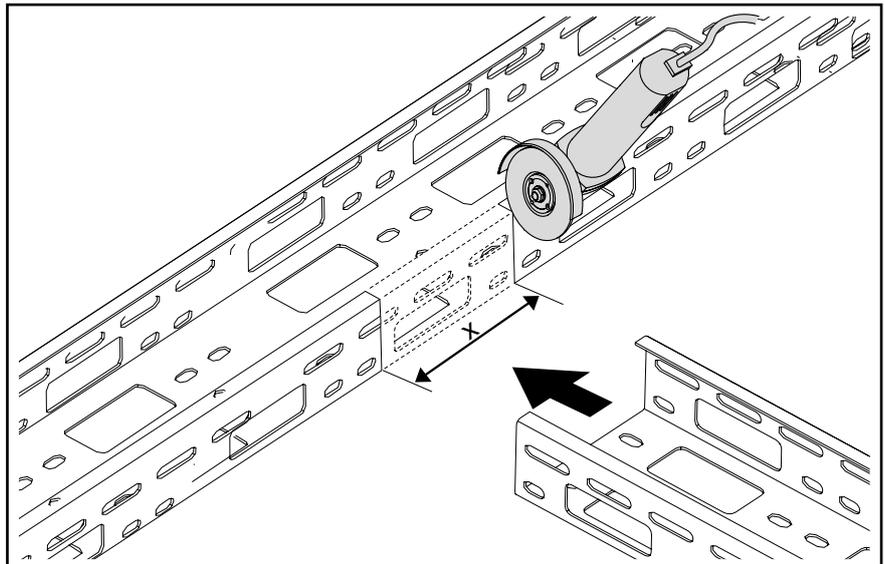


### CAUTION

#### **Risk of cutting!**

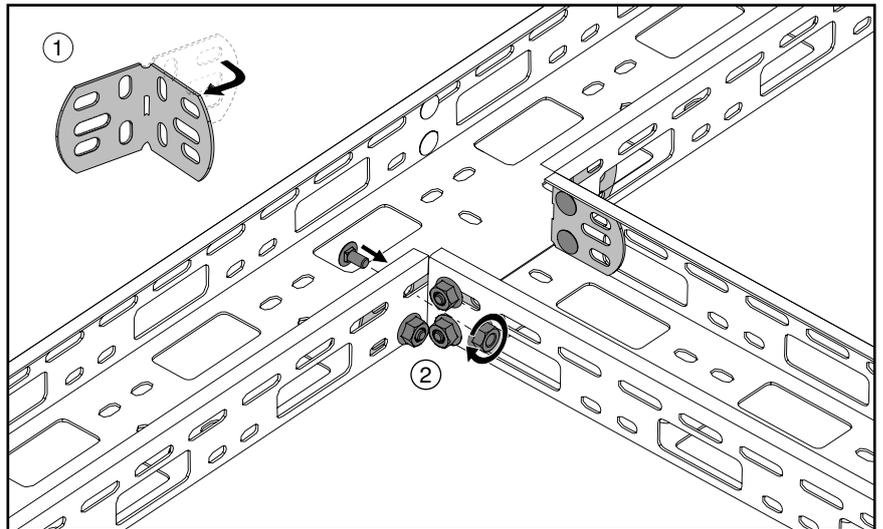
During cutting work, metal chips or sharp cut edges can cause injuries to eyes and hands!

Wear protective glasses and gloves.



**Fig. 21:** Cutting a luminaire support rail

1. Cut out the side rail of the first luminaire support rail to the width of the second luminaire support rail. Deburr cut edges if necessary.

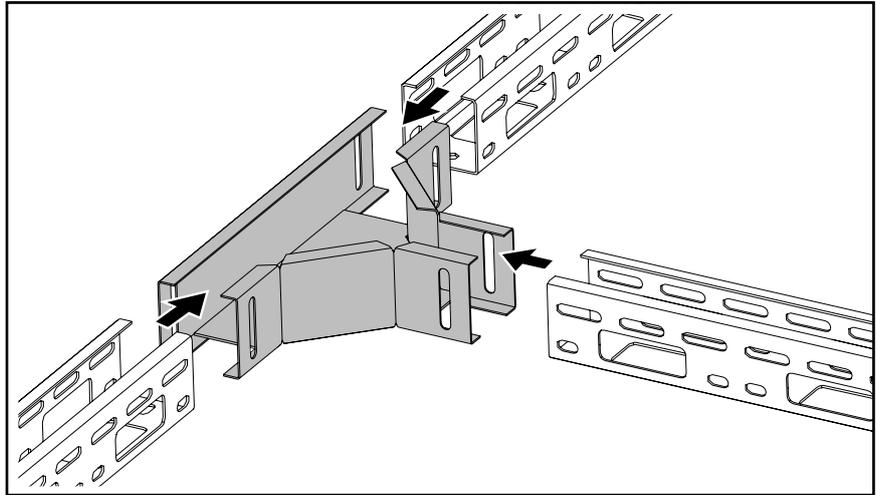


**Fig. 22:** Mounting a tee

2. Place the second luminaire support rail flush against the mounting site.
3. Bend the VF AZK straight and angle connectors by 90° to create an angle connector ①.
4. Place the angle connectors on the side rails of the luminaire support rails from the inside.
5. Mount the angle connectors with 4 screw connections each ②.

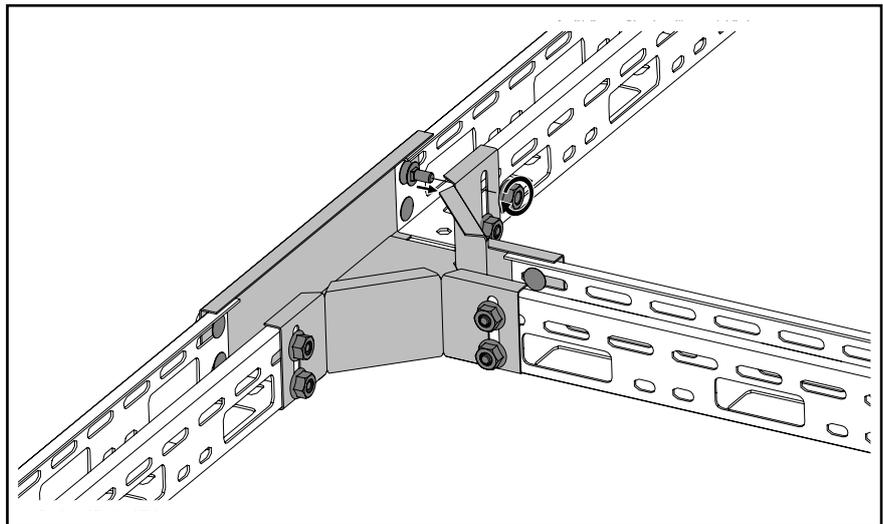
#### 4.5.2 With fitting for luminaire support rail 050

For the luminaire support rail LTS 050, a T branch can also be created using a fitting. The luminaire support rails do not need to be cut when using fittings.



**Fig. 23:** Positioning the luminaire support rails

1. Push the luminaire support rails into the T piece fitting, lining up the perforations.



**Fig. 24:** Mounting a T piece fitting

2. Mount the luminaire support rails with 4 screw connections each.

## 4.6 Creating a cross-over with fitting for luminaire support rail 050

### ATTENTION

#### Cable damage through incorrectly set screw connections!

Sharp-edged threads can damage cables.

Always insert bolts from the inside to the outside and screw on the nut from outside.

For the luminaire support rail LTS 050, a cross-over can also be created using a fitting. The luminaire support rails do not need to be cut when using fittings.

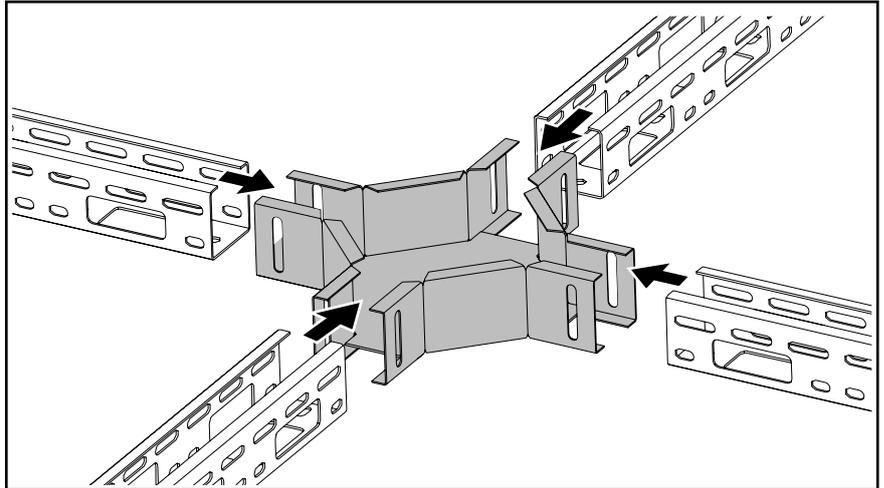


Fig. 25: Positioning the luminaire support rails

1. Push the luminaire support rails into the cross-over fitting, lining up the perforations.

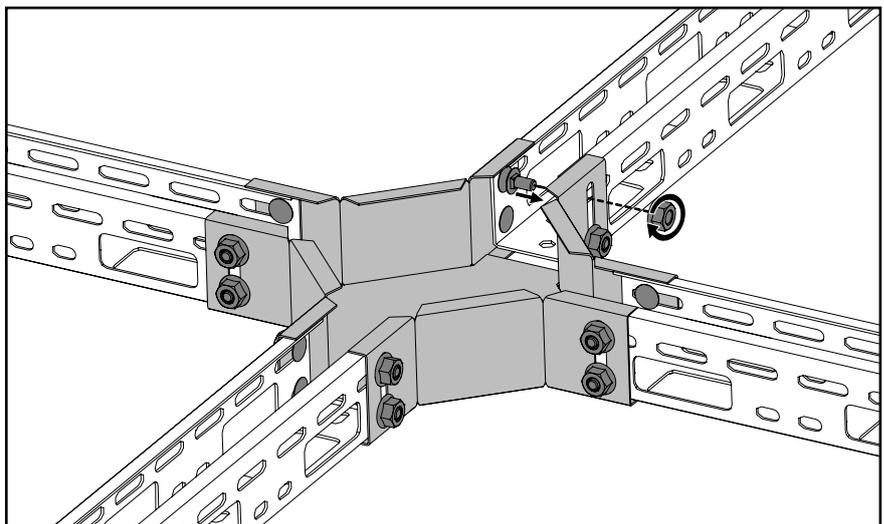


Fig. 26: Mounting a cross-over fitting

2. Mount the luminaire support rails with 4 screw connections each.

## 4.7 Mounting the cover

### 4.7.1 Cover fastening with turn buckle

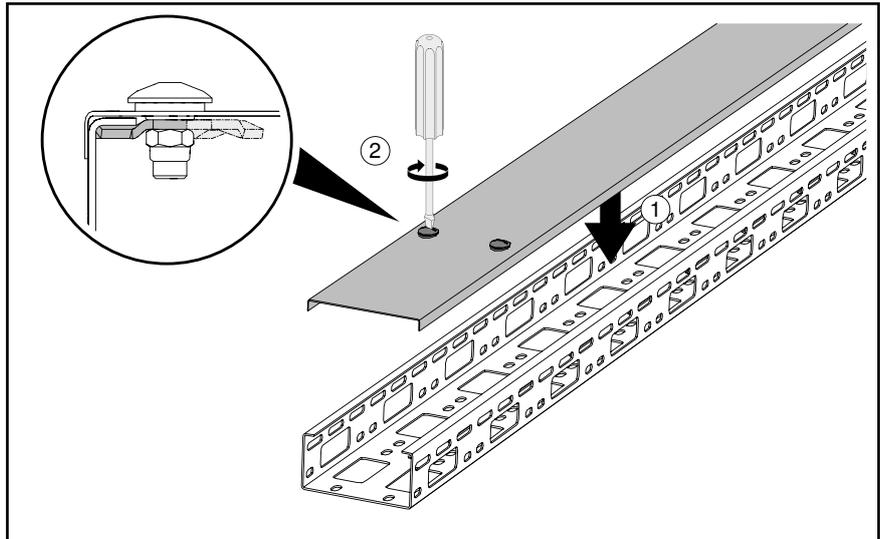


Fig. 27: Mounting the cover with turn buckle

1. Place the cover on the luminaire support rail ①.
2. Using a screwdriver, lock the turn buckle in a clockwise direction ②.

### 4.7.2 Cover fastening with cover clamp

Depending on the duct width, 4–6 cover clamps are required for secure fastening of a 3 m cover.

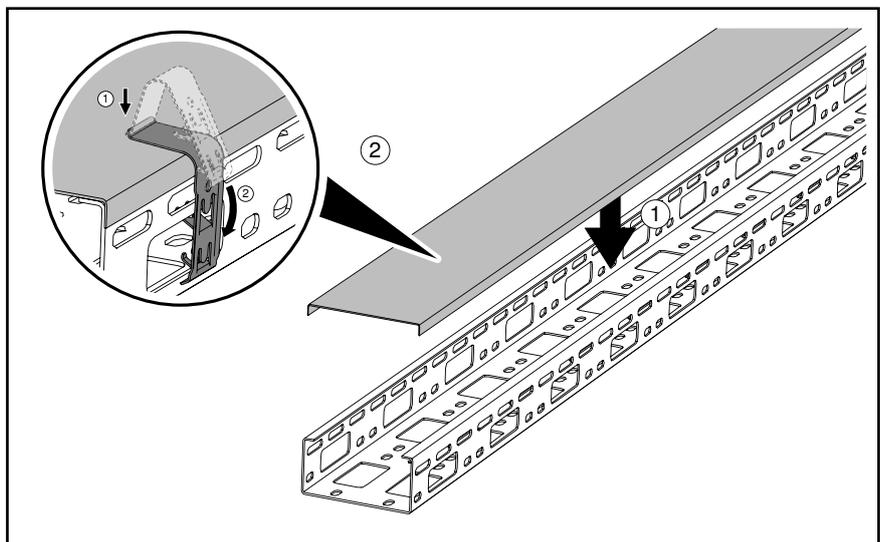
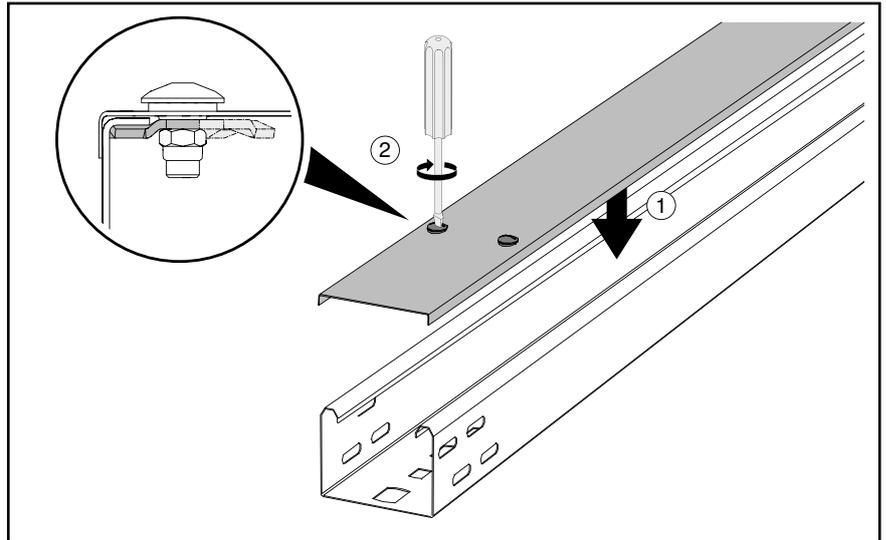


Fig. 28: Mounting the cover with cover clamp

1. Place the cover on the luminaire support rail ①.
2. Fasten the cover with cover clamps ②.

### 4.7.3 Cover fastening with turn buckle on luminaire support tray

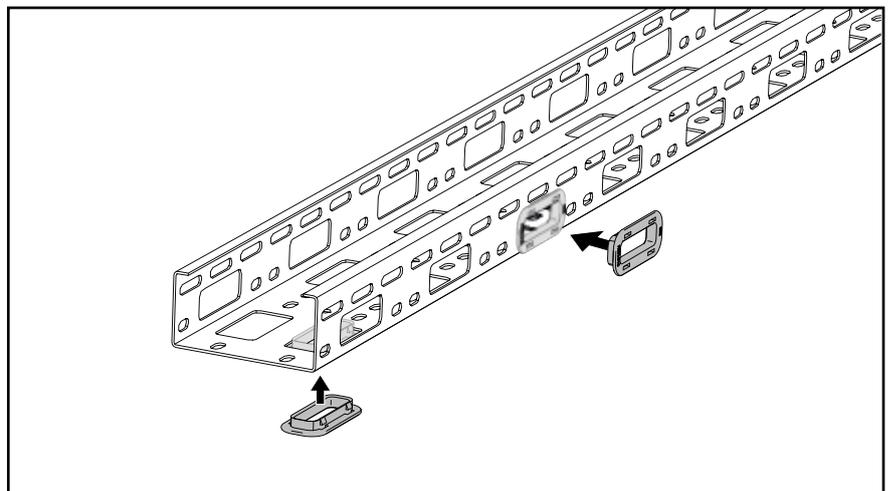


**Fig. 29:** Mounting the cover with turn buckle

1. Place the cover on the luminaire support tray ①.
2. Using a screwdriver, lock the turn buckle in a clockwise direction ②.

### 4.8 Inserting a cable protection ring

If cables are fed through side or base perforations in the luminaire support rail, cable protection rings must be used to prevent cable damage.

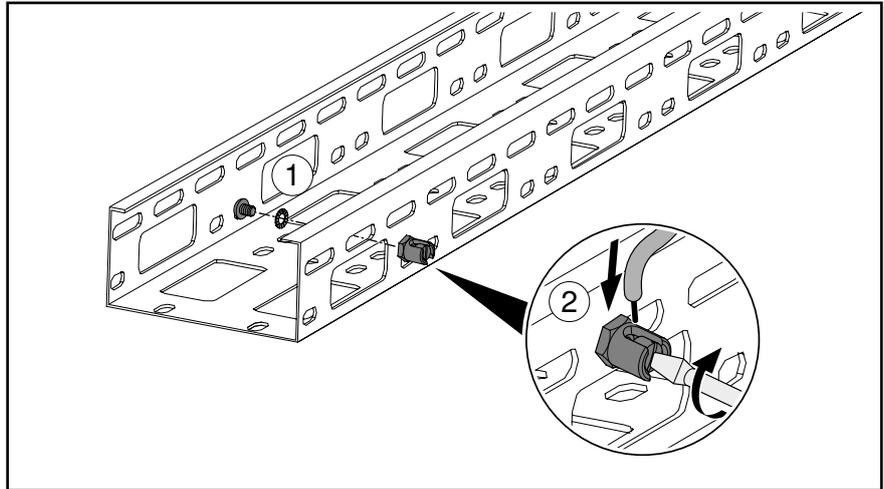


**Fig. 30:** Inserting a cable protection ring

1. Select the appropriate cable protection ring for the perforation.
2. Insert the cable protection ring in the base or side perforation.

## 5 Creating equipotential bonding

**Note!** *When mounting the system components, the screw connections automatically create continuous equipotential bonding of the entire luminaire support system. The system must be connected to the equipotential bonding of the overall system at least once.*



**Fig. 31:** Mounting the earthing terminal

1. Screw the earthing terminal to the side rail of the luminaire support rail or tray ①.
2. Electrically connect the earthing terminal to the overall equipotential bonding ②.

## 6 Maintaining a luminaire support system

The stability and function of the luminaire support system can be impaired by external influences, such as damage or machine vibrations.

Loose connection elements must be retightened and damaged parts replaced. In addition, the connection to the overall equipotential bonding must be checked regularly.

## 7 Dismantling a luminaire support system

Dismantling of all the elements of the luminaire support system takes place in the reverse order to mounting.

## 8 Disposing of a luminaire support system

- Metallic parts: As scrap metal
- Packaging: As household waste

Comply with the local waste disposal regulations.

## 9 Technical data

Designation	Type	Plate thickness	Dimensions (mm)	Material	Item no.
Luminaire support rail	LTS 50 FS	1.5 mm	6,000 x 50 x 50	FS	6075000
Luminaire support rail	LTS 50 FT	1.5 mm	6,000 x 50 x 50	FT	6075005
Luminaire support rail	LTS 100 FS	1.5 mm	6,000 x 100 x 50	FS	5075024
Luminaire support tray	LTR 3000 FS	0.75 mm	3,000 x 75 x 60	FS	6055810
Luminaire support tray	LTR 6000 FS	0.75	6,000 x 75 x 60	FS	6055812

### Accessories

Designation	Type	F (kN)	Dimensions (mm)	Material	Item no.
Straight connector	VF AZK 50 FS		220 x 46 x 46.5	FS	6066615
Straight connector	VF AZK 50 DD		220 x 46 x 46.5	DD	6066623
Straight connector set	RV 607 FS		200 x 73.7 x 58.7	FS	9068150
Straight and angle connector	VF AZK FT		100 x 1.5 x 45	FT	6066550
Cover with turn buckle	AZDMD 50 FS		3,000 x 53 x 10	FS	6080138
Cover with turn buckle	AZDMD 100 FS		3,000 x 103 x 10	FS	6080227
Cover with turn buckle	AZDMD 50 DD		3,000 x 53 x 10	DD	6080154
Cover with turn buckle	AZDMD 100 DD		3,000 x 103 x 10	DD	6080235
Cable protection ring	KSR-910 PE		20 x 58	PE	6066712
Cable protection ring	KSR-915 PE		28 x 58	PE	6066704
Suspension bracket	AHB 50 D4 FT		82.3 x 62.8 x 3.8	FT	6066505
Suspension bracket	AHB 100 D5 FT		114.9 x 83.9 x 4.9	FT	6066510
90° bend	LTS B DD		150 x 150 x 52	DD	6074901
T piece	LTS T DD		248 x 150 x 52	DD	6074912
Cross-over	LTS K DD		248 x 248 x 52	DD	6074921
Ceiling hook	948 TG6		–	G	3453820
Ceiling bracket	DB FT		80 x 40 x 40	FT	6356109
Ceiling bracket, variable	DBV FS		68 x 76 x 55	FS	6356055
Threaded rod	2078 M10 1M G		1,000 x 10	G	3141209
Trapezoidal fastening	TPB 100 FS		116 x 95 x 36	FS	6357506
Latch for trapezoidal fastening	TPB R FS		145 x 9.5 x 9	FS	6357536
Suspension chain	LTK-K 25 G		–	G	6050370

FS = Strip galvanised

FT = Hot-dip galvanised

DD = Strip galvanised zinc/aluminium, double dip

PE = Polyethylene







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