



# Classic Rolling Shutters and Classic Rolling Grilles

Technical Manual: Issue 01.04.2015



# Abbreviations Used

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<b>B<sub>U</sub></b>	= Width of the steel subframe
<b>DHV</b>	= Loss of passage height
<b>ET<sub>DMS</sub></b>	= Minimum fitting depth for doors with DMS
<b>ET<sub>KNH</sub></b>	= Minimum fitting depth for operator with emergency hand chain
<b>ET</b>	= Minimum fitting depth for operator and support brackets,
<b>ET<sub>SSG</sub></b>	= Fitting depth for the SSG system
<b>ET<sub>WPS</sub></b>	= Fitting depth for WPS - support bracket
<b>ET<sub>ZAK-XL</sub></b>	= Fitting depth for operator and support brackets with the ZAK-XL system
<b>EZS</b>	= Lintel trap guard
<b>F</b>	= Sideroom on catch safety device side
<b>F<sub>horiz</sub></b>	= Horizontal force at the fixing point
<b>F<sub>PV</sub></b>	= Sideroom on catch safety device side for barrel casing
<b>F<sub>res</sub></b>	= Resulting force at the fixing point
<b>F<sub>vert</sub></b>	= Vertical force at the fixing point
<b>F<sub>ZAK-XL</sub></b>	= Sideroom on catch safety device side with ZAK-XL system
<b>FS</b>	= Sideroom for side guide
<b>K</b>	= Sideroom for support bracket
<b>KU</b>	= Bottom support bracket dimension, different on bearing and operator sides
<b>L</b>	= Sideroom on bearing side
<b>L<sub>AR</sub></b>	= Sideroom on bearing side with additional posts
<b>L<sub>PV</sub></b>	= Sideroom on bearing side for barrel casing
<b>L<sub>WFK</sub></b>	= Sideroom WFK
<b>LDB</b>	= Clear passage width
<b>LDH</b>	= Clear passage height
<b>M<sub>PV</sub></b>	= Sideroom on motor side for barrel casing
<b>MK</b>	= Sideroom on motor side for chain drive operators
<b>MK<sub>ZAK-XL</sub></b>	= Sideroom on motor side for chain drive operators with ZAK-XL system
<b>MR</b>	= Sideroom on motor side for tubular operators
<b>MS</b>	= Sideroom on motor side for direct drive operators
<b>MS<sub>AR</sub></b>	= Sideroom on motor side for direct drive operators with additional posts
<b>MS<sub>DMS</sub></b>	= Sideroom on motor side for direct drive operators with DMS
<b>MS<sub>KNH</sub></b>	= Sideroom on motor side for direct drive operators with emergency hand chain
<b>FFL</b>	= Finished floor level
<b>PS</b>	= Side space requirement
<b>RAM</b>	= Overall frame dimension
<b>S</b>	= Required headroom
<b>S<sub>B</sub></b>	= Height of fascia panel
<b>S<sub>Dreh</sub></b>	= Required headroom for doors with swing-aside pass door assembly
<b>S<sub>FF</sub></b>	= Required headroom for doors with fixed assembly
<b>SKS</b>	= Closing edge safety device
<b>S<sub>PV</sub></b>	= Required headroom for doors with barrel casing
<b>S<sub>SBP</sub></b>	= Required headroom for doors with chamfered bottom profile
<b>S<sub>SSG</sub></b>	= Required headroom for door systems with SSG system,
<b>S<sub>TES</sub></b>	= Required headroom for doors with TES
<b>S<sub>WPS</sub></b>	= Required headroom for doors with WPS
<b>S<sub>ZAK</sub></b>	= Required headroom for doors with optional ZAK system
<b>S<sub>ZAK-XL</sub></b>	= Required headroom for doors with optional ZAK-XL system
<b>UB</b>	= Bottom edge actuation
<b>V<sub>O</sub></b>	= Possible height offset from the ideal fixing point towards the top
<b>V<sub>U</sub></b>	= Possible height offset from the ideal fixing point towards the bottom
<b>WLK</b>	= Wind load class acc. to EN 12424
<b>X<sub>L/F</sub></b>	= Horizontal dimension for fixing the support bracket on the bearing side/catch safety device side
<b>X<sub>M</sub></b>	= Horizontal dimension for fixing the support bracket on the motor side
<b>Y<sub>L/F</sub></b>	= Vertical dimension for fixing the support bracket on the bearing side/catch safety device side
<b>Y<sub>M</sub></b>	= Vertical dimension for fixing the support bracket on the motor side
<b>ZAK</b>	= Precision-guided roll-on bracket

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## Note:

All dimensions in this document provide the minimum details in [mm] and are standard values (If necessary, please request the accurate values from Hörmann KG Dissen).

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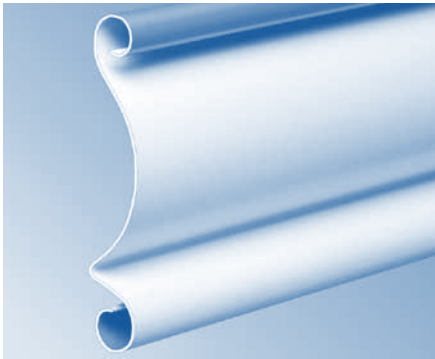
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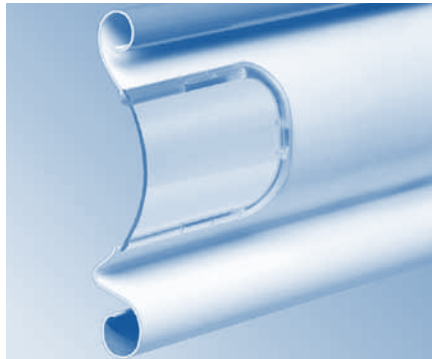
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# Profile Overview

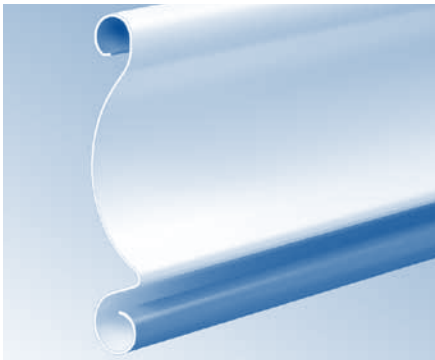
## HR 120



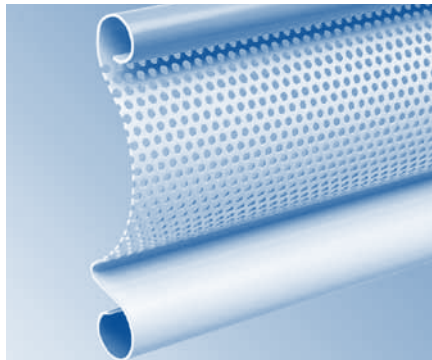
HR 120



HR 120 with window



HR 120, external rolling shutters



HR 120 aero

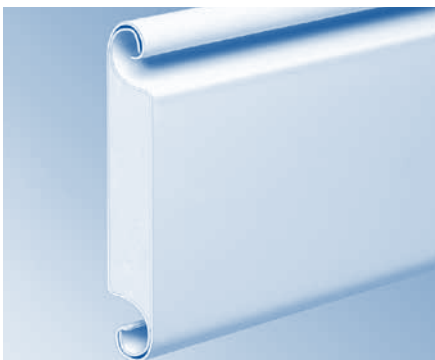
### Profile data

- Material:
  - HR 120 A 1.0 mm aluminium
  - HR 120 aero 1.0 mm aluminium
  - HR 120 S 1.0 mm steel
- Profile height 119 mm
- Assembly dimensions for panels and infills:
  - 1st profile 119 mm
  - Each further profile
    - HR 120 A 102.7 mm
    - HR 120 aero 102.7 mm
    - HR 120 S 102.5 mm
- Profile weight/m<sup>2</sup>:
  - HR 120 A Approx. 6 kg
  - HR 120 aero Approx. 5.5 kg
  - HR 120 S Approx. 15 kg
- Thermal insulation -
- Building materials class A2 (DIN 4102)

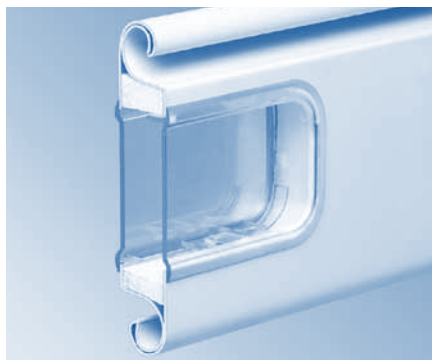
### Notes for HR 120 aero:

- Free ventilation cross section approx. 30 % of the door surface
- External rolling shutter only in a bright-rolled version

## HR 116



HR 116, internal and external rolling shutters



HR 116 with window

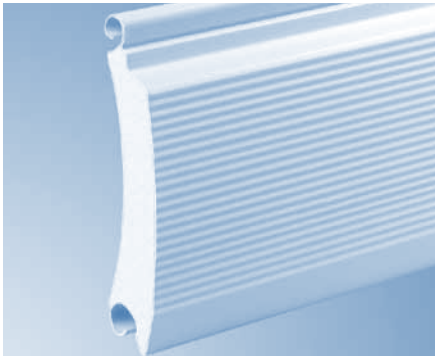


HR 116 with ventilation grille

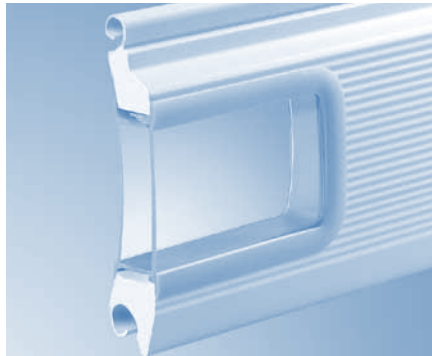
### Profile data HR 116 A

- Material: 1.0 mm aluminium
- Profile height 119 mm
- Assembly dimensions for panels and infills:
  - 1st profile 119 mm
  - Each further profile 103.6 mm
- Profile weight/m<sup>2</sup>: Approx. 10 kg
- Thermal insulation  $U = 5.3 \text{ W}/(\text{m}^2 \cdot \text{K})$
- Building materials class B2 (DIN 4102)
- Free ventilation cross section approx. 2350 mm<sup>2</sup> per ventilation grille

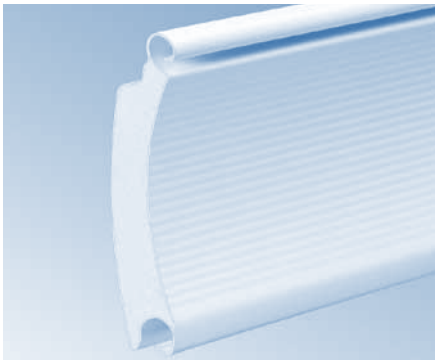
## Decotherm



Decotherm



Decotherm with rectangular window

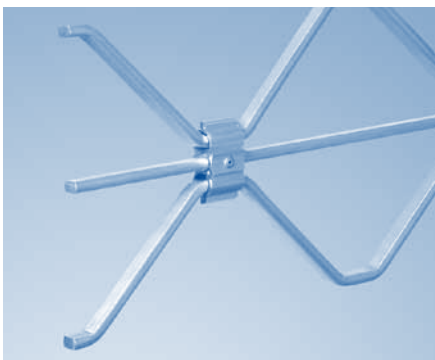


Decotherm, external rolling shutter

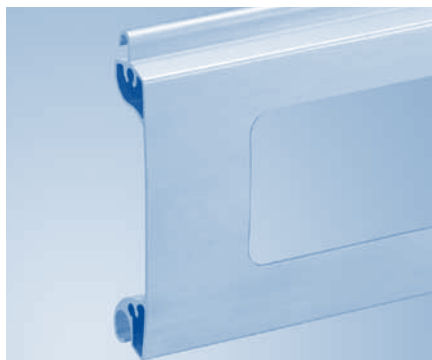
### Profile data

- Material:
  - Decotherm A 0.4 mm aluminium
  - Decotherm S 0.34 mm steel
- Profile height 109 mm
- Assembly dimensions for panels and infills:
  - 1st profile 109 mm
  - Each further profile 96 mm
- Profile weight/m<sup>2</sup>:
  - Decotherm A Approx. 4.2 kg
  - Decotherm S Approx. 10.3 kg
- Thermal insulation
  - Decotherm A U = 4.6 W/(m<sup>2</sup>·K)
  - Decotherm S U = 3.9 W/(m<sup>2</sup>·K)
- Fire behaviour Class E (DIN EN 13501-1)

## Rolling grilles



HG-L



HG75

### Profile data HG-L, HG75

- |  | HG-L      | HG75   |
|--|-----------|--------|
| • Material   | Aluminium |        |
| • Profile height                                     | 80 mm     | 84 mm  |
| • Assembly dimensions for panels and infills:        |           |        |
| – 1st profile  | 80 mm     | 84 mm  |
| – Each further profile                               | 97.5      | 75.0   |
| • Curtain weight/m <sup>2</sup>                      | 6.5       | 6.7    |
| • Free ventilation cross section of the door surface | 77 %      | 37.5 % |



HG-V, HG-S

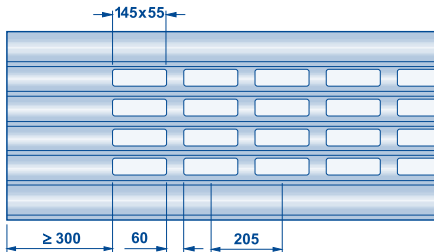
### Profile data HG-V, HG-S

- |   | Material                         | Door width thickness |
|---|----------------------------------|----------------------|
| • Material:                                   |                                  |                      |
| – HG-V  | Aluminium / stainless steel      |                      |
| – HG-S  | Galvanized steel                 |                      |
| • Profile height                              | 60 mm                            |                      |
| • Assembly dimensions for panels and infills: |                                  |                      |
| – 1st profile                                 | 60 mm                            |                      |
| – Each further profile                        | 68.5 mm                          |                      |
| • Curtain weight/m <sup>2</sup>               |                                  |                      |
| – HG-V  | Approx. 7 kg                     | 16 × 4 ≤ 3500 mm     |
|   | Approx. 8 kg                     | 20 × 4 > 3500 mm     |
| – HG-S  | Approx. 14 kg                    | 16 × 4 ≤ 4000 mm     |
|   | Approx. 15 kg                    | 18 × 4 ≤ 6000 mm     |
|   | Approx. 16 kg                    | 20 × 4 > 6000 mm     |
| • Free ventilation cross section              | approx. 85 % of the door surface |                      |

# Arrangement of the Windows and Ventilation Grilles

## HR 120 A / S

### Standard window version

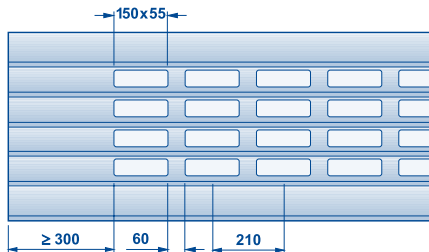


#### Note:

- Window profiles reduce the resistance to wind load
- Maximum 8 window profiles

## Decotherm A / S

### Standard window version

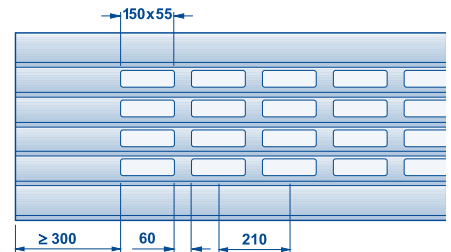


#### Note:

- Window profiles reduce the resistance to wind load
- Maximum 8 window profiles per door
- Minimum door width 1300 mm
- Not for Decotherm A

## HR 116 A

### Standard window version

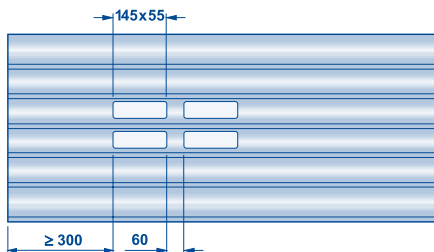


#### Note:

- Window profiles reduce the resistance to wind load
- Maximum number of window profiles:

Door width	Number of window / ventilation grille profiles
≤ 4000	All profiles
> 4000	Max. 20 profiles
> 6000	Max. 15 profiles
> 8000	Max. 10 profiles
> 10000	Max. 5 profiles

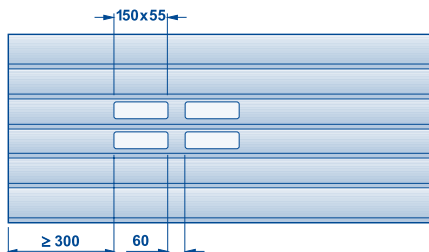
### Logistic version window



#### Note:

- 2 profiles with 2 window elements on the left and right

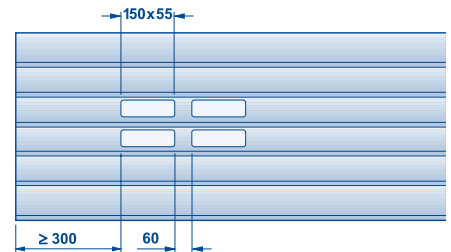
### Logistic window version



#### Note:

- 2 profiles with 2 window elements on the left and right
- Minimum door width 1300 mm

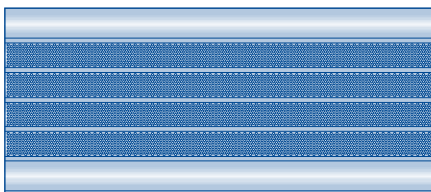
### Logistic window version



#### Note:

- 2 profiles with 2 window elements on the left and right.

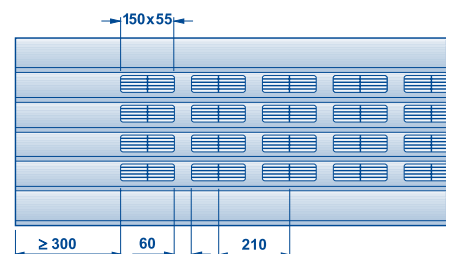
### Ventilation laths HR 120 aero



#### Note:

- Maximum 8 ventilation laths per door
- Arrangement with doors with wind locks on request
- Only available in bright-rolled, RAL 9002 or RAL 9006

### Ventilation grilles



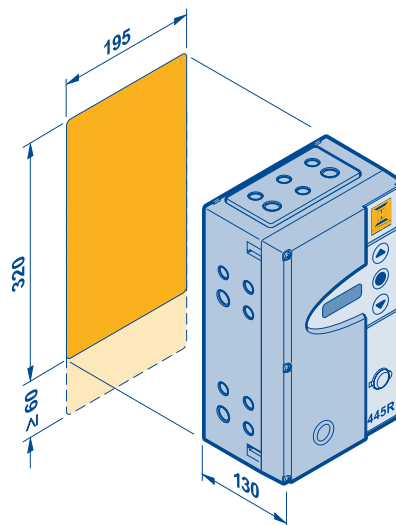
#### Note:

- Maximum number of ventilation grille profiles:

Door width	Number of window / ventilation grille profiles
≤ 4000	All profiles
> 4000	Max. 20 profiles
> 6000	Max. 15 profiles
> 8000	Max. 10 profiles
> 10000	Max. 5 profiles

# Fitting Space for Controls / Operator Data

## Fitting space for controls



360, 445R, B 455 R, 460 R

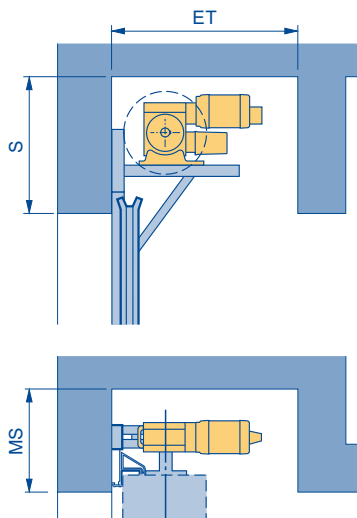
Operator designation		Direct drive operators						
		S14	S18	S25	S25 WS	S35	S42	S55
Output torque	Nm	140	180	250	250	350	420	550
Safety catch torque	Nm	510	510	635	635	890	1070	1400
Test no.		02191	02191	02192	02192	02192	02192	02192
Revolutions at the barrel	min <sup>-1</sup>	15	15	15	15	15	15	15
Motor power	kW	0.40	0.55	0.85	0.75	0.85	1.10	1.10
Operating voltage	V	3 × 230/400	3 × 230/400	3 × 230/400	1 × 230	3 × 230/400	3 × 230/400	3 × 230/400
Frequency	Hz	50	50	50	50	50	50	50
Motor rated current	A	4.3 / 2.5	4.3 / 2.5	4.4 / 2.55	8.0	4.95 / 2.85	5.1 / 2.95	7.3 / 4.2
Temperature range	°C	-20 / +40	-20 / +40	-20 / +40	-20 / +40	-20 / +40	-20 / +40	-20 / +40
Continuous sound pressure level	dB(A)	< 70	< 70	< 70	< 70	< 70	< 70	< 70
Protection category	IP	65	65	65	65	65	65	65
Motor on-time	ED	S3-60 %	S3-60 %	S3-60 %	S3-40 %	S3-60 %	S3-60 %	S3-60 %

Operator designation		Chain drive operators				Tubular operators			
		K20	K30	K40	K40-4	R12	R18	R23	R30
Output torque	Nm	200	300	400	400	120	180	230	300
Revolutions at the barrel	min <sup>-1</sup>	8	8	8	6	12	12	12	12
Motor power	kW	0.40	0.85	1.10	1.10	0.70	0.78	0.81	1.25
Operating voltage	V	3 × 230/400	3 × 230/400	3 × 230/400	3 × 230/400	1 × 230	1 × 230	1 × 230	1 × 230
Frequency	Hz	50	50	50	50	50	50	50	50
Motor rated current	A	3.1 / 1.8	4.4 / 2.55	4.95 / 2.85	4.95 / 2.85	3.4	3.7	3.9	5.4
Temperature range	°C	-20 / +40	-20 / +40	-20 / +40	-20 / +40	-20 / +50	-20 / +50	-20 / +50	-20 / +50
Continuous sound pressure level	dB(A)	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70
Protection category	IP	65	65	65	65	44	44	44	44
Motor on-time	ED	S3-60 %	S3-60 %	S3-60 %	S3-60 %	KB 6 <sup>2)</sup>	KB 6 <sup>2)</sup>	KB 4 <sup>1)</sup>	KB 4 <sup>1)</sup>

- 1) Short operation 4 min at 20°C ambient temperature; Maximum number of door operations: 2 per hour at 20°C ambient temperature. Deviating applications must be requested separately.
- 2) Short operation 6 min at 20°C ambient temperature; Maximum number of door operations: 3 per hour at 20°C ambient temperature. Deviating applications must be requested separately.

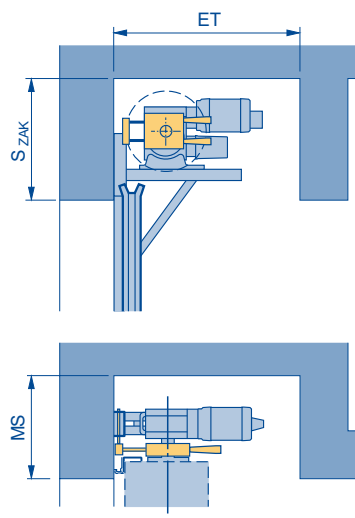
# Space Requirement Behind the Lintel

## Door with direct drive operator



**S** = See Tables of Standard Values  
**ET** = See Tables of Standard Values

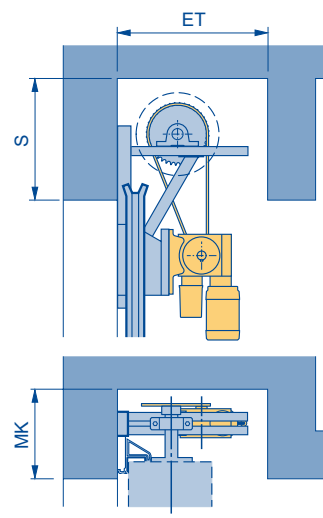
## Direct drive operator with ZAK system



**SZAK** =  $S - 80$  mm

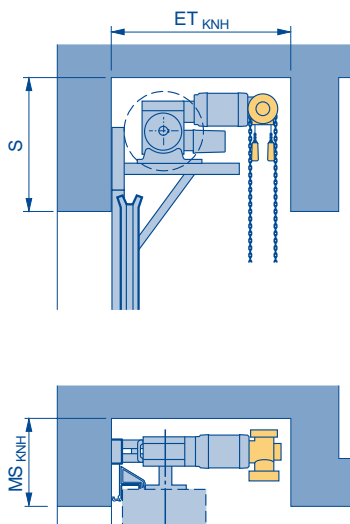
- Subject to a surcharge for classic rolling shutters
- Standard for classic rolling grilles

## Door with chain drive operator



**S** = See Tables of Standard Values  
**ET** = See Tables of Standard Values

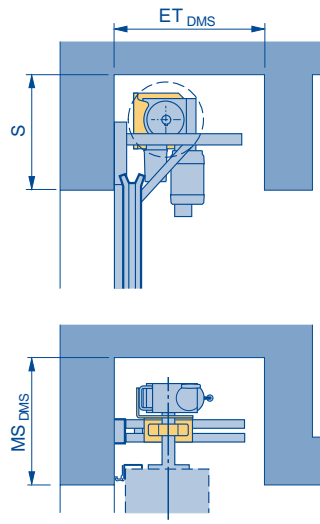
## Direct drive operator with emergency hand chain



**ET<sub>KNH</sub>** =  $ET - 70$  mm  
**MS<sub>KNH</sub>** = **MS**

- Subject to surcharge
- Emergency hand chain does not have any effect on the sideroom

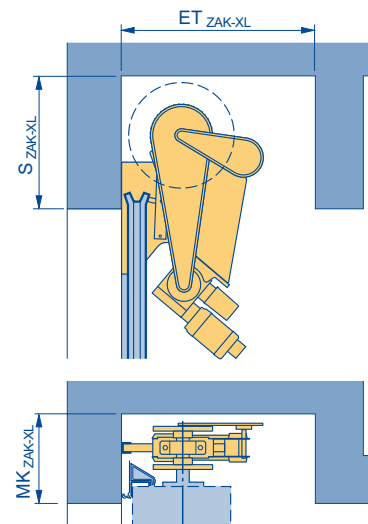
## Direct drive operator with DMS



**ET<sub>DMS</sub>** = Min. 520 mm  
**MS<sub>DMS</sub>** =  $MS + 100$  mm

- Subject to surcharge for classic rolling shutters and rolling grilles
- Classic rolling shutters with ZAK only up to S25

## Chain drive operator with ZAK-XL system



**SZAK-XL** =  $S - 80$  mm for all rolling shutters  
 =  $S - 255$  mm for all rolling grilles

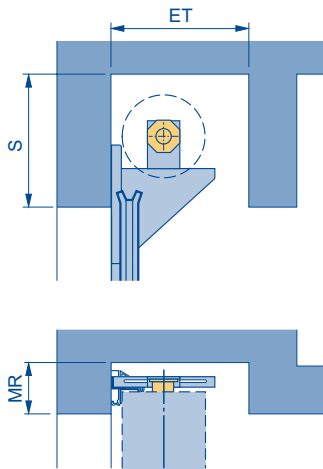
- ET<sub>ZAK-XL</sub>** = Min. 630 to max. 870 mm
- Subject to surcharge for classic rolling shutters and rolling grilles

### General information:

- If wind locks (not part of standard equipment) are required, the required headroom is increased by up to 100 mm. Please contact Hörmann KG Dissen.
- Please request **ET** for doors with special operators at Hörmann KG Dissen.

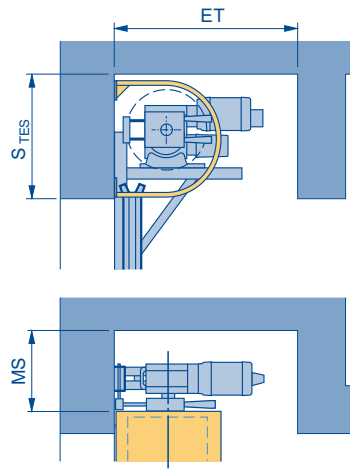


**Door with tubular operator**



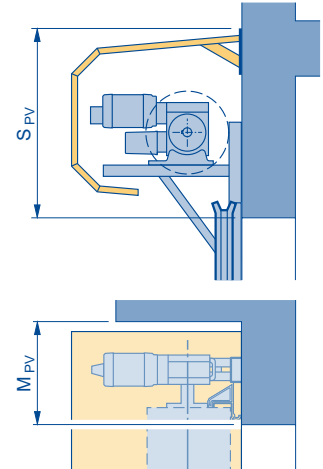
**S** = See Tables of Standard Values  
**ET** = See Tables of Standard Values

**Door with TES**



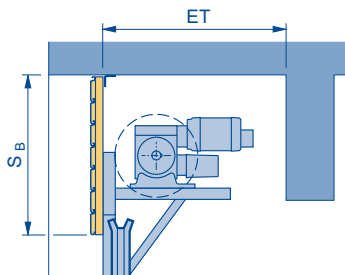
**S\_TES** = **S** + max. 100 mm  
**ET** = See Tables of Standard Values

**Door with barrel casing**



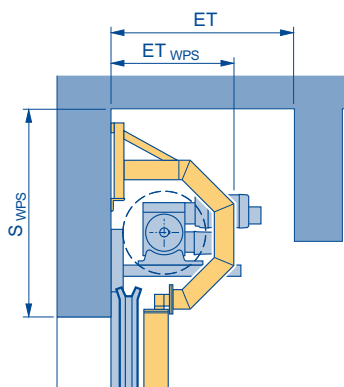
**S\_PV** = **S** + max. 150 mm for details, see page 13  
**M\_PV** = See page 13

**Door with fascia panel**



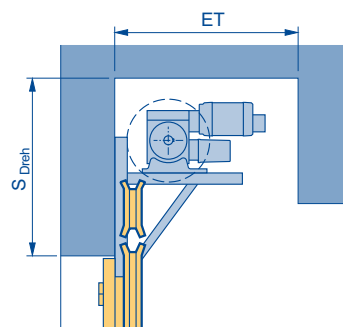
**S\_B** = Observe the assembly dimensions of the profiles (see page 4)

**Door with WPS**



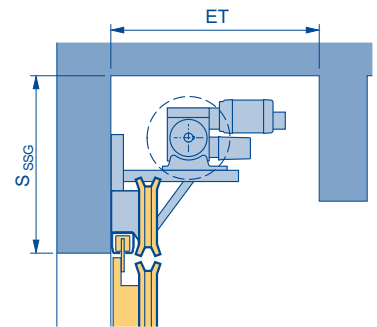
**ET** = See Tables of Standard Values  
**ET\_WPS** = See pages 32 – 33  
**S\_WPS** = See pages 32 – 33

**Door with swing-aside pass door assembly**



**S\_Dreh** = **S** + max. 200 mm  
**ET** = See Tables of Standard Values

**Door with SSG system**



**S\_SSG** = **S** + max. 350 mm

# Location of Support Bracket Fixing / Fitting in the Opening with Additional Posts

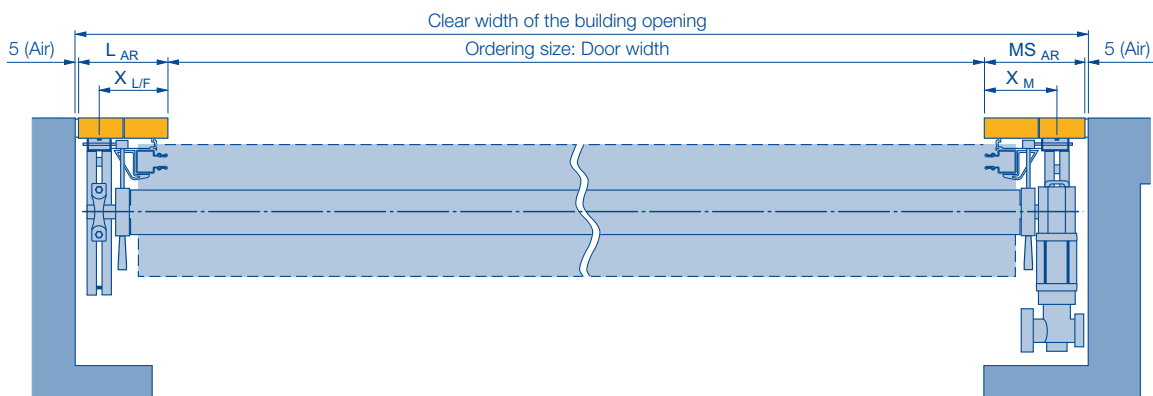
## Location of the support bracket fixing



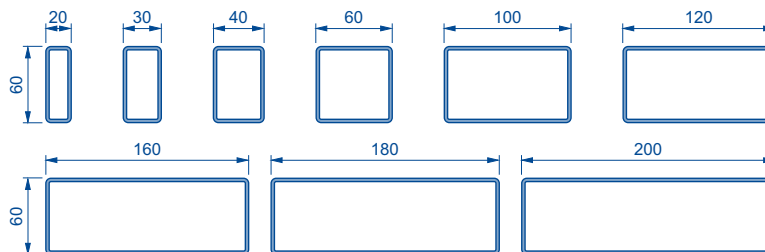
$Y_M$  and  $Y_{L/F}$  = The dimensions depend on the door size, please contact Hörmann KG Dissen.

	$X_M$	$X_{L/F}$	$X_M$	$X_{L/F}$	$V_O$	$V_U$
<b>Classic rolling shutters / rolling grilles</b>	<b>FS73</b>		<b>FS98</b>			
Direct drive operator	180	150	200	170	72	60
Chain Drive Operator	150	160	170	180	48	48
Tubular operator	120	120	145	145	-	-

## Fitting in the opening with additional posts



### Additional posts available



### Note:

The width of the sideroom created by the additional posts must be composed of the dimensions of the additional posts fitted.

$L_{AR}$  = Sideroom on bearing side with additional posts

$MS_{AR}$  = Sideroom on motor side for direct drive operators with additional posts

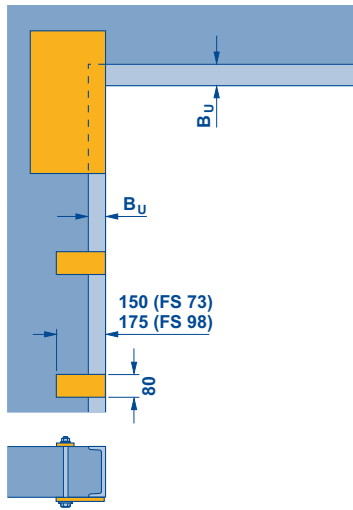
$X_{L/F}$  = Horizontal dimension for fixing the support bracket on the bearing side / catch safety device side

$X_M$  = Horizontal dimension for fixing the support bracket on the motor side

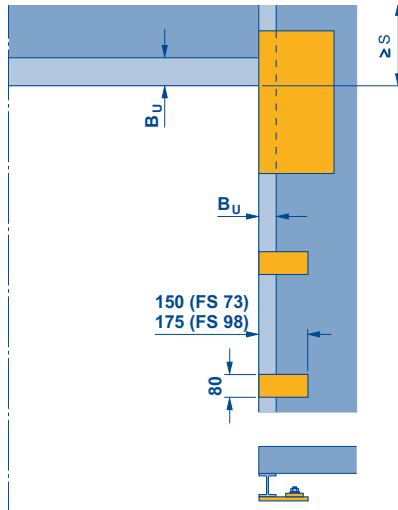
# Weld-On Plates/Break-in-Resistant Locks

## Weld-on plates

### Lightweight construction weld-on plates



### Steel construction weld-on plates



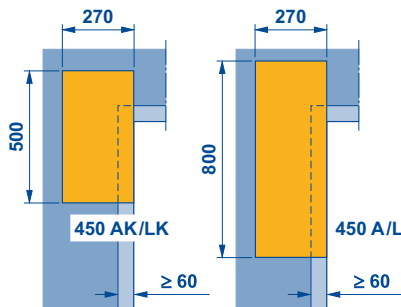
**B<sub>U</sub> = min. 60**

Classic rolling shutters/classic rolling grilles

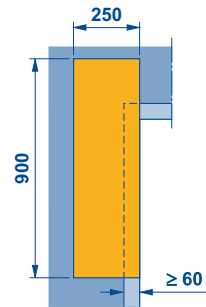
#### Note:

- For fixing by using a supporting lightweight construction, a subframe made of steel is required
- Weld-on plates are subject to surcharge
- Fixing the side guides using weld-on spacers (see pgs. 34/35) or weld-on plates for spacer brackets

### Classic rolling shutters and rolling grilles with direct drive operator

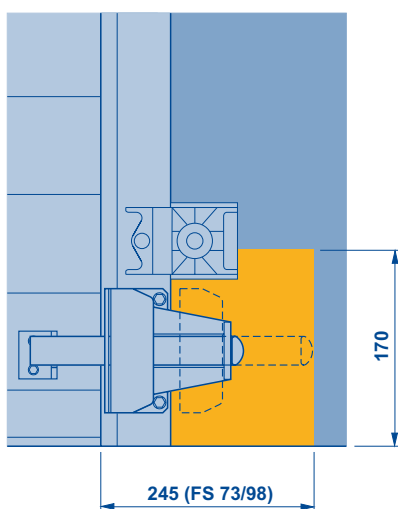


### Classic rolling shutters and rolling grilles with chain drive operator

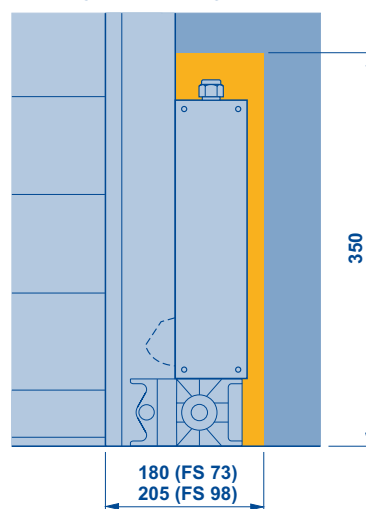


## Break-in-resistant locks

### Shootbolt



### Electromagnetic locking

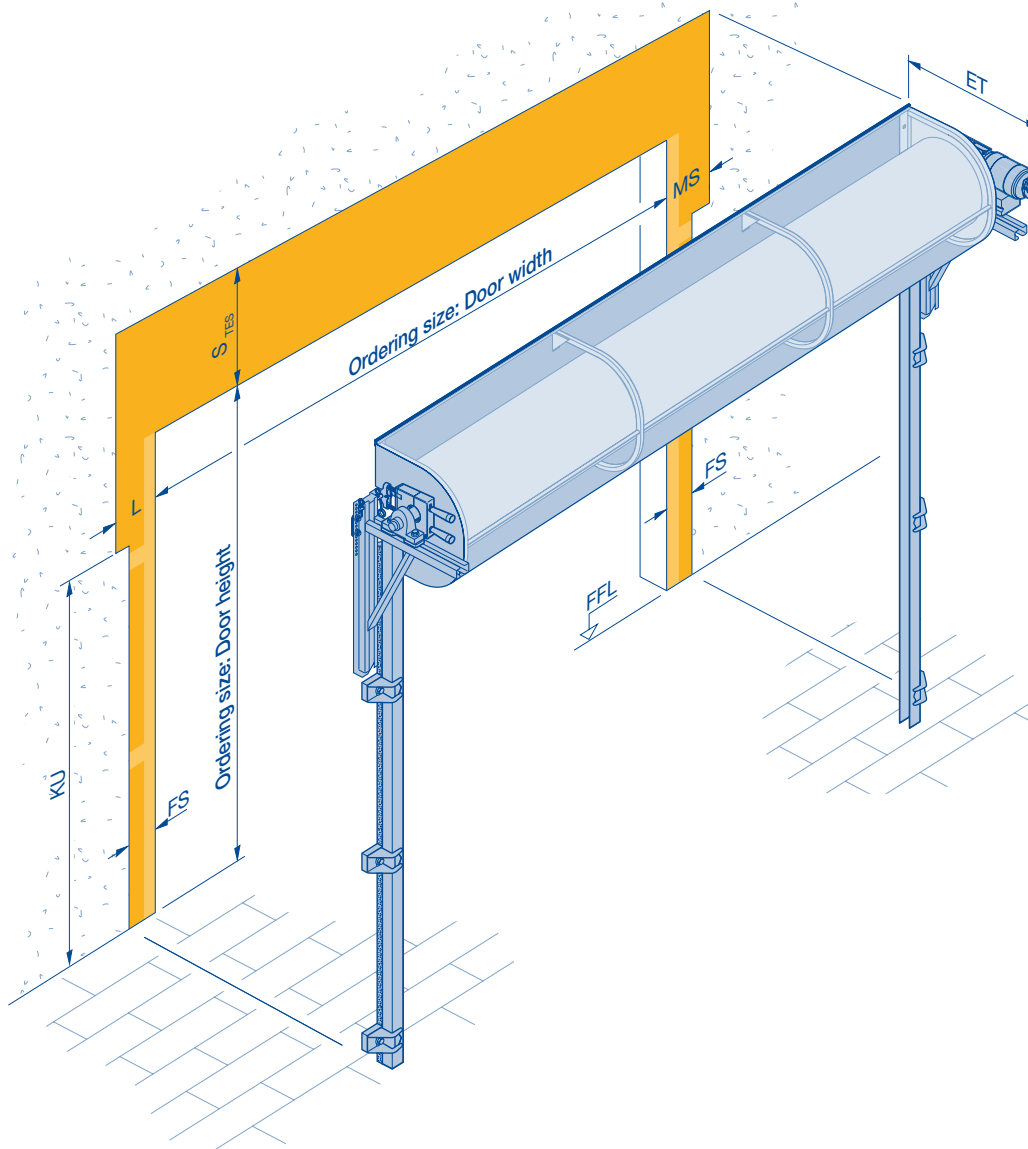


#### Note:

- Break-in-resistant locks subject to surcharge
- Lockable bottom profiles do not have any influence on the fitting space at the sides
- Shootbolt and electromagnetic locking are not available for rolling grilles and external rolling shutters
- Position of the shootbolt either to the left, right or on both sides
- Position of the electromagnetic locking is always to the left and right

# Trap Guard TES

Fitting example: classic rolling shutter with direct drive operator and ZAK system



## Application range:

Door systems with impulse control and door ordering height less than 2500 mm.

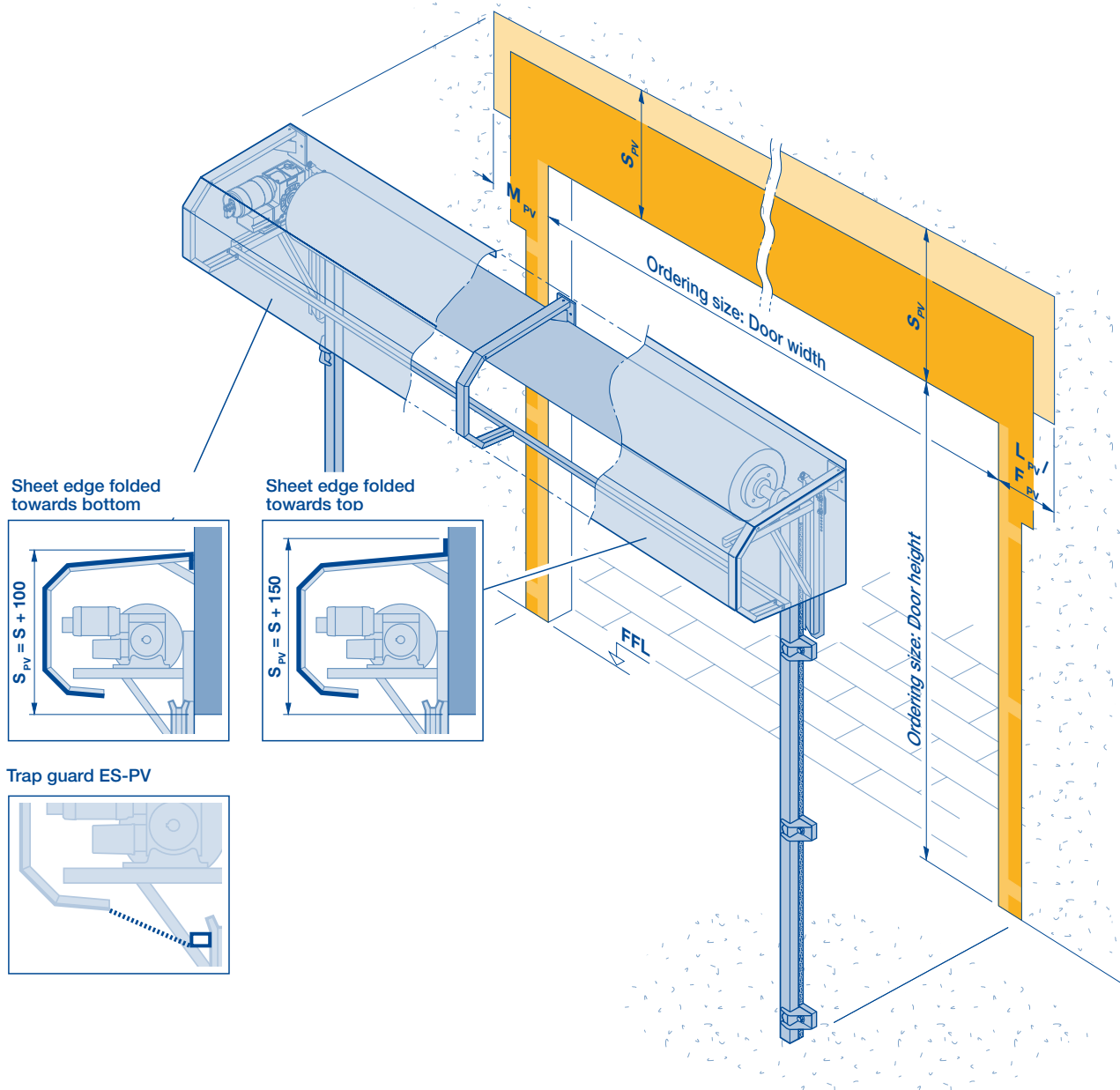
<b>L</b>	= Sideroom on bearing side
<b>MS</b>	= Sideroom on motor side for direct drive operators
<b>FS</b>	= Sideroom for side guide
<b>KU</b>	= Bottom support bracket dimension, different on bearing and operator sides
<b>S</b>	= Required headroom see tables from page 40
<b>S<sub>TES</sub></b>	= Required headroom for doors with TES, see notes
<b>ET</b>	= Minimum fitting depth for operator and support brackets, see tables from page 40
<b>FFL</b>	= Finished floor level

## Note:

- $S_{TES} = S + \text{max. } 100$
- Dimensions for sideroom, see from page:16
- Siderooms increase for doors fitted with the ZAK system:
  - $MS = MS + 5 \text{ mm}$
  - $L = L + 5 \text{ mm}$

# Barrel Casing/Trap Guard ES-PV

Fitting example for classic rolling shutter with direct drive operator



## Trap guard ES-PV

Application range: Door systems with impulse control and door ordering height less than 2500 mm.

## Barrel casing

$M_{PV}$	$L_{PV} / F_{PV}$
Max. 300 <sup>1)</sup>	Max. 300
Min. MS/MR <sup>1)</sup>	Min. L/F
350 <sup>2)</sup>	

1) For doors with direct drive operator or tubular operator

2) For doors with chain drive operator

**F** = Sideroom on catch safety device side

**F<sub>PV</sub>** = Sideroom on catch safety device side for barrel casing

**L** = Sideroom on bearing side

**L<sub>PV</sub>** = Sideroom on bearing side for barrel casing

**M<sub>PV</sub>** = Sideroom on motor side for barrel casing

**MR** = Sideroom on motor side for tubular operators

**MS** = Sideroom on motor side for direct drive operators

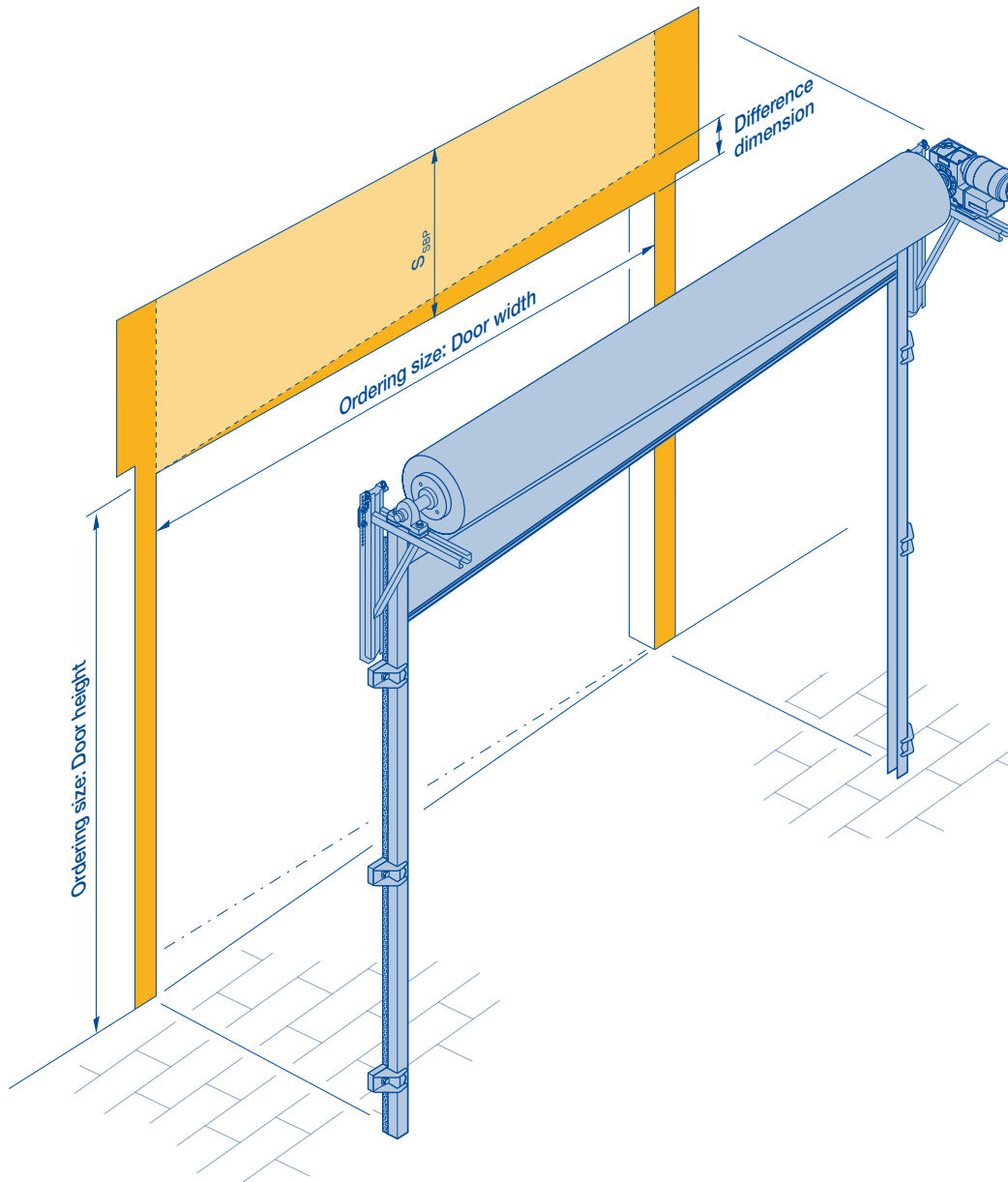
**FFL** = Finished floor level

## Note:

- Barrel casing can be selected with sheet edge folded up or down
- For external rolling shutters:
  - Fitting of the controller and SKS housing on the rear side of the end wall
  - For changes to the profile views, see page 4
- With trap guard ES-PV, the clear passage height is reduced:
  - For rolling shutters up to 80 mm
  - For rolling grilles up to 150 mm
 If necessary, please request the precise values from Hörmann KG Dissen.

# Chamfered Bottom Profile

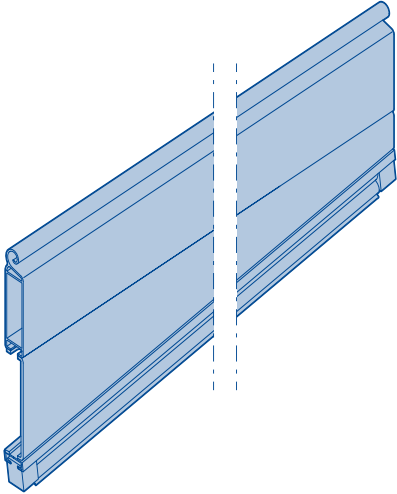
Fitting example for classic rolling shutter with direct drive operator



- S** = Required headroom
- S<sub>SBP</sub>** = Required headroom for doors with chamfered bottom profile

# Chamfered Bottom Profile

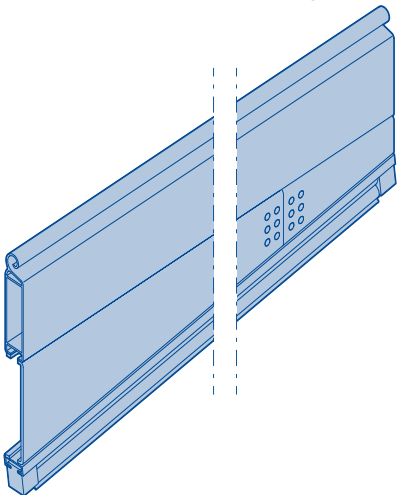
## Chamfered bottom profile, single-skinned



### Note:

- Door width  $\leq 5800$  mm
- Max. difference dimension 525 mm
- $S_{SBP} = S + \text{difference dimension} + 50$
- Can be combined with lockable bottom profile ABP1 and ABP2

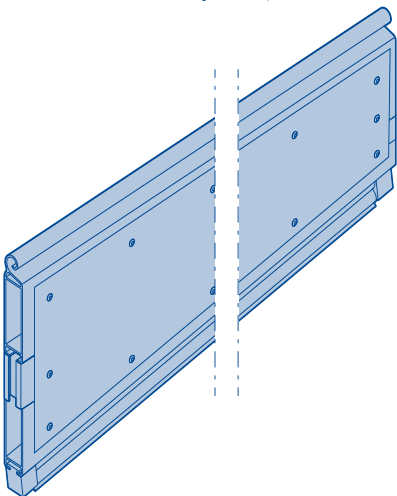
## Chamfered bottom profile, single-skinned – with butt weld



### Note:

- Door width  $> 5800$  mm
- Max. difference dimension 525 mm
- $S_{SBP} = S + \text{difference dimension} + 50$
- Can be combined with lockable bottom profile ABP1 and ABP2

## Chamfered bottom profile, double-skinned

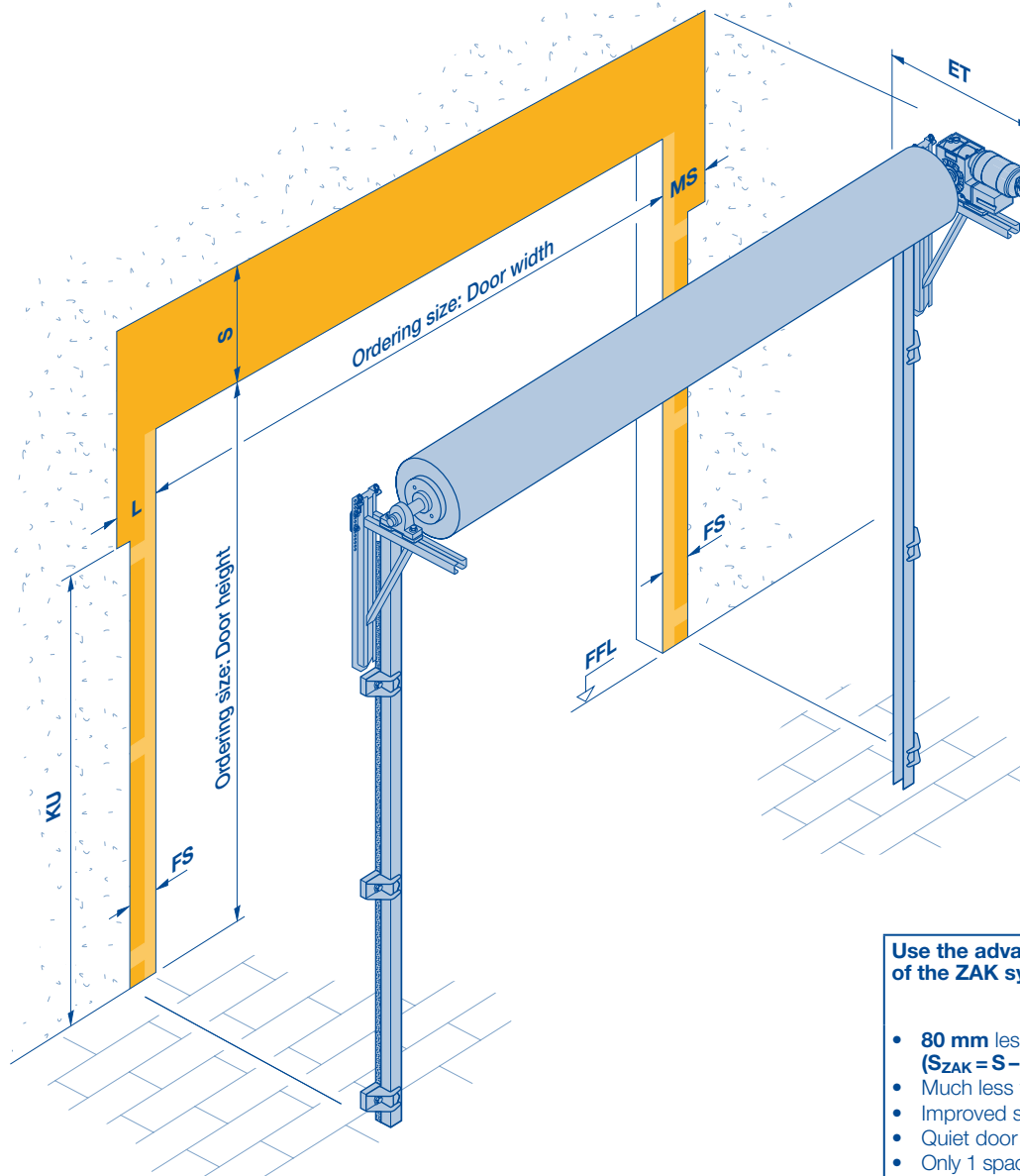


### Note:

- For all door widths
- Max. difference dimension 1000 mm
- $S_{SBP} = S + \text{difference dimension}$
- Cannot be combined with lockable bottom profile ABP1 and ABP2

# Space Requirements for Classic Rolling Shutters

## Direct drive operator



### Use the advantages of the ZAK system



- 80 mm less required headroom ( $S_{ZAK} = S - 80 \text{ mm}$ )
- Much less wear on the door curtain
- Improved seal at the lintel
- Quiet door travel
- Only 1 spacer support at the side guides

L	MS	FS	KU	L	MS	FS	KU
Side guide <b>FS 73</b>				Side guide <b>FS 98</b>			
<ul style="list-style-type: none"> <li>• Door widths <b>up to</b> 4000</li> <li>• Doors <b>without</b> wind locks</li> </ul>				<ul style="list-style-type: none"> <li>• Door widths <b>greater than</b> 4000</li> <li>• Doors <b>with</b> wind locks</li> </ul>			
215	275	155	<sup>2)</sup>	235	295	180	<sup>2)</sup>
275 <sup>1)</sup>	430 <sup>1)</sup>			295 <sup>1)</sup>	450 <sup>1)</sup>		

1) Space requirement for dismantling from the side

2) The dimension depends on the door size, please contact Hörmann KG Dissen.

**L** = Sideroom on bearing side  
**MS** = Sideroom on motor side for direct drive operators  
**FS** = Sideroom for side guide  
**KU** = Bottom support bracket dimension, different on bearing and operator sides

### Note:

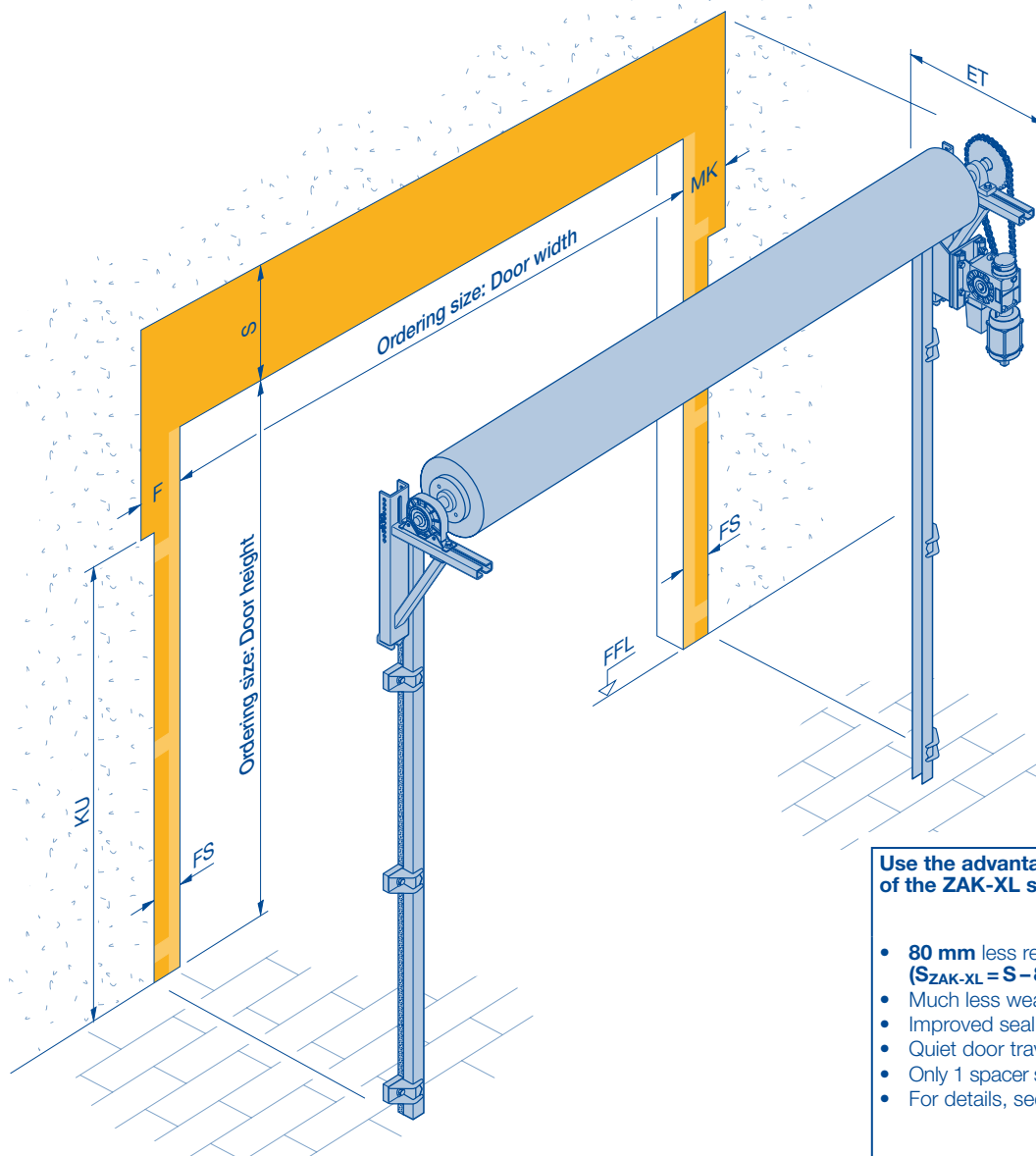
- The fitting example shows the arrangement of the operator from the right as seen from the inside. An arrangement on the left is also available on request.
- For external rolling shutters, the operator side is determined from the outside.
- The ZAK system does not have any influence on the sideroom.

**S** = Required headroom see tables from page 40  
**ET** = Minimum fitting depth for operator and support brackets, see tables from page 40  
**FFL** = Finished floor level



# Space Requirements for Classic Rolling Shutters

## Chain Drive Operator



**Use the advantages of the ZAK-XL system**

- **80 mm** less required headroom (**S<sub>ZAK-XL</sub> = S - 80 mm**)
- Much less wear on the door curtain
- Improved seal at the lintel
- Quiet door travel
- Only 1 spacer support at the side guides
- For details, see page 22

F	MK	FS	KU	F	MK	FS	KU
Side guide <b>FS 73</b>				Side guide <b>FS 98</b>			
<ul style="list-style-type: none"> <li>• Door widths <b>up to</b> 4000</li> <li>• Doors <b>without</b> wind locks</li> </ul>				<ul style="list-style-type: none"> <li>• Door widths <b>greater than</b> 4000</li> <li>• Doors <b>with</b> wind locks</li> </ul>			
230	300	155	<sup>2)</sup>	250	320	180	<sup>2)</sup>
270 <sup>1)</sup>	370 <sup>1)</sup>			290 <sup>1)</sup>	390 <sup>1)</sup>		

1) Space requirement for dismantling from the side  
 2) The dimension depends on the door size, please contact Hörmann KG Dissen.

**F** = Sideroom on catch safety device side  
**MK** = Sideroom on motor side for chain drive operators  
**FS** = Sideroom for side guide  
**KU** = Bottom support bracket dimension, different on bearing and operator sides

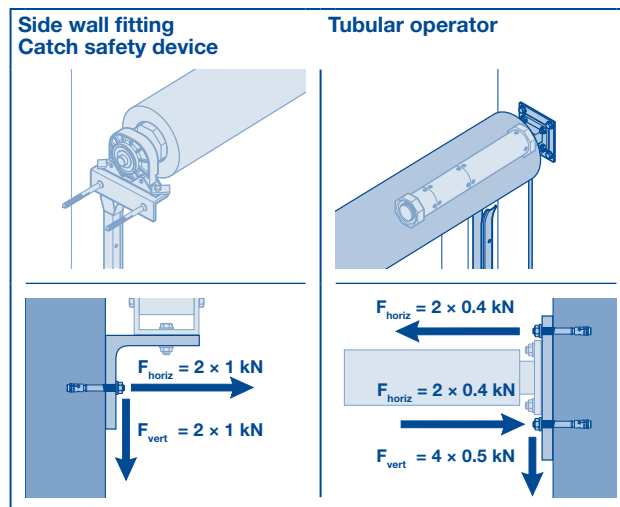
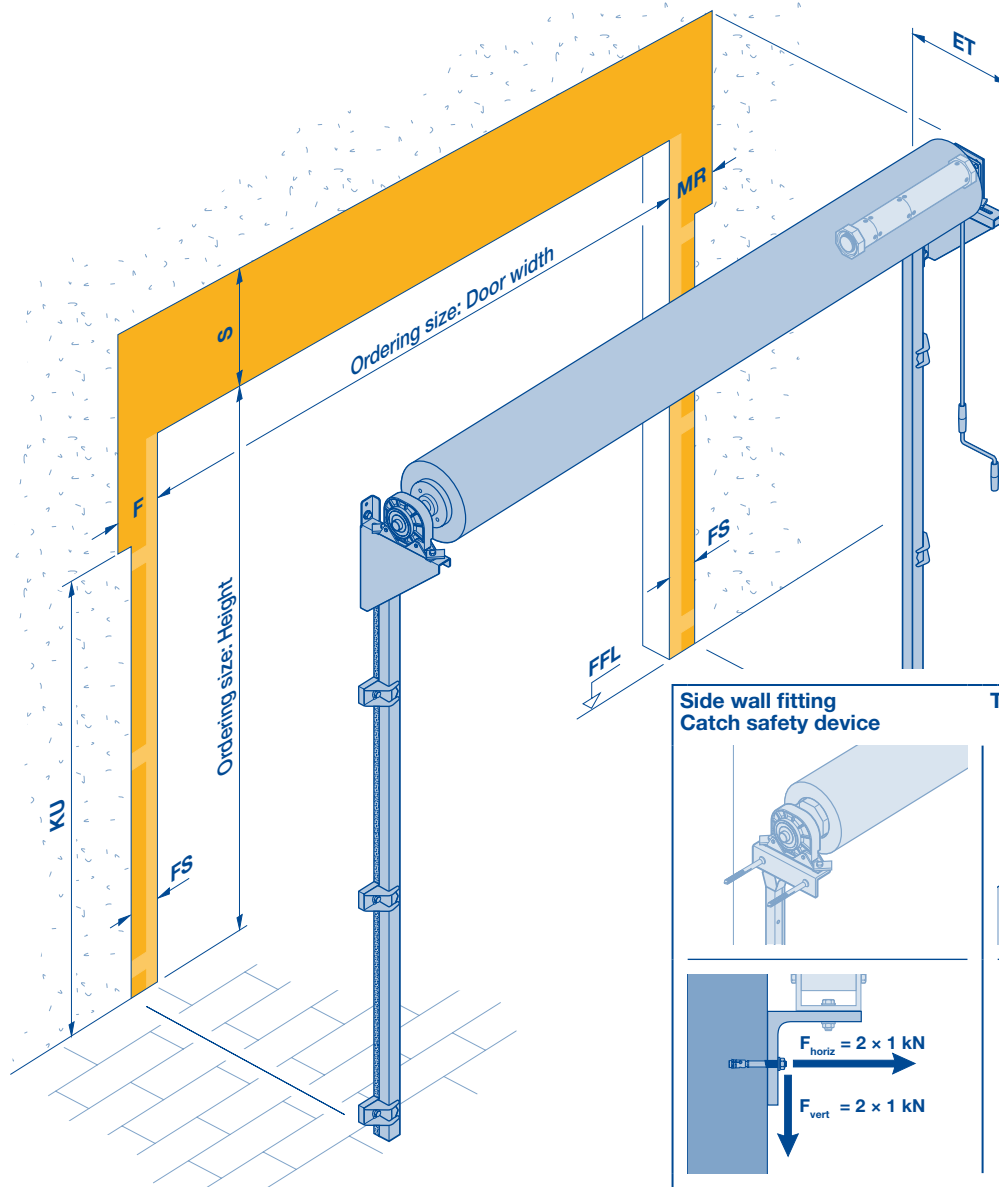
**Note:**

- The fitting example shows the arrangement of the operator from the right as seen from the inside. An arrangement on the left is also available on request.
- For external rolling shutters, the operator side is determined from the outside.

**S** = Required headroom see tables from page 52  
**ET** = Minimum fitting depth for operator and support brackets, see tables from page 52  
**FFL** = Finished floor level

# Space Requirements for Classic Rolling Shutters

## Tubular operator



F	MR	FS	KU	F	MR	FS	KU
Side guide <b>FS 73</b>				Side guide <b>FS 98</b>			
<ul style="list-style-type: none"> <li>Door widths <b>up to</b> 4000</li> <li>Doors <b>without</b> wind locks</li> </ul>				<ul style="list-style-type: none"> <li>Door widths <b>greater than</b> 4000</li> <li>Doors <b>with</b> wind locks</li> </ul>			
160	160	155	<sup>1)</sup>	185	185	180	<sup>1)</sup>

1) The dimension depends on the door size, please contact Hörmann KG Dissen.

**F** = Sideroom on catch safety device side  
**MR** = Sideroom on motor side for tubular operators  
**FS** = Sideroom for side guide  
**KU** = Bottom support bracket dimension, different on bearing and operator sides

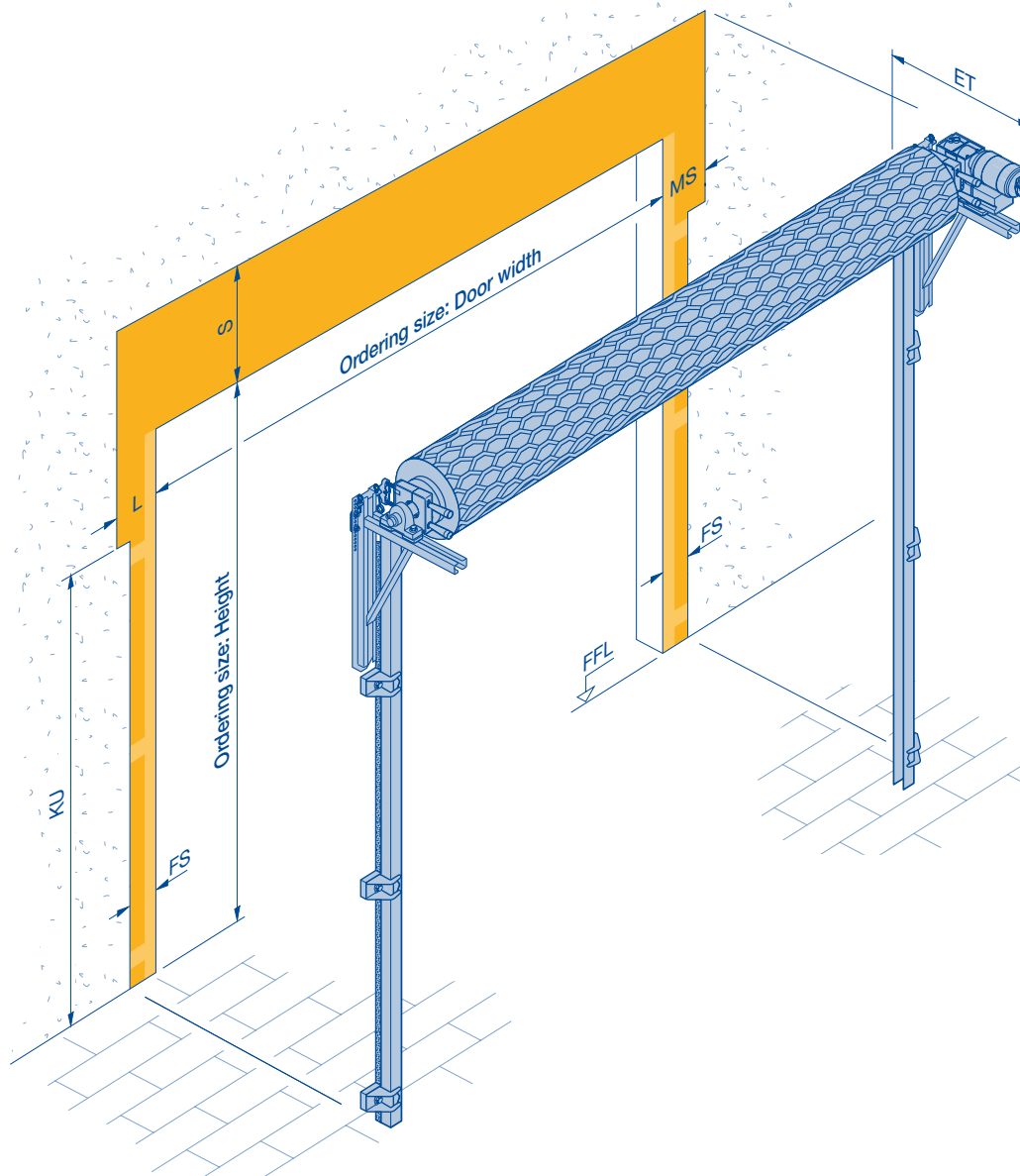
### Note:

- The fitting example shows the arrangement of the operator from the right as seen from the inside. An arrangement on the left is also available on request.
- For external rolling shutters, the operator side is determined from the outside.
- The side wall fitting does not have any influence on the sideroom.

**S** = Required headroom see tables from page 62  
**ET** = Minimum fitting depth for operator and support brackets, see tables from page 62  
**FFL** = Finished floor level

# Space Requirements for Classic Rolling Grilles

## Direct drive operator



L	MS	FS	KU	L	MS	FS	KU
Side guide <b>FS 73</b> <ul style="list-style-type: none"> <li>HG-V: Door widths <b>up to 4000</b></li> <li>HG-S: Door widths <b>up to 6000</b></li> </ul>				Side guide <b>FS 98</b> <ul style="list-style-type: none"> <li>HG-V: Door widths <b>greater than 4000</b></li> <li>HG-S: Door widths <b>greater than 6000</b></li> </ul>			
215	275	155	<sup>2)</sup>	235	295	180	<sup>2)</sup>
275 <sup>1)</sup>	430 <sup>1)</sup>			295 <sup>1)</sup>	450 <sup>1)</sup>		

1) Space requirement for dismantling from the side

2) The dimension depends on the door size, please contact Hörmann KG Dissen.

**L** = Sideroom on bearing side

**MS** = Sideroom on motor side for direct drive operators

**FS** = Sideroom for side guide

**KU** = Bottom support bracket dimension, different on bearing and operator sides

### Note:

- The fitting example shows the arrangement of the operator from the right as seen from the inside. An arrangement on the left is also available on request.
- For external rolling grilles, the operator side is determined from the outside.
- Classic rolling grilles with direct drive operators are fitted as standard with the ZAK system.

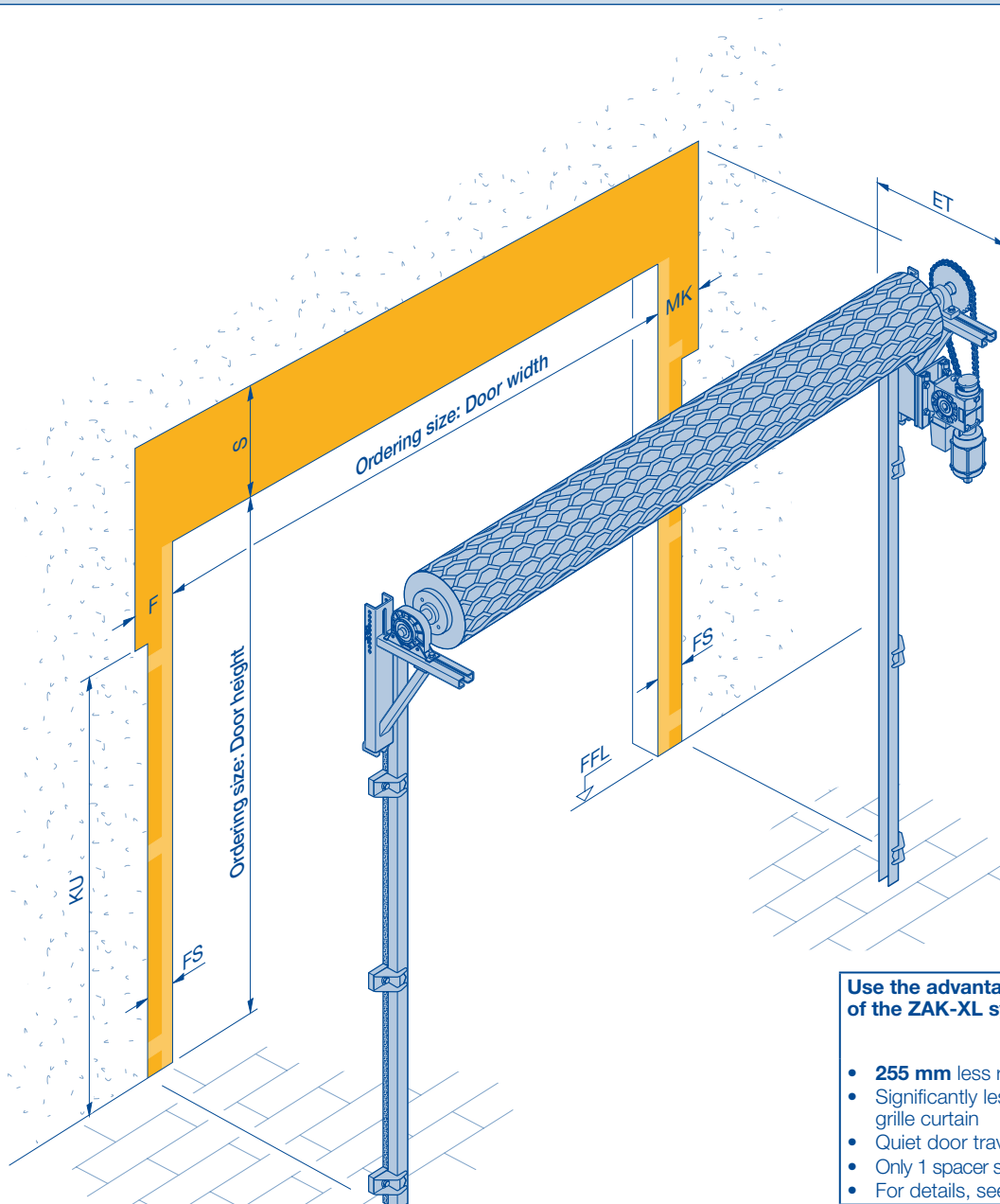
**S** = Required headroom see tables from page 72

**ET** = Minimum fitting depth for operator and support brackets, see tables from page 72

**FFL** = Finished floor level

# Space Requirements for Classic Rolling Grilles

## Chain drive operator



**Use the advantages of the ZAK-XL system**

- 255 mm less required headroom
- Significantly less wear on the rolling grille curtain
- Quiet door travel
- Only 1 spacer support at the side guides
- For details, see page 22

F	MK	FS	KU	F	MK	FS	KU
Side guide <b>FS 73</b> <ul style="list-style-type: none"> <li>• HG-V: Door widths <b>up to 4000</b></li> <li>• HG-S: Door widths <b>up to 6000</b></li> </ul>				Side guide <b>FS 98</b> <ul style="list-style-type: none"> <li>• HG-V: Door widths <b>greater than 4000</b></li> <li>• HG-S: Door widths <b>greater than 6000</b></li> </ul>			
230	300	155	<sup>2)</sup>	250	320	180	<sup>2)</sup>
270 <sup>1)</sup>	370 <sup>1)</sup>			290 <sup>1)</sup>	390 <sup>1)</sup>		

1) Space requirement for dismantling from the side  
 2) The dimension depends on the door size, please contact Hörmann KG Dissen.

**F** = Sideroom on catch safety device side  
**MK** = Sideroom on motor side for chain drive operators  
**FS** = Sideroom for side guide  
**KU** = Bottom support bracket dimension, different on bearing and operator sides

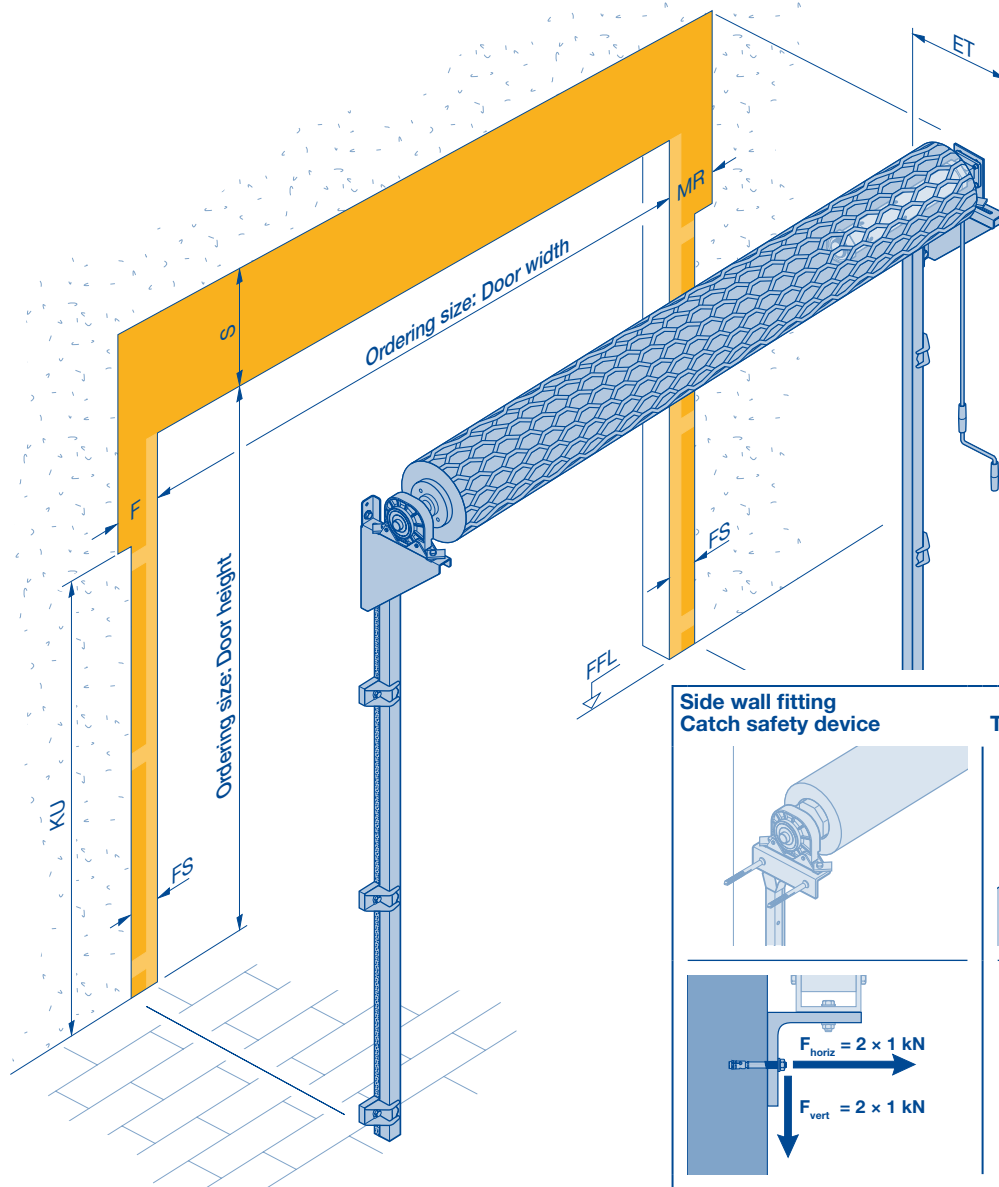
**Note:**

- The fitting example shows the arrangement of the operator from the right as seen from the inside. An arrangement on the left is also available on request.
- For external rolling grilles, the operator side is determined from the outside.

**S** = Required headroom see tables from page 76  
**ET** = Minimum fitting depth for operator and support brackets, see tables from page 76  
**FFL** = Finished floor level

# Space Requirements for Classic Rolling Grilles

## Tubular operator



F	MR	FS	KU	F	MR	FS	KU
Side guide <b>FS 73</b>				Side guide <b>FS 98</b>			
<ul style="list-style-type: none"> <li>HG-V: Door widths <b>up to 4000</b></li> <li>HG-S: Door widths <b>up to 6000</b></li> </ul>				<ul style="list-style-type: none"> <li>HG-V: Door widths <b>greater than 4000</b></li> <li>HG-S: Door widths <b>greater than 6000</b></li> </ul>			
160	160	155	<sup>1)</sup>	185	185	180	<sup>1)</sup>

1) The dimension depends on the door size, please contact Hörmann KG Dissen.

**F** = Sideroom on catch safety device side  
**MR** = Sideroom on motor side for tubular operators  
**FS** = Sideroom for side guide  
**KU** = Bottom support bracket dimension, different on bearing and operator sides

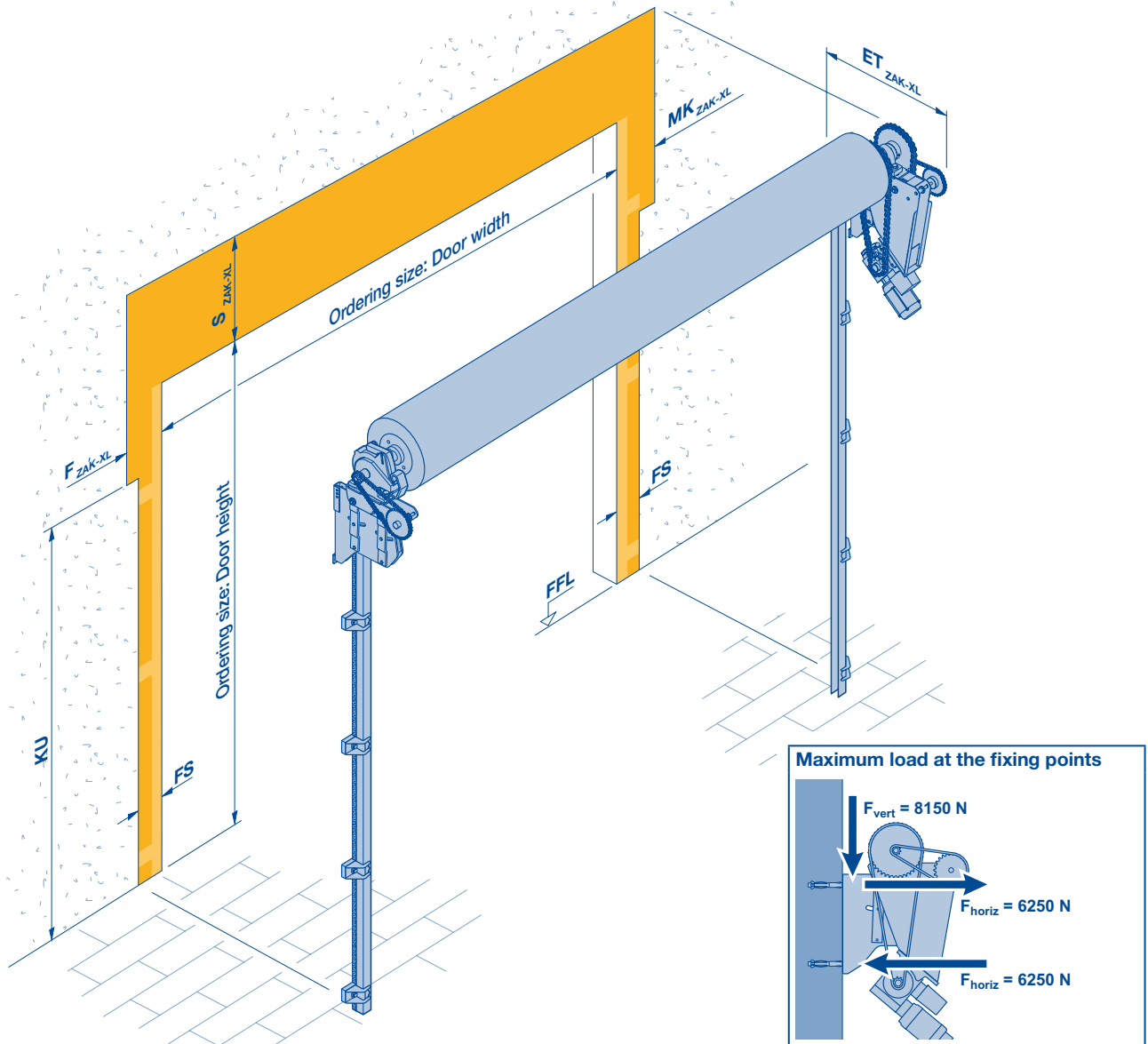
### Note:

- The fitting example shows the arrangement of the operator from the right as seen from the inside. An arrangement on the left is also available on request.
- For external rolling grilles, the operator side is determined from the outside.
- The side wall fitting does not have any influence on the sideroom.

**S** = Required headroom see tables from page 80  
**ET** = Minimum fitting depth for operator and support brackets, see tables from page 80  
**FFL** = Finished floor level

# Space Requirements for Classic Rolling Shutters / Classic Rolling Grilles

## Chain drive operator and ZAK-XL system



F <sub>ZAK-XL</sub>	MK <sub>ZAK-XL</sub>	FS	KU	F <sub>ZAK-XL</sub>	MK <sub>ZAK-XL</sub>	FS	KU
Side guide <b>FS 73</b>				Side guide <b>FS 98</b>			
<ul style="list-style-type: none"> <li>Door widths <b>up to</b> 4000</li> <li>Doors <b>without</b> wind locks</li> </ul>				<ul style="list-style-type: none"> <li>Door widths <b>greater than</b> 4000</li> <li>Doors <b>with</b> wind locks</li> </ul>			
380	440	155	<sup>1)</sup>	400	460	180	<sup>1)</sup>

1) The dimension depends on the door size, please contact Hörmann KG Dissen.

**F<sub>ZAK-XL</sub>** = Sideroom on catch safety device side with ZAK-XL system  
**MK<sub>ZAK-XL</sub>** = Sideroom on motor side for chain drive operators with ZAK@-XL system  
**FS** = Sideroom for side guide  
**KU** = Bottom support bracket dimension, different on bearing and operator sides

### Note:

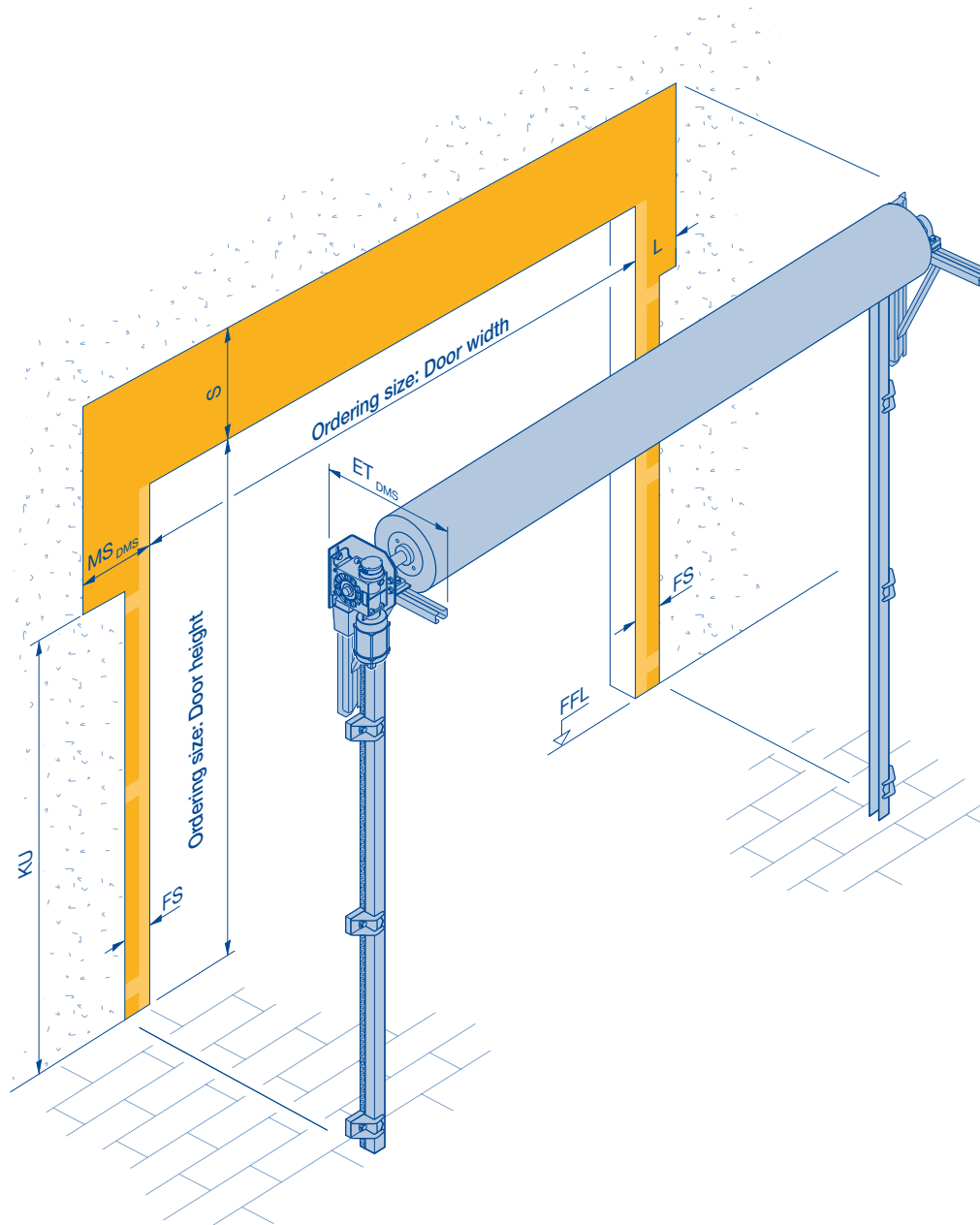
- The ZAK-XL system reduces the required headroom:  
**S<sub>ZAK-XL</sub>** = S – 80 mm for all classic rolling shutters  
 = S – 255 mm for all classic rolling grilles
- The **ET<sub>ZAK-XL</sub>** fitting depth is between 630 mm and 870 mm.  
 If necessary, please request the precise values from Hörmann KG Dissen.
- The door system must have at least the following dimensions
  - Door width ≥ 6000 mm
  - Door height ≥ 3500 mm

**S** = Required headroom see tables from page 52  
**S<sub>ZAK-XL</sub>** = Required headroom for doors with optional ZAK-XL system  
**ET<sub>ZAK-XL</sub>** = Fitting depth for operator and support brackets with the ZAK-XL system  
**FFL** = Finished floor level

# Space Requirements for Classic Rolling Shutters / Classic Rolling Grilles

## DMS

Fitting example with direct drive operator, operator on left side



L	MS <sub>DMS</sub>	FS	KU	L	MS <sub>DMS</sub>	FS	KU
Side guide <b>FS 73</b>				Side guide <b>FS 98</b>			
<ul style="list-style-type: none"> <li>Door widths <b>up to</b> 4000</li> <li>Doors <b>without</b> wind locks</li> </ul>				<ul style="list-style-type: none"> <li>Door widths <b>greater than</b> 4000</li> <li>Doors <b>with</b> wind locks</li> </ul>			
215	375	155	<sup>2)</sup>	235	395	180	<sup>2)</sup>
275 <sup>1)</sup>	530 <sup>1)</sup>			295 <sup>1)</sup>	550 <sup>1)</sup>		

1) Space requirement for dismantling from the side

2) The dimension depends on the door size, please contact Hörmann KG Dissen.

**L** = Sideroom on bearing side

**MS<sub>DMS</sub>** = Sideroom on motor side for direct drive operators with DMS

**FS** = Sideroom for side guide

**KU** = Bottom support bracket dimension, different on bearing and operator sides

### Note:

- The fitting example shows the arrangement of the operator from the left as seen from the inside. An arrangement on the right is also available on request.
- DMS can be used with all classic rolling shutters / rolling grilles with direct drive operator
- For doors with ZAK system, only up to direct drive operator type S25.
- The **ET<sub>DMS</sub>** fitting depth is at least 520 mm to max. 670 mm. If necessary, please request the precise values from Hörmann KG Dissen.

**S** = Required headroom see tables from page 40

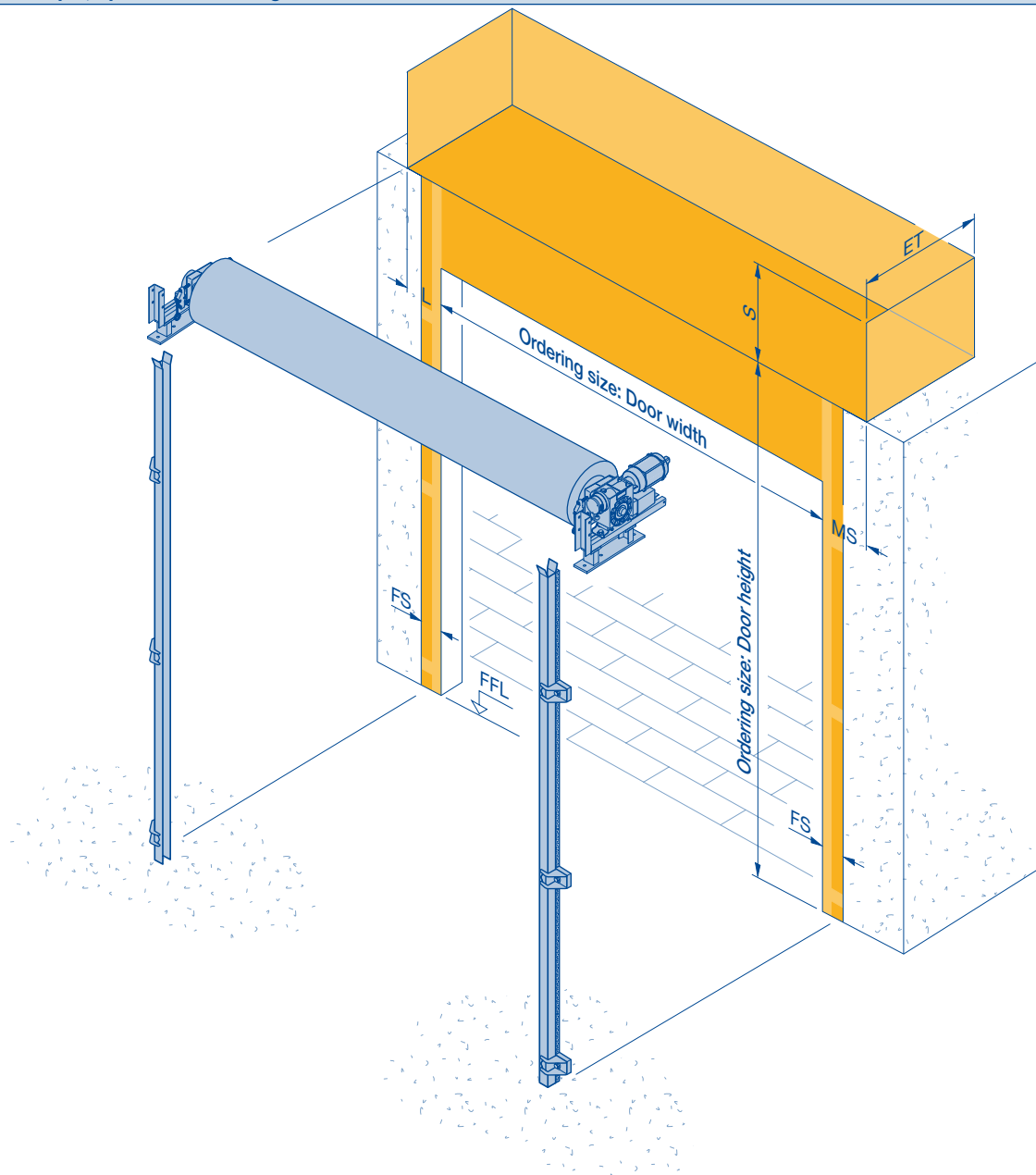
**ET<sub>DMS</sub>** = Minimum fitting depth for doors with DMS

**FFL** = Finished floor level

# Space Requirements for Classic Rolling Shutters / Classic Rolling Grilles

## Trestle support bracket

Fitting example, operator side on right



L	MS	FS	L	MS	FS
Side guide <b>FS 73</b>			Side guide <b>FS 98</b>		
<ul style="list-style-type: none"> <li>• Door widths <b>up to</b> 4000</li> <li>• Doors <b>without</b> wind locks</li> </ul>			<ul style="list-style-type: none"> <li>• Door widths <b>greater than</b> 4000</li> <li>• Doors <b>with</b> wind locks</li> </ul>		
215	275	155	235	295	180
275 <sup>1)</sup>	430 <sup>1)</sup>		295 <sup>1)</sup>	450 <sup>1)</sup>	

1) Space requirement for dismantling from the side

**L** = Sideroom on bearing side  
**MS** = Sideroom on motor side for direct drive operators  
**FS** = Sideroom for side guide

### Note:

- Trestle support brackets can be used with classic rolling shutters and classic rolling grilles with
  - Direct drive operator
  - Direct drive operator and ZAK system.
- Please contact Hörmann KG Dissen for more details on the specific version.

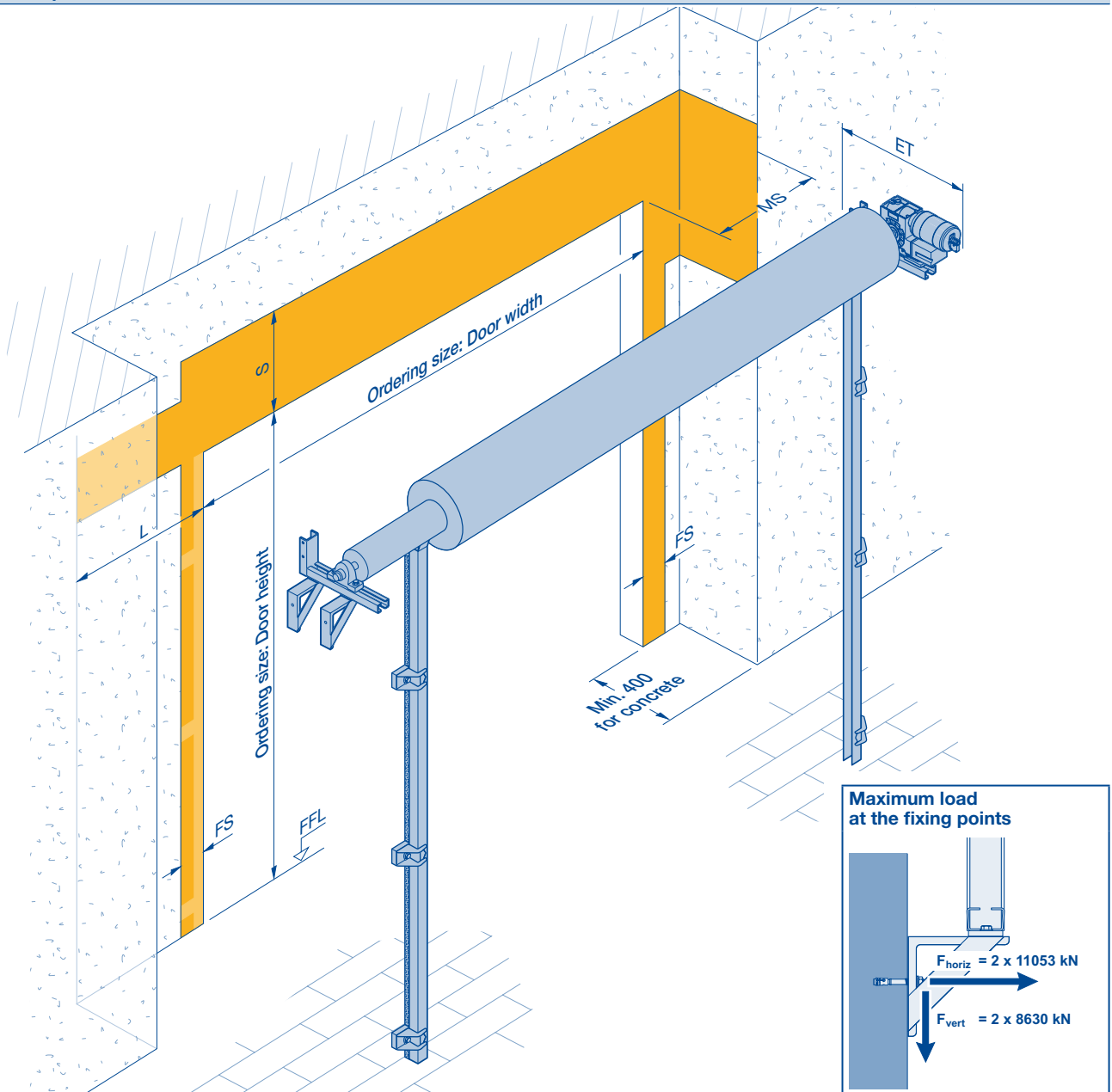
**S** = Required headroom see tables from page 40  
**ET** = Minimum fitting depth for operator and support brackets, see tables from page 40  
**FFL** = Finished floor level



# Space Requirements for Classic Rolling Shutters / Classic Rolling Grilles

## BT support brackets

### Fitting example with extended barrels



L	MS	FS	L	MS	FS
Side guide <b>FS 73</b>			Side guide <b>FS 98</b>		
<ul style="list-style-type: none"> <li>Door widths <b>up to</b> 4000</li> <li>Doors <b>without</b> wind locks</li> </ul>			<ul style="list-style-type: none"> <li>Door widths <b>greater than</b> 4000</li> <li>Doors <b>with</b> wind locks</li> </ul>		
Min. 195	275	155	Min. 215	295	180

#### Note:

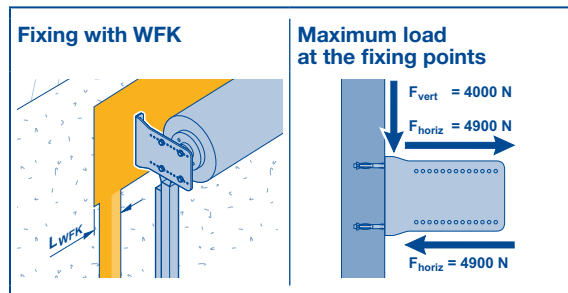
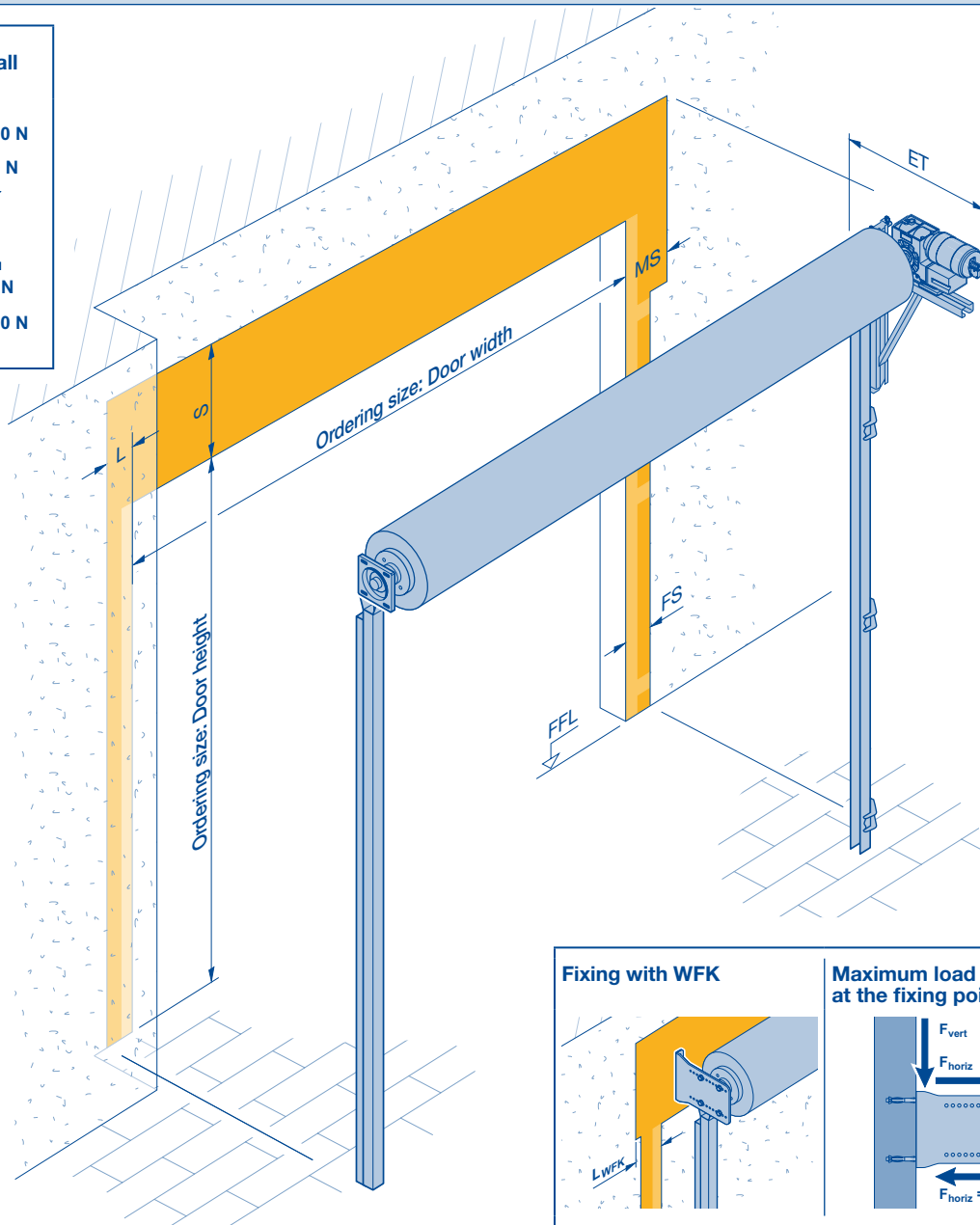
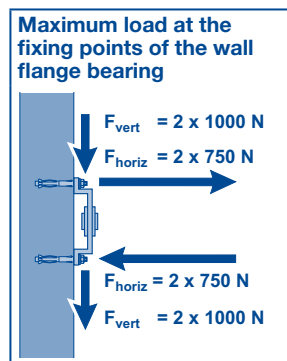
- BT support brackets can be used with classic rolling shutters and classic rolling grilles with
  - Direct drive operator
  - Direct drive operator and ZAK system.

**L** = Sideroom on bearing side  
**MS** = Sideroom on motor side for direct drive operators  
**S** = Required headroom see tables from page 40

**ET** = Minimum fitting depth for operator and support brackets, see tables from page 40  
**FFL** = Finished floor level  
**FS** = Sideroom for side guide

# Space Requirements for Classic Rolling Shutters / Classic Rolling Grilles

## Wall flange bearing



L	L <sub>WFK</sub>	MS	FS	L	L <sub>WFK</sub>	MS	FS
Side guide <b>FS 73</b>				Side guide <b>FS 98</b>			
• Door widths <b>up to 4000</b>				• Door widths <b>greater than 4000</b>			
• Doors <b>without</b> wind locks				• Doors <b>with</b> wind locks			
120 <sup>1)</sup>	145 <sup>1)</sup>	275	155	140 <sup>1)</sup>	165 <sup>1)</sup>	295	180
190 <sup>2)</sup>	160 <sup>3)</sup>			160 <sup>4)</sup>	180 <sup>3) 5)</sup>		
	215 <sup>2)</sup>			180 <sup>5)</sup>	235 <sup>2)</sup>		
				210 <sup>2)</sup>			

- 1) With subframe (without wind locks)
- 2) Maximum value without extending the barrel
- 3) With additional post
- 4) Side guide with support and additional post (without wind locks)
- 5) Side guide with clamp system (with wind locks)

**L** = Sideroom on bearing side  
**L<sub>WFK</sub>** = Sideroom WFK  
**MS** = Sideroom on motor side for direct drive operators

**FS** = Sideroom for side guide  
**S** = Required headroom see tables from page 40  
**ET** = Minimum fitting depth for operator and support brackets, see tables from page 40

**FFL** = Finished floor level

### Note:

- Wall flange bearings can only be applied to door systems fitted with direct drive operators.
- Wall flange bearings cannot be used in combination with the ZAK system.
- For classic rolling grilles with wall flange bearing, the required headroom is increased: **S = S + 255 mm**

### Two-sided use of the WFK support bracket:

- Only possible with doors of the same version and size
- Space requirement between the doors:
  - Doors with FS 73: 248 mm
  - Doors with FS 98: 288 mm
- Double maximum load at the fixing points

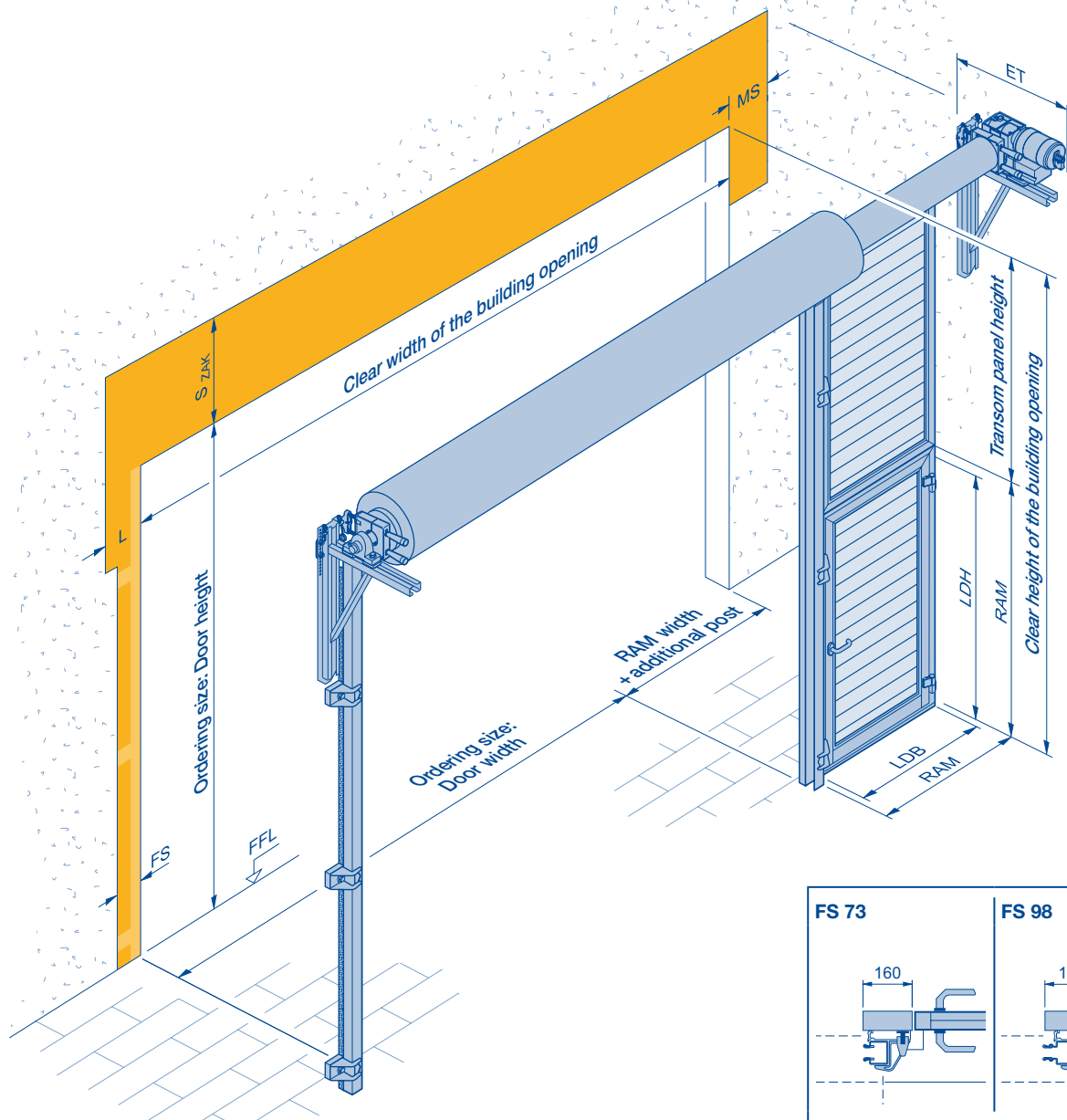
# Notes

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# Space Requirements for Classic Rolling Shutters / Classic Rolling Grilles

## Side door with transom panel

Fitting example with direct drive operator and ZAK system



	FS 73	FS 98
<b>Additional post (width)</b>	160	180
<b>Door width ordering size</b>	Clear width of the building opening – RAM (width) – additional post (width)	
<b>RAM (height)</b>	Min. 1800 mm, Max. 2500	
<b>RAM (width)</b>	Min. 650 mm, max. 1300	
<b>LDB</b>	RAM (width) – 140	
<b>LDH</b>	RAM (height) – 70	

**RAM** = Overall frame dimension  
**LDB** = Clear passage width  
**LDH** = Clear passage height  
**L** = Sideroom on bearing side  
**FS** = Sideroom for side guide

### Note:

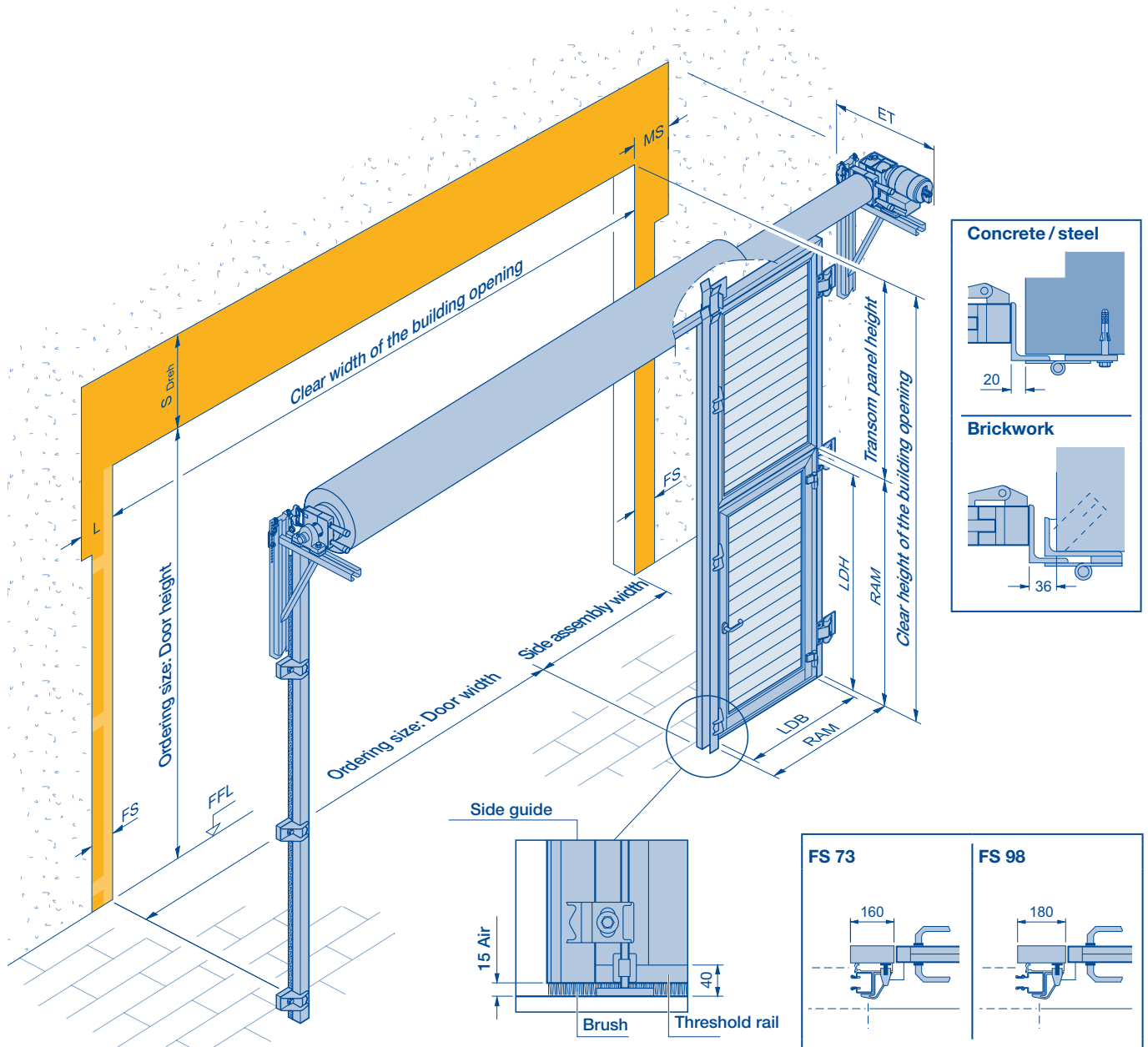
- The type of the side guide depends on the door data. For standard values, see page 34 / 35..
- Dimensions for sideroom, see:
  - For direct drive operators, page 16
  - For chain drive operators, page 17
- Please take into consideration possible tolerances on the building structure when determining the RAM width and transom panel height.

**MS** = Sideroom on motor side for direct drive operators  
**S ZAK** = Required headroom for doors with optional ZAK system  
**ET** = Minimum fitting depth for operator and support brackets, see tables from page 40  
**FFL** = Finished floor level

# Space Requirements for Classic Rolling Shutters / Classic Rolling Grilles

## Swing-aside pass door assembly

Fitting example with direct drive operator and ZAK system



	FS 73		FS 98	
	Brickwork	Concrete / steel	Brickwork	Concrete / steel
Side assembly width	RAM + 160 + 36	RAM + 160 + 20	RAM + 180 + 36	RAM + 180 + 20
Door width ordering size	Clear width of the building opening – side assembly width			
Transom panel height	Clear height of the building opening – RAM (height) – 75			
RAM (height)	Min. 1800 mm, Max. 2300			
RAM (width)	Min. 650 mm, max. 1300			
LDB	RAM (width) – 140			
LDH	RAM (height) – 70			

### Note:

- The head room is increased by max. 200 mm ( $S_{\text{TURN}} = S + 200$ ).
- The type of side guide depends on the version of the door.  
For standard values, see pages 34 / 35.
- Dimensions for sideroom, see:
  - For direct drive operators, page 16
  - For chain drive operators, page 17
- Side door with threshold rail, not approved as escape door.

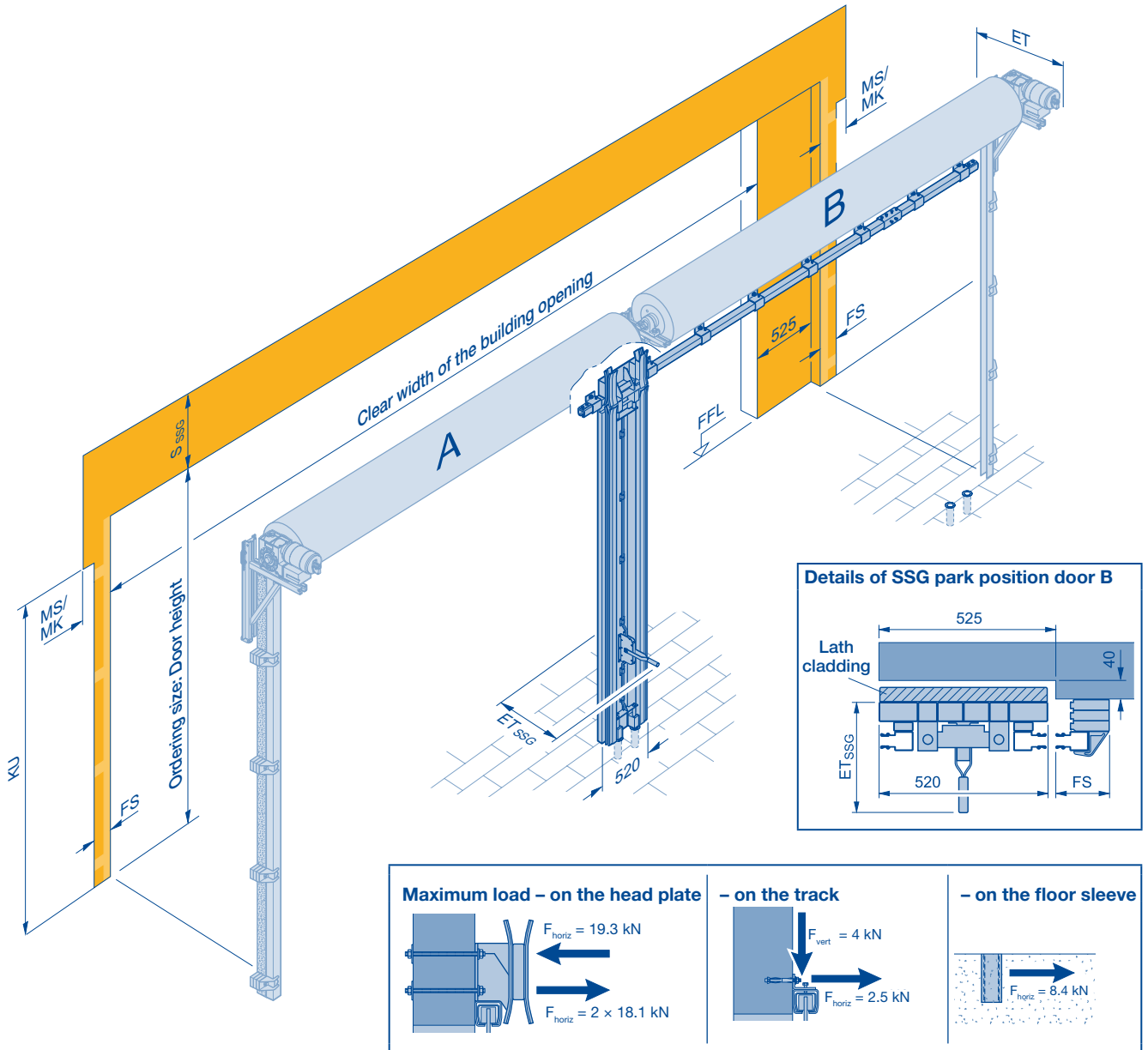
**RAM** = Overall frame dimension  
**LDB** = Clear passage width  
**LDH** = Clear passage height  
**L** = Sideroom on bearing side  
**FS** = Sideroom for side guide

**MS** = Sideroom on motor side for direct drive operators  
**S<sub>turn</sub>** = Required headroom for doors with swing-aside pass door assembly  
**ET** = Minimum fitting depth for operator and support brackets, see tables from page 40  
**FFL** = Finished floor level

# Space Requirements for Classic Rolling Shutters / Classic Rolling Grilles

## SSG system park position behind the opening

Fitting example with direct drive operator and park position to the right



Max. clear width of the building opening	Profile types Curtain types
16470 mm	HR 120 S
15470 mm	HR 120 A, HR 120 aero <sup>1)</sup>
19470 mm	Decotherm S
21470 mm	HR 116 A
23470 mm	HG-V <sup>2)</sup> , HG-S <sup>2)</sup>
Calculating the ordering sizes	
Ordering size width door A (Door without SSG travel)	(Clear width / 2) – 260
Ordering size width door B (Door with SSG travel)	(Clear width / 2) + 265
Ordering size height	Clear height of the building opening (maximum 6000 mm)

1) Only permissible for internal doors 2) Only permissible for doors with press-and-hold control

### Note:

- Available for classic rolling shutters / rolling grilles with direct drive operator or chain drive operator
- Symmetrical view from the outside
- Same operator type and profile version for door A and B
- The park position can be selected either to the right or left behind the building opening
- Not available as external rolling shutter in combination with ZAK-XL, WPS or fascia panels
- The required headroom cannot be reduced with the ZAK system
- Doors less than 2200 mm and rolling grille only with press-and-hold control
- $S_{SSG} = S + \text{max. } 350 \text{ mm}$
- $ET_{SSG} = 530 \text{ mm}$
- Side guides always FS 98
- The siderooms (FS, MS, MK) increase by 525 mm each for door B (for dimensions, see pages 16/17).

$F_{\text{horiz}}$  = Horizontal force at the fixing point  
 $F_{\text{vert}}$  = Vertical force at the fixing point  
 FS = Sideroom for side guide  
 MK = Sideroom on motor side for chain drive operators

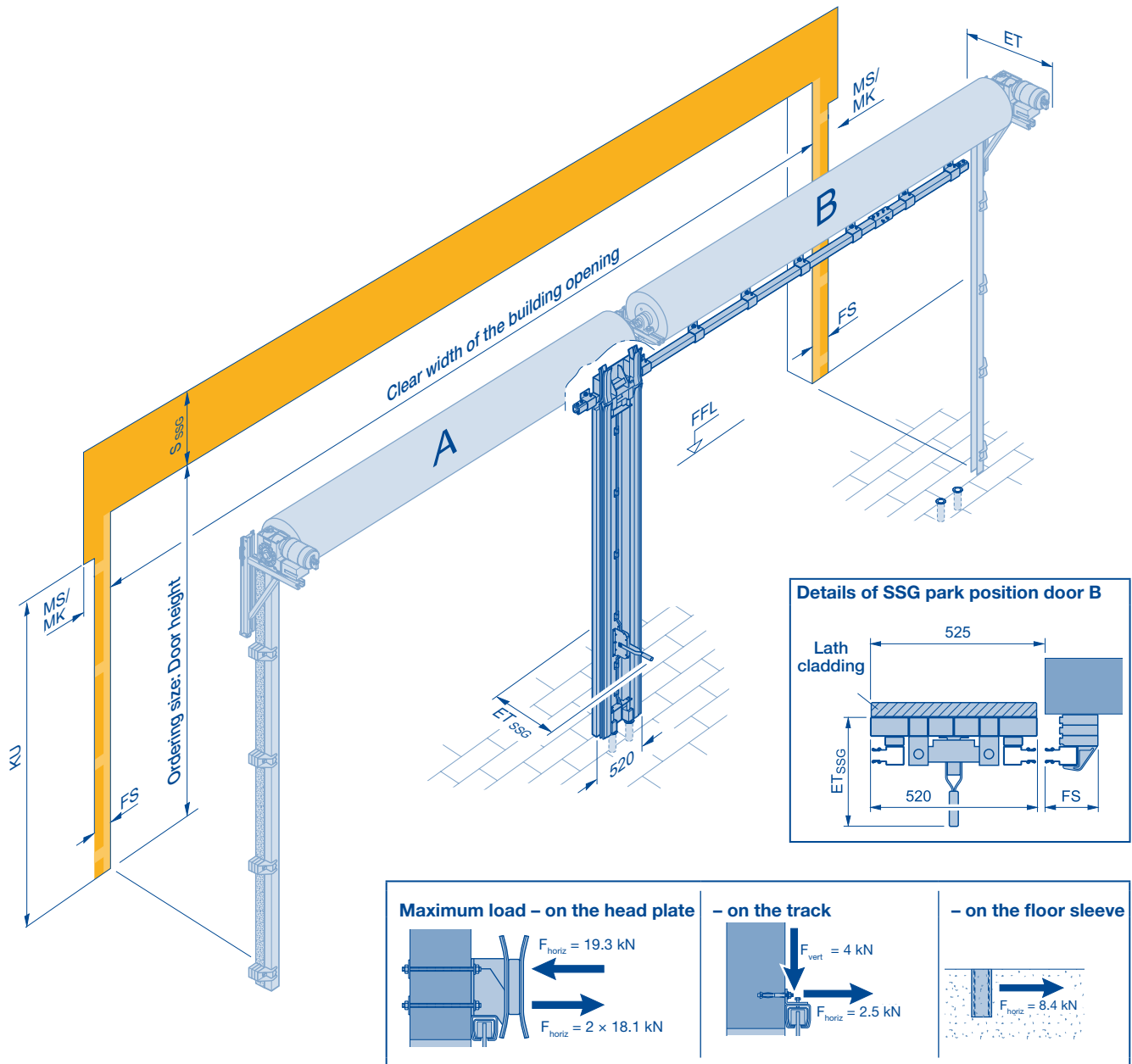
MS = Sideroom on motor side for direct drive operators  
 KU = Bottom support bracket dimension, different on bearing and operator sides  
 $S_{SSG}$  = Required headroom for door systems with SSG system  
 $ET_{SSG}$  = Fitting depth for the SSG system

FFL = Finished floor level  
 ET = Minimum fitting depth for operator and support brackets, see tables from page 40

# Space Requirements for Classic Rolling Shutters / Classic Rolling Grilles

## SSG system park position in the opening

Fitting example with direct drive operator and park position to the right



Max. clear width of the building opening	Profile types Curtain types
17500 mm	HR 120 S
16500 mm	HR 120 A, HR 120 aero <sup>1)</sup>
20500 mm	Decotherm S
22500 mm	HR 116 A
24500 mm	HG-V <sup>2)</sup> , HG-S <sup>2)</sup>
Calculating the ordering sizes	
Ordering size width door A/B	(Clear width / 2) – 260
Ordering size height	Clear height of the building opening (maximum 6000 mm)

1) Only permissible for internal doors

2) Only permissible for doors with press-and-hold control

**F<sub>horiz</sub>** = Horizontal force at the fixing point  
**F<sub>vert</sub>** = Vertical force at the fixing point

**MS** = Sideroom on motor side for direct drive operators  
**KU** = Bottom support bracket dimension, different on bearing and operator sides

**FS** = Sideroom for side guide  
**MK** = Sideroom on motor side for chain drive operators

**S<sub>SSG</sub>** = Required headroom for door systems with SSG system  
**ET<sub>SSG</sub>** = Fitting depth for the SSG system

### Note:

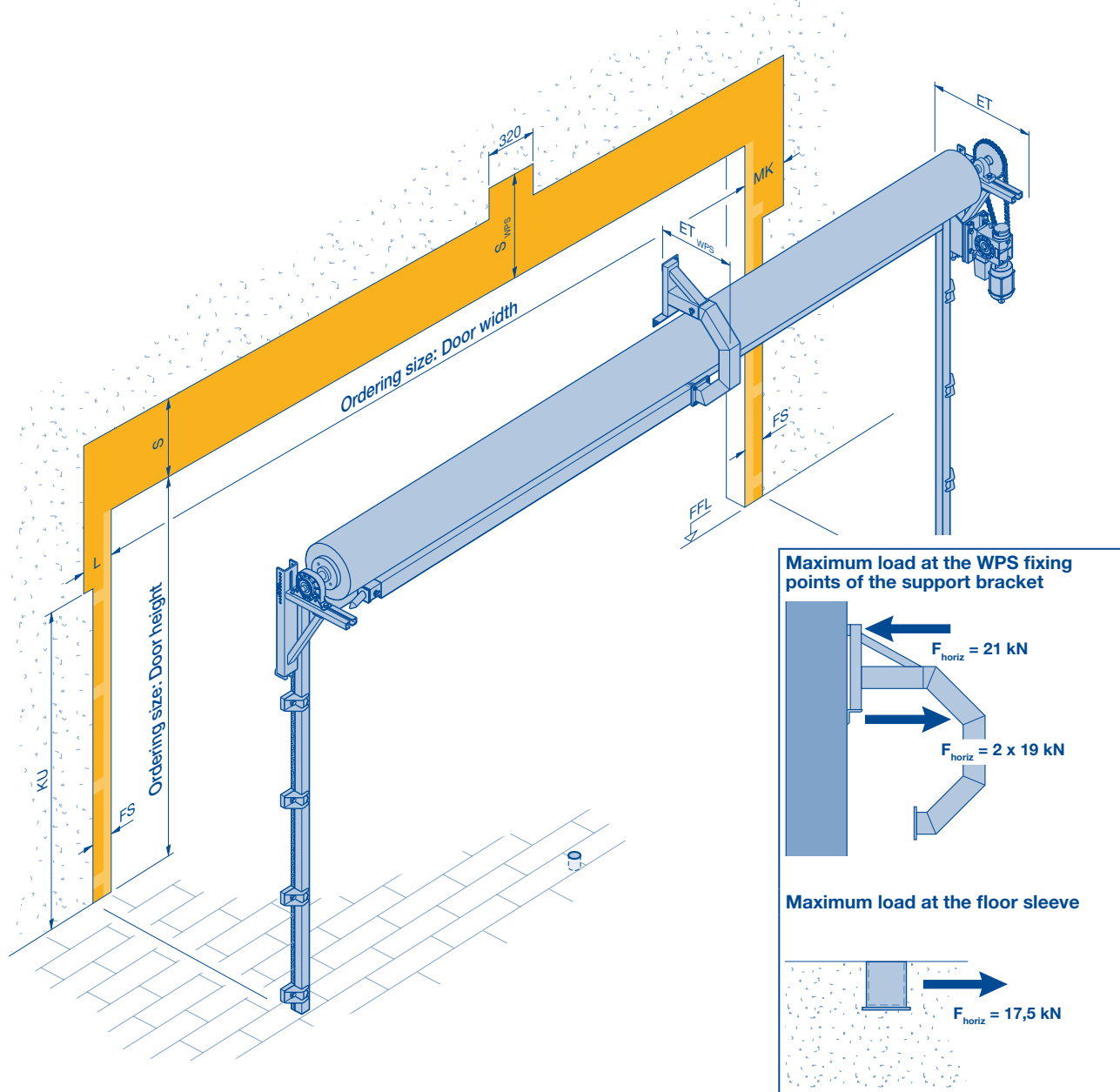
- Available for classic rolling shutters / rolling grilles with direct drive operator or chain drive operator
- Symmetrical view from the outside
- Same operator type and profile version for door A and B
- The park position can be selected either to the right or left
- Not available as external rolling shutter in combination with ZAK-XL, WPS or fascia panels
- The required headroom cannot be reduced with the ZAK system
- Doors less than 2200 mm and rolling grille only with press-and-hold control
- **S<sub>SSG</sub>** = S + max. 350 mm
- **ET<sub>SSG</sub>** = 530 mm
- Side guides always FS 98
- Does not have any influence on the lateral siderooms (FS, MS, MK) (for dimensions, see pages 16/17).

**ET** = Minimum fitting depth for operator and support brackets, see tables from page 40  
**FFL** = Finished floor level

# Space Requirements for Classic Rolling Shutters

## WPS

### Fitting example with chain drive operator



$F_{\text{horiz}}$	= Horizontal force at the fixing point
L	= Sideroom on bearing side
MK	= Sideroom on motor side for chain drive operators
FS	= Sideroom for side guide
KU	= Bottom support bracket dimension, different on bearing and operator sides
S	= Required headroom see tables from page 40
$S_{\text{WPS}}$	= Required headroom for door with WPS, see tables on page 33
ET	= Minimum fitting depth for operator and support brackets, see tables from page 40
$ET_{\text{WPS}}$	= Fitting depth for WPS support bracket, see tables on page 33
FFL	= Finished floor level

#### Note:

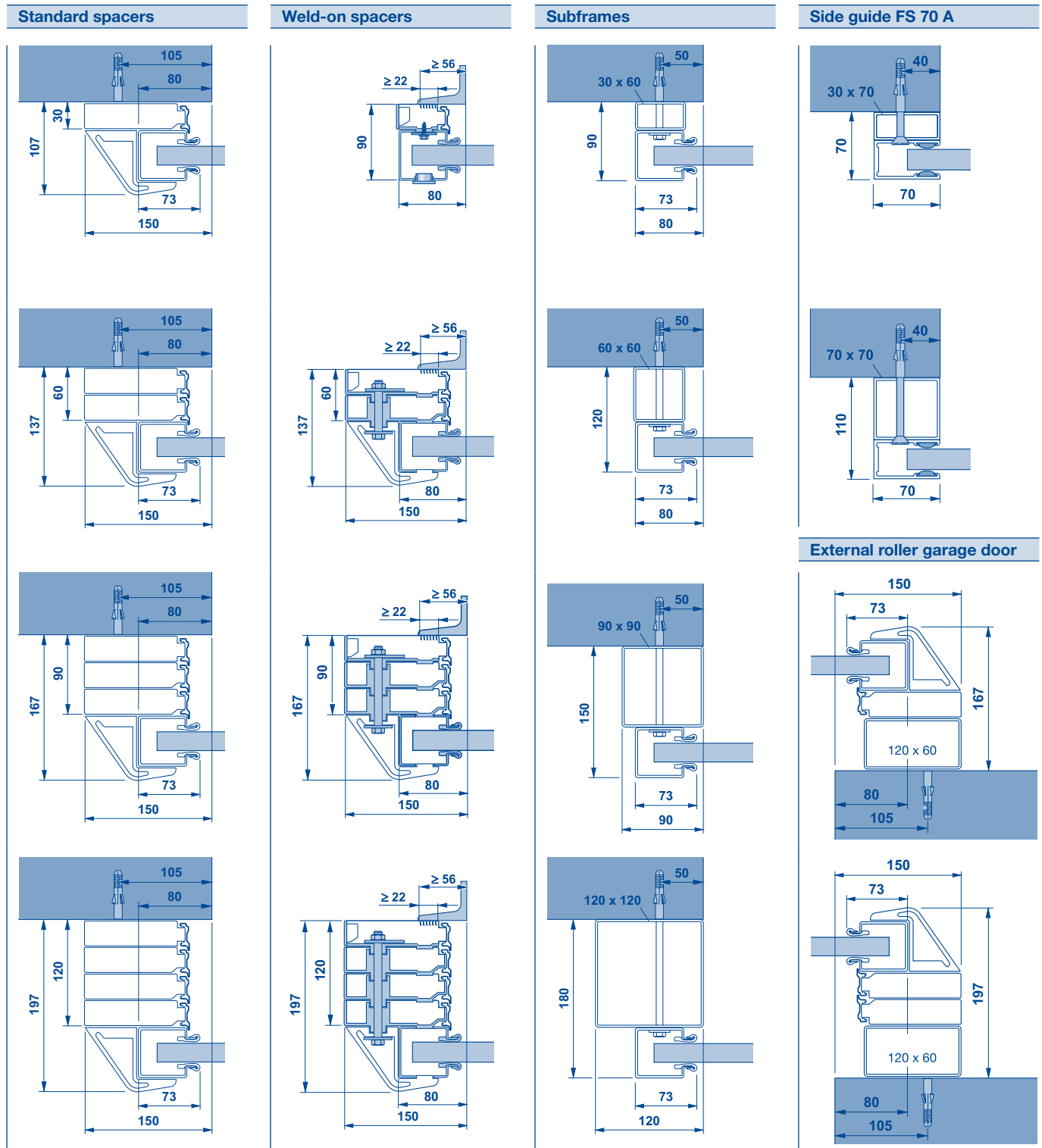
- The minimum door width must be 6200 mm.
- The WPS is only approved for doors with press-and-hold operation.
- The WPS does not have any influence on the sideroom.
- Dimensions for sideroom, see:
  - For direct drive operators, page 16
  - For chain drive operators, page 17
- For dimensions for  $ET_{\text{WPS}}$  and  $S_{\text{WPS}}$ , see the tables on page 33





# Classic Rolling Shutters / Classic Rolling Grilles

## Fitting the side guides FS 73 S / E



### Application range:

- Rolling shutters without wind locks up to 4000 mm door width
- Rolling grilles HG-V up to 4000 mm door width
- Rolling grilles HG-S up to 6000 mm door width

### Weld-on spacers

Conditions on the building structure:

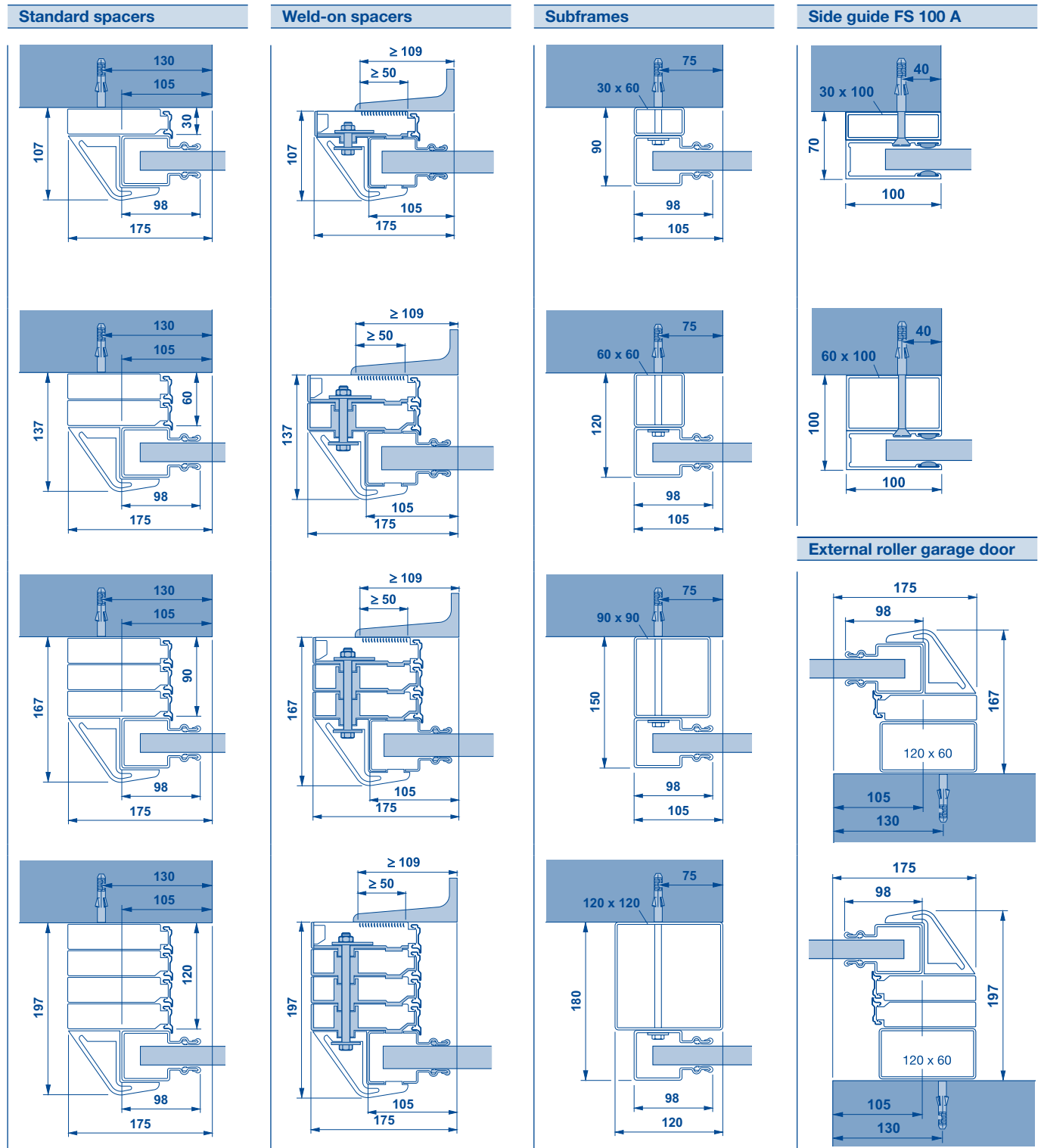
- Steel: Steel supports directly on the building opening
- Concrete, brickwork, lightweight construction: On-site U frame made of steel

### Note:

- For the number of spacers required, see tables from page 40
- At least 2 spacers for external rolling shutters and SKS
- Assembly height of the side guide = 60 mm
- Support height for each spacer = 30 mm
- Maximum load at the fixing point: 1.5 kN tensile load
- FS 70 A only for rolling shutters with profile version HR 120, HR 120 aero or for classic rolling grilles

# Classic Rolling Shutters / Classic Rolling Grilles

## Fitting the side guides FS 98 S



### Application range:

- Rolling shutters with wind locks
- Rolling shutters with door widths greater than 4000 mm
- Rolling grilles HG-V with door widths greater than 4000 mm
- Rolling grilles HG-S with door widths greater than 6000 mm

### Weld-on spacers

Conditions on the building structure:

- Steel: Steel supports directly on the building opening
- Concrete, brickwork, lightweight construction: On-site U frame made of steel

### Note:

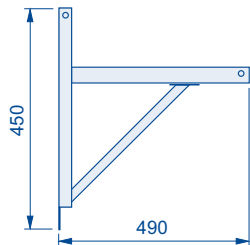
- For the number of spacers required, see tables from page 40
- At least 2 spacers for external rolling shutters and SKS
- Assembly height of the side guide = 60 mm
- Support height for each spacer = 30 mm
- Maximum load at the fixing point: 1.5 kN tensile load
- No wind locks with subframes
- FS 100 A only for rolling shutters with profile version HR 120, HR 120 aero or for classic rolling grilles

# Classic Rolling Shutters / Classic Rolling Grilles

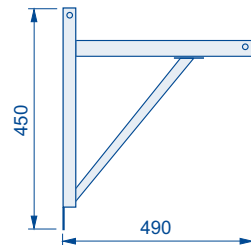
## Standard support brackets

### Doors with direct drive operator

Operator side



Bearing side



Support width



#### Support bracket N 450 AK/N 450 LK

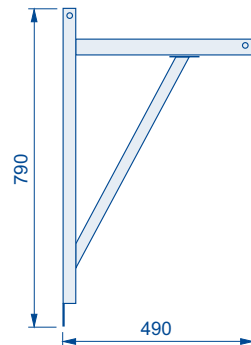
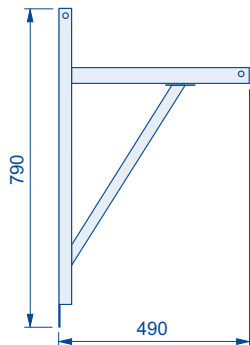
**Note:**

- Up to a door curtain and barrel weight of 300 kg

#### Support bracket N 450 A/N 450 L

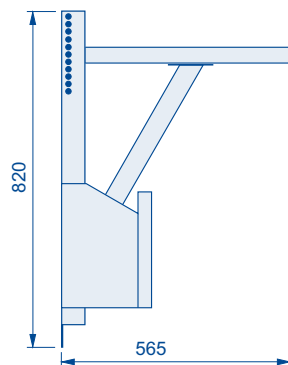
**Note:**

- From a door curtain and barrel weight of 300 kg

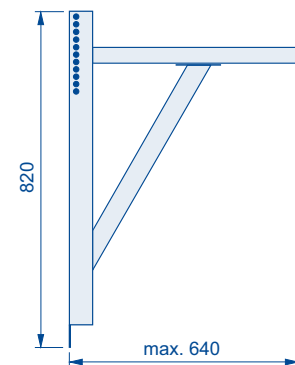


### Doors with chain drive operator

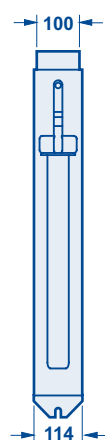
Operator side



Catch safety device side



Support width



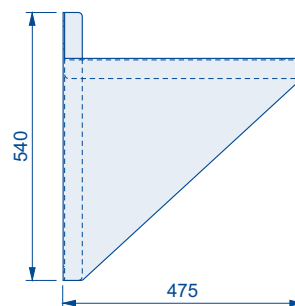
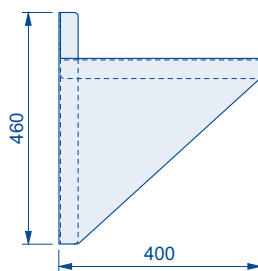
#### Support bracket K/ support bracket M 500/F

**Note:**

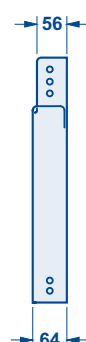
- The support surface is the same on the operator side and the catch safety device side

### Doors with tubular operator

Operator and catch safety device side



Support width



#### Support bracket 400/ support bracket 475

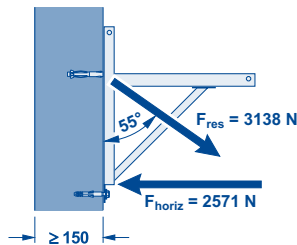
# Classic Rolling Shutters / Classic Rolling Grilles

## Maximum loads at the fixing points of the support brackets

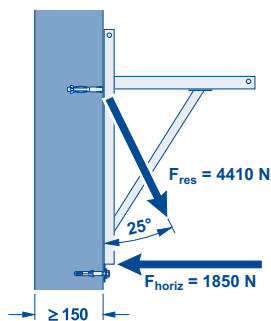
### Doors with direct drive operator

#### Load during operation

##### Support bracket N 450 K



##### Support bracket N 450



#### Minimum requirements for the building structure

##### Concrete

Strength class C 20 / 25  
 Thickness 140 mm  
 Standard EN 206-1

##### Steel

Strength class S235-JRG2  
 Thickness 5 mm  
 Standard EN 10027-1

##### Brickwork

Strength class 12 / mortar group II  
 Thickness 240 mm  
 Standard DIN 1053-1

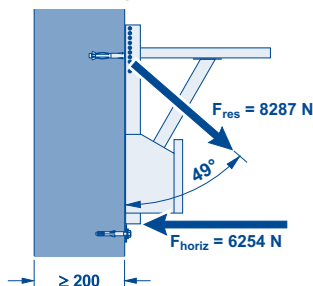
##### Timber

Coniferous wood: C24 / quality category II  
 Thickness  $120 \times 120 \text{ mm}$   
 Standard DIN 1052 (EC5)

$F_{res}$  = Resulting force at the fixing point  
 $F_{horiz}$  = Horizontal force at the fixing point

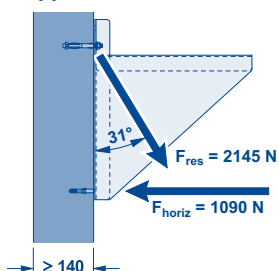
### Doors with chain drive operator

#### Load during operation

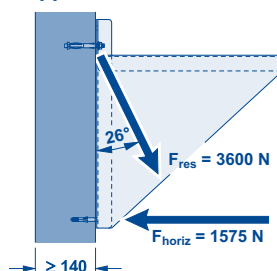


### Doors with tubular operator

#### Support bracket 400



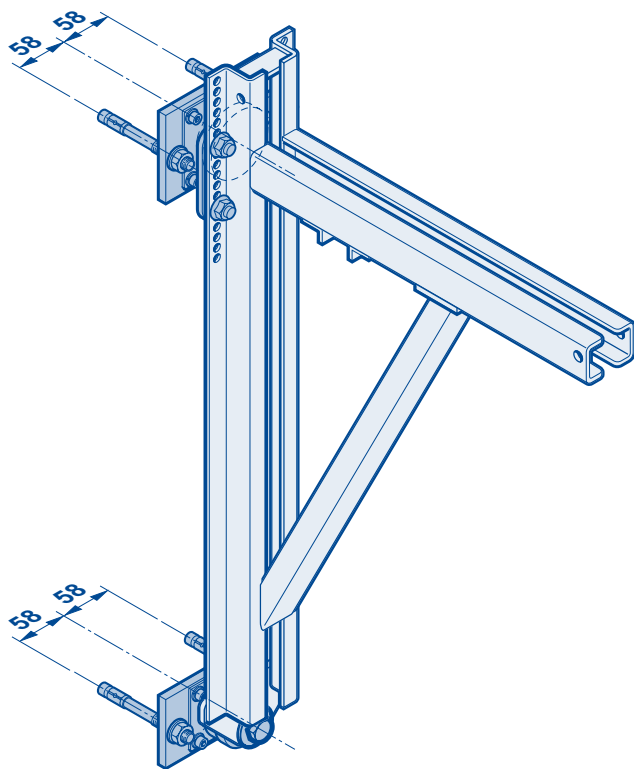
#### Support bracket 475



# Classic Rolling Shutters / Classic Rolling Grilles

## Acoustic-rated elements

### Acoustic-rated elements



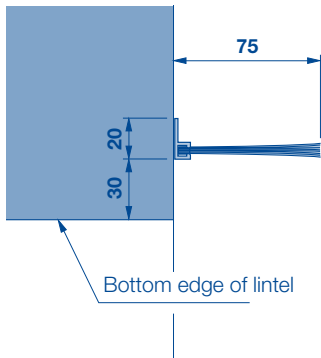
#### Note:

- Acoustic-rated elements can be used with:
  - Classic rolling grilles with direct drive operator
  - Classic rolling shutters with direct drive operator and ZAK system
- The acoustic-rated elements are fitted between the support bracket and building structure.
- The acoustic-rated elements reduce the transmission of the operator vibrations to the building structure.
- The acoustic-rated elements have no effect on:
  - Siderooms
  - Required headroom
  - ZAK adjustment dimensions
- The number of spacers increases to 2.
- The number of fixing points for the support brackets on the building structure doubles.
- The fitting depth (**ET**) increases by 50 mm.

# Classic Rolling Shutters

## Lintel seals

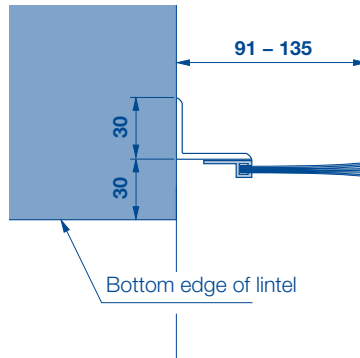
SD3



**Note:**

- Support height is 30 mm or one spacer

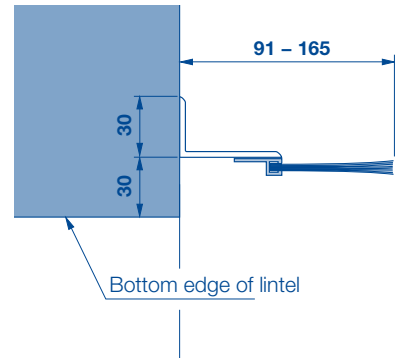
SD4



**Note:**

- Support height is 60 mm or two spacers
- Cover width adjustable

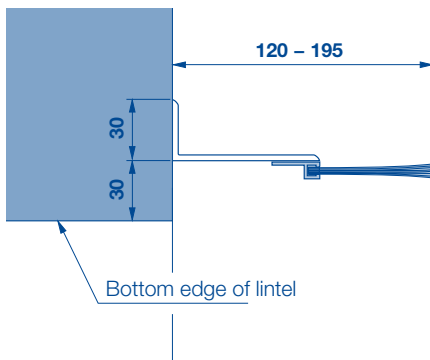
SD5



**Note:**

- Support height is 90 mm or three spacers
- Cover width adjustable

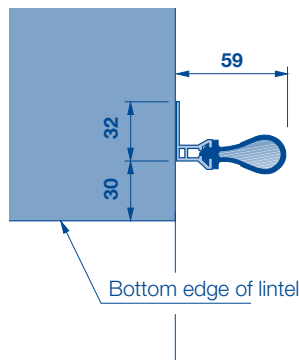
SD6



**Note:**

- Support height is 120 mm or four spacers
- Cover width adjustable

BF 50



**Note:**

- For classic rolling shutters with ZAK system and
  - Decotherm
- HR 116 Support height is 30 mm or one spacer



# Tables of Standard Values

## Classic Rolling Shutters with Direct Drive Operator

### HR 120 A

Door height	Door with wind locks as standard																			
8000	750	809	750	809	750	809	750	862	750	862	750	862	750	862	750	862	846	855	846	855
7750	750	797	750	809	750	809	750	862	750	862	750	862	750	862	846	855	846	855	846	855
7500	710	777	710	789	710	789	710	842	710	842	710	842	710	842	806	855	806	835	806	835
7250	710	777	710	777	710	789	710	789	710	789	710	842	710	842	806	855	806	835	806	835
7000	710	777	710	777	710	789	710	789	710	789	710	842	710	842	806	855	806	835	806	835
6750	710	777	710	777	710	777	710	789	710	789	710	789	710	842	806	855	806	835	806	835
6500	710	777	710	777	710	777	710	789	710	789	710	789	710	842	806	855	806	835	806	835
6250	710	777	710	777	710	777	710	789	710	789	710	789	710	842	806	855	806	835	806	835
6000	680	762	680	762	680	762	680	762	680	774	680	774	680	774	776	840	776	840	776	840
5750	680	762	680	762	680	762	680	762	680	762	680	774	680	774	776	840	776	840	776	840
5500	680	762	680	762	680	762	680	762	680	762	680	762	680	774	776	787	776	840	776	840
5250	680	762	680	762	680	762	680	762	680	762	680	762	680	774	776	787	776	840	776	840
5000	680	762	680	762	680	762	680	762	680	762	680	762	680	774	776	787	776	840	776	840
4750	634	739	634	739	634	739	634	739	634	739	634	739	634	739	730	764	730	764	730	764
4500	634	739	634	739	634	739	634	739	634	739	634	739	634	739	730	764	730	764	730	764
4250	634	739	634	739	634	739	634	739	634	739	634	739	634	739	730	752	730	752	730	764
4000	634	739	634	739	634	739	634	739	634	739	634	739	634	739	730	752	730	752	730	764
3750	600	722	600	722	600	722	600	722	600	722	600	722	600	722	696	735	696	735	696	735
3500	600	722	600	722	600	722	600	722	600	722	600	722	600	722	696	735	696	735	696	735
3250	600	722	600	722	600	722	600	722	600	722	600	722	600	722	696	735	696	735	696	735
3000	600	722	600	722	600	722	600	722	600	722	600	722	600	722	696	735	696	735	696	735
2750	554	699	554	699	554	699	554	699	554	699	554	699	554	699	650	712	650	712	650	712
2500	554	699	554	699	554	699	554	699	554	699	554	699	554	699	650	712	650	712	650	712
2250	554	699	554	699	554	699	554	699	554	699	554	699	554	699	650	712	650	712	650	712
	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000	6250	6500	6750	7000

#### Operator

S55
S42
S35
S25
S18
S14

123 = S (required headroom)

123 = ET (minimum fitting depth)

#### Note:

All standard values only apply to standard version doors **without** ZAK system.

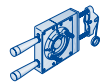






**Use the advantages of the ZAK system**

- 80 mm less required headroom ( $S_{ZAK} = S - 80 \text{ mm}$ )
- Much less wear on the door curtain
- Improved seal at the lintel
- Quiet door travel
- Only 1 spacer support at the side guides



Opening time [s]

Spacers

																		3	32
																		3	31
																		3	31
																		3	30
																		3	29
																		3	28
																		3	27
																		3	26
																		2	27
																		2	26
																		2	25
																		2	24
																		2	23
																		2	23
																		2	21
																		2	20
																		2	19
																		1	19
																		1	18
																		1	17
																		1	16
																		1	15
																		1	14
																		1	12
7250																			
7500																			
7750																			
8000																			
8250																			
8500																			
8750																			
9000																			
9250																			
9500																			
9750																			
10000																			
10250																			
10500																			
10750																			
11000																			
11250																			
11500																			
11750																			







# Tables of Standard Values

## Classic Rolling Shutter with Direct Drive Operator

### Decotherm S

#### Door height

	→ Door with wind locks as standard																					
9000	721	828	721	828	721	828	721	893	721	893	721	893	721	913	721	913	721	913	721	913		
8750	719	827	719	827	719	827	719	827	719	892	719	892	719	912	719	912	719	912	719	912	719	912
8500	719	827	719	827	719	827	719	827	719	892	719	892	719	912	719	912	719	912	719	912	719	912
8250	719	847	719	827	719	827	719	827	719	827	719	827	719	892	719	892	719	912	719	912	719	912
8000	719	847	719	827	719	827	719	827	719	827	719	827	719	892	719	892	719	912	719	912	719	912
7750	713	844	713	844	713	824	713	824	713	824	713	824	713	889	713	889	713	889	713	909	713	909
7500	681	828	681	828	681	808	681	808	681	808	681	808	681	808	681	873	681	873	681	873	681	893
7250	679	827	679	827	679	827	679	807	679	807	679	807	679	807	679	872	679	872	679	872	679	892
7000	679	827	679	827	679	827	679	807	679	807	679	807	679	807	679	872	679	872	679	872	679	892
6750	679	827	679	827	679	827	679	807	679	807	679	807	679	807	679	872	679	872	679	872	679	892
6500	679	774	679	827	679	827	679	827	679	807	679	807	679	807	679	807	679	872	679	872	679	892
6250	659	764	659	817	659	817	659	817	659	817	659	797	659	797	659	797	659	862	659	862	659	885
6000	637	753	637	806	637	806	637	806	637	806	637	806	637	786	637	786	637	786	637	786	637	864
5750	637	753	637	753	637	806	637	806	637	806	637	806	637	786	637	786	637	786	637	786	637	864
5500	637	753	637	753	637	806	637	806	637	806	637	806	637	786	637	786	637	786	637	786	637	864
5250	637	741	637	753	637	806	637	806	637	806	637	806	637	786	637	786	637	786	637	786	637	864
5000	605	725	605	737	605	737	605	790	605	790	605	790	605	790	605	770	605	770	605	770	605	885
4750	593	719	593	719	593	731	593	731	593	731	593	784	593	784	593	784	593	784	593	784	593	888
4500	593	719	593	719	593	731	593	731	593	731	593	784	593	784	593	784	593	784	593	784	593	888
4250	593	719	593	719	593	719	593	731	593	731	593	731	593	784	593	784	593	784	593	784	593	888
4000	593	719	593	719	593	719	593	731	593	731	593	731	593	784	593	784	593	784	593	784	593	888
3750	557	701	557	701	557	701	557	713	557	713	557	713	557	713	557	713	557	713	557	713	557	855
3500	557	701	557	701	557	701	557	701	557	701	557	701	557	713	557	713	557	713	557	713	557	855
3250	557	701	557	701	557	701	557	701	557	701	557	701	557	713	557	713	557	713	557	713	557	855
3000	557	701	557	701	557	701	557	701	557	701	557	701	557	713	557	713	557	713	557	713	557	855
2750	517	682	517	682	517	682	517	682	517	682	517	682	517	682	517	682	517	682	517	682	517	815
2500	517	681	517	681	517	681	517	681	517	681	517	681	517	681	517	681	517	681	517	681	517	815
2250	517	681	517	681	517	681	517	681	517	681	517	681	517	681	517	681	517	681	517	681	517	815
	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000	6250	6500	6750	7000		

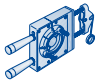
#### Door width

Operator	
S55	123 = S (required headroom) 123 = ET (minimum fitting depth)
S42	
S35	
S25	
S18	
S14	

**Note:**  
All standard values only apply to standard version doors without ZAK system.

**Use the advantages of the ZAK system**

- 80 mm less required headroom ( $S_{ZAK} = S - 80 \text{ mm}$ )
- Much less wear on the door curtain
- Improved seal at the lintel
- Quiet door travel
- Only 1 spacer support at the side guides



												Opening time [s]											
												Spacers											
												3	32										
												3	31										
												3	30										
												3	30										
												3	32										
												3	31										
												3	30										
												3	30										
												3	29										
												3	28										
												3	27										
												3	27										
												2	26										
												2	25										
												2	24										
753	894											2	23										
753	894	753	894	753	894							2	23										
753	894	753	894	753	894	753	894					2	23										
741	888	741	888	741	888	741	888	741	888			2	22										
715	875	715	875	715	875	715	875	715	875	715	875	2	21										
715	875	715	875	715	875	715	875	715	875	715	875	2	20										
715	855	715	855	715	875	715	875	715	875	715	875	2	19										
715	855	715	855	715	855	715	855	715	875	715	875	1	19										
701	848	701	848	701	848	701	848	701	868	701	868	1	18										
673	769	673	769	673	769	673	834	673	834	673	834	1	17										
673	769	673	769	673	769	673	769	673	834	673	834	673	834	1	16								
673	769	673	769	673	769	673	769	673	769	673	834	673	834	673	834	1	15						
673	769	673	769	673	769	673	769	673	769	673	769	673	769	673	834	689	862	689	862	1	14		
613	706	635	750	635	750	635	750	635	750	635	750	635	750	635	750	635	750	635	750	681	858	1	13
7250	7500	7750	8000	8250	8500	8750	9000	9250	9500	9750	10000												



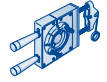
# Tables of Standard Values

## Classic Rolling Shutter with Direct Drive Operator

### Decotherm A

#### Use the advantages of the ZAK system

- 80 mm less required headroom ( $S_{ZAK} = S - 80$  mm)
- Much less wear on the door curtain
- Quiet door travel
- Only 1 spacer support at the side guides



Door height	Opening time [s]											
	Spacers											
4000	583	714	583	714	583	714	583	714	583	714	1	19
3750	549	697	549	697	549	697	549	697	549	697	1	19
3500	543	694	543	694	543	694	543	694	543	694	1	18
3250	543	694	543	694	543	694	543	694	543	694	1	16
3000	543	694	543	694	543	694	543	694	543	694	1	15
2750	513	679	513	679	513	679	513	679	513	679	1	15
2500	509	677	509	677	509	677	509	677	509	677	1	14
2250	509	677	509	677	509	677	509	677	509	677	1	13
	2250	2500	2750	3000	3250	3500	3750	4000				
	Door width											

#### Operator

S14

123 = S (required headroom)

123 = ET (minimum fitting depth)

#### Note:

All standard values only apply to standard version doors without ZAK system.



# Notes

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# Tables of Standard Values

## Classic Rolling Shutters with Chain Drive Operator

### HR 120 A

Door height	Door with wind locks as standard																				
	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000	6250	6500	6750	7000	
8000	750	605	750	605	750	605	750	605	750	605	750	605	750	605	750	605	750	605	750	605	750
7750	750	605	750	605	750	605	750	605	750	605	750	605	750	605	750	605	750	605	750	605	750
7500	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710
7250	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710
7000	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710
6750	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710
6500	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710
6250	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710	595	710
6000	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680
5750	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680
5500	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680
5250	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680
5000	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680	595	680
4750	634	595	634	595	634	595	634	595	634	595	634	595	634	595	634	595	634	595	634	595	634
4500	634	595	634	595	634	595	634	595	634	595	634	595	634	595	634	595	634	595	634	595	634
4250	634	595	634	595	634	595	634	595	634	595	634	595	634	595	634	595	634	595	634	595	634
4000	634	595	634	595	634	595	634	595	634	595	634	595	634	595	634	595	634	595	634	595	634
3750	600	595	600	595	600	595	600	595	600	595	600	595	600	595	600	595	600	595	600	595	600
3500	600	595	600	595	600	595	600	595	600	595	600	595	600	595	600	595	600	595	600	595	600
3250	600	595	600	595	600	595	600	595	600	595	600	595	600	595	600	595	600	595	600	595	600
3000	600	595	600	595	600	595	600	595	600	595	600	595	600	595	600	595	600	595	600	595	600
2750	554	595	554	595	554	595	554	595	554	595	554	595	554	595	554	595	554	595	554	595	554
2500	554	595	554	595	554	595	554	595	554	595	554	595	554	595	554	595	554	595	554	595	554
2250	554	595	554	595	554	595	554	595	554	595	554	595	554	595	554	595	554	595	554	595	554

Door width

<b>Operator</b>
K40
K30
K20

123 = S (required headroom)

123 = ET (minimum fitting depth)

**Note:**  
All standard values only apply to standard version doors **without** the ZAK-XL system.









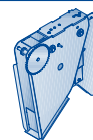






**Use the advantages of the ZAK-XL system**

- 80 mm less required headroom ( $S_{ZAK-XL} = S - 80 \text{ mm}$ )
- Much less wear on the door curtain
- Improved seal at the lintel
- Quiet door travel
- Only 1 spacer support at the side guides
- For details, see page 22



**Opening time [s]**

**Spacers**

849	634	889	674	889	674	889	674	889	674	889	674	889	674	889	674	889	674	3	32
837	622	837	622	889	674	889	674	889	674	889	674	889	674	889	674	889	674	3	31
837	622	837	622	863	670	863	670	863	670	863	670	863	670	863	670	863	670	3	30
837	622	837	622	853	670	853	670	853	670	853	670	853	670	853	670	853	670	3	30
833	618	833	618	853	670	853	670	853	670	853	670	853	670	853	670	853	670	3	32
833	618	833	618	853	670	853	670	853	670	853	670	853	670	853	670	853	670	3	31
807	595	807	595	807	595	853	638	853	670	853	670	853	670	853	670	853	670	3	30
795	595	847	632	847	632	847	632	847	632	847	632	847	632	847	632	847	632	3	30
795	595	839	624	839	624	839	624	839	624	839	624	839	624	839	624	839	624	3	29
795	595	809	595	809	595	809	595	809	595	809	595	809	595	809	595	809	595	3	28
795	595	809	595	809	595	809	595	809	595	809	595	809	595	809	595	809	595	3	27
795	595	809	595	809	595	809	595	809	595	809	595	809	595	809	595	809	595	3	27
769	595	769	595	809	595	809	595	809	595	809	595	809	595	809	595	809	595	2	26
753	595	753	595	753	595	807	595	807	595	807	595	807	595	807	595	807	595	2	25
753	595	753	595	753	595	753	595	753	595	753	595	753	595	753	595	753	595	2	24
753	595	753	595	753	595	753	595	753	595	753	595	753	595	753	595	753	595	2	23
753	595	753	595	753	595	753	595	753	595	753	595	753	595	753	595	753	595	2	23
741	595	741	595	741	595	741	595	741	595	741	595	741	595	741	595	741	595	2	22
741	595	741	595	741	595	741	595	741	595	741	595	741	595	741	595	741	595	2	22
715	595	715	595	715	595	715	595	715	595	715	595	715	595	715	595	715	595	2	21
715	595	715	595	715	595	715	595	715	595	715	595	715	595	715	595	715	595	2	20
715	595	715	595	715	595	715	595	715	595	715	595	715	595	715	595	715	595	2	19
715	595	715	595	715	595	715	595	715	595	715	595	715	595	715	595	715	595	1	19
701	595	701	595	701	595	701	595	701	595	701	595	701	595	701	595	701	595	1	18
701	595	701	595	701	595	701	595	701	595	701	595	701	595	701	595	701	595	1	18
673	595	673	595	673	595	673	595	673	595	673	595	673	595	673	595	673	595	1	17
673	595	673	595	673	595	673	595	673	595	673	595	673	595	673	595	673	595	1	17
673	595	673	595	673	595	673	595	673	595	673	595	673	595	673	595	673	595	1	16
673	595	673	595	673	595	673	595	673	595	673	595	673	595	673	595	673	595	1	16
673	595	673	595	673	595	673	595	673	595	673	595	673	595	673	595	673	595	1	15
673	595	673	595	673	595	673	595	673	595	673	595	673	595	673	595	673	595	1	15
673	595	673	595	673	595	673	595	673	595	673	595	673	595	673	595	673	595	1	14
673	595	673	595	673	595	673	595	673	595	673	595	673	595	673	595	673	595	1	14
613	595	635	595	635	595	635	595	635	595	635	595	635	595	635	595	635	595	1	13
635	595	635	595	635	595	635	595	635	595	635	595	635	595	635	595	635	595	1	13
7250																			
7500																			
7750																			
8000																			
8250																			
8500																			
8750																			
9000																			
9250																			
9500																			
9750																			
10000																			











# Tables of Standard Values

## Classic Rolling Shutters with Tubular Operator

### HR 120 S

#### Door height

8000																					
7750																					
7500																					
7250																					
7000																					
6750																					
6500	696	536																			
6250	684	524																			
6000	654	500	654	500																	
5750	654	500	654	500																	
5500	654	500	654	500	654	500															
5250	654	500	654	500	654	500	654	500													
5000	654	500	654	500	654	500	654	500													
4750	626	500	626	500	626	500	626	500	626	500											
4500	626	500	626	500	626	500	626	500	626	500	626	500									
4250	626	500	626	500	626	500	626	500	626	500	626	500	626	500							
4000	626	500	626	500	626	500	626	500	626	500	626	500	626	500	626	500					
3750	588	428	588	428	588	428	588	428	588	428	588	428	588	428	588	428	588	428			
3500	588	428	588	428	588	428	588	428	588	428	588	428	588	428	588	428	588	428			
3250	588	428	588	428	588	428	588	428	588	428	588	428	588	428	588	428	588	428	588	428	
3000	588	428	588	428	588	428	588	428	588	428	588	428	588	428	588	428	588	428	588	428	588
2750	550	425	550	425	550	425	550	425	550	425	550	425	550	425	550	425	550	425	550	425	646
2500	550	425	550	425	550	425	550	425	550	425	550	425	550	425	550	425	550	425	550	425	646
2250	550	425	550	425	550	425	550	425	550	425	550	425	550	425	550	425	550	425	550	425	646
	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000	6250	6500	6750	7000	

#### Door width

Operator
R30
R23
R18
R12

123 = S (required headroom)

123 = ET (minimum fitting depth)

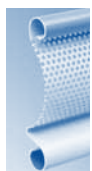
**Note:**  
All standard values only apply to standard version doors.



Opening time [s]

Spacers

																					-	-	
																						-	-
																						-	-
																						-	-
																						-	-
																						-	-
																						-	-
																						3	32
																						3	32
																						3	32
																						3	30
																						3	29
																						3	29
																						2	28
																						2	28
																						2	27
																						2	25
																						2	24
																						1	24
																						1	22
																						1	21
																						1	20
																						1	19
																						1	17
																						1	15
7250	7500	7750	8000	8250	8500	8750	9000	9250	9500	9750	10000	10250	10500	10750	11000	11250	11500	11750					



# Tables of Standard Values

## Classic Rolling Shutters with Tubular Operator

HR 120 aero

Door height

8000	732	572	732	572	732	572	732	572	732	572	732	572	732	572																						
7750	732	572	732	572	732	572	732	572	732	572	732	572	732	572																						
7500	696	536	696	536	696	536	696	536	696	536	696	536	696	536																						
7250	696	536	696	536	696	536	696	536	696	536	696	536	696	536																						
7000	696	536	696	536	696	536	696	536	696	536	696	536	696	536																						
6750	696	536	696	536	696	536	696	536	696	536	696	536	696	536																						
6500	696	536	696	536	696	536	696	536	696	536	696	536	696	536																						
6250	684	524	684	524	684	524	684	524	684	524	684	524	684	524																						
6000	654	500	654	500	654	500	654	500	654	500	654	500	654	500																						
5750	654	500	654	500	654	500	654	500	654	500	654	500	654	500																						654
5500	654	500	654	500	654	500	654	500	654	500	654	500	654	500																						654
5250	654	500	654	500	654	500	654	500	654	500	654	500	654	500																						654
5000	654	500	654	500	654	500	654	500	654	500	654	500	654	500																						654
4750	626	500	626	500	626	500	626	500	626	500	626	500	626	500																						626
4500	626	500	626	500	626	500	626	500	626	500	626	500	626	500																						626
4250	626	500	626	500	626	500	626	500	626	500	626	500	626	500																						626
4000	626	500	626	500	626	500	626	500	626	500	626	500	626	500																						626
3750	588	428	588	428	588	428	588	428	588	428	588	428	588	428																						588
3500	588	428	588	428	588	428	588	428	588	428	588	428	588	428																						588
3250	588	428	588	428	588	428	588	428	588	428	588	428	588	428																						588
3000	588	428	588	428	588	428	588	428	588	428	588	428	588	428																						588
2750	550	425	550	425	550	425	550	425	550	425	550	425	550	425																						550
2500	550	425	550	425	550	425	550	425	550	425	550	425	550	425																						550
2250	550	425	550	425	550	425	550	425	550	425	550	425	550	425																						550
	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000	6250	6500	6750	7000																

Door width

Operator

R30
R23
R18
R12

123 = S (required headroom)

123 = ET (minimum fitting depth)

Note:

All standard values only apply to standard version doors.





**Opening time [s]**

**Spacers**

										3	32
										3	31
										3	30
										3	30
										3	32
										3	31
										3	30
										3	30
										3	29
										3	28
										3	27
										3	27
										2	26
										2	25
										2	24
										2	23
										2	23
										2	22
										2	21
										2	20
										2	19
										1	19
										1	18
										1	17
										1	16
										1	15
		613	673	500	673	500					
		673	500	673	500	673	500				
		613	425	635	500	635	500	635	500	635	500
	7250										
	7500										
	7750										
	8000										
	8250										
	8500										
	8750										



# Tables of Standard Values

## Classic Rolling Shutters with Tubular Operator

### Decotherm A

Door height

Opening time [s]

4000	583	425	583	425	583	425	583	425	583	425	583	425			
3750	549	425	549	425	549	425	549	425	549	425	549	425			
3500	543	425	543	425	543	425	543	425	543	425	543	425			
3250	543	425	543	425	543	425	543	425	543	425	543	425			
3000	543	425	543	425	543	425	543	425	543	425	543	425			
2750	513	425	513	425	513	425	513	425	513	425	513	425			
2500	509	425	509	425	509	425	509	425	509	425	509	425			
2250	509	425	509	425	509	425	509	425	509	425	509	425			
	2250		2500		2750		3000		3250		3500		3750		4000

24
23
22
20
19
19
17
16

Door width

Operator

R30
R23
R18
R12

123 = S (required headroom)

123 = ET (minimum fitting depth)

**Note:**

All standard values only apply to standard version doors.



# Tables of Standard Values

## Classic Rolling Shutters with Tubular Operator

### HR 116 A

Door height		Opening times [s]																						Spacers				
Door with wind locks as standard																												
9000																										-	-	
8750																											-	-
8500																											-	-
8250																											-	-
8000	784	624																									4	35
7750	762	602																									4	35
7500	762	602	762	602																							4	34
7250	762	602	762	602																							4	33
7000	762	602	762	602	762	602																					4	32
6750	762	602	762	602	762	602																					4	32
6500	758	598	758	598	758	598																					4	31
6250	710	550	710	550	710	550	710	550																			3	31
6000	710	550	710	550	710	550	710	550	710																		3	29
5750	710	550	710	550	710	550	710	550	710	550																	3	28
5500	710	550	710	550	710	550	710	550	710	550																	3	27
5250	710	550	710	550	710	550	710	550	710	550																	3	26
5000	710	550	710	550	710	550	710	550	710	550	710																3	25
4750	660	500	660	500	660	500	660	500	660	500	660	500															3	25
4500	660	500	660	500	660	500	660	500	660	500	660	500	660														3	24
4250	660	500	660	500	660	500	660	500	660	500	660	500	660	500													3	23
4000	660	500	660	500	660	500	660	500	660	500	660	500	660	500	660												3	21
3750	660	500	660	500	660	500	660	500	660	500	660	500	660	500	660	500											3	20
3500	610	500	610	500	610	500	610	500	610	500	610	500	610	500	610	500	610	500									2	20
3250	610	500	610	500	610	500	610	500	610	500	610	500	610	500	610	500	610	500	610	500							2	19
3000	610	500	610	500	610	500	610	500	610	500	610	500	610	500	610	500	610	500	610	500	610	500					2	18
2750	610	500	610	500	610	500	610	500	610	500	610	500	610	500	610	500	610	500	610	500	610	500	610	500			2	16
2500	596	436	596	436	596	436	596	436	596	436	596	436	596	436	596	436	596	436	596	436	596	436	596	436	596	436	2	15
2250	550	425	550	425	550	425	550	425	550	425	550	425	550	425	550	425	550	425	550	425	550	425	550	425	550	425	1	14
	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000	6250	6500	6750	7000								

**Operator**

R30
R23
R18
R12

123 = S (required headroom)      123 = ET (minimum fitting depth)

**Note:**  
All standard values only apply to standard version doors.



# Tables of Standard Values

## Classic Rolling Grilles with Direct Drive Operator

### HG-V

#### Door height

8000	622 808	622 861	622 861	622 861	622 861	622 861	622 841	622 841	622 841	622 906	622 906	622 906	622 906	622 926	622 926	641 936						
7750	622 808	622 808	622 861	622 861	622 861	622 861	622 861	622 841	622 841	622 841	622 906	622 906	622 906	622 906	622 926	622 926	641 936					
7500	622 808	622 808	622 861	622 861	622 861	622 861	622 861	622 841	622 841	622 841	622 906	622 906	622 906	622 906	622 926	622 926	641 936					
7250	622 808	622 808	622 808	622 861	622 861	622 861	622 861	622 841	622 841	622 841	622 906	622 906	622 906	622 906	622 906	622 906	599 915	599 915				
7000	622 796	622 808	622 808	622 861	622 861	622 861	622 861	622 841	622 841	622 841	622 906	622 906	622 906	622 906	622 906	622 906	599 915	599 915	599 915			
6750	580 775	580 787	580 787	580 787	580 840	580 840	580 840	580 820	580 820	580 820	580 820	580 820	580 820	580 885	580 885	580 885	599 915	599 915	599 915	599 915		
6500	580 775	580 787	580 787	580 787	580 840	580 840	580 840	580 820	580 820	580 820	580 820	580 820	580 820	580 885	580 885	580 885	599 915	599 915	599 915	599 915	599 915	
6250	580 775	580 775	580 787	580 787	580 787	580 840	580 840	580 840	580 840	580 820	580 820	580 820	580 820	580 820	580 885	580 885	580 885	599 915	599 915	599 915	599 915	
6000	580 775	580 775	580 787	580 787	580 787	580 787	580 840	580 840	580 840	580 820	580 820	580 820	580 820	580 820	580 820	580 820	580 820	599 915	599 915	599 915	599 915	
5750	580 775	580 775	580 775	580 787	580 787	580 787	580 840	580 840	580 840	580 820	580 820	580 820	580 820	580 820	580 820	580 820	580 820	599 915	599 915	599 915	599 915	
5500	538 754	538 754	538 754	538 754	538 766	538 766	538 819	538 819	538 819	538 819	538 819	538 819	538 799	538 799	538 799	538 799	538 799	557 874	557 874	557 894	557 894	
5250	538 754	538 754	538 754	538 754	538 766	538 766	538 819	538 819	538 819	538 819	538 819	538 819	538 799	538 799	538 799	538 799	538 799	538 799	557 874	557 874	557 894	557 894
5000	538 754	538 754	538 754	538 754	538 754	538 766	538 766	538 819	538 819	538 819	538 819	538 819	538 819	538 819	538 799	538 799	538 799	538 799	557 874	557 874	557 874	557 874
4750	538 754	538 754	538 754	538 754	538 754	538 754	538 766	538 766	538 819	538 819	538 819	538 819	538 819	538 819	538 819	538 819	538 799	538 799	557 874	557 874	557 874	557 874
4500	538 754	538 754	538 754	538 754	538 754	538 754	538 766	538 766	538 819	538 819	538 819	538 819	538 819	538 819	538 819	538 819	538 799	538 799	557 874	557 874	557 874	557 874
4250	496 733	496 733	496 733	496 733	496 733	496 733	496 745	496 745	496 745	496 745	496 798	496 798	496 798	496 798	496 798	496 798	496 798	496 798	515 809	557 874	557 874	557 874
4000	496 733	496 733	496 733	496 733	496 733	496 733	496 733	496 745	496 745	496 745	496 745	496 745	496 798	496 798	496 798	496 798	496 798	496 798	515 788	557 874	557 874	557 874
3750	496 733	496 733	496 733	496 733	496 733	496 733	496 733	496 745	496 745	496 745	496 745	496 745	496 798	496 798	496 798	496 798	496 798	496 798	515 788	557 874	557 874	557 874
3500	496 733	496 733	496 733	496 733	496 733	496 733	496 733	496 733	496 733	496 733	496 733	496 733	496 745	496 745	496 745	496 745	496 798	496 798	515 788	557 874	557 874	557 874
3250	496 733	496 733	496 733	496 733	496 733	496 733	496 733	496 733	496 733	496 733	496 733	496 733	496 745	496 745	496 745	496 745	496 798	496 798	515 788	557 874	557 874	557 874
3000	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 724	454 724	454 724	454 724	454 724	454 724	454 777	454 777	454 777	454 777
2750	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 724	454 724	454 724	454 724	454 724	454 724
2500	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 712	454 724	454 724	454 724	454 724	454 724
2250	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 703
	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000	6250	6500	6750	7000		

#### Door width

#### Operator

S55
S42
S35
S25
S18
S14

123 = S (required headroom)

123 = ET (minimum fitting depth)

#### Note:

- All standard values only apply to standard version doors.
- For doors **without** ZAK system, the required headroom is increased: S = S + 255 mm.







# Tables of Standard Values

## Classic Rolling Grilles with Direct Drive Operator

### HG-S

#### Door height

8000	622 841	622 906	622 906	622 906	622 926	622 926	622 926														
7750	622 841	622 841	622 906	622 906	622 926	622 926	622 926	622 926													
7500	622 841	622 841	622 906	622 906	622 906	622 926	622 926	622 926													
7250	622 841	622 841	622 841	622 906	622 906	622 926	622 926	622 926	622 926												
7000	622 841	622 841	622 841	622 906	622 906	622 906	622 926	622 926	622 926												
6750	580 820	580 820	580 820	580 820	580 820	580 885	580 885	580 885	580 905	580 905	580 905										
6500	580 840	580 820	580 820	580 820	580 820	580 820	580 885	580 885	580 905	580 905	580 905	580 905									
6250	580 840	580 820	580 820	580 820	580 820	580 820	580 885	580 885	580 885	580 905	580 905	580 905	580 905								
6000	580 840	580 840	580 820	580 820	580 820	580 820	580 820	580 885	580 885	580 905	580 905	580 905	580 905								
5750	580 840	580 840	580 820	580 820	580 820	580 820	580 820	580 820	580 885	580 885	580 905	580 905	580 905	580 905							
5500	538 819	538 819	538 819	538 799	538 799	538 799	538 799	538 799	538 864	538 864	538 884	538 884	538 884	538 884							
5250	538 819	538 819	538 819	538 799	538 799	538 799	538 799	538 799	538 799	538 864	538 864	538 884	538 884	538 884	538 884						
5000	538 819	538 819	538 819	538 819	538 799	538 799	538 799	538 799	538 799	538 864	538 864	538 864	538 864	538 864	538 884						
4750	538 766	538 819	538 819	538 819	538 819	538 799	538 799	538 799	538 799	538 799	538 864	538 864	538 864	538 864	538 884						
4500	538 766	538 766	538 819	538 819	538 819	538 819	538 799	538 799	538 799	538 799	538 864	538 864	538 864	538 864	538 864	538 864	557 894				
4250	496 745	496 745	496 798	496 798	496 798	496 798	496 798	496 798	496 778	496 778	496 778	496 778	496 778	496 843	496 843	496 843	557 894	557 894			
4000	496 745	496 745	496 745	496 798	496 798	496 798	496 798	496 798	496 798	496 798	496 778	496 778	496 778	496 778	496 778	496 843	496 843	496 843	515 873		
3750	496 733	496 745	496 745	496 745	496 798	496 798	496 798	496 798	496 798	496 798	496 778	496 778	496 778	496 778	496 778	496 843	496 843	496 843	515 873	515 873	
3500	496 733	496 733	496 745	496 745	496 745	496 798	496 798	496 798	496 798	496 798	496 798	496 778	496 778	496 778	496 778	496 778	496 778	496 778	515 873	515 873	515 873
3250	496 733	496 733	496 733	496 745	496 745	496 745	496 798	496 798	496 798	496 798	496 798	496 798	496 798	496 778	496 778	496 778	496 778	496 778	515 873	515 873	515 873
3000	454 712	454 712	454 712	454 712	454 724	454 724	454 724	454 724	454 777	454 777	454 777	454 777	454 777	454 757	454 757	454 757	454 757	454 757	515 873	515 873	515 873
2750	454 712	454 712	454 712	454 712	454 712	454 724	454 724	454 724	454 724	454 777	454 777	454 777	454 777	454 777	454 777	454 777	454 777	454 777	473 832	473 832	473 852
2500	454 712	454 712	454 712	454 712	454 712	454 724	454 724	454 724	454 724	454 777	454 777	454 777	454 777	454 777	454 777	454 777	454 777	454 777	473 832	473 832	473 852
2250	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 703	412 715	412 715	412 715	412 715	412 715	425 768	425 768	425 768	425 768	425 768	473 832	473 832	473 832
	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000	6250	6500	6750	7000	

#### Door width

#### Operator

S55
S42
S35
S25
S18
S14

123 = S (required headroom)

123 = ET (minimum fitting depth)

#### Note:

- All standard values only apply to standard version doors.
- For doors **without** ZAK system, the required headroom is increased: S = S + 255 mm.





# Tables of Standard Values

## Classic Rolling Grilles with Chain Drive Operator

### HG-V

#### Door height

8000	877	595	877	595	877	595	877	595	877	595	877	595	877	595	877	595	896	595	896	595	896	595	896	595	896	595	896	595	896	595	896	595								
7750	877	595	877	595	877	595	877	595	877	595	877	595	877	595	877	595	896	595	896	595	896	595	896	595	896	595	896	595	896	595	896	595								
7500	877	595	877	595	877	595	877	595	877	595	877	595	877	595	877	595	896	595	896	595	896	595	896	595	896	595	896	595	896	595	896	595								
7250	877	595	877	595	877	595	877	595	877	595	877	595	877	595	877	595	896	595	896	595	896	595	896	595	896	595	896	595	896	595	896	595								
7000	877	595	877	595	877	595	877	595	877	595	877	595	877	595	877	595	896	595	896	595	896	595	896	595	896	595	896	595	896	595	896	595								
6750	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595								
6500	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595								
6250	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595								
6000	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595								
5750	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595								
5500	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595								
5250	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595								
5000	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595								
4750	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595								
4500	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595								
4250	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595								
4000	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595								
3750	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595								
3500	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595								
3250	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595								
3000	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595								
2750	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595								
2500	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595								
2250	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595								
	2250		2500		2750		3000		3250		3500		3750		4000		4250		4500		4750		5000		5250		5500		5750		6000		6250		6500		6750		7000	

#### Door width

Operator	
K40-4	123
K40	123
K30	123
K20	123

123 = S (required headroom)

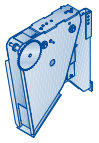
123 = ET (minimum fitting depth)

#### Note:

- All standard values only apply to standard version doors without the ZAK-XL system.

### Use the advantages of the ZAK-XL system

- Up to **255 mm** less required headroom ( $S_{ZAK-XL} = S - 255\text{ mm}$ )
- Much less wear on the door curtain
- Quiet door travel
- Only 1 spacer support at the side guides
- For details, see page 22



#### Opening time\* [s]

#### Spacers

896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	3	60
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	3	58
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	3	57
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	3	56
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	3	54
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	2	53
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	2	51
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	2	51
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	2	50
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	2	48
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	2	46
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	2	44
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	2	43
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	2	42
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	2	40
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	2	38
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	1	37
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	1	36
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	1	33
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	1	31
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	1	29
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	1	28
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	1	25
896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	896	1	23
7250																						
7500																						
7750																						
8000																						
8250																						
8500																						
8750																						
9000																						
9250																						
9500																						
9750																						
10000																						
10250																						
10500																						
10750																						
11000																						
11250																						
11500																						
11750																						

\* For doors fitted with the chain drive operator K40-4, the door opening time increases by 33 %



# Tables of Standard Values

## Classic Rolling Grilles with Chain Drive Operator

### HG-S

#### Door height

8000	877	595	877	595	877	595	877	595	877	595	877	595	877	595	896	595	896	595	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	951	670						
7750	877	595	877	595	877	595	877	595	877	595	877	595	877	595	877	595	896	595	896	595	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	945	670	945	670		
7500	877	595	877	595	877	595	877	595	877	595	877	595	877	595	877	595	896	595	896	595	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	940	670	940	670		
7250	877	595	877	595	877	595	877	595	877	595	877	595	877	595	877	595	896	595	896	595	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	934	670	934	670
7000	877	595	877	595	877	595	877	595	877	595	877	595	877	595	877	595	896	595	896	595	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	896	670	927	670	927	670
6750	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	854	595	854	595	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	922	670	922	670
6500	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	854	595	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	916	670	916	670
6250	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	854	595	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670
6000	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	854	595	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670
5750	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	854	595	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670
5500	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	835	595	854	595	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670	854	670
5250	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595
5000	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595
4750	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595
4500	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595
4250	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595	793	595
4000	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595
3750	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595
3500	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595
3250	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595	751	595
3000	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595
2750	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595
2500	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595
2250	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595	709	595
	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000	6250	6500	6750	7000																										

#### Door width

#### Operator

K40-4
K40
K30
K20

123 = S (required headroom)

123 = ET (minimum fitting depth)

#### Note:

- All standard values only apply to standard version doors without the ZAK-XL system.





# Tables of Standard Values

## Classic Rolling Grilles with Tubular Operator

### HG-V

#### Door height

8000	877	522	877	522	877	522	877	522	877	522												
7750	877	522	877	522	877	522	877	522	877	522												
7500	877	522	877	522	877	522	877	522	877	522												
7250	877	522	877	522	877	522	877	522	877	522	877	522										
7000	877	522	877	522	877	522	877	522	877	522	877	522										
6750	835	500	835	500	835	500	835	500	835	500	835	500	835	500								
6500	835	500	835	500	835	500	835	500	835	500	835	500	835	500	835	500						
6250	835	500	835	500	835	500	835	500	835	500	835	500	835	500	835	500	835	500				
6000	835	500	835	500	835	500	835	500	835	500	835	500	835	500	835	500	835	500				
5750	835	500	835	500	835	500	835	500	835	500	835	500	835	500	835	500	835	500	835	500		
5500	835	500	835	500	835	500	835	500	835	500	835	500	835	500	835	500	835	500	835	500		
5250	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500		
5000	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500
4750	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500
4500	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500
4250	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500	793	500
4000	751	425	751	425	751	425	751	425	751	425	751	425	751	425	751	425	751	425	751	425	751	425
3750	751	425	751	425	751	425	751	425	751	425	751	425	751	425	751	425	751	425	751	425	751	425
3500	751	425	751	425	751	425	751	425	751	425	751	425	751	425	751	425	751	425	751	425	751	425
3250	751	425	751	425	751	425	751	425	751	425	751	425	751	425	751	425	751	425	751	425	751	425
3000	709	425	709	425	709	425	709	425	709	425	709	425	709	425	709	425	709	425	709	425	709	425
2750	709	425	709	425	709	425	709	425	709	425	709	425	709	425	709	425	709	425	709	425	709	425
2500	709	425	709	425	709	425	709	425	709	425	709	425	709	425	709	425	709	425	709	425	709	425
2250	709	425	709	425	709	425	709	425	709	425	709	425	709	425	709	425	709	425	709	425	709	425
	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000	6250	6500	6750	7000		

#### Door width

#### Operator

R30
R23
R18
R12

123 = S (required headroom)

123 = ET (minimum fitting depth)

**Note:** All standard values only apply to standard version doors.



Opening time [s]										
Spacers										
				3	40					
				3	39					
				3	38					
				3	37					
				3	35					
				2	36					
				2	35					
				2	34					
				2	32					
				2	31					
				2	30					
				2	31					
				2	29					
				2	28					
				2	26					
				2	25					
				1	25					
				1	24					
				1	22					
				1	21					
				1	21					
	728	728		1	19					
	728	500		1	17					
	728	728	728	728	500			1	17	
	728	500	728	500	728	500	728	500	1	16
7250	7500	7750	8000							



# Notes

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# Hörmann: Quality without Compromise



Hörmann KG Amshausen, Germany



Hörmann KG Antriebstechnik, Germany



Hörmann KG Brandis, Germany



Hörmann KG Brockhagen, Germany



Hörmann KG Dissen, Germany



Hörmann KG Eckelhausen, Germany



Hörmann KG Freisen, Germany



Hörmann KG Ichtshausen, Germany



Hörmann KG Werne, Germany



Hörmann Genk NV, Belgium



Hörmann Alkmaar B.V., Netherlands



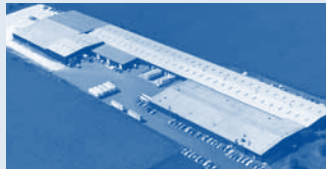
Hörmann Legnica Sp. z o.o., Poland



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Hörmann Tianjin, China



Hörmann LLC, Montgomery IL, USA



Hörmann Flexon LLC, Burgettstown PA, USA

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**OPERATORS**  
**INDUSTRIAL DOORS**  
**LOADING EQUIPMENT**  
**HINGED DOORS**  
**DOOR FRAMES**

