HELLA

# Technical Documentation

AF 50 - 80 - 100

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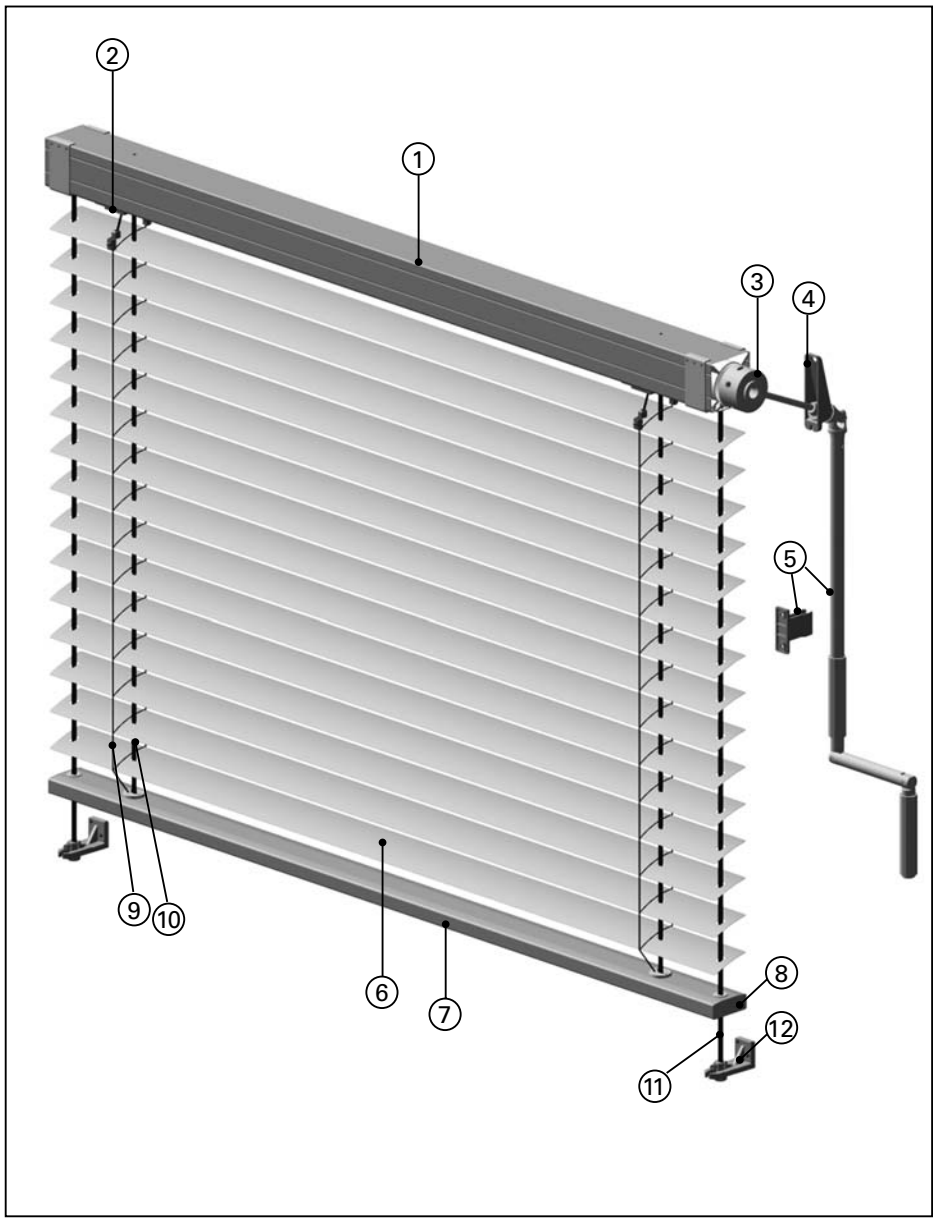
**Types: AF 50, AF 80, AF 100**

# Crank Handle Operated Exterior Venetian Blind - 50 mm

**Type: AF 50 K**






AF 50- K view: Crank handle operated exterior venetian blind

1) Top rail 58 x 56 mm made of galvanised sheet steel (cutting edges without surface treatment)
2) Plastic blind-bearing
3) Crank handle gear
4) Bearing
5) Crank rod with folding handle and plastic or magnetic holder
6) Slat 50 x 0.24 mm
7) Bottom rail 50 x 18.6 mm made of aluminium, extruded and powder-coated
8) Plastic end cap for bottom rail
9) Ladder cord for 50 mm slats
10) Lifting tape 6.0 x 0.28 mm
11) Lateral tensioning
12) Wire bracket or tensioning shoe with clamping screw

### Field of Application and Use

Exterior venetian blind with low-noise wind protection device, suitable for large door and window openings up to a surface area of 20 m².

### Benefits of the Product

- Sun protection
- Anti-glare blind
- Light regulation
- View protection
- Design of the facade
- Long durability due to top quality components

### Operation

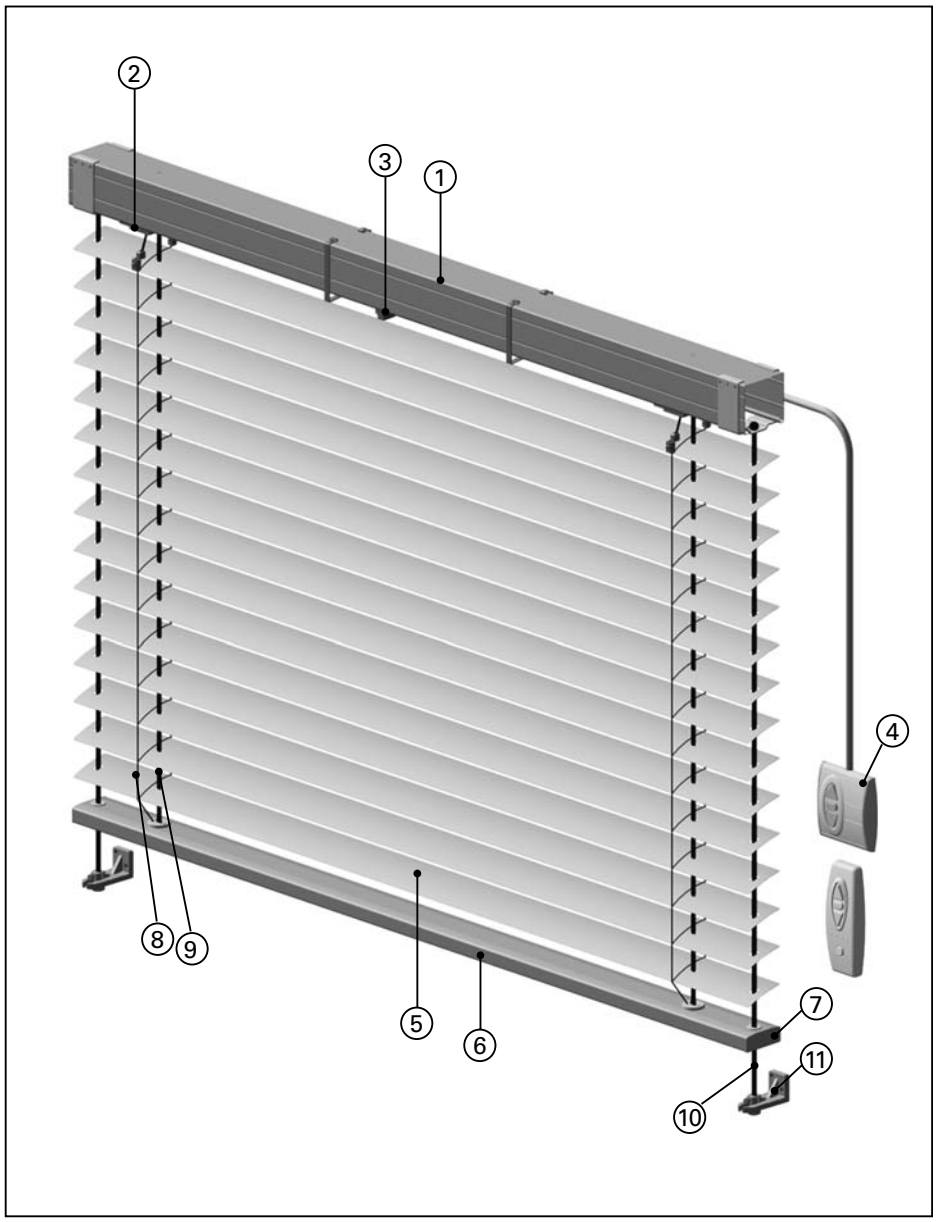
Raising and lowering the blind and tilting of the slats via crank handle and smooth-running bevel gear unit. Seen from the inside, the blind can be operated from the right or left side depending on the customer's preference.

### Installation

According to requirements, the blind can be installed outside on the window frame or door-frame, in a shaft provided by customers or in front of the window recess (see installation location and dimensioning instructions).

# Electrically Operated Exterior Venetian Blind - 50 mm

**Type: AF 50- M**




AF 50- M view: Outdoor blind with motor drive

1) Top rail 58 x 56 mm made of galvanised sheet steel (cutting edges without surface treatment)
2) Plastic blind-bearing
3) Electric motor
4) Switch or control device according to requirements (surcharge)
5) Slat 50 x 0.24 mm
6) Bottom rail 50 x 18.6 mm made of aluminium, extruded and powder-coated
7) Plastic end cap for bottom rail
8) Ladder cord for 50 mm slats
9) Lifting tape 6.0 x 0.28 mm
10) Lateral tensioning
11) Wire bracket or tensioning shoe with clamping screw

**Field of Application and Use**

Convenient exterior venetian blind with low-noise wind protection device, also suitable for large door and window openings up to a surface area of 20 m².

**Benefits of the Product**

- Sun protection
- Anti-glare blind
- Light regulation
- View protection
- Design of the facade
- Long durability due to top quality components
- Conveniently operated with an electric drive

**Operation**

Raising and lowering the blind and tilting of the slats via conveniently operated electric drive. The electric motor with integrated limit switch can be operated via control systems, remote control or automatic device, if desired (accessories for a surcharge). A control device is compulsory if several motors are to be operated by one switch.

**Installation**

According to requirements, the blind can be installed outside on the window frame or door-frame, in a shaft provided by customers or in front of the window recess (see installation location and dimensioning instructions).

# Tender Specification and Limit Sizes

**Type: AF 50**

### Top Rail

U-shaped moulded cold roll profile, galvanised and bordered on both edges; dimensions 58 x 56 mm. (Cutting edges without surface treatment.)
For a surcharge, top rail with extruded aluminium, dimensions 59 x 59.5 mm, if requested.
Installation with galvanised steel brackets and integrated fixing devices for cover to discreetly hide the clamps of the protection cover.

### Bottom Rail

Extruded, closed aluminium profile, powder-coated or naturally anodised. Dimensions 50 x 18.6 mm.
Closed with plastic end caps.

### Slats

Slightly curved aluminium slats made from highly elastic special alloy, bend proof, scratchproof and shockproof, 2-layer stove enamelled (incl. on the longitudinal edges); slat width 50 mm, slat thickness 0.24 mm.

### Slat Guide (Wind Protection Device)

Standard: low-noise stable wire tension system made from braided flat tape, UV-protected, dimensions 4.5 x 1.5 mm. For a surcharge, alternative: wire tension, polyamide-coated steel cord, polyamide-coated stainless steel cord or shiny stainless steel cord. All variations dimensions: ø 3 mm. Punched through the ends of all the slats, stretched taught using a wire bracket of die-cast aluminium with nipple.

### Tilting Device

Standard: Tilting device without a working position tilting both ways. When lowering the blind, it is closed towards the exterior, smooth tilting process when changing direction of movement, when raising the blind, it is closed towards the interior.
For a surcharge (if requested, or standard at AF 50L): Variotec-bearing with working position. Blind lowers in the shading position (approx. 50°), when it reaches the bottom end position the blind closes completely, smooth tilting process when changing direction of movement, blind raises in the horizontal position. (Adjustable and lockable with a short upward motion at any height).

### Ladder Cord

High-strength shrink-resistant terylene-polyester.
For a surcharge with transverse tensioning, joined to every slat non-positively (double Omega-punching), if requested.

### Lifting Tape

Anti-friction coated lifting tapes for a run with minimum wear and tear and maximum UV-protection, dimensions 6.0 x 0.28 mm, tear-proof at 750N, guaranteed thickness tolerance in the range of 1/100 mm.

### Crank Handle Operation

Raising and lowering the blind and repositioning the slats using a crank handle. Maintenance-free bevel gear unit with gear reduction 2:1, duct into the interior via bearing, powder-coated aluminium crank rod with folding handle and crank holder. For a surcharge, end stops at the top and bottom via limit stop.

### Electric Operation

Raising and lowering the blind and repositioning the slats using an electric motor (230 V/AC). Drive with integrated planetary gear, end switch at the top and bottom, thermo-protection switch to prevent overloading the motor. Tilting of the slats is enabled by lightly touching the switch in the respective direction. If several motors should be activated with one switch, a control unit is necessary.

### Protection Cover, Half-box, Whole-Box

Technical description in the tender specification "Covers".

| Model | Min. Width | | max. Height | max. Surface | max. Surface |
|---|---|---|---|---|---|
| Manual operation | without limit stop | with limit stop | [mm] | [mm] | [m²] |
| **AF 50 K** | 340 | 360 | 5.000 | 5.200 | 20 |
| **AF 50 K*** | 340 | 400 | 5.000 | 5.200 | 20 |
| Motorised operation | Standard Motor | Object Motor | [mm] | [mm] | [m²] |
| **AF 50 M (Elero)** | 490 | 490 | 5.000 | 5.200 | 20 |
| **AF 50 M (Elero)*** | 520 | 520 | 5.000 | 5.200 | 20 |
| **AF 50 M (Somfy)** | 570 | 520 | 5.000 | 5.200 | 20 |
| **AF 50 M (Somfy)*** | 610 | 555 | 5.000 | 5.200 | 20 |

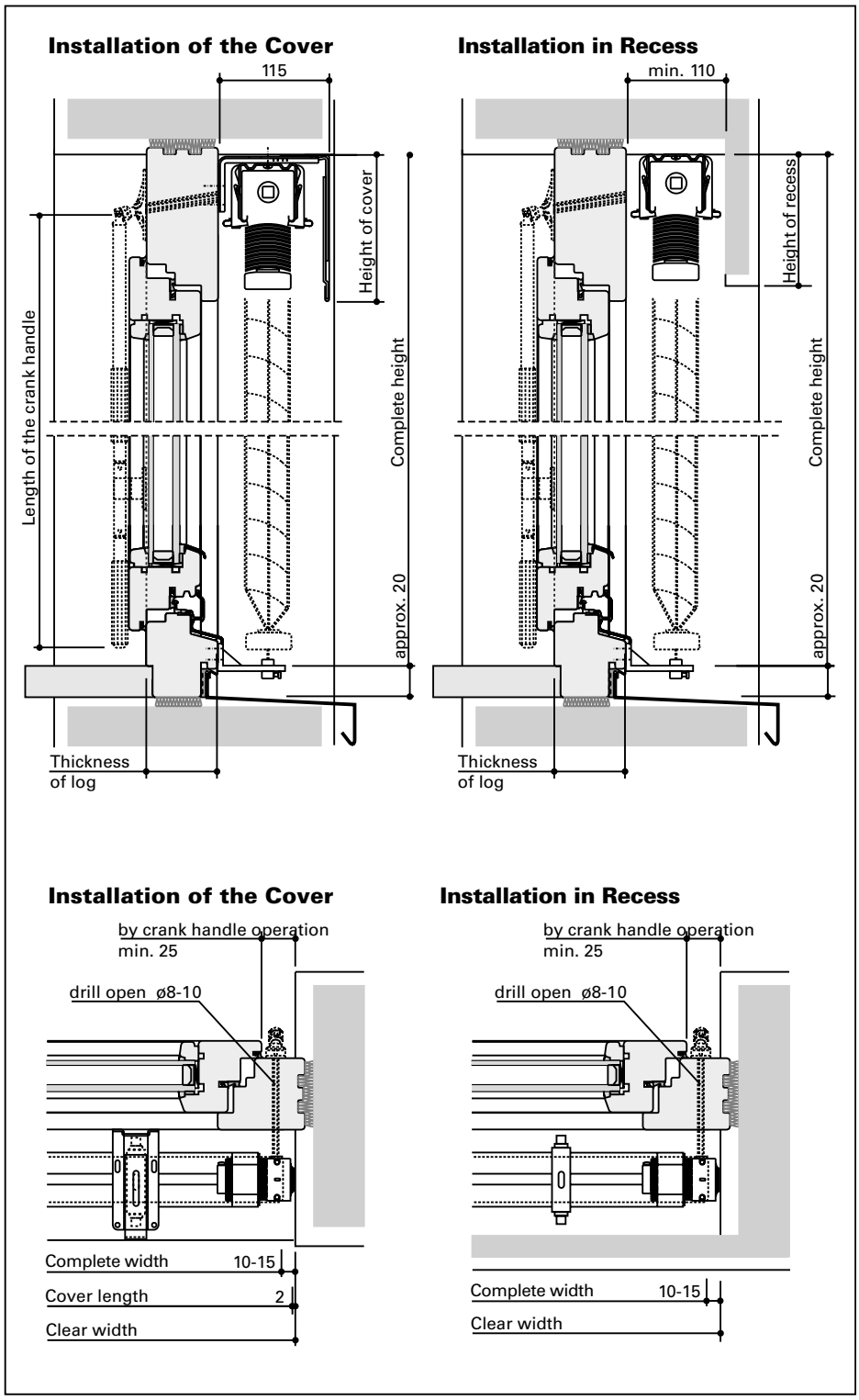
* ..... or rather at blind with tilting device with working position
as regards: a) model with working position
b) model with light control function

| Height of Blind [mm] | Height of package [mm] | Height of cover [mm] |
|---|---|---|
| 800 | 120 | 130 |
| 1.200 | 130 | 140 |
| 1.600 | 140 | 150 |
| 2.000 | 155 | 165 |
| 2.400 | 165 | 175 |
| 2.800 | 175 | 185 |

| Height of Blind [mm] | Height of package [mm] | Height of cover [mm] |
|---|---|---|
| 3.200 | 185 | 195 |
| 3.600 | 195 | 205 |
| 4.000 | 195 | 205 |
| 4.400 | 210 | 220 |
| 4.800 | 230 | 240 |
| 5.200 | 240 | 240 |

# Installation Location and Dimensioning Instructions

**Type: AF 50**

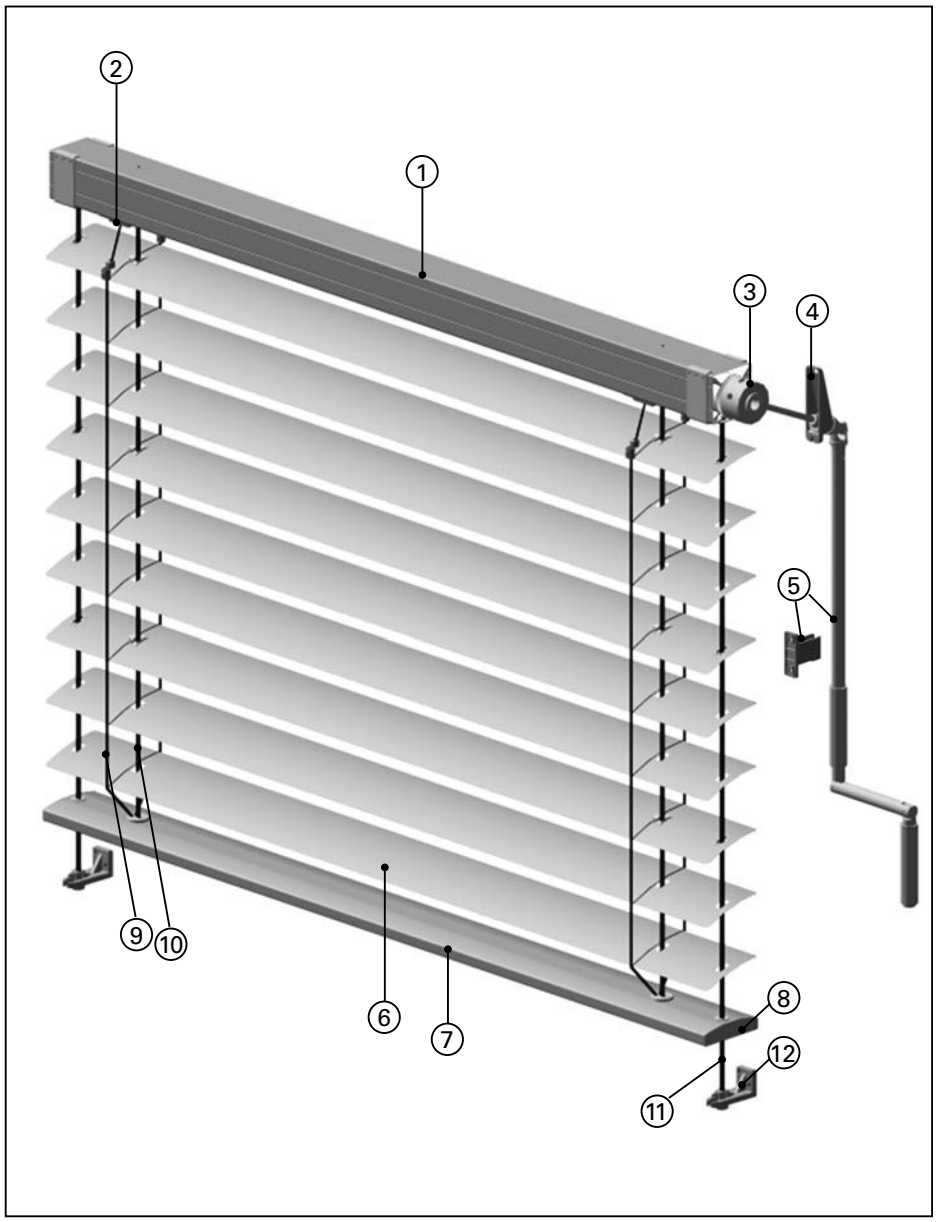



**References**

1) Quantity
2) Blind type
3) Colour of the slats, inside fittings, any special colours
4) Complete width = minimum clear width of 3 measuring points minus 20-30 mm
5) Complete height = minimum clear height minus 20-30 mm
6) Specify operating issue
7) Specify depth of duct
8) Operating side
9) Specify length of the crank rod
10) Specify crank passage
11) Type of installation
12) Type and colour of the cover
13) Cover width = clear width, cover height according to table
14) Specially designed models, possibly to be made clear with sketches

# Crank Handle Operated Exterior Venetian Blind - 80 mm

**Type: AF 80 K**




AF 80- K view: Crank handle operated exterior venetian blind

1) Top rail 58 x 56 mm made of galvanised sheet steel (cutting edges without surface treatment)
2) Plastic blind-bearing
3) Crank handle gear
4) Bearing
5) Crank rod with folding crank and plastic or magnetic holder
6) Slat 80 x 0.44 mm
7) Bottom rail 80 x 18.6 mm made of aluminium, extruded and powder-coated
8) Plastic end cap for bottom rail
9) Ladder cord for 80 mm slats
10) Lifting tape 6.0 x 0.28 mm
11) Lateral tensioning
12) Wire bracket or tensioning shoe with clamping screw

**Field of Application and Use**

Exterior venetian blind with low-noise wind protection device, suitable for large door and window openings up to a surface area of 20 m².

**Benefits of the Product**

- Sun protection
- Anti-glare blind
- Light regulation
- View protection
- Design of the facade
- Long durability due to top quality components

**Operation**

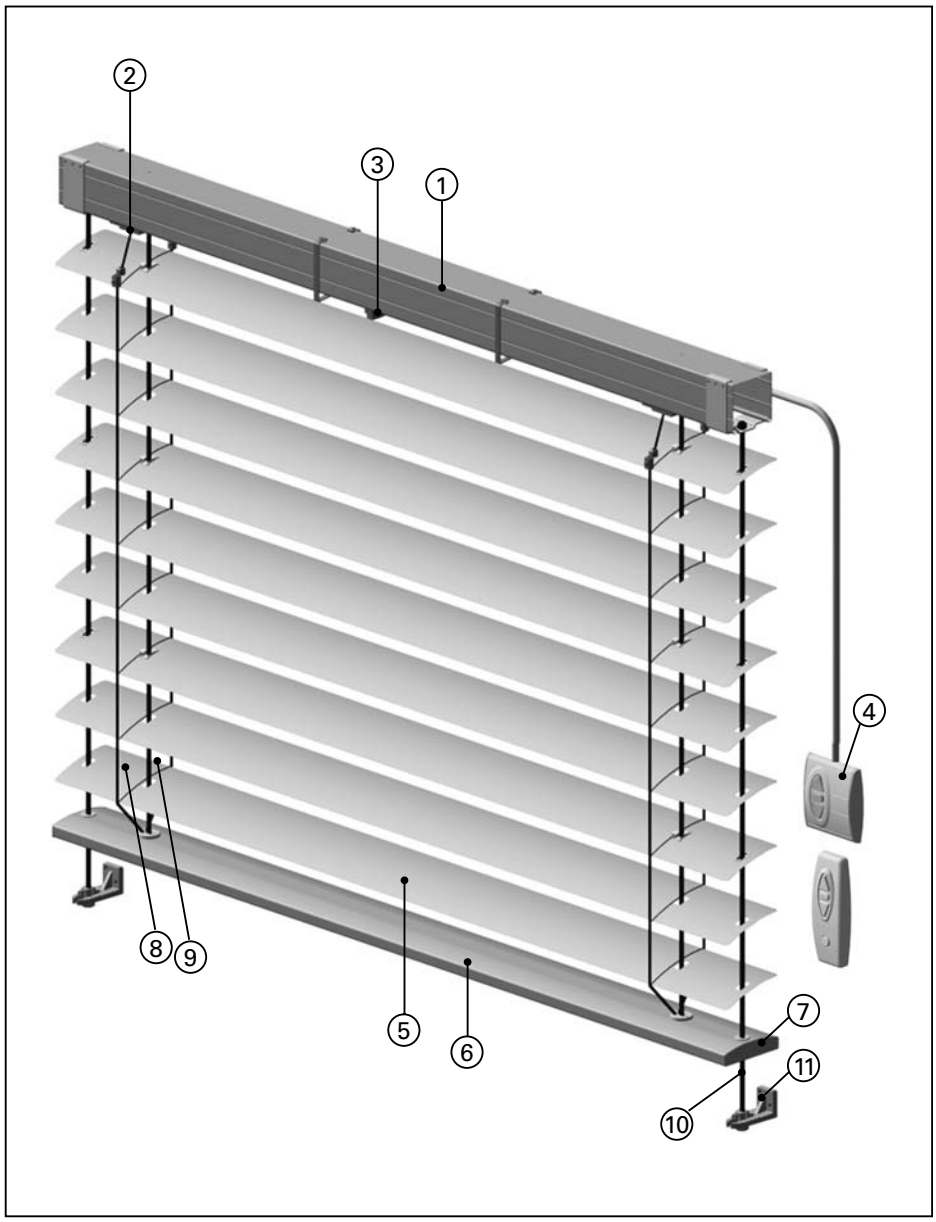
Raising and lowering the blind and tilting of the slats via crank handle and smooth-running bevel gear unit. Seen from the inside the blind can be operated from the right or left side depending on the customer's preference.

**Installation**

According to requirements, the blind can be installed outside on the window frame or doorframe, in a shaft provided by customers or in front of the window recess (see installation location and dimensioning instructions).

# Electrically Operated Exterior Venetian Blind - 80 mm

**Type: AF 80- M**




AF 80- M view: Outdoor blind with motor drive

1) Top rail 58 x 56 mm made of galvanised sheet steel (cutting edges without surface treatment)
2) Plastic blind-bearing
3) Electric motor
4) Switch or control device according to requirements (surcharge)
5) Slat 80 x 0.44 mm
6) Bottom rail 80 x 18.6 mm made of aluminium, extruded and powder-coated
7) Plastic end cap for bottom rail
8) Ladder cord for 80 mm slats
9) Lifting tape 6.0 x 0.28 mm
10) Lateral tensioning
11) Wire bracket or tensioning shoe with clamping screw

**Field of Application and Use**

Convenient exterior venetian blind with low-noise wind protection device, also suitable for large door and window openings up to a surface area of 20 m².

**Benefits of the Product**

- Sun protection
- Anti-glare blind
- Light regulation
- View protection
- Design of the facade
- Long durability due to top quality components
- Conveniently operated with an electric drive

**Operation**

Raising and lowering the blind and rotation of the slats via conveniently operated electric drive. The electric motor with integrated limit switch can be operated via control systems, remote control or automatic device, if desired (accessories for a surcharge). A control device is compulsory, if several motors are to be operated by one switch.

**Installation**

According to requirements, the blind can be installed outside on the window frame or door-frame, in a shaft provided by customers or in front of the window recess (see installation location and dimensioning instructions).

# Tender Specification

**Type: AF 80**

**Top Rail**
U-shaped moulded cold roll profile, galvanised and bordered on both edges; dimensions 58 x 56 mm. For a surcharge, top rail with extruded aluminium, dimensions 59 x 59.5 mm, if requested. (Cutting edges without surface treatment.)
Installation with galvanised steel brackets and integrated fixing device for cover to discreetly hide the clamps of the protection cover.

**Bottom Rail**
Extruded, closed aluminium profile, powder-coated, dimensions 80 x 18.6 mm.
Closed with plastic end caps.

**Slats**
Slightly curved aluminium slats made from highly elastic special alloy, bend proof, scratchproof and shockproof, 2-layer stove enamelled (incl. on the longitudinal edges), slat width 80 mm, slat thickness 0.44 mm.

**Slat Guide (Wind Protection Device)**
Standard: low-noise stable wire tension system made from braided flat tape, UV-protected, dimensions 4.5 x 1.5 mm. If requested, for a surcharge, alternative: wire tension, polyamide-coated steel cord, polyamide-coated stainless steel cord or shiny stainless steel cord. All variations dimensions ø 3mm. Punched through the ends of all the slats, stretched taught using a wire bracket of die-cast aluminium with nipple.

**Tilting Device**
Standard: Tilting device without a working position tilting both ways. When lowering the blind, it is closed towards the exterior, smooth tilting process when changing direction of movement, when raising the blind, it is closed towards the interior.
For a surcharge (if requested, or standard at AF 80L): Variotec-bearing with working position. Blind slides down when in shading position (approx. 50°), when it reaches the bottom end position the blind closes completely, smooth turning process when changing direction of movement, blind slides up horizontally. (Adjustable and lockable with a short upward motion at any height.)

**Side Guide Rails**
Extruded aluminium profile with anti-noise plastic insert.
Dimensions: 20/27, 27/27, 30/80, 30/17, 18/20.
Installation with adjustable die-cast aluminium brackets, distance as required according to documentation, or sideways into the wall-lighting, with the option of being buried or visible.
Round extruded aluminium side guide rails ø 45 with anti-noise plastic insert.
Installation standard with adjustable brackets consisting of a powder-coated die-cast aluminium distance bracket and die-cast zinc Collinox-coated clamping lock.

**Ladder Cord**
High-strength shrink-resistant terylene-polyester.
For a surcharge with transverse tensioning, linked to every slat non-positively (double Omega-punching), if requested.

**Lifting Tape**
Anti-friction coated lifting tapes for a run with minimum wear and tear and maximum UV-protection, dimensions 6.0 x 0.28 mm, tear-proof at 750N, guaranteed thickness tolerance in the range of 1/100 mm.

**Crank Handle Operation**
Raising and lowering the blind and repositioning the slats using a crank handle. Maintenance-free bevel gear unit with gear reduction 2:1, duct into the interior via bearing, powder-coated aluminium crank rod with folding handle and crank holder. If requested, for a surcharge, end stops at the top and bottom via limit stop.

**Electric Operation**
Raising and lowering the blind and repositioning the slats using an electric motor (230 V/AC). Drive with integrated planetary gear, end switch at the top and bottom, thermo-protection switch to prevent overloading the motor. Tilting of the slats is enabled by lightly touching the switch in the respective direction. If several motors should be activated with one switch, a control unit is necessary.

**Protection Cover, Half-Box, Whole-Box**
Technical documentation "Boxes and Covers".

**Square Box, Round Box, Facade Box**
Technical documentation "Boxes and Covers".

# Limit Sizes

**Type: AF 80**

| Model | Min. Width | | Max. Width | Max. Height | Max. Surface |
|---|---|---|---|---|---|
| Manual operation | without limit stop | with limit stop | [mm] | [mm] | [m²] |
| **AF 80K** | 340 | 360 | 5.000 | 5.200 | 14 |
| **AF 80 K*** | 340 | 400 | 5.000 | 5.200 | 14 |
| Motorsied operation | Standard Motor | Object Motor | [mm] | [mm] | [m²] |
| **AF 80 M (Elero)** | 490 | 490 | 5.000 | 5.200 | 20 |
| **AF 80 M (Elero)*** | 520 | 520 | 5.000 | 5.200 | 20 |
| **AF 80 M (Somfy)** | 570 | 520 | 5.000 | 5.200 | 20 |
| **AF 80 M (Somfy)*** | 610 | 555 | 5.000 | 5.200 | 20 |

* ..... or rater at blind with tiling device with working postion (Variotec)
as regards: a) model with working positon
b) model with light control function

**Note:** minimum width is always based on the length of the slats; with guide rails, the respective side guid rail subtraction must be added on (see table).

## Standard Heights of Packages

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 120 | 130 |
| 1.200 | 125 | 135 |
| 1.600 | 135 | 145 |
| 2.000 | 145 | 155 |
| 2.400 | 155 | 165 |
| 2.800 | 160 | 170 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 3.200 | 170 | 180 |
| 3.600 | 180 | 190 |
| 4.000 | 190 | 200 |
| 4.400 | 200 | 210 |
| 4.800 | 205 | 215 |
| 5.200 | 215 | 225 |

## Heights of Packages with Clip in each Slat

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 135 | 145 |
| 1.200 | 155 | 165 |
| 1.600 | 175 | 185 |
| 2.000 | 195 | 205 |
| 2.400 | 215 | 225 |
| 2.800 | 230 | 240 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 3.200 | 255 | 265 |
| 3.600 | 270 | 280 |
| 4.000 | 290 | 300 |
| 4.400 | 310 | 320 |
| 4.800 | 330 | 340 |
| 5.200 | 350 | 360 |

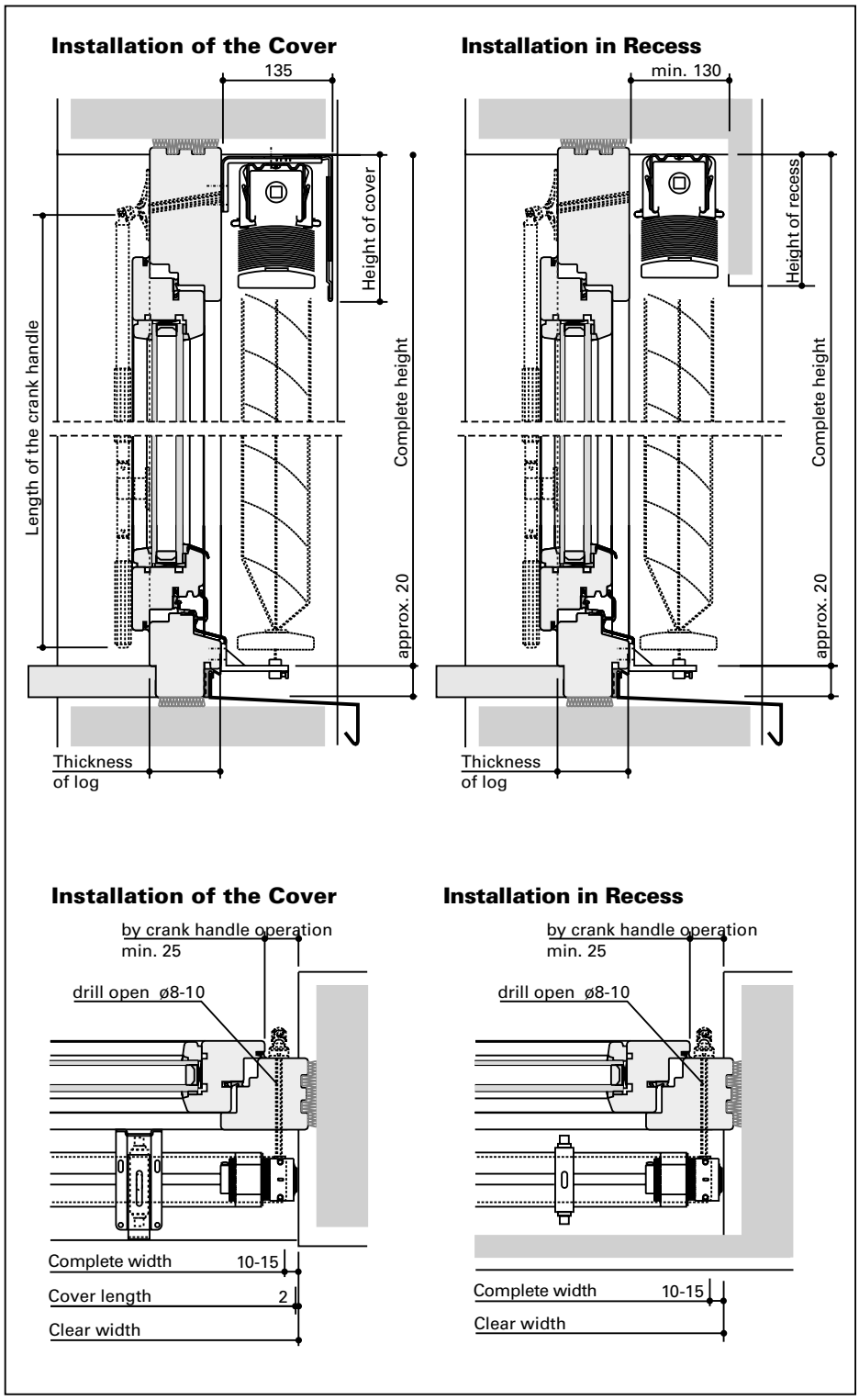
## Heights of Packages with Guide Pin in every 4th Slat

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 125 | 135 |
| 1.200 | 130 | 140 |
| 1.600 | 145 | 155 |
| 2.000 | 155 | 165 |
| 2.400 | 170 | 180 |
| 2.800 | 175 | 185 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 3.200 | 185 | 195 |
| 3.600 | 200 | 210 |
| 4.000 | 205 | 215 |
| 4.400 | 220 | 230 |
| 4.800 | 230 | 240 |
| 5.200 | 235 | 245 |

# Installation Location and Dimensioning Instructions

**Type: AF 80**

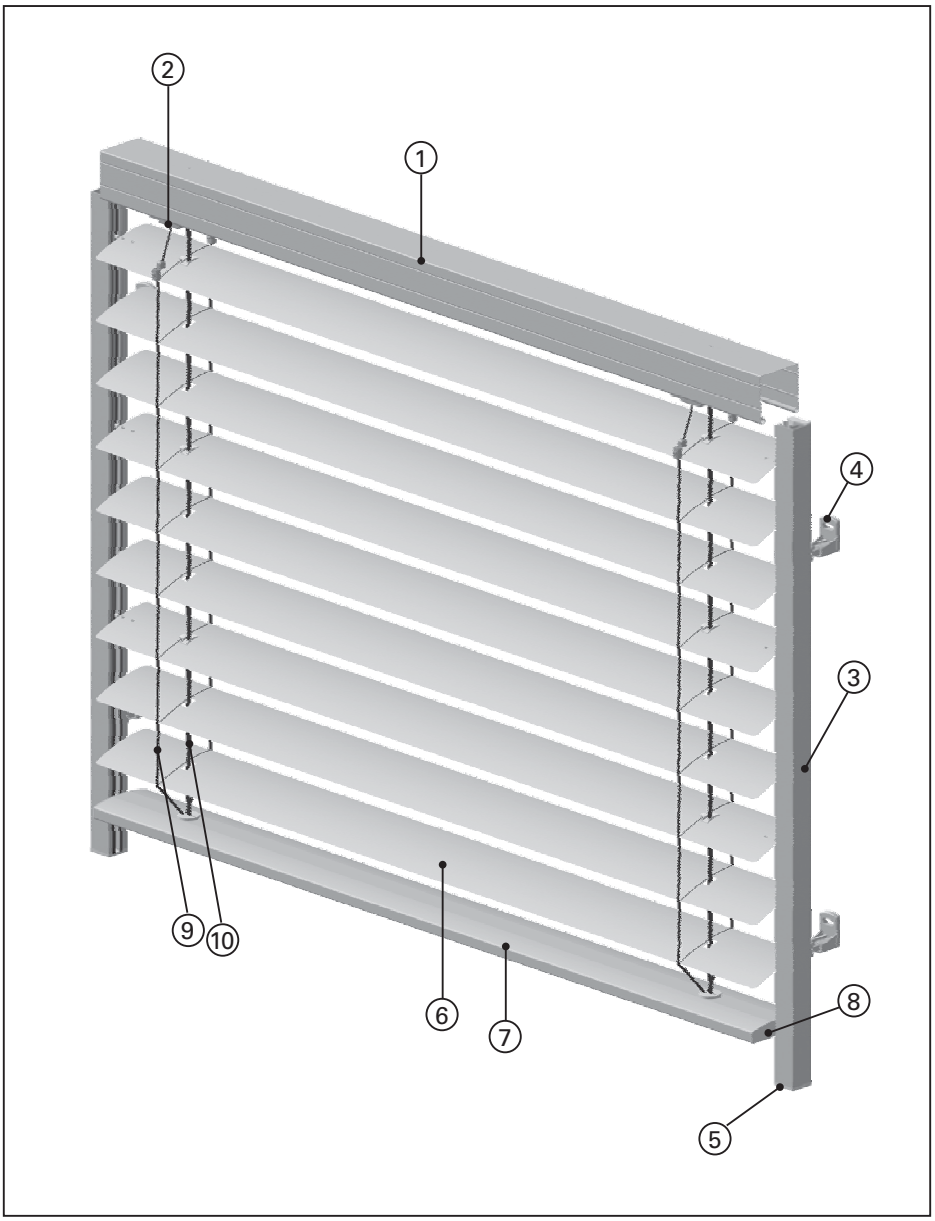



**References**

1) Quantity
2) Blind type
3) Colour of the slats, inside fittings, any special colours
4) Complete width = minimum clear width of 3 measuring points minus 20-30 mm
5) Complete height = minimum clear height minus 20 - 30 mm
6) Specify operating issue
7) Specify depth of duct
8) Operating side
9) Specify length of the crank rod
10) Specify crank passage
11) Type of installation
12) Type and colour of the cover
13) Cover width = clear width, cover height according to table
14) Specially designed models, possibly to be made clear with sketches

# Exterior Venetian Blind 80 mm with Side Guide Rail

**Type: AF 80 with side guide rail**




AF 80 view: Exterior venetian blind with side guide rail

1) Top rail 58 x 56 mm made of galvanised sheet steel (cutting edges without surface treatment)
2) Plastic blind-bearing
3) Side guide rail made of extruded and powder-coated aluminium
4) Adjustable side guide rail bracket
5) Plastic side guide rail end cap
6) Slat 80 x 0.44 mm
7) Bottom rail 80 x 18.6 mm made of extruded and powder-coated aluminium
8) Plastic end caps for bottom rail
9) Ladder cord for 80 mm slats
10) Lifting tape 6.0 x 0.28 mm

**Field of Application and Use**

Exterior venetian blind with side guide rail, also suitable for large door and window openings up to a surface area of 20 m².

**Benefits of the Product**

- Sun protection
- Anti-glare blind
- Light regulation
- View protection
- Design of the facade
- Long durability due to top quality components
- Conveniently operated with a crank drive

**Operation**

Raising and lowering the blind and tilting of the slats via crank handle and smooth-running bevel gear unit or electric motor.

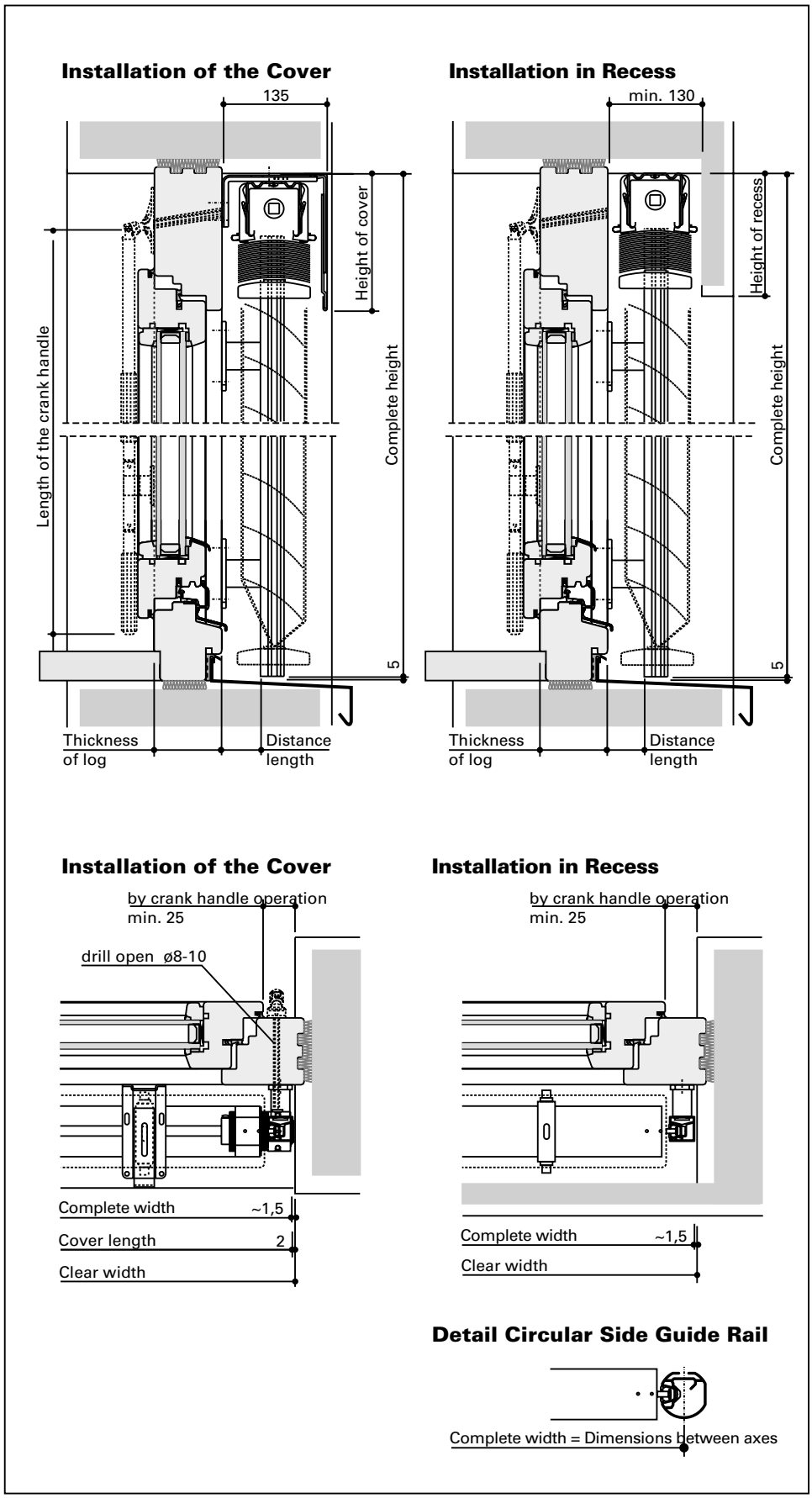
**Installation**

According to requirements, the blind can be installed outside on the window frame or door-frame, in a shaft provided by customers or in front of the window recess (see installation location and dimensioning instructions).

# Installation Location and Dimensioning Instructions

**Type: AF 80 with side guide rail**



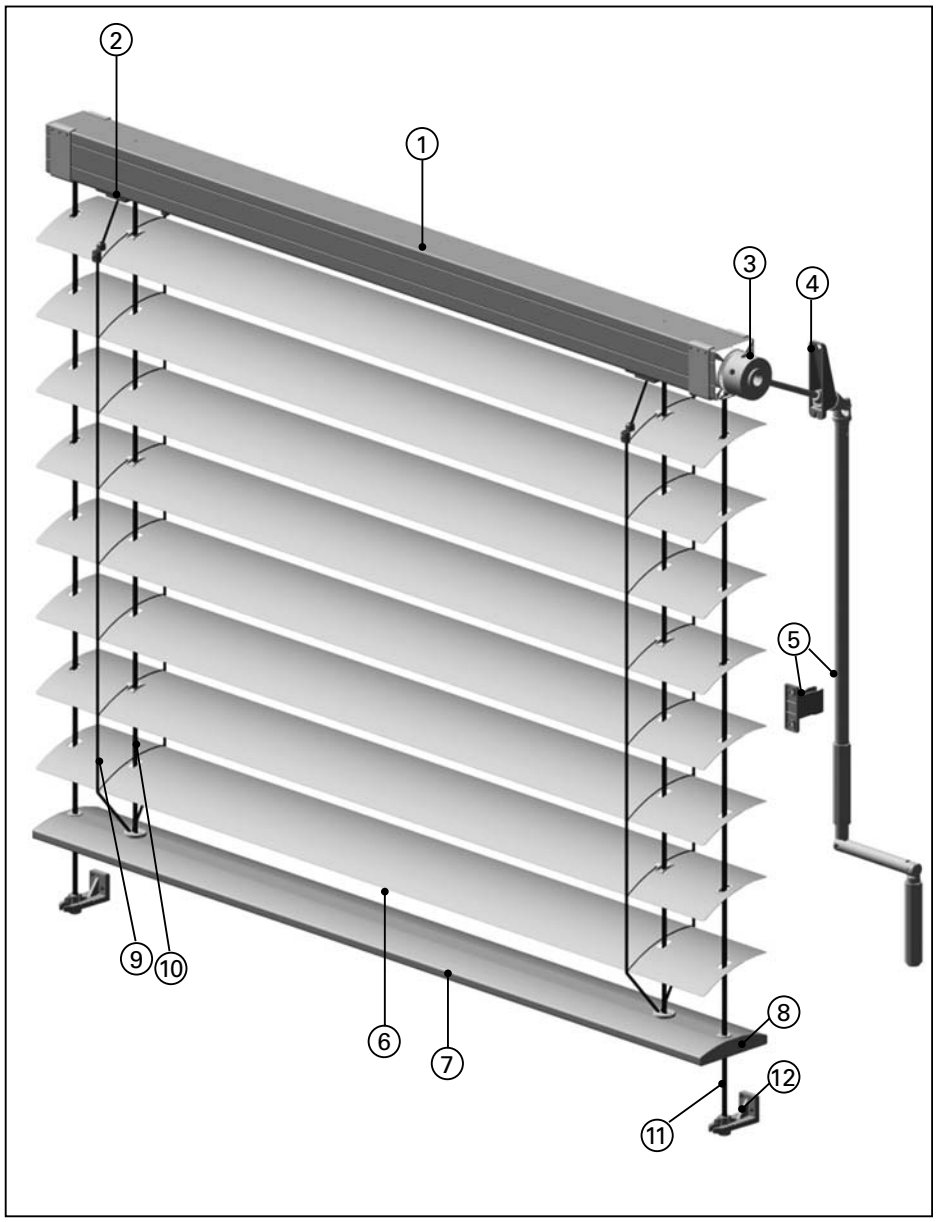



**References**

1) Quantity
2) Blind type
3) Colour of slats, inside fittings, any special colours
4) Complete width = minimum clear width of 3 measuring points minus approx. 3 mm
5) Complete height = minimum clear height minus 5 mm
6) Specify side guide rail type
7) Specify operating issue
8) Specify depth of duct
9) Operating side
10) Specify length of the crank rod
11) Specify crank passage
12) Type of installation
13) Type and colour of the cover
14) Cover width = clear width, cover height according to table
15) Specially designed models, possibly to be made clear with sketches

# Crank Handle Operated Exterior Venetian Blind - 100 mm

**Type: AF 100 K**




AF 100- K view: Crank handle operated exterior venetian blind

1) Top rail 58 x 56 mm made of galvanised sheet steel (cutting edges without surface treatment)
2) Plastic blind-bearing
3) Crank handle gear
4) Bearing
5) Crank rod with folding handle and plastic or magnetic holder
6) Slat 100 x 0.44 mm
7) Bottom rail 100 x 18.6 mm made of aluminium, extruded and powder-coated
8) Plastic end caps for bottom rail
9) Ladder cord for 100 mm slats
10) Lifting tape 6.0 x 0.28 mm
11) Lateral tensioning
12) Wire bracket or tensioning shoe with clamping screw

**Field of Application and Use**

Exterior venetian blind with low-noise wind protection device, suitable for large door and window openings up to a surface area of 20 m².

**Benefits of the Product**

- Sun protection
- Anti-glare blind
- Light regulation
- View protection
- Design of the facade
- Long durability due to top quality components

**Operation**

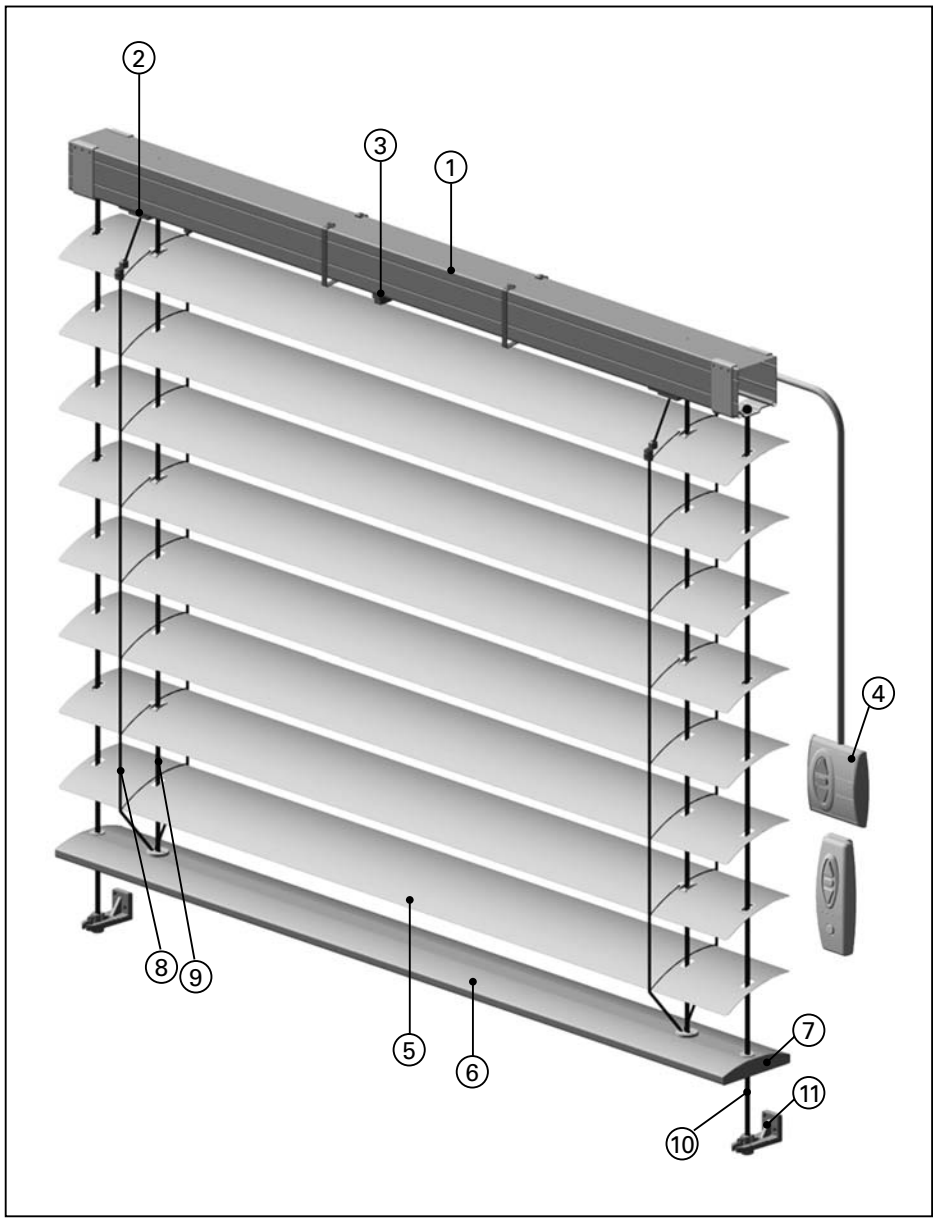
Raising and lowering the blind and tilting of the slats via crank handle and smooth-running bevel gear unit. Seen from the inside, the blind can be operated from the right or left side depending on the customer's preference.

**Installation**

According to requirements, the blind can be installed outside on the window frame or door-frame, in a shaft provided by customers or in front of the window recess (see installation location and dimensioning instructions).

# Motor Operated Exterior Venetian Blind - 100 mm

**Type: AF 100- M**




AF 100- M view: Motor operated exterior venetian blind

1) Top rail 58 x 56 mm made of galvanised sheet steel (cutting edges without surface treatment)
2) Plastic blind-bearing
3) Electric motor
4) Switch or control switch according to requirements (surcharge)
5) Slat 100 x 0.44 mm
6) Bottom rail 100 x 18.6 mm made of aluminium, extruded and powder-coated
7) Plastic end cap for bottom rail
8) Ladder cord for 100 mm slats
9) Lifting tape 6.0 x 0.28 mm
10) Lateral tensioning
11) Wire bracket or tensioning shoe with crampling screw

**Field of Application and Use**

Convenient exterior venetian blind with low-noise wind protection device, also suitable for large door and window openings up to a surface area of 20 m².

**Benefits of the Product**

- Sun protection
- Anti-glare blind
- Light regulation
- View protection
- Design of the facade
- Long durability due to top quality components
- Conveniently operated with an electric drive

**Operation**

Raising and lowering the blind and tilting of the slats via conveniently operated electric drive. The electric motor with integrated limit switch can be operated via control systems, remote control or automatic device, if desired (accessories for a surcharge). A control device is compulsory, if several motors are to be operated by one switch.

**Installation**

According to requirements, the blind can be installed outside on the window frame or door-frame, in a shaft provided by customers or in front of the window recess (see installation location and dimensioning instructions).

# Tender Specification

**Type: AF 100**

**Top Rail**
U-shaped moulded cold roll profile, galvanised and bordered on both edges; dimensions 58 x 56 mm. For a surcharge, top rail with extruded aluminium, dimensions 59 x 59.5 mm, if requested (cutting edges without surface treatment).
Installation with galvanised steel brackets and integrated fixing device for cover to discreetly hide the clamps of the protection.

**Bottom Rail**
Extruded, closed aluminium profile, powder-coated or naturally anodised.
Dimensions 100 x 18.6 mm.
Closed with plastic end caps.

**Slats**
Slightly curved aluminium slats made from highly elastic special alloy, bend proof, scratchproof and shockproof, 2-layer stove enamelled (incl. on the longitudinal edges); slat width 100 mm, slat thickness 0.44 mm.

**Slat Guides (Wind Protection Device)**
Standard: low-noise "stable" wire tension system made from braided flat tape, UV-protected, Dimensions 4.5 x 1.5 mm. For a surcharge, alternative: wire tension, polyamide-coated steel cord, polyamide-coated stainless steel cord or shiny stainless steel cord, if requested. All variations dimensions: ø 3 mm. Punched through the ends of all the slats, stretched taught using a wire bracket of die-cast aluminium with nipple.

**Tilting Device**
Standard: tilting device without a working position with tilting both ways. When lowering the blind, it is closed towards the outside, smooth tilting process when changing direction of movement, when raising the blind, it is closed on the inside. For a surcharge, if requested, (or standard at AF 100L): Variotec-bearing with working position. The blind is in the shading position when lowered (approx. 50°), when it reaches the bottom end position the blind closes completely, smooth tilting process when changing direction of movement, blind raises horizontally. (Adjustable and lockable with a short upwards motion at any height).

**Side Guide Rails**
Extruded aluminium profile with anti-noise plastic insert.
Dimensions: 20/27, 27/27, 30/80, 30/17, 18/20.
Installation with adjustable die-cast aluminium brackets, distance as required according to documentation, or laterally into the wall-clearance, with the option of being buried or visible.
Round extruded aluminium side guide rails ø 45 with anti-noise plastic insert.
Installation standard with adjustable brackets consisting of a powder-coated die-cast aluminium distance bracket and die-cast zinc Collinox-coated clamping lock.

**Ladder Cord**
High-strength shrink-resistant terylene-polyester.
For a surcharge with transverse tensioning, linked to every slat non-positively (double Omega-punching), if requested.

**Lifting Tape**
Anti-friction coated lifting tapes for a run with minimum wear and tear and maximum UV-protection, dimensions 6.0 x 0.28 mm, tear-proof at 750N, guaranteed thickness tolerance in the range of 1/100 mm.

**Crank Handle Operation**
Raising and lowering the blind and repositioning the slats using a crank handle. Maintenance-free bevel gear unit with gear reduction 2:1, duct into the interior via bearing, powder-coated aluminium crank handle rod with folding handle and crank holder. For a surcharge, end stops at the top and bottom via limit stop, if requested.

**Electric Drive**
Raising and lowering the blind and repositioning the slats using an electric motor (230 V/AC). Drive with integrated planetary gear, limit switch at the top and bottom, thermo-protection switch to prevent overloading the motor. Tilting of the slats is enabled by lightly touching the switch in the respective direction. If several motors should be activated with one switch, a control unit is necessary.

**Protection Cover, Half-Box, Whole-Box**
Technical description in the tender specification "Boxes and Covers".

# Limit Sizes

**Type: AF 100**

| Model | Min. Width | | Max. Width | Max. Height | Max. Surface |
|---|---|---|---|---|---|
| Manual operation | without limit stop | with limit stop | [mm] | [mm] | [m²] |
| **AF 100 K** | 340 | 360 | 5.000 | 4.000 | 14 |
| **AF 100 K*** | 340 | 400 | 5.000 | 4.000 | 14 |
| Motorised Operation | Standard Motor | Objekt Motor | [mm] | [mm] | [m²] |
| **AF 100 M (Elero)** | 490 | 490 | 5.000 | 4.000 | 20 |
| **AF 100 M (Elero)*** | 520 | 520 | 5.000 | 4.000 | 20 |
| **AF 100 M (Somfy)** | 570 | 520 | 5.000 | 4.000 | 20 |
| **AF 100 M (Somfy)*** | 610 | 555 | 5.000 | 4.000 | 20 |

* ..... or rather at blind with tilting device with working position
as regards: a) model with working position
b) model with light control function

**Note:** minimum wdth is always based on the lenght of the slats with guide rails, the respectibe side guide rail subtraction must be added on (see table).

## Standard Heights of Packages

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 115 | 130 |
| 1.200 | 125 | 135 |
| 1.600 | 135 | 145 |
| 2.000 | 145 | 155 |
| 2.400 | 150 | 160 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 2.800 | 160 | 170 |
| 3.200 | 170 | 180 |
| 3.600 | 180 | 190 |
| 4.000 | 190 | 200 |
| | | |

## Heights of Packages with Clip in each Slat

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 130 | 140 |
| 1.200 | 150 | 160 |
| 1.600 | 165 | 175 |
| 2.000 | 185 | 195 |
| 2.400 | 200 | 210 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 2.800 | 220 | 230 |
| 3.200 | 240 | 250 |
| 3.600 | 255 | 265 |
| 4.000 | 275 | 285 |
| | | |

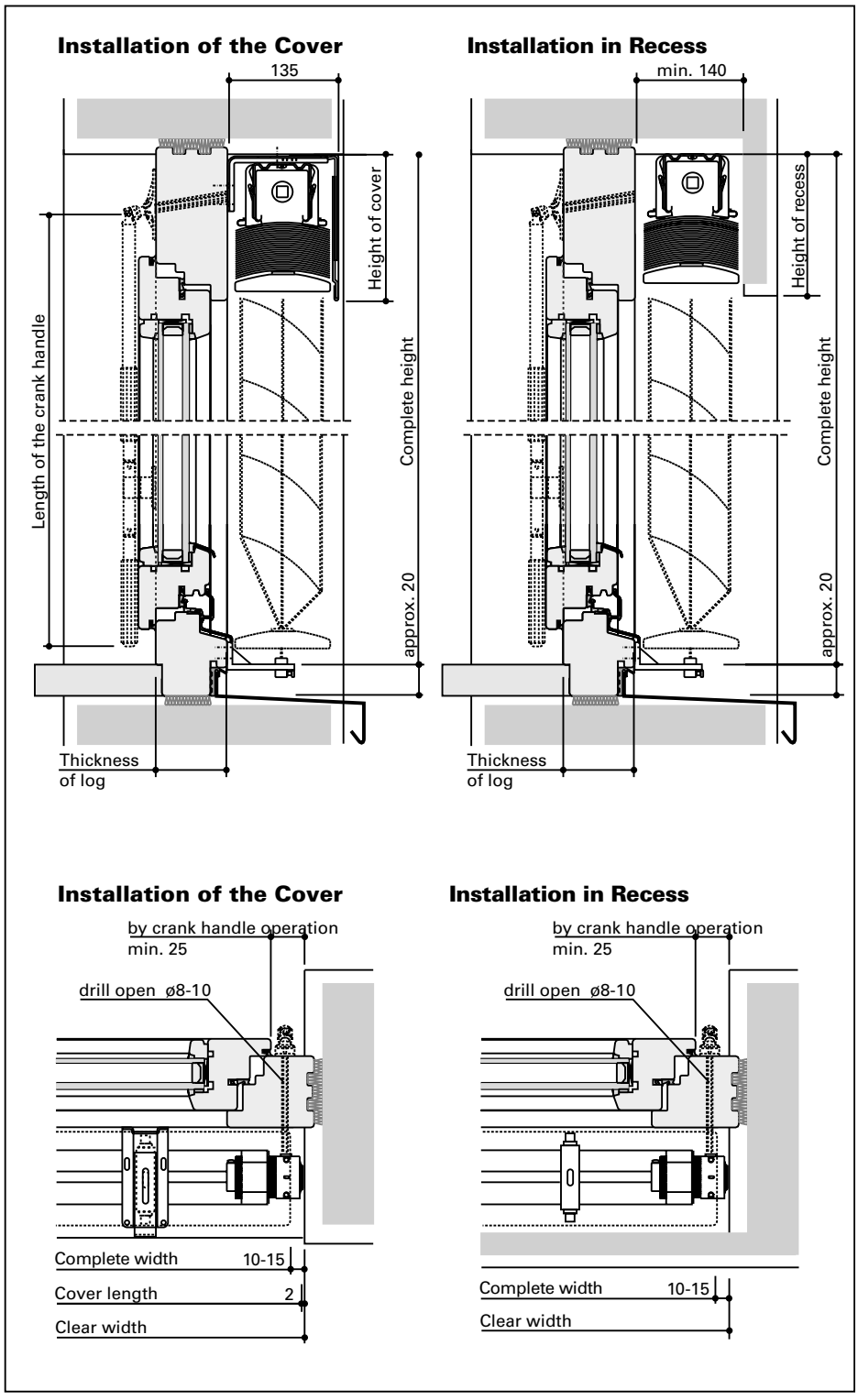
## Heights of Packages with Guide Pin in every 4th Slat

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 125 | 135 |
| 1.200 | 130 | 140 |
| 1.600 | 140 | 150 |
| 2.000 | 145 | 155 |
| 2.400 | 155 | 165 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 2.800 | 160 | 170 |
| 3.200 | 175 | 185 |
| 3.600 | 185 | 195 |
| 4.000 | 190 | 200 |
| | | |

# Installation Location and Dimensioning Instructions

**Type: AF 100**

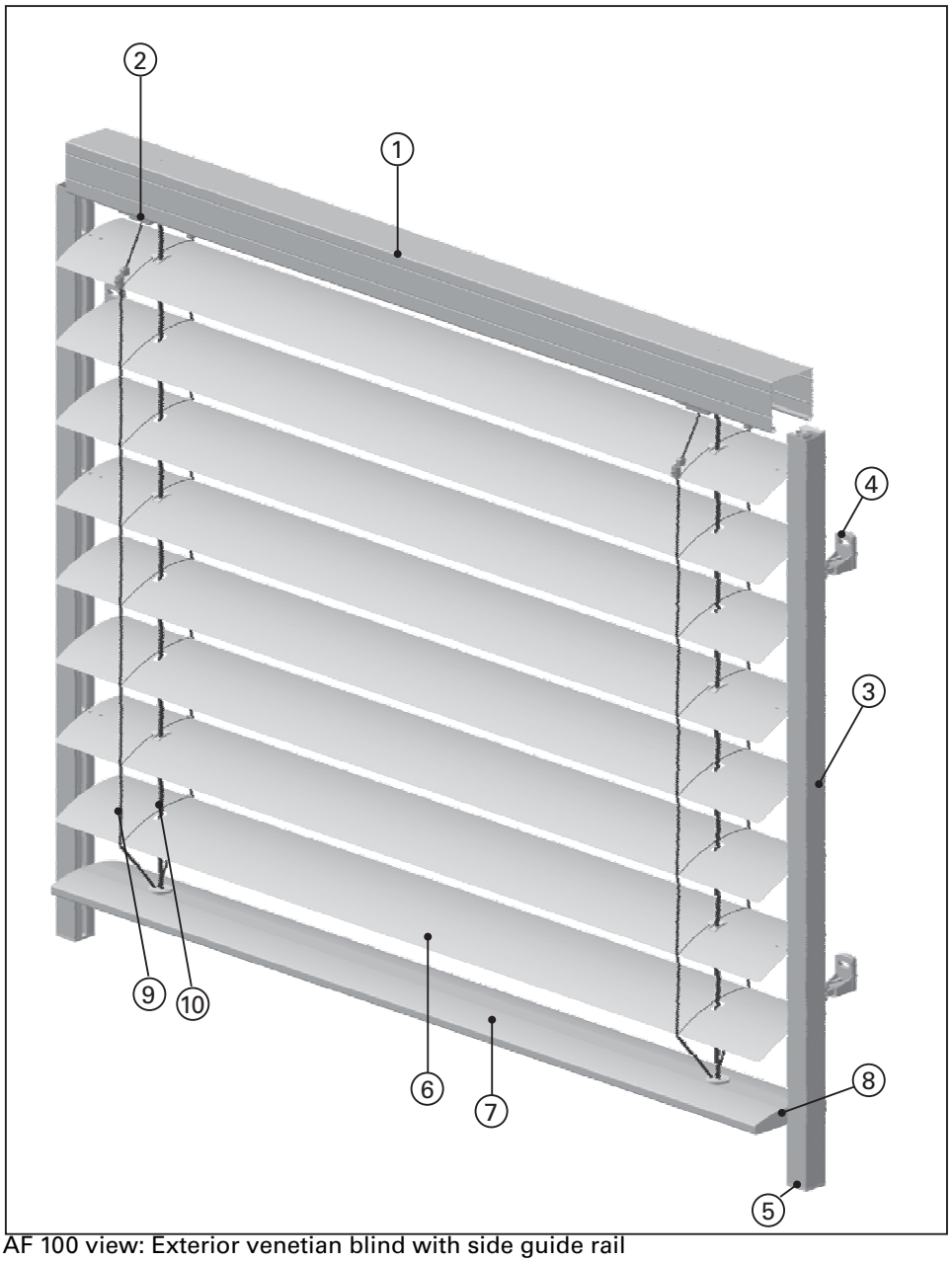



**References**

1) Quantity
2) Blind type
3) Colour of slats, inside fittings, any special colours
4) Complete width = minimum clear width of 3 measuring points minus 20-30 mm
5) Complete height = minimum clear height minus 20 - 30 mm
6) Specify operating issue
7) Specify depth of duct
8) Operating side
9) Specify length of the crank rod
10) Specify crank passage
11) Type of installation
12) Type and colour of the cover
13) Cover width = clear width, cover height according to table
14) Specially designed models, possibly to be made clear with sketches

# Exterior Venetian Blind 100 mm with Side Guide Rail

**Type: AF 100 with side guide rail**




AF 100 view: Exterior venetian blind with side guide rail

1) Top rail 58 x 56 made of galvanised sheet steel (cutting edges without surface treatment)
2) Plastic blind-bearing
3) Side guide rail made of extruded and powder-coated aluminium
4) Adjustable side guide rail bracket
5) Plastic side guide rail end cap
6) Slat 100 x 0.44 mm
7) Bottom rail 100 x 18.6 mm made of aluminium, extruded and powder-coated
8) Plastic end cap for bottom rail
9) Ladder cord for 100 mm slats
10) Lifting tape 6.0 x 0.28 mm

**Field of Application and Use**

Exterior venetian blind with side guide rail, also suitable for large door and window openings up to a surface area of 20 m².

**Benefits of the Product**

- Sun protection
- Anti-glare blind
- Light regulation
- View protection
- Design of the facade
- Long durability due to top quality components
- Conveniently operated with a crank handle operation

**Operation**

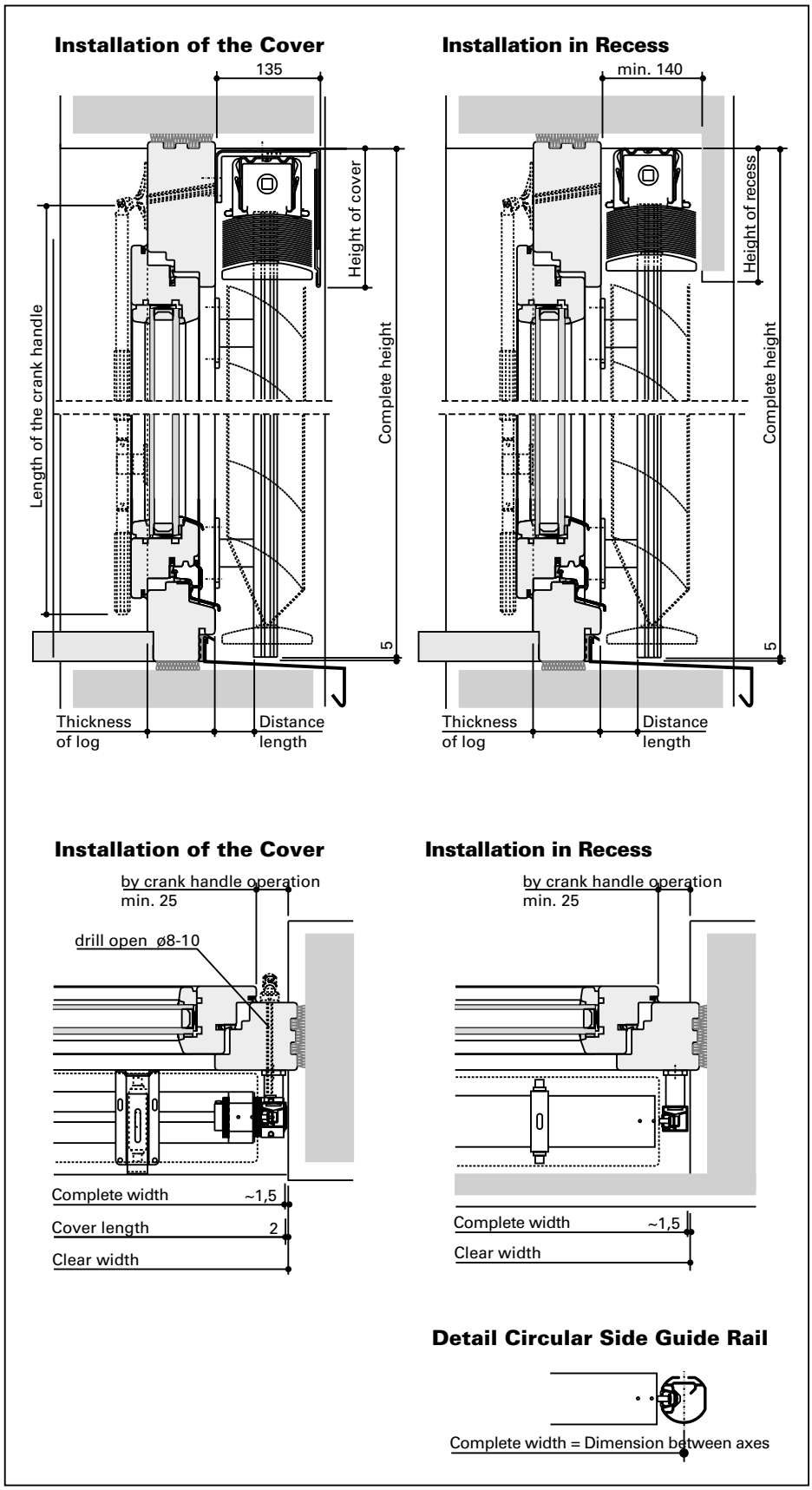
Raising and lowering the blind and tilting of the slats via crank handle and smooth-running bevel gear unit or electric motor.

**Installation**

According to requirements, the blind can be installed outside on the window frame or door-frame, in a shaft provided by customers or in front of the window recess (see installation location and dimensioning instructions).

# Installation Location and Dimensioning Instructions

**Type: AF 100 with side guide rail**

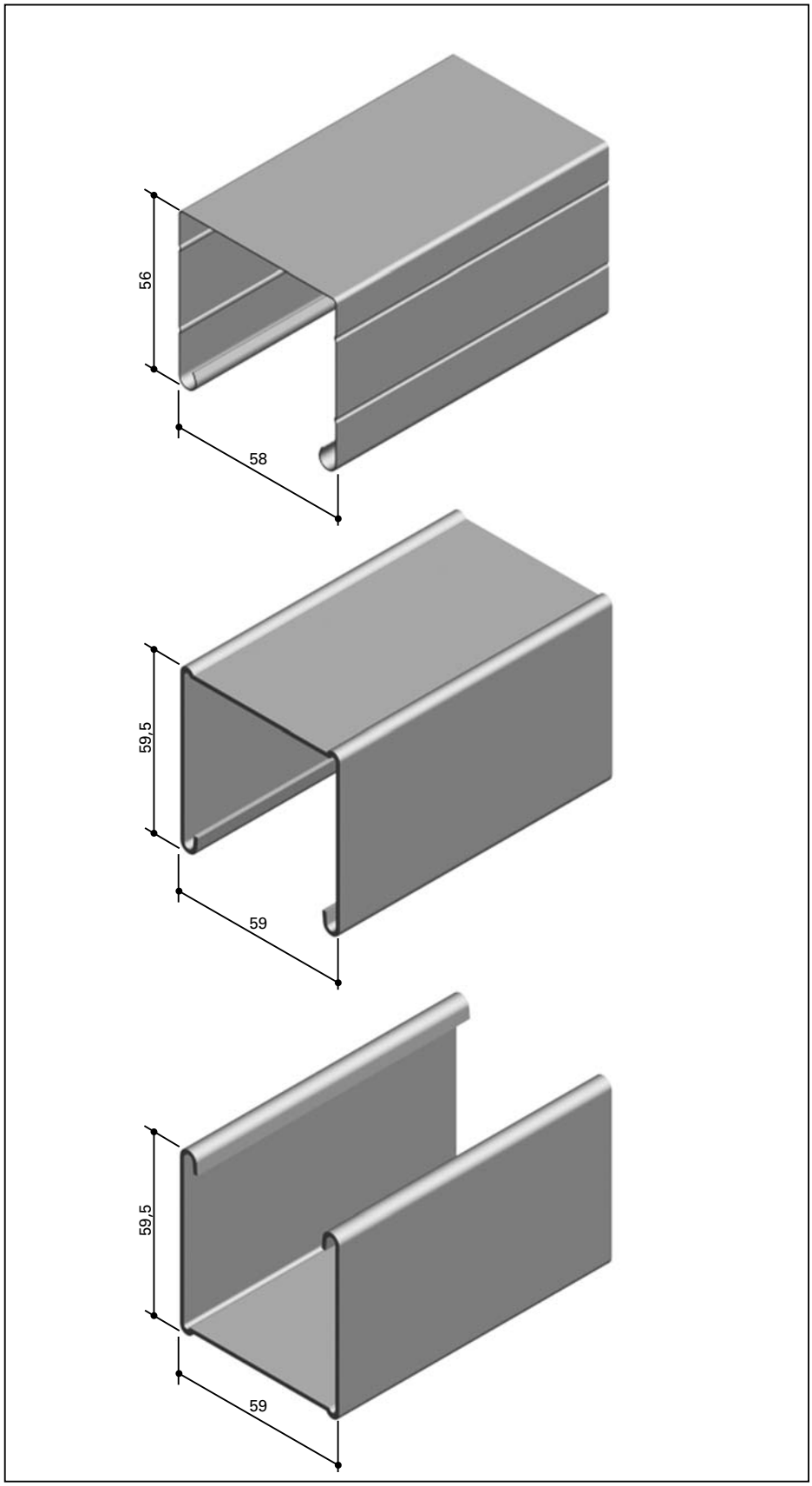



**References**

1) Quantity
2) Blind type
3) Colour of slates, fittings, any special colours
4) Complete width = minimum clear width of 3 measuring points minus ca. 3 mm
5) Complete height = minimum clear height minus 5 mm
6) Specify lateral guide rail type
7) Specify operating issue
8) Specify depth of passage
9) Operating side
10) Specify length of the crank rod
11) Specify crank duct
12) Type of installation
13) Type and colour of the cover
14) Cover width = clear width, cover height according to table
15) Specially designed models, possibly to be made clear with sketches

# General: Top Rails

**Types: AF 50, AF 80, AF 100**




**Top Rail**

Galvanised sheet steel roll form.
Dimensions 58 x 56 mm.
Installation with closed side facing upwards.
(Special colour not possible)

**Top Rail (Surcharge)**

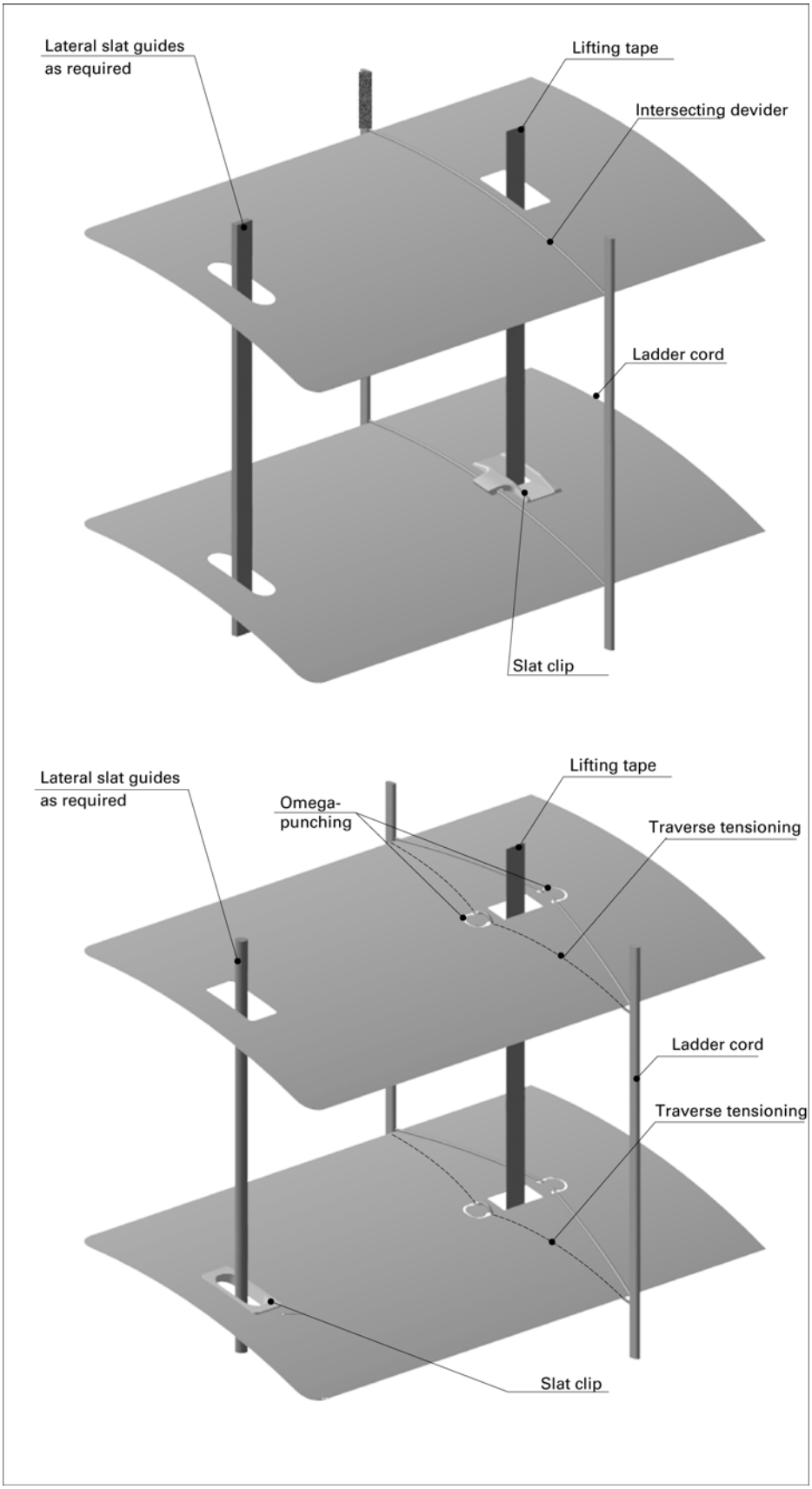
Made of extruded aluminium.
Dimensions 59 x 59.5 mm.
Installation with closed side facing upwards.
(Special colour not possible)

**Top Rail (Surcharge)**

Made of extruded aluminium.
Dimensions 59 x 59.5 mm.
Installation with closed side facing downwards.
(Special colour not possible)

# General: Slat Joints

**Types: AF 50, AF 80, AF 100**



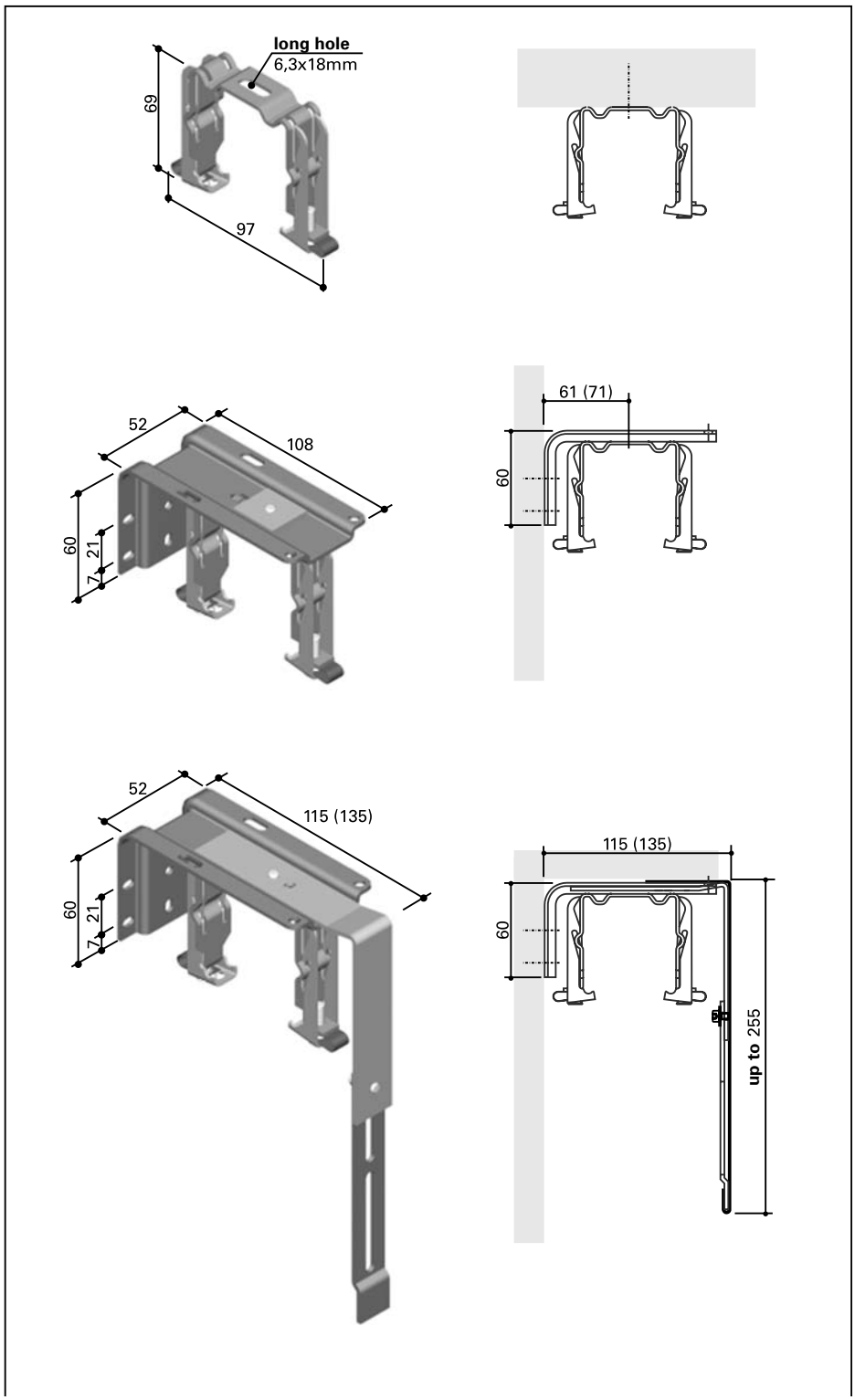

The slats are kept evenly apart using a ladder cord. With blind types AF 80 and AF 100, every 4th slat is equipped with plastic slat clips, thereby preventing the lifting tape from getting too worn and the ladder cord from sliding off to the side.
With a stable wire tension system or wire tension, no slat tensioning wire clips are possible.
For a surcharge, every slat can be equipped with a slat clip, if required (note: higher slat packages must be considered).
AF 50 is supplied without plastic slat clips. The ladder cord is then protected underneath the slats by punched parts that match the colour of the slat.

If required, for a surcharge the ladder cord can be joined non-positively with each slat (double Omega-punching). Fixed in this way, the blind is centred and becomes very stable. Warning: the closing process, however, changes for the worse.

# General: Brackets

**Types: AF 50, AF 80, AF 100**

| Complete Width | No. of Brackets |
|---|---|
| up to 2000mm | 2 |
| 2001mm to 2800mm | 3 |
| 2801mm to 3600mm | 4 |
| > 3600mm | 5 |




**Vertical Bracket**

Made of galvanised steel.
Dimensions 69 x 97 mm.
Article no.: JA170503

**Horizontal Bracket (Combined Bracket) Standard**

In 2 parts, made of galvanised steel.
Dimensions angle 60 x 108 x 52 mm.
Dimensions vertical bracket 69 x 97 mm.
Model: AF 50:
Article no.: JA1705U6
Models: AF 80, AF 100
Article no.: JA1705U

**Combined Box Bracket with Support Height at 60 mm, Thickness of Cover 115 mm**

Model: AF 50

| Article number | Height [mm] |
|---|---|
| JA1705U7 | 130 - 165 |
| JA 1705U8 | 166 - 200 |
| JA1705U9 | 201 - 255 |

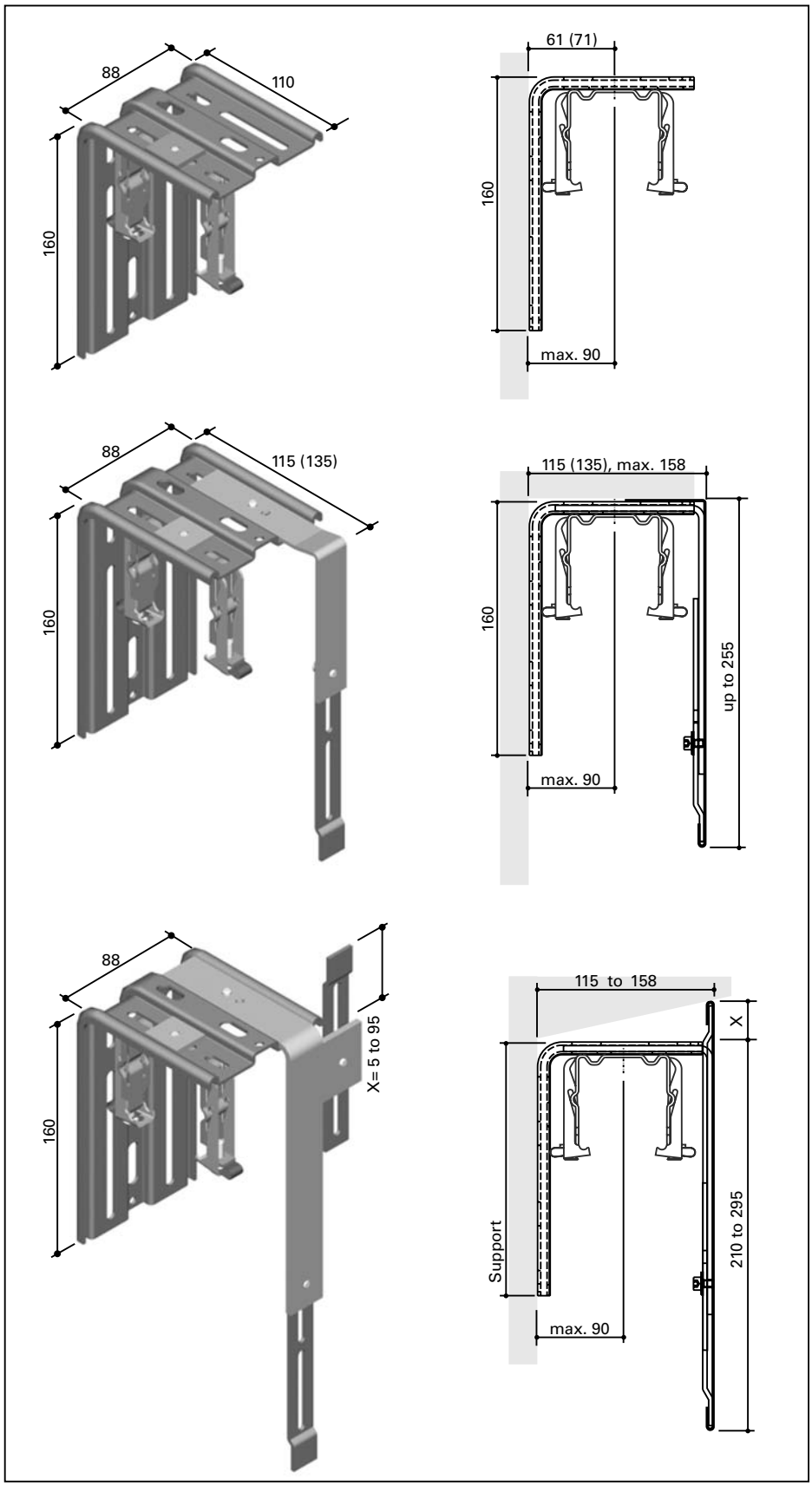
**Thickness of Cover 135 mm**

Models: AF 80, AF 100

| Article number | Height [mm] |
|---|---|
| JA1705U2 | 130 - 165 |
| JA 1705U3 | 166 - 200 |
| JA1705U4 | 201 - 255 |

# General: Brackets

**Types: AF 50, AF 80, AF 100**




**Horizontal Bracket (Combined Bracket)**

In 2 parts, galvanised steel.
Dimensions angle 160 x 105 x 88 mm.
Dimensions vertical bracket 69 x 97 mm.
Article no.: JA1705W6

**Combined Box Bracket with Support Height at 160 mm, Thickness of Cover 115 mm**

| Article number | Height [mm] |
|---|---|
| JA1705V2 | 166 - 200 |
| JA1705V3 | 201 - 255 |

**Combined Box Bracket with Support Height at 160 mm, Thickness of Cover 135 mm**

| Article number | Height [mm] |
|---|---|
| JA1705V4 | 166 - 200 |
| JA1705V5 | 201 - 255 |

**Combined Box Bracket for SB1 with Support Height at 160 mm**

**Note:** Dimension X can be a maximum of 95 mm

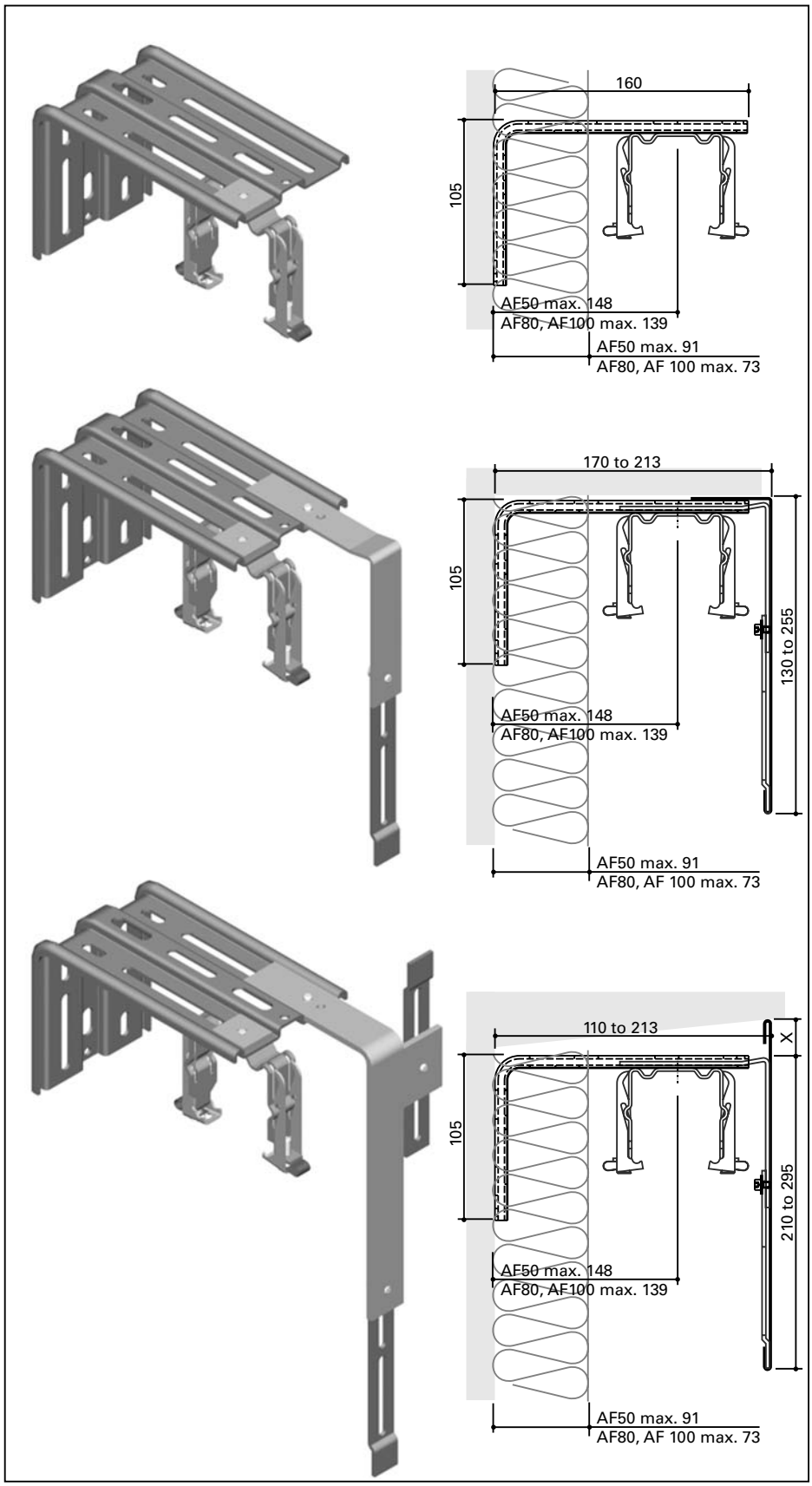
| Article number | Height [mm] |
|---|---|
| JA1705V6 | 210 - 295 + X |

This bracket is made specifically to order. The height of cover, dimension X, thickness of cover, and the position of the vertical bracket must be given!

Note: the bracket must be positioned in such a way that the clearance is not affected.

# General: Brackets

**Types: AF 50, AF 80, AF 100**




**Horizontal Bracket (Combined Bracket)**

In 2 parts, galvanised steel.
Dimensions angle 160 x 105 x 88 mm.
Dimensions vertical bracket 69 x 97 mm.
Article no.: JA1705W

**Combined Box Bracket to be installed below the upgraded Insulation**

| Article number | Height [mm] |
|---|---|
| JA1705W1 | 130 - 165 |
| JA 1705W2 | 166 - 200 |
| JA1705W3 | 201 - 255 |

This bracket is made specifically to order. The height of cover, dimension X, thickness of cover, and the position of the vertical bracket must be given!

**Combined Box Bracket for SB1 with Support Height at 105 mm**

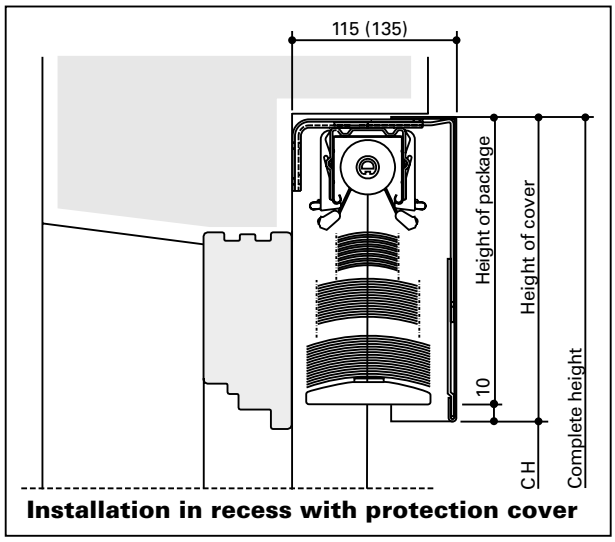
Note:
Dimension X can be a maximum of 95 mm

| Article number | Height [mm] |
|---|---|
| JA1705V8 | 210 - 295 + X |

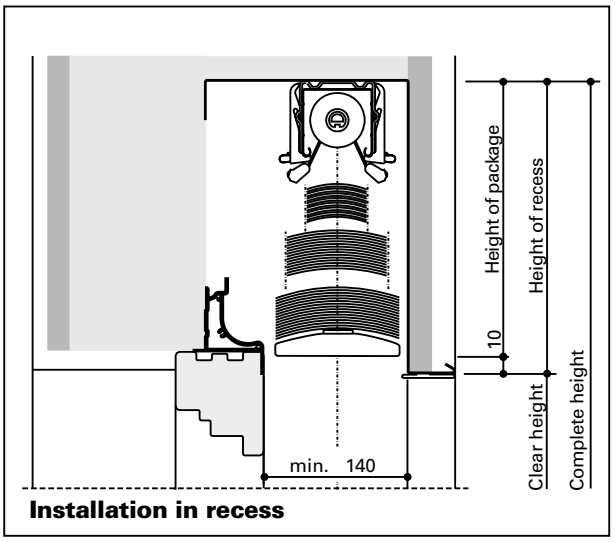
This bracket is made specifically to order. The height of cover, dimension X, thickness of cover, and the position of the vertical bracket must be given!

# General: Types of Installation

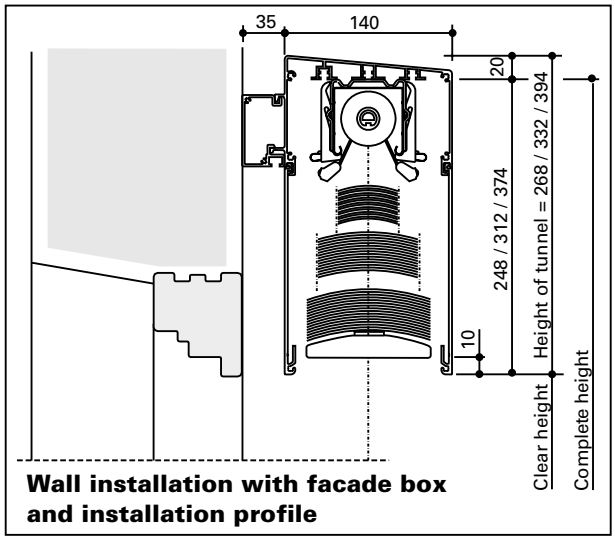
**Types: AF 50, AF 80, AF 100**



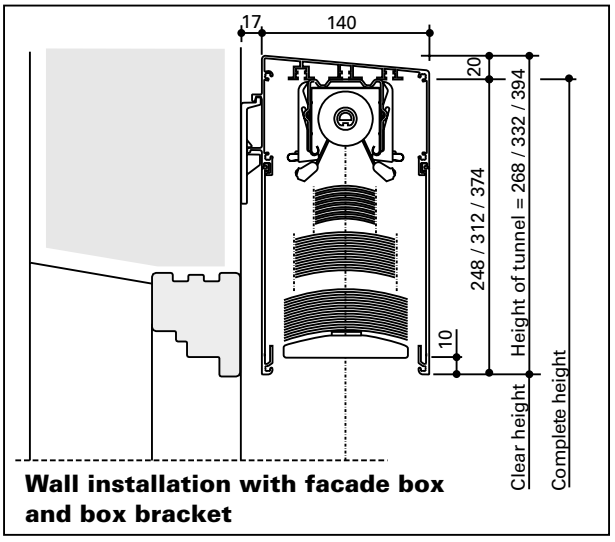

**Installation in recess with protection cover**



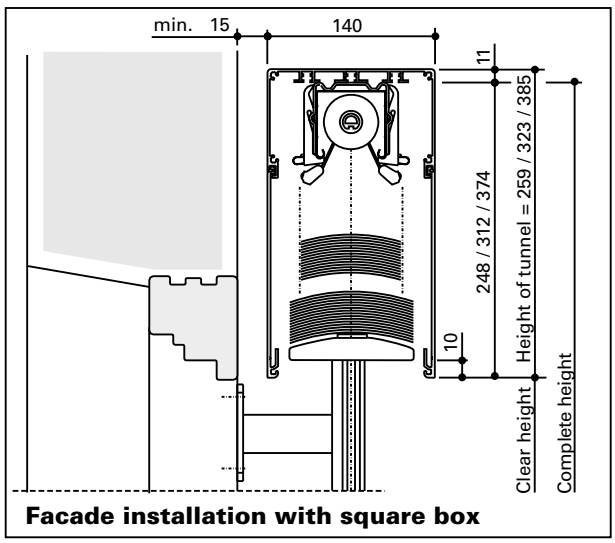

**Installation in recess**



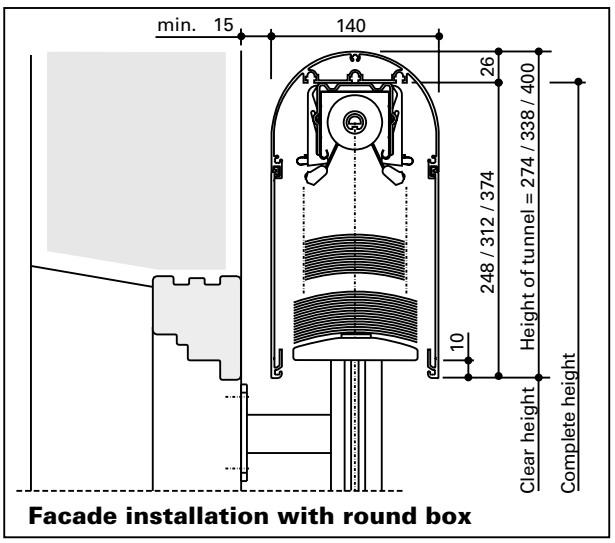

**Wall installation with facade box and installation profile**




**Wall installation with facade box and box bracket**




**Facade installation with square box**

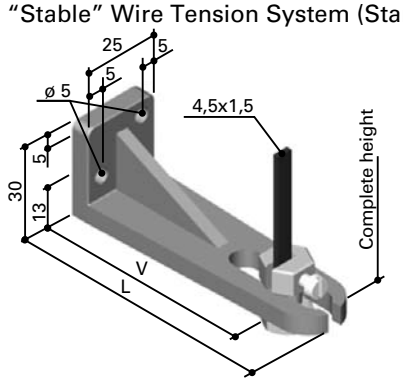



**Facade installation with round box**

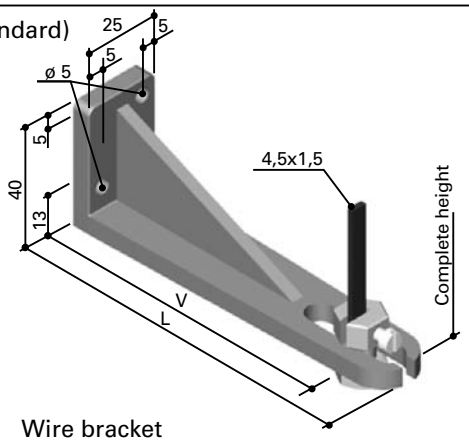
# General: Tensioning Wires

**Types: AF 50, AF 80, AF 100**

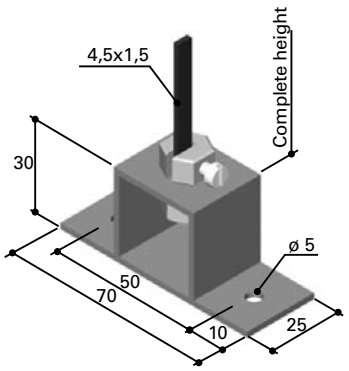
"Stable" Wire Tension System (Standard)




Wire bracket
AW 39: L=45, V=12-39
AW 53: L=60, V=26-53
AW 79: L=85, V=52-79

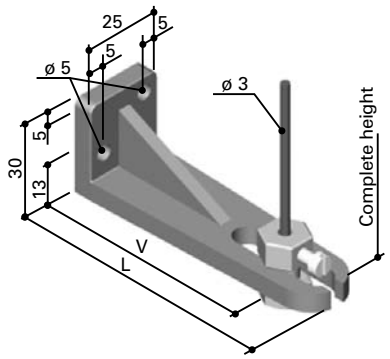



Wire bracket
AW 107: L=114, V= 80-107
AW 135: L=142, V=108-135
AW 163: L=170, V=136-163

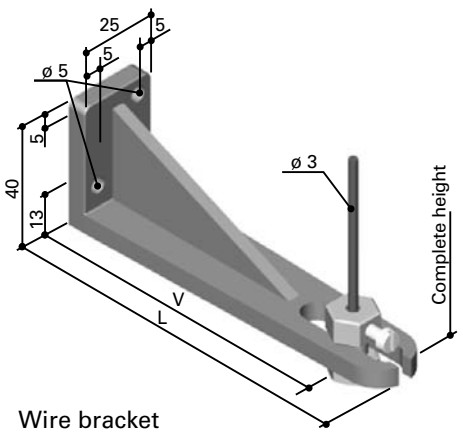



Tensioning shoe
ABSCH

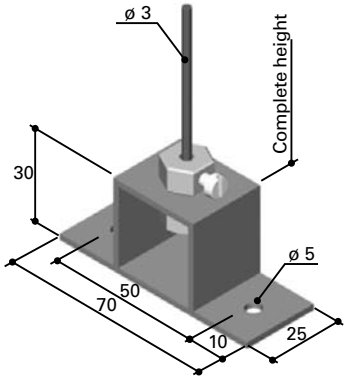
Wire Tension System




Wire bracket
AW 39: L=45, V=12-39
AW 53: L=60, V=26-53
AW 79: L=85, V=52-79

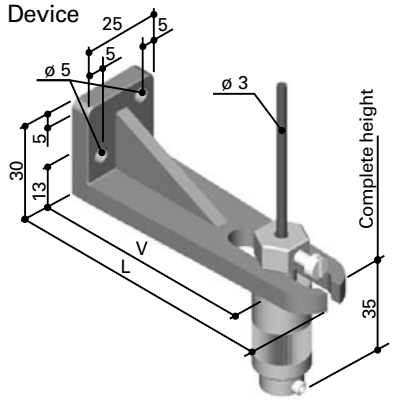



Wire bracket
AW 107: L=114, V= 80-107
AW 135: L=142, V=108-135
AW 163: L=170, V=136-163

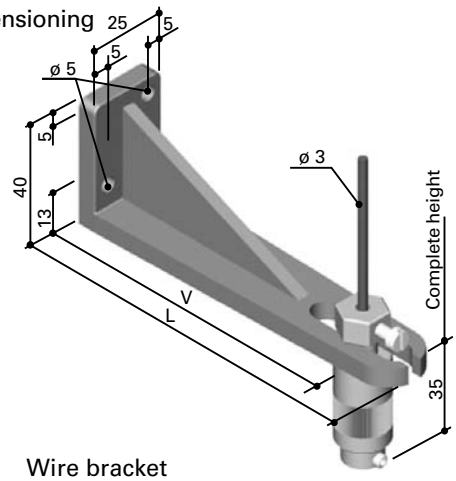



Tensioning shoe
ABSCH

Wire Tension System with Spring Tensioning Device




Wire bracket
AWF 39: L=45, V=12-39
AWF 53: L=60, V=26-53
AWF 79: L=85, V=52-79



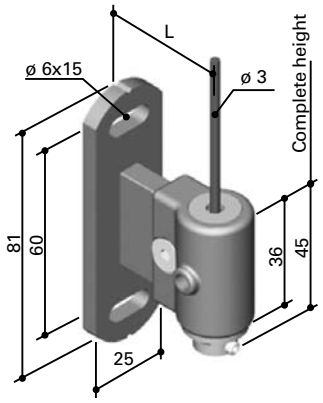

Wire bracket
AWF 107: L=114, V= 80-107
AWF 135: L=142, V=108-135
AWF 163: L=170, V=136-163

**Dimension from the outer edge of the tensioning bracket to the middle of the tensioning wire: AF 50 = 56 mm, AF 80 = 86 mm.**

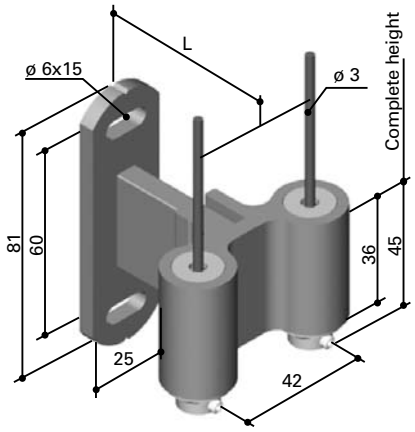
# General: Tensioning Wires

**Types: AF 50, AF 80, AF 100**

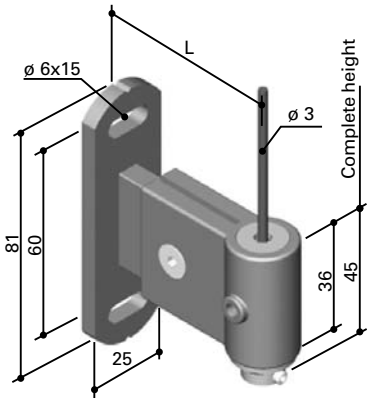
Installation Bracket for Wire Tensioning (Surcharge)




Fixed installation bracket with spring tensioning device
ABK 37: L=37
ABK+Dimension:
L=optional (up to 45mm)

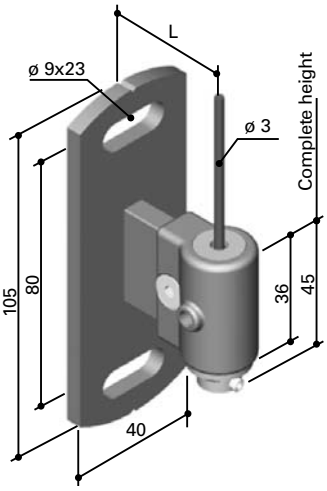



Fixed installation bracket with double spring tensioning device
ABKD 37: L=37
ABKD 56: L=56
ABKD 66: L=66
ABKD+Dimension: L=optional

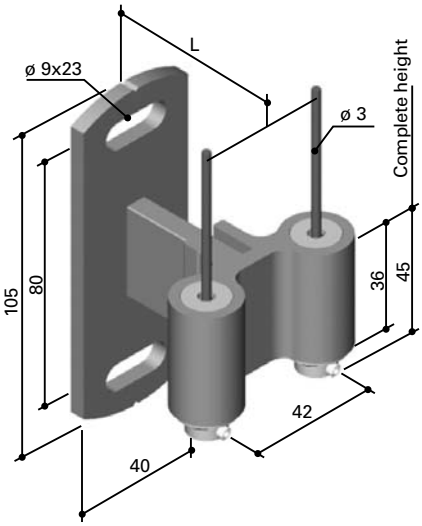



Adjustable installation bracket with spring tensioning device
ABK 56: L=56
ABK+Dimension:
L=Dimension+10mm (as from 46mm)

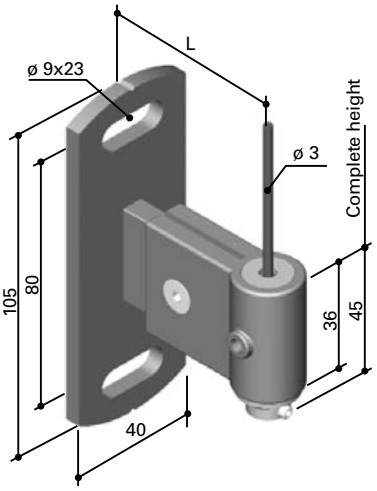
Installation Bracket for upgraded Insulation or pre-installed M8 threaded Bolts for Wire Tensioning




Fixed installation bracket with spring tensioning device
ABK 37: L=37
ABK+Dimension:
L=optional (up to 45mm)




Fixed installation bracket with double spring tensioning device
ABKD 37: L=37
ABKD 56: L=56
ABKD 66: L=66
ABKD+Dimension: L=optional



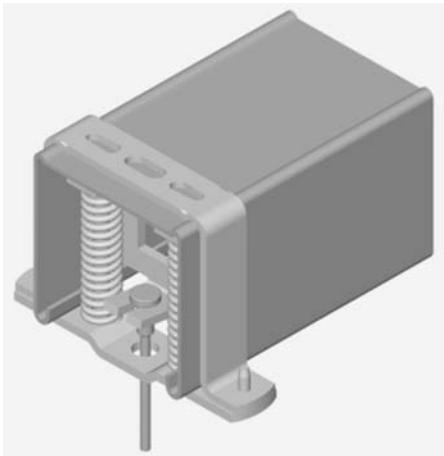

Adjustable installation bracket with spring tensioning device
ABK 56: L=56
ABK+Maß:
L=Dimension+10mm (as from 46mm)

**Dimension from the outer edge of the tensioning bracket to the middle of the tensioning wire: AF 50 = 56 mm, AF 80 = 86 mm, AF 100 = 66 mm**

Tensioning Wire Alternatives:
- "Stable" wire tension system (standard)
- Wire tension 3 mm natural
- Steel wire 2/3 trans VZ/PA12
- Steel wire 2/3 trans Psilver Niro-PA12
- Steel wire Niro 3 mm

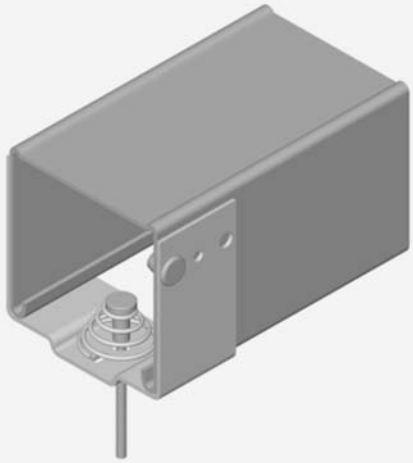
# General: Tensioning Springs

**Types: AF 50, AF 80, AF 100**



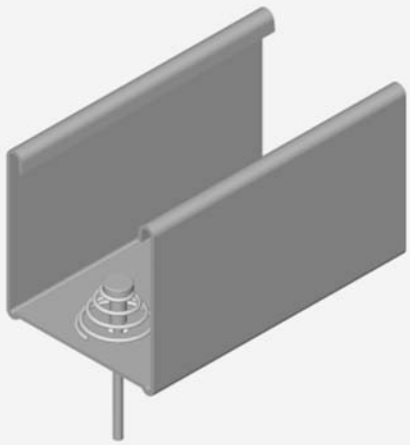
**Top Profile Bracket with Double Wire Bracket (standard)**

Galvanized steel, with 2 springs to counter-balance the high pulling forces.
Note: only possible with top rail SGP and installation with the open side pointing downwards!



**Top Rail Open Underneath with Tensioning Bracket and Conical Helical Spring**

Stainless steel, cheaper model.
Mounting possible in roll form and extruded top rail. Note: less counter-balancing of the high pulling forces!

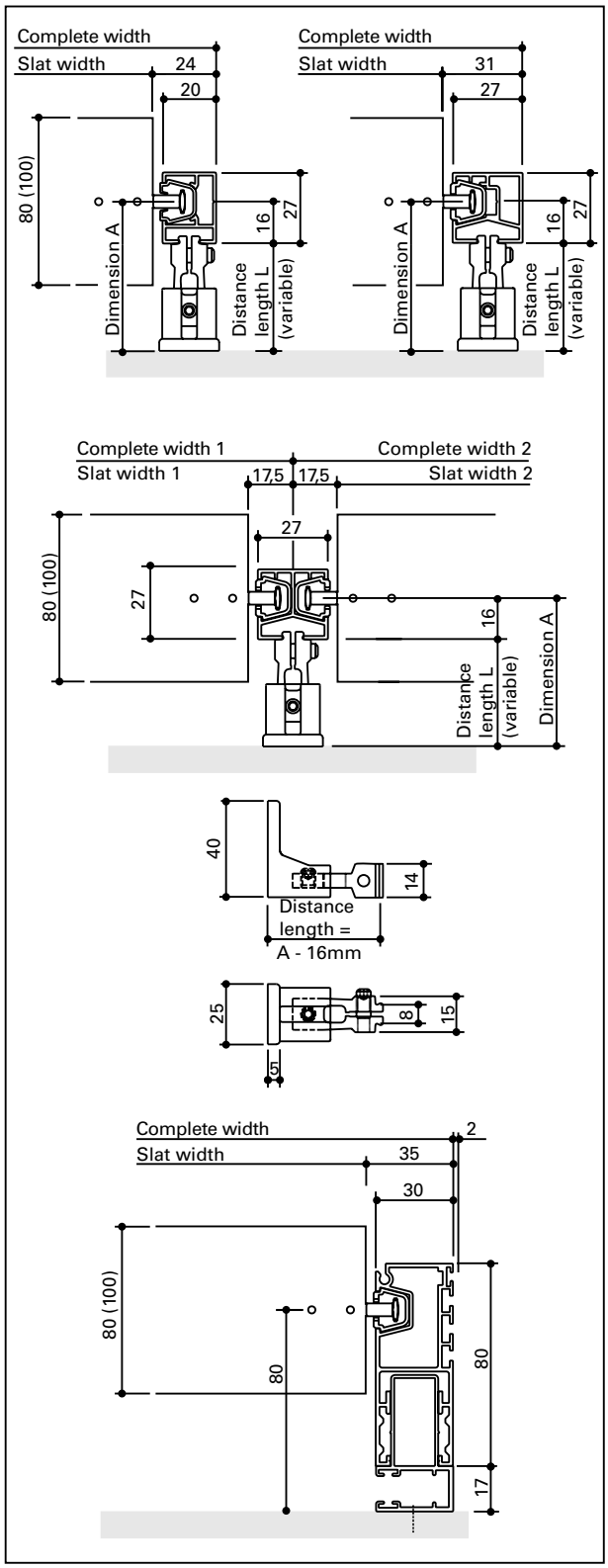


**Top Rail Closed Underneath with Conical Helical Spring**

Stainless steel, cheaper model.
Model only possible with top rail SGP.
Note: less counter-balancing of the high pulling forces!

# General: Side Guide Rails

**Types: AF 80, AF 100**




**Single Guide Rail 20/27 und 27/27**
Installation using distance brackets on the window frame or the facade.
Standard length of the side guide rail = complete height minus 70 mm

**Double Guide Rail 27/27**
Installation using distance brackets on the window frame of the facade.
Standard length of the side guide rail = complete height minus 70 mm

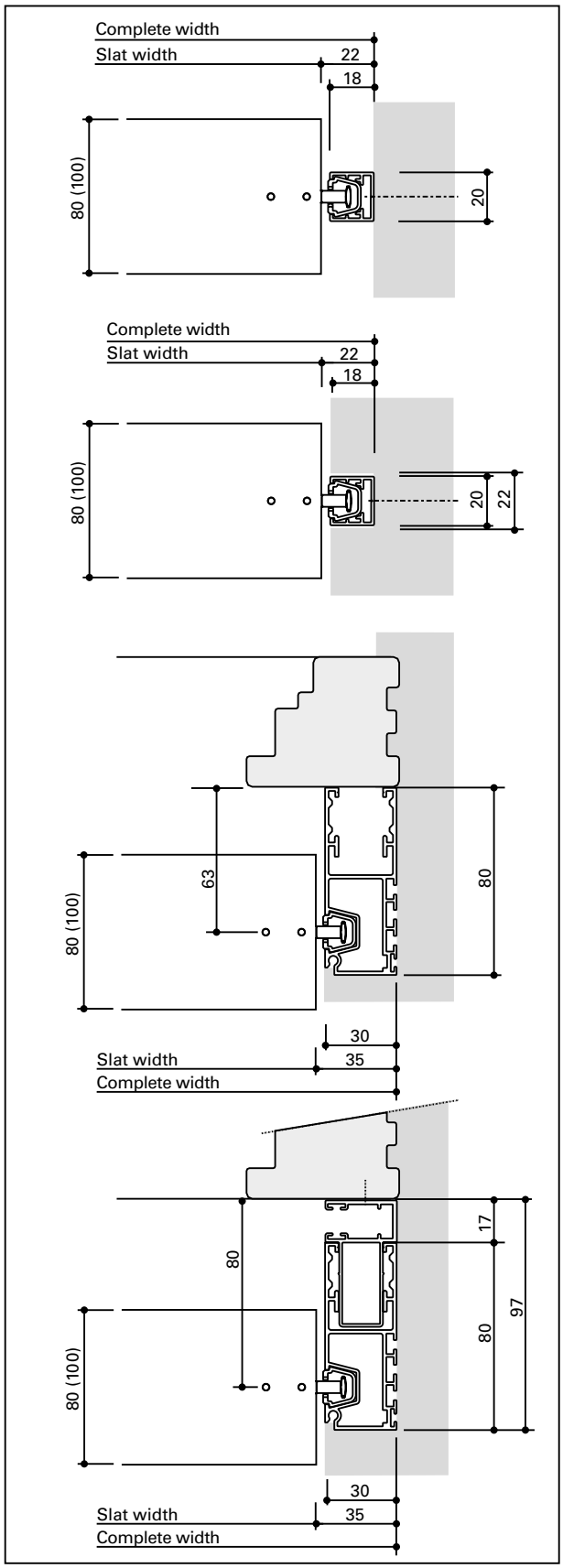
**Distance Brackets adjustable (not possible with VWS)**
Clamping lock made of die-cast zinc, Collinox-coated
Distance bracket flange made of die-cast aluminium, powder-coated
Dimensions A:
53mm - 66mm
61mm - 73mm (Standard)
67mm - 89mm
90mm - 116mm
90mm - 140mm
141mm - 176mm

**Combined Side Guide Rail 30/80 und 30/17**
Side guide rail in two parts for blind and insect roller screen (ISTR and ISKTR) mounted on the window frame.

| | | | | | |
|---|---|---|---|---|---|
| **Height of the blind** | from | [mm] | | 801 | 3001 |
| | to | [mm] | 1800 | 3000 | 4000 |
| **Distance bracket** | per GR | [quantity] | 2 | 3 | 4 |

# General: Side Guide Rails

**Types: AF 80, AF 100**




**Lateral Side Guide Rail18/20**

Lateral installation into the wall clearance.
Standard side guide rail length = complete height minus 70 mm

**Lateral Side Guide Rail 18/20**

Lateral installation into a notch provided by the customer.
Notch dimensions: Width 22 mm, Depth 18 mm
Note: protrusion beyond the recess is required

**Combined Side Guide Rail 30/80 mounted in.**

Installation directly on the window frame.
Note: protrusion beyond the recess is required

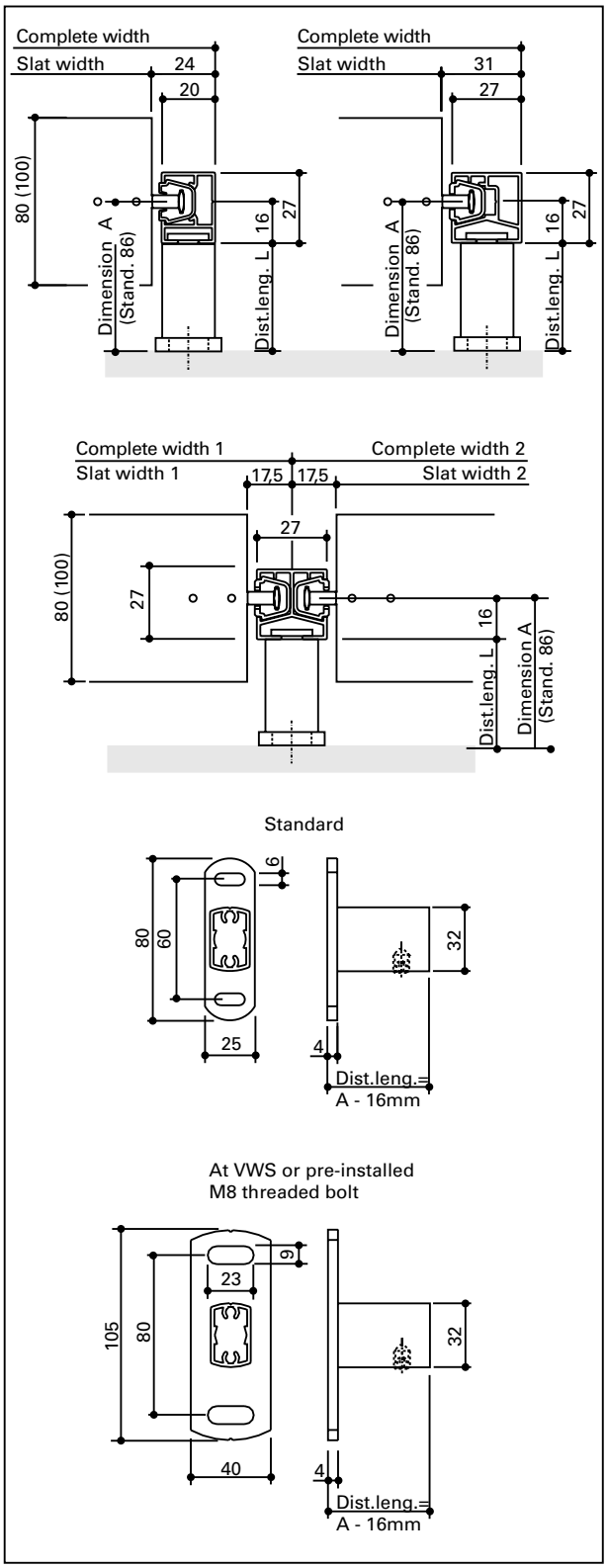
**Combined Side Guide Rail 30/80 mounted in along with insect roller screen.**

Installation directly on the window frame.
Note: protrusion beyond the recess is required

General

# Square Side Guide Rails for SB 140 and RB 140

**Types: AF 80, AF 100**




**Single Guide Rail 20/27 und 27/27**
Installation using distance brackets on the window frame or the facade.
Standard length of the side guide rail = complete height minus 70 mm

**Double Guide Rail 27/27**
Installation using distance brackets on the window frame of the facade.
Standard length of the side guide rail = complete height minus 70 mm

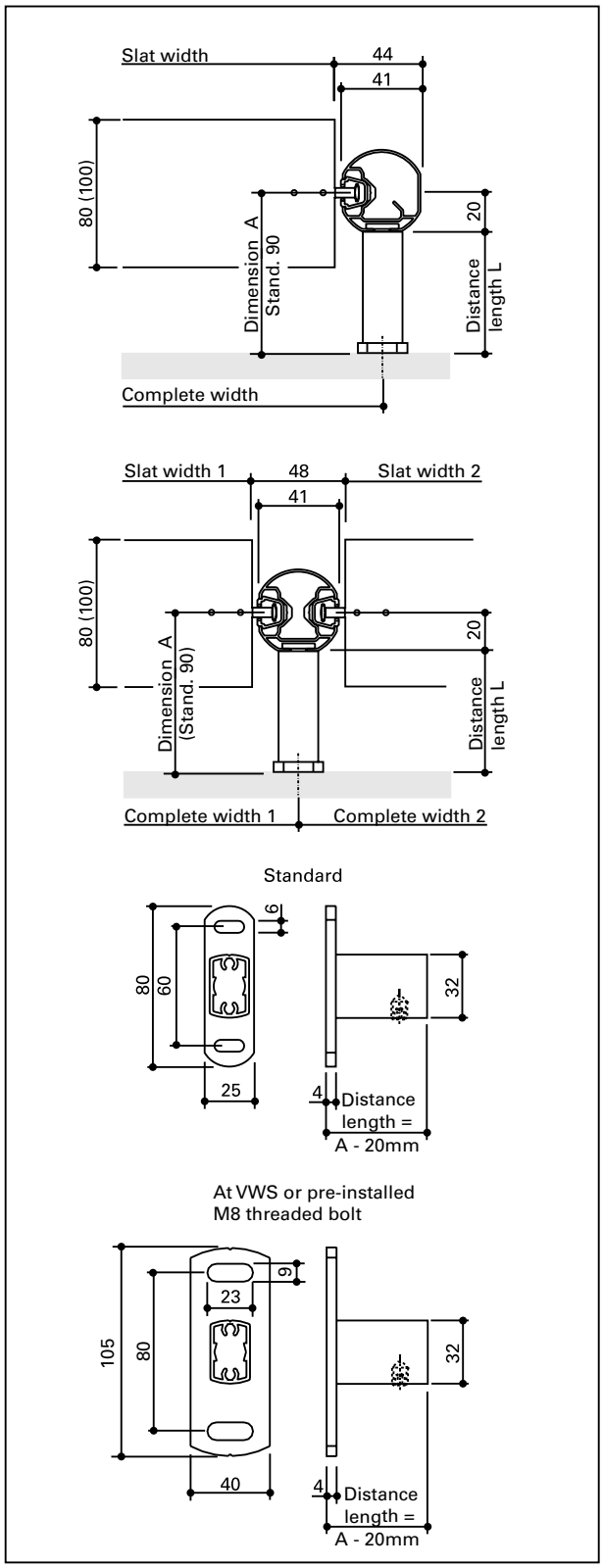
**Distance Bracket**
Extruded aluminium distance profile;
Dim. 32 x 20 mm.
Base plate made of die-cast zinc;
Dim. 80 x 25 x 4 mm
Large base plate made of die-cast zinc;
Dim. 105 x 40 x 4 mm
Fixing of the distance bracket to the side guide rail using a galvanised steel clamping cone.
Standard ordering dimension A = 86 mm.
Ordering dimensions from 86 mm to 216 mm feasible.

**Special lengths should be mentioned in the order!**

| | | | | | |
|---|---|---|---|---|---|
| **Height of the blind** | from | [mm] | | 801 | 3001 |
| | to | [mm] | 1800 | 3000 | 4000 |
| **Distance bracket** | per GR | [quantity] | 2 | 3 | 4 |

# Round Side Guide Rails for SB 140 and RB 140

**Types: AF 80, AF 100**




**Round Single Guide Rail, Dimension ø 45**

Installation using distance brackets on the window frame or the facade.

**Round Double Guide Rail, Dimension ø 45**

Installation using distance brackets on the window frame or the facade.

**Distance Bracket**

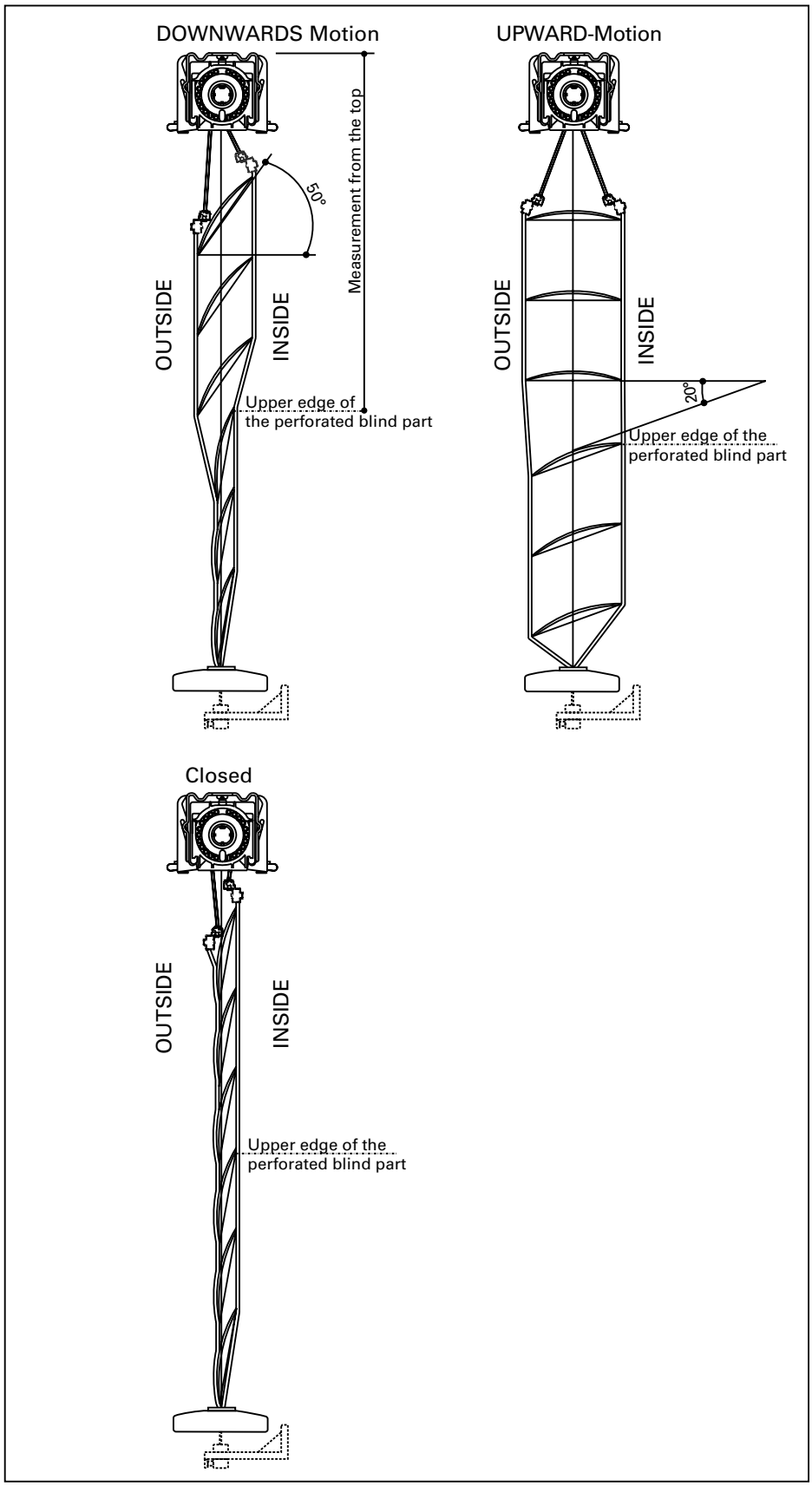
Extruded aluminium distance profile;
Dim. 32 x 20 mm.
Base plate made of die-cast zinc;
Dim. 80 x 25 x 4 mm
Large base plate made of die-cast zinc;
Dim. 105 x 40 x 4 mm
Fixing of the spacer to the side guide rail using a galvanised steel clamping cone.
Standard ordering dimension A = 86 mm.
Distance lengths from 86 mm to 216 mm feasible.

**Special lengths should be mentioned in the order!**

| | | | | | |
|---|---|---|---|---|---|
| **Height of the blind** | **from** | **(mm)** | | 1801 | 3001 |
| | **to** | **(mm)** | 1800 | 3000 | 4000 |
| **Distance bracket** | **per GR** | **(quanity)** | 2 | 3 | 4 |

# General: Light Control Function

**Types: AF 50, AF 80, AF 100**



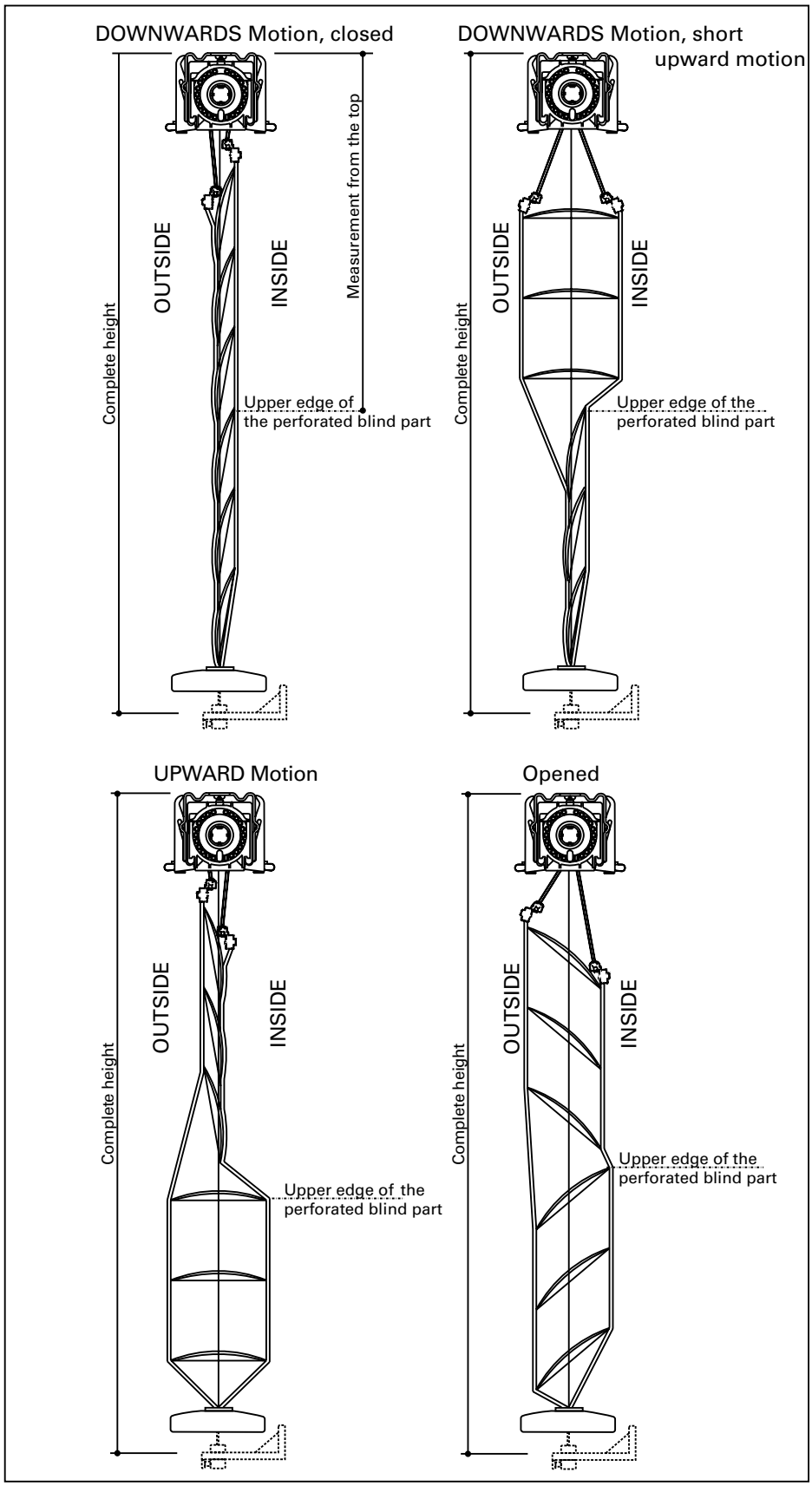

The blind with light control function is characterised by three essential criteria:

1) Blind generally with bearing with working position (Variotec)
2) Lower half of the blind with perforated slats, if requested
3) Various possibilities for adjustment of the blind:

- Lowering of the blind into working position (Variotec). Slats in the upper part are tipped by approx. 50°; in the lower part the slats are closed.
- Raising of the blind with horizontally set slats in the upper part, in the lower part they are tipped by approx. 20°.
- The blind can also be closed completely.

# General: Daylight Transport Function

**Types: AF 50, AF 80**



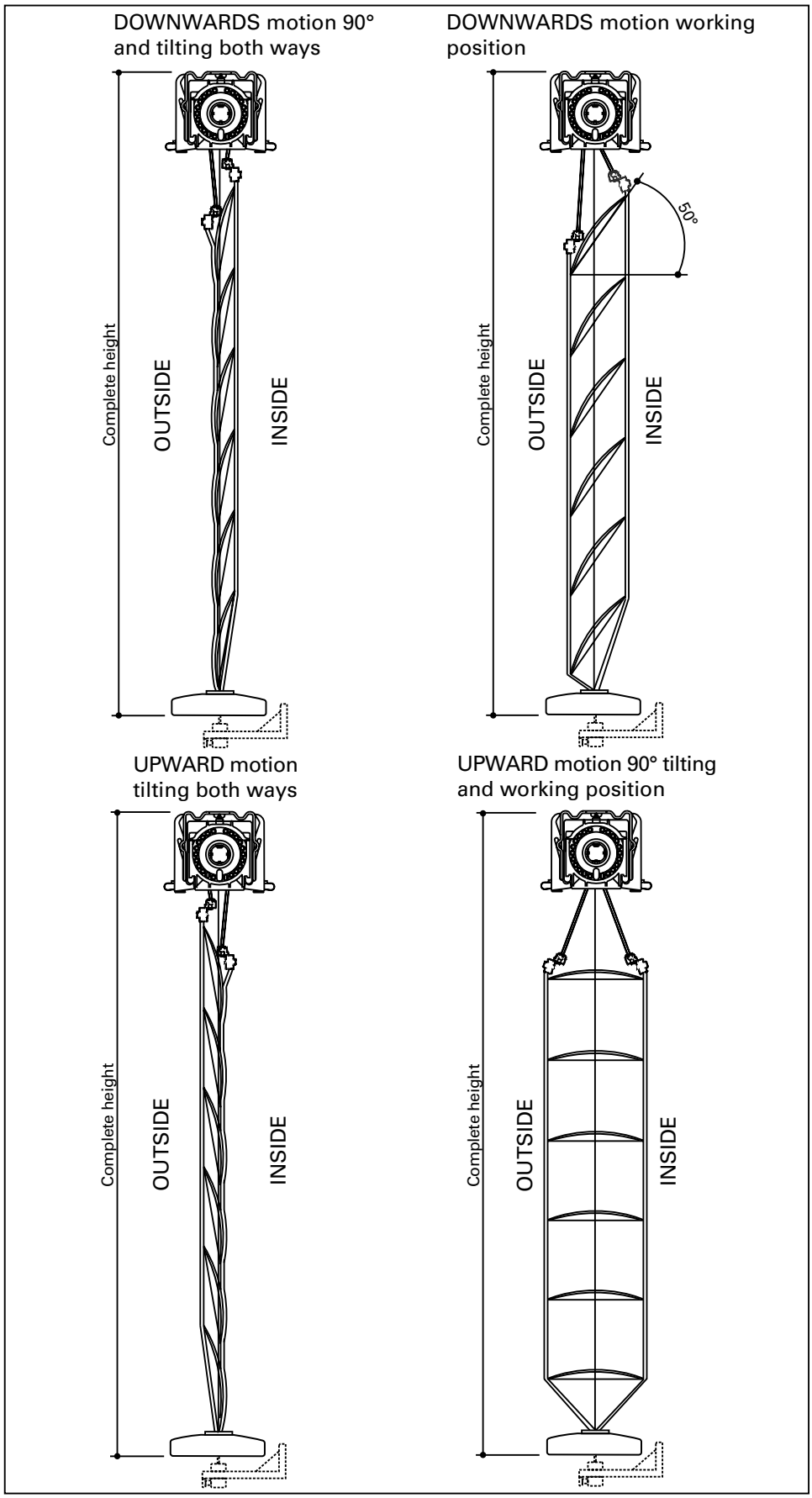

The blind with daylight transport function is characterized by various slat positioning possibilities:

- The blind is raised in the closed position.
- The upper part of the blind can be opened to a maximum of 90° while the lower part remains closed.
- When raising the blind, the upper part is closed towards the interior.
- The lower part of the blind is raised with the slats horizontal in their maximum opening angle.

**Note: AF 100 cannot be supplied with the daylight transport function, as the blind is raised with the slats in a horizontal position**.

# General: Tiltings

**Types: AF 50, AF 80, AF 100**




**Tilting Both Ways (Standard)**

When lowering the blind, it is closed towards the exterior, and when raising, towards the interior. In between it can be smoothly adjusted.

**Working Position (Variotec)**

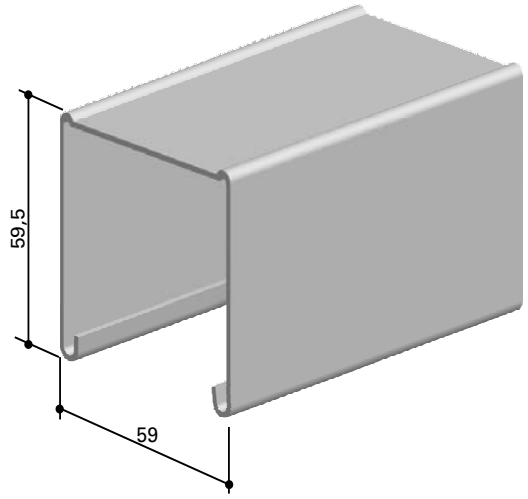
When lowering, the blind is tipped approx. 50° towards the exterior, when raising, it is horizontal, and in between it can be smoothly adjusted. Once completely lowered, the blind can be closed towards the exterior and can be smoothly adjusted till it is horizontal.

**90° Tilting**

When lowering the blind, it is closed towards the exterior, and when raising, it is horizontal. In between it can be smoothly adjusted.

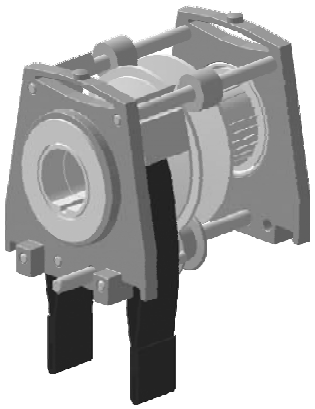
# General: Horiso

**Types: AF 50, AF 80, AF 100**




**Top Rail (Standard)**

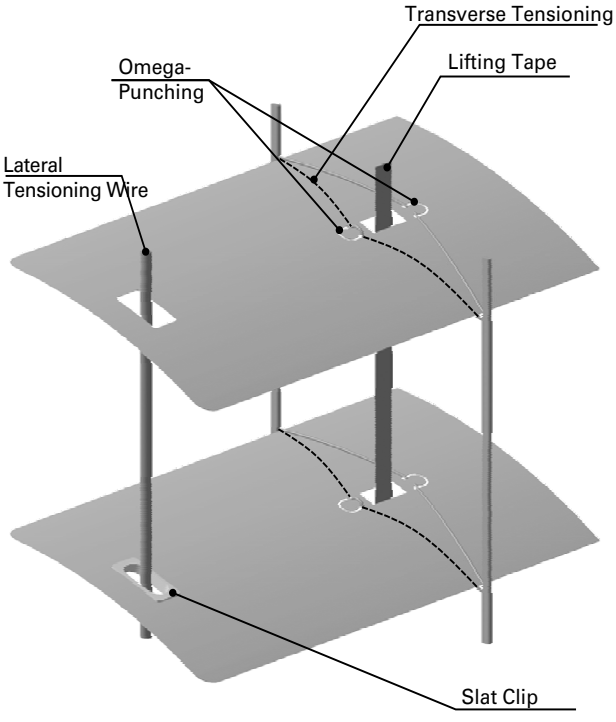
Made of extruded aluminim. Dimensions 59 x 59.5mm. Installation with closed side facing upward.



**Tilting Device**

Precision ball bearing, dustproof for 6 mm lifting tape for AF 50 and for 10 mm lifting tape for AF 80 and AF 100.

Note: Only 90° tilting possible.




**Slat Joints**

The ladder cord will be joined non-positively with each slat (double Omega-punching). Fixed in this way, the blind is centred and becomes very stable.

Note: the closing process, however, changes for the worse.

# General: Horiso

**Types: AF 50, AF 80, AF 100**

| Modell | mi. Width [mm] | max. Width [mm] | max.Height [mm] | max.Surface [m²] |
|---|---|---|---|---|
| **AF 50 H** | 700 | 5.000 | 3.000 | 15 |

## Standard Heights of Packages

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 120 | 130 |
| 1.200 | 130 | 140 |
| 1.600 | 140 | 150 |
| 2.000 | 155 | 165 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 2.400 | 165 | 195 |
| 2.800 | 175 | 205 |
| 3.000 | 180 | 205 |
| | | |

| Modell | Min. Width [mm] | max. Width [mm] | max .Height [mm] | max.Surface [m²] |
|---|---|---|---|---|
| **AF 80 H** | 700 | 5.000 | 3.000 | 15 |

**Achtung:** minimum width is always based on th ength of the slats; with guide rails, the respective side guid rail subtraction must be added on (see table).

## Standard Heights of Packages

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 120 | 130 |
| 1.200 | 125 | 135 |
| 1.600 | 135 | 145 |
| 2.000 | 145 | 155 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 2.400 | 155 | 165 |
| 2.800 | 160 | 170 |
| 3.000 | 165 | 175 |
| | | |

## Heights of Packages with Clip in each Slat

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 135 | 145 |
| 1.200 | 155 | 165 |
| 1.600 | 175 | 185 |
| 2.000 | 195 | 205 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 2.400 | 215 | 225 |
| 2.800 | 230 | 240 |
| 3.000 | 240 | 250 |
| | | |

## Heights of Packages with Guide Pin in every 4th Slat

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 125 | 135 |
| 1.200 | 130 | 140 |
| 1.600 | 145 | 155 |
| 2.000 | 155 | 165 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 2.400 | 170 | 180 |
| 2.800 | 175 | 185 |
| 3.000 | 185 | 195 |
| | | |

# General: Horiso

**Types: AF 50, AF 80, AF 100**

| Model | min. Width [mm] | max. Width [mm] | max.Height [mm] | max.Surface [m²] |
|---|---|---|---|---|
| **AF 100 H** | 700 | 5.000 | 3.000 | 15 |

**Note:** minimum width is alwayse based on the length of theslats; with guide rails, the respective side guide rail subtractuon must be added on (see table)

## Standard Heights of Packages

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 115 | 130 |
| 1.200 | 125 | 135 |
| 1.600 | 135 | 145 |
| 2.000 | 145 | 155 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 2.400 | 150 | 160 |
| 2.800 | 160 | 170 |
| 3.000 | 165 | 175 |
| | | |

## Heights of Packages with Clip in each Slat

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 130 | 140 |
| 1.200 | 150 | 160 |
| 1.600 | 165 | 175 |
| 2.000 | 185 | 195 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 2.400 | 200 | 210 |
| 2.800 | 220 | 230 |
| 3.000 | 225 | 235 |
| | | |

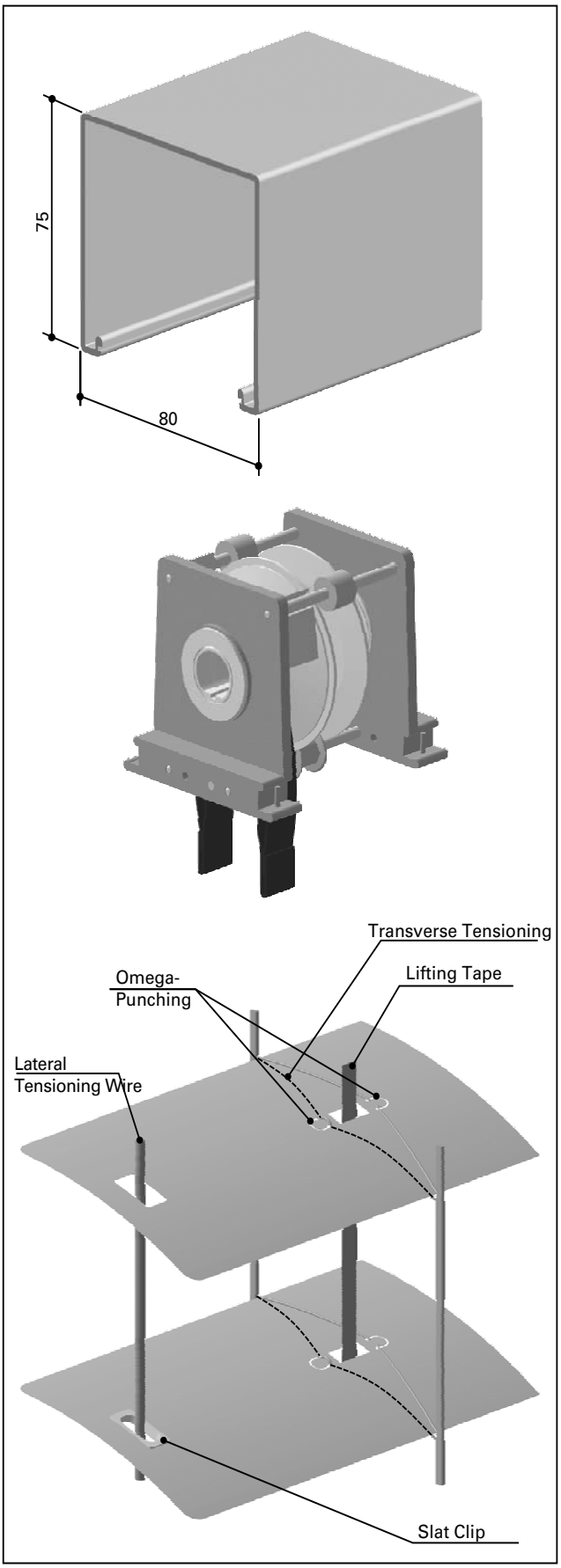
## Heights of Packages with Guide Pin in every 4th Slat

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 125 | 135 |
| 1.200 | 130 | 140 |
| 1.600 | 140 | 150 |
| 2.000 | 145 | 155 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 2.400 | 155 | 165 |
| 2.800 | 160 | 170 |
| 3.000 | 170 | 180 |
| | | |

# General: Horiso S

**Types: AF 80, AF 100**




**Top Rail (Standard)**

Made of extruded aluminium. Dimensions 80 x 75 mm. Installation with closed side facing upward.

**Tilting Device**

Precision ball bearing, dustproof for 10 mm lifting tape for AF 80 and AF 100.

Note: Only 90° tilting possible.

**Slat Joints**

The ladder cord will be joined non-positively with each slat (double Omega-punching). Fixed in this way, the blind is centred and becomes very stable.

Note: the closing process, however, changes for the worse

# General: Horiso S

**Types: AF 80, AF 100**

| Model | Min. Width [mm] | Max. Width [mm] | Max. Width [mm] | Max. Surface [m²] |
|---|---|---|---|---|
| **AF 80 HS** | 700 | 5.000 | 6.400 | 25 |

**Note:** minimum width is always based on the length of the slats, with guide rails the respective side guide rail subtraction must be added on (see table).

## Standard Heights of Packages

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 135 | 145 |
| 1.200 | 145 | 155 |
| 1.600 | 155 | 165 |
| 2.000 | 165 | 175 |
| 2.400 | 170 | 180 |
| 2.800 | 180 | 190 |
| 3.200 | 190 | 200 |
| 3.600 | 200 | 210 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 4.000 | 205 | 215 |
| 4.400 | 215 | 225 |
| 4.800 | 225 | 235 |
| 5.200 | 235 | 245 |
| 5.600 | 245 | 255 |
| 6.000 | 250 | 260 |
| 6.400 | 260 | 270 |
| | | |

## Heights of Packages with Clip in each Slat

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 155 | 165 |
| 1.200 | 175 | 185 |
| 1.600 | 190 | 200 |
| 2.000 | 210 | 220 |
| 2.400 | 230 | 240 |
| 2.800 | 250 | 260 |
| 3.200 | 270 | 280 |
| 3.600 | 290 | 300 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 4.000 | 310 | 320 |
| 4.400 | 330 | 340 |
| 4.800 | 350 | 360 |
| 5.200 | 365 | 375 |
| 5.600 | 385 | 395 |
| 6.000 | 405 | 415 |
| 6.400 | 425 | 435 |
| | | |

## Heights of Packages with Guide Pin in every 4th Slat

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 145 | 155 |
| 1.200 | 150 | 160 |
| 1.600 | 165 | 175 |
| 2.000 | 175 | 185 |
| 2.400 | 180 | 190 |
| 2.800 | 195 | 205 |
| 3.200 | 205 | 215 |
| 3.600 | 220 | 230 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 4.000 | 225 | 235 |
| 4.400 | 235 | 245 |
| 4.800 | 250 | 260 |
| 5.200 | 255 | 265 |
| 5.600 | 270 | 280 |
| 6.000 | 280 | 290 |
| 6.400 | 285 | 295 |
| | | |

# General: Horiso S

**Types: AF 80, AF 100**

| Model | Min. Width [mm] | Max. Width [mm] | Max. Height [mm] | Max. Surface [m²] |
|---|---|---|---|---|
| **AF 100 HS** | 700 | 5.000 | 6.400 | 25 |

**Note:** minimum width is always based on the length of the slats; with guide rails, the respective side guide rail subtraction must be added on (see table)

## Standard Heights of Packages

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 135 | 145 |
| 1.200 | 145 | 155 |
| 1.600 | 155 | 165 |
| 2.000 | 160 | 170 |
| 2.400 | 170 | 180 |
| 2.800 | 180 | 190 |
| 3.200 | 190 | 200 |
| 3.600 | 195 | 205 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 4.000 | 205 | 215 |
| 4.400 | 215 | 225 |
| 4.800 | 225 | 235 |
| 5.200 | 230 | 240 |
| 5.600 | 240 | 250 |
| 6.000 | 250 | 260 |
| 6.400 | 260 | 270 |
| | | |

## Heights of Packages with Clip in each Slat

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 150 | 160 |
| 1.200 | 165 | 175 |
| 1.600 | 185 | 195 |
| 2.000 | 200 | 210 |
| 2.400 | 220 | 230 |
| 2.800 | 240 | 250 |
| 3.200 | 255 | 265 |
| 3.600 | 275 | 285 |

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 4.000 | 290 | 300 |
| 4.400 | 305 | 315 |
| 4.800 | 325 | 335 |
| 5.200 | 340 | 350 |
| 5.600 | 360 | 370 |
| 6.000 | 375 | 385 |
| 6.400 | 395 | 405 |
| | | |

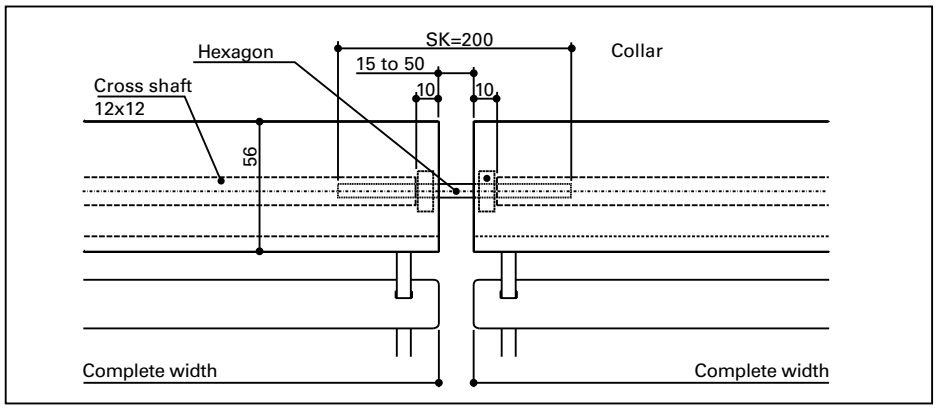
## Heights of Packages with Guide Pin in every 4th Slat

| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 800 | 145 | 155 |
| 1.200 | 150 | 160 |
| 1.600 | 160 | 170 |
| 2.000 | 165 | 175 |
| 2.400 | 175 | 185 |
| 2.800 | 180 | 190 |
| 3.200 | 190 | 200 |
| 3.600 | 205 | 215 |

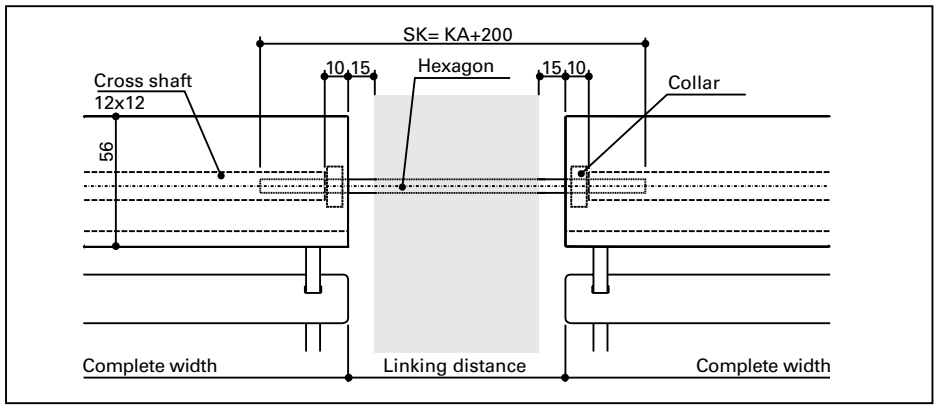
| Height of Blind [mm] | Height of Package [mm] | Height of Cover [mm] |
|---|---|---|
| 4.000 | 210 | 220 |
| 4.400 | 220 | 230 |
| 4.800 | 225 | 235 |
| 5.200 | 235 | 245 |
| 5.600 | 240 | 250 |
| 6.000 | 250 | 260 |
| 6.400 | 265 | 275 |
| | | |

# General: Linking Options

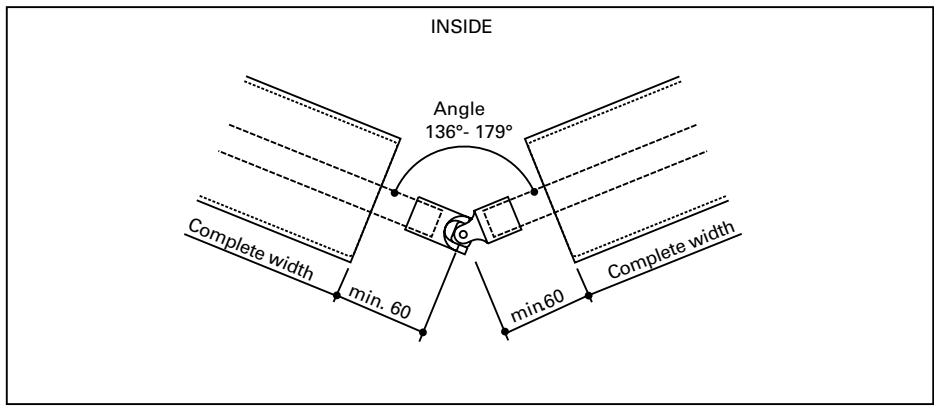
**Types: AF 50, AF 80, AF 100**



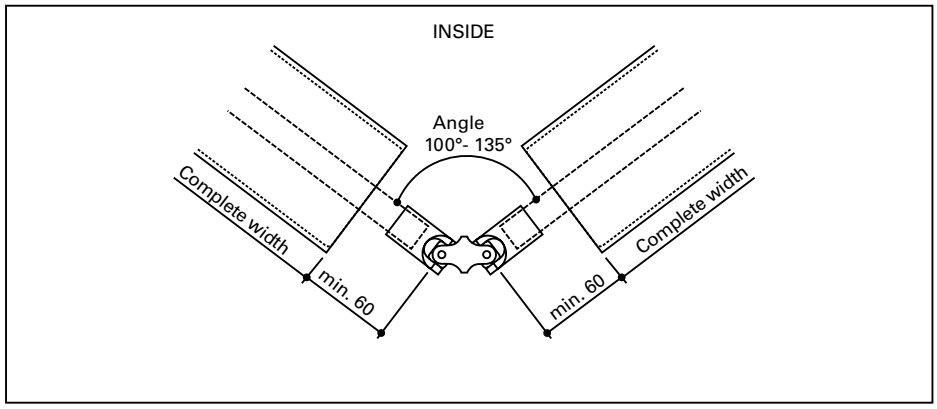

Close Linking
with divided top rail and linking distance of 15 mm to 50 mm




Close Linking
at passage through existing components with divided top rail. Mention linking distance on order form.



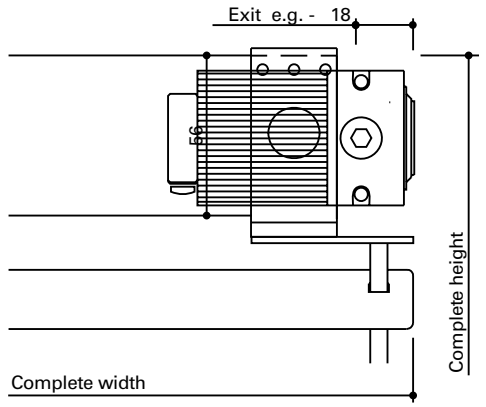

Where there are angels of 136° to 179° linking with universal link



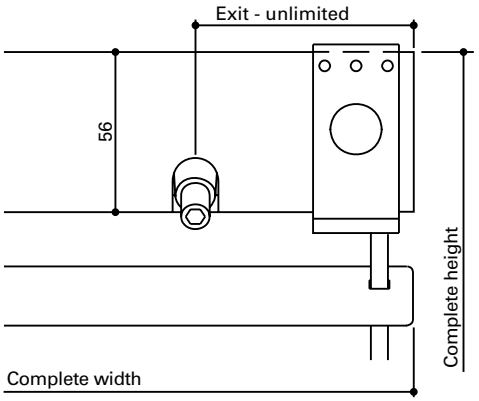

Where there are angels of 100° to 135° linking with universal link

# General: Crank Handle Operation

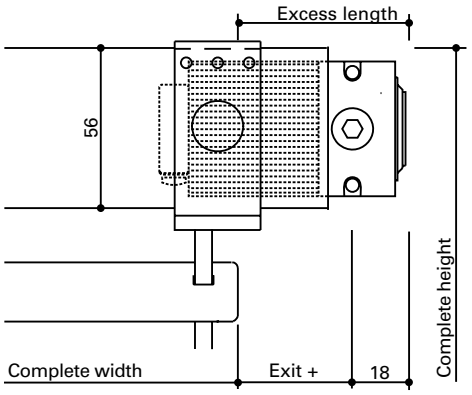
**Types: AF 50, AF 80, AF 100**




View with crank exit
right or left minus 20 mm
(within the blind)

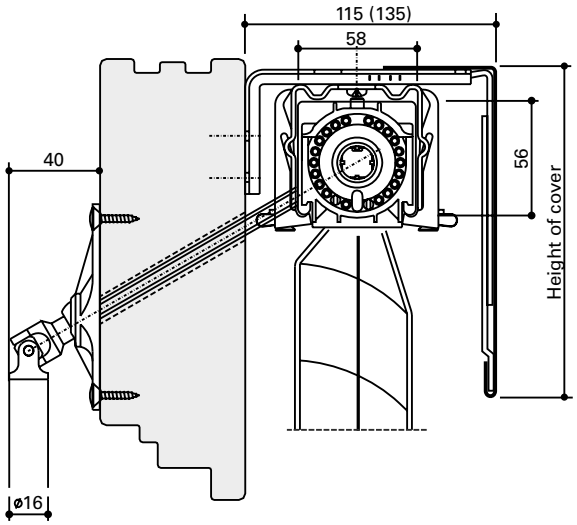



View with crank exit within
the blind (minus -)

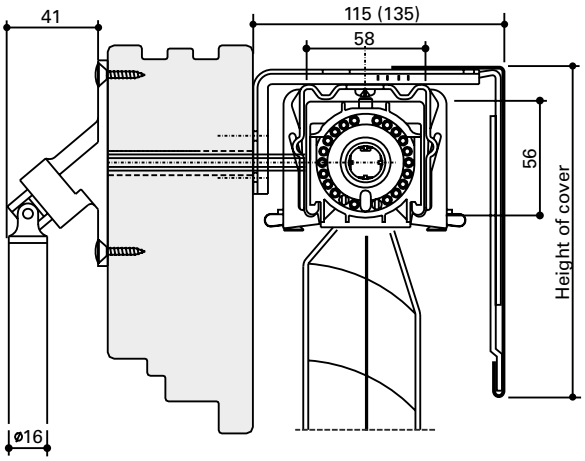



View with crank exit outside
of the blind (plus +)

Standard crank passage - diagonal



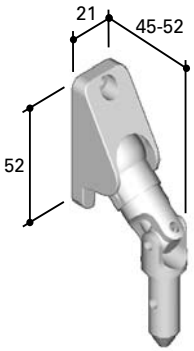

Crank passage - horizontal
(surcharge)



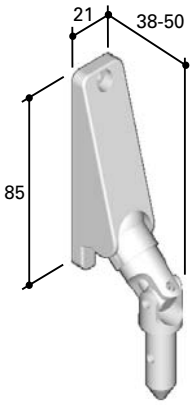
# General: Crank Handle Operation

**Types: AF 50, AF 80, AF 100**

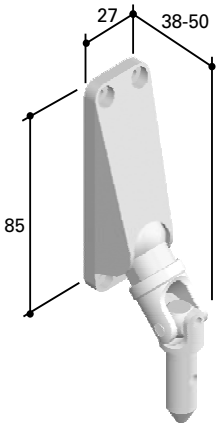
**Bearing - diagonal**



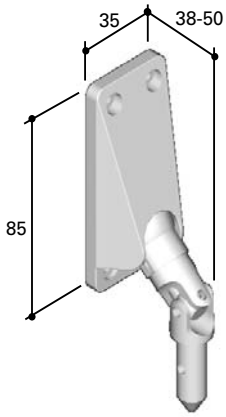

Bearing 50°-21x52
Plastic base plate
white, brown, grey
Art. No.: RO010285




Bearing 70°-21x85
Plastic base plate
white, brown, grey
Art. No.: RO010283

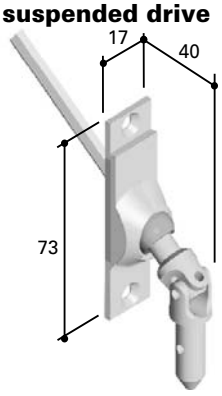



Bearing 70°-27x85
Plastic base plate
white, brown, grey
Art. No.: 11150201



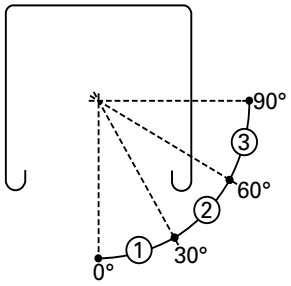

Bearing 70°-35x85
Plastic base plate
white, brown, grey
Art. No.: RO010282

**Bearing - diagonal also possible with fully-suspended drive**




Bearing 50°-17x37
chrome-plated base plate
Art. No.: RO010228-L500

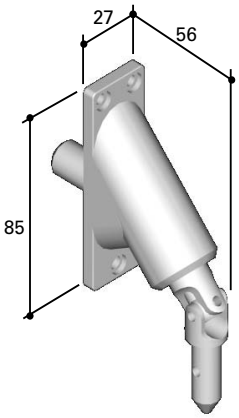
**Bearing - Range of Use**




1) 0° - 30° only possible with additional direction change
2) 41° - 60° Bearing diagonal
3) 61° - 90° Bearing horizontal

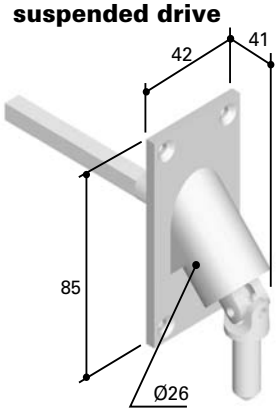
**Note:** gear exit under 45° situated beyond the end of the slats is required!

**Bearing - horizontal**

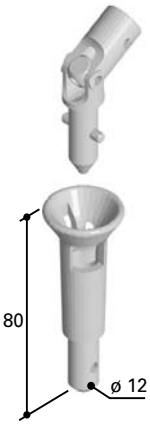



Bearing 90°-27x85
Plastic base plate
white, brown, grey
Art. No.: RO010281

**also possible with fully-suspended drive**

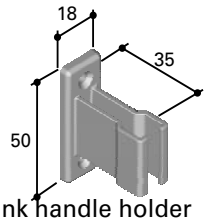



Bearing 90°-42x85
Die-cast aluminium base plate (white)
Art. No.: RO010261-L500

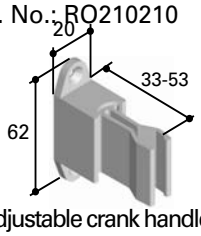



Crank handle funnel for flex crank handle, nickel-plated
Art. No.: RO010225

**Fittings**




Crank handle holder 35mm
(white, brown, grey)
Art. No.: RO210210




Adjustable crank handle holder (grey)
Art. No.: JA100226

# General: Motorized Drive

**Types: AF 50, AF 80, AF 100**

The blind is raised and lowered using an electric motor with integrated planetary gear by activating a switch. Slats can be tilted by lightly touching the switch in the respective direction.

If several motors should be activated with one switch, a control unit is necessary. When it reaches the top or bottom end position, the limit switches built-in to the motor automatically shut off the drive.

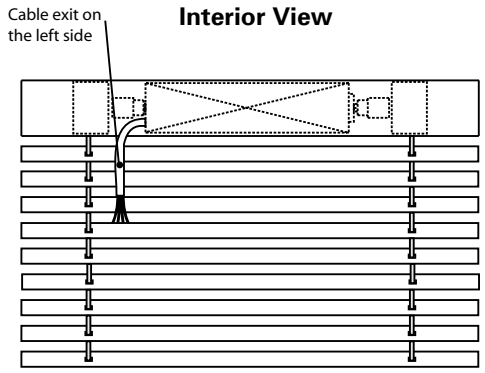
The drive is located in the middle of the blind with the cable exit on the left (seen from the interior)! With coupled devices, the middle motor is located in the middle (M) before the last bearing.

For control options, automatic devices and a choice of switches, please see your control documentation.

| Model | Surface of the Blind CH x CW | Art.No. | Elero (Standard Motor) | Art.No. | Elero (Object Motor) | Capacity (Watt) | Power consumpt. |
|---|---|---|---|---|---|---|---|
| AF 50 | up to 14 m² | 05100205 | E-MOTOR JA05 SOFT | 05100211 | E-MOTOR JA05 SOFT-UNO | 100 W | 0,45 A |
| | up to 25 m² | 05100206 | E-MOTOR JA09 SOFT | | | 170 W | 0,75 A |
| | up to 36 m² | 05100207 | E-MOTOR JA20 DK | | | 190 W | 1,05 A |
| AF 80<br>AF 100 | up to 8 m² | 05100205 | E-MOTOR JA05 SOFT | 05100211 | E-MOTOR JA05 SOFT-UNO | 100 W | 0,45 A |
| | up to 16 m² | 05100206 | E-MOTOR JA09 SOFT | | | 170 W | 0,75 A |
| | up to 25 m² | 05100207 | E-MOTOR JA20 DK | | | 190 W | 1,05 A |

| Model | Surface of the Blind CH x CW | Art.No. | Somfy (Standard Motor) | Art.No. | Somfy (Object Motor) | Capacity (Watt) | Power consumpt. |
|---|---|---|---|---|---|---|---|
| AF 50 | up to 8 m² | 05100012 | ORIENTA MU 3 NM | 05100008 | ORIENTA M 3 NM | 90 W | 0,4 A |
| | up to 17 m² | 05100013 | ORIENTA MU 6 NM | 05100009 | ORIENTA M 6 NM | 115 W | 0,5 A |
| | up to 27 m² | 05100014 | ORIENTA MU 10 NM | 05100010 | ORIENTA M 10 NM | 130 W | 0,6 A |
| | up to 36 m² | 05100015 | ORIENTA MU 20 NM | 05100011 | ORIENTA M 20 NM | 210 W | 0,95 A |
| AF 80<br>AF 100 | up to 5 m² | 05100012 | ORIENTA MU 3 NM | 05100008 | ORIENTA M 3 NM | 90 W | 0,4 A |
| | up to 10 m² | 05100013 | ORIENTA MU 6 NM | 05100009 | ORIENTA M 6 NM | 115 W | 0,5 A |
| | up to 16 m² | 05100014 | ORIENTA MU 10 NM | 05100010 | ORIENTA M 10 NM | 130 W | 0,6 A |
| | up to 25 m² | 05100015 | ORIENTA MU 20 NM | 05100011 | ORIENTA M 20 NM | 210 W | 0,95 A |

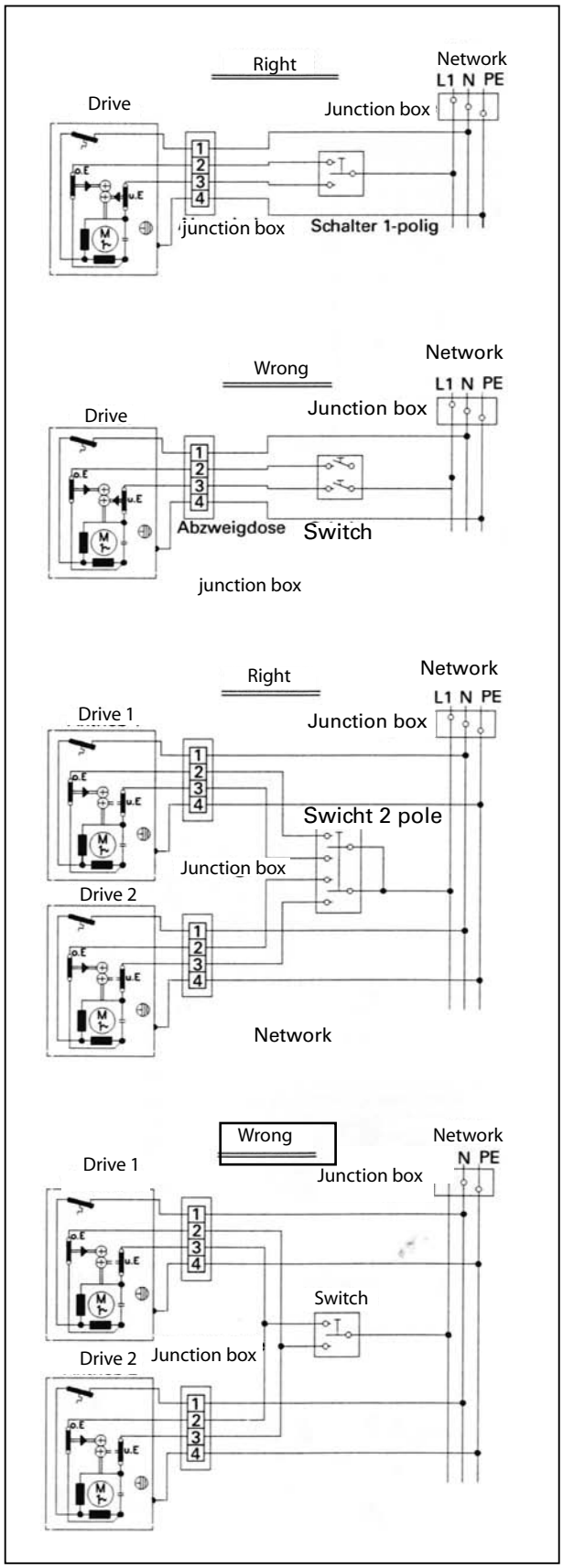
**Middle Motor with Cable Exit on the left Side**




**Note:** INSTABUS- Systems (EIB) und Motorized Drives.
On activating electric drives, please note that the minimum changeover delay between the Up and Down command is 500 ms. Usually only 30 – 80 ms are provided for. If incorrectly set up, the limit switches of the electric drives can fail (fuse). The Hella company declines guarantee in such a case.

# General: Motorized Drive

**Types: AF 50, AF 80, AF 100**




**Wiring Diagram for Individual Control Individual Drive 1 Pole**

The drives must be wired as suggested by the motor manufacturer. For installation by the customers, please observe the Austrian Electrotechnical Association and the local electric works' regulations.

**Note!**

**Important tips**

Electrical installations done by customers, must be carried out by a concessionary electrician.

**Unacceptable Types of Wiring for Parallel Connections to 2 or more Drives**

The drives of a commonly controlled facility never have precise running times!

Therefore, if several drives are to be commonly operated with one switch, a separate contact should be provided for every drive and every running direction (galvanic isolation of the drives). Jointly controlling several drives requires SOMFY control and/or automatic equipment. Otherwise, there is the risk that enormous loads occur, that the limit switches get destroyed and that the drive malfunctions.

**Note:**

When installing together with **Instabus EIB**-systems, the minimum changeover delay between the Up and Down Command is 500 ms.

**Switches or Circuits that Enable Up and Down Commands Simultaneously**

Simultaneously issuing the Up and Down Commands, leads to a short-circuit of the capacitor and to contra-induction in the winding. Therefore, only electrical or mechanical interlocking individual switches should be used. With several switches, provide one-step or multi-point control relays. When controlling several drives, use control equipment with an interacting locking of commands.

**Further Wiring Regulations / Drives in Wet Spaces**

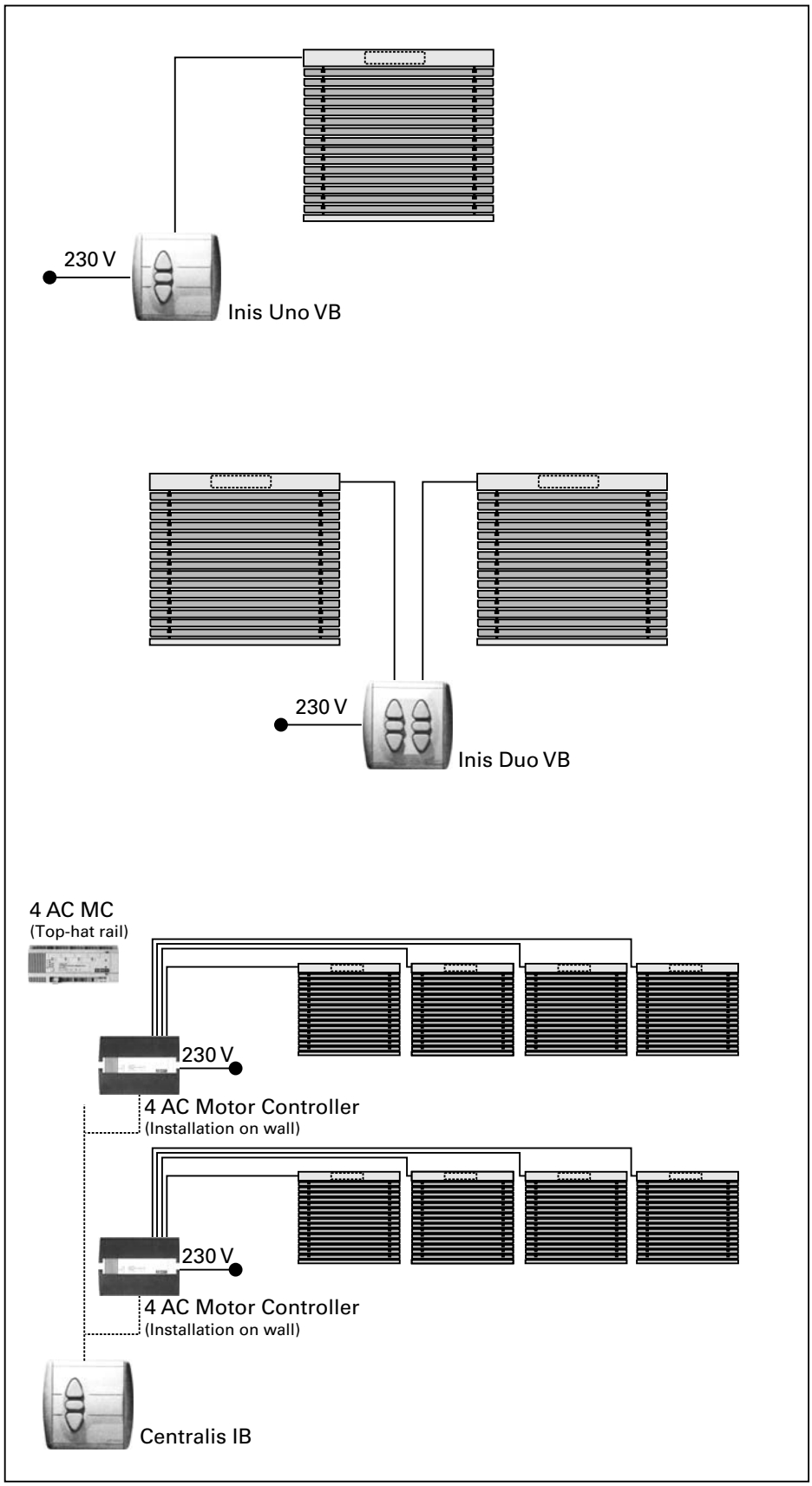
The drives have protection class splashproof according to the Association for Electrical, Electronic & Information Technologies (VDE) 0700 Part 228. If our drives are to be used in wet spaces (e.g. bathrooms), the regulations and recommendations of the Austrian Electrotechnical Association and the local energy supply company should be observed, including the stipulations on the safe area for wet and damp spaces in the Austrian Electrotechnical Association's regulations.

**These Regulations Include Obligatory Safety Measures!**

**Non-compliance Can Be Fatal!**

# General: Motorized Drive

**Types: AF 50, AF 80, AF 100**




**Individual Operation**

Control of 1 drive using a switch (Inis Uno VB).
Note:
maximum 1 drive per switch

**Individual Operation with Dual Switch**

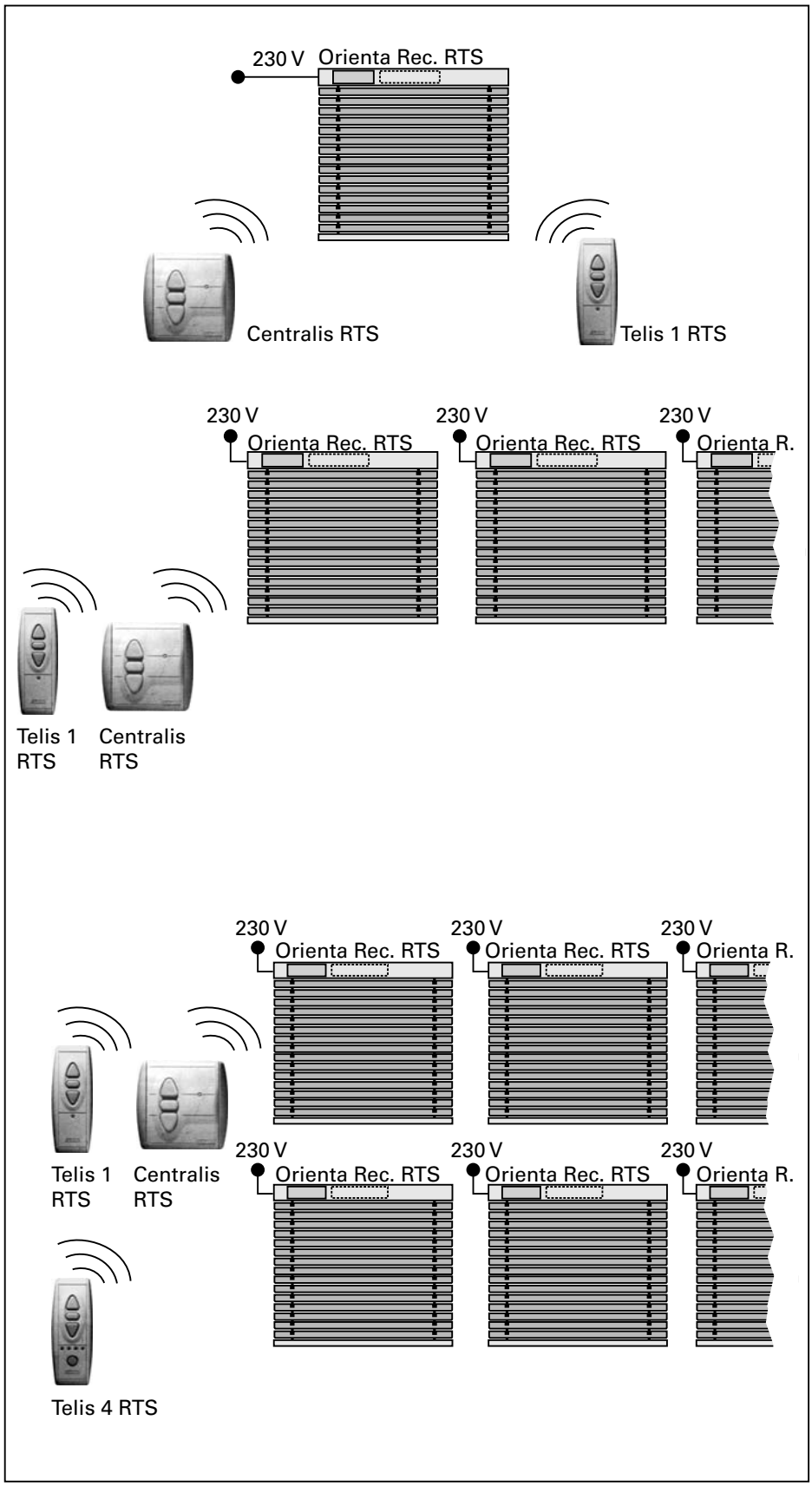
Control of 2 drives using a dual switch (Inis Uno VB)

**Group Operation**

Simultaneous control of up to 4 drives with a 4 AC motor controller (installation on wall or top-hat rail installation in the standard transfer casing).
Central command using central button Centralis Uno IB.

# General: Motorized Drive

**Types: AF 50, AF 80, AF 100**




**Individual Remote Control**

Controlling a drive with an additional Orienta Receiver RTS radio receiver that is built into the top rail.
As a transmitter, either a Telis 1 RTS (1-channel radio hand-held transmitter) can be used, or a Centralis RTS (1-channel radio wall transmitter).

**Small Group Remote Control**

Controlling several drives (up to 16) each with an additional Orienta Receiver RTS radio receiver that is built into the top rail.
As a transmitter, either a Telis 1 RTS (1-channel radio hand-held transmitter) can be used, or a Centralis RTS (1-channel radio wall transmitter).

**Individual, Small Group and Centralised Remote Control**

Controlling several drives (up to 16) each with an additional Orienta Receiver RTS radio receiver that is built into the top rail.
As a transmitter, either a Telis 1 RTS (1-channel radio hand-held transmitter) can be used, or a Centralis RTS (1-channel radio wall transmitter).
If the facilities are subdivided into even smaller groups, or individually controlled, a Telis 4 RTS (4-channel radio hand-held transmitter) or another hand-held transmitter is required.

# General: Colour Definition

**Types: AF 50, AF 80, AF 100**

| Available Colours: | |
|---|---|
| Slats 50/80/100mm | According to current range |
| Slats 50/80/100mm perforated | Standard in white and silver<br>Colours according to current range for a surcharge |
| Top rail (roll form) | Galvanised |
| Top rail (extruded) | Standard in shiny aluminium<br>Colours from the RAL-colour chart or anodised for a surcharge (CO, C31-C35) |
| Bottom ail<br>Side guide rail<br>Distance bracket | Standard in 2 colours:<br>White (RAL 9016) and silver (RAL 9006)<br>Colours from the RAL-colour chart or anodised for a surcharge (CO, C31-C35) |
| Cover | Standard in 3 colours:<br>White (RAL 9016), brown (similar RAL 8014), silver (RAL 9006)<br>Colours from the RAL-colour chart or anodised for a surcharge (CO, C31-C35) |
| Box (round box) | Standard silver (RAL 9006)<br>Colours from the RAL-colour chart or anodised for a surcharge (CO, C31-C35) |
| Box (square box) | Standard silver (RAL 9006)<br>Colours from the RAL-colour chart or anodised for a surcharge (CO, C31-C35) |
| Inside fittings | White, grey and dark brown |
| Ladder cord | Grey and black |
| Lifting tape | Black |
| Side guide rail insert | Grey and black |