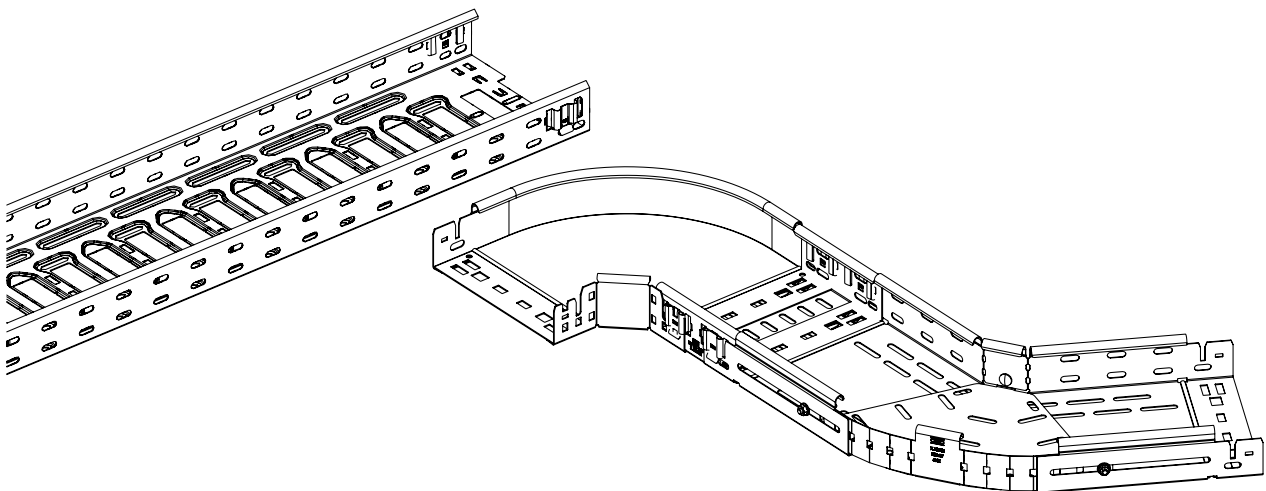


## Cable tray system Magic®

Brief system instructions  
for MKSM, SKSM, IKSM, RKSM



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## 1 General safety information



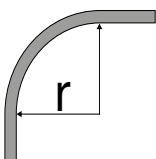
If cable support systems are touched with bare hands, then cutting could result on account of the sharp edges. Always wear suitable protective gloves when handling system parts.



When working with the cable support system, in particular during shortening, e.g. with an angle grinder, splinters and chips may result, which can cause injury. For this reason, wear personal protective equipment (PPE) during mounting.



If the maximum load capacity is exceeded, the cable support system may collapse. Comply with the load limits!

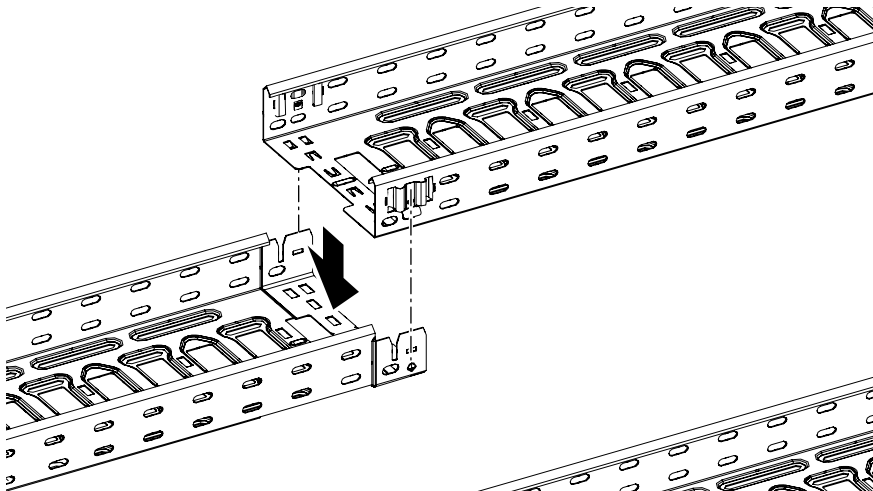


Cables can be damaged on bending. When laying the cables, ensure that the minimum bending radius, prescribed by the cable manufacturer, is observed.

## 2 Getting to know the quick connection system

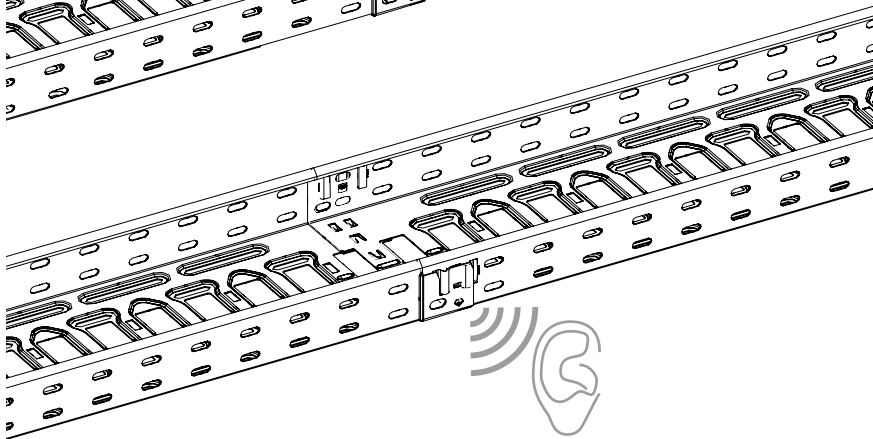
### 2.1 Engaging the quick connection

The connection sides of the Magic cable trays and many fittings have spring elements and connection sleeves. These can be inter-connected and engaged. This creates a screwless, load-bearing straight connection, which is electrically conductive, allowing connection of the duct section to the building's equipotential bonding system.



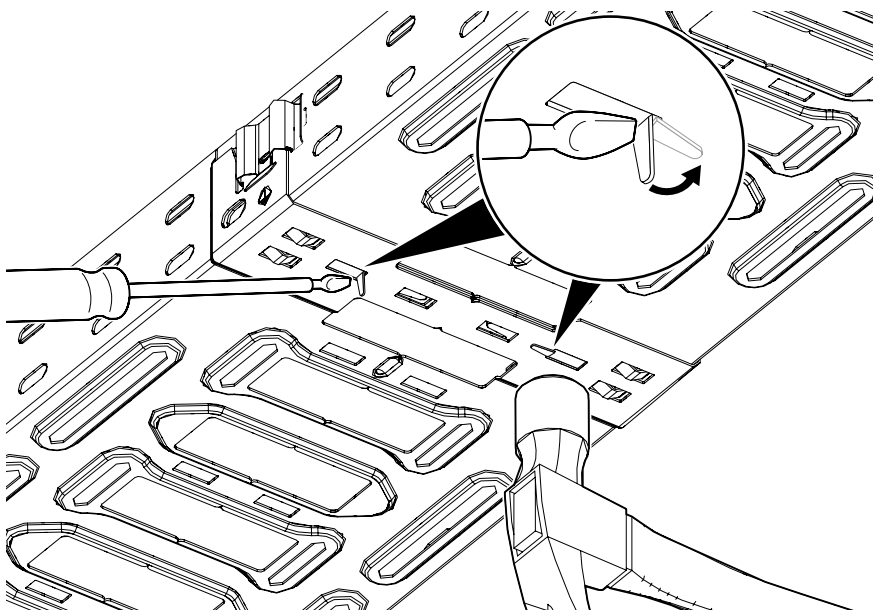
**Fig. 1**

Connect the cable trays, as shown.



**Fig. 2**

The correct engaging of the spring elements is confirmed by a click sound.



**Fig. 3**

For sufficient stability, the connection straps must be bent over for cable tray widths of 400 mm or more. It is recommended for widths of over 300 mm. Work with a screwdriver and hammer.

For correction purposes, the connection straps can be bent back a maximum of three times. If this continues, there is the risk of them breaking off.

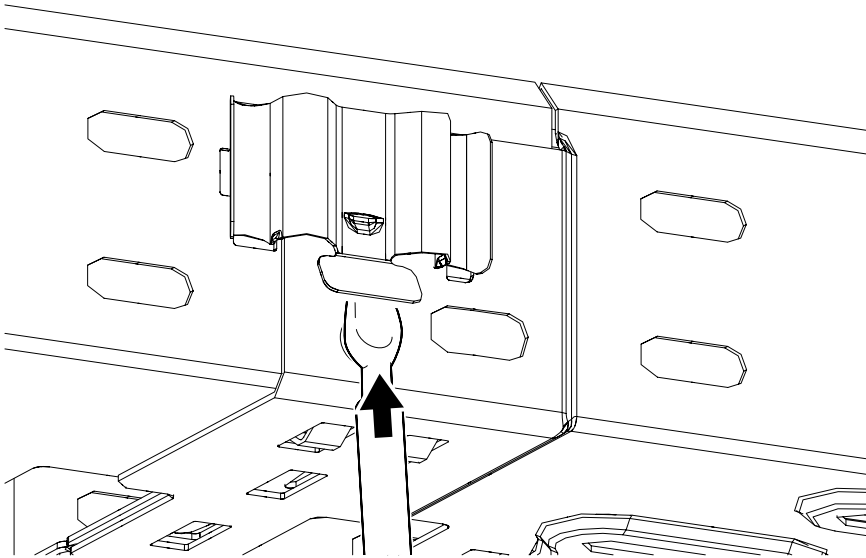
**E30 E90**

For function maintenance (only for RKSM 6..), the bending of the connection straps is required for all tray widths.

You can find information on the fastening of the cable tray system (e.g. to supports/brackets) in the mounting instructions for U support systems, I support systems, TP support systems, universal systems and clamping fastening systems.

## 2.2 Releasing the quick connection

The quick connection system allows rapid connection release. You may need to release the connection straps on the underside in advance (see Fig. 3).

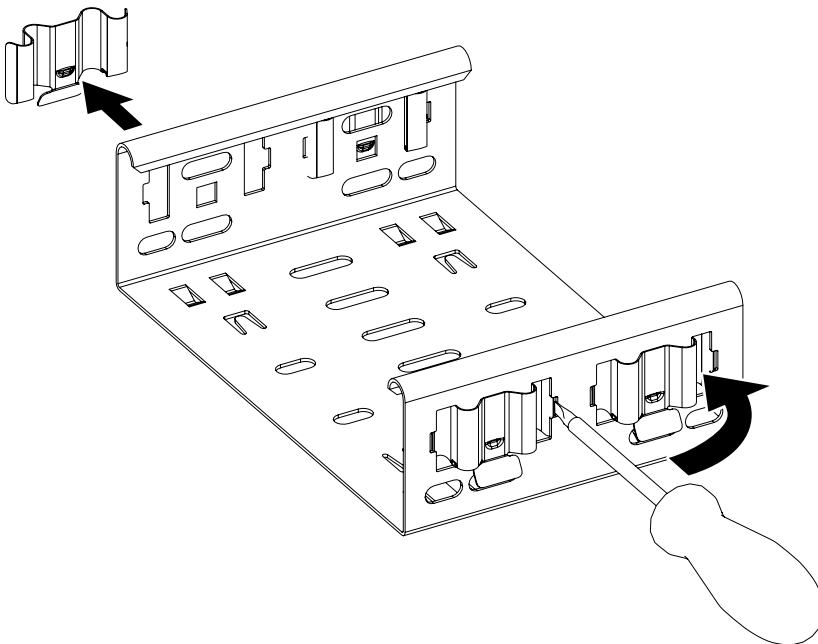


**Fig. 4**

To slacken the connection, push a slotted screwdriver under the spring element on both sides. This disengages the lock and the cable trays can be separated.

## 2.3 Removing spring elements

In some applications, it is necessary to remove spring element pairs.



**Fig. 5**

Apply a screwdriver as shown and lever out the spring elements.

### 3 Getting to know special fittings

#### 3.1 Mounting the straight connector set (type KTSMV..)

The Magic straight connector set is used to connect parts of the route without quick connections, e.g. cut cable trays or sleeve to sleeve. The straight connector set is available in a matching version to the system parts to be connected.

**Note:** The straight connector set is not suitable for direct connection to some fittings (e.g. bends or junctions). Use an additional fitting connector (see „4.3 Connecting fittings with cable trays, spacing less than 3 metres“ on page 10).

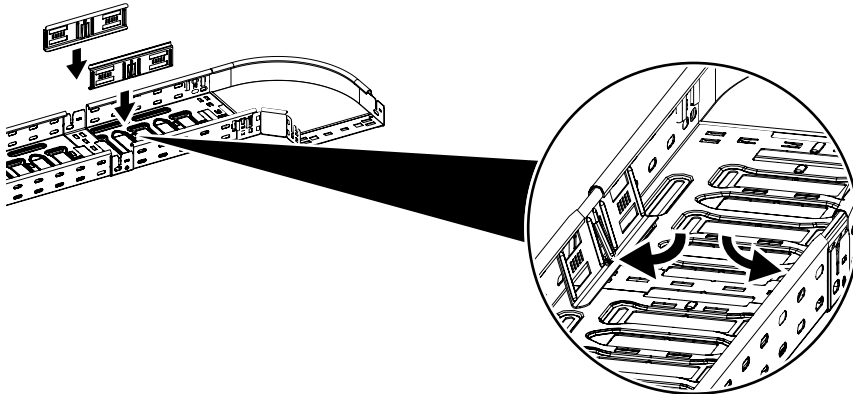


Fig. 6

Push the side parts of the straight connector set on the butt edge under the edge contour and push them outwards.

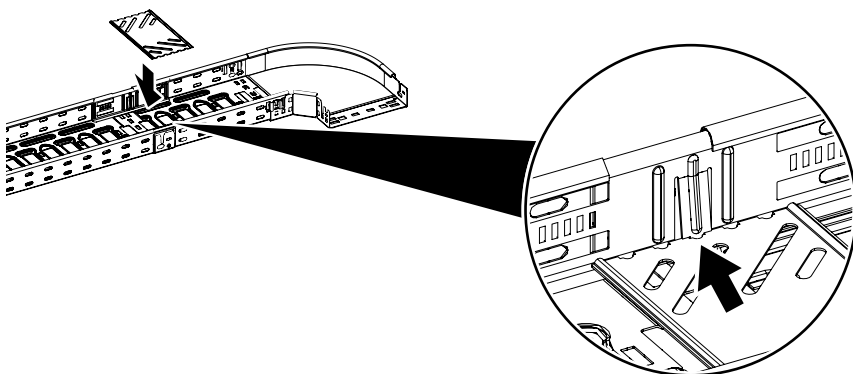


Fig. 7

Push the centre bar of the straight connector through the side parts. Ensure that the centre bar engages under the locks of the side parts.

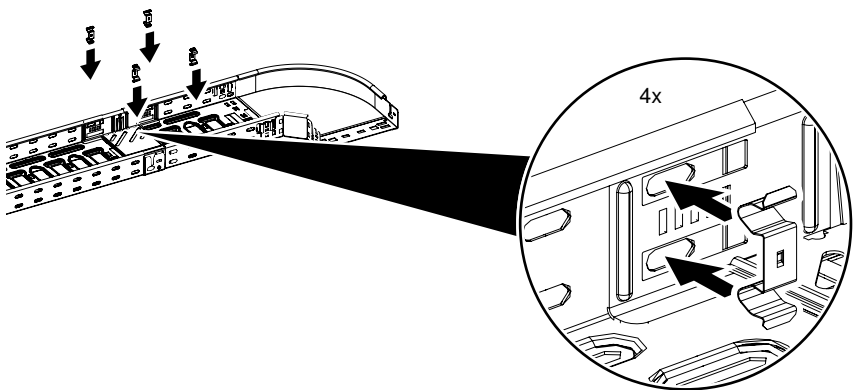
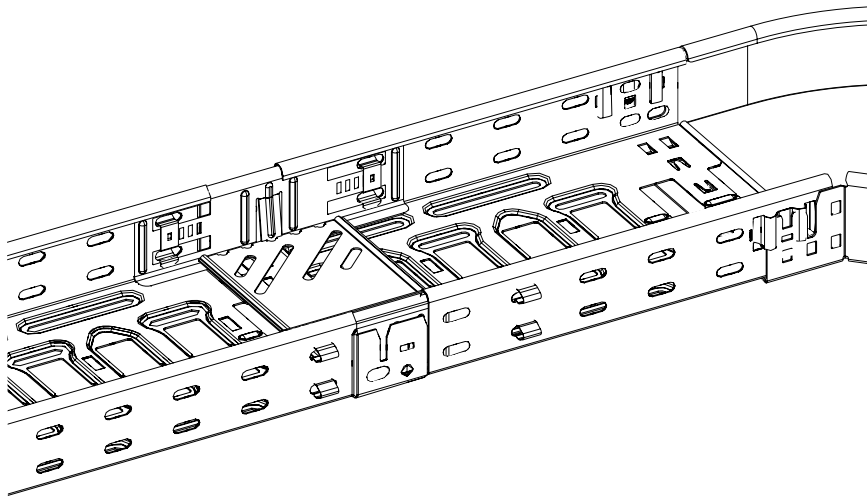


Fig. 8

In order to fix the straight connector set permanently, push the four fastening clips **from the inside** through the slots of the side parts.

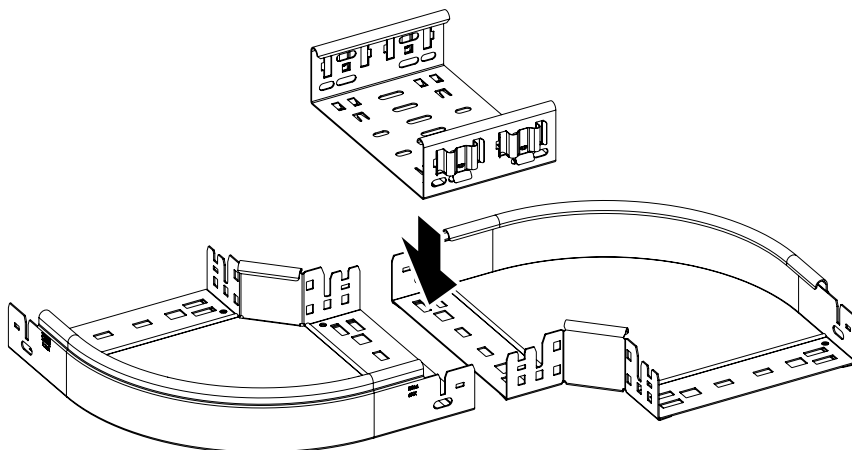


**Fig. 9**

Thus, the straight connector set creates a stable, load-bearing connection between the cable trays.

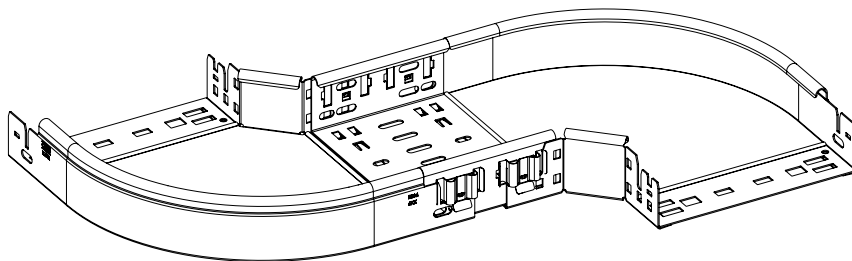
### 3.2 Mounting fitting connectors (type FVM..)

Fittings have connection sleeves on the connection sides. To interconnect them, use the fitting connector, which is equipped with spring elements on both sides.



**Fig. 10**

Place the fitting connector between two fittings, as shown, as push it on, so that the spring elements engage audibly.

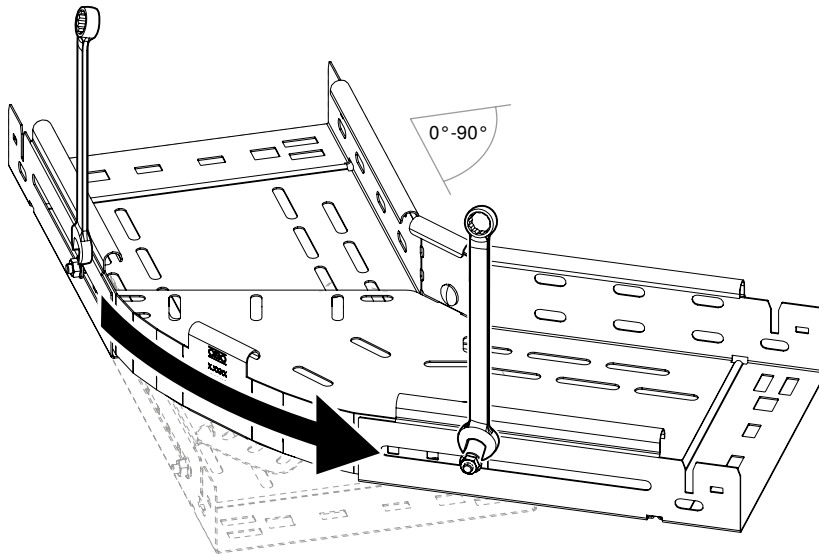


**Fig. 11**

Thus, the straight connector creates a stable, load-bearing connection between the fittings.

### 3.3 Mounting variable bends (type RBMV..)

The variable bend can be used to install direction changes in the route. The bend can be infinitely adjusted and fixed in the range  $0^{\circ}$ - $90^{\circ}$ .



**Fig. 12**

Slacken the fastening screws, set the required angle through sliding and retighten the fastening screws.

OBO cable tray systems have appropriate bend fittings for direction changes of exactly  $45^{\circ}$  and  $90^{\circ}$ .

## 4 Solutions for installation situations

### 4.1 Connecting cable trays and fittings

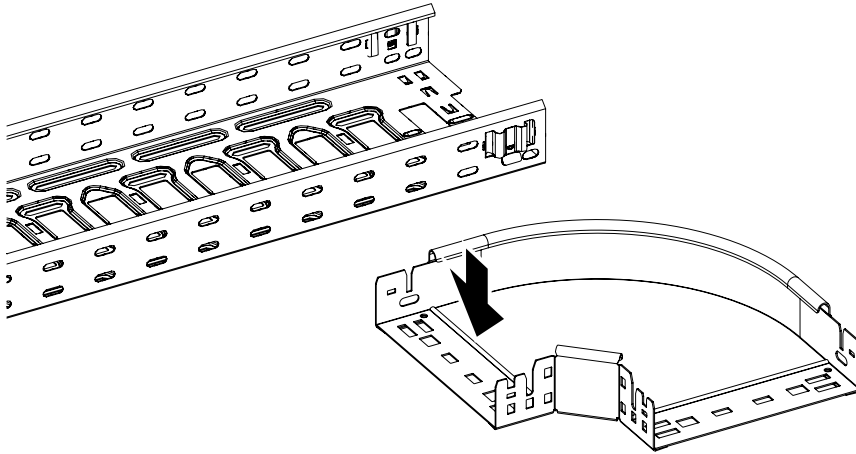


Fig. 13

Fittings have connection sleeves on the connection sides.

Push the spring element side of the cable tray into the sleeve side of the fitting until the spring elements engage audibly.

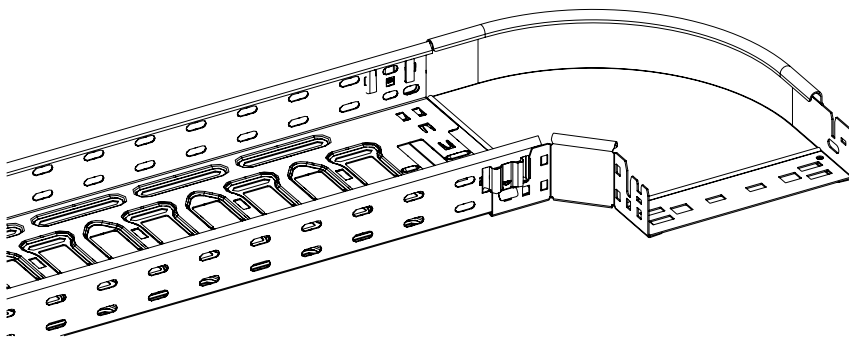


Fig. 14

When inserting cables, maintain the minimum bend radii of the cables according to the manufacturer's data.

### 4.2 Connecting cut cable trays with fittings

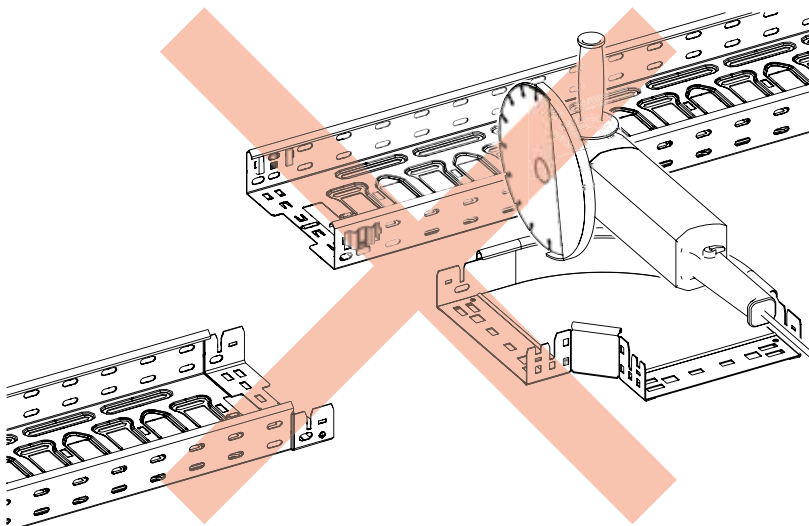
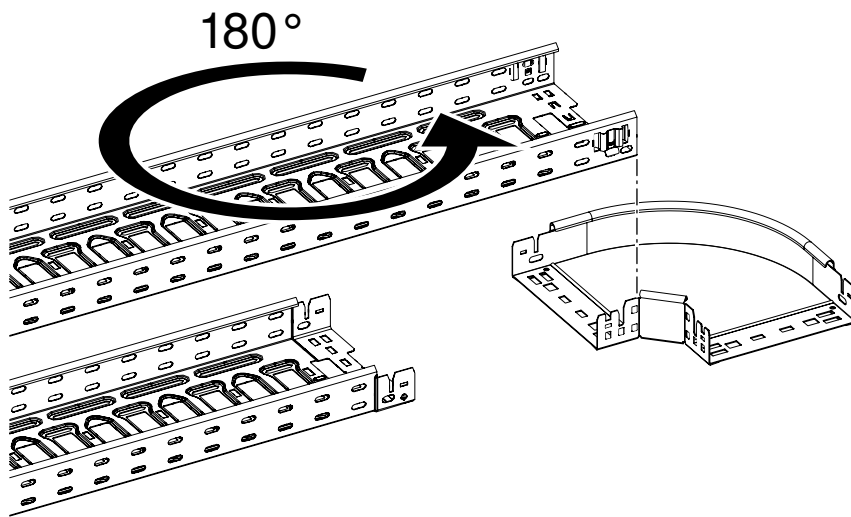


Fig. 15

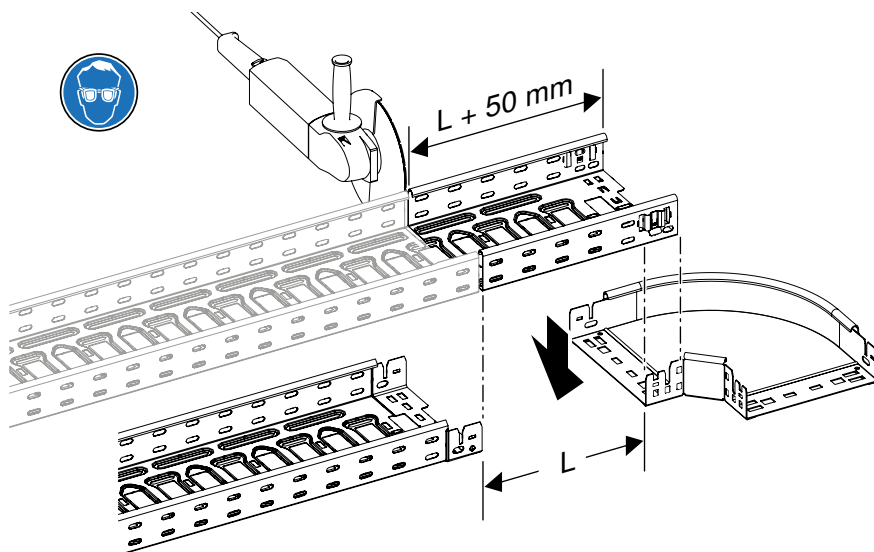
Do **not** apply and shorten the cable tray to be cut as shown.





**Fig. 16**

Instead, turn the cable tray to be cut by 180°, so that the spring element side points towards the fitting.

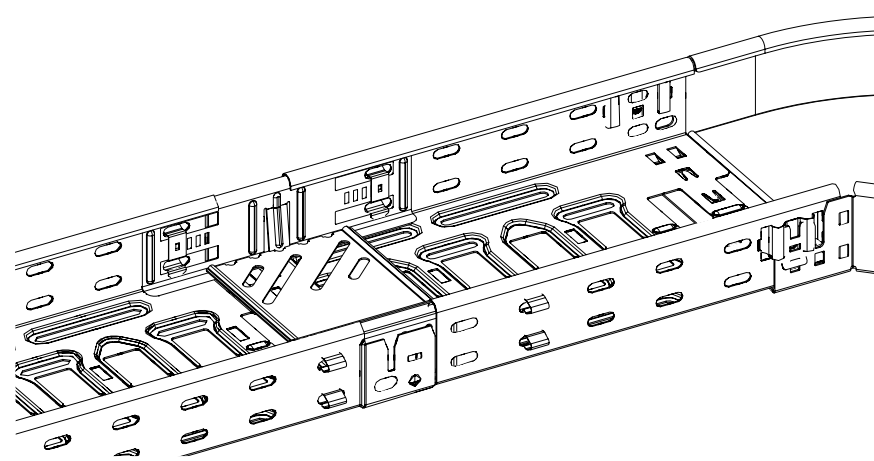


**Fig. 17**

Now, measure the cable tray as shown and shorten it, e.g. with an angle grinder.

Deburr the cut edges carefully.

Engage the cut cable tray with the spring elements in the fitting.

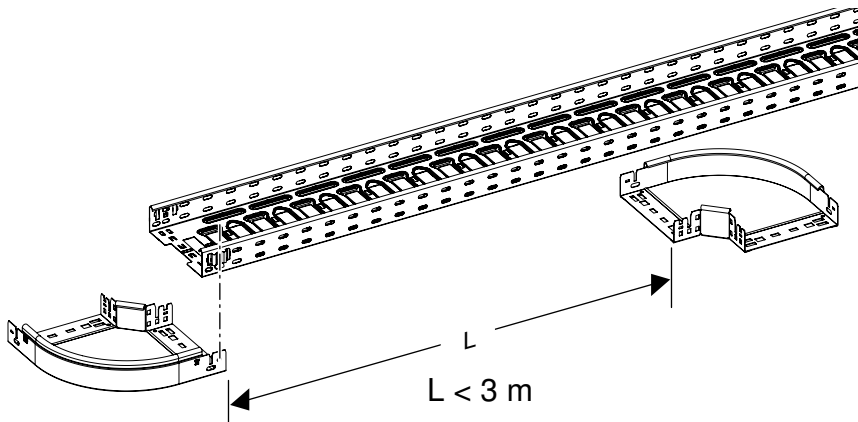


**Fig. 18**

Insert the straight connector set in the centre of the joint of the two cable trays and engage it (see „3.1 Mounting the straight connector set (type KTSMV..)“ on page 5).

### 4.3 Connecting fittings with cable trays, spacing less than 3 metres

This example shows how two fittings, whose spacing is  $< 3$  metres, can be connected with a cable tray. The cable tray is cut on the sleeve side and any further connection is carried out using the straight connector set (type KTSMV..). However, as not all the fittings can be connected directly with the straight connector set (e.g. bends or junctions), a fitting connector (type FVM..) must be used in this case.

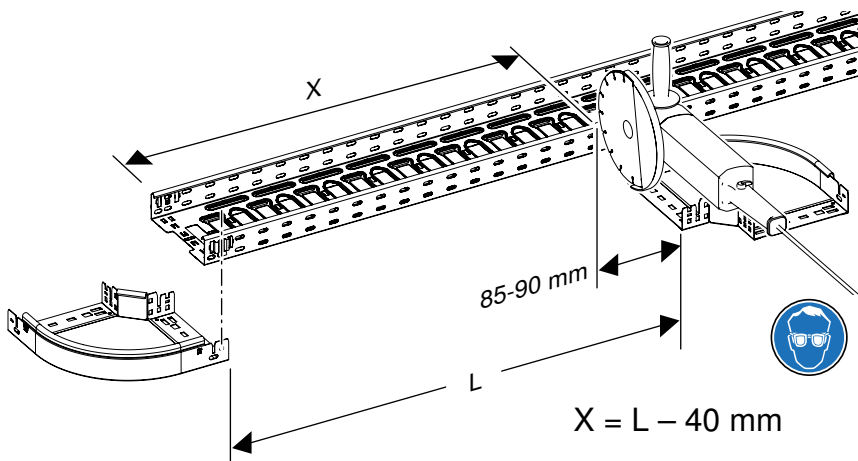


**Fig. 19**

The spacing between the fittings is less than 3 metres.

The cable tray must be cut and then has no quick connection on one side.

For spacings of greater than 3 metres, see „4.2 Connecting cut cable trays with fittings“ on page 8.



**Fig. 20**

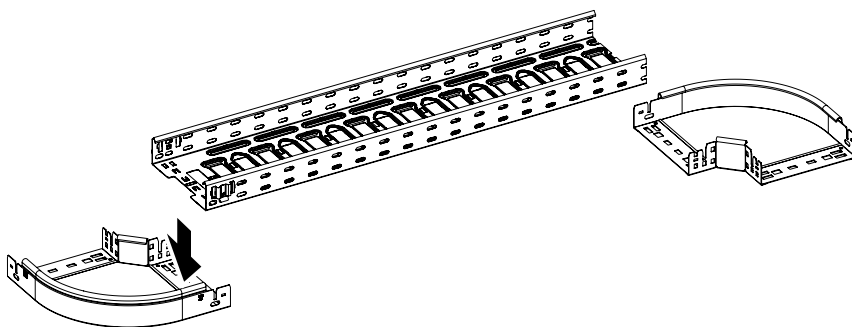
L = Clearance of the fittings  
X = Length of the tray to be cut

Calculate the length X as follows:

$$X = L - 40 \text{ mm}$$

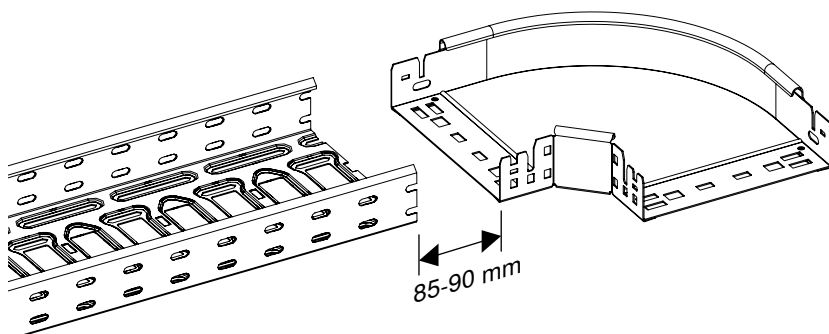
Shorten the cable tray on the sleeve side.

Deburr the cut edges carefully.



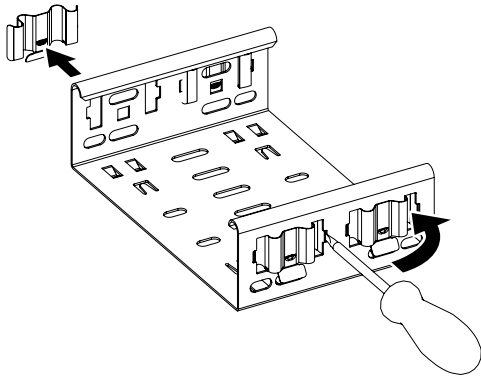
**Fig. 21**

Insert and engage the cut cable tray.



**Fig. 22**

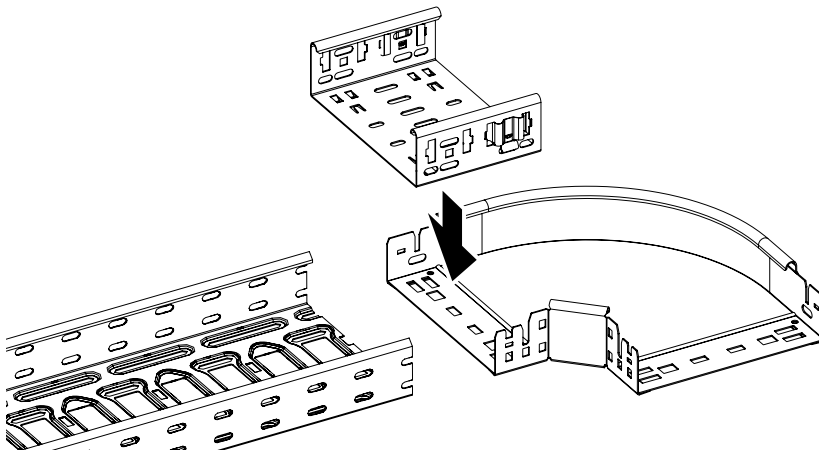
The distance to the fitting connector, type FVM.., to be inserted must be 85-90 mm.



**Fig. 23**

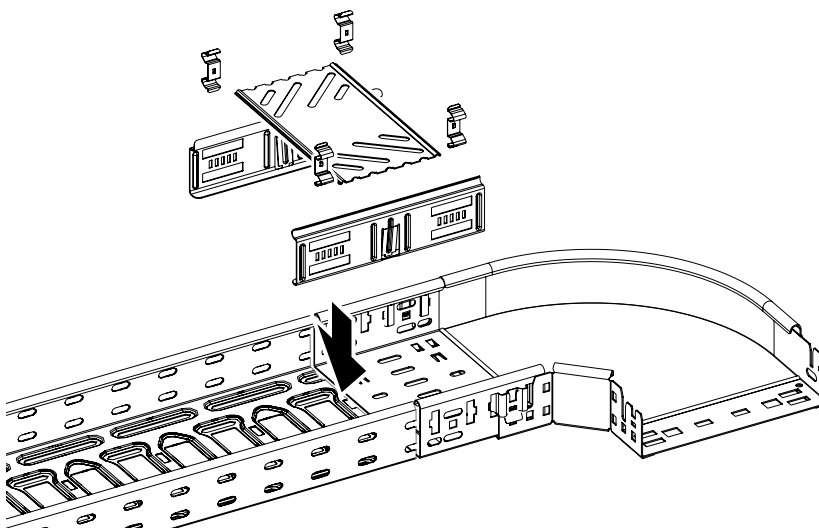
On the FVM.. fitting connector, remove one pair of spring elements. For this, apply a screwdriver as shown and lever out the spring elements.

The spring elements are no longer required.



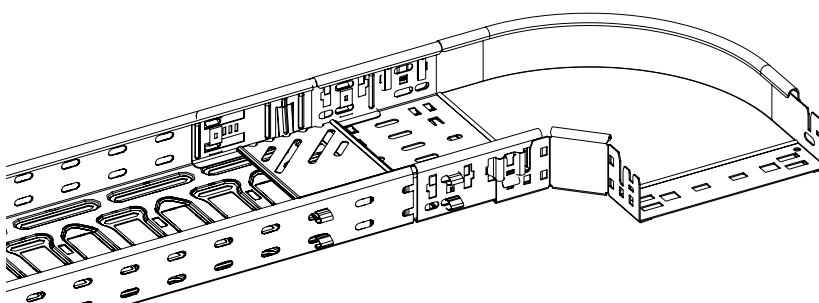
**Fig. 24**

Engage the fitting connector with the spring elements in the fitting.



**Fig. 25**

Fix the intersection between the fitting connector and the cut cable tray with the straight connector set (see „3.1 Mounting the straight connector set (type KTSMV..)“ on page 5).



**Fig. 26**

This creates a stable, load-bearing connection.

Besides the screwless connection option described here, you can cut the cable tray directly in front of the fitting and then screw it directly to the fitting using two straight connectors (type RL VK..), or connect them to existing tray systems.

#### 4.4 Mounting a change of direction with 90° and 45° bend

Use an appropriate bend if the route requires a direction change of exactly 90 or 45 degrees.

Fig. 27

90° bend, type RBM 90..

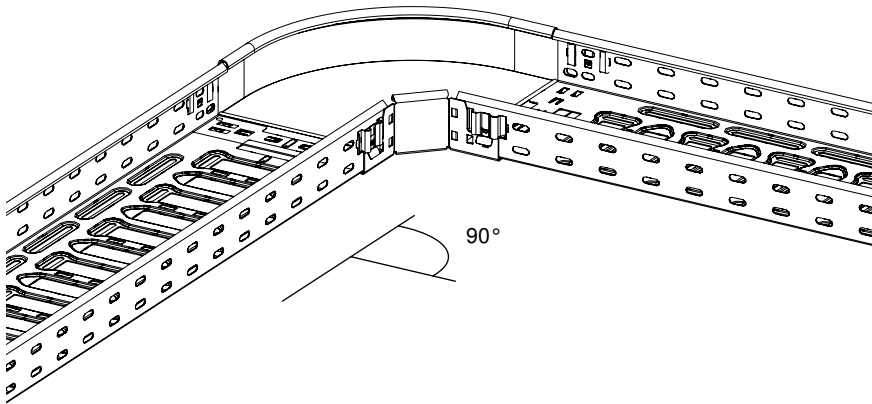
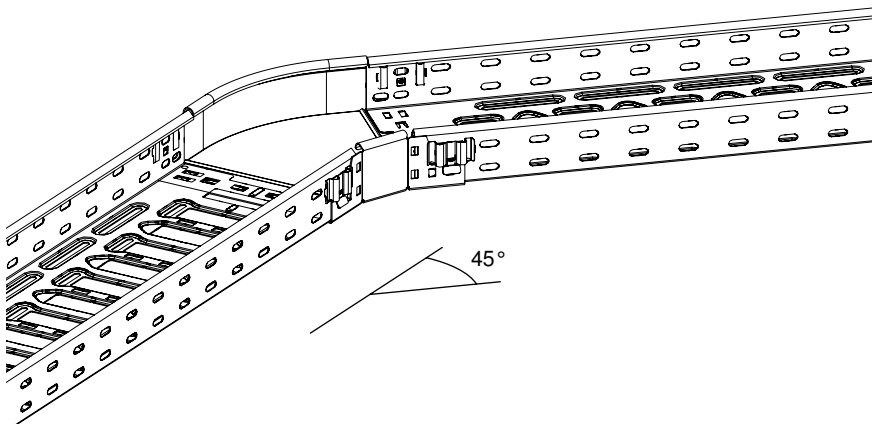


Fig. 28

45° bend, type RBM 45..

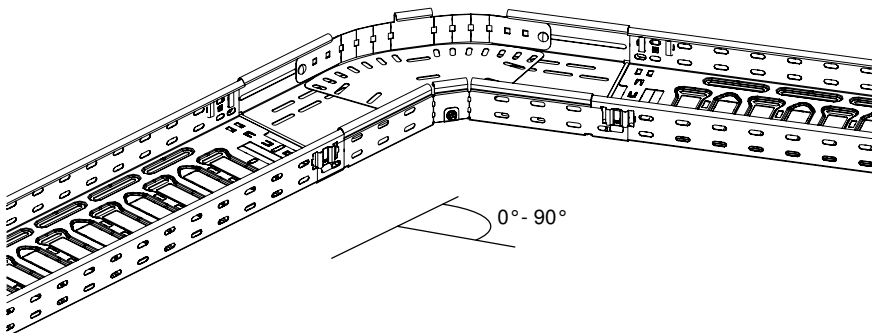


#### 4.5 Mounting a change of direction with variable bend

The variable bend, type RBMV.., can be used to install infinitely variable direction changes of 0°-90° to the route.

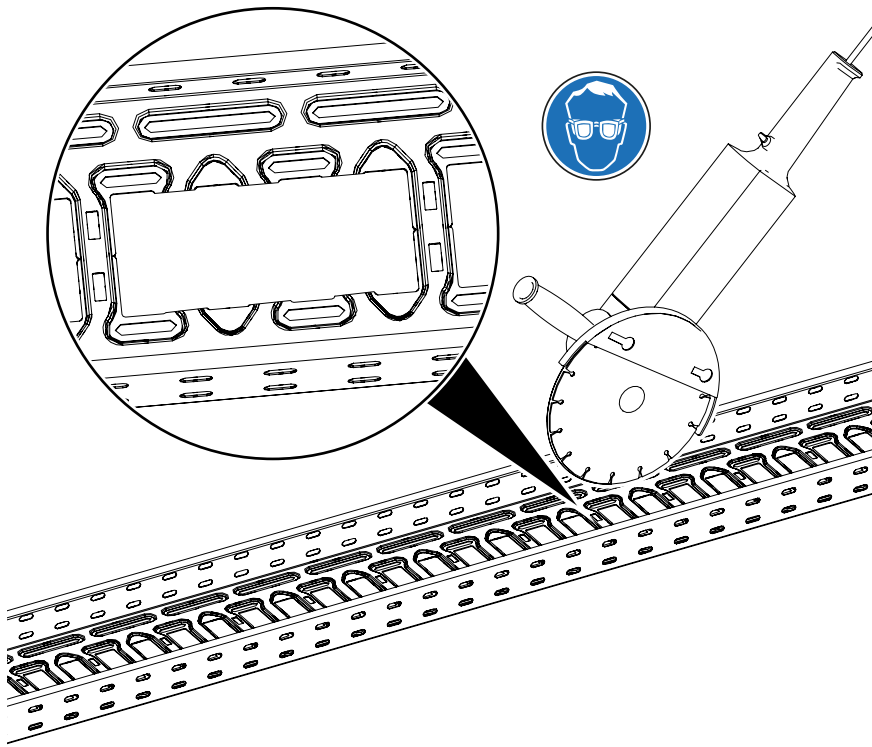
Fig. 29

Variable bend, type RBMV..



## 4.6 Creating a change of direction by cutting the cable tray

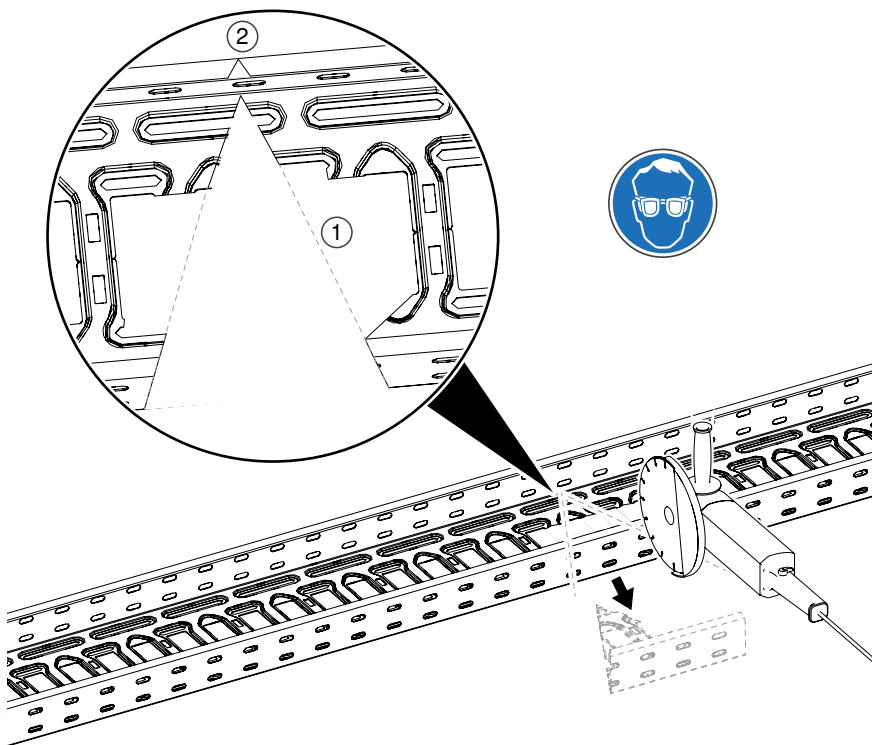
Any change of direction from 0°-90° can be created by cutting a cable tray. The intersection is fixed with an angle connector.



**Fig. 30**

Firstly, remove the centre bars from the future intersection, e.g. using an angle grinder.

Deburr the cut edges carefully.

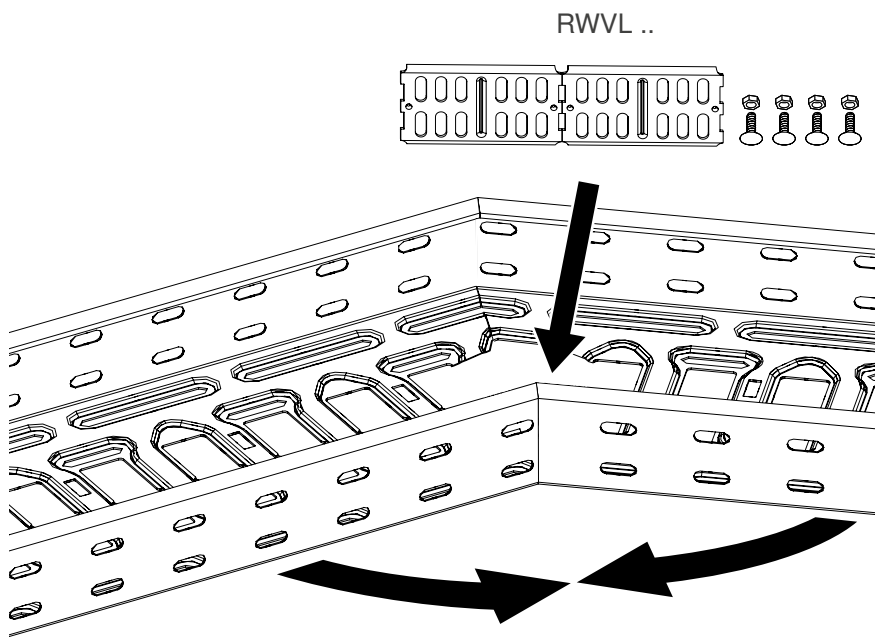


**Fig. 31**

Determine the angle and cut the cable tray as shown ① in such a way that the opposite rail is not damaged.

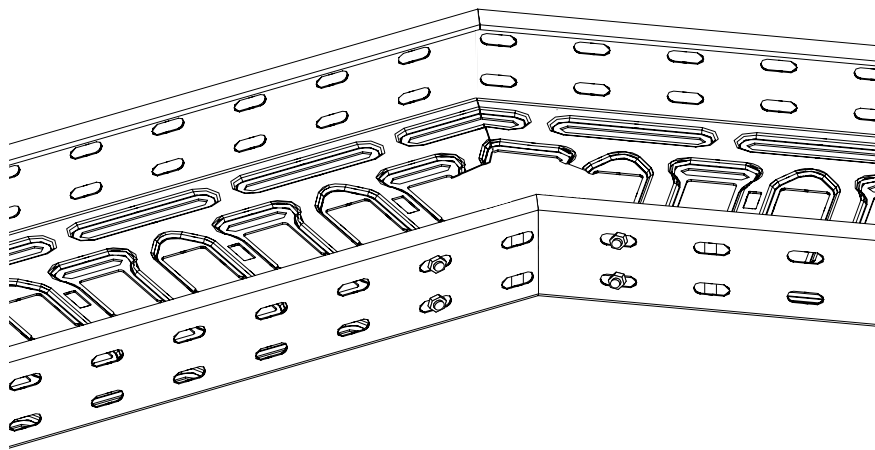
In addition, cut a notch into the rounded rail edge opposite ("eye") ②.

Deburr the cut edges carefully.



**Fig. 32**

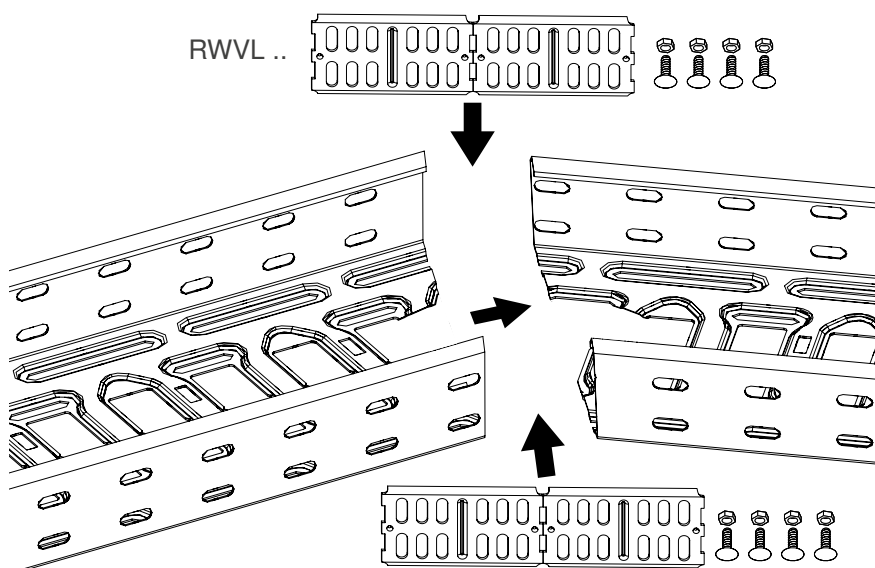
Bend the cable tray and fix the cut rail with an angle connector, type RWVL.



**Fig. 33**

The correctly mounted angle connector produces a stable, load-bearing connection.

You can also create this change of direction with two separate cable trays. In this case, use two angle connectors to fix the cable trays.



**Fig. 34**

Combine the cut trays and fix them from inside with two angle connectors, type RWL.



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