



# HSW FLEX Therm

Horizontal sliding wall system  
– aesthetic elegance offering  
reliable protection against wind  
and weather

Horizontal sliding wall systems are complex installations in which the individual components need to be cleverly coordinated. The following pages are intended as an aid in your initial planning work. Our own design service will be glad to support you from the outline concept through to the detailed engineering and also in preparation of any tender specifications you may require.



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# 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 pivoting / sliding panels and hinged doors.

# 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 1250 mm per panel and for system heights up to 3500 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 pivoting / sliding panels, it is possible to provide single and double doors at any point 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 hinged doors offer same design. Each system can be augmented by any number of stationary elements such as side screens or hinged doors as required.



## 05

A simple lock bar for switching from the sliding to the door function of pivoting / 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 pivoting / 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.

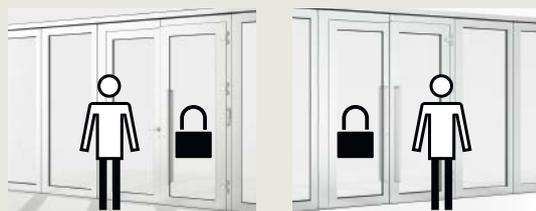
# Doors with multiple security – and high utility values

**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 specialty steel are protected against drill and saw attack.

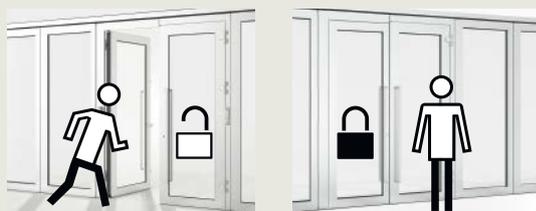
As an option, the doors may also be equipped with the MULTIBLINDO easy multi-point locking system, a further upgrade that offers additional, practical door functions, making it the ideal complementary system for public-access applications. The functions are readily selectable at the locking mechanism, as indicated by the illustration and description below.

## 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 1250 mm and heights up to 3500 mm make the sliding door system extremely flexible. It should,

however, be borne in mind that pivoting / sliding panels must remain within a maximum height of 3000 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.



#### Frame weight (kg)

for sliding panel, fixed panel and offset hung end panel without handle or lever

Element height	Element width			
	400	800	1000	1250
2000	17	20	22	24
2400	20	23	24	26
2800	22	26	27	29
3200	25	28	30	32
3500	27	30	32	34

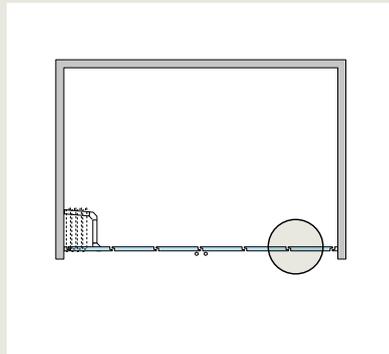
#### Frame weight (kg)

for pivoting / sliding panel without handle or lever

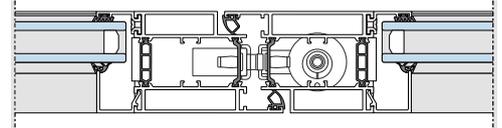
Element height	Element width	
	1000	1250
2000	42	45
2500	48	51
3000	53	56



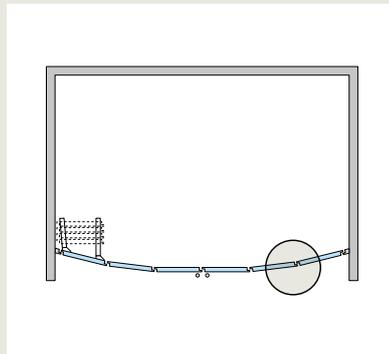
**Straight run**



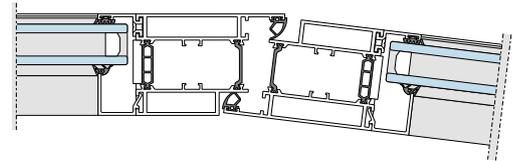
Standard profile interlock with double-offset sealing arrangement



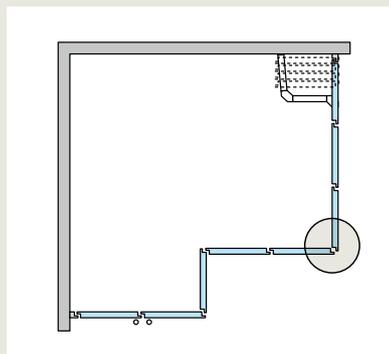
**System with round segmentation implemented with standard profiles**



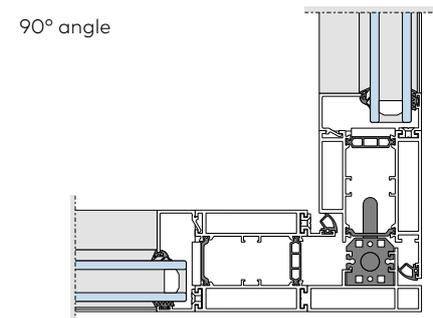
Standard profile interlock with double-offset sealing arrangement implementable up to an angle of 7°



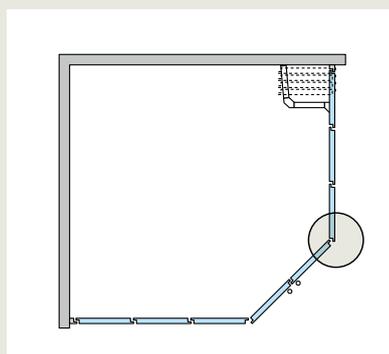
**System configuration with 90° angles**



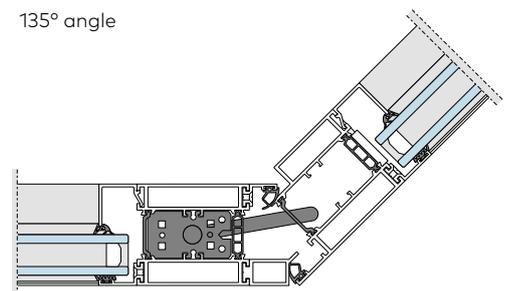
90° angle



**System configuration with 135° angles**



135° angle





## Flexibly configurable track system – for every spatial situation

**The HSW track system offers maximum flexibility in the implementation of system configurations and parking arrangements.**

Straight track rails are joined together via the appropriate modules such as angle and intersection joints to create the individual configurations you require. Complex system symmetries with multiple segmentation can thus also be accommodated. The individual

elements are interconnected by means of clamps and guide pins for assured functional reliability. Parking areas adapted to each spatial situation can be preassembled or supplied to site in individual parts for in-situ installation.



Straight track rail



L-section 90°



#### Firmly connected by clamp devices

The individual elements such as the track rails and modules are securely and stably interconnected by clamp devices. Additional guide pins ensure a smooth transition at the close-fitting joint for maximum running smoothness of the sliding panels.



#### Milled angle modules and removable track sections

The angle modules are milled from a single profile section. The high precision that this produces ensures the smooth operation of the roller carriers as they run over the various joints and intersections. A removable track section to facilitate inspection work also allows individual sliding panels to be replaced as and when required.



#### Optimized insulation of track rail

The insulation of the track rail can be further improved by provision of an additional plastic extrusion on the weather side so as to significantly reduce condensation.



T-section 90°



Y-section / intersection  
135° right and left



Module 04/05 for 90°  
angles, left or right



Module 06 for 45° angles



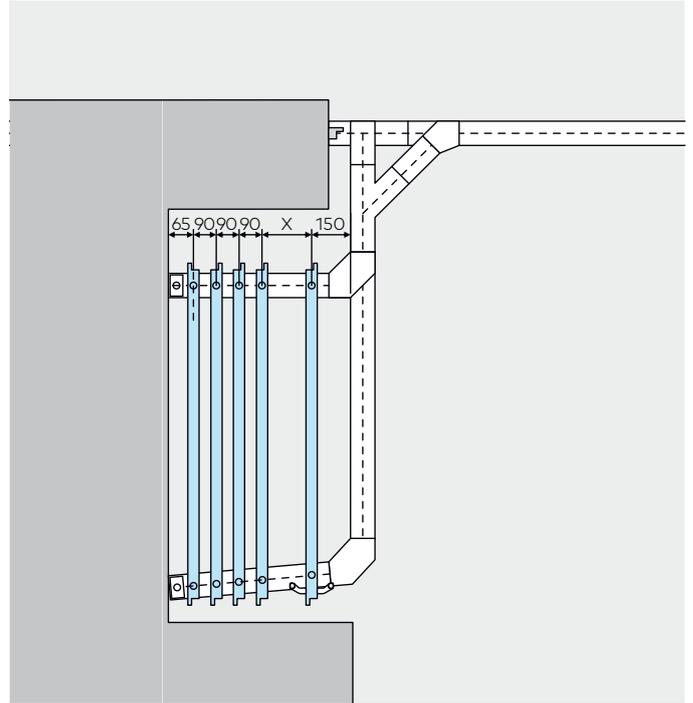
Module 07/09 for  
90° - 95° angles

# The right solution – for every parking situation



## Parking in a box or niche

With no hinged door panel, single-sided opening (left or right or left and right).



**Existing structures and non-standard designs often require unusual solutions, particularly when it comes to configuring the parking area.**

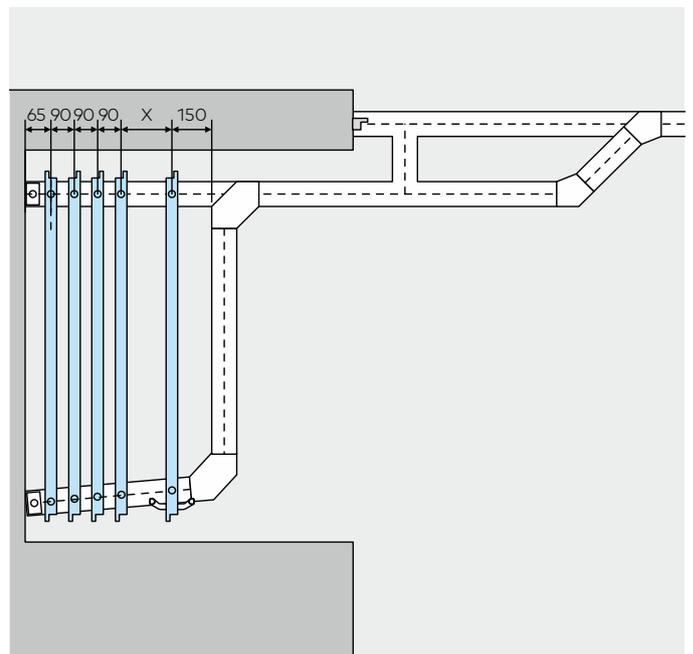
HSW FLEX Therm systems can be combined with stacking tracks of various configurations. The single-panel stack can be parked either parallel or square to the frontage, in a visible area or concealed behind columns or similar. The panels may also be parked in a line, either behind a wall or in a niche.

The parking solutions below show by way of example how such arrangements may be designed to be openly visible or concealed.

Please note during your own planning and design work that large systems with many individual panels will inevitably require a correspondingly generous amount of parking/stacking space.

## Parking with a bypass stacking track

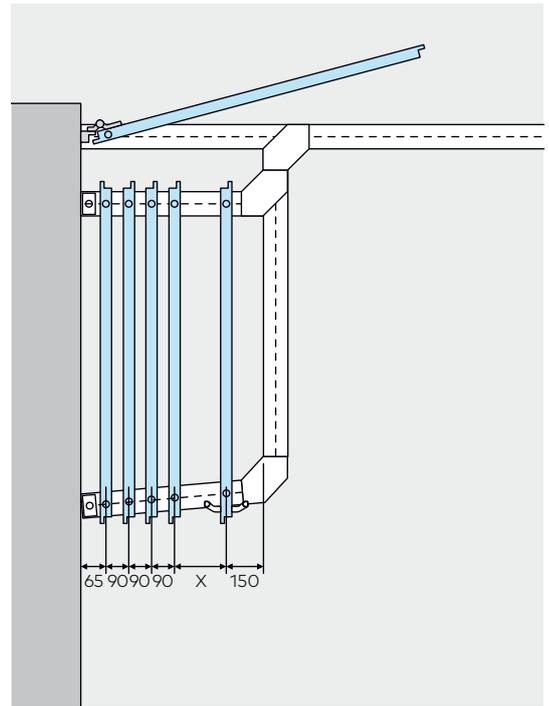
Without hinged door panel, single-sided opening, stacking behind a protruding wall / fixed side panel (left or right or left and right).





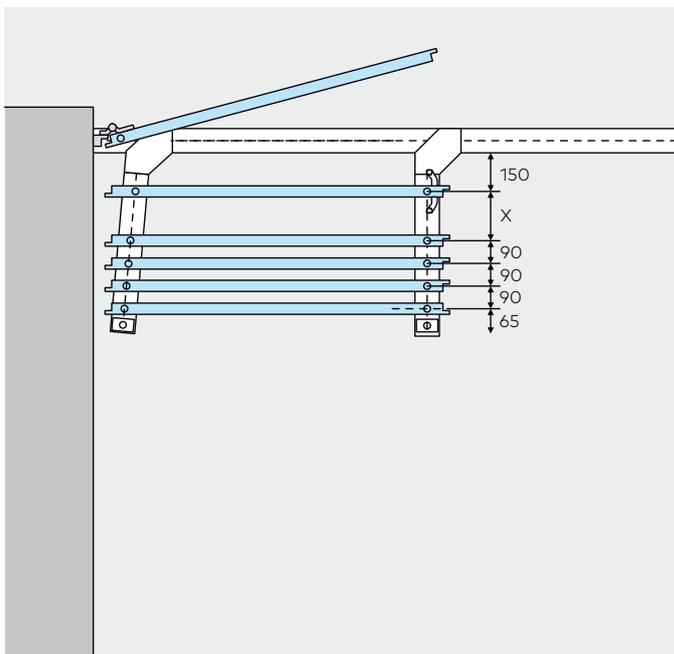
**Parking behind a hinged door panel**

Single-action, as a possible access point (left or right or left and right).



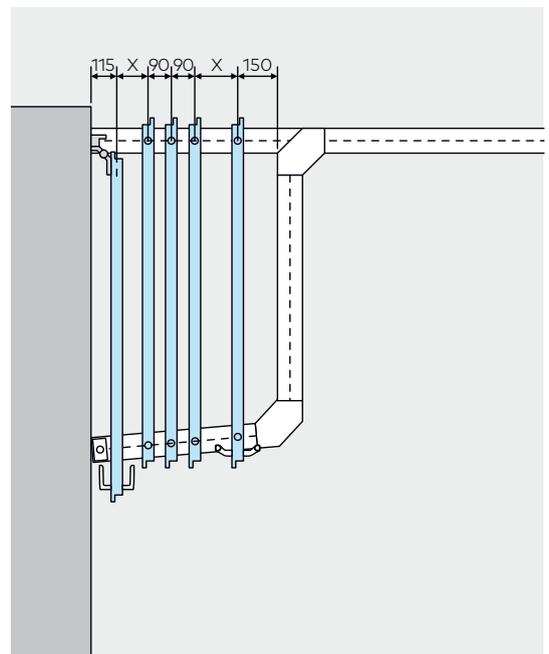
**Parallel parking behind a hinged door panel**

As a possible access point.  
Outer stacking leg at an angle of 95° (left or right and left and right).



**Standard stacking track**

With hinged door panel, single-action, as a possible through-passage panel (left or right or left and right).



# System height

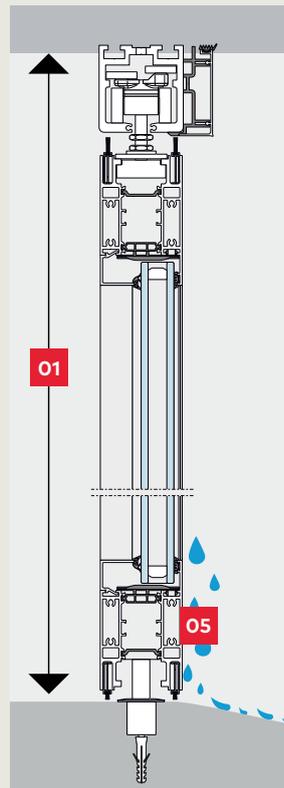
Particular attention must be given to the system height. Adherence to the specified design dimensions must be ensured during installation, e.g. by providing a 1 meter datum in the vicinity of the planned system that the installers are able to use without hindrance.



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.

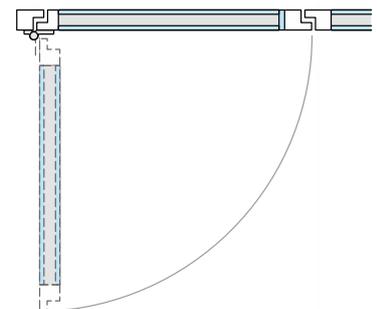


- 01**  
System height
- 02**  
Top edge of track =  
top edge of system
- 03**  
Finished floor level =  
bottom edge of system
- 04**  
1-meter datum  
(local reference  
dimension)
- 05**  
Sufficient water  
drainage must be  
provided by others  
on site



## First panel as a hinged door

Non-sliding, e.g. as a side entrance for when the system is closed.  
For details, see page 18.



# 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:	1250 mm
Max. panel height:	3500 mm
For pivoting / sliding panels:	3000 mm
Max. panel weight incl. glass:	150 kg
For pivoting / sliding panels:	100 kg



## 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

Sliding panel without additional functions. For details, see page 20.

## Pivoting / sliding panel

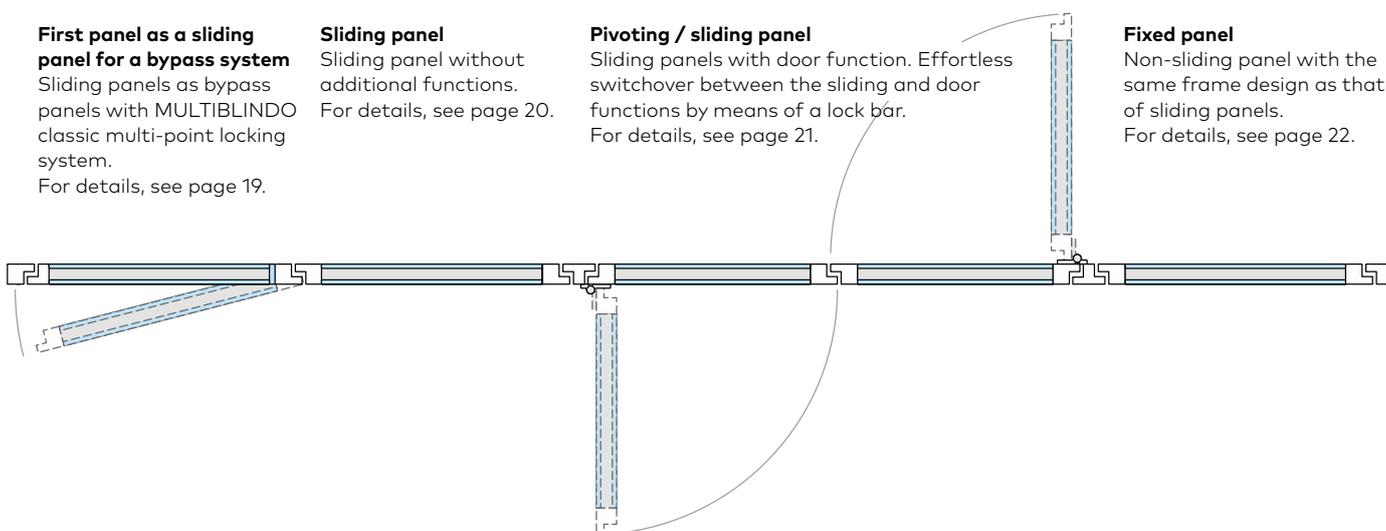
Sliding panels with door function. Effortless switchover between the sliding and door functions by means of a lock bar.

For details, see page 21.

## Fixed panel

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

For details, see page 22.



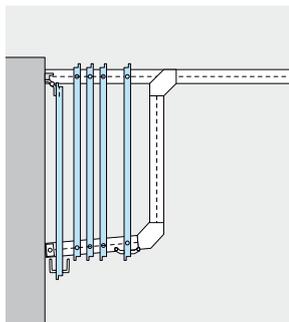
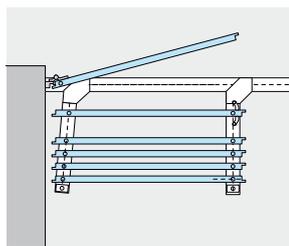
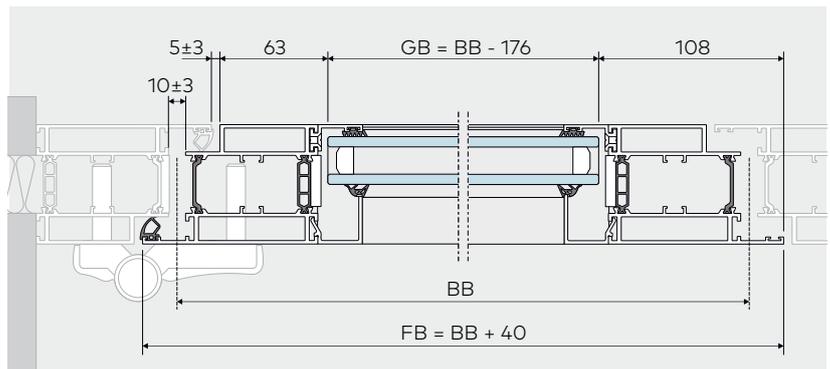
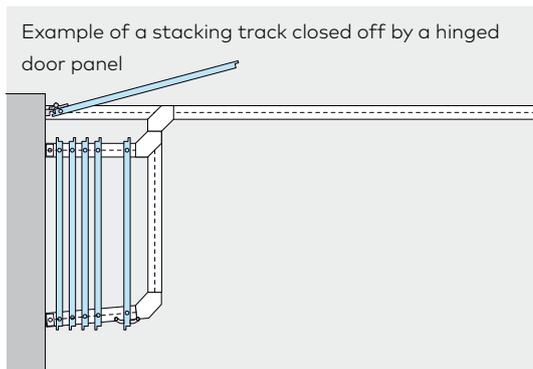
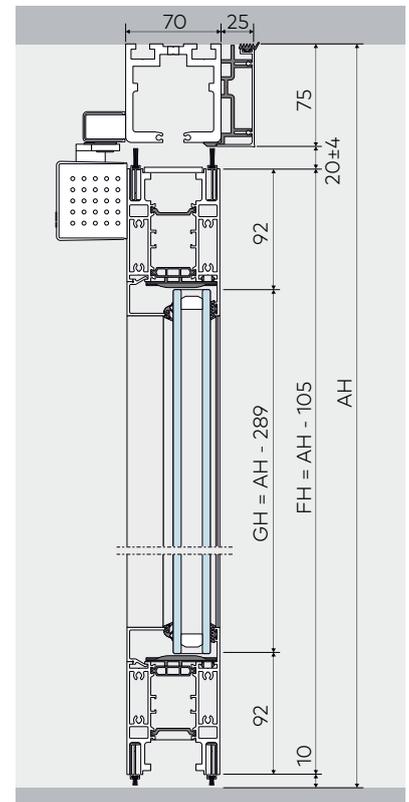
# Hinged door panels

## System termination at parking locations

**01**  
Surface-mounted door closer  
TS 93 with mechanical  
hold-open device

**02**  
Lever handle

**03**  
Multi-point locking



The non-sliding hinged door 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 by 90° to release the entire panel assembly for sliding in and out. The hinged door panel can also be used as a side entrance.

### Standard design

- MULTIBLINDO classic mortise lock with three / four locking points using hook bolts with auxiliary bolt and featuring a manual locking function
- Lever handle (for details, see page 21)

### Dimensions

- Panel width of 900 - 1250 mm
- Panel height of 2000 - 3500 mm
- Panel weight of 150 kg

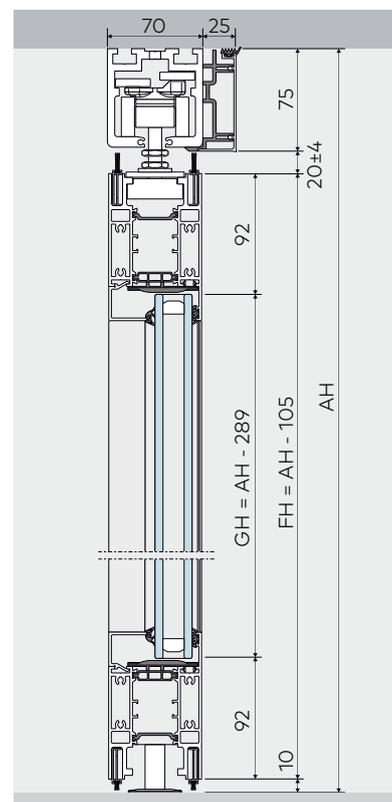
### Optional equipment

- Surface-mounted door closer TS 93 with mechanical hold-open
- Pull handles and push bars (for details, see page 21)
- MULTIBLINDO easy mortise lock with selectable automatic locking action and practical door functions (for details, see page 21). Suitable for both knob or pull handle outside and lever handle inside.

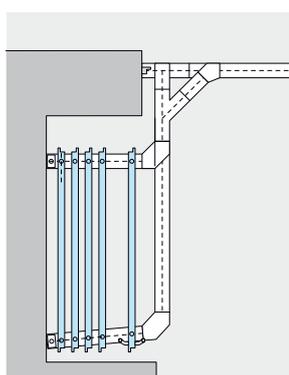
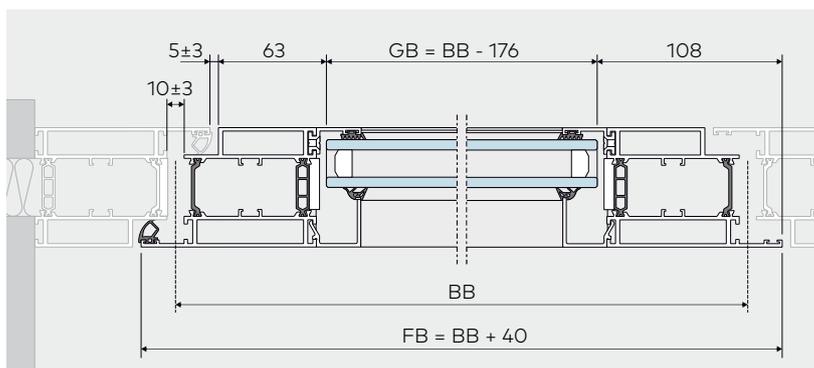
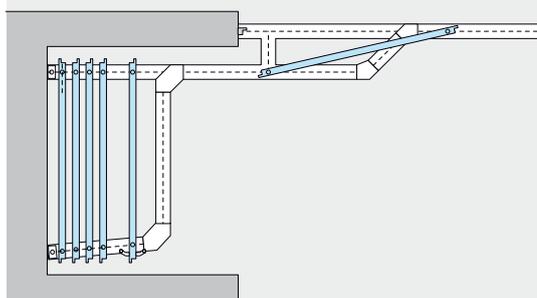
## Sliding panels as bypass panels

### All panels concealed in a parking niche

**O4**  
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 three / four locking points using hook bolts with auxiliary bolt and featuring a manual locking function
- 2 x Manet door knobs, single-sided inward opening

#### Dimensions

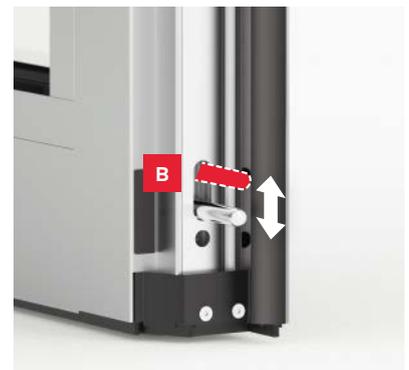
- Panel width of 400 - 1250 mm
- Panel height of 2000 - 3500 mm
- Panel weight incl. glass 150 kg

# 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.



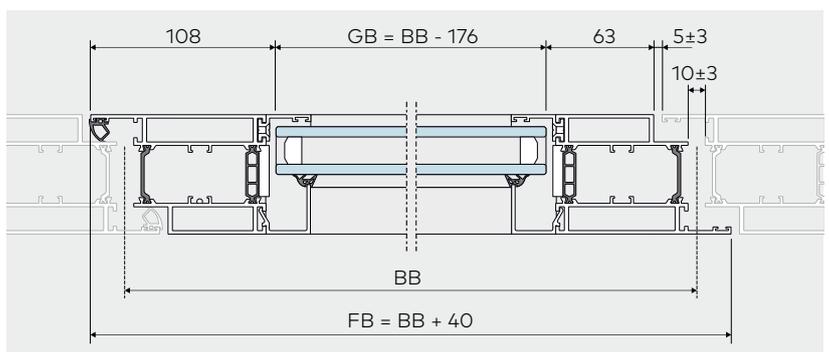
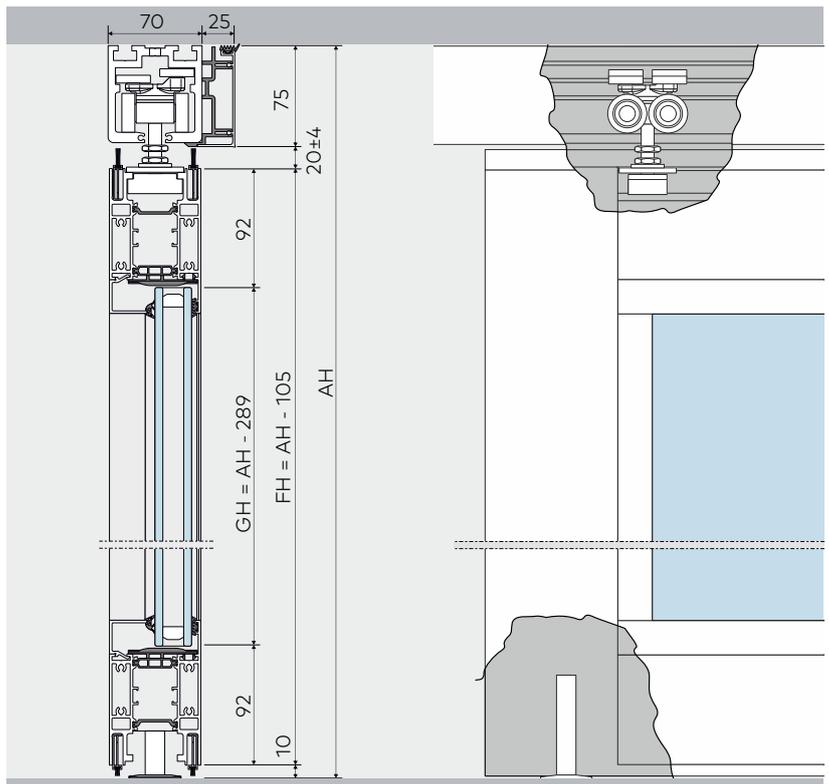
In the closed condition, the sliding panels are held in position by locks engaging in floor keeps. The switchover between stationary and sliding merely requires operation of the bolts in the form of either the flush type (A) or the end-mounted type (B).

### 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 - 1250 mm
- Panel height of 2000 - 3500 mm
- Panel weight incl. glass 150 kg



The profile flanges may point inwards or outwards

## Pivoting / sliding panels

Sliding doors released with flick of the wrist

**C**  
**Concealed door closer ITS 96**  
 integrated in the door profile.

**D**  
**Lock bar** for switching from sliding to stationary panel with door function.



Pivoting / 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 switchover from sliding to door function requires just a quick operation of the lock bar.

### Standard design

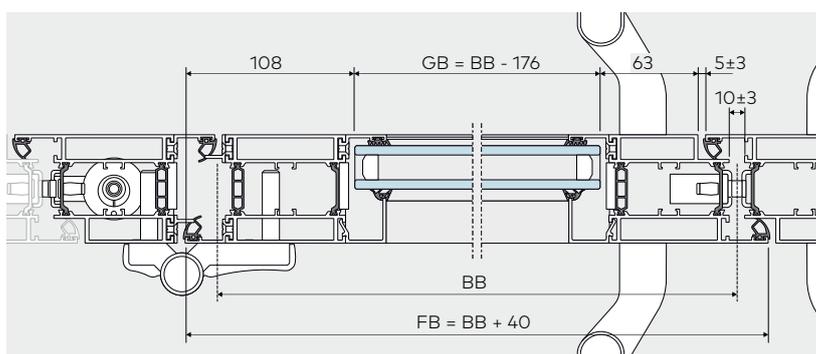
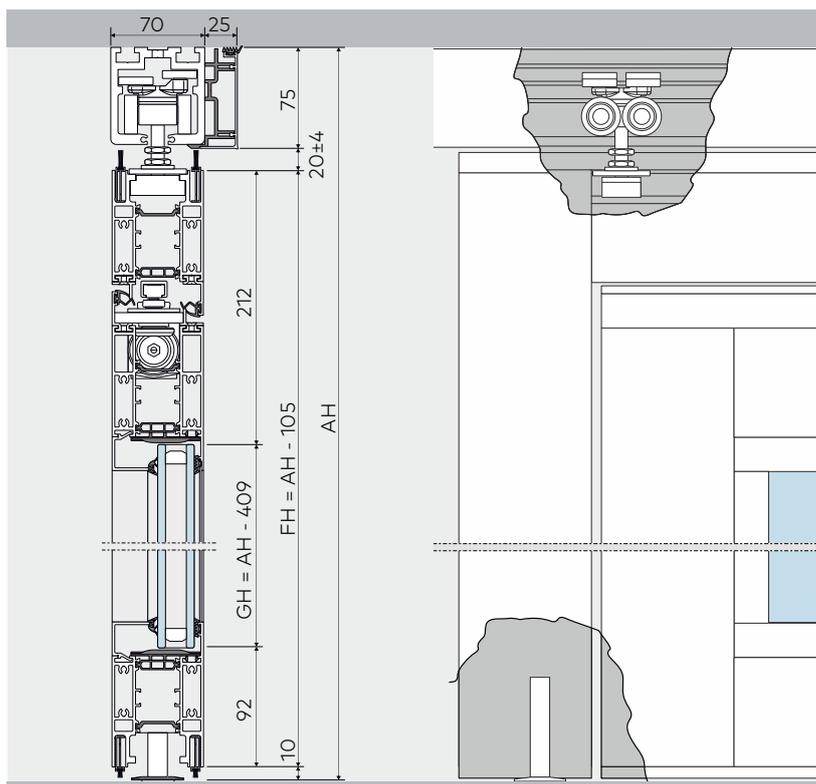
- MULTIBLINDO classic mortise lock with three-point locking or, with panel heights greater than 2400 mm, with 4-point locking
- Lever handle
- Integrated door closer ITS 96 EN 3-6 with mechanical hold-open, barrier-free to DIN 18040, easy opening in accordance with DIN SPEC 1104, adjustable closing force, closing speed and latching action
- Lock bar operation at handle height

### Dimensions

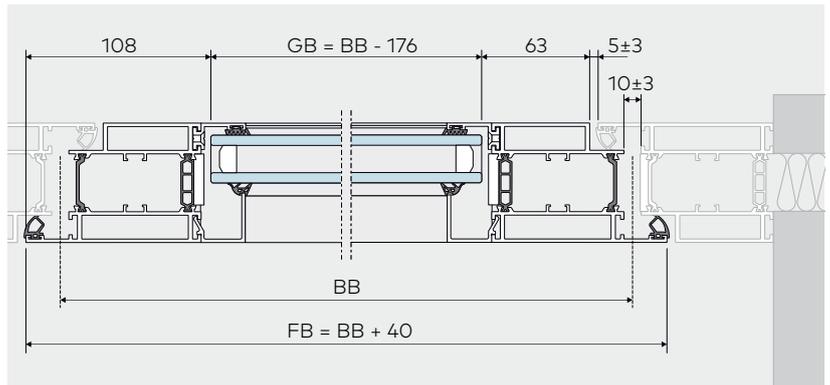
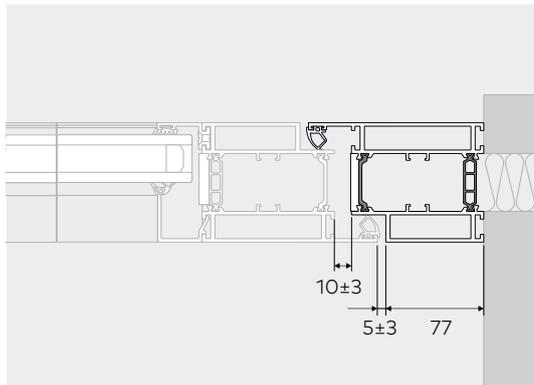
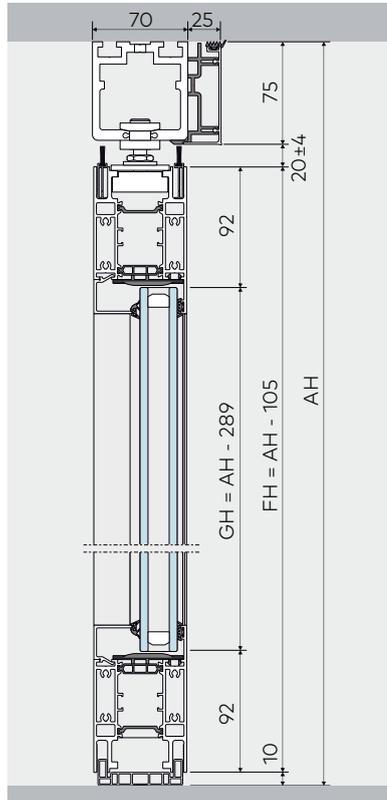
- Panel width of 900 - 1250 mm
- Panel height of 2000 - 3000 mm
- Panel weight incl. glass 100 kg

### Optional equipment

- Pull handle
- MULTIBLINDO easy mortise lock with selectable automatic locking action and three practical door functions (for details, see page 9). Suitable for use of knob or pull handle outside and lever handle inside.



# 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 hinged door 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 a hinged door panel.

## Complementary accessories

The HSW FLEX Therm belongs to the extended dormakaba product family with all its many coordinated components



### Surface-mounted door closer TS 93 with mechanical hold-open

- For barrier-free doors to DIN 18040
- Easy door opening as per DIN SPEC 1104
- EASY OPEN technology
- Delayed action and backcheck as standard

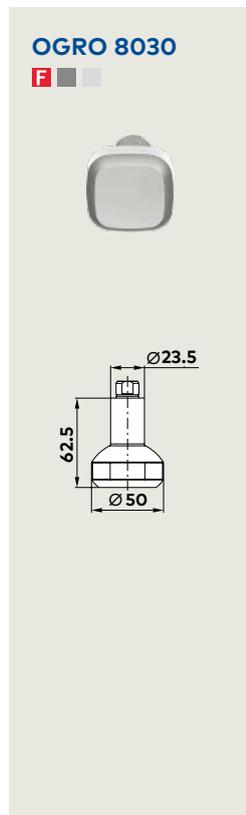
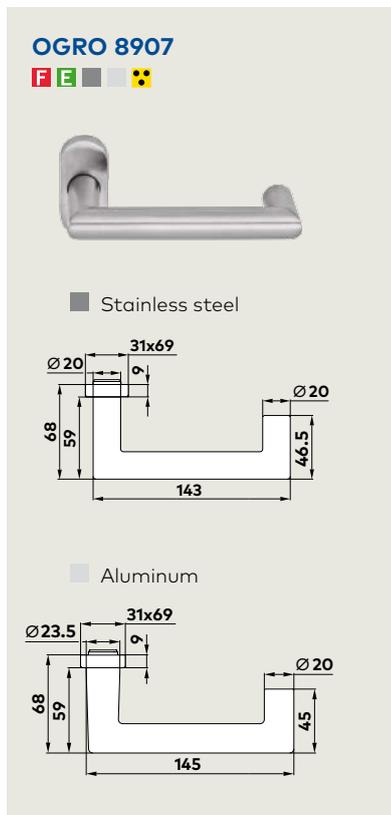
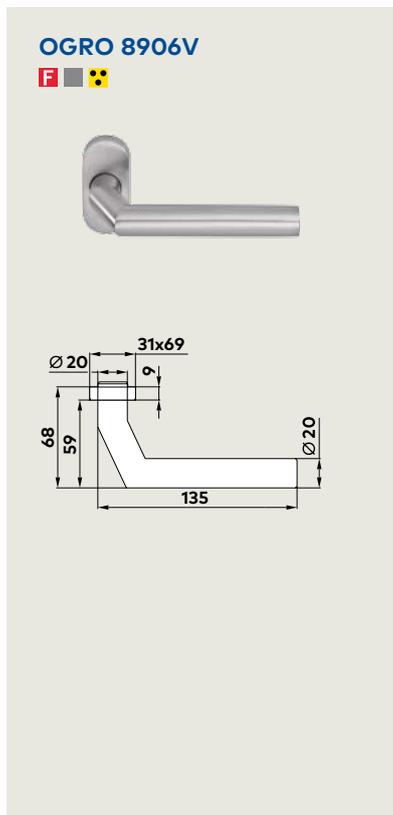
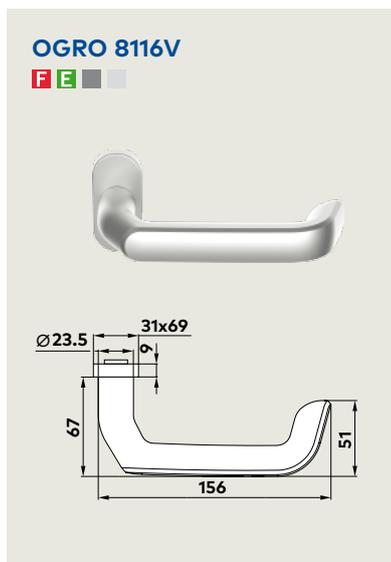
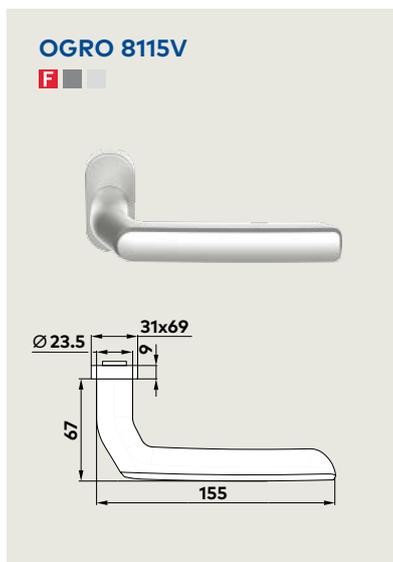
### MULTIBLINDO classic

Mortise lock with three- or four-point locking, hook bolts with auxiliary bolt, and operation via a europrofile cylinder. It also features a reversible and adjustable latch. The latch can be replaced by a roller catch or a blanking plate.

### MULTIBLINDO easy

Mortise lock with selectable automatic locking action and three practical door functions (for details, see page 9). Suitable for use with a knob or pull handle on the outside and a lever handle on the inside.

# Hardware to match

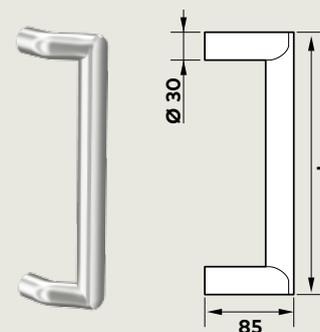


- F EN 1634-1: Fire resistance tests for doors
- DIN 18273: Lever handle sets for fire and smoke control doors
- E EN 179: Emergency exit devices with lever handle, certified to EN 179 for emergency exits and escape routes

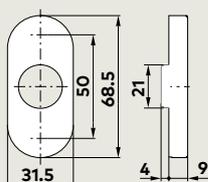
- ⦿ Particularly suitable for hospitals, senior homes, care establishments, and for barrier-free access (easy elbow operation)
- ⦿ Braille (optional) in the allocated material
- Stainless steel
- Aluminum

**TG 9116**

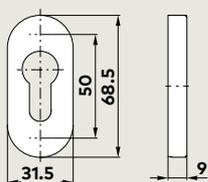
Version	L
1	300
2	400
3	600



**OGRO 6621**  
with retention springing

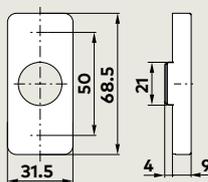


**OGRO 6620**  
without springing

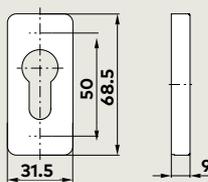


**OGRO 6679**

**OGRO 6611**  
with retention springing

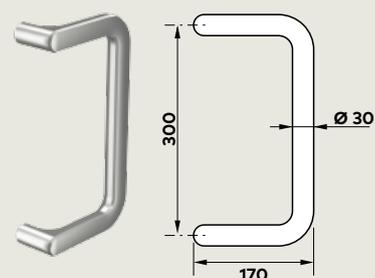


**OGRO 6610**  
without springing

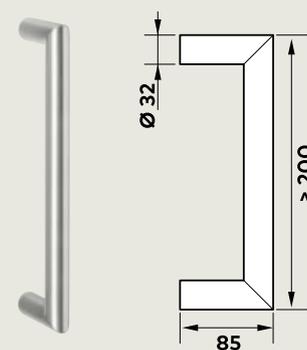


**OGRO 6676**

**TG 9117**

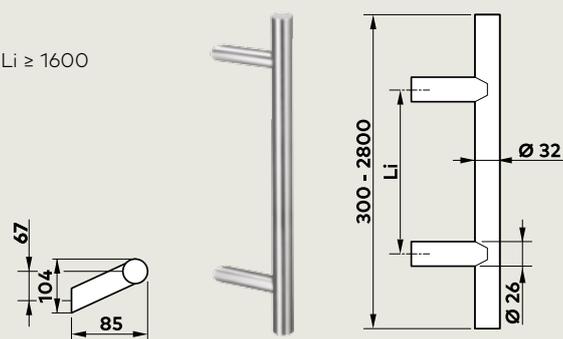


**TG 9335**



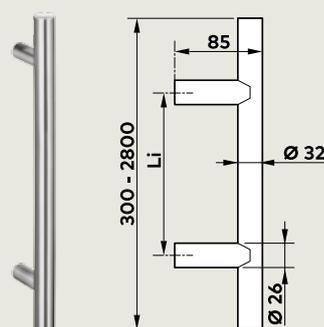
**TG 9377**

3rd spacer  $L_i \geq 1600$



**TG 9387**

3rd spacer  $L_i \geq 1900$



# Notes on portal systems

## Maintenance recommendation for high-frequency HSW systems

Horizontal sliding walls with glass panels have been developed in order to provide retail outlets with generous and enticing frontages – entrances that offer easy accessibility and an inviting appearance for customers. When the frontages are closed, they can double up as expansive shop windows.

In cases where double-action sliding panels are used for main entrances as a portal system (i. e. in shopping malls or as similar operated HSW systems) they are submitted to very high daily traffic volumes and usage frequency rates. The door closers and pivot bearings used by dormakaba have been successfully tested in accordance with the requirements of EN 1154. EN 1154 specifies 500,000 test cycles for manually operated closing devices.

High-frequency portal systems such as the above can reach this number of cycles after just a few months. Consequently, dormakaba recommends that such units be regularly maintained.

The higher the usage levels, the more frequently the equipment should be serviced by either the installation firm or a similarly specialized fitter.

In addition to any door closer that may be fitted, a suitable opening limitre (to be provided on site) will also be required as protection for single action and double action sliding panels.

In the case particularly of public and highly frequented entrance systems, door closers are unsuitable as opening limitres as any excess pressure applied to doors will lead to high stress forces being applied at the sweep maximum.

# Surface finishes

## Production-related color variations cannot be completely ruled out

HSW systems with the surface finish 150 is additionally coated or otherwise converted. Anodizing the milled edges of track modules can give rise to typical flow marks/striae. As an alternative to the anodized finish (EV1), dormakaba therefore offers powder-coated modules and track rails of all lengths which have the same visual appearance as the EV1 finish.

## General care recommendations

The surfaces of the hardware are not maintenance-free and should be cleaned in accordance with the requirements of the material and their design. For metallic surfaces (anodized surfaces, stainless steel), please only use suitable cleaners that have no scouring content. For painted/coated surfaces, we request that you only use appropriate solvent-free cleaners.

## Surface finishes

Aluminum	dormakaba No.
Aluminum silver	150
Coloured coatings	dormakaba No.
Black	304
Similar EV 1	318
White	350
High weather resistant	398
Special colour	399
Stainless steel	dormakaba No.
Stainless steel, satinised	700



## Customized colour and protective coatings

Aside from individual, customized colours, the profiles can also be supplied with protective and high-resilience coatings, for example for sites in coastal regions or for swimming pool applications.

# Safety-related information

## Important safety-related information for the mounting and use of dormakaba glass fittings.

(Follow these instructions in addition to the mounting and operating instructions in order to avoid damage of product and damage to person or property.)

**Important:** All users have to be informed about relevant points mentioned in these safety-related information and the mounting and operating instructions!

### General

1. dormakaba recommends using TSG-H (heat soaked toughened safety glass) to DIN EN 12150-1.
2. dormakaba glass fittings are not suitable for application in rooms where chemicals (e. g. chlorine) are used such as indoor swimming pools, saunas or salt-water pools.
3. Never move sliding panels faster than walking speed and always stop the door manually before it reaches end position.
4. Do not shut swing doors with excessive force. Install door stop to prevent door from opening too far.

### Mounting

1. Only properly qualified and specially trained staff is authorised to mount dormakaba glass fittings.
2. Never use glass with conchoidal fractures and/or damaged edges.
3. Due to crushing hazards – among others in the area of the secondary closing edge – and possible injury caused by breakage of glass during mounting, corresponding protective clothing (especially gloves and protective goggles) is required.
4. Clean clamping area with fat solvent (standard commercial cleaning agent) before mounting the glass fitting.
5. Never use clamping shoes on structured glass surfaces (except on satined glass) or glass of heavily varying thickness unless with a corresponding levelling layer.
6. Never use clamping shoes on self-cleaning coatings.
7. When adjusting glass elements, always stick to the required clearance for the respective fitting. Adjust clearance so that the glass does not touch hard components such as glass, metal or concrete.
8. Make sure not to use excessive force when installing the glass (avoid local stress resulting from very tight screws).

### Maintenance

Check fittings at regular intervals for proper positioning and smooth running and door for correct adjustment. Especially highly-frequented door systems require inspection by properly qualified staff (specialised companies or installation firms). Immediately replace damaged glass elements (no glass flaking and/or conchoidal fractures)!

### General care instructions

The surface finishes of the fittings are not maintenance-free and should be cleaned according to their material and design.

- For metallic surfaces (anodised finishes, stainless steel) please use appropriate cleaning agents without abrasive additives only.
- For varnished surfaces please use appropriate solvent-free cleaning agents only.
- Brass surfaces (without surface protection) have to be treated with an appropriate maintenance agent on occasion, to avoid tarnishing.

**For practical planning, please use our drawings dormakaba DETAIL.**



The printed colours indicating the surface finishes are not 100 % true, but do provide a useful guide.

Statements made with regard to the nature or use of the products are for the purposes of descriptions. Assent with regard to the existence of particular properties or particular uses always requires special written agreement. Pictures may show special designs which are different to the standard scope of delivery.

Subject to change without notice.

