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# Panel Systems

## HSW EASY Safe

Security in use and elegance in design

### Outstanding strengths of the HSW EASY Safe system:

- The optional safe use of laminated safety glass increases security and also widens the creative possibilities.
- A visible status display with a clear colour system indicates the status of the top locking device on the single-action sliding panel or double-action sliding panel. This gives a better overview and even more security.
- Double brush seals in the top and bottom door rails, successfully minimize drafts.



# Intelligent solutions for more convenience and security

## HSW EASY Safe – More clarity and easier locking thanks to status display

### Locking status at a glance

Security and convenience in one: The top door locking device clearly shows the locking status of the door panel on the status display. This gives the user a greater feeling of reassurance and security.



### Less draft for even greater comfort

Innovative double brush seals in the top and optional in the bottom door rails improve door closure and noticeably minimize the amount of draft. The vertical brush seals, which are also optionally available, can be fitted up to the full height of the panel and give additional draft proofing – for noticeably greater comfort.





## Simple locking with hand or foot

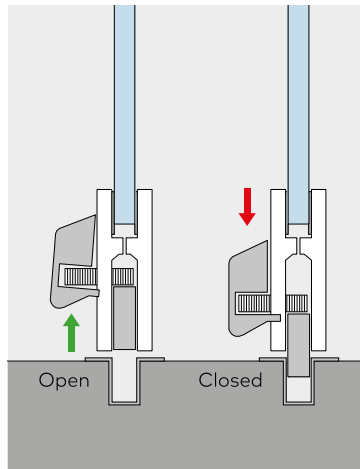
### Multilock – Three locking possibilities in one component

#### The new Multilock system opens up a new world of simplicity

The Multilock combines three locking possibilities in one compact element and can be installed effortlessly in the bottom door rail.



#### Easy foot-operated opening and closing



#### Simplicity with clear benefits:

The 3-in-1 Multilock can be offered in three options for secure locking: side locking device, front locking device or cylinder lock.

- Maximum convenience with foot-operated locking options for the face-mounted floor bolt – simple and hassle-free.

## Innovative hold for more security

### VSG – Improved security with the optional use of laminated safety glass



#### **Creative freedom combined with security**

Thanks to the innovative Clamp&Glue bonding technology, the HSW EASY Safe system allows the use of highly secure laminated safety glass. With the insertion of inlays within the laminated safety glass, the horizontal sliding wall can be used as a custom design element, thus setting new standards in interior design.

#### **Hassle-free installation thanks to the new Clamp&Glue technology**

The fixing process with HSW EASY Safe is incredibly simple. The special adhesive is fed through an injection hole in the two upper door rail halves to the adhesive channel where it spreads out evenly. After a drying time of just 15 minutes the panel can then be installed.

#### **Attractive added value:**

- Laminated safety glass makes the application of HSW EASY Safe not only attractive, but also more secure.
- The innovative Clamp&Glue technology enables easy bonding and also ensures that fittings and LSG (from TSG) are held firmly in place.
- Special inserts in the laminated safety glass offer huge design freedom as well as additional functions such as protection from the sun, noise reduction and privacy screening.

The inlay can be gradually pressed out using clamping force. The bonding of the glass with the fitting prevents the fitting from slipping out of the glass due to possible decrease in clamping force.

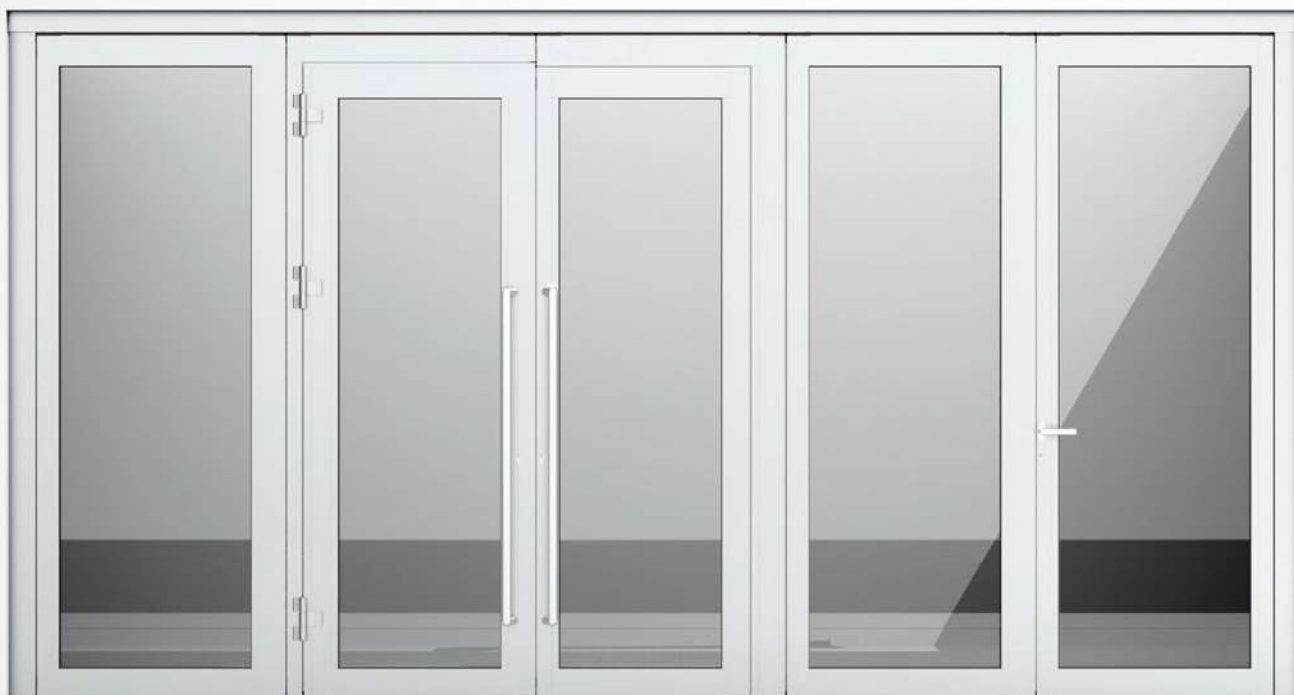
## HSW FLEX Therm

Aesthetic elegance offering reliable protection against wind and weather

**Whether it's for a shop window or a business entrance, the new horizontal glass sliding wall system HSW FLEX Therm impresses with its clear, uniform and straightforward design lines.**

Yet the internal values are also compelling. In applications on the outside of buildings, the outstanding insulation properties of the profile come to the fore,

complying with ENEC as from 2016. Added to this is the fact that the system will match virtually any architectural style, as well as offering a wide range of configuration possibilities. Your benefit: A flexible sliding wall system that is easy to design, with excellent form, function and convenience attributes integrated right from the start.



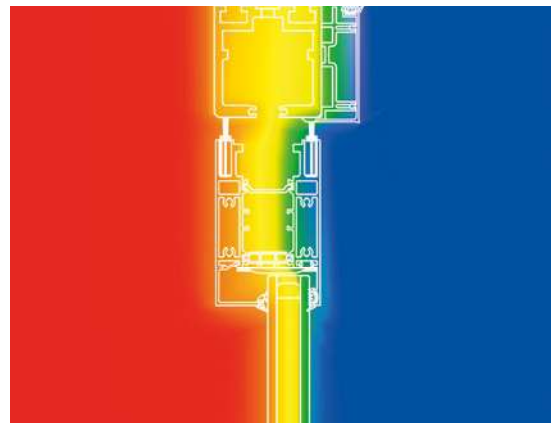
### High security, rectilinear design

A new frame system has been created specifically for the HSW FLEX Therm. Its clear, straightforward design lines, its detailed, sophisticated functionality and the high level of safety and security it offers are benefits that cannot be ignored. Frames without miter cuts ensure uniformity in visual appearance, especially with the functional elements such as the locking mechanisms, multi-point locking systems and door closers concealed within the profiles.



### Optimized thermal separation

The HSW FLEX Therm frame profile offers 40% better insulation compared to the predecessor model. Optimized with double rubber lip and brush seals on the inside and outside and with air-filled cavities, its profiles ensure improved thermal separation – from the finished floor right up to the overhead track.



### Thermal protection

Heat transition coefficient to EN ISO 10077-1, -2  $UD[W/m^2K] = 1.8$

### Impact load

Grade 5 to EN 13049/16361

### Wind resistance:

Grade A3 to EN 12211/12210

### Air permeability:

Grade 2 to EN 1026/12207

### Durability

Grade 3 to EN 1527, corresponding to 25,000 cycles for suspended sliding doors > 100 kg.  
Grade 3 to EN 1191, corresponding to 20,000 cycles for the door function of single-action sliding panels and offset hung end panels

### Sound insulation index

Glazing thickness: 44.4 mm

Evaluated sound insulation index:  $R_w = 31.4$  dB

Standard: Airborne sound insulation of a movable glass partition wall acc. to DIN EN ISO 10140

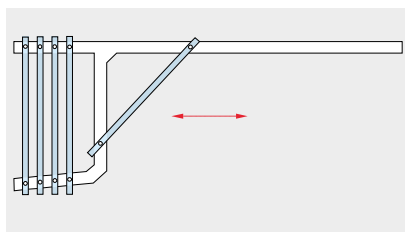
# HSW – Transparent versatility

Horizontal sliding walls are used in a wide range of different project types, and for both internal and external applications. These partitions can be flexibly designed to suit the site of installation, structural conditions and design concept. They can satisfy a broad spectrum of requirements in relation to styling, material and finish

or colour, and can also be equipped with individually fabricated panels to perform special functions. Additional utilisation of the dormakaba substructure allows a simple, reliable and secure installation of the entire HSW system.

## HSW – Horizontal Sliding Walls

Panels slide individually – stacking track required

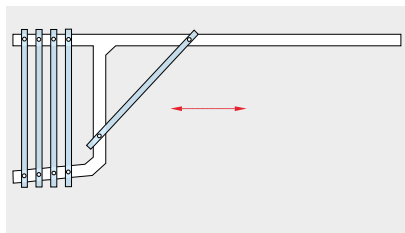


### HSW EASY Safe

Glass assembly with top and bottom door rail

## HSW Horizontal Sliding Walls, fully framed

Panels slide individually – stacking track required



### HSW-R

Fully framed for toughened safety glass, laminated safety glass or double glazing

# Product overview

## HSW EASY Safe

With the HSW Easy system, the panels create a continuous transparent face completely without side frame elements. Under certain circumstances, an additional wind deflector can, however, be provided at the glass edges as a preferred option.

## FSW EASY Safe

The FSW EASY Safe folding sliding wall system offers both high transparency and enhanced user safety. Door rails top and bottom and roller carriers at the end of every second panel make it ideal for inline configurations. Visually compatibility with HSW EASY Safe panels means that both systems can be effectively combined in the access frontages of a building.

## HSW-R

The HSW-R sliding glass panel frontage is suitable wherever likely to be exposed to high wind loads – for example, for shop windows and store entrances located in the façade/on the outside of the building. Aluminium alloy frames clamp the glass on all sides, with lateral rubber lip seals and double brush seals top and bottom providing added weather protection.

## HSW FLEX Therm

The horizontal sliding wall for reliable and secure protection from wind and weather – flexible and energy-efficient. The straightforward lock bar system makes it easy to change the function of the panel with just one hand. All functional elements are invisibly integrated in the new frame system for added aesthetic allure.

Use and features	HSW EASY Safe	FSW EASY Safe	HSW-R	HSW FLEX Therm
Shop fronts	●	●	●	●
Shop fronts with climate barrier function			○	●
Internal room divider	●	●	○	○
Glass thicknesses (mm) Toughened safety glass (TSG)	10/12/13/ 15/17/19	10/12/13/ 15/17/19		
Glass thicknesses (mm) Laminated safety glass (comprising TSG sheets)	10,8/12,8/13,5/ 15/17/19	10,8/12,8/13,5/ 15/17/19	8–24 <sup>1)</sup>	8 10-49
Assembly height (max. mm)	4.000	3.000	3.000	3.500
Panel width (max. mm)	1.250	1.100	1.100	1.250
Panel weight (max. kg)	150	80	100	150
<b>Access panels (pivoting type)</b>				
– Pivoting end panel, single-action	●	●	●	
– Pivoting end panel, double-action	●	●	●	
– Offset hung end panel	●	●	●	●
– Single-action sliding panel	●	●	●	●
– Double-action sliding panel	●	●	●	
– Invisibly integrated door closer ITS 96	●		●	●

● Standard ○ Optional \* Weight dependent on panel fittings <sup>1)</sup> also usable for double glazing units.

## Panel design

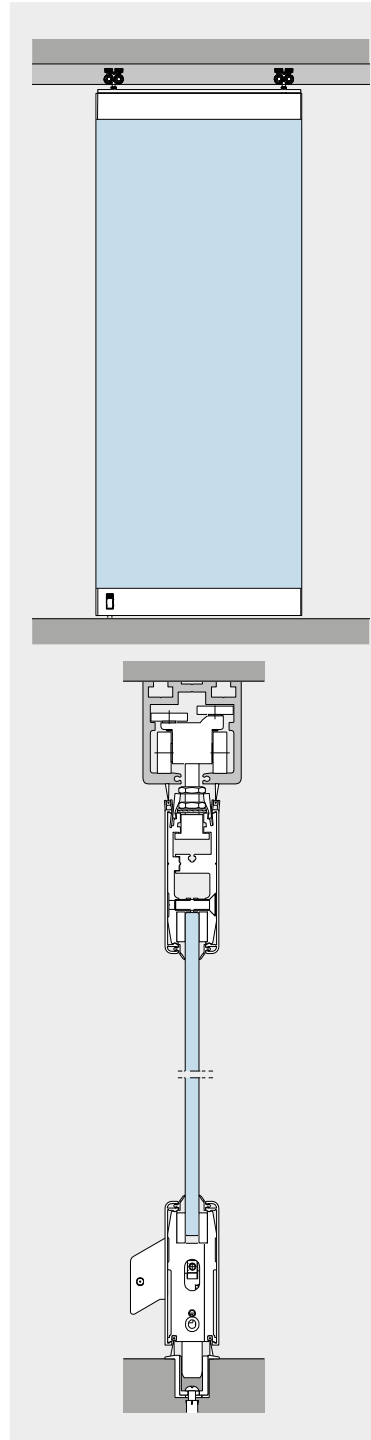
With the features that the different panel types have in common **HSW EASY Safe** satisfies all the requirements placed on transparent façades in the typical applications that arise.

- All panel types are provided with a bottom and a top door rail, which hold the glass safely.
- HSW assembly only with sliding panels, pivoting end panels and fixed panels can do without an additional carrier profile. For single- and double-action sliding panels the carrier profile is indispensable. When an assembly incorporates single- or double-action sliding panels then the carrier profile is provided for all panel types.
- The glass panes can have the following glass thicknesses: 10 mm, 10.8 mm, 12 mm, 12.8 mm, 13.5 mm, 15 mm, 17 mm and 19 mm. (tolerance range +/- 0.5 mm)
- When using laminated safety glass the Clamp&Glue technology provides secure hold without the need for glass drilling.
- The top panel profile (either door rail or carrier profile) incorporates a double brush seal as standard. As an option the bottom door rails can have double brush seals as well.
- Excellent draft protection is reached when additional sealing profiles with matching double brushes are used at the vertical glass edges as well.

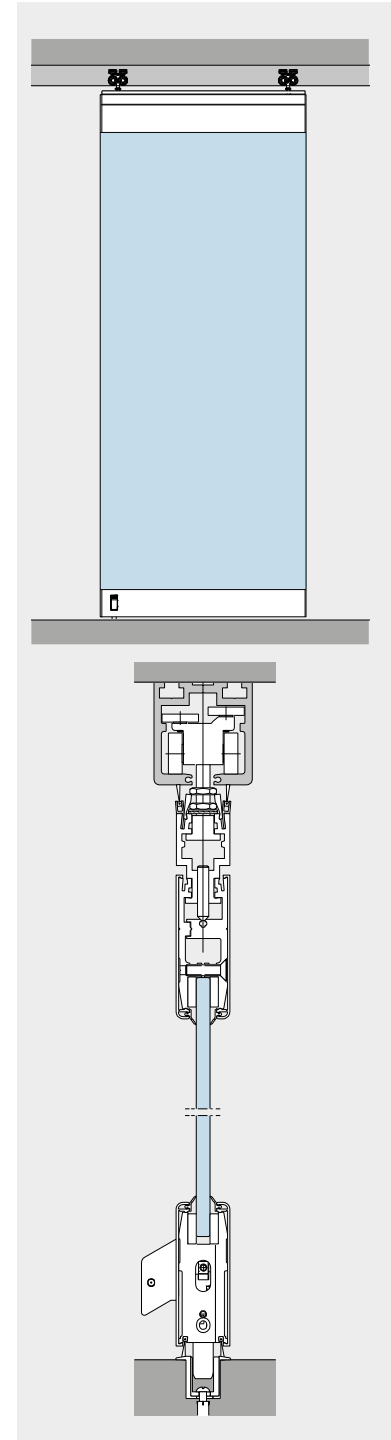
HSW EASY Safe is certified to have reached the following tests:

- Wind load (Frame bending): EN 12210 Class 1
- Endurance strength: DIN EN 1527 Class 3 and DIN EN 1191 Class 3
- Side impact: DIN EN 13049 Class 5 (highest class)
- Corrosion: DIN EN 1670 Class 4
- EPD (Environmental Product Declaration): ISO 14040

**Sliding panel**  
without carrier profile

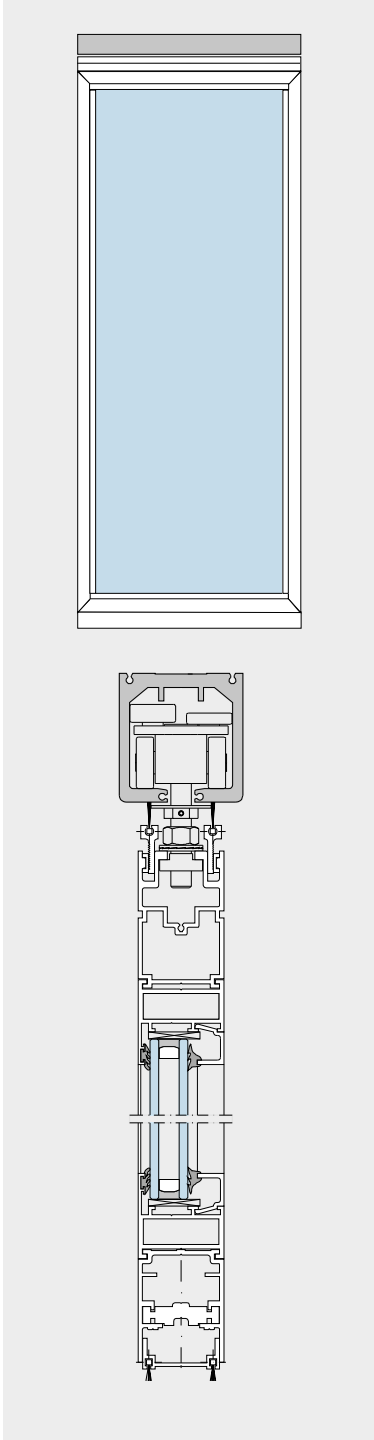


**Sliding panel**  
with carrier profile

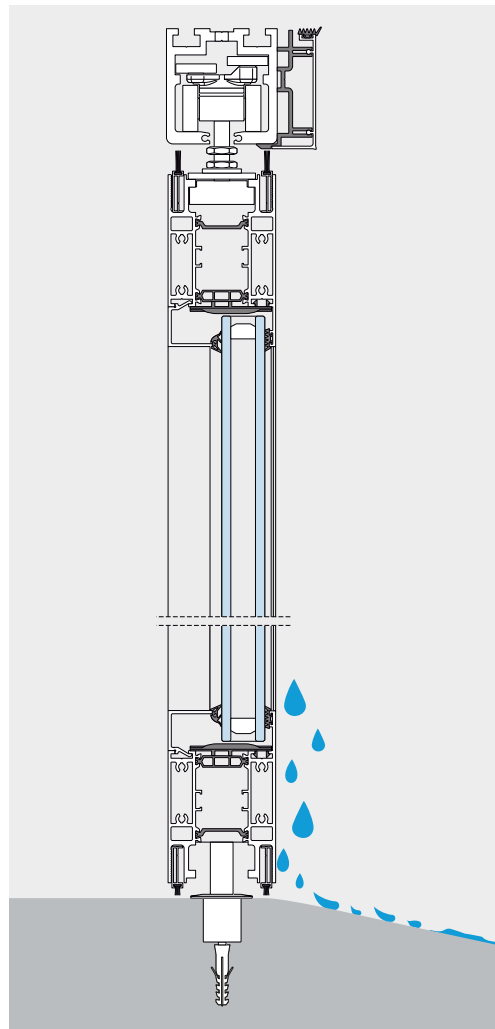


**HSW-R**

All-round frame

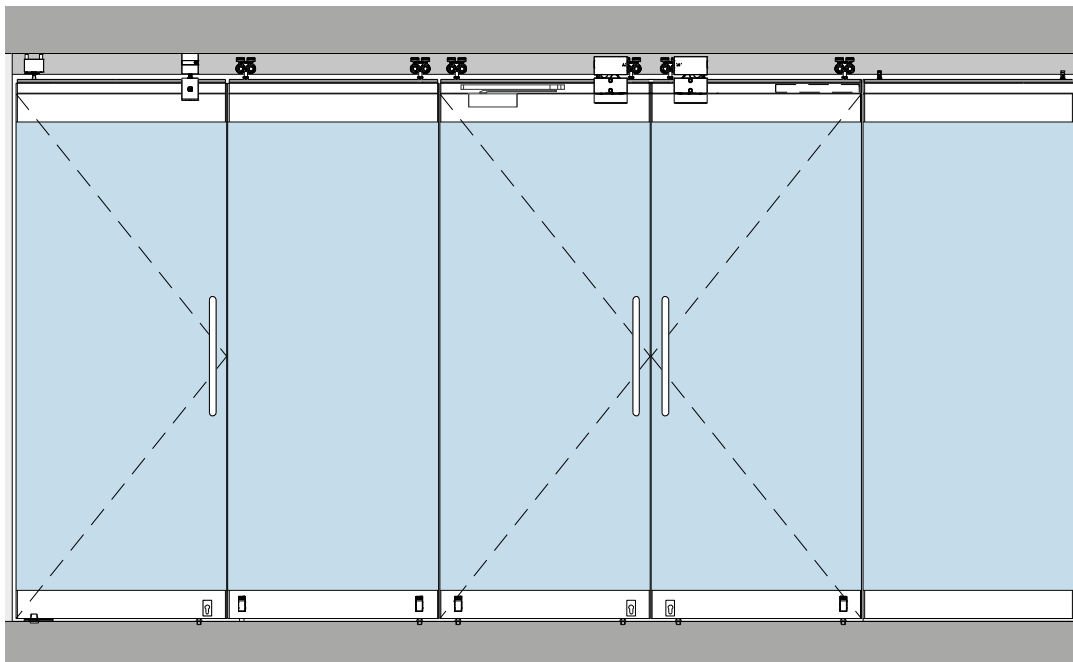


The all-round frames of the individual panels of an HSW-R system offer not only high stability but also effective protection against external influences, with the option of either laminated safety glass (LSG), toughened safety glass (TSG) or double glazing units for the glazing.

**HSW FLEX Therm**



# HSW EASY Safe – Panel functions



A presentation of the offset hung end panel and the sliding folding panel is available on pages 61 and 62

	<b>Pivoting end panel, single- or double-action</b> Non-sliding. Single-action panel with floor pivot and dormakaba TS 92/dormakaba TS 73 door closer. Double-action panel with floor pivot or dormakaba BTS floor spring.	<b>Sliding panel</b> Basic movable panel without additional function.	<b>Single-action sliding panel*</b> Single-action sliding panel with dormakaba TS 92 cam-action door closer, operational when frontage closed. (Alternatively with ITS 96.)	<b>Double-action sliding panel*</b> With ITS 96 door closer, operational when frontage closed.	<b>Fixed panel</b> Fixed panel design matching the design of the sliding panels in the assembly.
<b>Max. panel height</b>	4,000 mm	4,000 mm	3,600 mm	3,600 mm	4,000 mm
<b>Max. panel width</b>	1,250 mm	1,250 mm	1,250 mm (1,100 mm)	1,100 mm	1,250 mm
<b>Max. panel weight</b>	150 kg	150 kg	120 kg**	120 kg**	150 kg

The individual panels can also be of differing widths. The largest width should not exceed max. 115% of the smallest width.

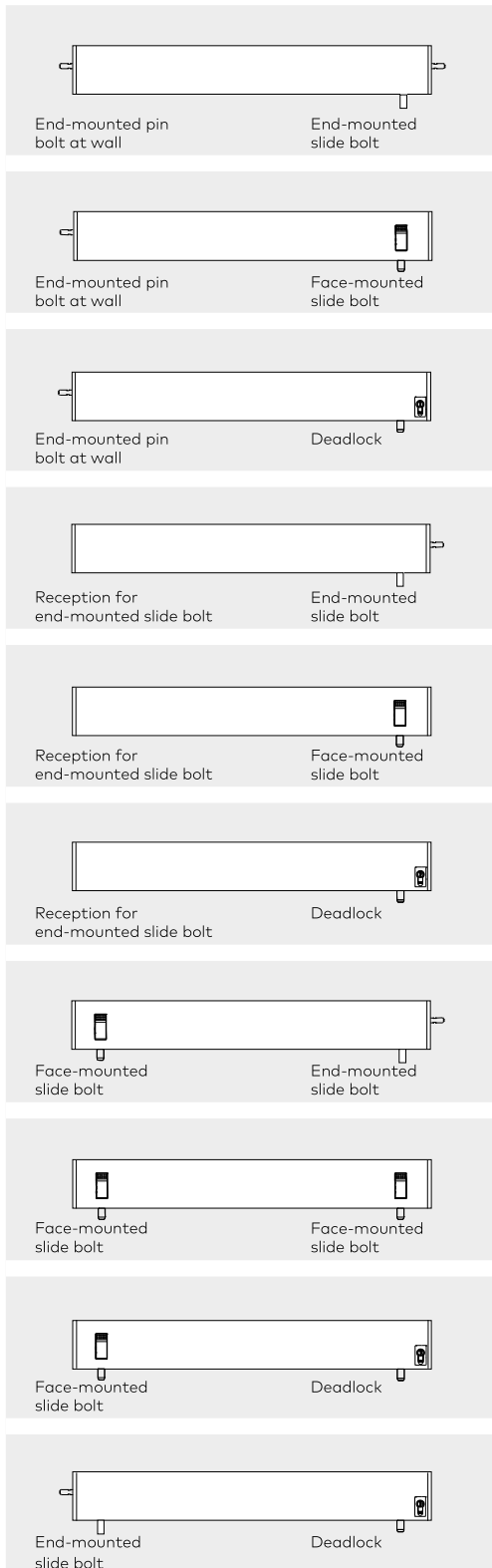
\*For these panel types please consider our notes on portal systems on page 125.

\*\*Note: The maximum permissible weight relates to the complete door assembly, including handles.

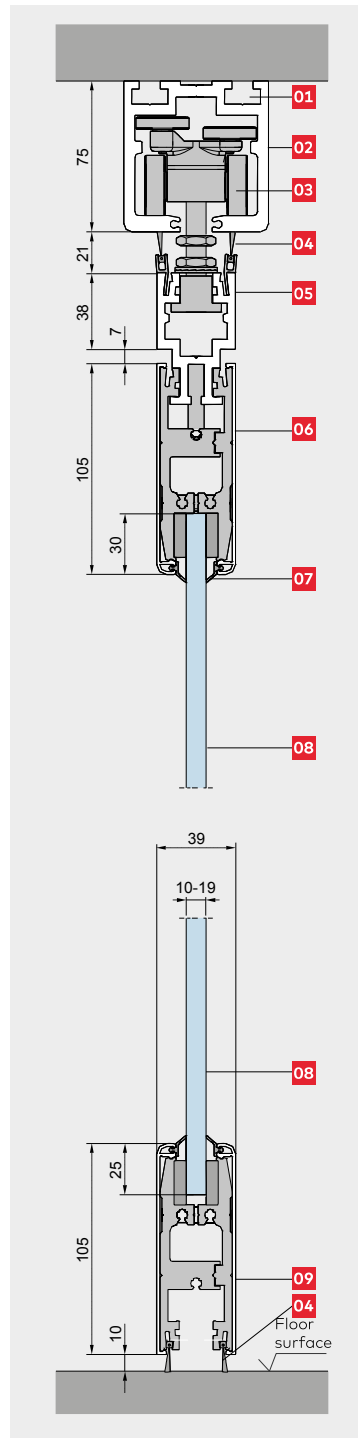
# Door rails and general details

## Bottom locking devices

All depicted combinations are also available as mirror arrangements.



## General parts and measurements

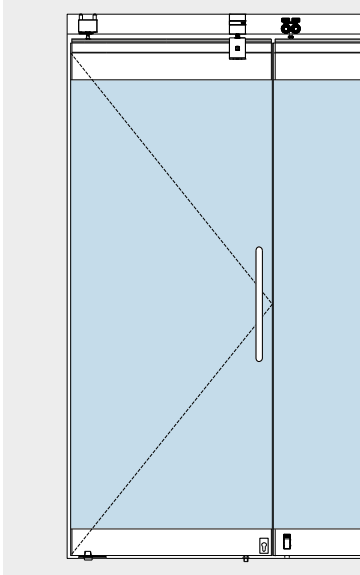


Irrespective of the function of the individual panels, an HSW EASY Safe system comprises the following basic components:

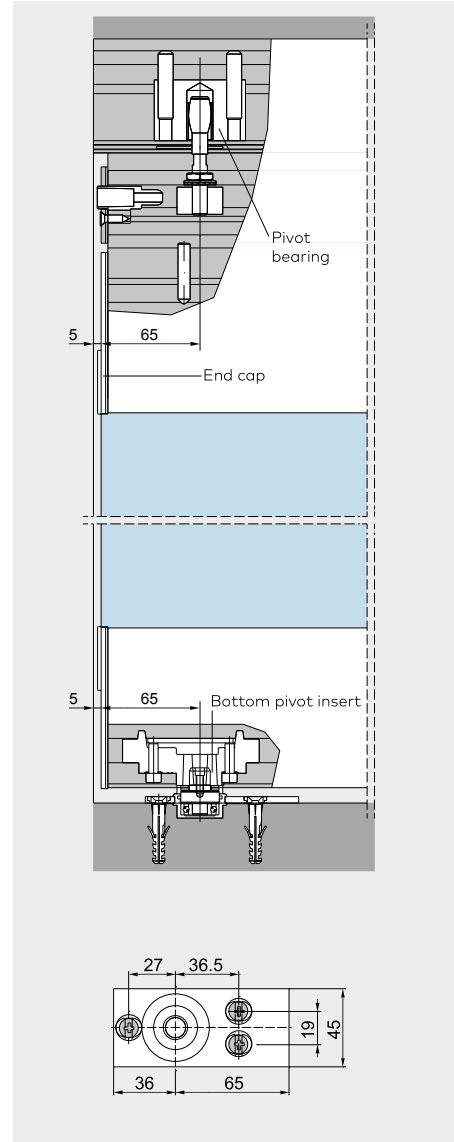
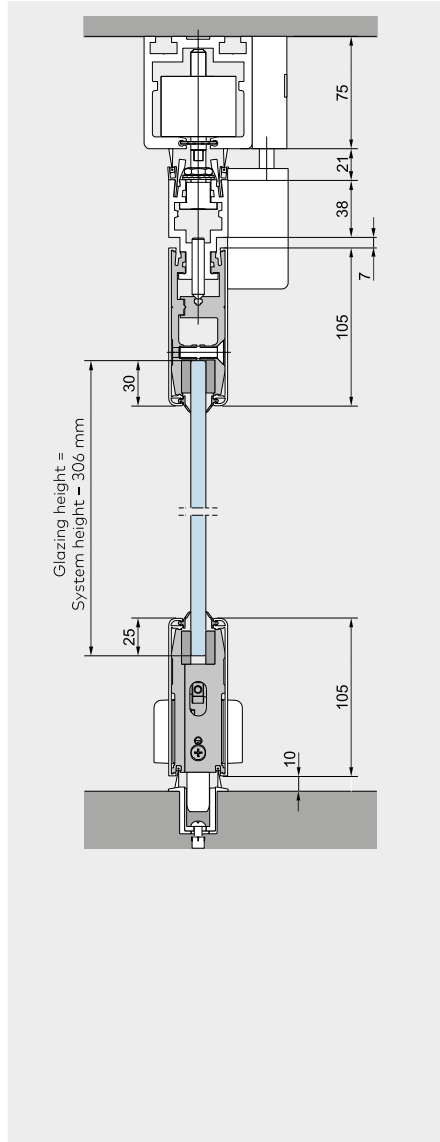
- 01** Two parallel channels suitable for M 10 screws and clamp connectors
- 02** Track rail
- 03** Roller carrier
- 04** Double brush seals on top (bottom layout is optional)
- 05** Carrier profile
- 06** Top door rail and (consisting of basic profiles, cover profile and lateral end caps)
- 07** Rubber seal, bridges the gap between cover profile and glass panel
- 08** Toughened safety glass or toughened laminated safety glass 10–19 mm (by others)
- 09** Bottom door rail, both comprising base profiles with cover profiles and end caps

# Pivoting end panel

## single- or double-action



**Pivoting end panel, single- or double-action, with floor pivot**  
 Non-moving and always equipped with a locking dead-lock and the option for an additional upper locking unit.



### Pivoting end panel, single-action

with stop-type end caps top and bottom.

Pivot point variants:

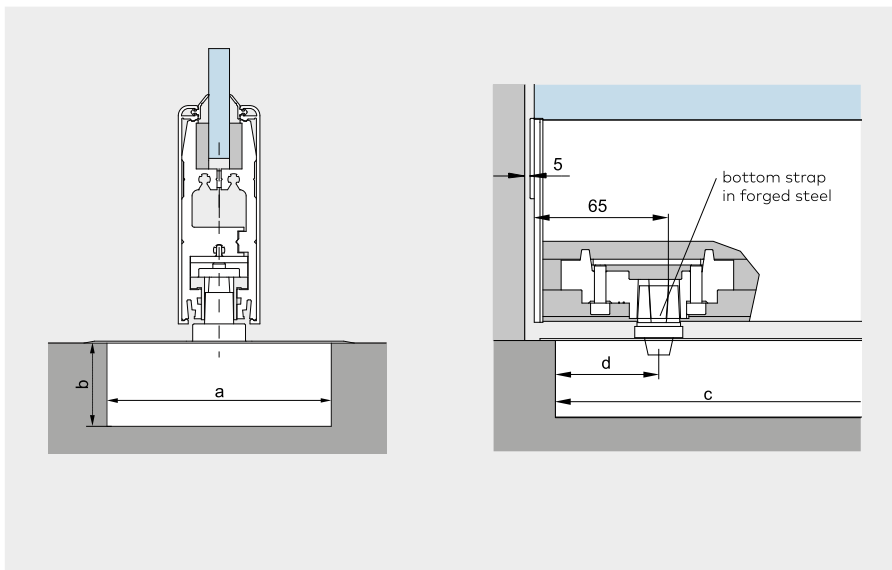
- Floor pivot with round spindle, optional combined with dormakaba TS 92 overhead door closer\*
- dormakaba BTS 84 for panels up to 100 kg, with optional hold-open at 90° door opening angle
- dormakaba BTS 80 for panels up to 150 kg with adjustable hold-open device

### Pivoting end panel, double-action

Pivot point variants:

- Floor pivot with round spindle
- dormakaba BTS 84 for panels up to 100 kg, with optional hold-open at 90° door opening angle
- dormakaba BTS 80 for panels up to 150 kg with adjustable hold-open device

### Pivoting end panel, single- or double-action, with floor spring



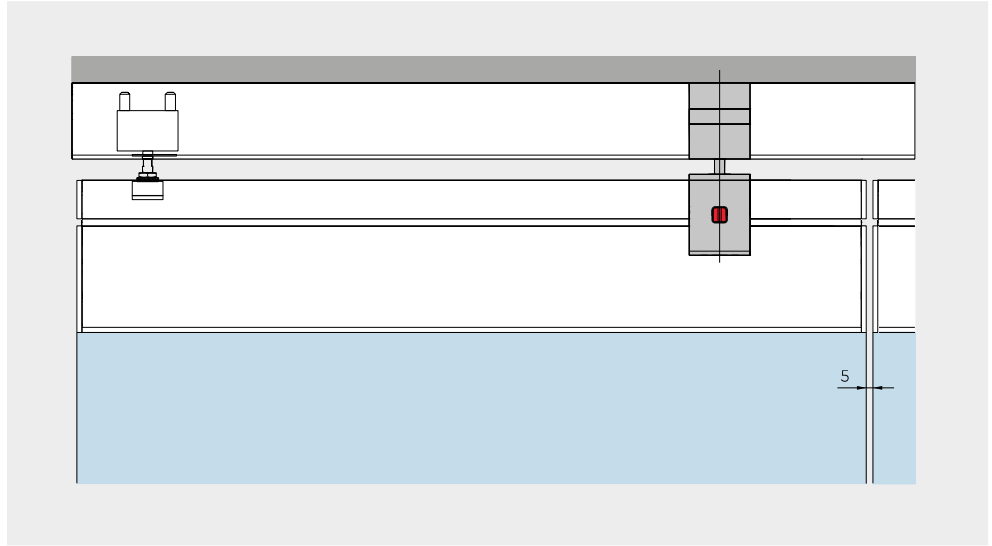
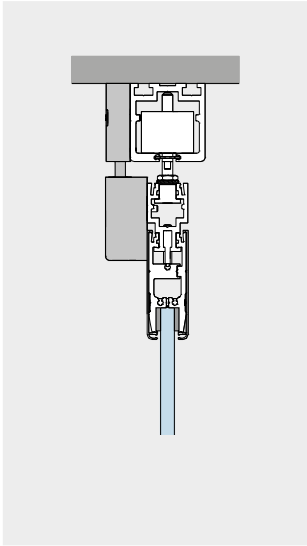
Mounting dimensions (in mm)

	dormakaba BTS 84	dormakaba BTS 80
a	108	78
b	40	60
c	306	341
d	51–58	51–57

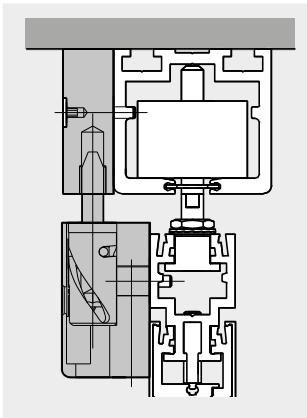
\* Data and features dormakaba TS 92 see page 55.

# Pivoting end panel

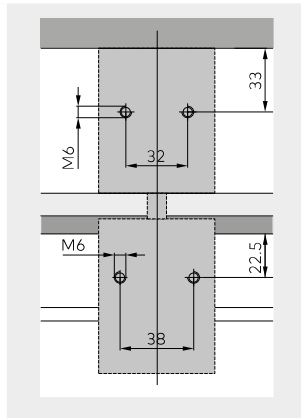
single- or double-action, with additional upper locking bolt



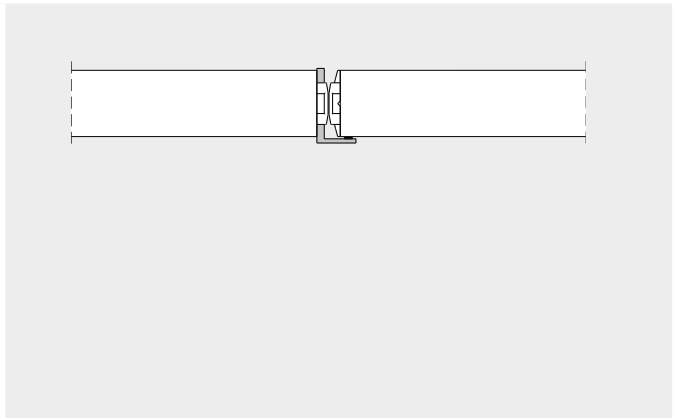
Additional upper locking bolt



New drill hole of pattern



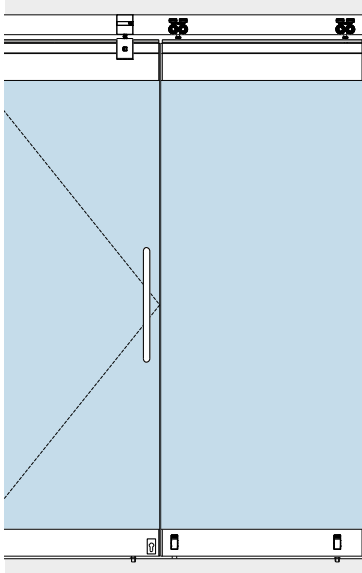
End cap with stop (optional)



Data and features		dormakaba BTS 80			dormakaba BTS 84		
		3	4	6	2	3	4
Spring strength (EN)							
Standard and external doors	≤850 mm				●		
	≤950 mm	●				●	
	≤1,100 mm		●				●
	≤1,400 mm			●			
Closing speed adjustable by valve	130°-0°				●	●	●
	130°-20°				●	●	●
	175°-0°	●	●	●			
Delayed action (adjustable by valve) (selectable alternative to the hold-open feature)		●	●	●			
Max leaf weight (kg)		300	300	300	100	100	100
Hold open	90°				●	●	●
	adjustable	●	●	●			
Dimension	Length	341	341	341	306	306	306
	Overall width	78	78	78	108	108	108
	Height	60	60	60	40	40	40
Door closer tested to EN 1154		●	●	●	●	●	●

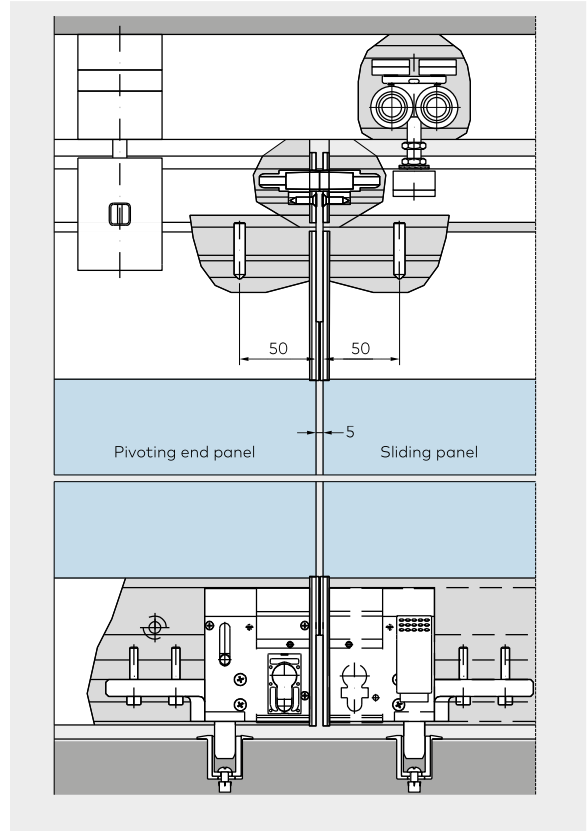
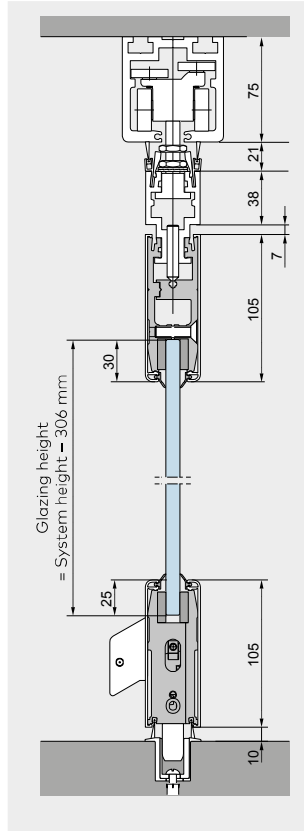
# Sliding panel

## Basic movable panel without additional function.

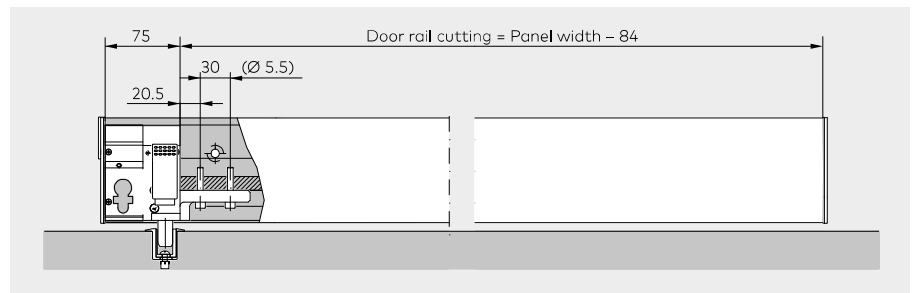


The sliding panels are movable. Once in their closed position, they are locked. The locking components provided in the bottom door rail can be face-mounted slide bolts, end-mounted slide bolts, end pin bolts or deadlocks.

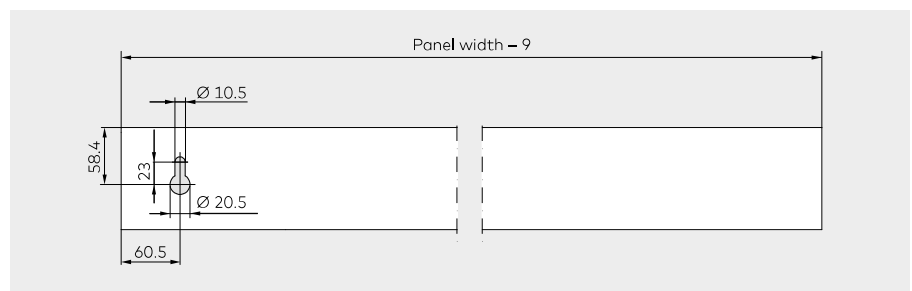
The structure of the bottom door rail applies also to single-action/double-action sliding panel.

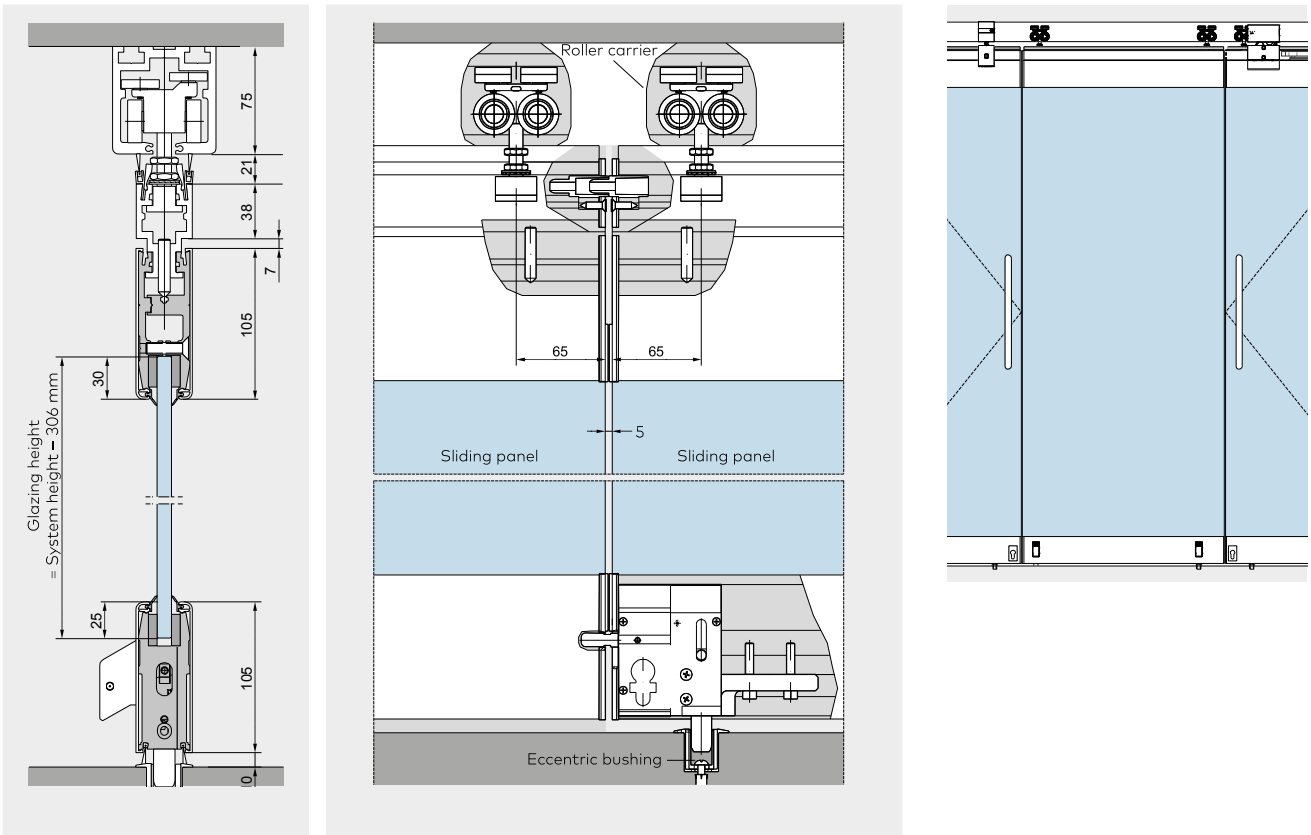


## Bottom door rail with face-mounted slide bolt

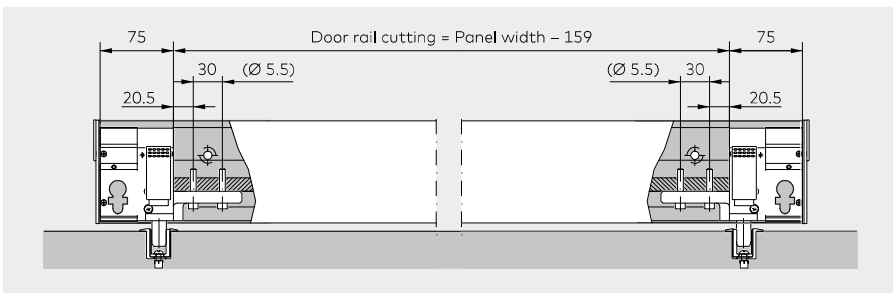


## Machining of cover profile (face-mounted slide bolt)

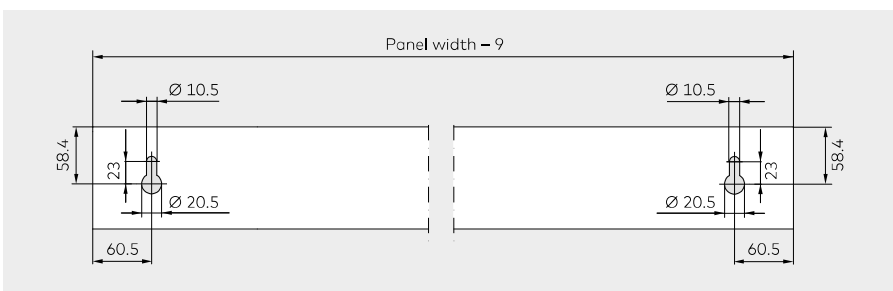




**Bottom door rail with face-mounted slide bolt on both sides**



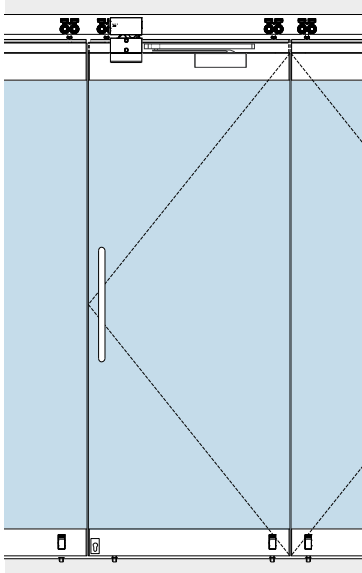
**Machining of cover profile (face-mounted slide bolt)**



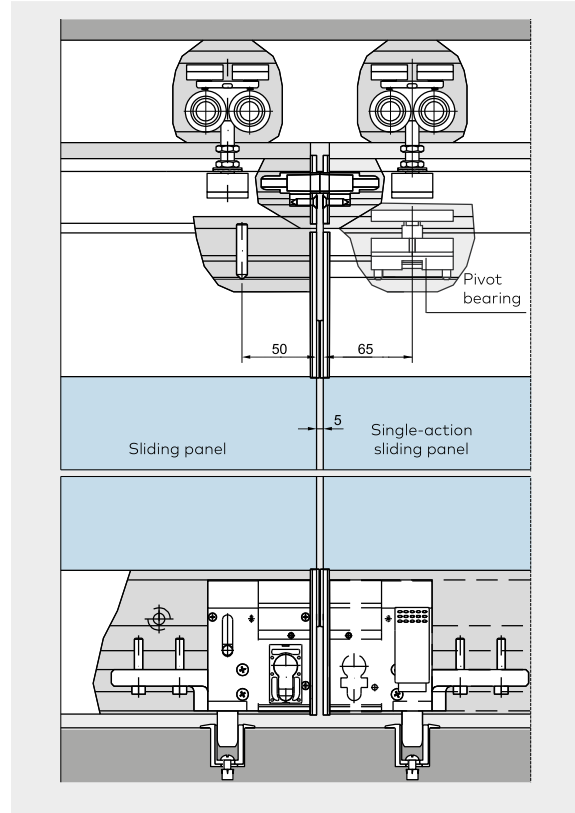
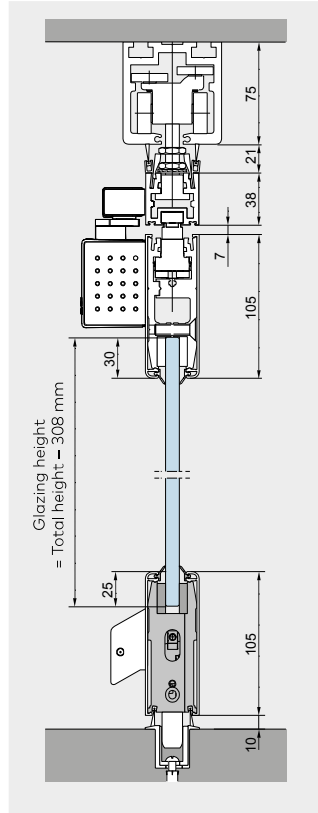


# Single-action sliding panel

with dormakaba TS 92 cam-action door closer

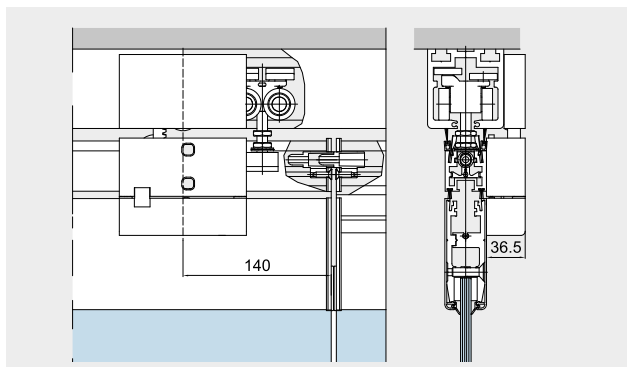


This panel type is installed where doors only need to be opened in one direction, either inward or outward. In both cases, the cam-action door closer is fixed to the internal side of the assembly. If you are considering this panel type, please note our advisories relating to portal systems on page 125.





Status display



<b>Sliding function</b>	locked	locked	open
<b>Door function</b>	open	locked	locked

**Data and features: dormakaba TS 92**

Closing strength/size	EN 2-4
Closing speed and latching action independently adjustable at two separate valves	180°-15° 15°-0°
Non-handed	yes
Cushioned stay limit adjustment	80°-120°
Hold-open adjustment	75°-150°
Weight	1.9 kg
Length	281 mm
Overall depth	47 mm
Height	65 mm

**Standard assembly**

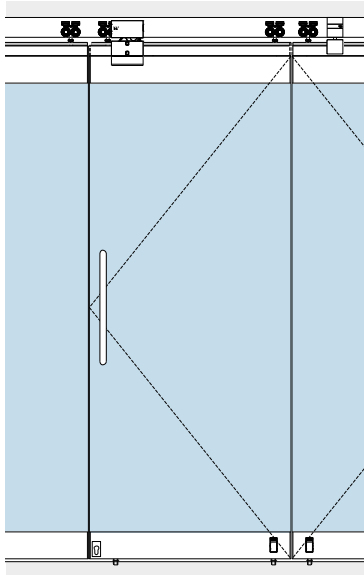
top: Pivot bearing, dormakaba TS 92 with slide channel, one locking device.  
 bottom: Face-mounted slide bolt as pivot (released for sliding function), deadlock.

**Optional equipment**

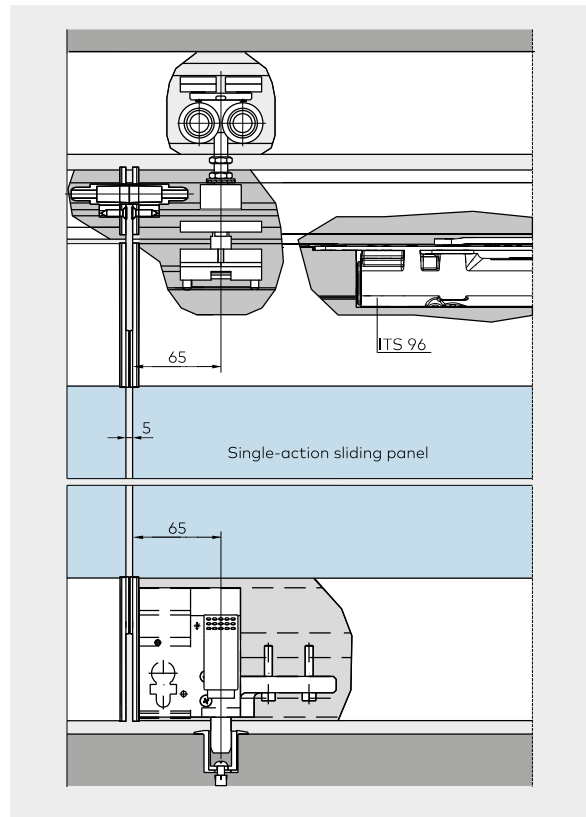
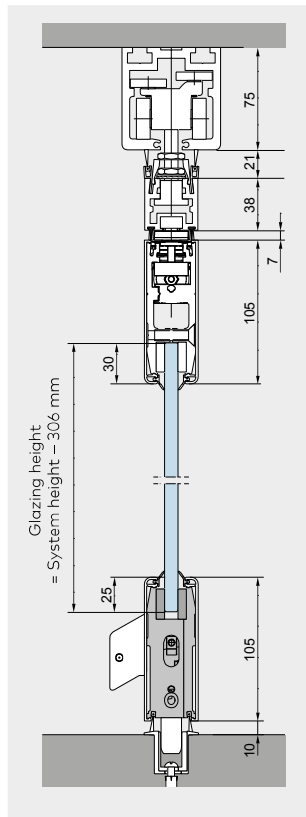
top: Additional locking device (upper locking unit) to secure the panel in the area of a reshuffle bypass or for more stability in closed position (Illustration see page 44).  
 bottom: Second face mounted slide bolt instead of deadlock.

# Single-action sliding panel

with integrated door closer dormakaba ITS 96, 2-4



This panel variant is used where the door element is required to only open in one direction, either inward or outward. If you are considering this panel type, please note our advisories relating to portal systems on page 125.



### Standard assembly

- top: Pivot bearing, ITS 96 with slide channel, one locking device.
- bottom: Face-mounted slide bolt as pivot (released for sliding function), deadlock.

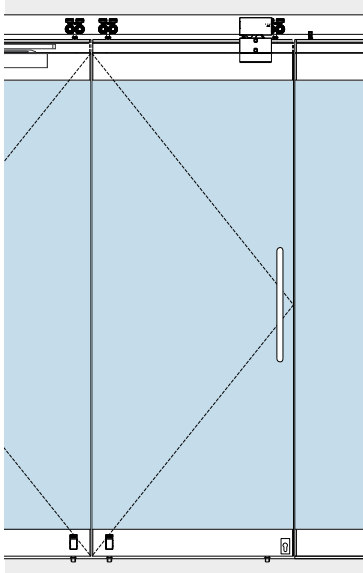
### Optional equipment

- top: Additional locking device (upper locking bolt) to secure the panel in the area of a reshuffle bypass or for more stability in closed position.
- bottom: Second face mounted slide bolt instead of deadlock.

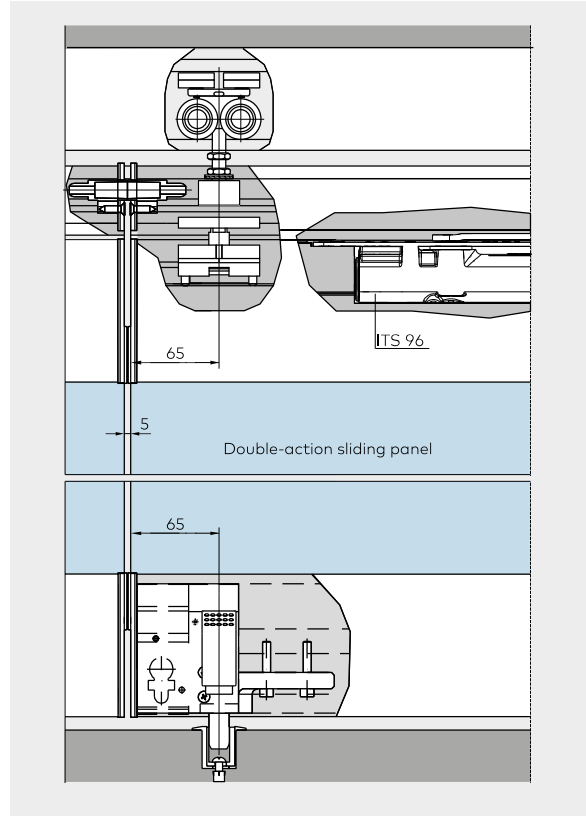
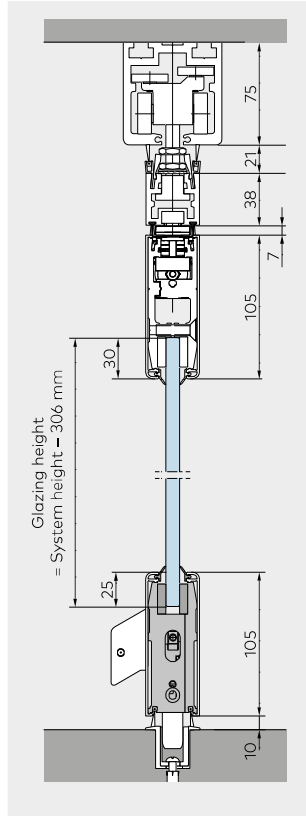
<b>Data and features: ITS 96, Gr. 2-4</b>	
Closing strength/size	EN 2-4
Max. panel width	≤1,100 mm
Max. panel weight	≤120 kg
Closing strength continuously variable	Adjusting screw
Closing speed continuously variable	by valve
latching speed is adjustable from 15°-0°	by valve
Cushioned stay limit mechanically variable	yes
Max. opening angle	ca. 120°
Hold-open variable	yes (door stop necessary)
Weight	1.3 kg
Length	277 mm
Overall depth	32 mm
Height	42 mm
Door closer tested according to EN 1154	yes

# Double-action sliding panel

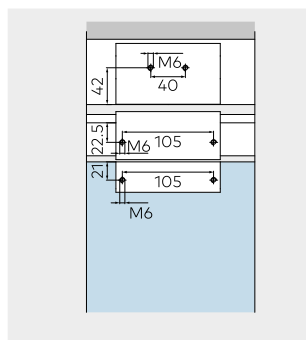
with integrated door closer dormakaba ITS 96, 2-4.



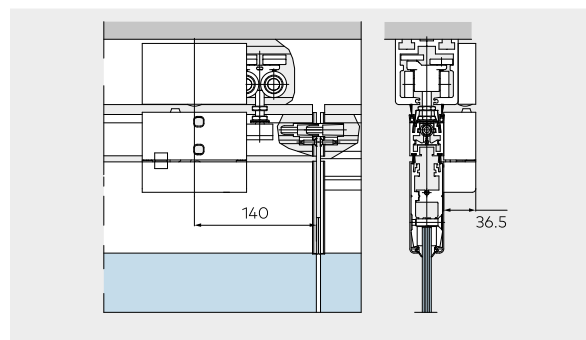
Being virtually invisible, its presence has no effect on the overall appearance of the partition. In its standard form, ITS 96 is provided with a 90° hold-open. If you are considering this panel type, please note our advisories relating to portal systems on page 125.



## Hole of pattern upper locking unit



## Upper locking unit

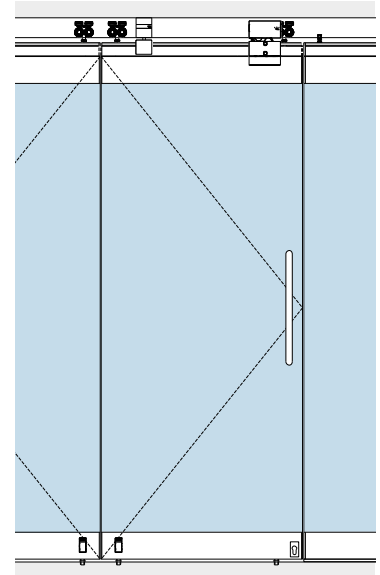
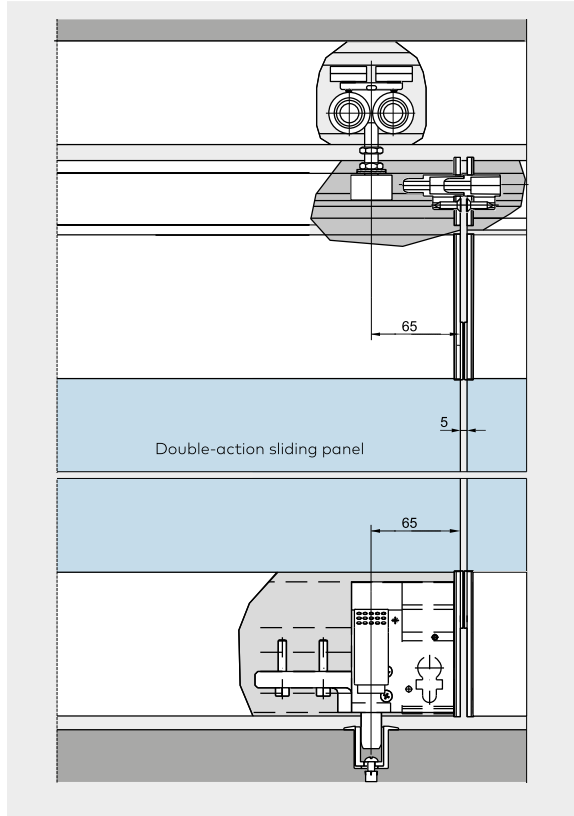
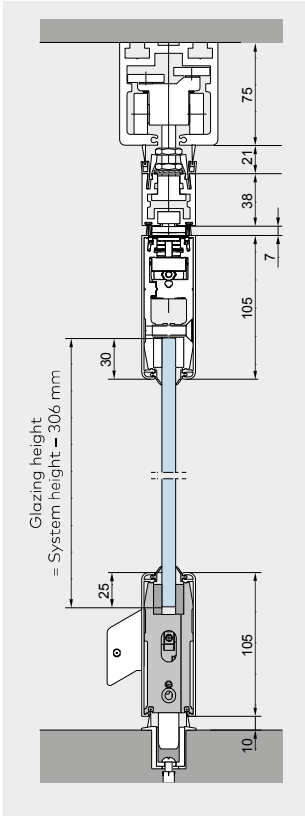


### Standard assembly

- top: Pivot bearing, ITS 96 with slide channel, one locking device
- bottom: Face-mounted slide bolt as pivot (released for sliding function), deadlock

### Optional equipment

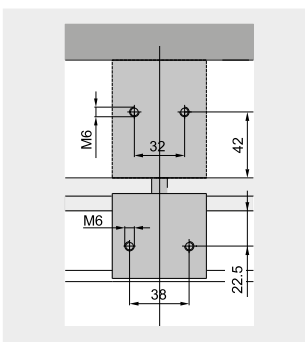
- top: Additional locking device (upper locking unit) to secure the panel in the area of a reshuffle bypass or for more stability in closed position.
- bottom: Second face mounted slide bolt instead of deadlock



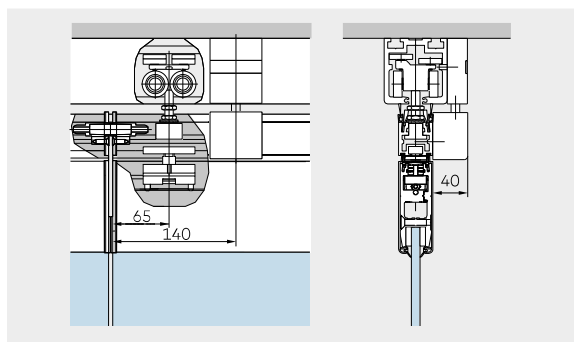
**Additional upper lock**

The additional upper locking bolt is used for single-action or double-action sliding panels as an optional addition to the upper locking unit at the other end of the door. In some cases it is recommended for additional stabilization of the carrier profile.

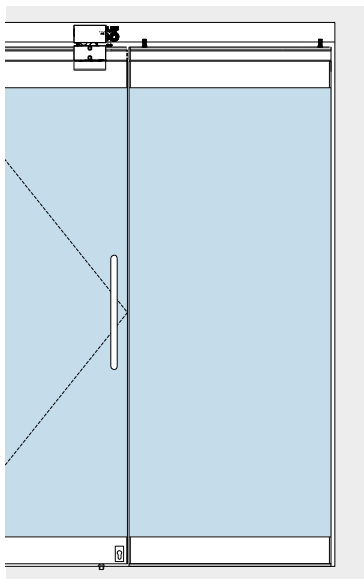
**Hole of pattern additional upper lock**



**Additional upper lock**



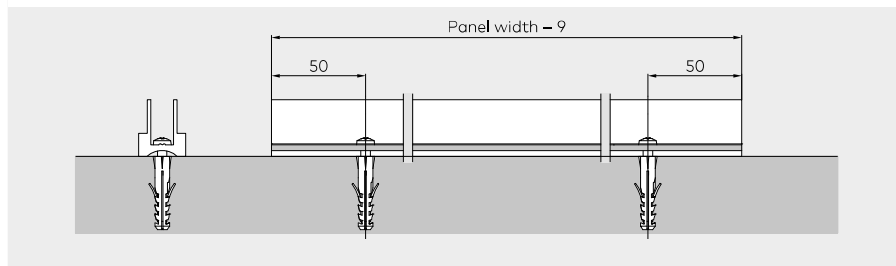
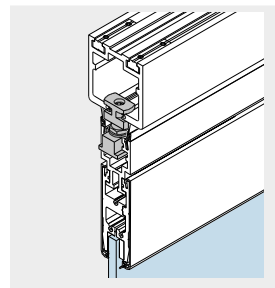
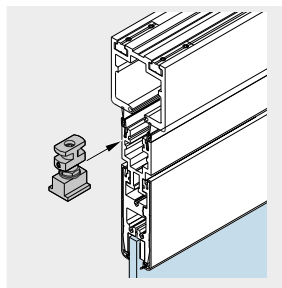
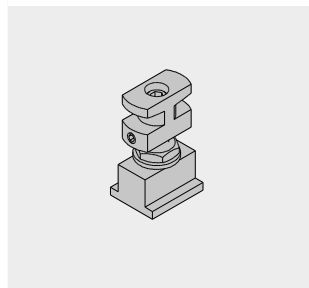
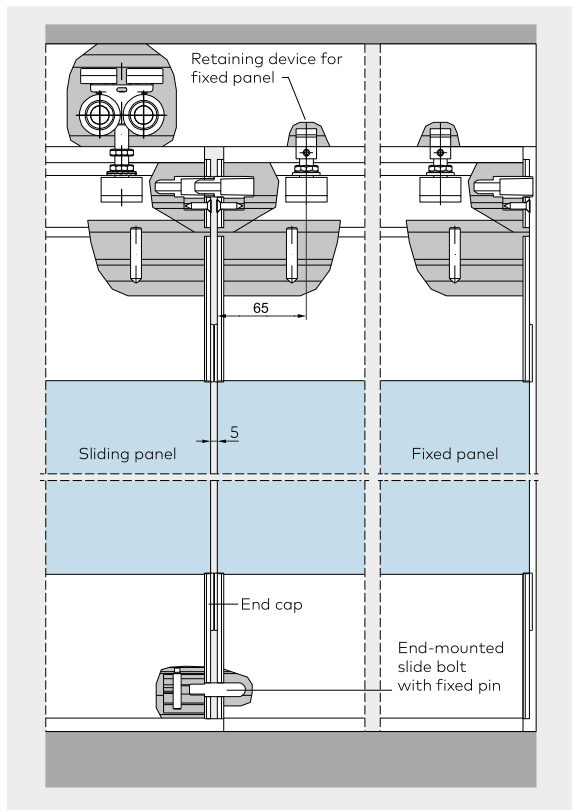
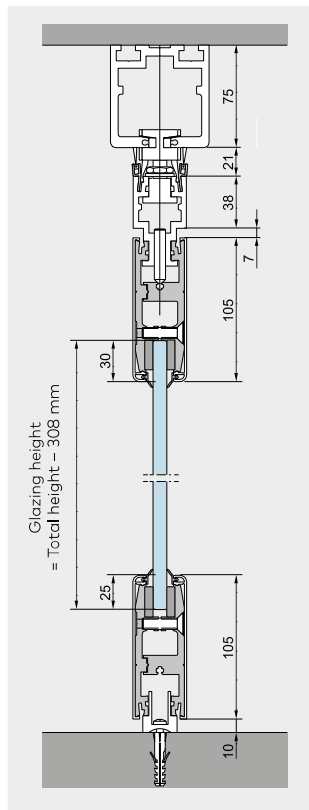
# Fixed panel



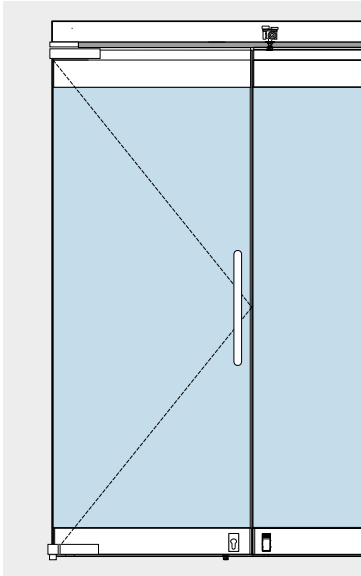
Non-moving side panel, independent of the rest of the system. The fixed side panels are of the same basic design as the sliding panels and continue the appearance of the movable part of the frontage without any optical break. If required, the retaining devices at the top can be replaced by a carrier system to convert such a panel into a sliding panel.

### Standard assembly

- top: Retaining devices fixed to the track rail.
- bottom: Spacer profile fixed to the floor; access for fixed end pin of the adjacent panel.

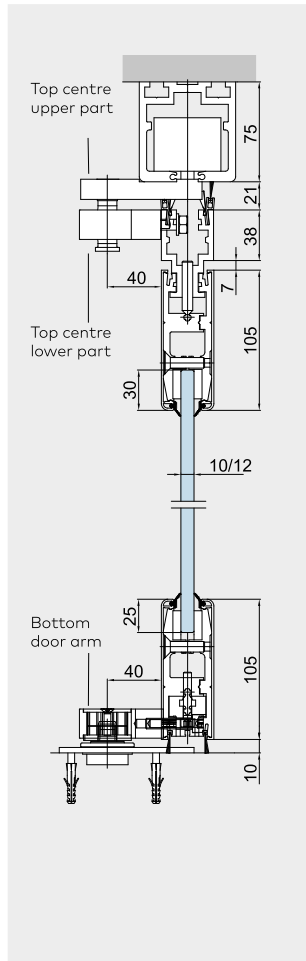


# Offset hung end panel

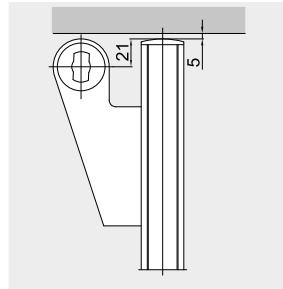


## Offset hung end panel

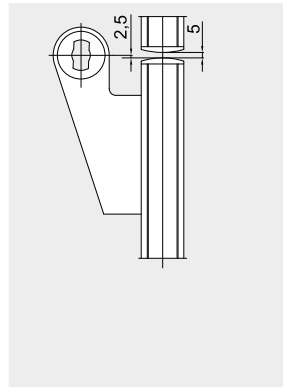
Single action panel, non-sliding, operates independently of the rest of the system. The single action door with offset pivoting arm assembly can be swung around 180°, so leaving the entire operating zone free. A bottom deadlock secures the closed leaf.



**Position 90° and 180° opening angle at wall**  
 position 180° opening angle at fixed panel



**180° opening angle**  
 Offset hung end panel at fixed panel

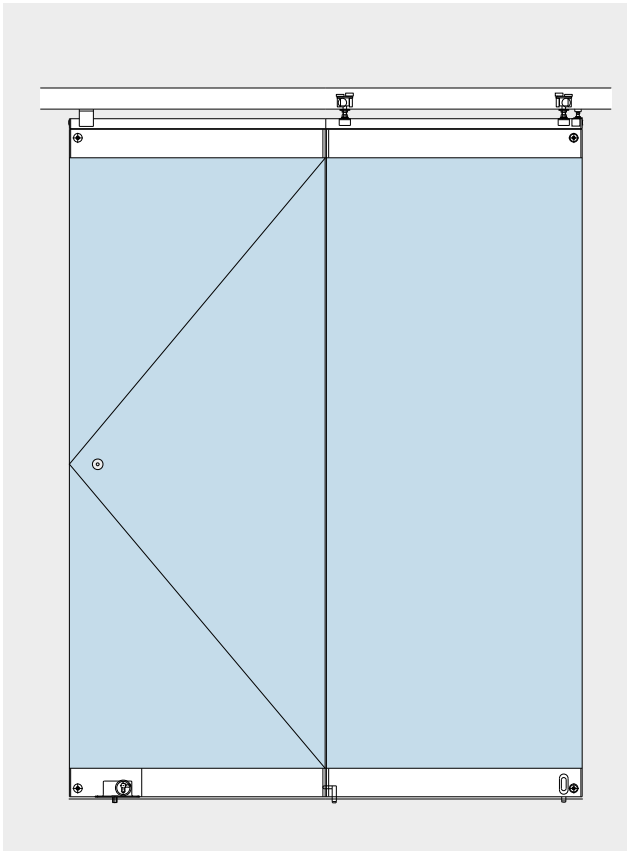


**Max. panel weight 100 kg**

Pivoting end panel views as seen from below



# Sliding / folding panel

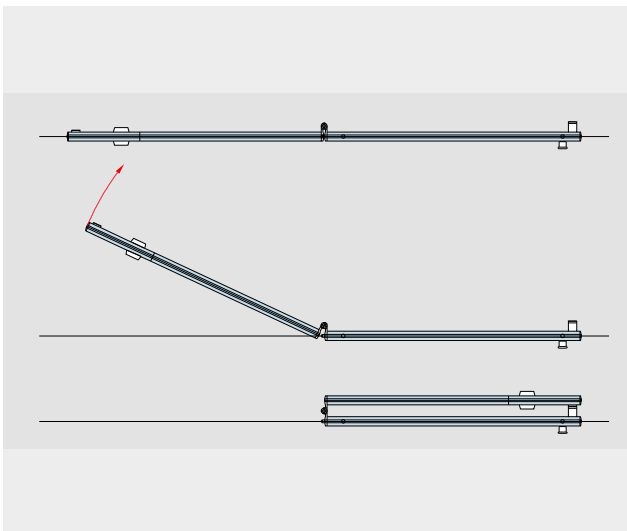
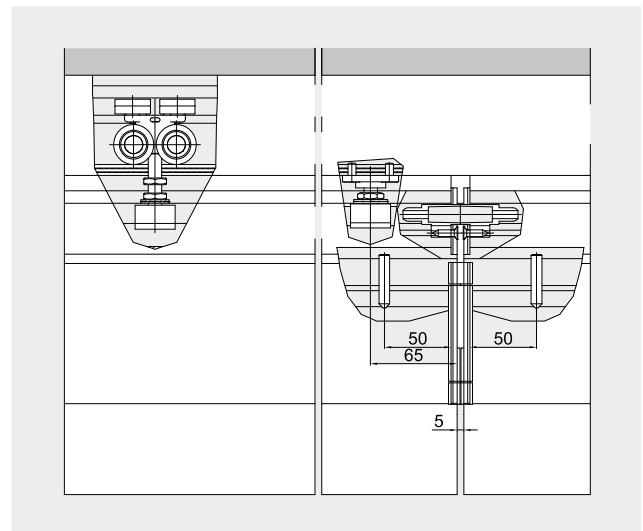
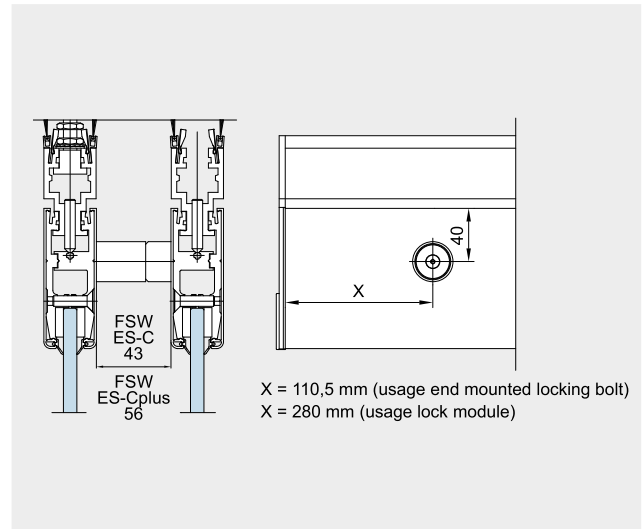


Hinged, with lock and slide bolt at the bottom, latching bolts top and bottom for fixing the final folding panel to the slide panel.

**Max. panel sizes and weights**

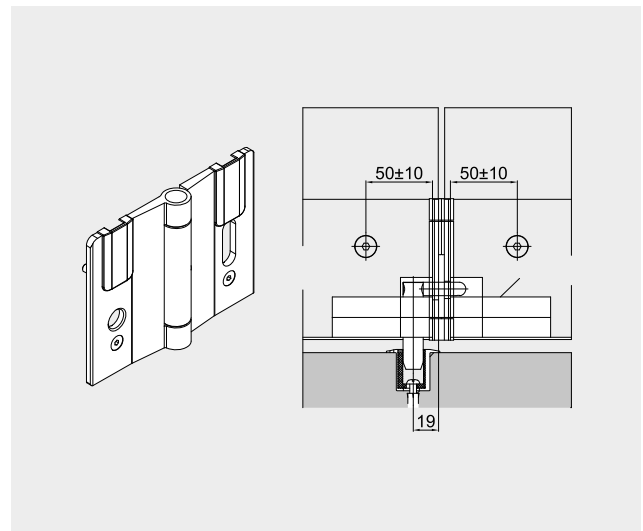
- Max. panel width 2 x 1,000 mm
- Max. system height 3,000 mm
- Max. panel weight 2 x 70 kg

Magnetic door holders top and bottom



End mounted slide bolt

Panel hinge



# Space for your notes

# FSW EASY Safe – Types and functions

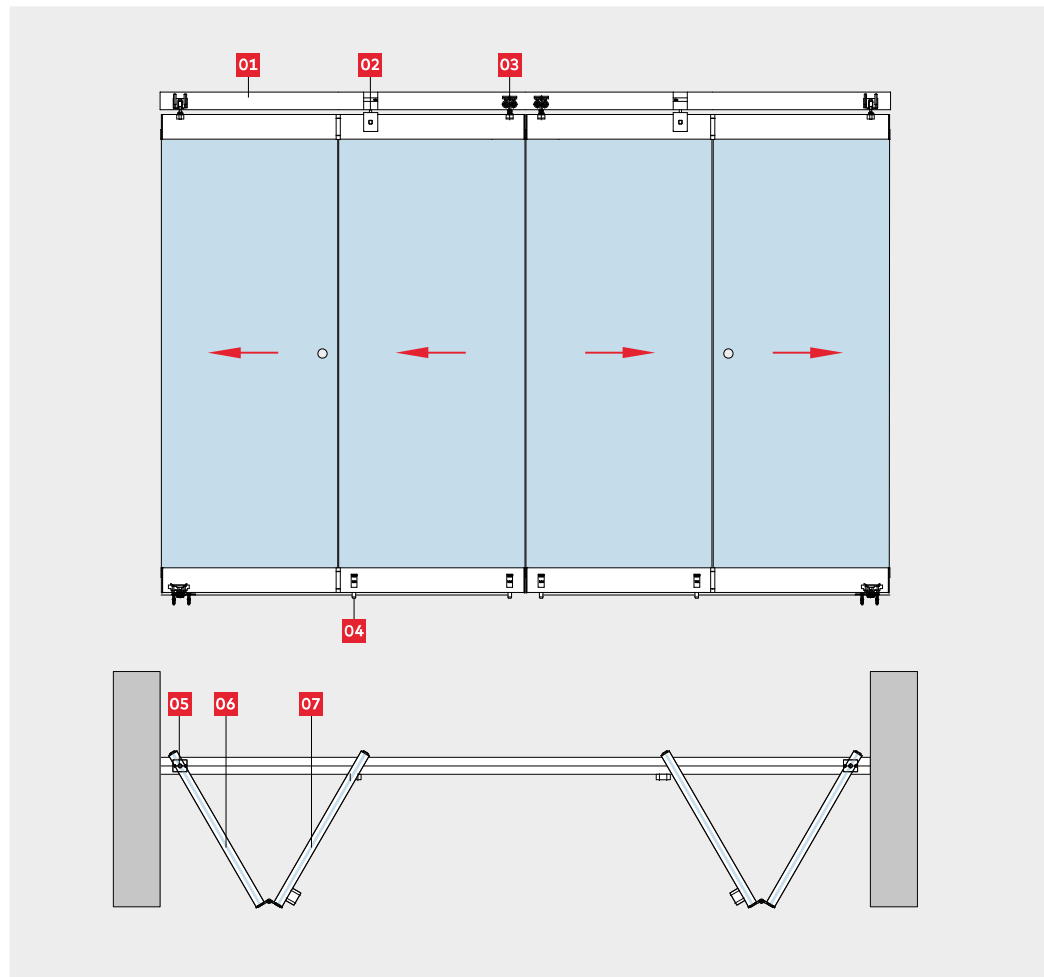
## FSW toughened glass folding walls featuring door rails top and bottom and a roller carrier at the end of each second panel.

FSW folding sliding walls are suitable for linear configurations. With an FSW EASY Safe assembly, you can have either two or four panels (a basic panel and 1 or 3 folding panels) linked together. Where two counter-running (bi-parting) assemblies are installed, it is possible to create frontages with up to eight FSW panels.

As the panels are visually compatible with the HSW EASY Safe pivoting/sliding panels, and both systems use the same track design, shop/store frontages or similar transparent partition systems can be made up of these two different types, with the FSW assembly at the free end or supplemented by a single- or double-action HSW end panel (types 4+5). FSW systems can be designed for either opening direction.

### Example: Design with 2 x 2 panels (type 1c), bi-parting

- 01**  
Track rail
- 02**  
Upper locking bolt
- 03**  
Roller carrier
- 04**  
Face mounted slide bolt
- 05**  
Upper pivot bearing of the basic panel
- 06**  
Basic panel
- 07**  
Folding panel

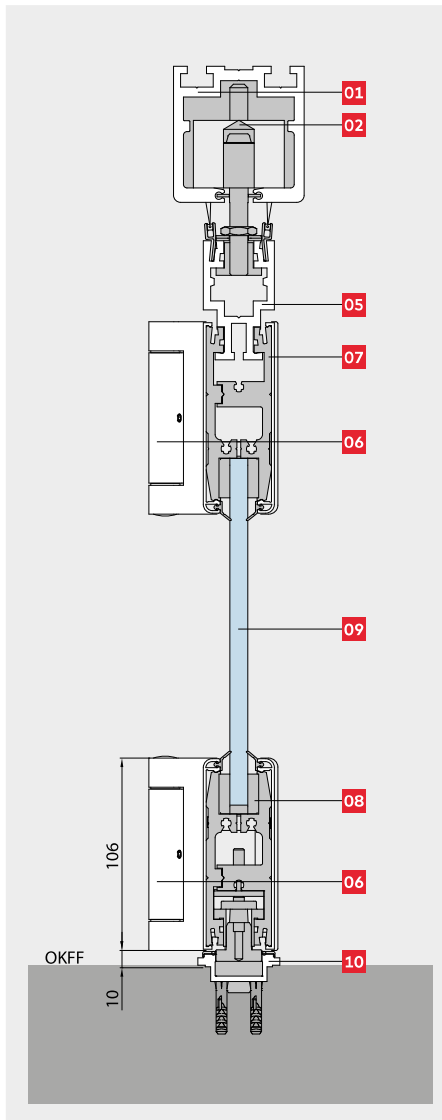


Max. panel sizes and weights	Basic panel with top pivot and floor pivot	Folding panel with roller carrier and lock bolts top and bottom	Folding panel with roller carrier and lock bolts top and bottom	Basic panel with roller carrier and lock bolts top and bottom
Max. assembly height	3000 mm	3000 mm	3000 mm	3000 mm
Max. panel width	1100 mm	1100 mm	1100 mm	1100 mm
Max. panel weight	80 kg	80 kg	80 kg	80 kg

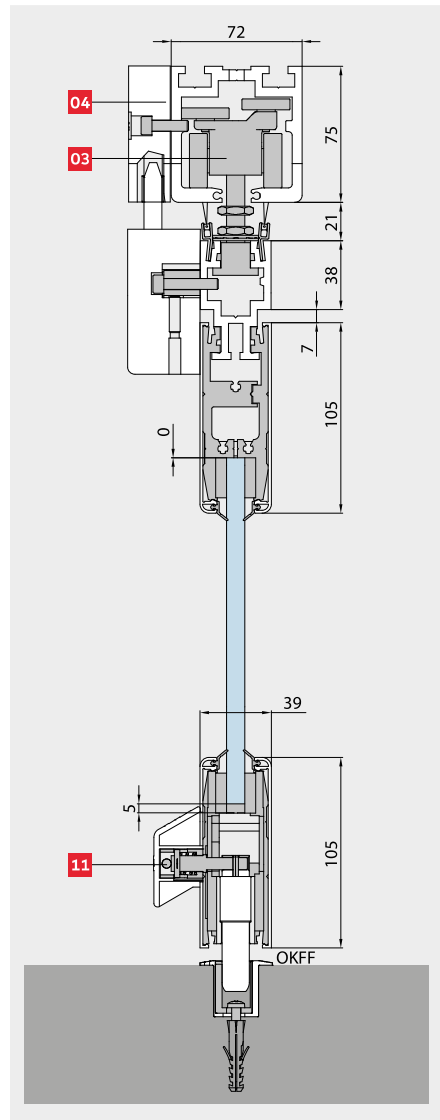
The standard thicknesses are 10/12 mm toughened safety glass (TSG).  
Other thicknesses and glazing with laminated safety glass (LSG) available on request.

# System components

## Basic panel



## Folding panel



The FSW EASY Safe assembly consists of the following basic components:

**01**  
Track rail (fixed to the substructure)

**02**  
Upper pivot bearing

**03**  
Roller carrier

**04**  
Upper locking bolt

**05**  
Carrier profile

Design without a carrier profile also available – see drawing below

**06**  
Folding hinge

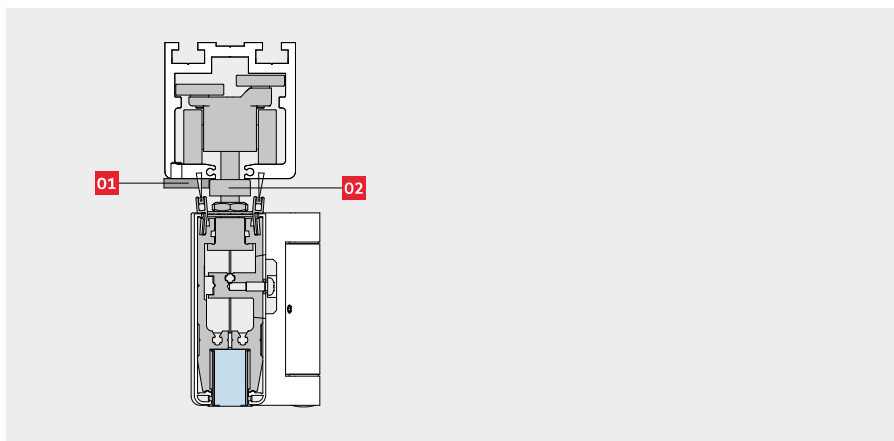
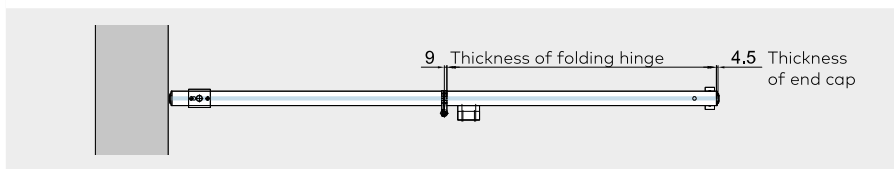
**07**  
Top door rail (consisting of basic profile and covers with lip seal)

**08**  
Bottom door rail (consisting of basic profile and covers with lip seal)

**09**  
Toughened safety glass, or LSG of TSG (when using LSG we recommend the Clamp&Glue technology)

**10**  
Floor pivot bearing

**11**  
Face mounted slide bolt

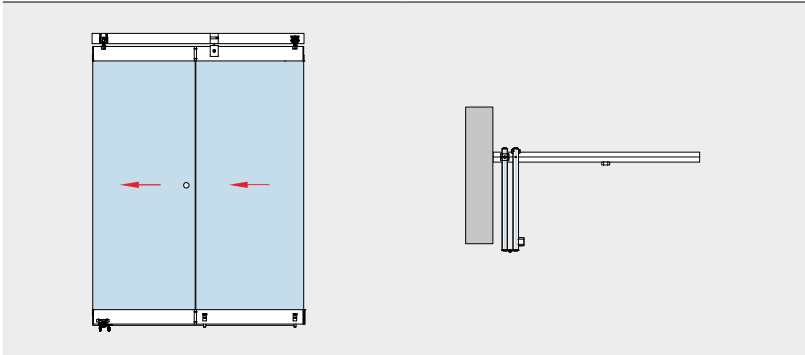


**01**  
Contact plate

**02**  
Roller carrier with stop device

# Layout variants

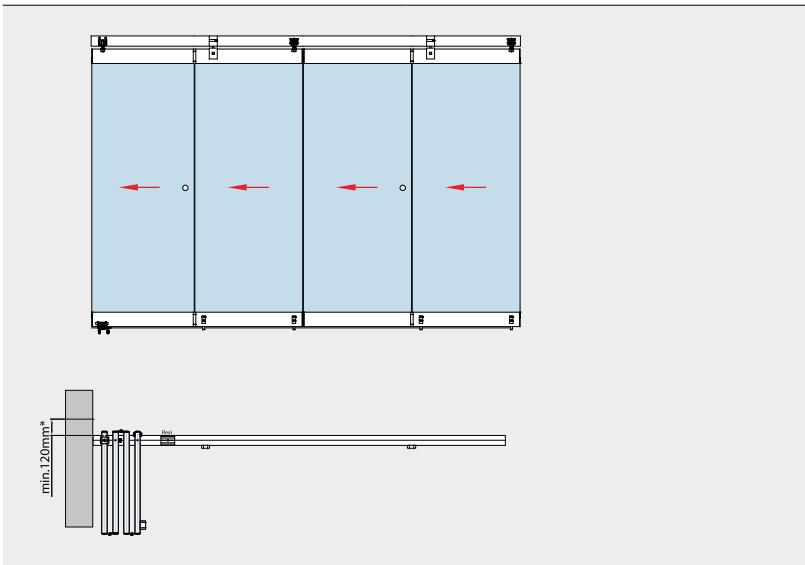
## Type 1



### Classification Product description

- 1a** 2 panels left, as illustrated
- 1b** 2 panels right, invers
- 1c** 4 panels (2 panels left and 2 panels right), bi-parting

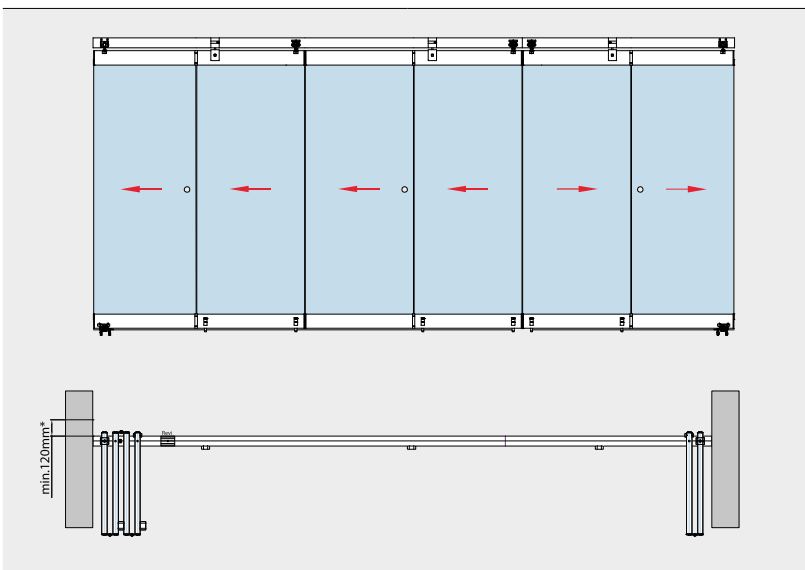
## Type 2



### Classification Product description

- 2a** 4 panels left, as illustrated
- 2b** 4 panels right, invers
- 2c** 8 panels (2 panels left and 4 panels right), bi-parting

## Type 3



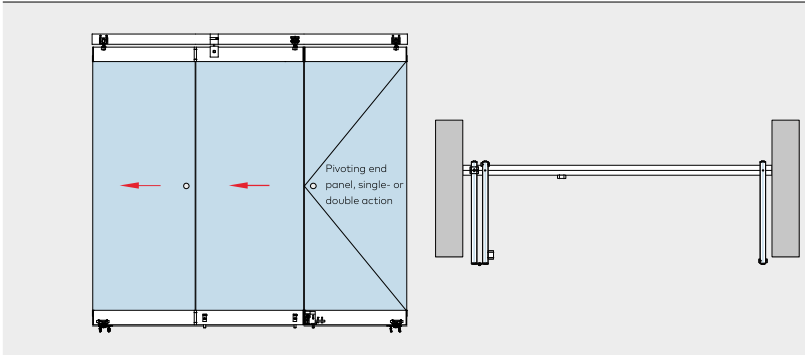
### Classification Product description

- 3a** 6 panels left, as illustrated (4 panels left and 2 panels right)
- 3b** 6 panels left, invers (2 panels left and 4 panels right)
- 3c** 8 panels (4 panels left and 4 panels right)

\* Minimum structural clearance (e.g. balustrade, railings etc.)

**Type 4**

**Classification Product description**

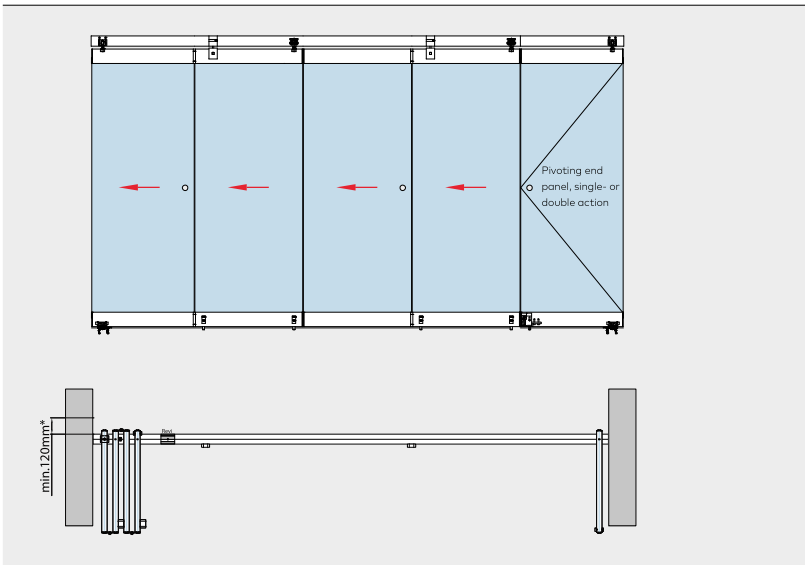


**4a** 2 panels left and 1 pivoting end panel, single- or double action, right (as illustrated)

**4b** 2 panels right and 1 single- action or double-action end panel left (invers)

**Type 5**

**Classification Product description**



**5a** 4 panels right and 1 pivoting end panel, single- or double action, right (as illustrated)

**5b** 4 panels right and 1 pivoting end panel, single- or double action, left (invers)

\* Minimum structural clearance (e.g. balustrade, railings etc.)

# FSW EASY Safe C – Types and functions

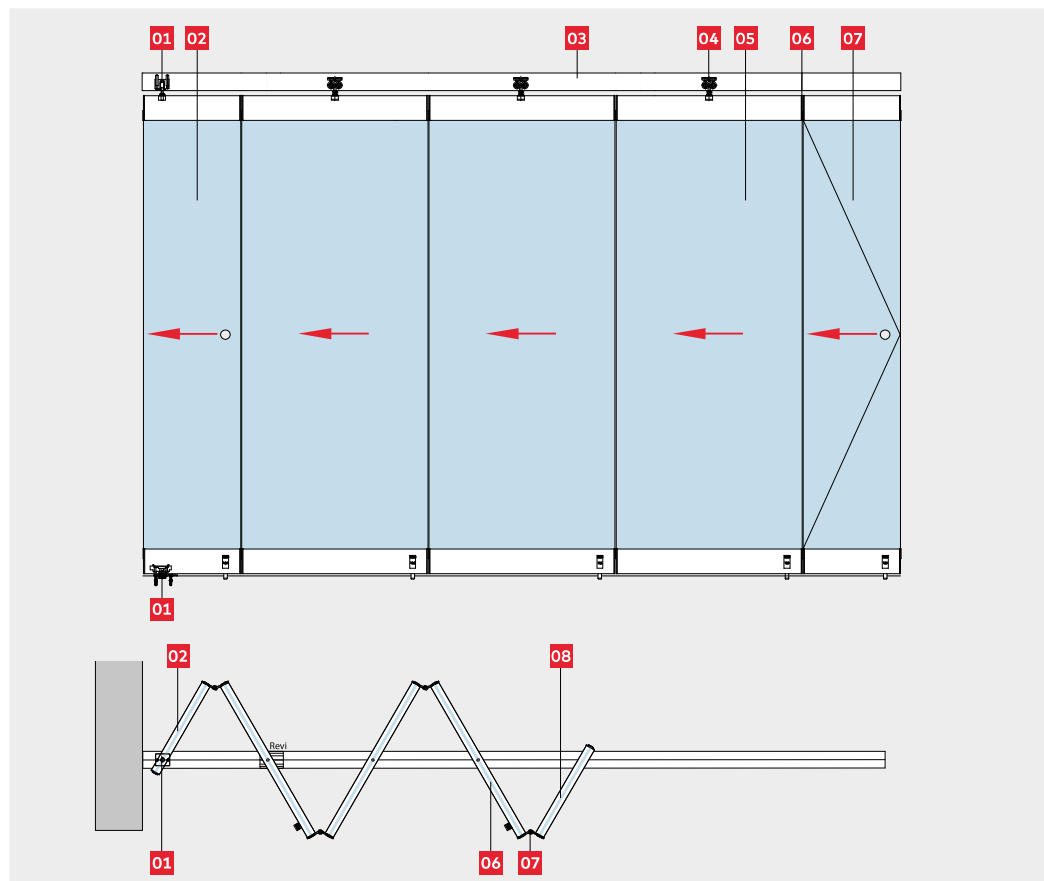
## Toughened glass folding partitions with door rails top and bottom roller carrier at panel centre

The FSW EASY Safe C is adaptable to large spans. An assembly comprises a basic panel, up to 6 folding centre panels and a folding pivoting panel which, when the system is closed, can be used for access (alternatively, a non-attached single or double action end panel can be used). The number of panels therefore ranges between 3 and 8. As the roller carriers are centrally arranged on the centre panels, the basic

panel must be designed as a half-width unit (plus pivot offset of 65 mm). The pivoting access panel can be of either basic panel or centre panel width. The slightly offset hinges mean that the panels can be folded into particularly compact stacks, with high stability also ensured. Available as standard for glass thicknesses of 10 or 12 mm. Other glass thicknesses and models with laminated safety glass also available on request. Please indicate your requirements when ordering!

**Example: Partition type C2 (symmetrical with narrow pivoting access panel)**

- 01**  
Pivot bearing top and bottom
- 02**  
Basic panel
- 03**  
Track rail
- 04**  
Roller carrier
- 05 + 07**  
Flap panel unit
- 06**  
Folding hinge

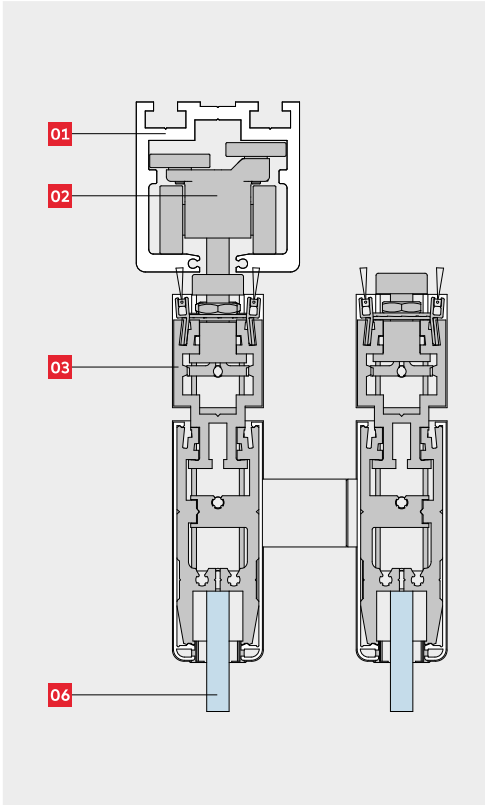


Max. panel sizes and weights	Basic panel with top pivot and floor pivot	Centre panel with roller carrier and lock bolts top and bottom	Centre panel with roller carrier and lock bolts top and bottom	Flap panel unit
Max. assembly height	3000 mm	3000 mm	3000 mm	3000 mm
Max. panel width	½ panel width + 65mm	1100 mm	1100 mm	1100 mm
Max. panel weight	80 kg	80 kg	80 kg	80 kg

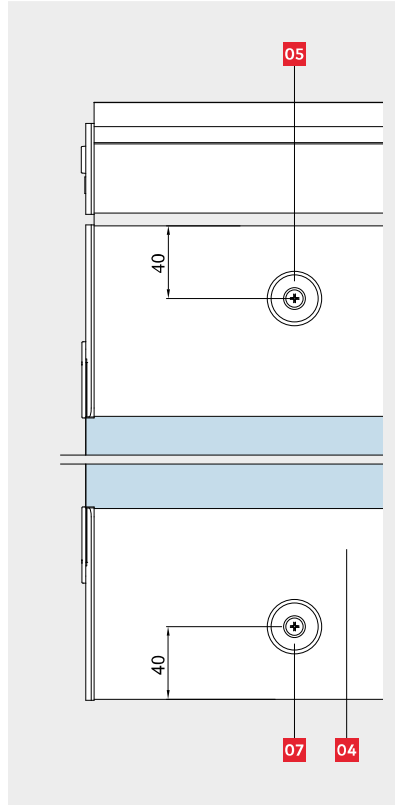
The standard thicknesses are 10/12 mm toughened safety glass (TSG). Other thicknesses and glazing with laminated safety glass (LSG) available on request.

# System components

## Folding panel with bolt



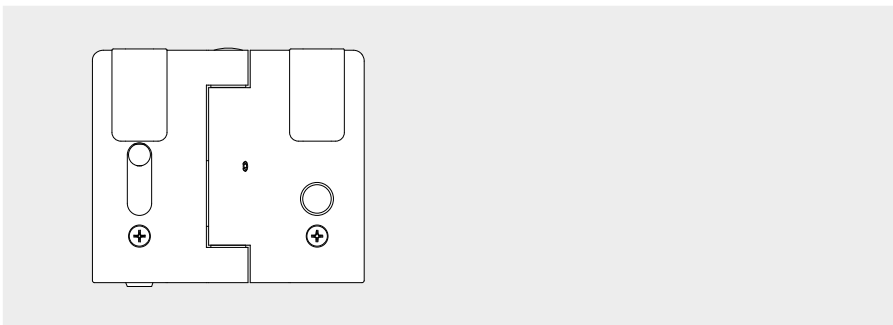
## Magnetic door holders top and bottom



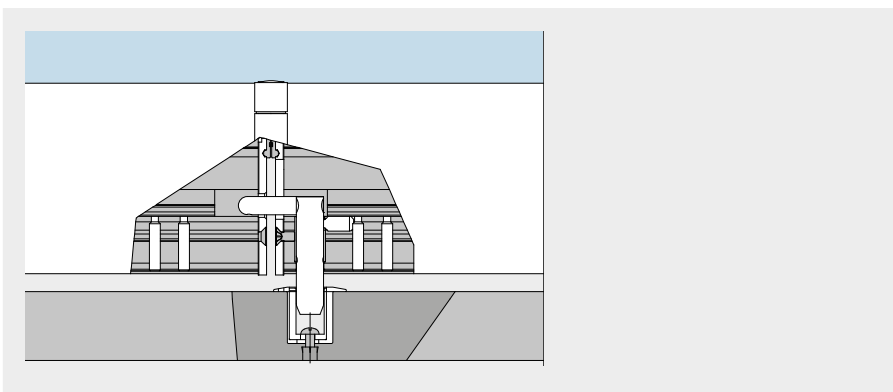
The FSW EASY Safe C system consists of the following basic components:

- 01** Track rail (fixed to the substructure)
- 02** Roller carrier
- 03** Carrier profile  
Top door rail also available in a design without the carrier profile – see drawing below.
- 04** Bottom door rail consisting of basic profile and covers with lip seal.
- 05** Magnetic holder top
- 06** Toughened safety glass, or LSG of TSG (when using LSG we recommend the Clamp&Glue technology)
- 07** Magnetic holder bottom

## Bottom hinge



## End mounted slide bolt at the bottom between both panels of the flap panel unit

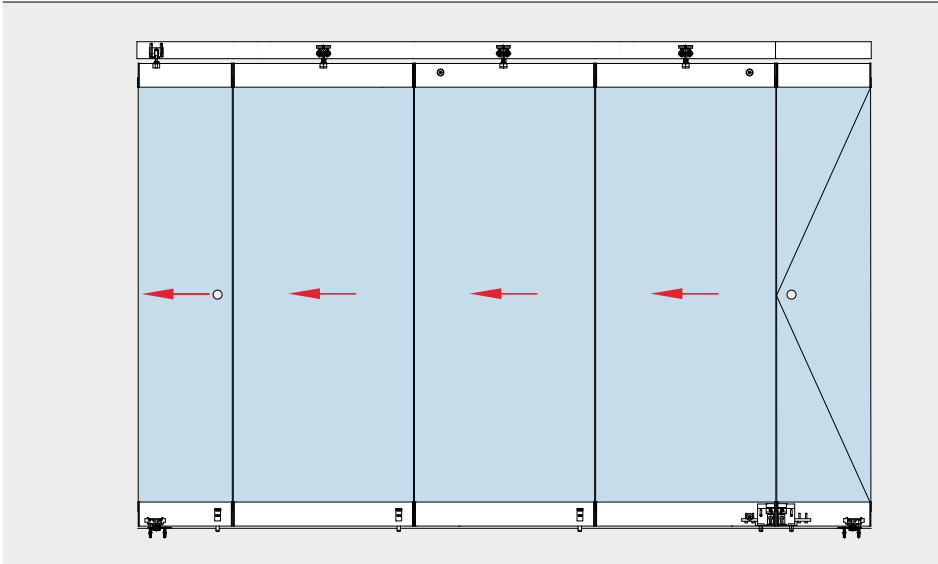




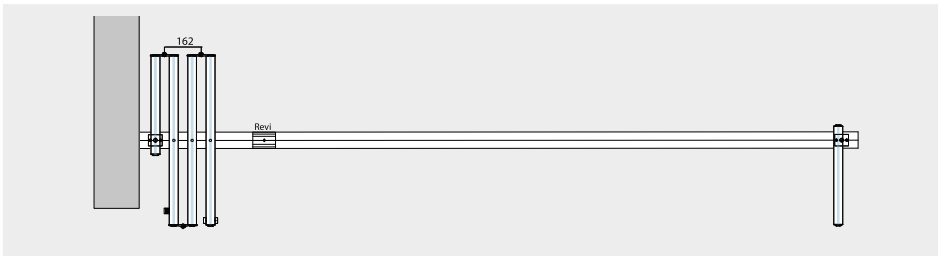
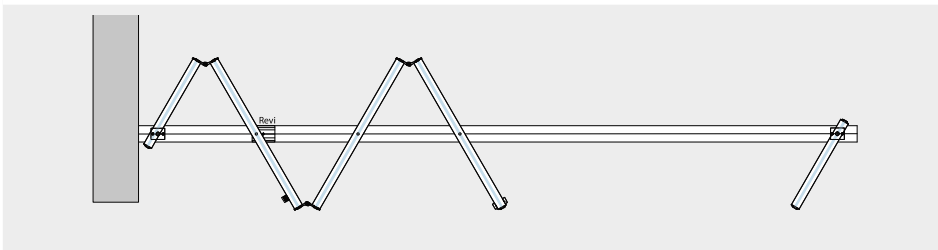
# Layout variants

## Type C1

### Product description

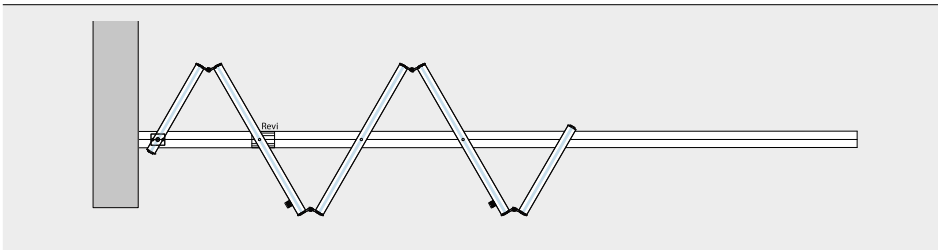


- 1 pivoting end panel, single-action, as access (here in narrow design for reasons of symmetry)
- 1-6 centre panels
- 1 basic panel (narrow)



## Type C2

### Product description

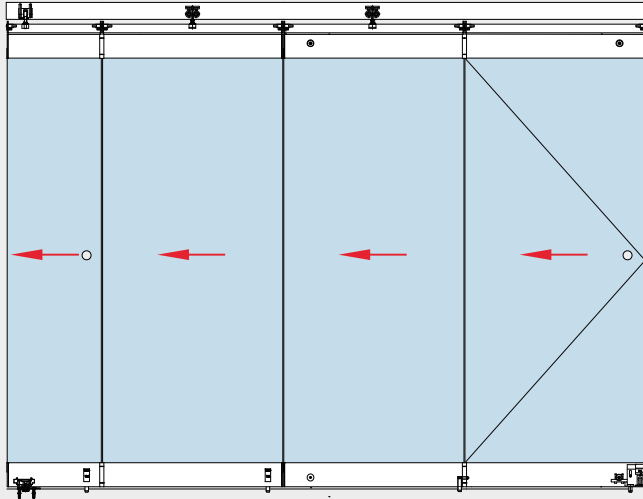


- 1 pivoting access panel (here in narrow design for reasons of symmetry)
- 1-6 centre panels
- 1 basic panel (narrow)

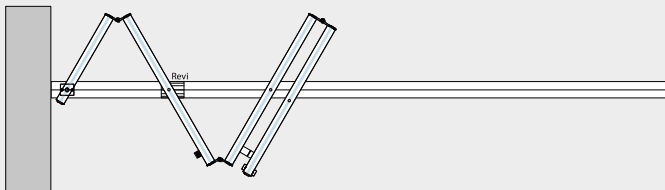


**Type C3**

**Product description**

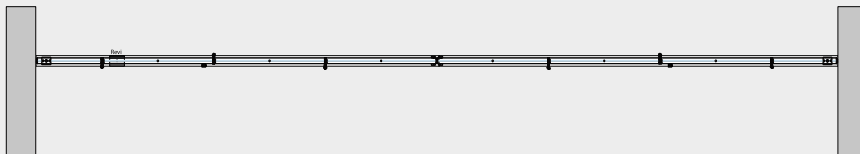


- 1 basic panel (narrow)
- 1-5 centre panels
- 1 dual panel assembly

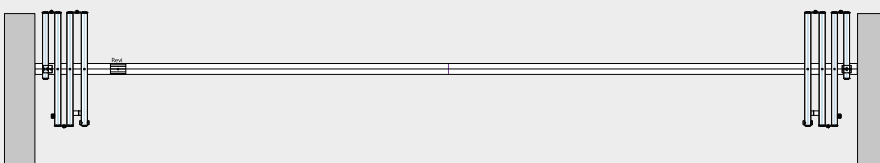


**Type C3, dual assembly (bi-parting)**

**Product description**



- Left:**
- 1 basic panel (narrow)
  - 1-5 centre panels
  - 1 dual panel assembly



- Right:**
- 1 basic panel (narrow)
  - 1-5 centre panels
  - 1 dual panel assembly

# FSW EASY Safe Cplus – Types and functions

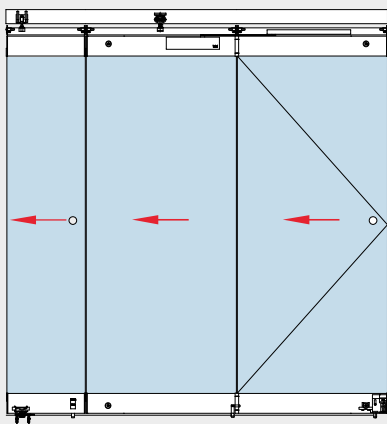
## Access with convenience – the plus you get with the FSW EASY Safe Cplus

Based on the design of the FSW EASY Safe Cplus, the model variant FSW EASY Safe Cplus offers the possibility of including a flap panel as a fully fledged access door when the system is otherwise closed – with all the automatic closing convenience which the dormakaba TS 93 G cam-action door closer can offer.

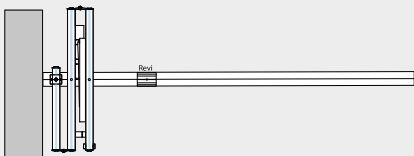
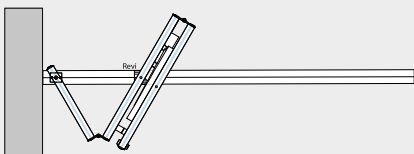
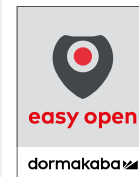
The special bottom lock bolt and the top clamp-fitted stop serve to stabilize the first panel of the flap panel unit in this configuration. The top angle stop ensures the correct positioning of the closed flap panel unit. The folding hinges connect both panels of the flap panel unit and offer a larger pivot offset in order to create space for the door closer and pull handles. All the other folding panels are equipped with standard hinges and roller carriers.

### Type Cp 1

### Product description

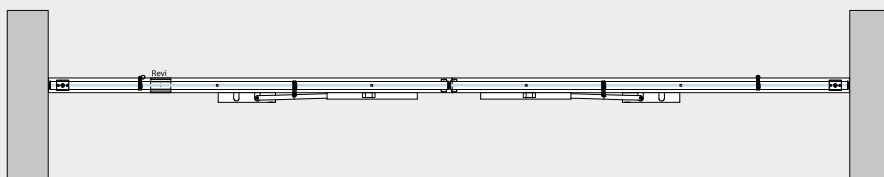


- 1 basic panel (narrow)
- 1 dual panel assembly with dormakaba TS93 G cam-action door closer

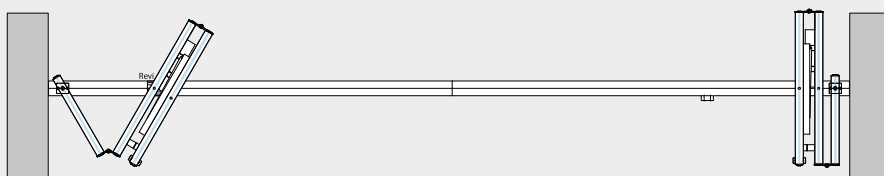


### Type Cp1 dual assembly (bi-parting)

### Product description



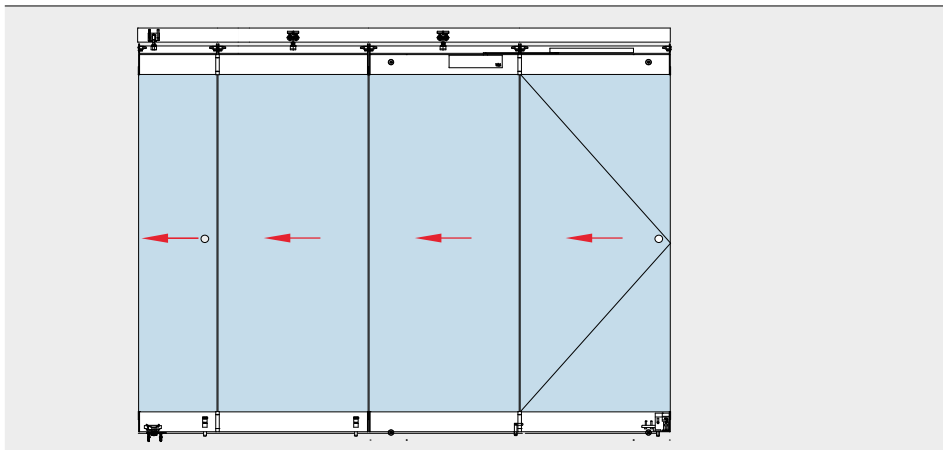
- Left:**
- 1 basic panel (narrow)
  - 1 dual panel assembly with dormakaba TS93 G cam-action door closer



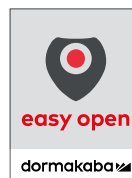
- Right:**
- 1 basic panel (narrow)
  - 1 dual panel assembly with dormakaba TS93 G cam-action door closer

**Type Cp 2**

**Product description**

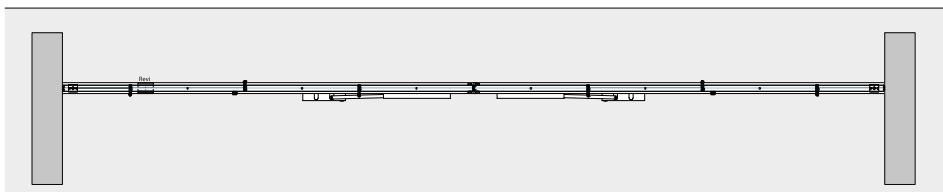


- 1 basic panel (narrow)
- 1 – 5 centre panels
- 1 dual panel assembly with dormakaba TS93 G cam-action door closer

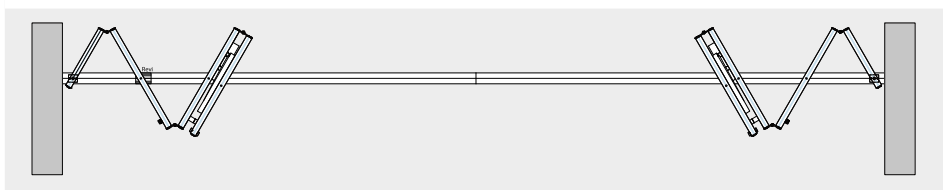


**Type Cp2, dual assembly (bi-parting)**

**Product description**



- Left:**
- 1 basic panel (narrow)
  - 1 – 5 centre panels
  - 1 dual panel assembly with dormakaba TS93 G cam-action door closer



- Right:**
- 1 basic panel (narrow)
  - 1 – 5 centre panels
  - 1 dual panel assembly with dormakaba TS93 G cam-action door closer

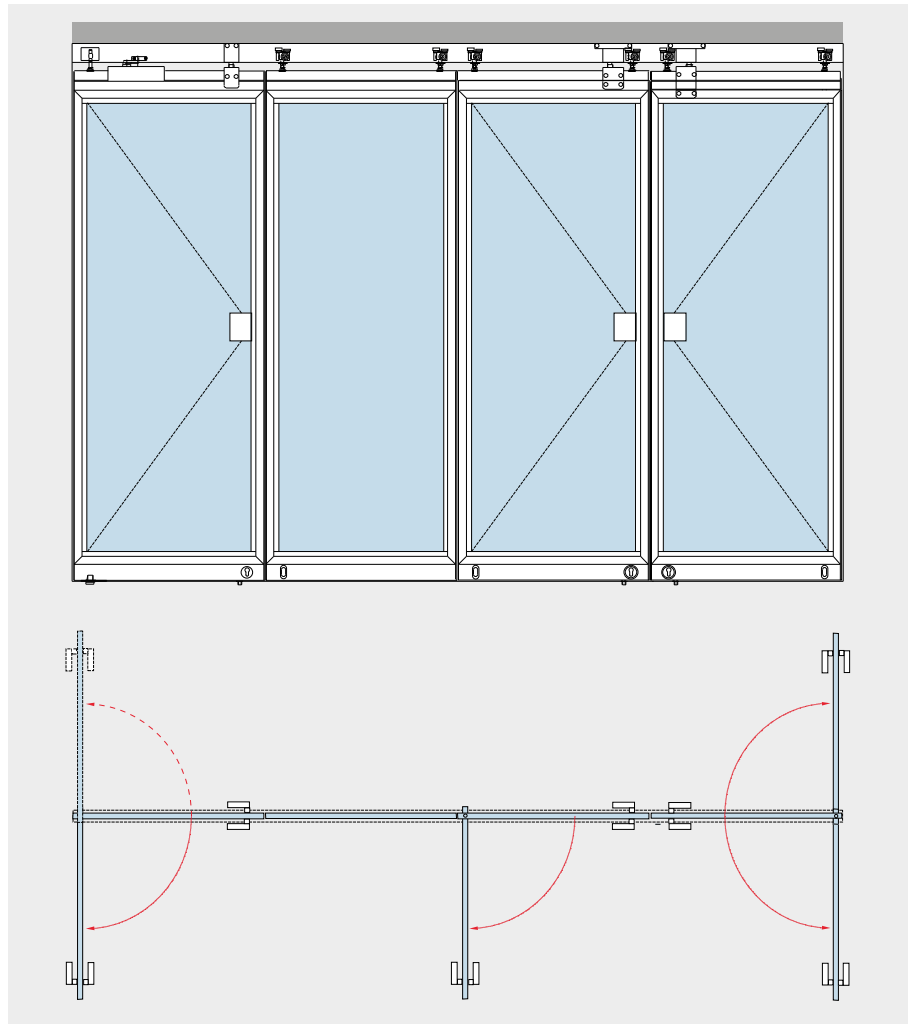
**dormakaba TS 93 technical data and features**

Spring strength/Door closer size	EN 2 – 5	EN 5 – 7
Adjustable closing force	Adjustable screw	Adjustable screw
Adjustable closing speed	Adjustable valve	Adjustable valve
Non-handed	Yes	Yes
Adjustable latching action	Adjustable valve	Adjustable valve
Adjustable backcheck	80° – 120°	80° – 120°
Adjustable hold-open	75° – 150°	75° – 150°
Weight	3.5 kg	5.2 kg
Length	275 mm	285 mm
Installation depth	53 mm	62 mm
Height	60 mm	71 mm

# HSW-R – Types and functions

## Horizontal sliding walls, framed all round for toughened safety glass, laminated safety glass or double glazed units

Resistant to mechanical stress, protect against the influences of the weather, heat loss and drafts thanks to sturdy profile frames with brush seals top and bottom and laterally arranged rubber lip seals. Optionally prepared for single pane toughened safety glass (TSG) or laminated safety glass (LSG), insulating glass/ double glazing or special glass. Frame profiles for 8 to 24 mm. Other glass thicknesses on application.

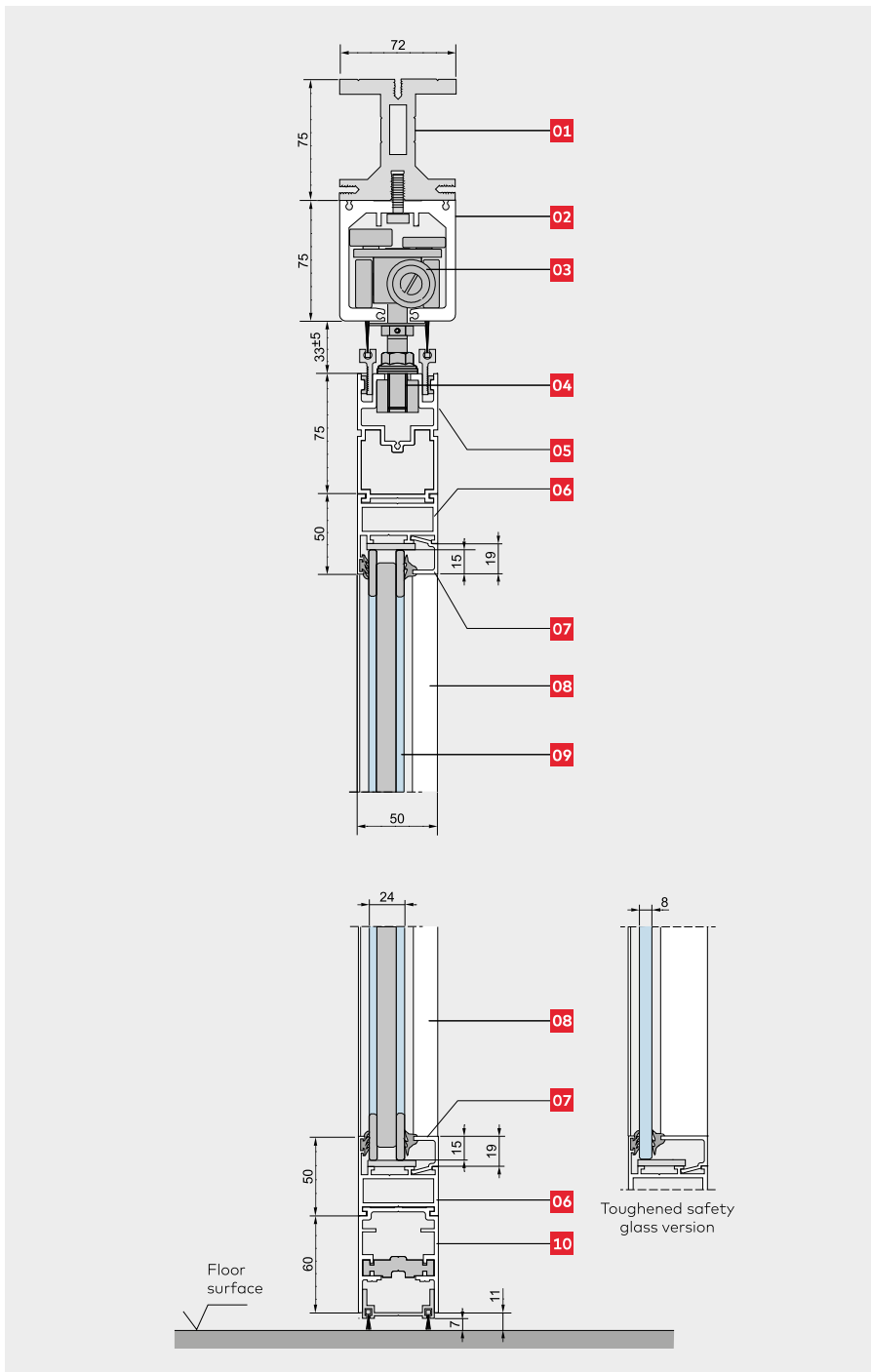


Max. panel sizes and weights	Pivoting end panel, single- or double-action Non-moving. Pivoting end panel, double-action, with floor bearing and top pivot. Optional with floor spring dormakaba BTS 80/84. Or as pivoting end panel, single-action, with stop and dormakaba BTS 80/84 or dormakaba TS 92/TS 73.	Sliding panel Fixed when frontage closed.	Pivoting end panel, When frontage closed with integrated concealed door closer type ITS 96, Size 3-6; operational. Minimal panel width 870 mm.	Double-action sliding panel* When frontage closed with integrated concealed door closer type ITS 96, Size 3-6; operational. Minimal panel width 870 mm.
Max. system height	3,000 mm	3,000 mm	3,000 mm	3,000 mm
Max. panel width	1,100 mm	1,100 mm	1,100 mm	1,100 mm
Max. panel weight	100 kg	100 kg	100 kg	100 kg
Frame weight (with width = 1,000 mm and height = 2,500 mm)	20 kg	20 kg	20 kg	20 kg

The individual panels can also be of differing widths. The largest width should not exceed max. 115% of the smallest width.

\* For these panel types please consider our notes on portal systems on page 125.

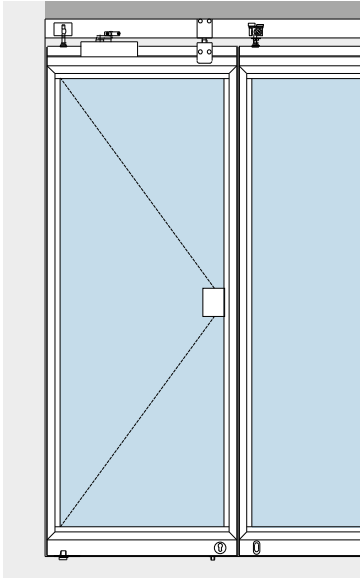
# System design



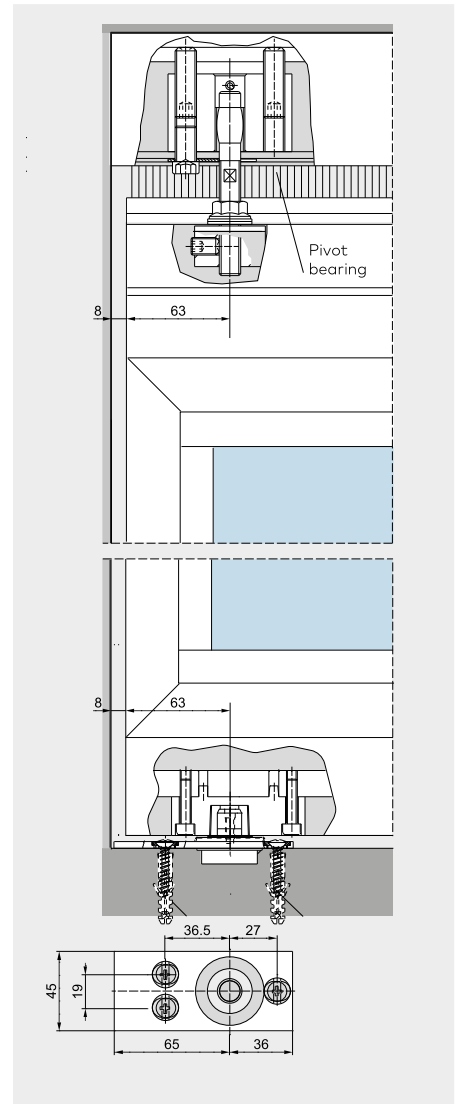
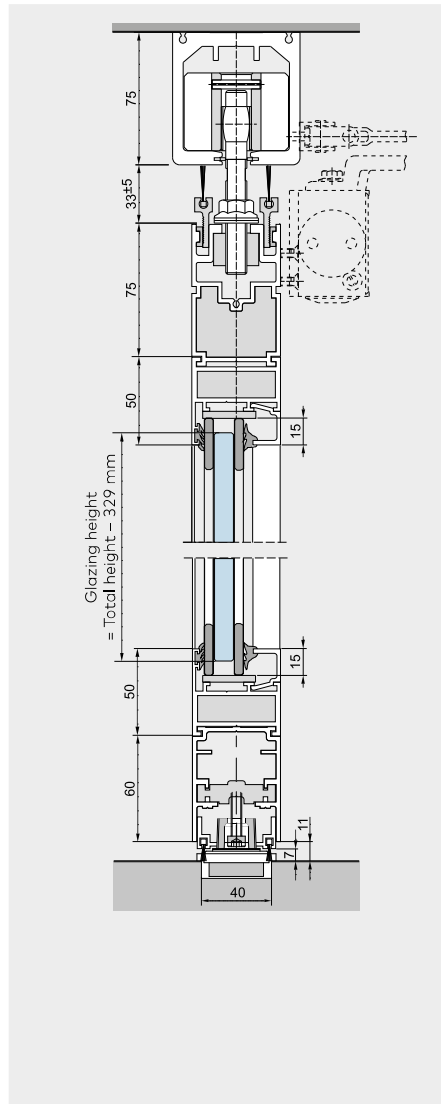
Irrespective of the function of the individual panels, an HSW-R system comprises the following components:

- 01** Installation-efficient dormakaba substructure to accommodate track rail mounting requirements (optional)
- 02** Track rail (for bolting to the substructure)
- 03** Carrier
- 04** Suspension assembly
- 05** Adapter frame
- 06** Glazing frame profile, horizontal
- 07** Glass clamping bar
- 08** Glazing frame profile, vertical
- 09** Toughened safety glass, laminated safety glass or double glazing units (by others)
- 10** Bottom frame profile.

# Single/double-action panels



**Pivoting end panel, single- or double-action, with floor pivot**  
 Non-moving and always equipped with bottom dead-bolt with the option of a top bolt or side action deadlock. Single-action or double-action options.



### Pivoting end panel, single-action

with stop plates at the top bolt.

Assembly types:

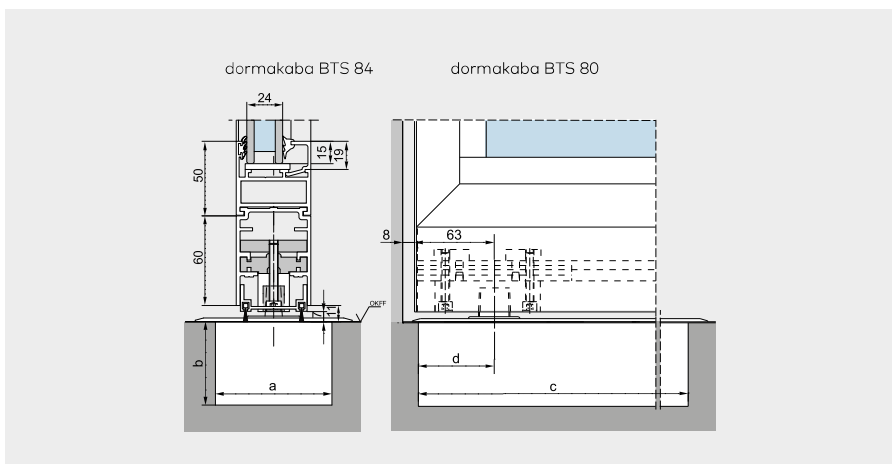
- Floor pivot with round spindle
- As above, but with TS 73 or TS 92 overhead door closer
- dormakaba BTS 84 for panels up to 100 kg, with optional hold-open at 90° door opening angle
- dormakaba BTS 80 for panels of 100–150 kg, provided with hold-open as standard

### Pivoting end panel, double-action

Assembly types:

- Floor pivot with round spindle
- dormakaba BTS 84 for panels up to 100 kg, with optional hold-open at 90° door opening angle
- dormakaba BTS 80 for panels of 100–150 kg, provided with hold-open as standard

### Pivoting end panel, single- or double-action, with floor spring



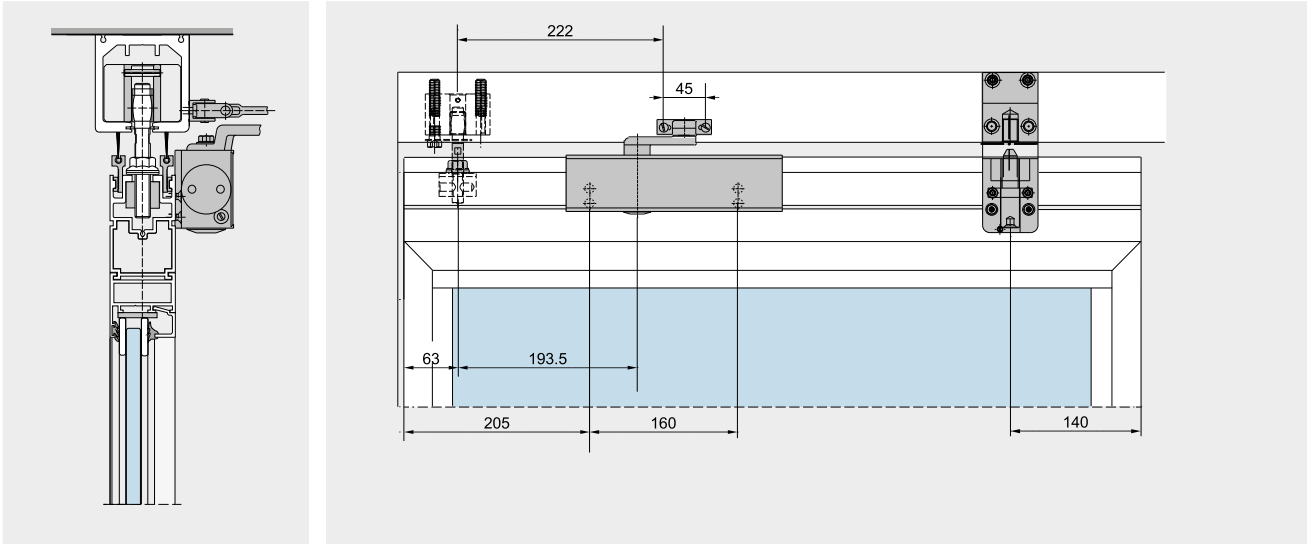
Mounting dimensions (mm)

	dormakaba BTS 80	dormakaba BTS 84
a	78	108
b	60	40
c	341	306
d	51–57	51–58

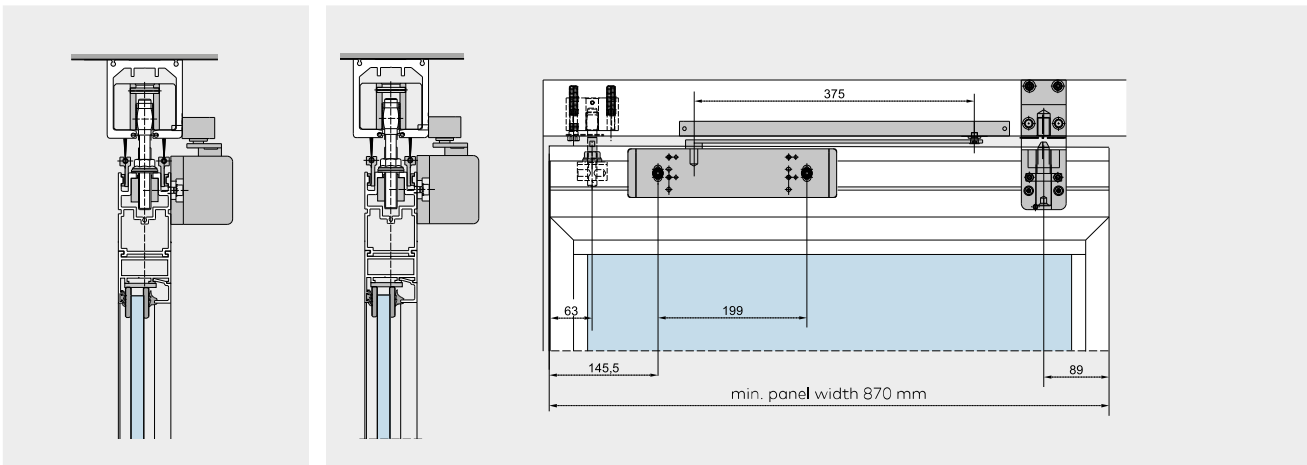


# Pivoting end panel, single-action

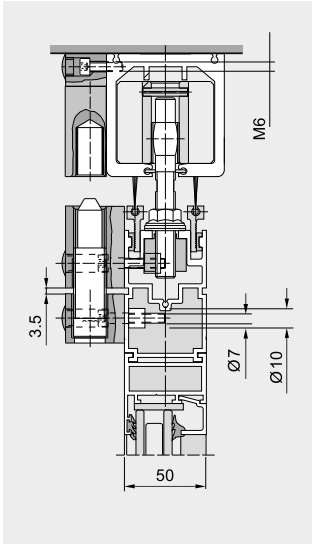
with dormakaba TS 73 overhead door closer and additional locking device and door stop



with dormakaba TS 92 overhead door closer and additional locking device

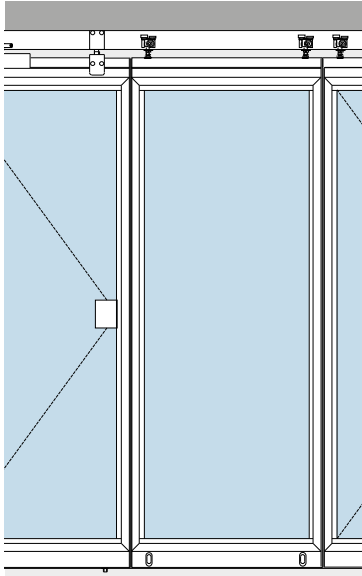


### Additional locking device



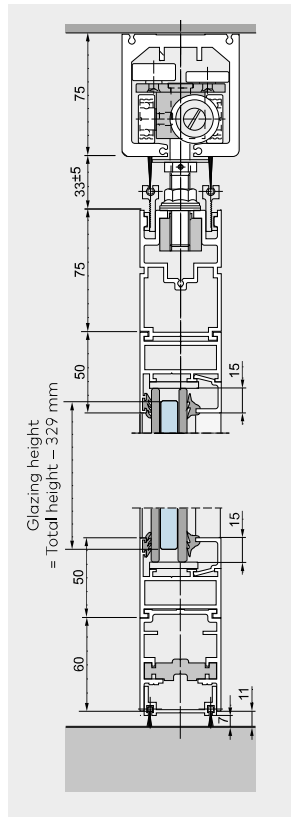
<b>Data and features</b>	<b>dormakaba TS 73 V</b>	<b>dormakaba TS 92</b>
Closing strength/size	EN 2-4	EN 2-4
Closing strength, variable	via adjusting screw and arm hing	via adjusting screw and arm hinge
Closing speed adjustment	via valve	via valve
Non-handed	●	●
Latching speed adjustment	via arm	via arm
Cushioned stay limit adjustment	75°-180°	80°-120°
Hold-open adjustment	75°-160°	75°-150°
Weight	1.8 kg	1.9 kg
Length	233 mm	281 mm
Overall depth	42.50 mm	47 mm
Height	60 mm	65 mm

# Sliding panels and connections

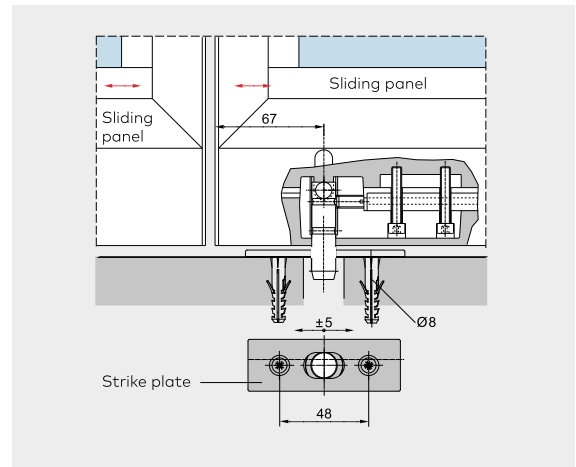


### Fixed when partition is closed.

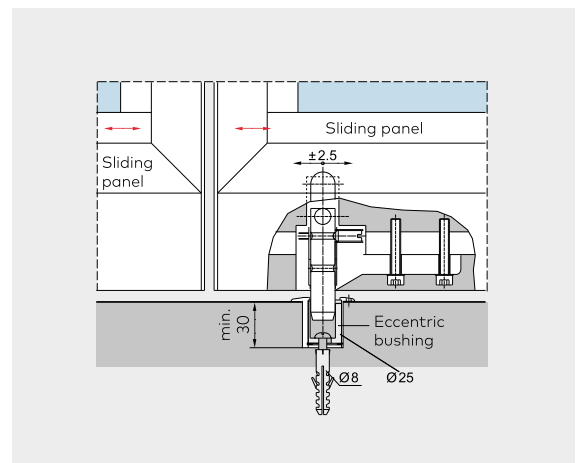
The sliding panels are moving elements. Once in their closed position, they are locked down. The components available for this are provided in the bottom rail in the form of face-mounted floor bolts or deadlocks.



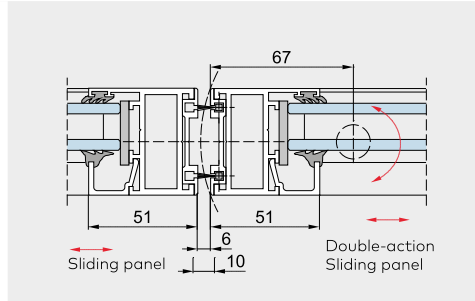
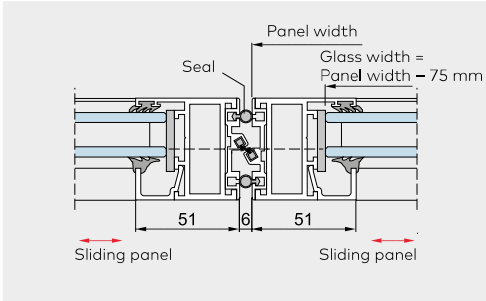
### Fixing the panel in the strike plate



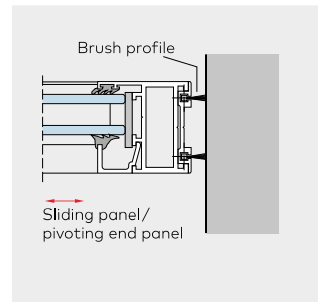
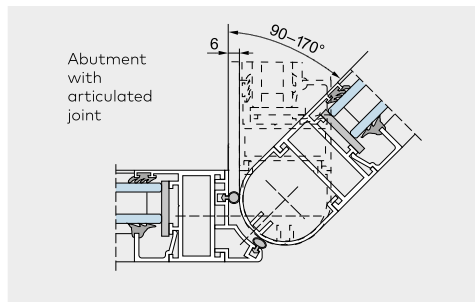
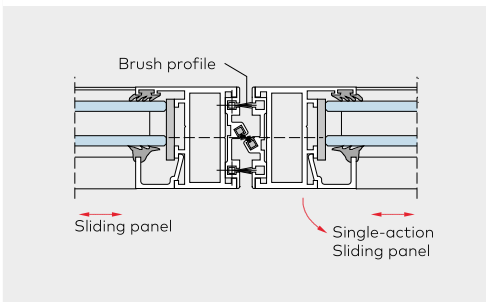
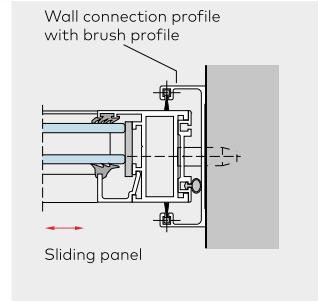
### Fixing the panel in eccentric bushing



**Sliding panel to panel connections**

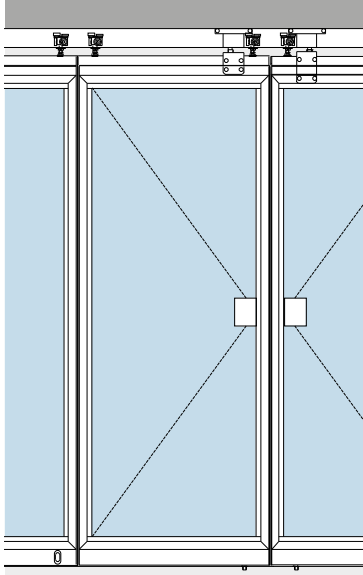


**Panel to wall connection**



# Single-action sliding panel

with integrated dormakaba ITS 96 concealed door closer, size 3–6



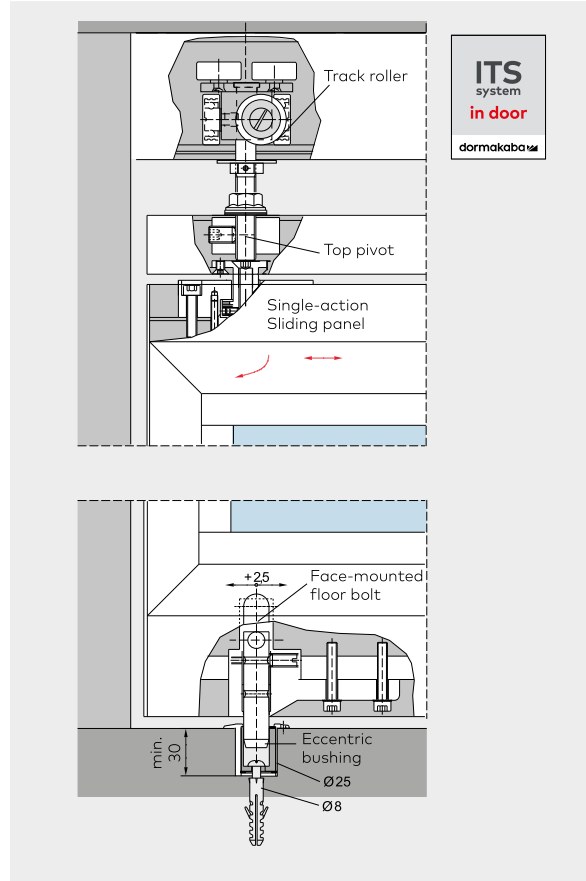
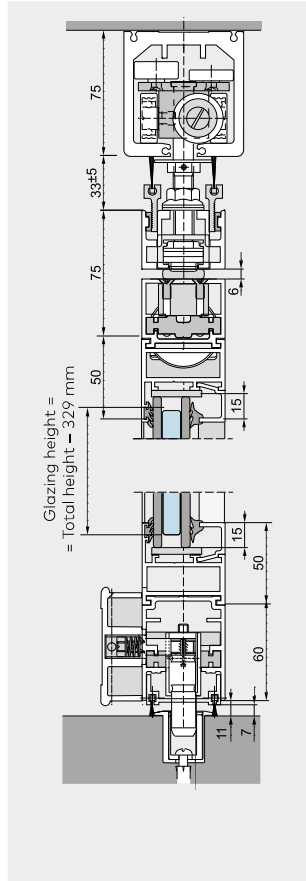
This panel type is used where passdoors only need to be opened in one direction. The single-action sliding panel can be configured for either inward or outward opening.

### Standard assembly

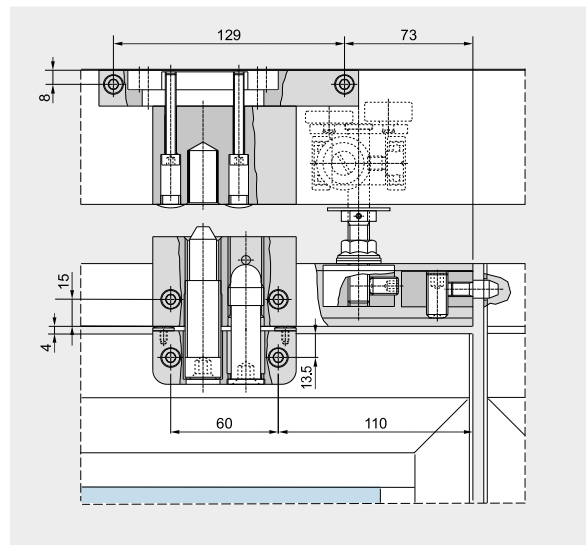
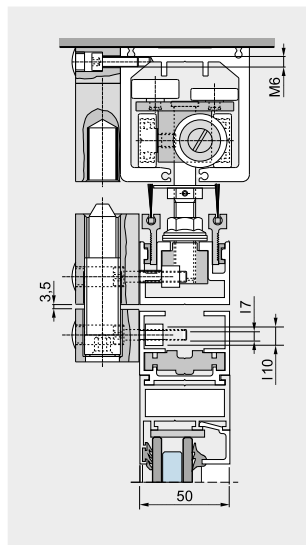
- top: Pivot bearing, ITS 96, size 3–6, one locking device
- bottom: Face-mounted floor bolt as pivot (released for sliding function)

### Optional equipment

- top: Second locking device (for reshuffle bypass stacking)
- bottom: Optional second face-mounted floor bolt or deadlock

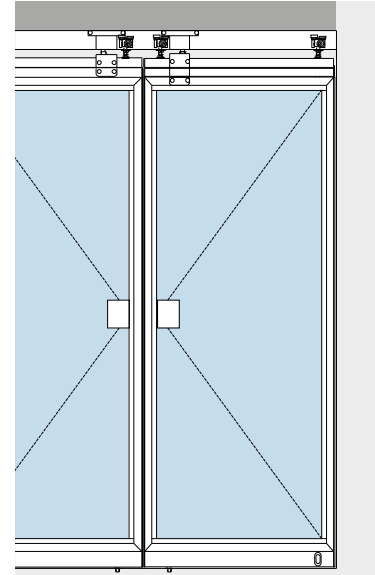
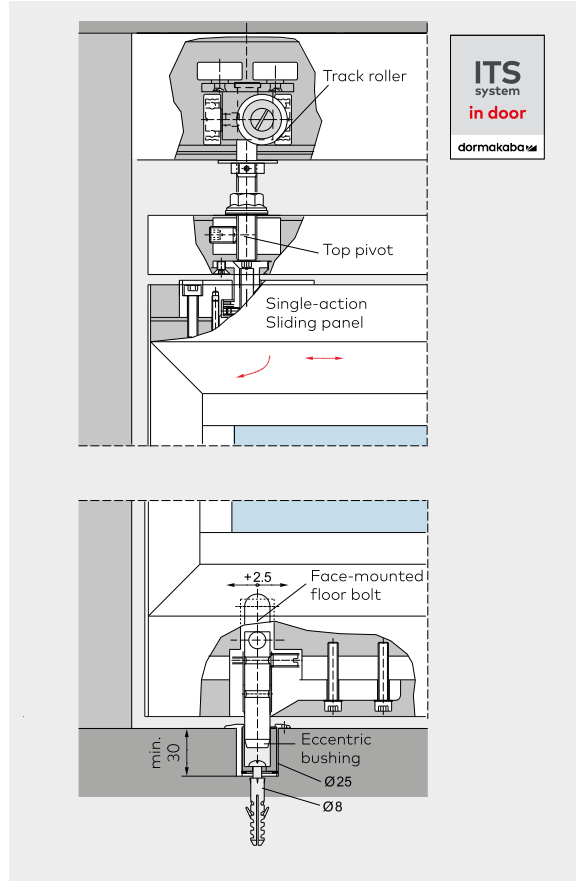
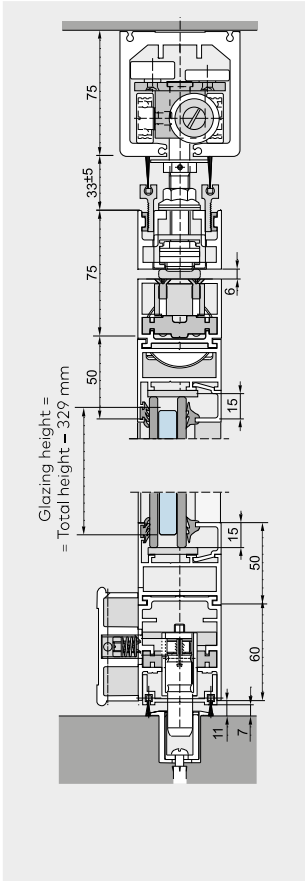


### Locking device



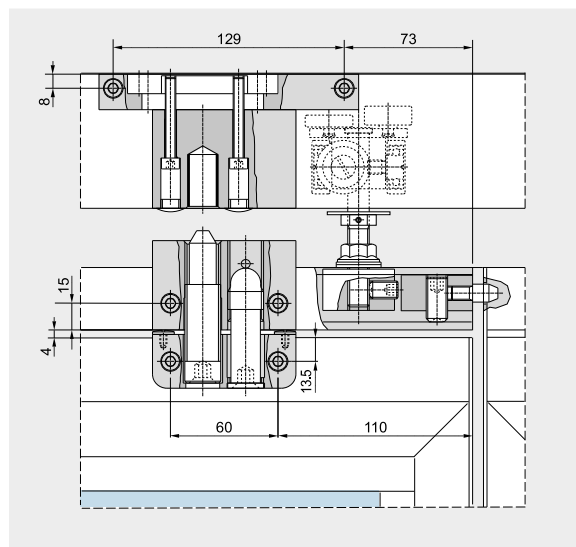
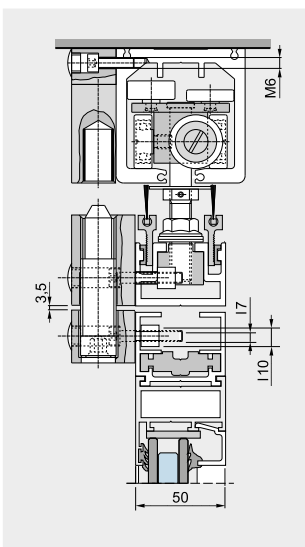
# Double-action sliding panel

with integrated dormakaba ITS 96 concealed door closer, size 3–6



Double-action sliding panels with ITS 96, size 3–6 door closers are characterised by their exceptional ease of installation and operation. These passdoor panels are generally equipped with a bottom deadlock and top locking device plus a bottom floor bolt operating as the pivot bearing (released for the sliding function). The ITS 96 does not feature a hold-open function as standard.

## Locking device



For these panel types please consider our notes on portal systems on page 125.

# HSW FLEX Therm – Easy to slide, easy to lock with just a flick of the wrist

The quality of a sliding door system is also exemplified by the manual devices that get used on a daily basis – for opening and closing, for locking, and for effortless sliding and parking of the individual panels. With HSW FLEX Therm, switch-over between the pivoting and sliding function is by means of a simple bolt operation.

The HSW FLEX Therm sliding elements are available in widths up to 1,250 mm per panel and for system heights up to 3,500 mm, with a maximum permissible panel weight of 150 kg.



## 01

All the sliding panels of a system can be parked at any point inside or outside the system frontage. The panels run on proven, low-friction roller carriers that are ideally matched to the track system.

## 02

The basic elements of each system are the sliding panels whereby the switchover between stationary location and sliding function is performed by means of a simple bolt actuator positioned either at foot height (06) or – as an option – at lock bar height (07).

## 03

With the single-action sliding panels, it is possible to provide single and double doors at certain points along the configuration. The switchover from the sliding to the door function is carried out with a simple manual operation of the lock bar (05).

## 04

Fixed panels and offset hung end panels offer same design. Each system can be augmented by any number of stationary elements such as side screens or offset hung end panels as required.



## 05

A simple lock bar for switching from the sliding to the door function of single-action sliding panels



**06**  
**End-mounted floor bolts** at foot operating height for fixing the sliding panels in their end positions.



**07**  
**Optional flush bolts** at handle height for fixing the sliding panels in their end positions.





**01**  
**Concealed door closer ITS 96**  
 All the single-action sliding panels are equipped with the ITS96 door closer integrated in the door profile and featuring a mechanical hold-open.



**02**  
**Swivel-type steel hook bolts**  
 protected against drill and saw attack by an auxiliary bolt.



**03**  
**Selector** in the door rebate for implementing the door functions in the case of the MULTIBLINDO easy.

# Doors with multiple security – and high utility values

**Integrated door closers and multi-point locking are invisibly combined in the elegant frame profile.**

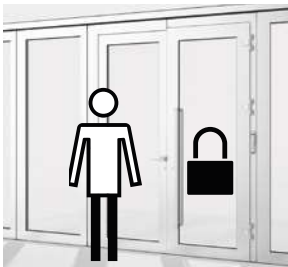
The MULTIBLINDO classic multi-point locking system comes as standard in the form of a three-point or four-point arrangement, depending on the system height. In the locked condition, swivel-type steel hook bolts with auxiliary bolt secure the door against unauthorized access. The swivel-type bolts of speciality steel are protected against drill and saw attack.

As an option, the doors may also be equipped with the MULTIBLINDO easy multi-point locking system, a further upgrade that offers additional, practical door functions, making it the ideal complementary system

for public-access applications. The functions are readily selectable at the locking mechanism, as indicated by the illustration and description below.

Also emergency exits and panic exits are according to DIN standards feasible. The connection of MULTIBLINDO Easy Exit lock with the corresponding OGRO handles fulfils the requirements according to DIN EN 179 and the use of the PRO Exit Push bars fulfils the prerequisites according to DIN EN 1125 at the offset hung end panels.

## Door functions MULTIBLINDO easy



### Selector position 0

Increased security (night-time mode). The door is secured by the multi-point lock.



### Selector position 1

The door can only be opened from the inside.



### Selector position 2

Public-access function. The door can be opened from the inside and the outside.

View from the inside

View from the outside

## Possible system configurations – as varied as your requirements

**Architecture is, by its very nature, versatile and frequently demanding. Whether applied to an existing building or in the form of an unusual system, HSW FLEX Therm will adapt to virtually any spatial requirements and design grids that you wish to impose.**

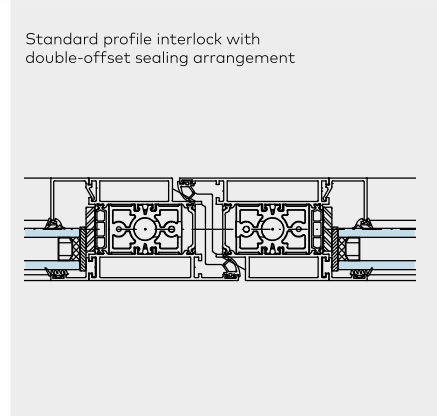
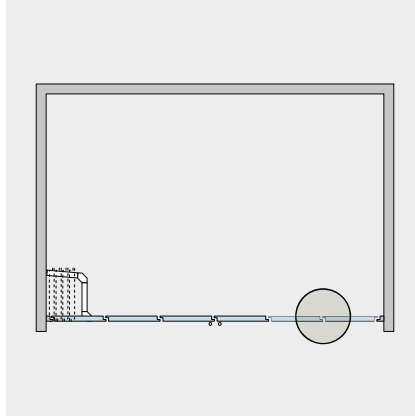
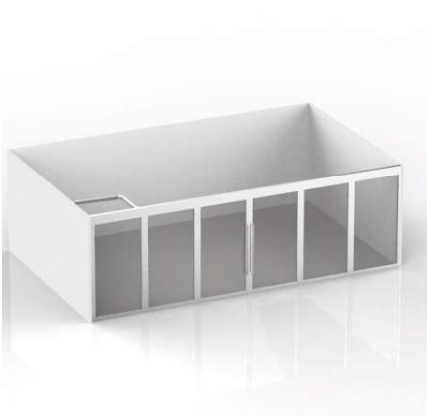
The maximum element width of 1,250 mm and heights up to 3,500 mm make the sliding door system extremely flexible. It should, however, be borne in mind that single-action sliding panels must remain within a

maximum height of 3,000 mm and a maximum weight per individual element of 150 kg.

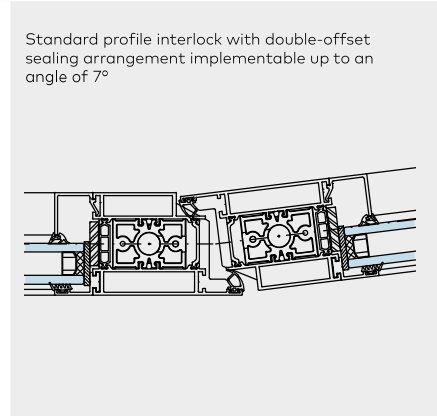
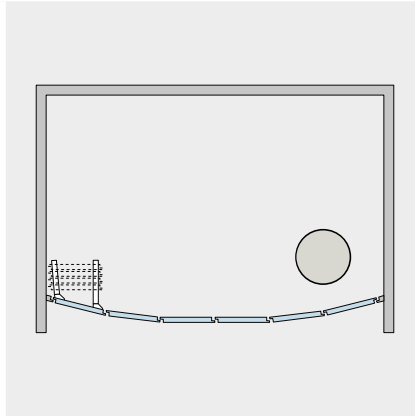
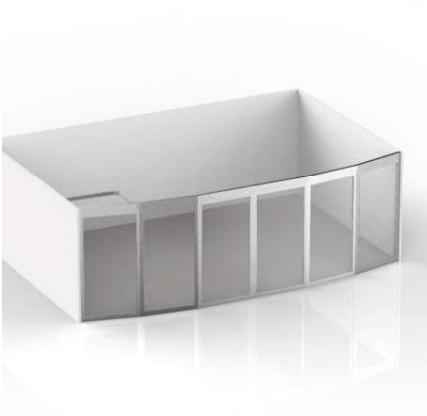
The examples that follow offer a selection of common system configurations, although there are many other options available.



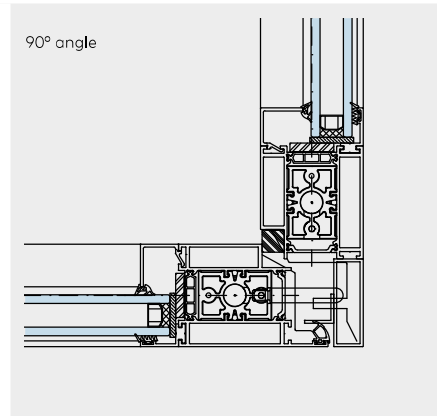
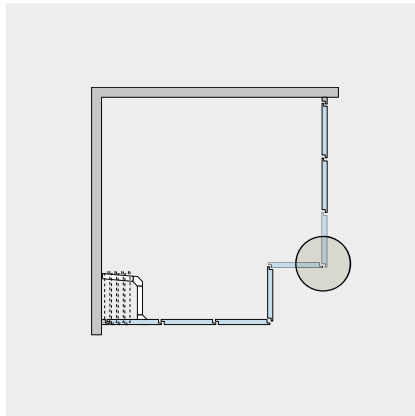
**Straight run**



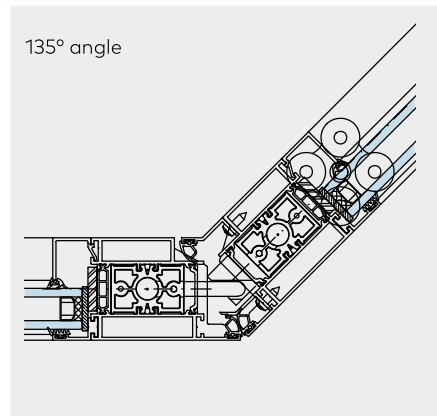
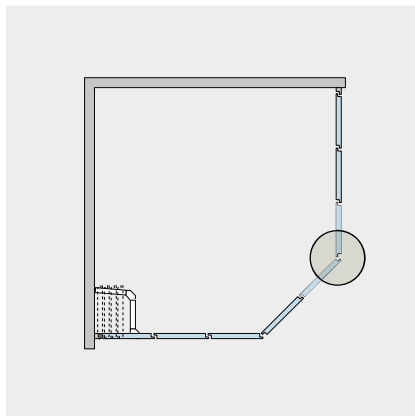
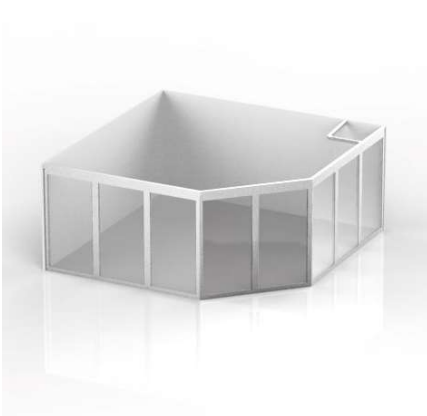
**System with round segmentation implemented with standard profiles**



**System configuration with 90° angles**

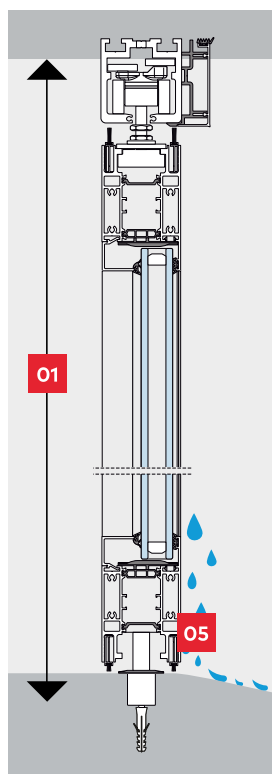


**System configuration with 135° angles**



# System height

Particular attention must be given to the system height. Adherence to the specified design dimensions must be ensured during installation, e.g. by providing a 1 meter datum in the vicinity of the planned system that the installers are able to use without hindrance.



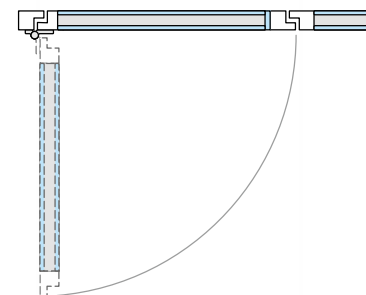
- 01** System height
- 02** Top edge of track = top edge of system
- 03** Finished floor level = bottom edge of system
- 04** 1-meter datum (local reference dimension)
- 05** Sufficient water drainage must be provided by others on site

**First panel as an offset hung end panel (OHEP)**  
 Non-sliding, e.g. as a side entrance for when the system is closed.  
 For details, see page 22

The system height is always measured from the finished floor level (FFL) to the top edge of the track.

### Tolerances

The roller assembly can be adjusted following installation for vertical compensation amounting to +/- 4 mm. The gap width in the horizontal direction can be adjusted by 5 mm (-2 mm / + 3mm) for each sliding panel by means of rubber bumpers.



# Panel types and equipment

The various panel types and panel designs can be combined together in one and the same system. The clear and uniform design lines remain constant across the entire system width.

Max. panel width:	1,250 mm
Max. panel height:	3,500 mm
For single-action sliding panels:	3,000 mm
Max. panel weight incl. glass:	150 kg
For single-action sliding panels:	150 kg
Max. Glass thickness:	49 mm



## First panel as a sliding panel for a bypass system

Sliding panels as bypass panels with MULTIBLINDO classic multi-point locking system.

For details, see page 19.

## Sliding panel (SP)

Sliding panel without additional functions.

For details, see page 20.

## Single-action sliding panel (SASP)

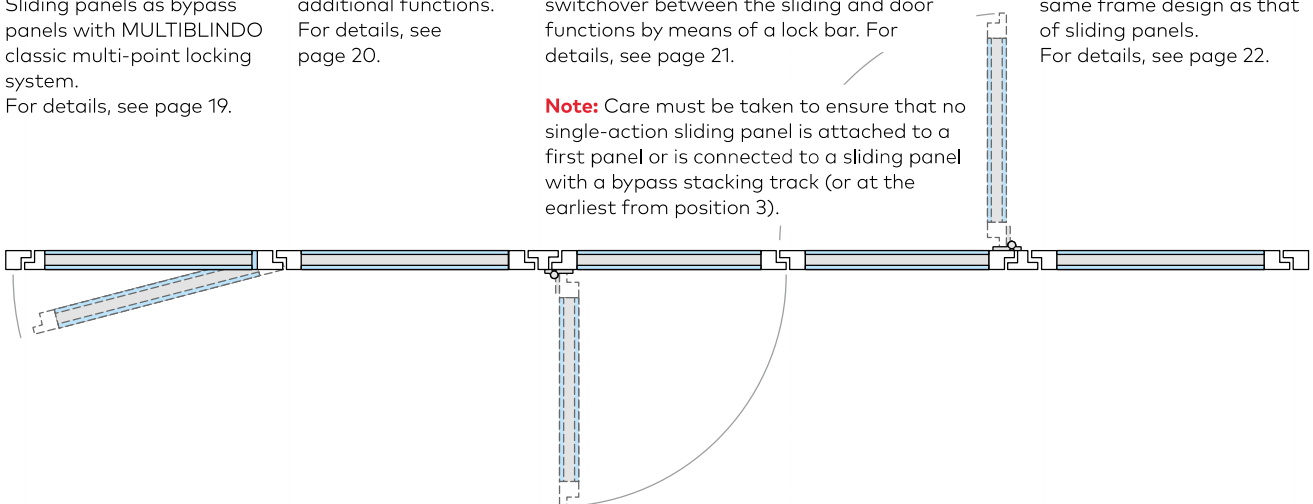
Sliding panels with door function. Effortless switchover between the sliding and door functions by means of a lock bar. For details, see page 21.

**Note:** Care must be taken to ensure that no single-action sliding panel is attached to a first panel or is connected to a sliding panel with a bypass stacking track (or at the earliest from position 3).

## Fixed panel (FP)

Non-sliding panel with the same frame design as that of sliding panels.

For details, see page 22.



# Offset hung end panels

## System termination at parking locations

**01**

Surface-mounted door closer dormakaba TS 93 with mechanical hold-open device

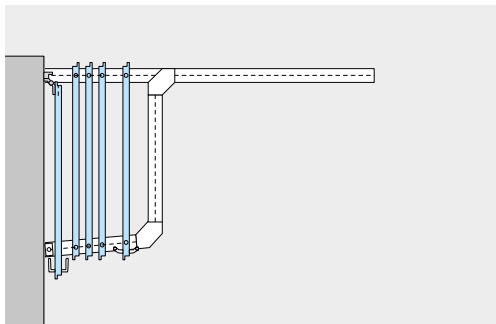
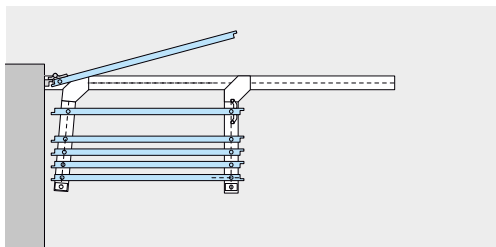
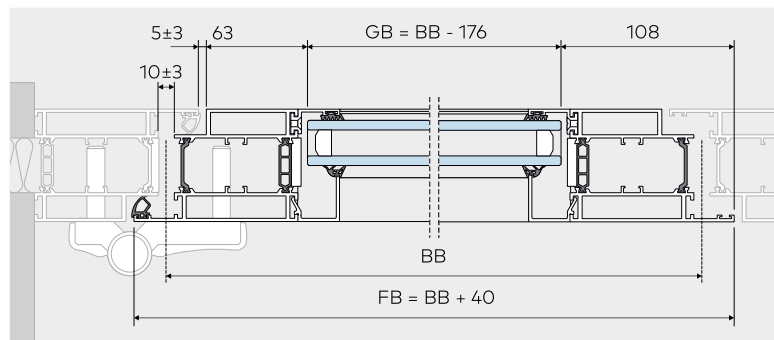
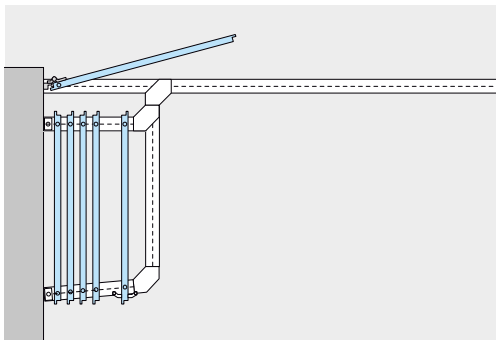
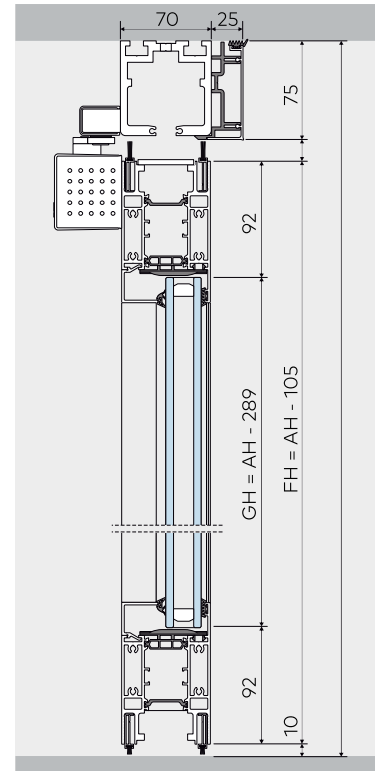
**02**

Lever handle

**03**

Multi-point locking

**Example of a stacking track closed off by an offset hung end panel**



The non-sliding offset hung end panel is mounted separately from the rest of the system at the wall abutment profile, either on the inside or the outside. It can be swung open, depending on the connection situation, on  $90^\circ$  to  $180^\circ$  to release the entire panel assembly for sliding in and out. The offset hung end panel can also be used as a side entrance.

**Standard design**

- MULTIBLINDO classic mortise lock with 3-point locking. From a panel height of 2,500 mm with 4-point locking as a combination of hook and pin locks
- Lever handle (for details, see page 119)

**Dimensions**

- Panel width of 400 - 1,250 mm
- Panel height of 2,000 - 3,500 mm
- Panel height of 150 kg
- Glass thickness 8 mm, 10 - 49 mm

**Optional equipment**

- Surface-mounted door closer dormakaba TS 93 with mechanical hold-open
- Pull handles and push bars (for details, see page 110)
- MULTIBLINDO easy mortise lock with selectable automatic locking action and practical door functions (for details, see page 118). Suitable for both knob or pull handle outside and lever handle inside.

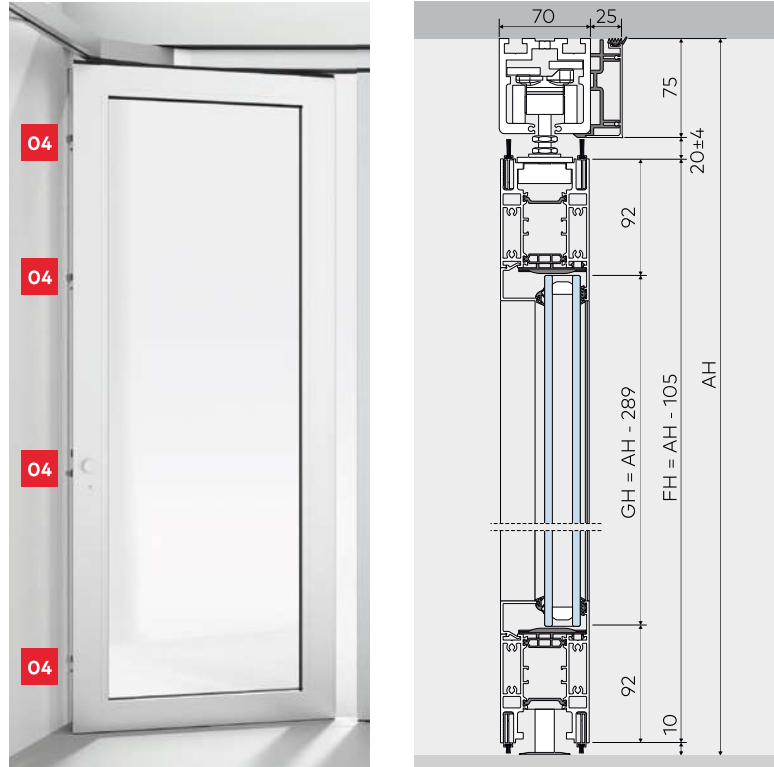
**Additional equipment:**

- Mortise lock MUTLIBLINDO easy Exit with emergency or panic exit approval

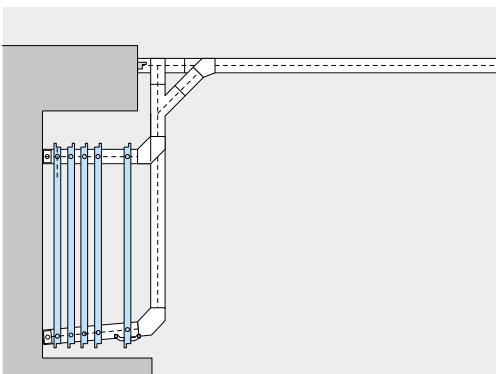
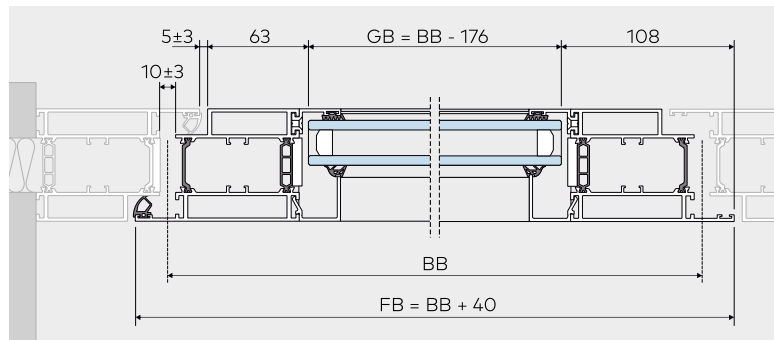
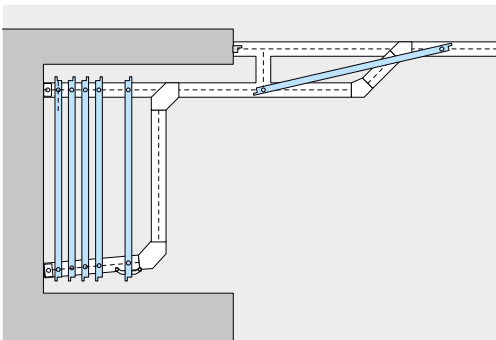
# Sliding panels as bypass panels

## All panels concealed in a parking niche

**04**  
MULTIBLINDO classic  
Multi point locking system



### Example of parking situations with bypass panels



If no panels are to be visible when the frontage is open, a bypass arrangement can be provided in the track to link the frontage to the parking area. The first panel (sliding panel) is opened and closed using the multipoint locking system engaging in the wall abutment profile. The panels that make up the system may, for example, be parked in a niche or along a wall.

#### Standard design

- MULTIBLINDO classic mortise lock with 3-point locking. From a panel height of 2,500 mm with 4-point locking as a combination of hook and pin locks
- 2 x Manet door knobs, single-sided inward opening

#### Dimensions

- Panel width of 400 - 1,250 mm
- Panel height of 2,000 - 3,500 mm
- Panel weight incl. glass 150 kg
- Glass thickness 8 mm, 10 - 49 mm



# Sliding panels

## Super-easy to operate

**A**  
**Flush bolt** at handle height (approx. 900 mm) for securing the sliding panels at their end positions.

**B**  
**End-mounted floor bolt** at foot operating height for fixing the sliding panels in their end positions.



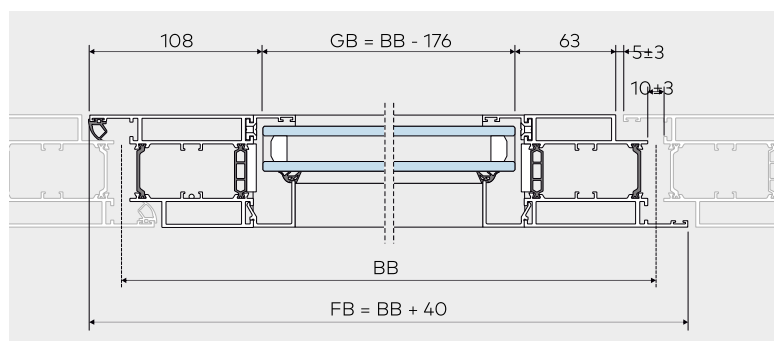
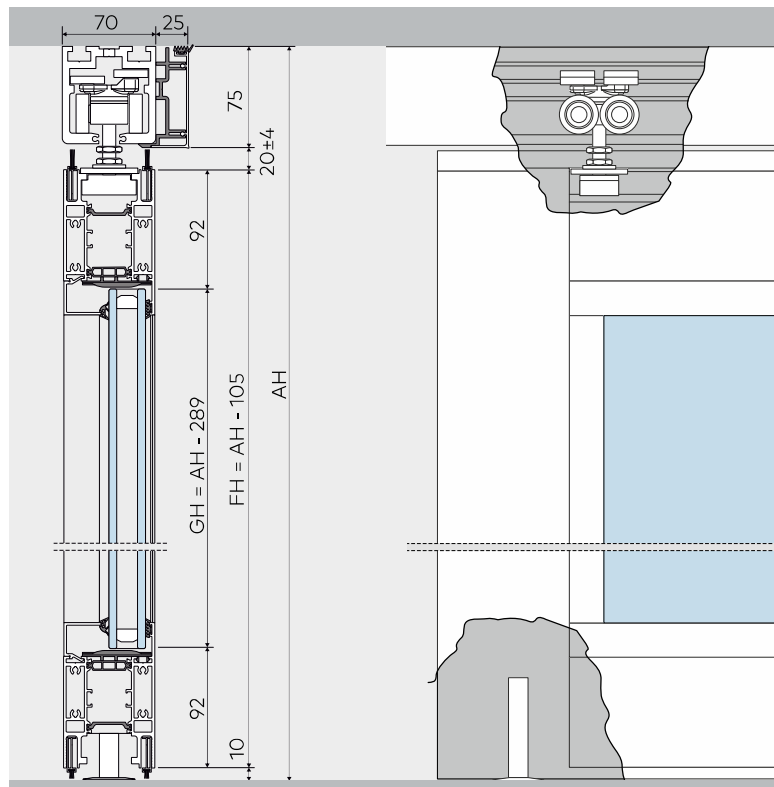
In the closed condition, the sliding panels are held in position by locks engaging in floor keeps. The switchover between stationary and sliding merely requires operation of the bolts in the form of either the flush type (A) or the end-mounted type (B).

**Standard design**

- Locking by means of end-mounted floor bolts which are foot operated, or by tilting-type flush bolts at handle height

**Dimensions**

- Panel width of 400 - 1,250 mm
- Panel height of 2,000 - 3,500 mm
- Panel weight incl. glass 150 kg
- Glass thickness 8 mm, 10 - 49 mm



The profile flanges may point inwards or outwards

# Single-action sliding panels

## Sliding doors released with flick of the wrist

**C**  
**Unsichtbarer Türschließer ITS 96**  
 im Türprofil integriert.

**D**  
**Drehriegel** zum Wechsel von beweglicher Schiebefunktion zu fixiertem Flügel mit Türfunktion.



Single-action sliding panels may be designed as either single or double doors. If they are double doors, it has to be remembered that these have to be designed with alternate handings. The switch-over from sliding to door function requires just a quick operation of the lock bar.

### Standard design

- MULTIBLINDO classic mortise lock with 3-point locking. From a panel height of 2,500 mm with 4-point locking as a combination of hook and pin locks
- Lever handle
- Integrated door closer ITS 96 EN 3-6 with mechanical hold-open, barrier-free to DIN 18040, easy opening in accordance with DIN SPEC 1104, adjustable closing force, closing speed and latching action
- Lock bar operation at handle height

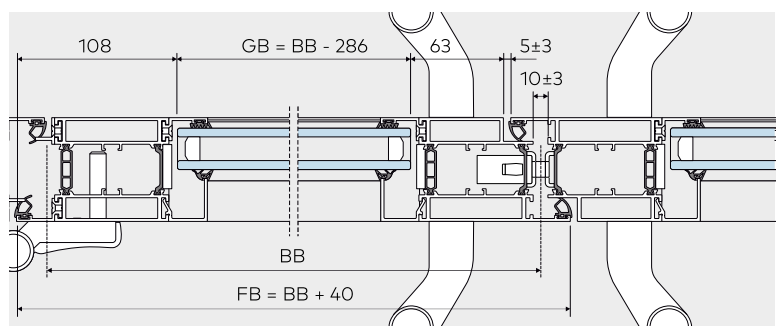
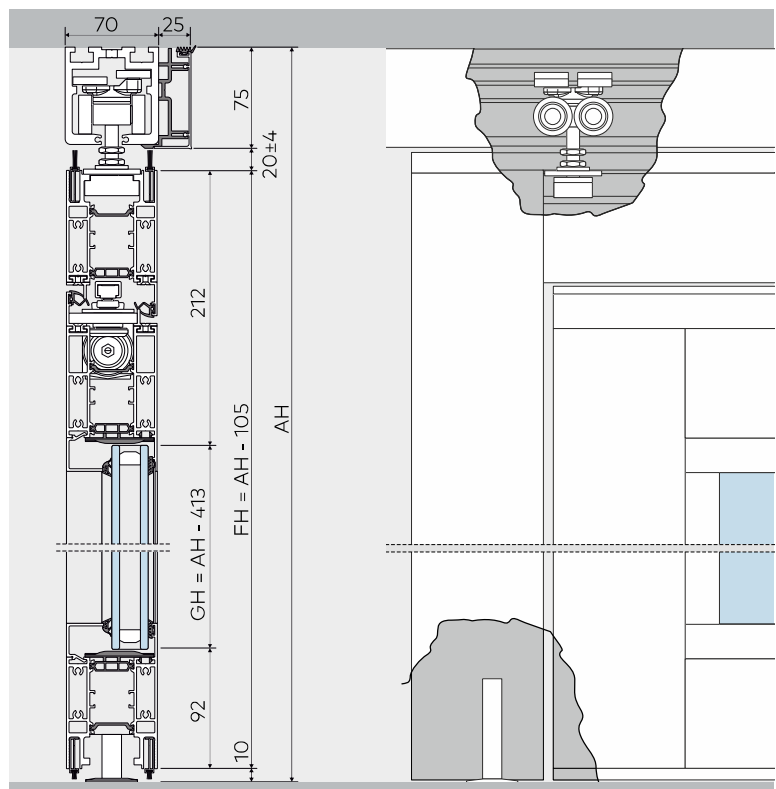
### Dimensions

- Panel width of 950 - 1,250 mm
- Panel height of 2,000 - 3,000 mm
- Panel weight incl. glass 150 kg
- Glass thickness 8 mm, 10 - 49 mm

### Optional equipment

- Pull handle
- MULTIBLINDO easy mortise lock with selectable automatic locking action and three practical door functions (for details, see page 119). Suitable for use of knob or pull handle outside and lever handle inside.

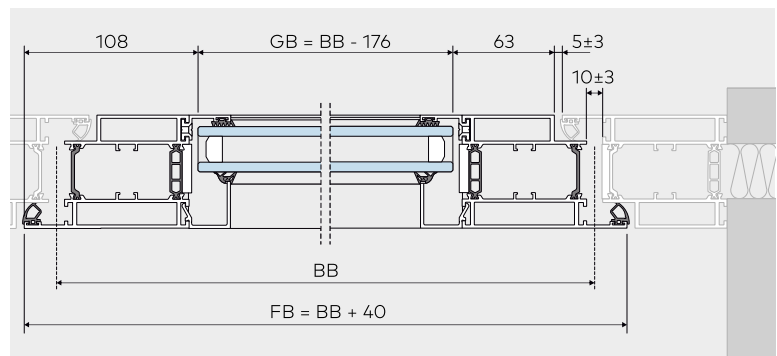
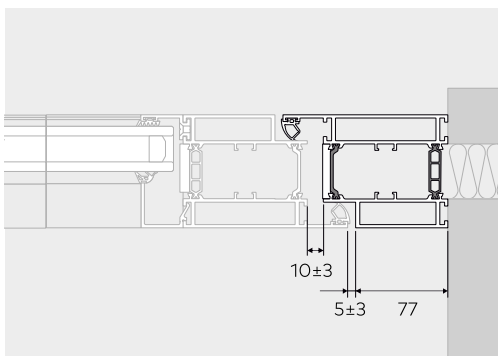
**Note:** The hardware sets for the various applications can be found in the HSW price list.



**Note:** width single-action sliding panelsl  
 min. = 950 mm (LPW = 753 mm) max. = 1,250 mm (LPW = 1,093 mm)

# System termination

## with wall abutment profile and fixed side screen



### Wall abutment profile

The HSW FLEX Therm locks onto a wall abutment profile, at either end of the system. On the parking area side, this is connected to the offset hung end panel or contained in the wall abutment for bypass stacking.

The profile flange can be mounted both on the inside and the outside.

### Fixed side screen as the last panel

A fixed side screen can be provided in any size with the same visual appearance as the sliding panels. Instead of the bottom brush seals, a base profile is used. The fixed panel is connected to the wall via the wall abutment profile. Fixed side screens can also be combined with an offset hung end panel.

