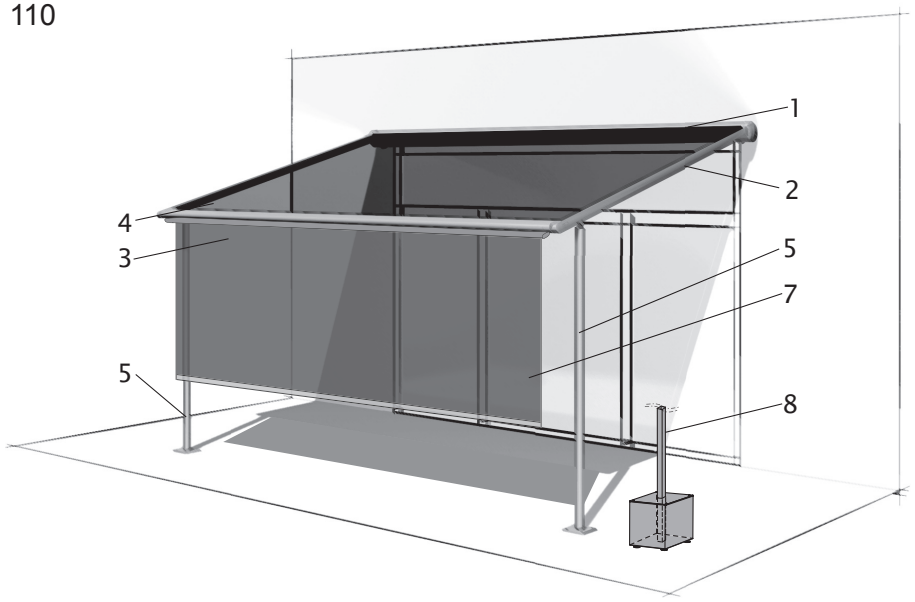
Installation instructions patio awning

markilux pergola 110 / 210

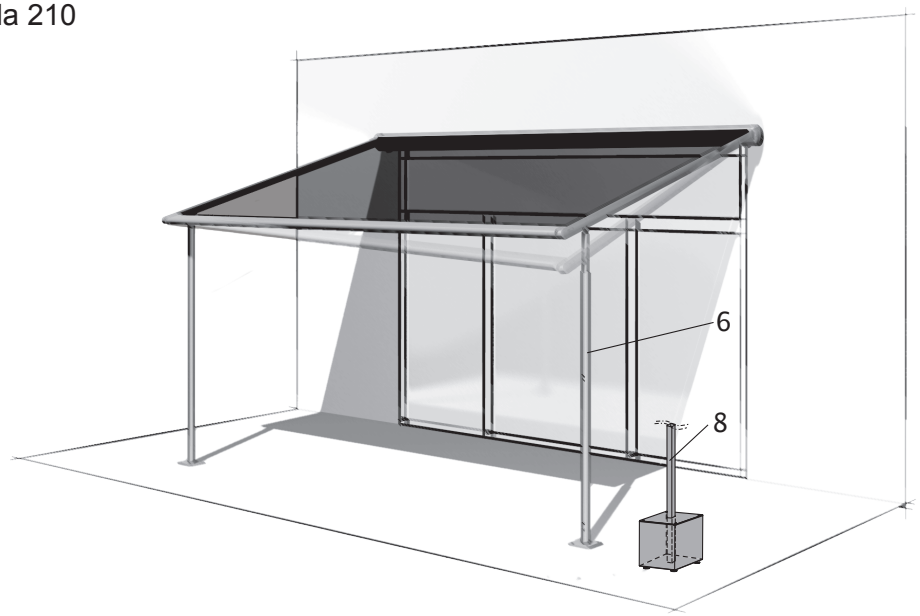
GB

Overview

markilux pergola 110



markilux pergola 210



1 Cassette housing
2 Guide track
3 Front profile
4 awning cover
5 front post round or angular
6 front post round or angular, can be lowered on one side, only for markilux pergola 210
7 Shadeplus, optional
8 Post with stabilisation box, optional

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Table of contents

markilux safety instructions

Important information for the installation of markilux awnings

1.Who is allowed to fit markilux awnings?

The markilux installation instructions are to a qualified mechanic who has skilled knowledge in following domains:

- Occupational and operational safety and accident prevention regulations
- Handling of ladders and scaffoldings
- Handling and transport of long and heavy component parts
- Handling of tools and machines
- Fixture device placement
- Assessment of building materials
- Commissioning and operation of the product

If any one of these qualifications is not existent, a qualified installation firm must be engaged.

⚠ Electrical works: electrical installations must be carried out by a certified electrician according to VDE 0100. The enclosed installation instructions of the supplied electronic devices are to be observed.

We recommend installation be carried out by at least two people. Larger awnings may require three persons.

2. Before beginning the installation it is to be checked, ...

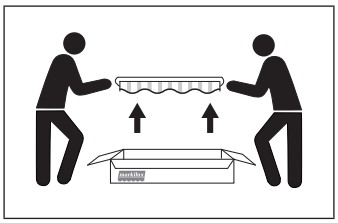
- does the number and type of fixture brackets match the order?
- do the specifications made with the order concerning the fastening background correspond with the actual fastening background at hand (only for folding-arm awnings)?

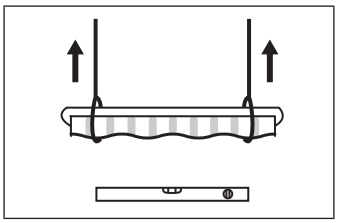
If irregularities which may affect the safety of the unit or its users are determined, then the installation must not be undertaken.

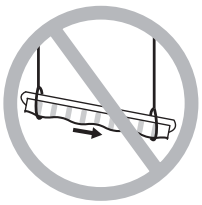
3. Reading and passing on the instructions

The security and attachment notes as well as the operation manuals are to be read and observed! The markilux operating guide, as well as the setting instructions of the motor, switch and controller manufacturers are to be handed over to the user with a written confirmation and fitted wind class (see handover declaration). He is to be comprehensively informed about the safety and usage information of the awning. With nonobservance and improper operation, the awning can suffer damage and accidents can occur.

4. Working at greater heights







If the awning construction has to be pulled up into a higher area with rope support, then the awning has

- to be taken out of the package,
- should be connected with pull ropes in such a way that these cannot slip out,
- are to be pulled up up evenly in an horizontal position.

The same also applies for awning deinstallation.

⚠ Working at heights increases the risk of falling. Appropriate climbing aids and safety rails are to be used whilst installing the awning.

5. Wind resistance classes

CE

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Schmitz-Werke GmbH & Co. KG
Hansestraße 87
D-48282 Emsdetten

DIN EN 13561
Awnings for exterior applications

wind resistance class 2
markilux folding-arm awnings markilux 710/810, 720/820, 725/825, 750/850, 730/830, 740/840, 745/845, 893, 869/869 tracfix (depending on size), 876/876 tracfix (depending on size), 8850

wind resistance class 3
markilux 760/860, 620 zip, 660 zip, 680 zip, 780/880, 8800/8800 zip, 869/869 tracfix (depending on size), 876/876 tracfix (depending on size), pergola 110/210

The awning fulfills the requirements of the wind resistance class specified in the CE conformity marking (explanations see „handover declaration“).

In assembled condition, it only fulfills these requirements if...

- ... the awning is mounted in accordance with the type and number of consoles recommended by the manufacturer.
- ... the instructions of the fixing material manufacturer regarding the used dowels were followed during the assembly.
- ... the installation of folding-arm awnings was carried out considering the

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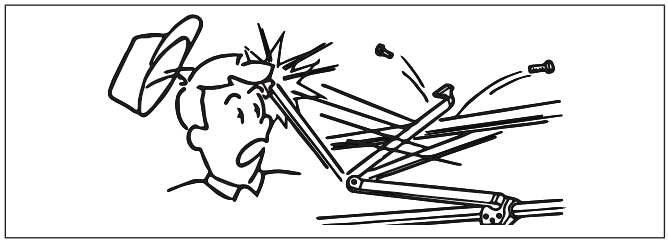
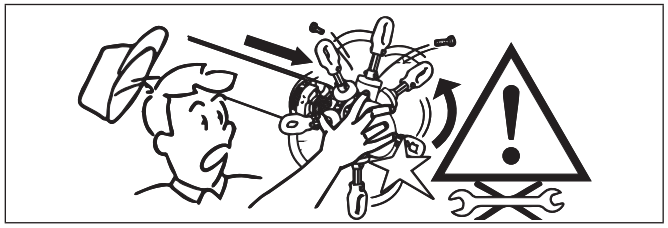
6. Partly assembled awnings



⚠ In case of awnings that come partly-assembled from the factory – e.g. coupled folding-arm awnings without cover - the spring-loaded parts (see figure: Example folding-arm awning) are secured against unintentional opening. These securing means must be removed only after the complete assembly.

The labelled awning parts are under spring tension and can pose an high injury risk.

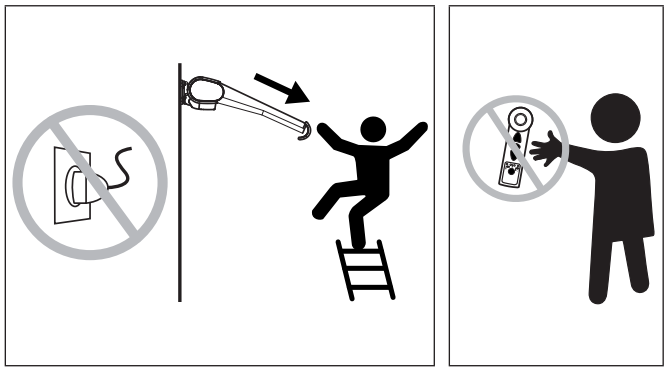
7. Folding arm awnings with servo gear for hand crank



⚠ The servo gear unit of folding-arm awnings (marking by label) must not be dismantled. It is under great tension!

If the awning cloth or the gear have to be changed, kindly enquire before about the instructions „What is to be done, if the servo gear unit has to be dismantled?.

8. Uncontrolled operation



⚠ When working in the range of travel of the awning (see figure: example folding-arm awning) the automatic control has to be deactivated. There is a risk of crushing body parts and falling.

Additionally, the installer must ensure that the unit cannot be unintentionally operated during works. The power supply should be disconnected i.e. by removing or turning off safety fuses and/or removing the power cables and motor socket gear. For works on manually operated units the crank should be removed and stored safely.

If awnings are operated by more than one person, an override locking device (controlled circuit breakers from outside) must be installed so that any retraction or extension of the awning is not possible.

9. Proper intended use

Awnings may only be used according to the purpose defined in the operation manual. Alterations like rebuilding or enlargements which are not intended by the manufacturer may only be carried out with the manufacturers written approval.

Additional awning burdens by means of object attachments or or rope wearing can result in damage or dropping of the awning and are therefore not allowed.

The awning must not be subjected to high temperatures, heavy vibrations, jarring or heavy mechanical stress.

A build up of snow behind the awning can be avoided by installation of snow stoppers (snow collecting grid or the like).

10. Crush and shear zones

⚠ Depending on the type of awning there are crush and shear zones, e.g. between front profile and cassette and between moving parts. Items of clothing or limbs can be grabbed by the unit and pulled in. (see figure: example folding-arm awning.)

If the awning is installed at a height less than 2.5 metres above accessible traffic ways, then the awning may only be operated by a pushbutton switch which enables the moving parts to be viewed. Electric controls, radio-controlled motors with click in-switches are not permitted for such installations.

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assembly advices

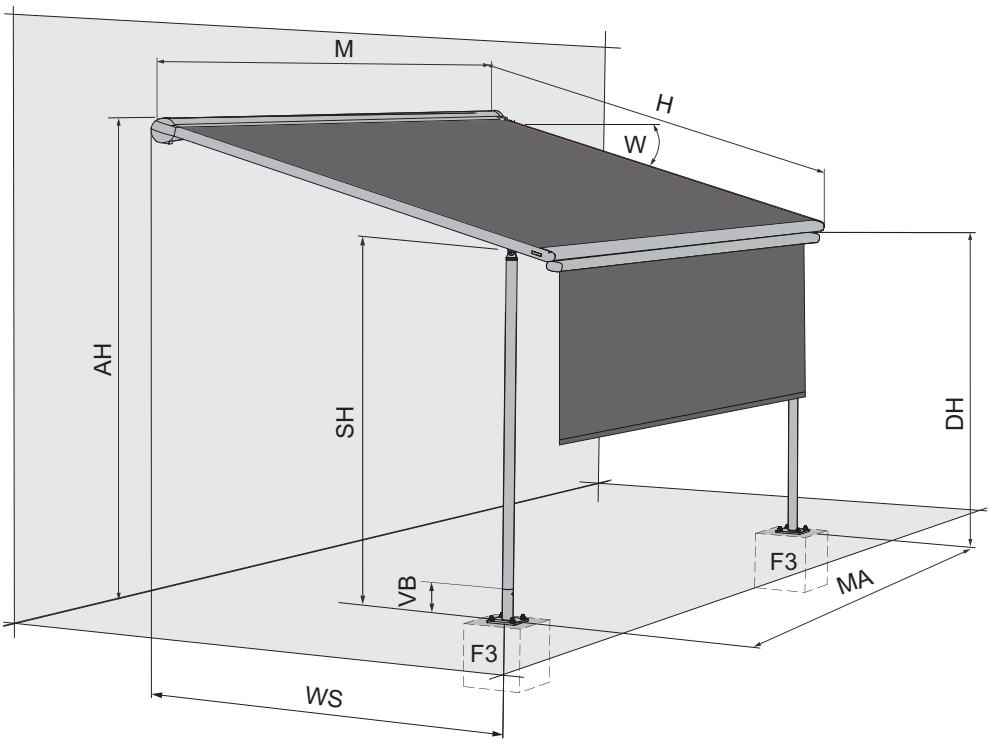
markilux pergola 110 / 210

1. Dimension overview

Further information can be found in our sales documentation.

1.1 General views

Single unit pergola 110: Mounting the posts on concrete foundations - optional with shade plus

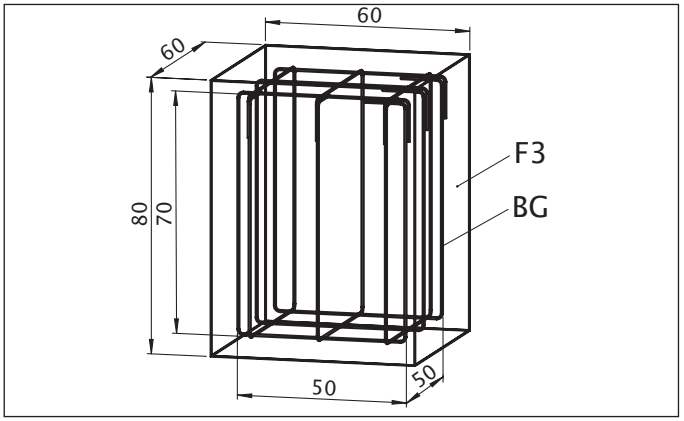


F3 = concrete foundations:

A concrete footing (F3) has to be laid on site in accordance with the technical drawing for each support post:

- Concrete foundations of concrete compressive strength C25/30 (before B25) with reinforcement cage consisting of 6 pcs. construction steel stirrups Ø 6 mm
- Fixture of the front base plates (F3) with Fischer anchor bolts FAZ 10/30 in A4 stainless steel with washer acc. to DIN 9021 (or equivalent)

Concrete foundataion F3



dimensions in cm

M	= awning width = MA + 10 cm	DH	= headroom
H	= extension	W	= awning pitch = 5° to 45°
MA	= fixture width = mounting axle	VB	= height adjustment 10 cm
AH	= fixture height	WS	= distance from wall to support post centre
SH	= post height	F3	= concrete foundation

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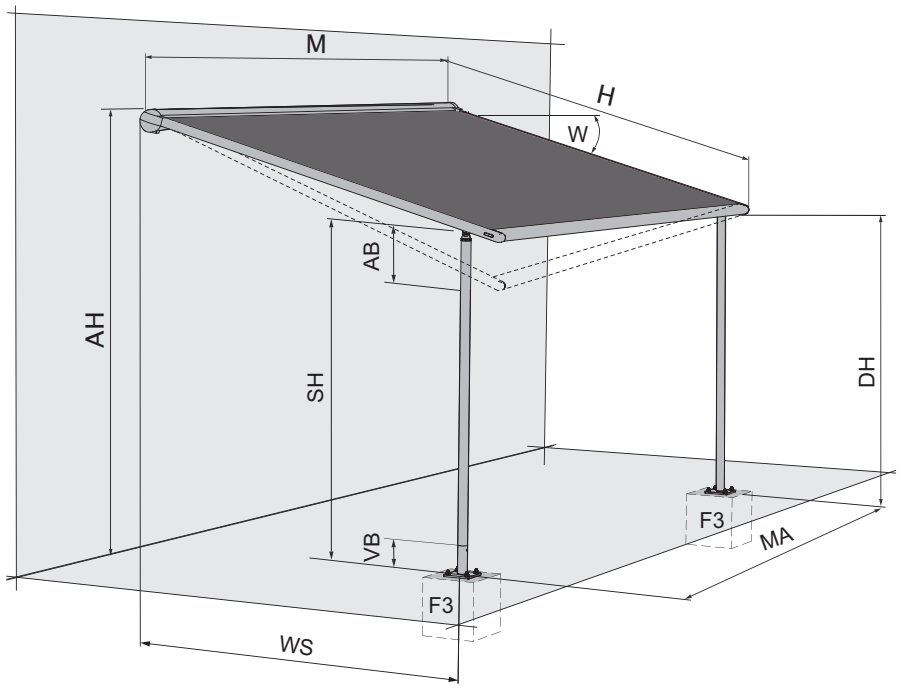
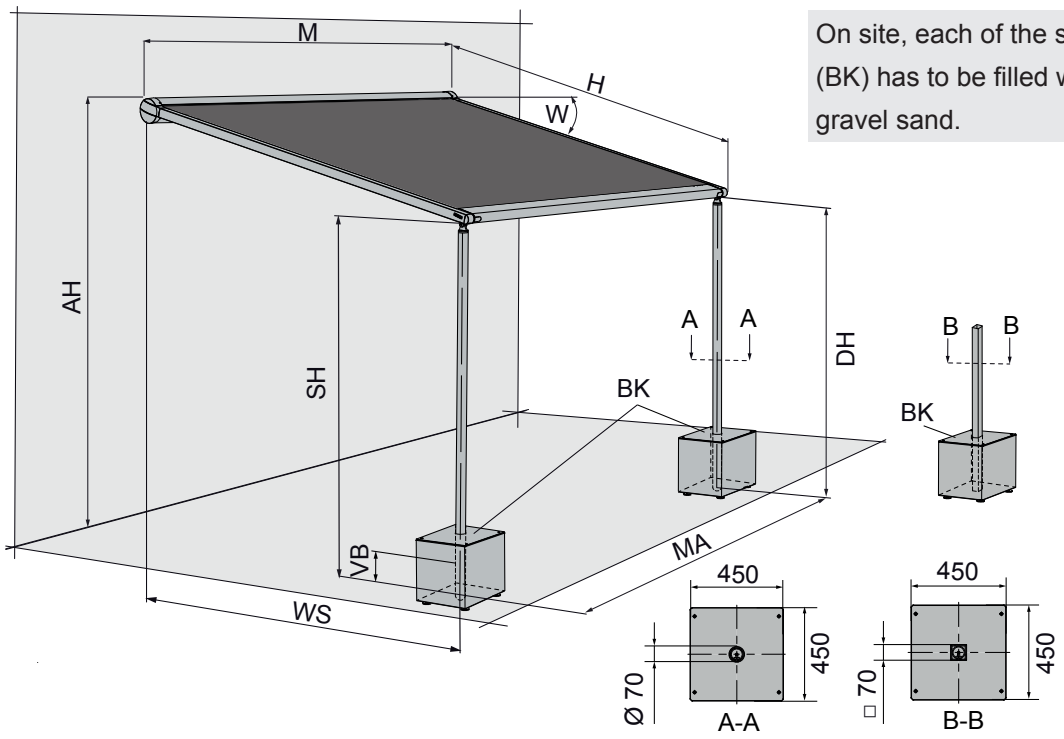
Single unit pergola 210: Fixing the posts on concrete foundations - optional with shade plus



Single unit pergola 110 / 210: stabilisation boxes at the front posts - optional with shade plus

On site, each of the stabilisation boxes (BK) has to be filled with at least 100 kg gravel sand.



dimensions in mm

M	= awning width = MA + 10 cm
H	= extension
MA	= fixture width = mounting axle
AH	= fixture height
SH	= post height

DH	= headroom
W	= awning pitch = 5° to 45°
VB	= height adjustment 10 cm
WS	= distance from wall to support post centre
F3	= concrete foundation, see page 5
BK	= stabilisation box

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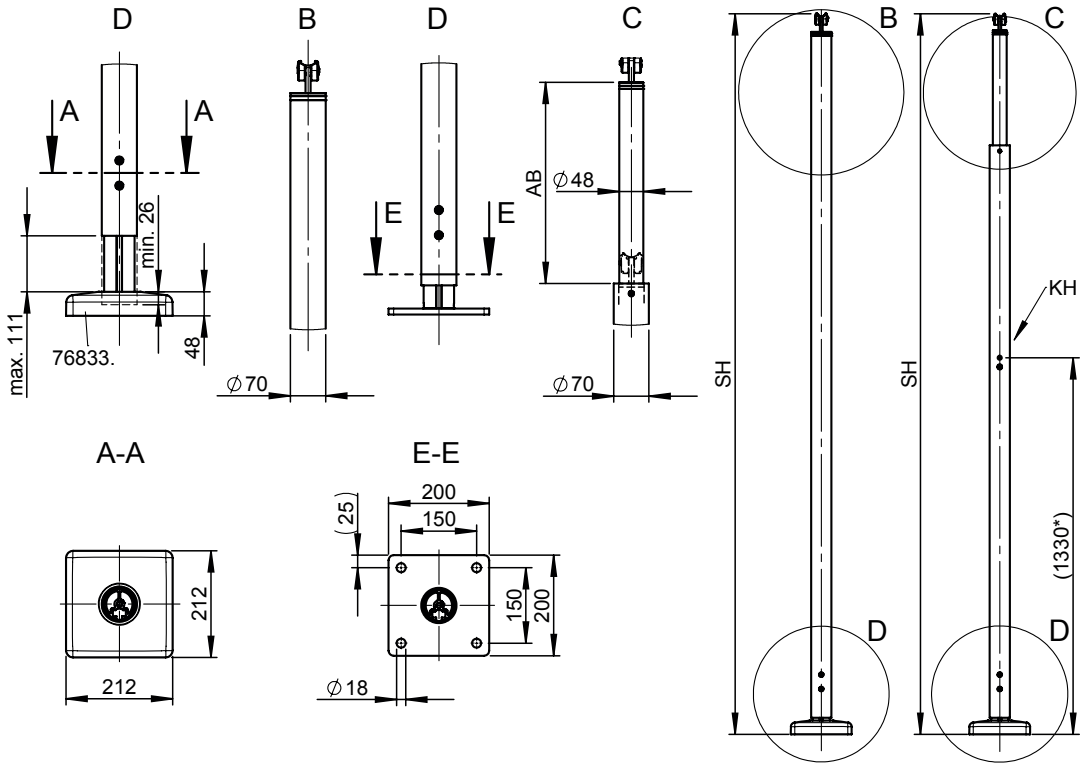
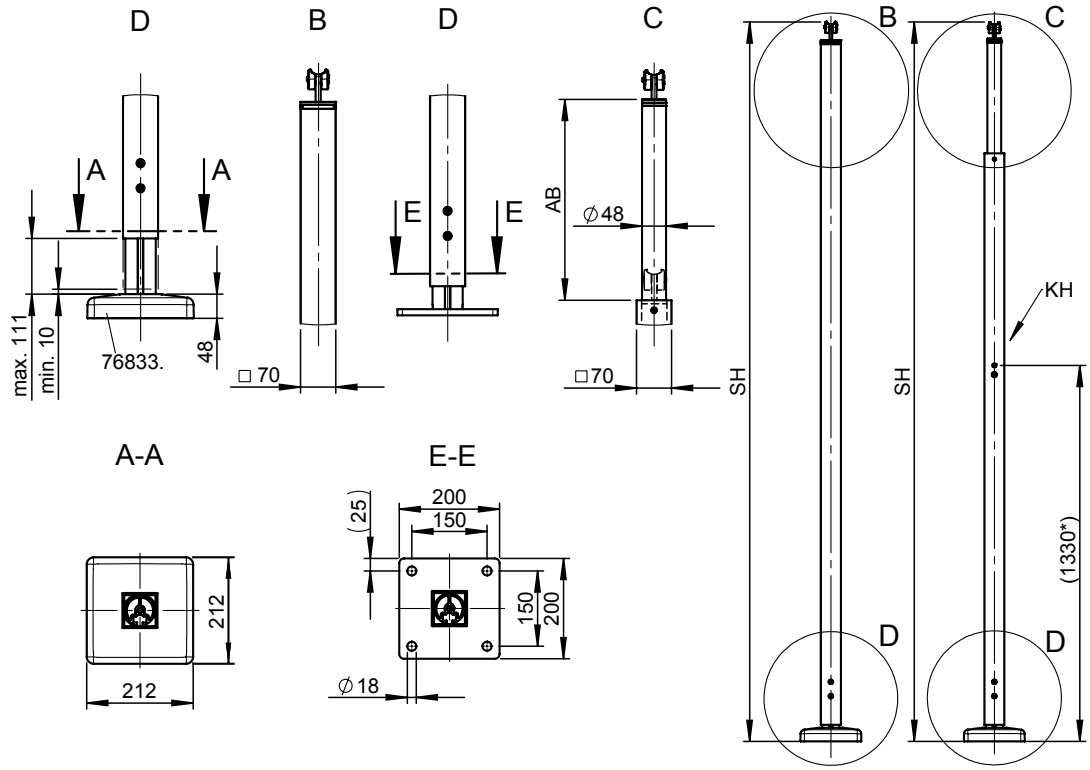
1.2 Post dimensions

Round post with base plate (lowerable / not lowerable)



dimensions in mm

Square post with base plate (lowerable / not lowerable)



dimensions in mm

A	= detail: top view base cover (76833.)
UW	= lowering range 200, 300 or 400 mm or a post, depends on the size of the pergola 210, see sales documents
B	= detail: post without manual height compensation
C	= detail: post with manual height compensation (hand crank not displayed)

D	= detail: height compensation of both feet at the front posts for mounting, approx. 100 mm
E	= detail: top view base plate
KH	= crank support
SH	= post height, standard height 2500 mm or custom height
*	= dimensions for standard height

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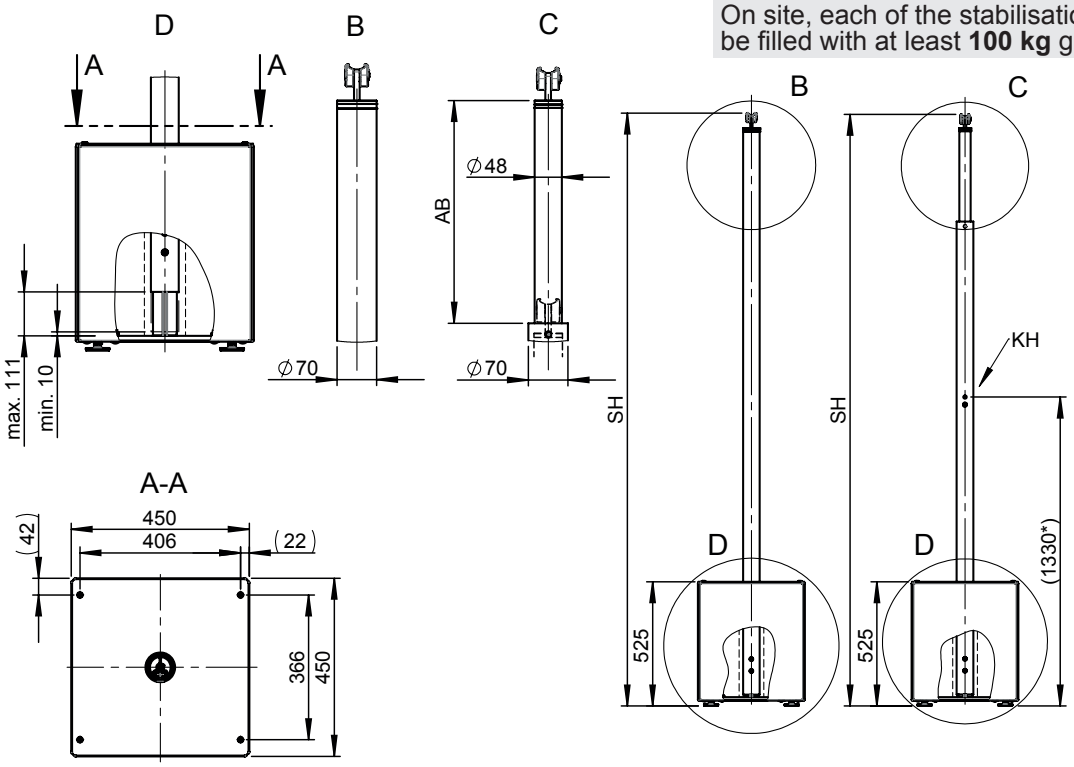
Round post with stabilisation box (lowerable / not lowerable)

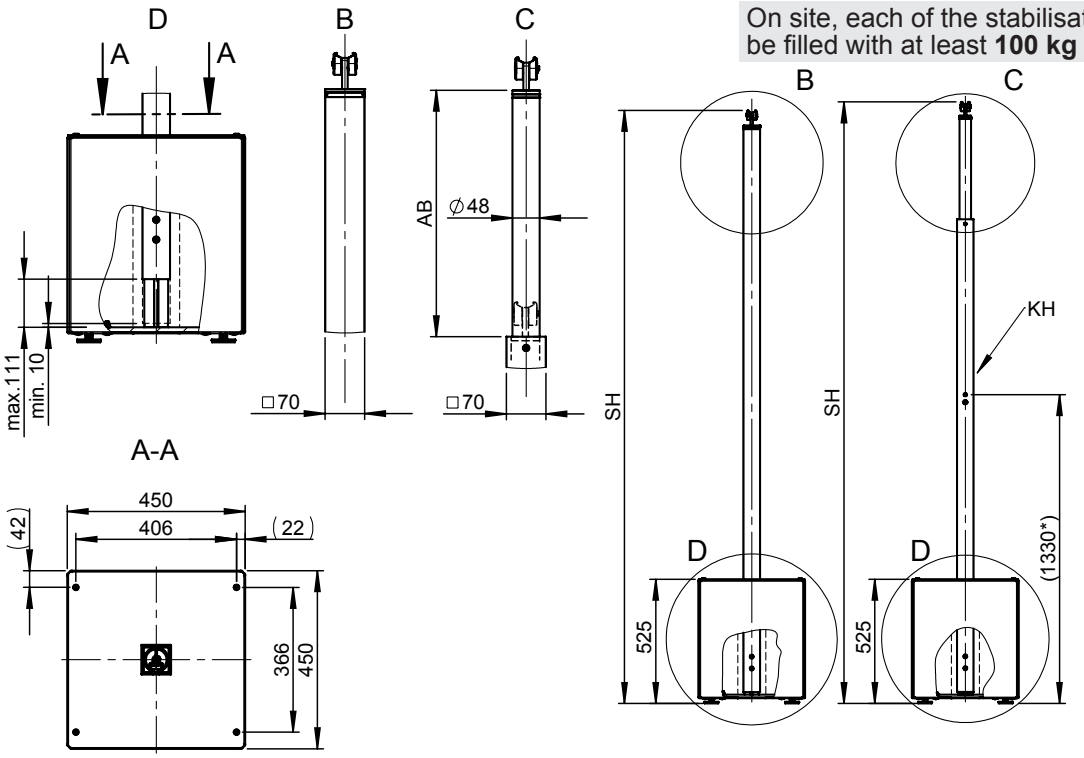
On site, each of the stabilisation boxes (BK) has to be filled with at least **100 kg** gravel sand.



dimensions in mm

Square post with stabilisation box (lowerable / not lowerable)

On site, each of the stabilisation boxes (BK) has to be filled with at least **100 kg** gravel sand.



dimensions in mm

A	= detail: top view stabilisation box with cover
UW	= lowering range 200, 300 or 400 mm of a post, depends on the size of the pergola 210, see sales documents
B	= detail: post without manual height compensation
C	= detail: post with manual height compensation (hand crank not displayed)

D	= detail: height compensation of both feet within the stabilisation box at the front posts; for mounting approx. 100 mm
KH	= crank support
SH	= post height, standard height 2500 mm or custom height
*	= dimensions for standard height

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2. Calculation of the mounting dimensions

⚠ **markilux pergola 110:**
Drainage in case of rain is guaranteed only with a pitch setting of the awning of at least 14° (= 25 %).

⚠ **markilux pergola 210:**
Drainage in case of rain is guaranteed only with a pitch setting of the awning of at least 7° with completely lowered post.

⚠ **Attention! For both awnings applies:** The awning is a solar protection system! In case of an approaching thunderstorm, downpours, bad weather fronts, the awning has to be retracted in time. During rain, even a too low pitch setting can lead to the formation of water pockets and damage to the system! With a pitch setting of at least 14° (pergola 110) or 7° (pergola 210) with lowered post, the markilux pergola 110 / 210 fulfills the conditions of performance class 2 (precipitation quantity 56 l/m² x h). This is the resistance to accumulations of water in accordance with DIN EN 13561.

2.1 Face fixture

The following calculation formulae and tables refer to the dimension overviews fig. 2a, 2b

W	AX	XX	ZX
5°	26	46	112
10°	32	38	120
15°	38	30	128
20°	44	22	135
25°	49	13	142
30°	54	4	149
35°	58	-5	156
40°	62	-15	161
45°	65	-24	167

AH = SH + ZX + sin W ● (H - Y)

SH = AH - ZX - sin W ● (H - Y)

WS = cos W ● (H - Y) + AX

DH = SH - sin W ● Y

pergola 110 / 210 for mounting on **concrete foundations**

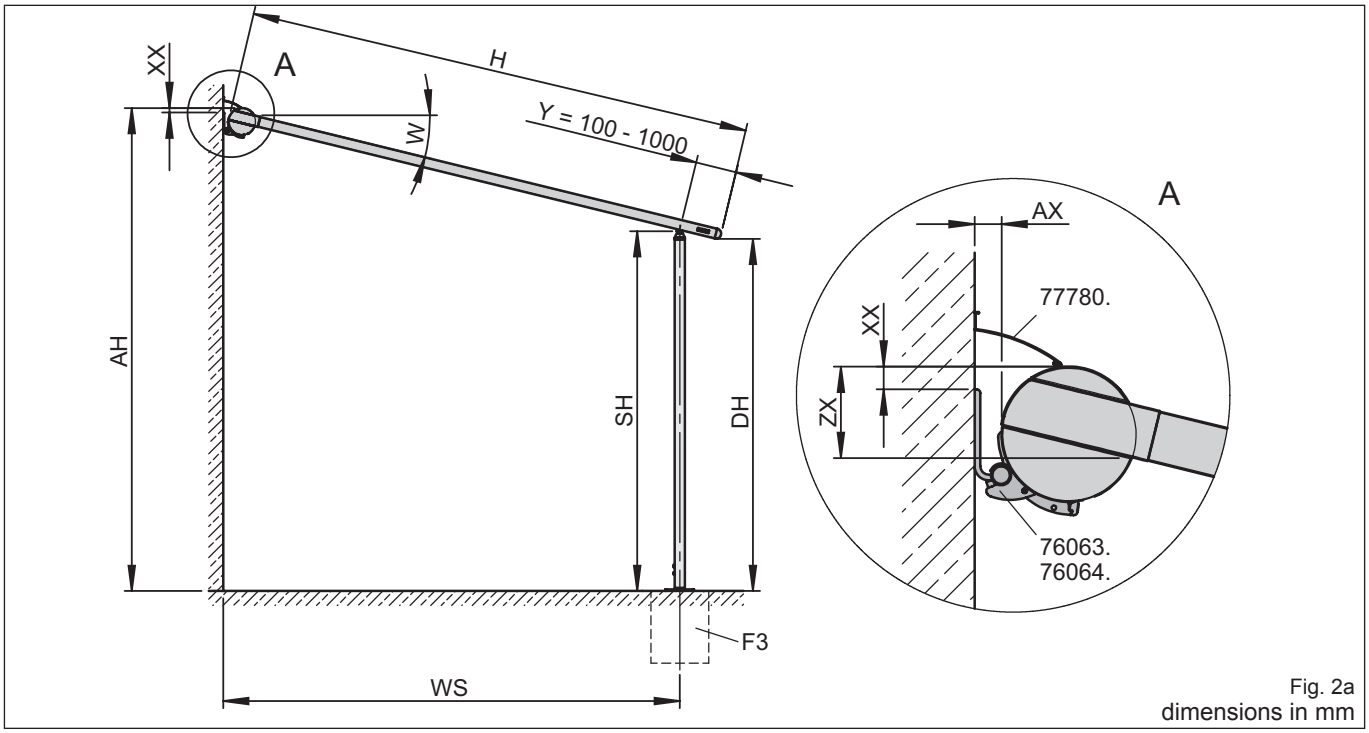

Fig. 2a
dimensions in mm

H	= extension	W	= awning pitch = 5° to 45°
AH	= fixture height	AX	= calculation value for the distance wall to support post centre WS (see table)
SH	= post height	XX	= distance top edge mounting bracket – top edge cassette
DH	= headroom (DHS for shadeplus, also see fig. 3)	ZX	= calculation value for fixture height AH
WS	= distance from wall to support post centre	F3	= concrete foundation
Y	= backset dimension of the front posts min. 100 to max. 1000 mm		

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pergola 110 / 210 with **stabilisation boxes**

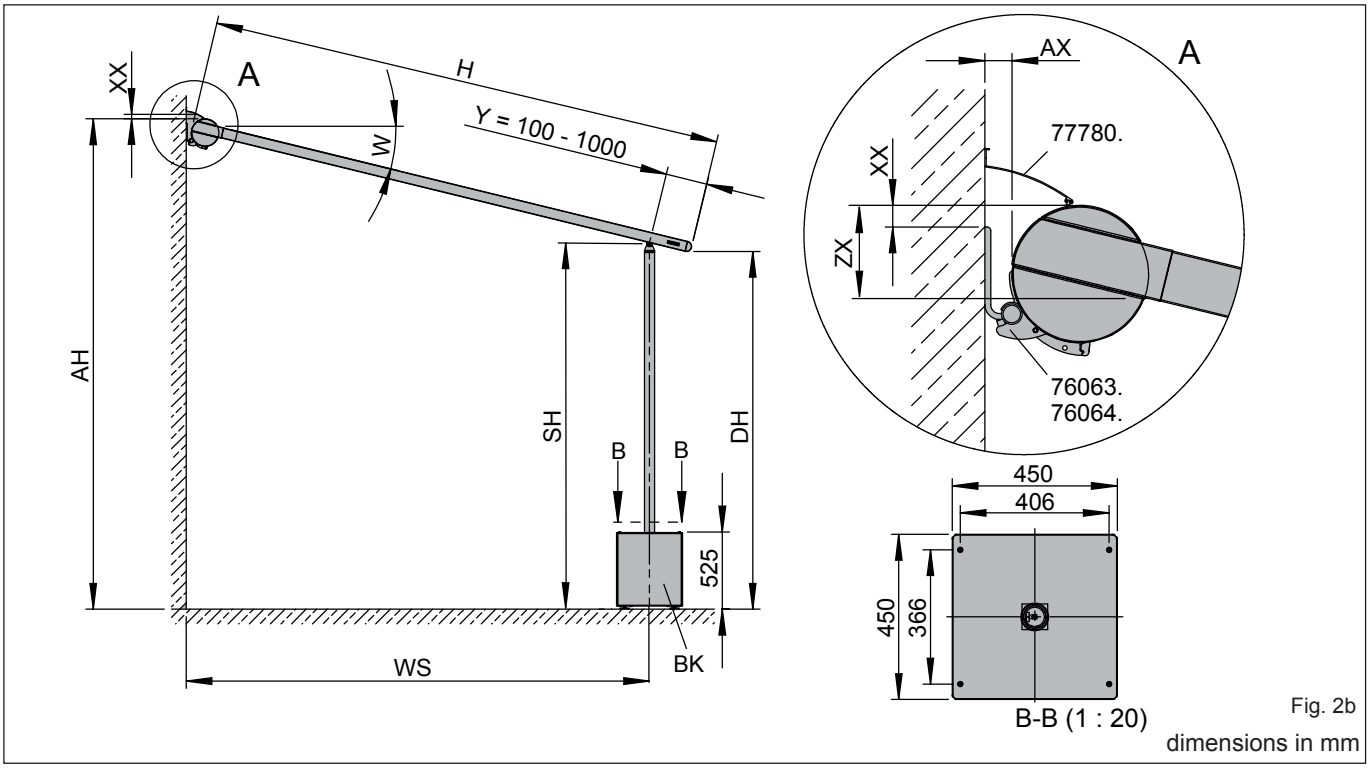
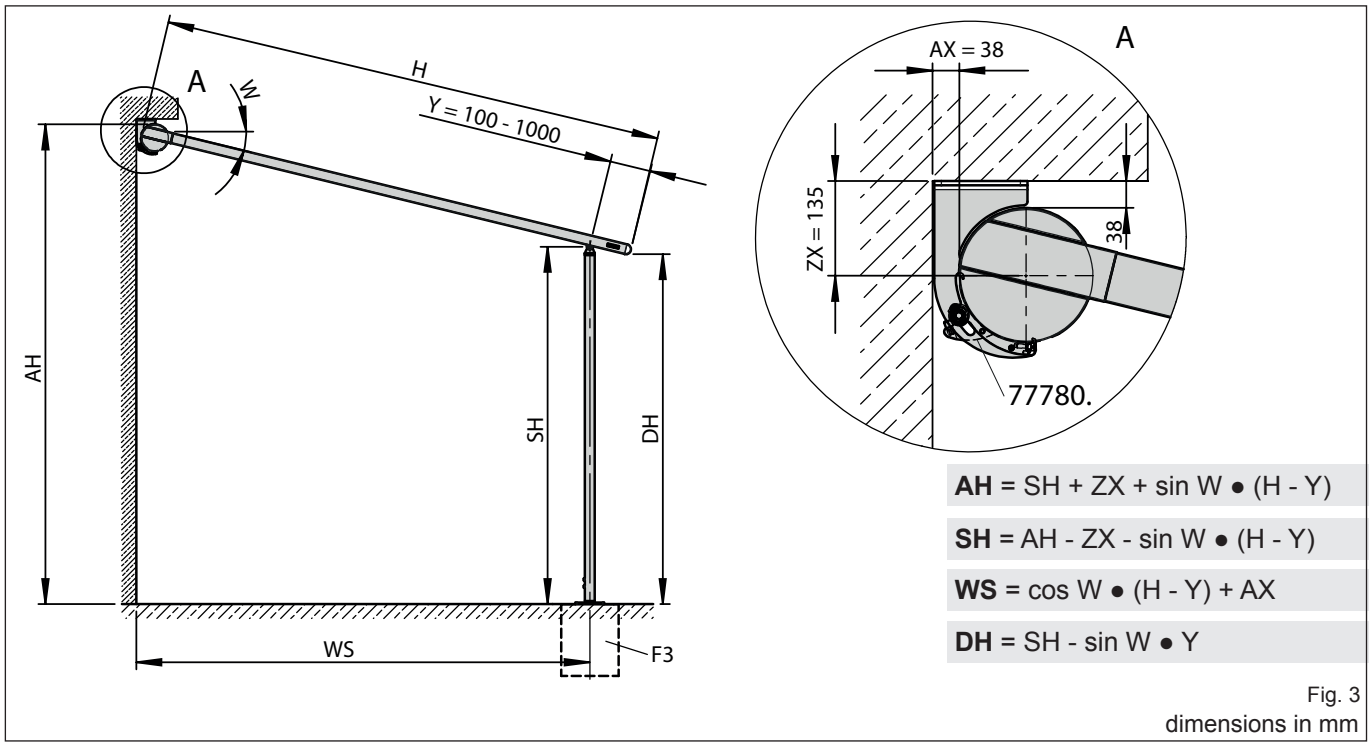


Fig. 2b
dimensions in mm

2.2 Top fixture



AH = SH + ZX + sin W ● (H - Y)

SH = AH - ZX - sin W ● (H - Y)

WS = cos W ● (H - Y) + AX

DH = SH - sin W ● Y

Fig. 3
dimensions in mm

H	= extension
AH	= fixture height
SH	= post height
DH	= headroom (DHS with shadeplus, also see fig. 4)
W	= awning pitch = 5° to 45°
WS	= distance from wall to support post centre
Y	= backset dimension of the front posts min. 100 to max. 1000 mm
BK	= stabilisation box

AX	= calculation value for the distance wall to support post centre WS (see table)
XX	= distance top edge mounting bracket – top edge cassette
ZX	= calculation value for fixture height
F3	= concrete foundation
77780.	= wall sealing profile (optional), effective up to a maximum awning pitch of 15°
76063.	= face fixture cassette bracket assembly, left
76064.	= face fixture cassette bracket assembly, right

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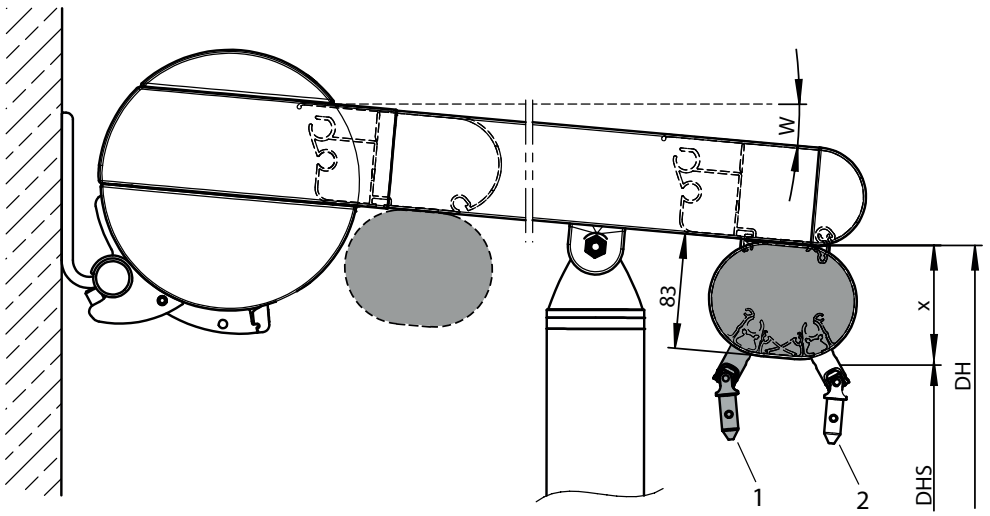
2.3 Headroom when shadeplus is retracted

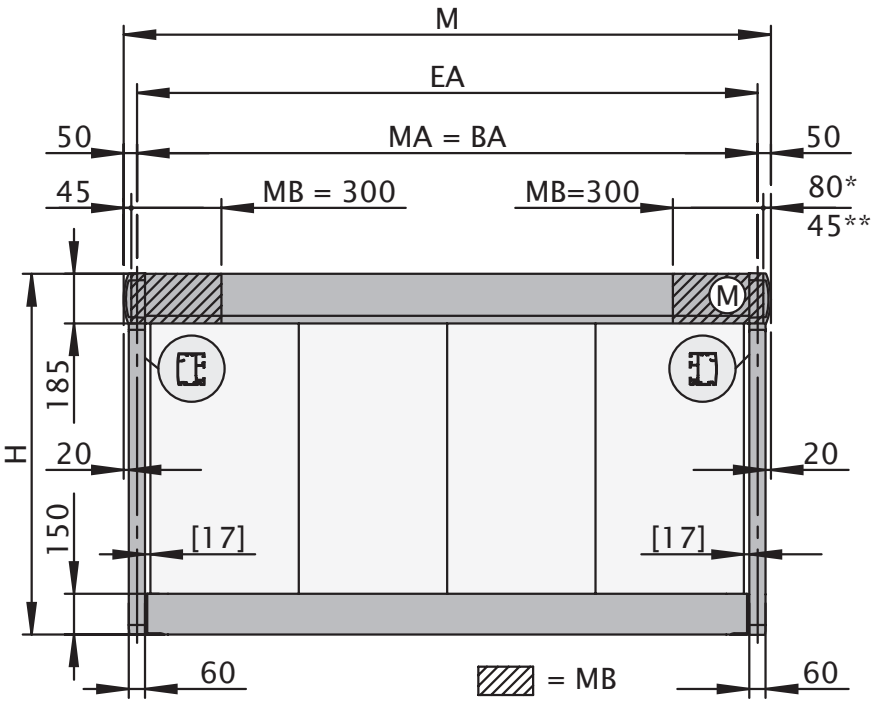


W	X
5°	82
10°	81
15°	80
20°	78
25°	75
30°	72
35°	68
40°	63
45°	58

Fig. 4
dimensions in mm

2.4 Dimension view from top

Mounting dimensions **1 field, 1 motor**



dimensions in mm

H	= extension
M	= awning width = MA + 10 cm
BA	= width between fixing points = awning fixture width
MA	= fixture width = mounting axle
EA	= single unit
MB	= bracket fixture range
DH	= headroom (observe additional dimensions for shadeplus, see also fig. 4)
DHS	= headroom with shadeplus = DH minus X

W	= awning pitch = 5° to 45°
X	= calculation value for DHS – headroom with shadeplus
[...]	= dimensions of the cover gap for standard unit, no cover gap for units with tracfix system
Ⓜ	= motor drive operation side
76734.	= double track post
1	= operation shadeplus rear
2	= operation shadeplus front (optional)
*	= dimension cable exit at the back (standard)
**	= dimension cable exit below (optional

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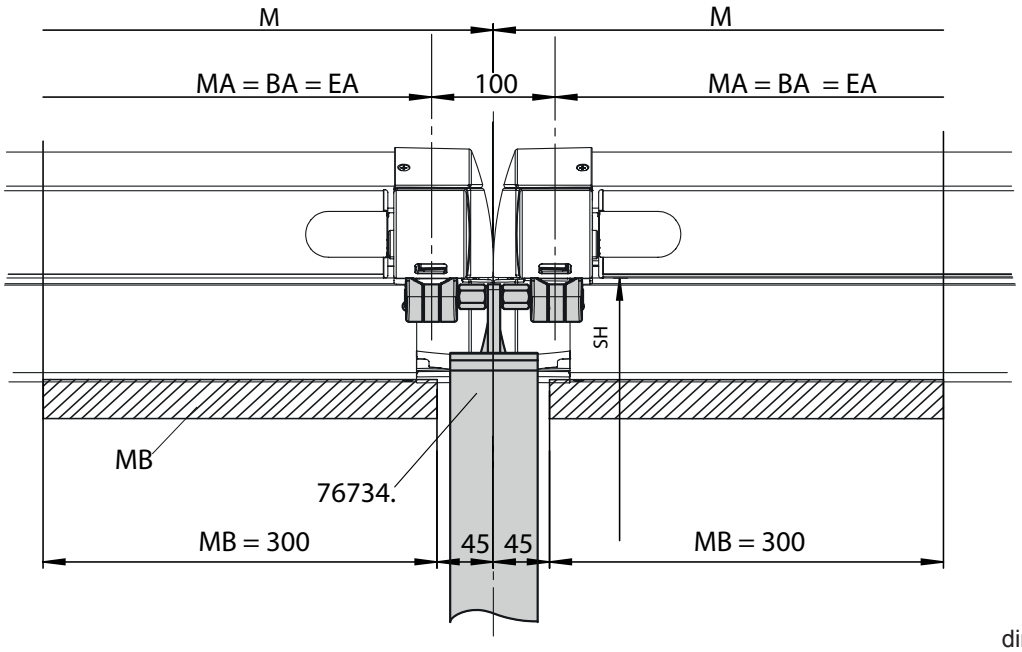
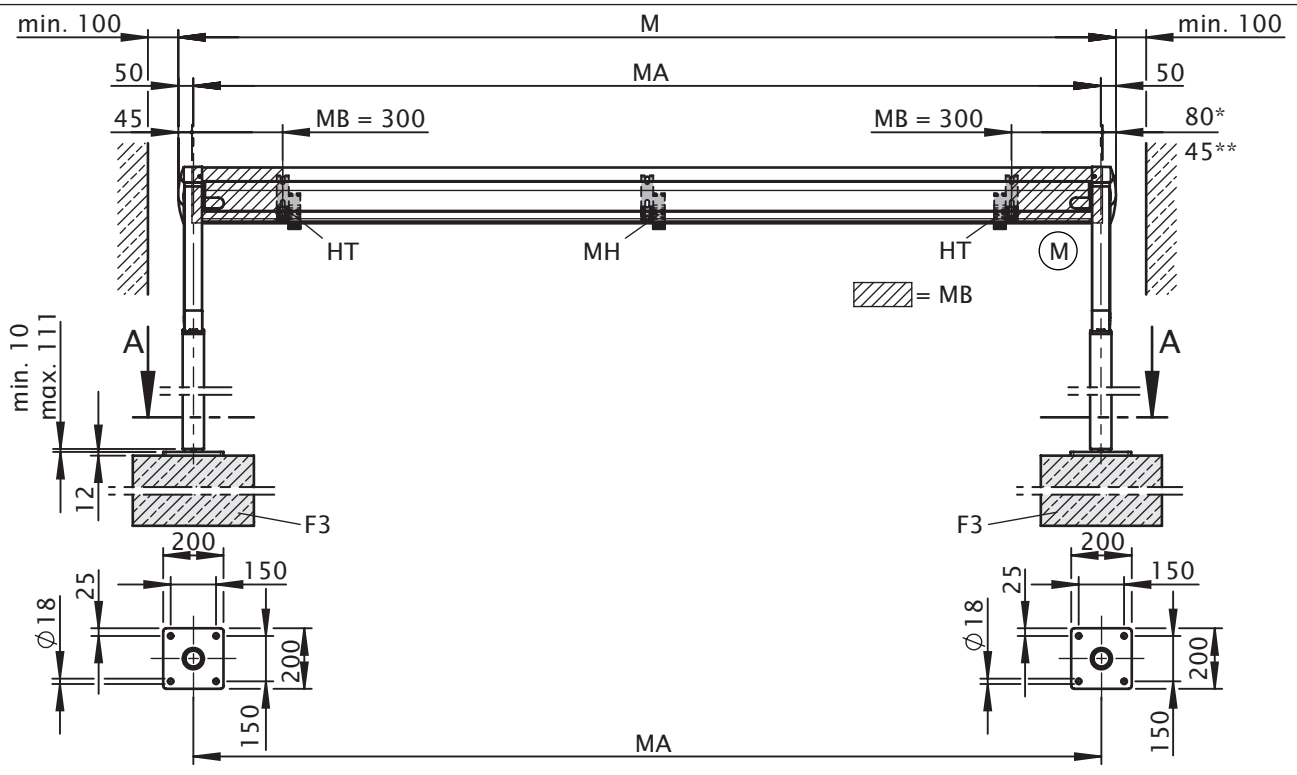
Mounting dimensions 2 single units, 2 motors, central double track bracket for 2 single tracks



dimensions in mm

2.5 Reveal fixture



dimensions in mm

NOTE: In case of reveal fixture, a wall clearance of at least 100 mm to each awning side has to be observed!

M	= awning width = MA + 10 cm
HT	= bracket
BA	= width between fixing points = awning fixture width
MA	= fixture width = mounting axle
EA	= single unit
F3	= concrete foundation

SH	= post height
MB	= bracket fixture range
MH	= from an awning width of 601 cm an additional wall bracket (76063.) is required
76734.	= double track post
*	= dimension cable exit at the back (standard)
**	= dimension cable exit below (optional)

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3. Fixture brackets and accessories

3.1 Mounting systems

⚠ Attention!

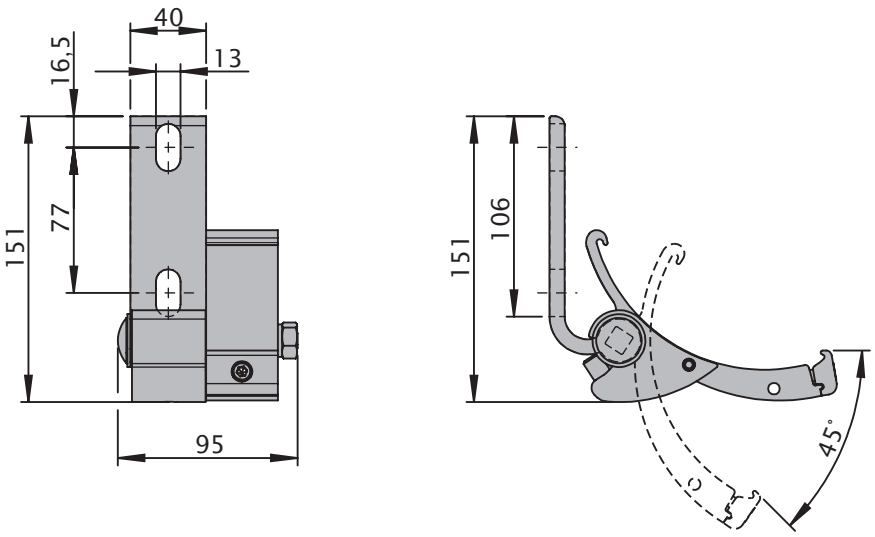
Basically the following is applicable for all mounting systems:

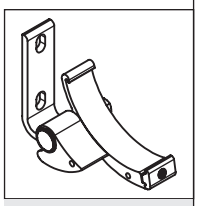
1. The mounting material manufacturers (e.g. Fischer, Hilti, Upat, etc.) offer different mounting systems according to the undersurface. If the conditions for the mounting are met according to DIN EN 13561, the wind resistance class 3 for the mounting can be confirmed to the user.
2. Mounting material is not delivered, as different undersurfaces (e.g. concrete, lime sand stone, autoclaved aerated concrete, etc.) require different types of mounting material
3. **IMPORTANT:** The brackets must be aligned with each other! When subsurfaces are uneven, the clearances are to be checked using a cord pulley and if required compensated accordingly. Due to the horizontal mounting of the folding-arm awning and the perpendicular fit of the mounting brackets, the smooth functioning of the folding-arm awning is guaranteed.

3.2 Mounting brackets

Wall bracket left

pitch setting 5° to 45°



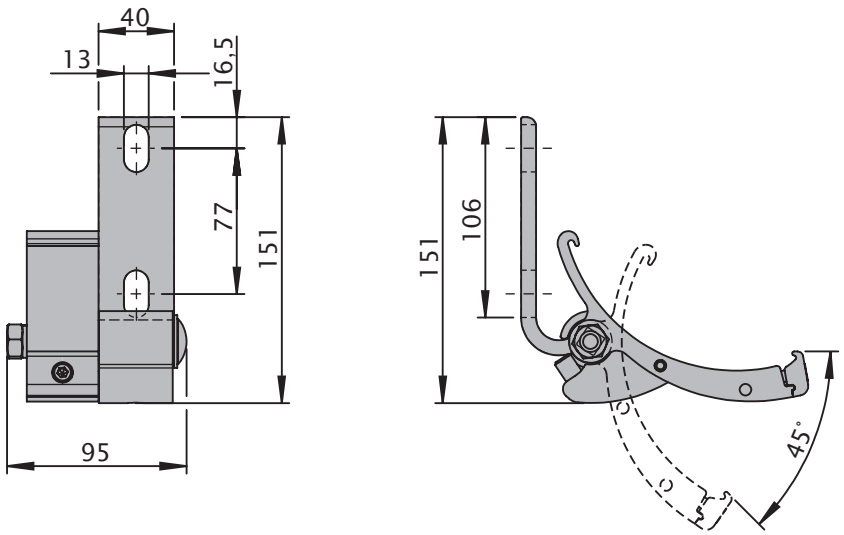


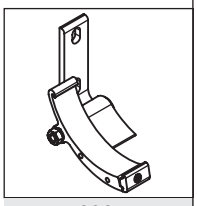
76063.

dimensions in mm

Wall bracket right

pitch setting 5° to 45°





76064.

dimensions in mm

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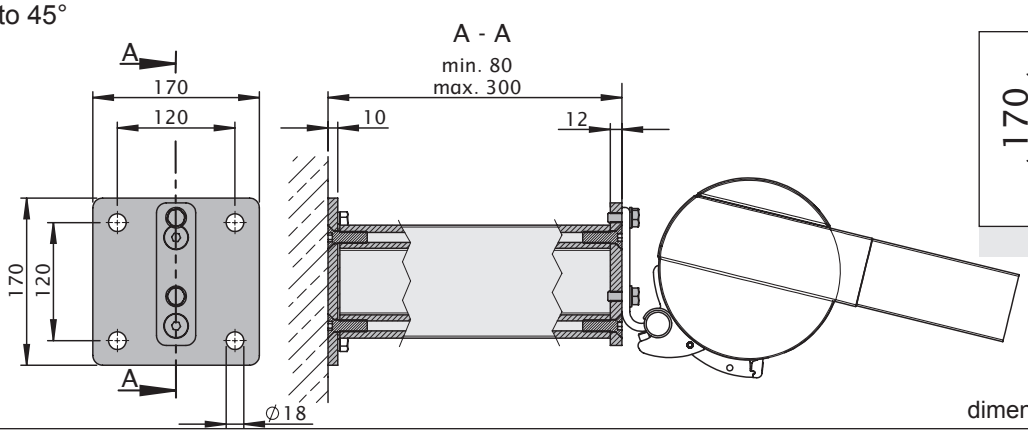
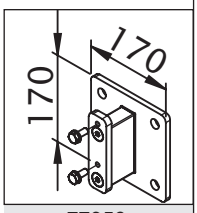
Face fixture using stand-off brackets

pitch setting 5° to 45°



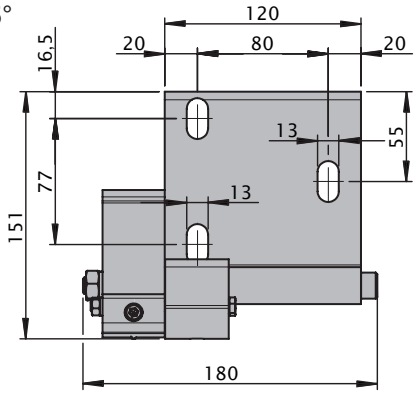


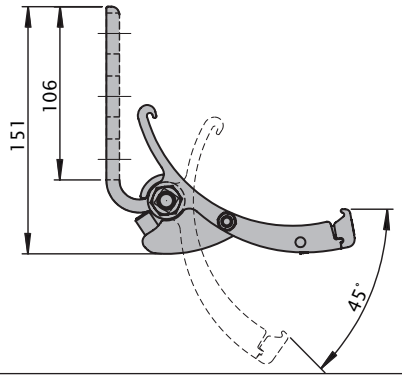
77956.

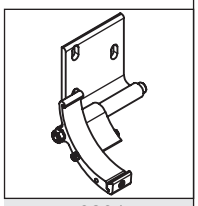
dimensions in mm

Wall bracket wide left

pitch setting 5° to 45°





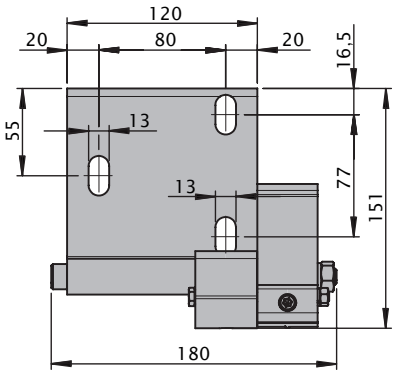


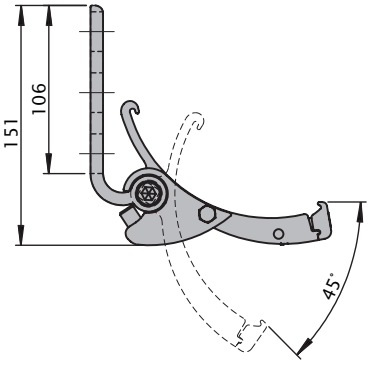
76231.

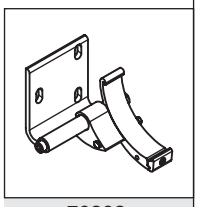
dimensions in mm

Wall bracket wide right

pitch setting 5° to 45°







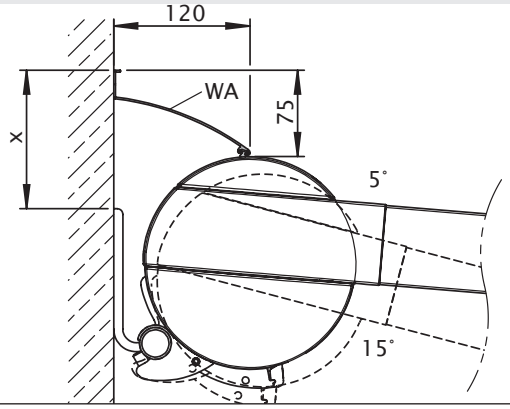
76232.

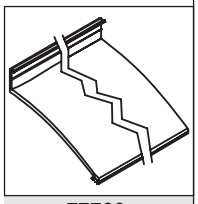
dimensions in mm

Face fixture with wall sealing profile

pitch setting 5° to 15°

W	x
5°	122
10°	114
15°	105
20°	—
25°	—
30°	—
35°	—
40°	—
45°	—





77780.

dimensions in mm

WA = wall sealing profile

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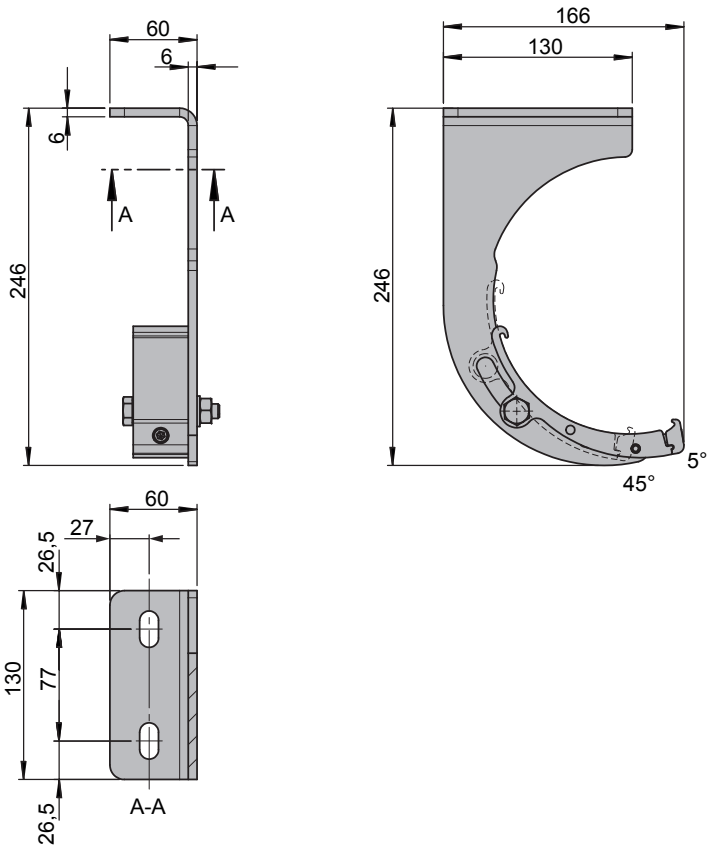
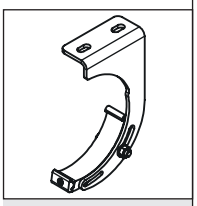
Top fixture brackets right and left

pitch setting 5° to 15°

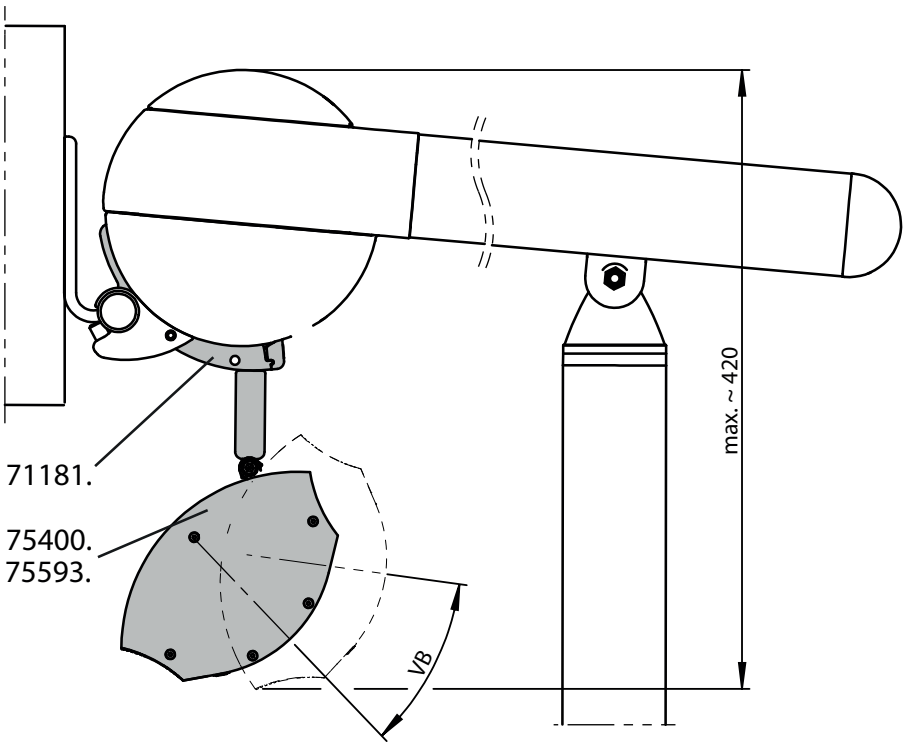


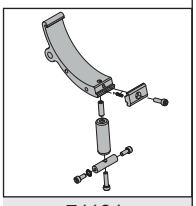


77058.
left and right

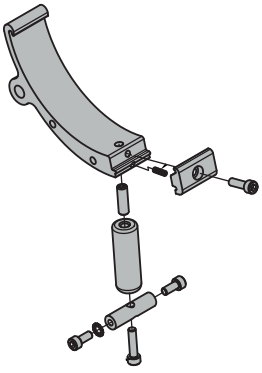
dimensions in mm

Bracket for infra-red heater





71181.



71181.

dimensions in mm

VB	= possible adjustment range of the infra-red heater	75400.	= infra-red heater with 1400 W
71181.	= 2 pcs brackets for one infra-red heater each	75593.	= infra-red heater with 2000 W

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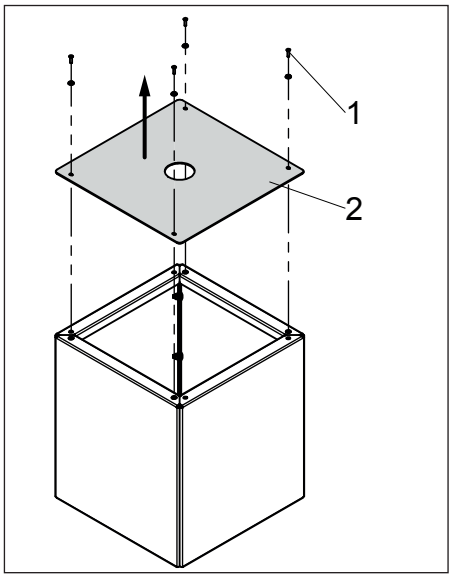
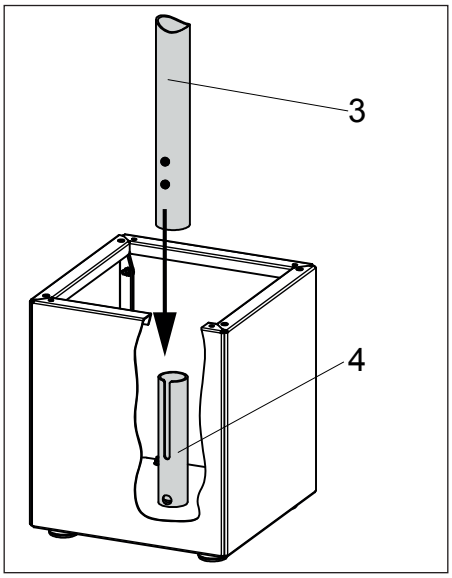
4. Setting up stabilisation boxes - optional

Example markilux pergola 110 with round posts

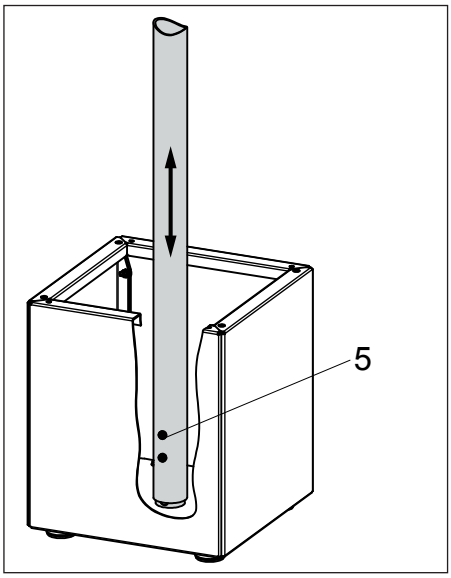


1. Loosen the countersunk head screws M 5 x 20 mm (1) and remove the cover plate (2).



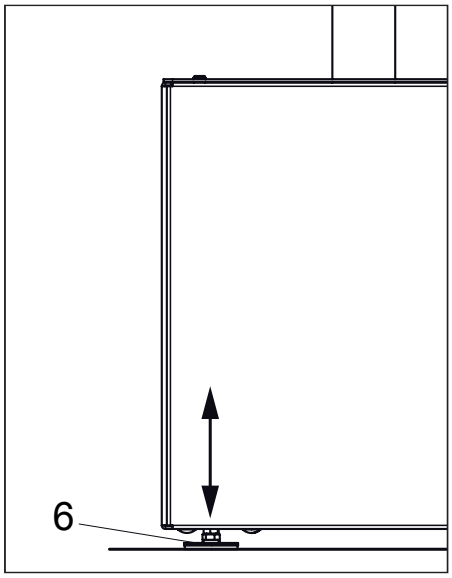
2. Place post (3) onto the base tube (4).

For Pergola 210: Push the post cover upwards until the screws are exposed.

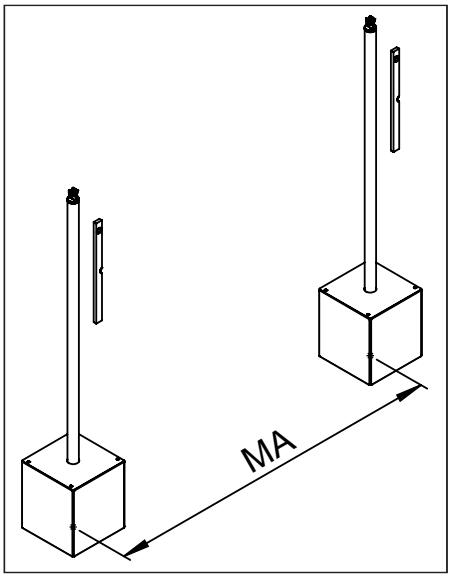


3. Align the height of the post and tighten cylindrical head screws M 10 x 30 (5).

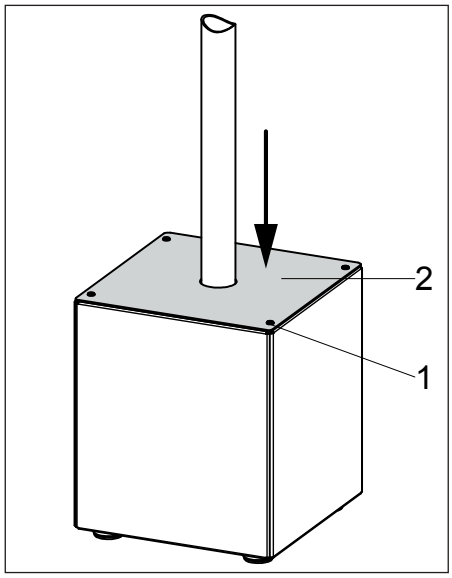
For Pergola 210: Push down again the post cover until the base plate.



4. Align the post vertically at the adjustable feet (6) under the stabilisation box. The height can be adjusted by up to 25 mm or the pitch can be compensated by approx. 5°.



5. Align the posts parallel in distance MA and measure precisely with the fixture brackets of the awning, also see chapter 5. It is important that the guide tracks run parallel. The max. fitting tolerance is 3 mm as otherwise smooth operation cannot be guaranteed.



6. On site, the stabilisation boxes have to be filled with **100 kg** gravel sand each after the alignment.

Fix the cover plates (2) again on the stabilisation boxes using the countersunk head screws M 5 x 20 mm (1).

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5. Mounting the fixture brackets and setting up the posts

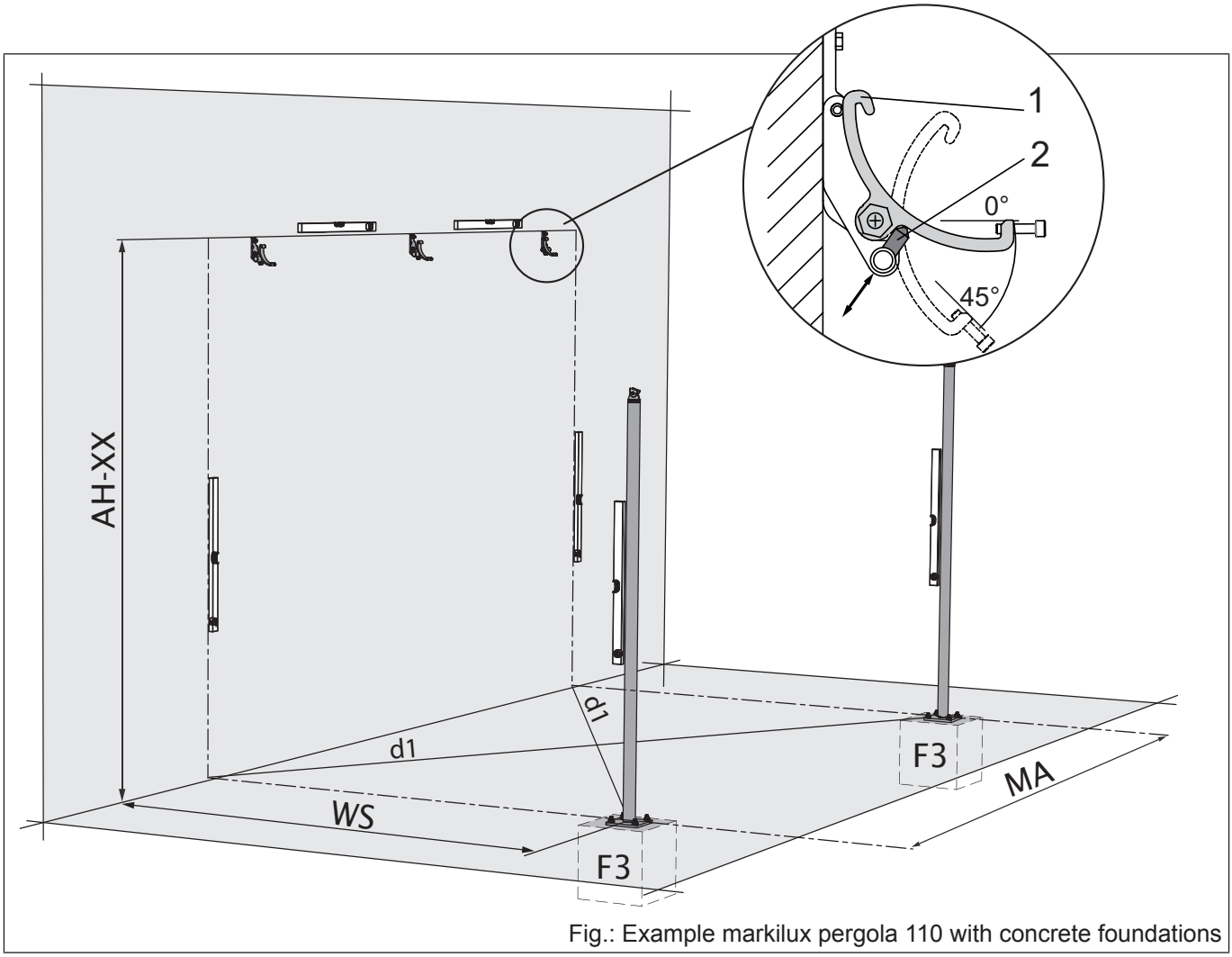

Fig.: Example markilux pergola 110 with concrete foundations

1	= brackets for cassette housing
2	= threaded pin M 10 x 30 mm

1. Lay concrete foundations (also see chapter 1) or set up stabilisation boxes (chapter 4.). Observe post distance (MA) and wall distance (WS).
2. Determine mounting height (also see chapter 2). Mark the position of the mounting brackets (wall or ceiling). Mounting ranges see chapter 2.4 "Dimension overview from top“.
3. Mark the drill holes and mount the mounting brackets with the corresponding mounting plates or spacers according to the undersurface. Align the mounting brackets horizontally! A central mounting bracket is required if the awning width exceeds 601 cm.
4. Roughly preset the pitch of the wall brackets to the desired pitch by unscrewing / screwing in the threaded pin (2).
5. Align the post to each other, check diagonal measurements (d1), post clearance and wall clearance!
6. ⚠ **Attention!** It is important that the guide tracks are parallel. The max. fitting tolerance is 3 mm as otherwise smooth operation cannot be guaranteed. See also chapter 5 "Mounting the awning".

   For concrete foundations: Mounting of the front base plates at the foundation (F3) using Fischer anchor bolds FAZ 10/30 in A4 stainless steel with washer acc. to DIN 9021 (or equivalent). Mark drill holes. Drill the holes in accordance with the mounting material and screw the posts perpendicularly.

   For stabilisation boxes: See chapter 4. "Setting up the stabilisation boxes - optional“.

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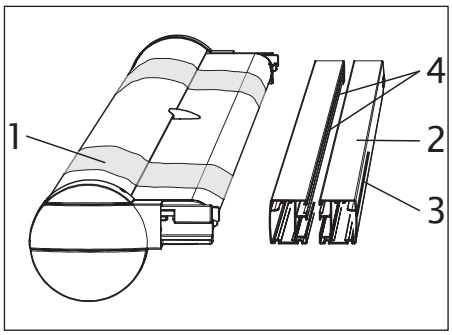
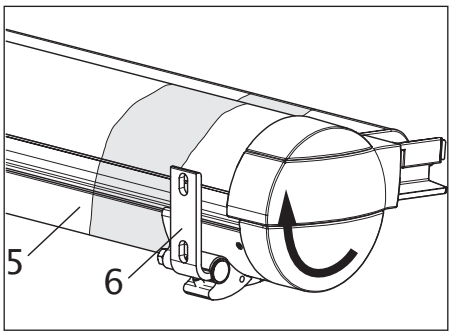
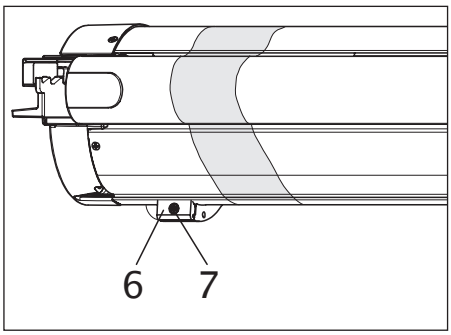
6. Mounting the awning (example fixture type wall bracket)



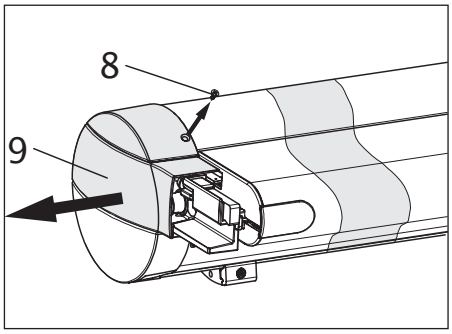
1. Unpack awning from the box (pay attention to marking "top"). Do not remove the protective foil (1) of the front profile and the transport belt fixings (3 = adhesive strips, 4 = Styrofoam wedges) from the guide tracks (2).



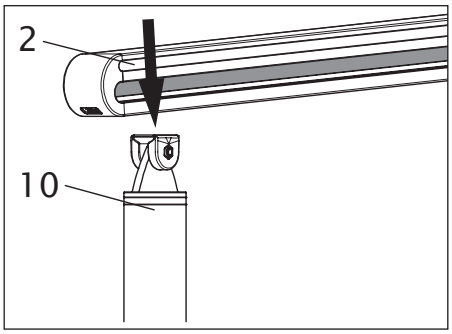
2. Engage cassette (5) in the already mounted fixture brackets (6).



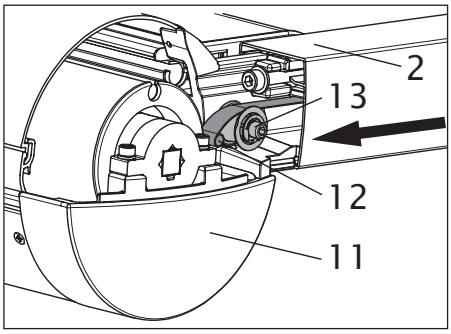
3. Align the awning laterally. Tighten the SW 5 cylindrical head screws at the clamping piece (7) of the wall brackets (6), so that the awning is secured.



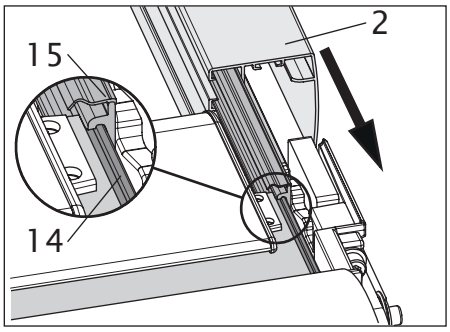
4. Unscrew the countersunk head screw (8) at the left side cheek and remove the inspection cover (9).



5. Position left track profile (2) on the post (10) and engage, do not screw together yet.

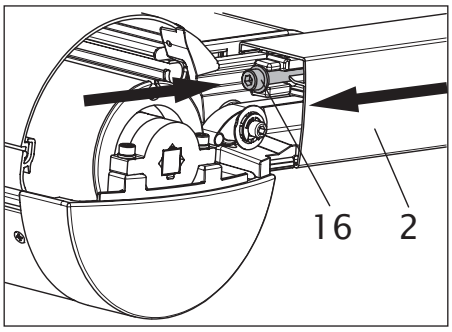


6. Slide the guide track profile (2) about 2 to 3 cm over the rollers of the front profile bogey onto the end cap (11). Remove the tape holding the drive belt in place (adhesive strip) from the guide track profile. The lug-end of the drive belt (12) must be fed over the belt roller (13).



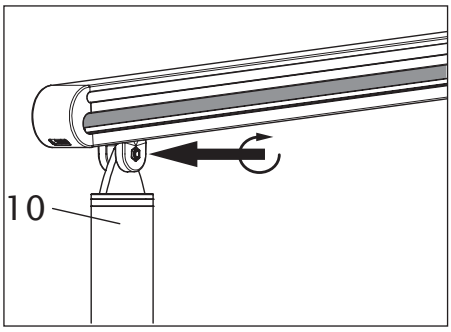
6a.

⚠ Attention!
For awnings with tracfix system, the cover has to be threaded in the plastic track (15) with the "zip" (14) for the function of the tracfix system, before the guide track (2) of the awning is slid onto to end cap, as described under point 6.



7. Push the guide track profile (2) up to the stop and secure with a SW 6 Allen key cheese-head screw (16).

⚠ Attention!
If the guide track profile has to be loosened or removed: Unscrew the cylindrical head screw SW 6 (15) about 15 mm and loosen the connection by means of beating lightly on the screw head!



8. Tighten the clamping jaws of the post (10) SW 6.

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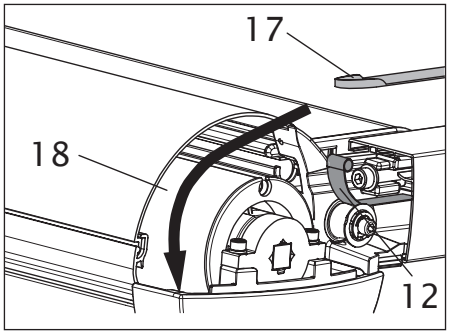
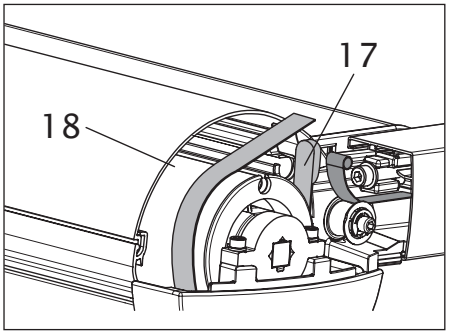
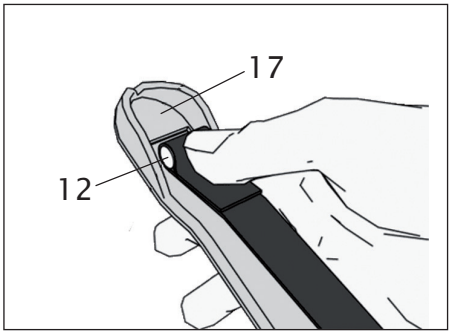


9. Lift the lug-end of the drive belt (12) up. Guide the assembly aid (17) between the fabric roller (18) and the rear of the cassette with the thicker part facing up.

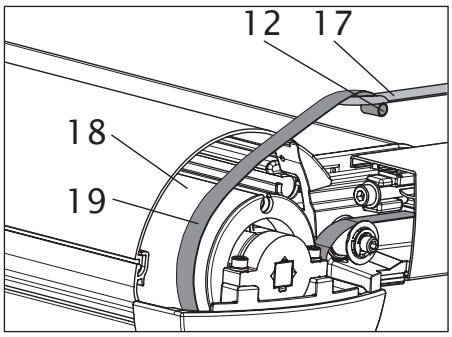


10. Push assembly aid (17) through and guide around the fabric roller (18).



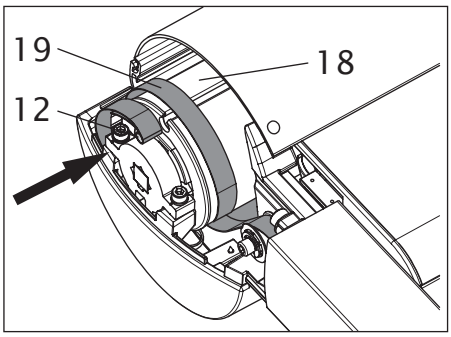
11. Push the lug-end of the drive belt (12) through the slot in the assembly aid (17).

⚠ **Attention!**
Do not twist the drive belts!

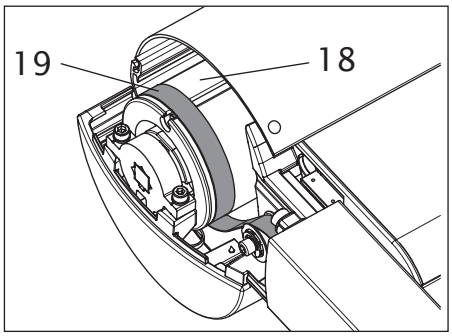


12. Pull the assembly aid back out (17). In so doing the drive belt (19) is guided around the underside of the fabric roller (18). Detach the lug-end of the drive belt (12) from the assembly aid.

13. ⚠ **Attention!**
The drive belt has to be passed around the fabric roller a second time, so push the assembly aid through again and repeat paragraphs 9. to 12.

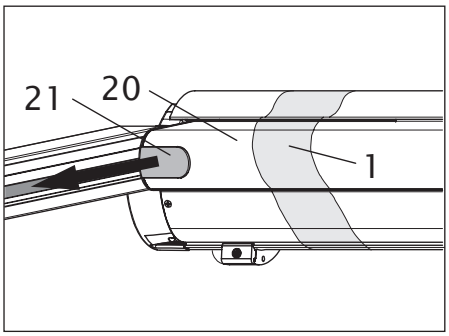


14. Slip the lug-end of the drive belt (12) underneath the first wrap of drive belt (19) and insert it into the keyway in the fabric roller (18).

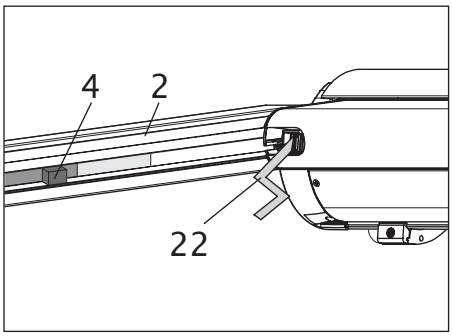


15. ⚠ **Attention!**
Ensure that the belt rolls up cleanly on itself on the fabric roller (18). Do not twist the drive belt (19)!

Repeat points 3. to 15. at the right side.



16. Remove protective foil (1) from the front profile (20). Pull off sealing cap (21) from the projection profile (right and left).



17. Remove the remaining polystyrene blocks holding the drive belt in place (4) from the guide track profile (2) (on both the right and left). Let the drive belt guiding aid with Velcro (22) hang out from the projection profile.

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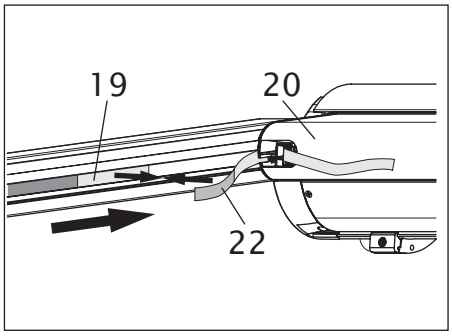
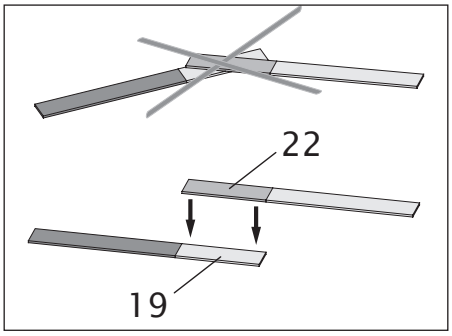
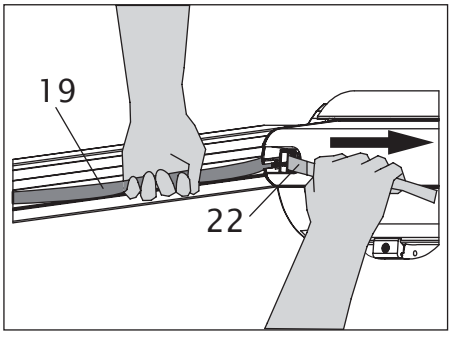


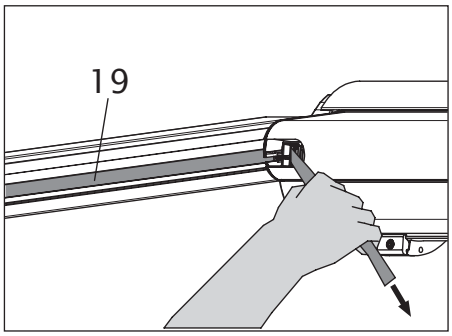
18. Pull the free end of the drive belt with fluffy velcro (19) towards the front profile (20) and connect it to the red end of the velcro strip (22) (right and left track profile).



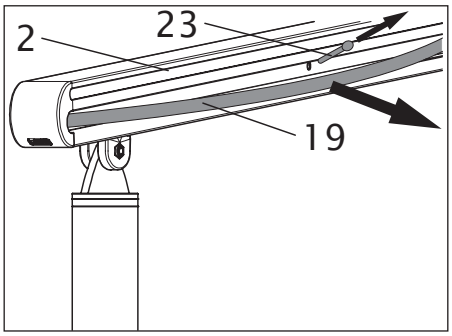
19. ⚠ **Attention!**
The coloured end of the velcro strip (22) must be in line with the fluffy velcro end of the drive belt (19) and they must be connected over their entire surfaces.



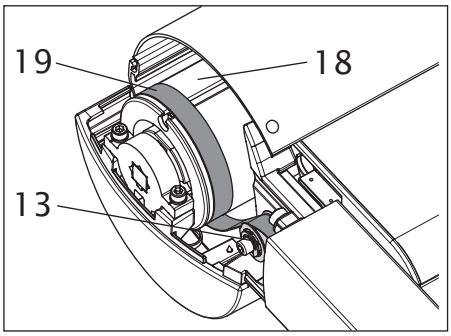
20. Carefully pull the drive belt (19) around the tensioning module with the help of the velcro strip (22) (see chapter 7 - course taken by the drive belt) While doing this, the drive belt must be held slightly under tension at both ends. Avoid forced or jerky pulling actions (both right and left). Avoid forced or jerky pulling actions (both right and left).



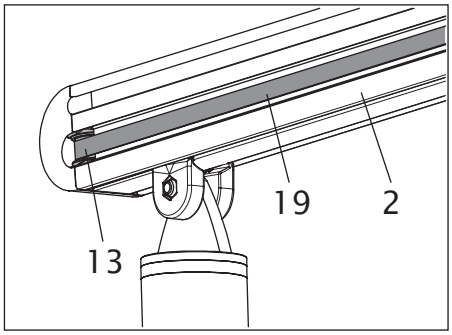
21. Tension the drive belt (19), so that it does not flutter and cannot be twisted. Place the free end of the drive belt into the projection profile (right and left).



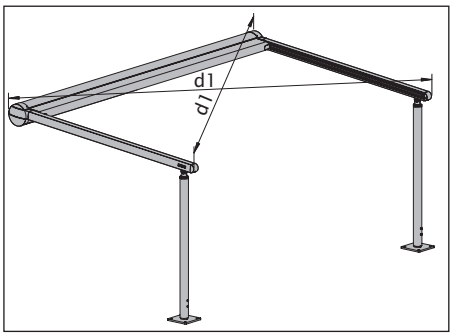
22. By pulling the drive belt (19) out of the guide track (2), put pressure on the tensioning module until the split-pin (23) can be withdrawn easily (on both the right and left). The awning is now under tension.



23. At the inspection openings check drive belts (19) for twisting and correct seating on the fabric roller (18) and the belt rollers (13).

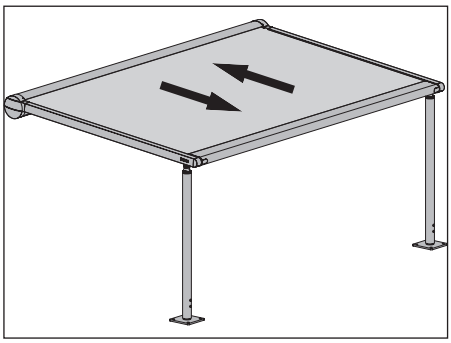


24. At the inspection openings check drive belts (19) in the guide tracks (2) for twisting and correct seating on the belt rollers (13).



25. Measure the awning diagonally (d1) and align, as otherwise smooth functioning is not guaranteed.

⚠ **Attention!**
It is important that the guide tracks are parallel. The max. fixture tolerance (in particular for the tracfix function) is 3 mm as otherwise smooth operation cannot be guaranteed. Subsequently tighten all screws of the fixture brackets.



26. Extend and retract the awning for functional testing.

⚠ **Attention!**
The lower end position is not programmed for the standard motor without radio. Take care that the extension profile does not damage the conservatory when moving the awning. Make sure you stop before. See also chapter 8. motor drive.

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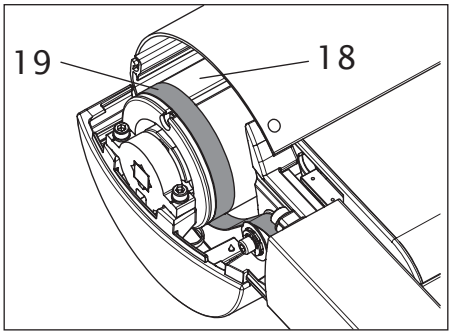
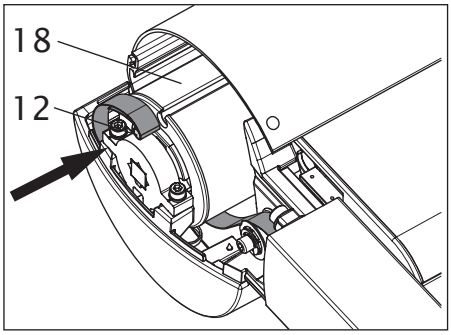
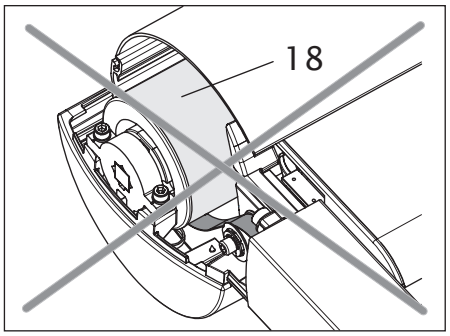


27. Check the position of the drive belt (19) on the fabric roller (18) when the awning is retracted. Ideally, the fabric roller will be in the position shown. The transport band envelops the fabric roller with 1.5 wrappings.

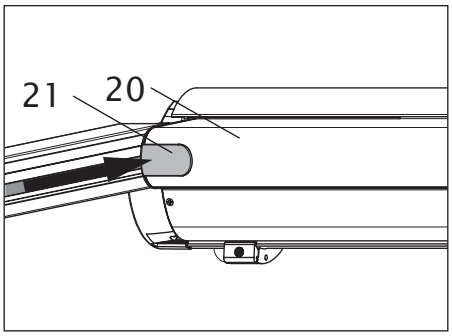


28. If, when the first wrap of the drive belt has been unwound, the lug in the drive belt (12) is in the upper area of the fabric roller (18), then trouble-free operation of the awning is still guaranteed.

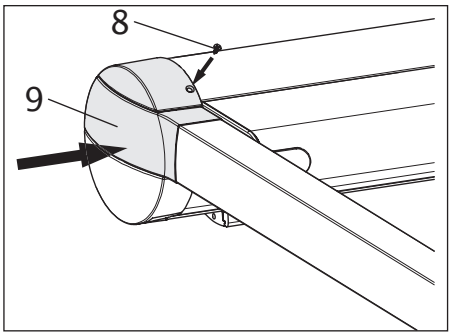
⚠ **Attention!**
Check if the awning cover is tensioned sufficiently in central position, see chapter 7.1 What to do if.... If the position of the drive belt is incorrect, see points 27. to 29..



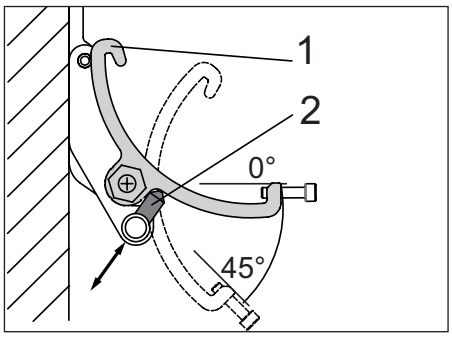
29. Should there be no drive belt left on the fabric roller (18), paragraphs 9. to 15. have to be repeated. For this purpose the gas piston has to be secured again as described in chapter 6 "What to do, if....".



30. Roll up the drive belt together with the length of Velcro, insert it into the front profile (20) and put on the end cap (21) [right and left].



31. On both end caps fix the inspection covers again (9) using the countersunk head screws (8).



32. For markilux pergola 210:
⚠ Loosen the threaded pin (2) at the bracket (1) on the side of the lowerable post, lower the support and tighten threaded pin again with the post lowered.

33. **NOTE!**

After the assembly and a trial run have been carried out for markilux pergola 110 and 210:

Slightly unscrew the threaded pin (2) at the mounting brackets (1), see fig. under point 32, so that the entire system does not tension incorrectly in case of different thermal expansion.

34. **NOTE!**

During the first retraction and extension of units with a **drop exceeding 5 m**, a tighter winding of the cover onto the fabric roller might occur. This may lead to a decrease in cover tension or to a lower tension of the gas piston. Please refer to chapter 7.

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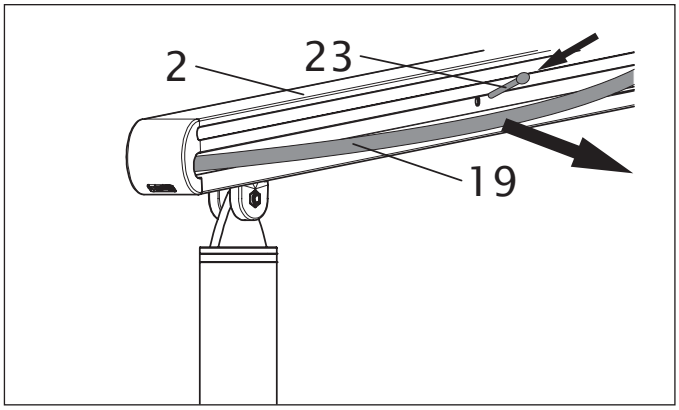
7. What to do, if...

7.1 ...the awning has no tension in the middle position?



By pulling the drive belt (19) out of the guide track (2), bring the hole in the internal gas piston into line with that of the guide track and re-insert the split-pin (23) (**on both the right and the left**).

The drive belts are now now longer under tension and the clamping module is held securely in position.

Now tighten the drive belts as described in paragraph 21 and tension the awning again as in paragraph 22.

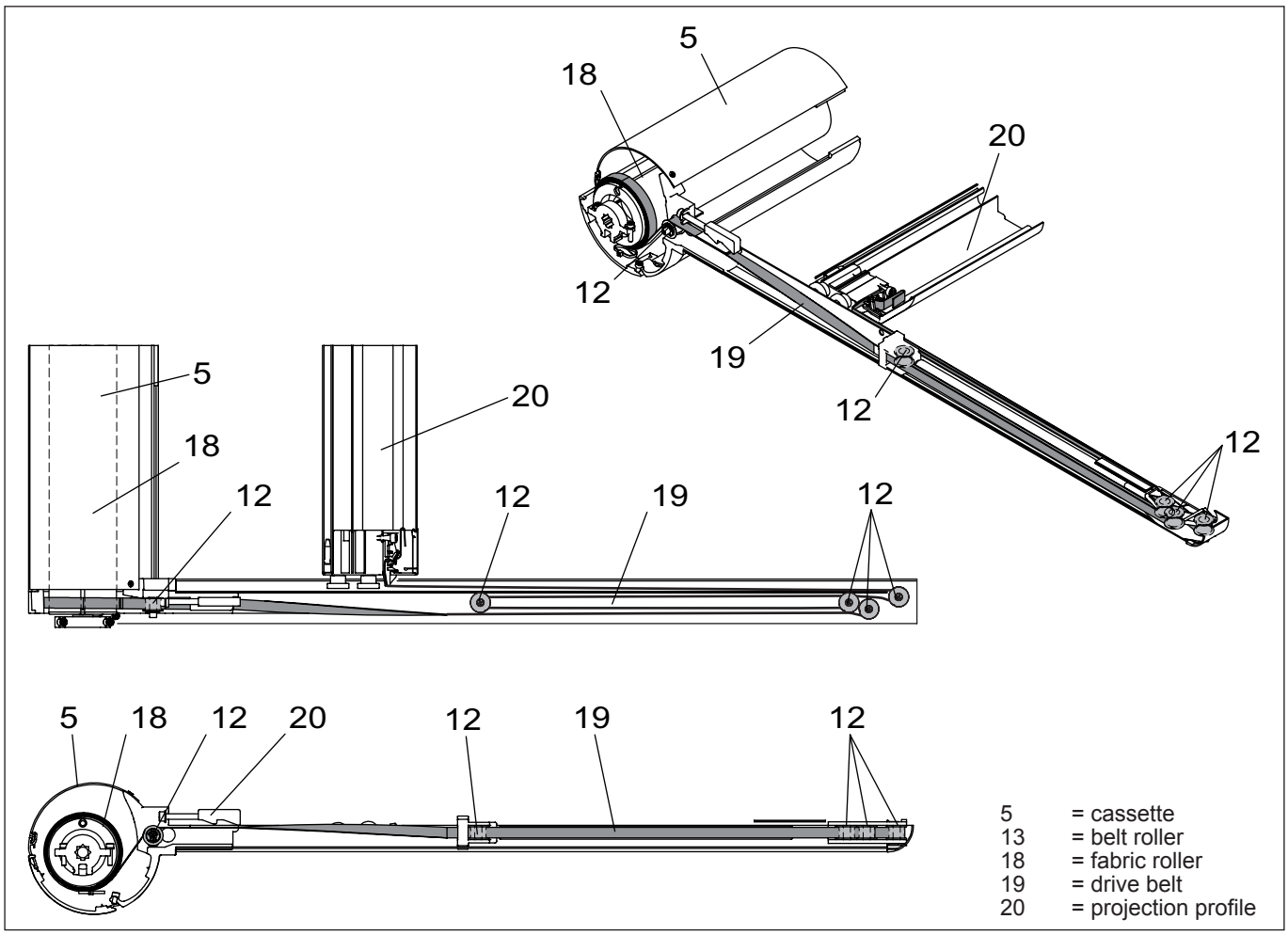
7.2 ...the projection profile stops prior to reaching the end stop point?

Different cover thickness leads to different winding behaviour, which can influence the gas piston and lead to the projection profile stopping prior to reaching the end stop point. In this case extra drive belt has to be allocated both **right and left.**

1. Extend the awning as far as possible.
2. Remove the belt cap and remove the drive belt from the projection profile.
3. Tension the drive belt with one hand, keep it in this position and thus securing it. Press the belt clamp and slacken the drive belt for about 10 cm. Release the belt clamp.
4. Extend awning completely.
5. Pull the drive belt at the projection profile until it cannot be pulled anymore.
6. Now tension the drive belt again with one hand, keep it in this position and thus securing it. With the second hand press the belt clamp and slacken the belt for approx. 6 cm. Release the belt clamp.
7. Check retraction and extension of the system.

If the system stops again prematurely, repeat point 1-7. Slacken more drive belt (point 6).
If the projection profile does not close properly or if the awning is not tensioned uniformly, continue with chapter 7.1.

8. Course of the drive belt



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9. Motor drive

9.1 Motor connection

The electrical connection for the motor drive and/or control system connection is to be carried out according to the instructions of the manufacturer of the motor and control system. Modifications, especially concerning the motor, the control system and the connecting supply lines require authorisation in writing.

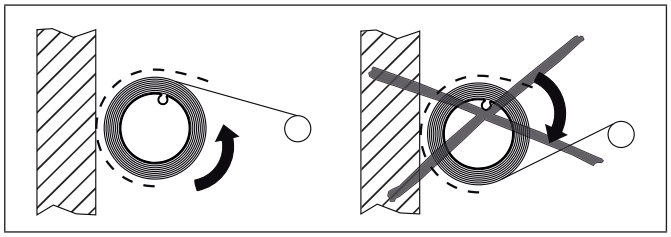
The installation and setting-up instructions are attached to the motor's power supply cable. Instructions for further electric components are inside the belonging package. Radio motors are supplied with an additional note on setting the motor on the awning. The installed motor switches off on reaching **a rated performance for the upper limit position (torque auto-stop function).**

⚠ **Attention!**
The lower limit position has to be adjusted in accordance with the motor instructions for a standard motor (stop on reaching a particular awning position: point stop). This setting is not set in the factory.

The lower limit position is preset for RTS motors.

Instructions for further electric components are inside the belonging package.

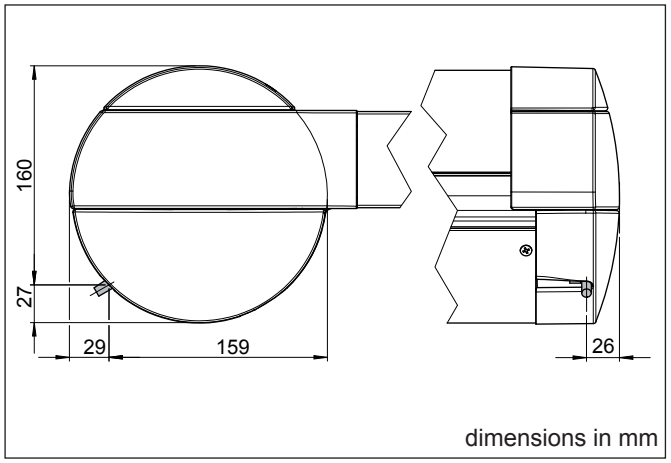
Sense of rotation during retraction:



⚠ **Attention!**
The rolling up of the fabric on the fabric roller from below during retraction could lead to damage to the awning. Should you need to change the end stops, it is indispensable to pay attention to the sense of rotation!

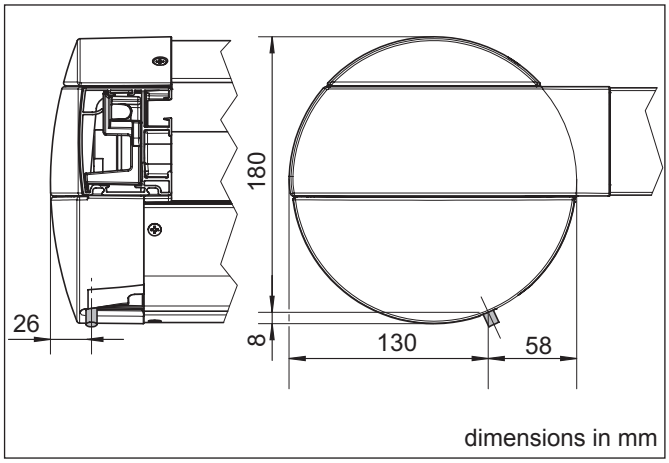
Cable exit at motorised version

cable exit at the back (standard):



dimensions in mm

cable exit below (optional):



dimensions in mm

9.2 Motor connection data markilux pergola 110 / 210

markilux pergola 110 / 210	wireless (433 MHz)	U = 230 V~ / 240 W, 50 Hz, I = 1.10 A
	with radio IO technology (868 - 870 MHz)	U = 230 V~ / 240 W, 50 Hz, I = 1.10 A
	wired	U = 230 V~ / 246 W, 50 Hz, I = 1.20 A

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markilux Handover Declaration

GB

For the users of vertical blinds and conservatora awnings

markilux awnings for exterior use conform to the standard EN 13561 for awnings and thus to the current technical requirements in relation to their construction and installation brackets.

The wind resistance class the installation conforms to, is determined specifically by the type and number of fixture brackets as well as the fixture substrate being fitted to.

The awning **may be used only up to the wind resistance class declared permissible by the installing company**. This **may differ** from the wind resistance class specified in the CE conformity mark.

In accordance with its knowledge of local conditions and the type of installation it has carried out, the installing company shall inform the user as to whether the wind resistance class permitted by markilux has been met and shall document the actual wind resistance class met by the installation.

Automatic control mechanisms are to be adjusted so that they react to the appropriate wind resistance class.

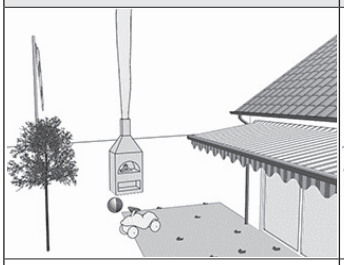
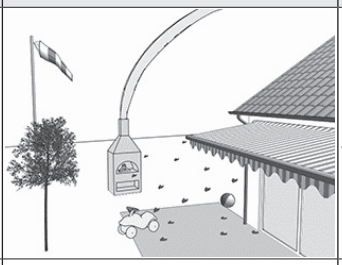
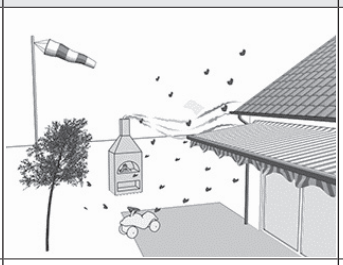
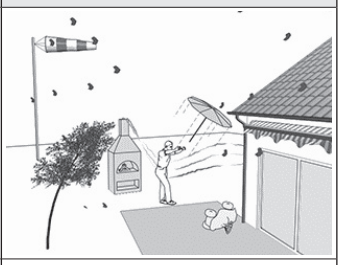
CE

markilux
Schmitz-Werke GmbH & Co.KG
Hansestraße 87
D-48282 Emsdetten

DIN EN 13561
Blinds and awnings for exterior applications

wind resistance class 2
markilux 710/810, 720/820, 725/825, 750/850, 730/830, 740/840, 745/845, 893, 876/876 tracfix (depending on size), 869/869 tracfix (depending on size), and 8850

wind resistance class 3
markilux 760/860, 620 tracfix, 660 tracfix, 876/876 tracfix (depending on size), 869/869 tracfix (depending on size), 780/880, 8800/8800 tracfix and pergola

wind resistance class 0	wind resistance class 1	wind resistance class 2	wind resistance class 3
			
Wind resistance class 0 corresponds either to performance criteria that we were not asked to meet or to those that have not been measured or to a product that does not fulfil the requirements of wind resistance class 1.	The awning may remain extended up to a maximum of Beaufort force 4.	The awning may remain extended up to a maximum of Beaufort force 5.	The awning may remain extended up to a maximum of Beaufort force 6.
	Definition according to Beaufort: **moderate breeze, moderate wind** The wind moves twigs and smaller branches, lifts dust and loose paper.	Definition according to Beaufort: **fresh breeze, fresh wind** Small deciduous trees begin to sway, white crests forms on seas	Definition according to Beaufort: **strong breeze** Large boughs move, umbrellas are difficult to keep under control, telephone wires "whistle" in the wind
Use only under supervision. The awning must be retracted if there is any wind.	wind speed 5.5-7.4 m/s = 20-27 km/h = 12-16 mph	wind speed 7.5-10.4 m/s = 28-37 km/h = 17-23 mph	wind speed 10.5-13.4 m/s = 38-48 km/h = 24-30 mph

The user was duly informed as the operation of the awning: ☐ yes ☐ no

Following documents have been handed to the user:

- Operation manual ☐ yes ☐ no
- Installation and setting instructions supplied by the motor, switch and control unit manufacturer(s) (if available) ☐ yes ☐ no

The awning may be used under the following conditions:

Wind: [X] permissable up to wind resistance class [ ] = wind speed [ ]

Rain: [ ] permissable by completely extended awning
[ ] not permitted whith angle of inclination belox 25% = 14°, measured from the horizontal plane

Danger of frost and snow: [X] not permitted

Date: _____ Signature of fitter: _____

Signature of user*: _____

* with your signature you confirm that you have received a copy of the handover declaration!

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01-09-15

markilux Handover Declaration

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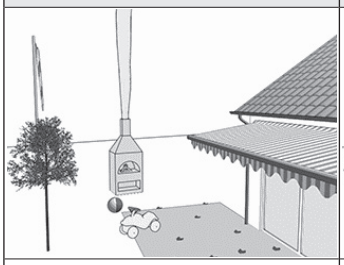
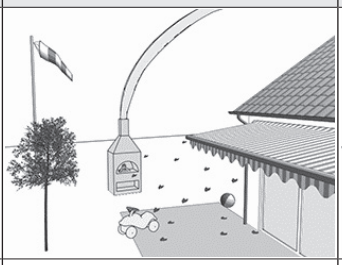
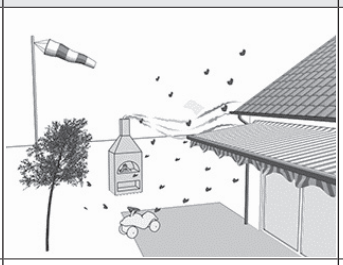
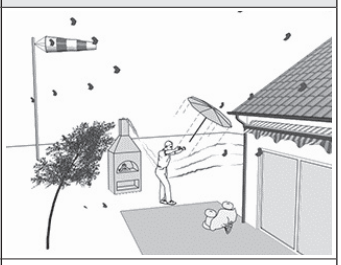
wind resistance class 0	wind resistance class 1	wind resistance class 2	wind resistance class 3
			
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01-09-15