

Hormann Industrial Sectional Doors 67mm Technical Manual



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Technical manual

As of 01.10.2024

Industrial sectional doors

Series 60
Depth 67 mm

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Note:

All information in this document can only represent the status upon document creation.

Therefore deviations from the product configurator may occur.

All dimensions in mm.

Subject to design changes.

Detailed door leaf constructions and track applications as well as fitting examples are provided in this manual.

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Product descriptions

Door type	Door leaf / wicket door
Sectional door SPU 67 Thermo: double-skinned steel sectional door with thermal break, Stucco-textured / Micrograin, door sections 625 and 750 mm high	
Door leaf	Door sections made of double-skinned, PU-foamed steel sections with thermal break (made of hot-galvanized steel). Door sections Stucco-textured on inside and outside with uniform horizontal ribbing, or Micrograin with fine horizontal embossing outside and Stucco-textured inside, 625 and 750 mm high, depth 67 mm. All door sections without finger trap protection. Surface protection with high-quality exterior coil coating and interior primer coating.
Wicket door	Only to be installed in the centre fields of the door. Cannot be fitted in the outer fields – note the arrangement! Only opening outwards, LH or RH hinged. In doors with wicket door without threshold rail, the clear frame dimensions (ordering size, LZ) must not exceed the clear opening width + 10 mm. Attention (for threshold): For grid heights 2000, 2125 and 2250 mm, the clear opening height must not be lower than the door height.
Glazing	Glazing frames made of anodised aluminium extrusion profiles in the version with thermal break or alternatively sections with compound glazing are possible within the indicated fitting area. Fewer compound glazings or different arrangements are possible subject to the minimum distances. Glazing frames are possible from FFL and compound glazing from 625 / 750 mm above FFL.
Sectional door SPU 67 Thermo: double-skinned steel sectional door with thermal break, Stucco-textured / Micrograin, door sections 375 and 500 mm high	
Door leaf	Door sections made of double-skinned, PU-foamed steel sections with thermal break (made of hot-galvanized steel). Door sections Stucco-textured on inside and outside with uniform horizontal ribbing, or Micrograin with fine horizontal embossing outside and Stucco-textured inside, 375 and 500 mm high, depth 67 mm. All door sections without finger trap protection. Surface protection with high-quality exterior coil coating and interior primer coating.
Wicket door	Only to be installed in the centre fields of the door. Cannot be fitted in the outer fields – note the arrangement! Only opening outwards, LH or RH hinged. In doors with wicket door without threshold rail, the clear frame dimensions (ordering size, LZ) must not exceed the clear opening width + 10 mm. Attention (for threshold): For grid heights 2000 and 2125 mm, the clear opening height must not be lower than the door height.
Glazing	Glazing frames made of anodised aluminium extrusion profiles in the version with thermal break or alternatively sections with compound glazing are possible within the indicated fitting area. Fewer compound glazings or different arrangements are possible subject to the minimum distances. Glazing frames are possible from FFL and compound glazing from 500 mm above FFL.
Sectional door APU 67 Thermo: glazed aluminium sectional door with thermal break with steel bottom section	
Door leaf	Bottom section made of double-skinned, PU-foamed steel section with thermal break (made of hot-galvanized steel), 750 mm (standard) or 1500 mm high, Stucco-textured on inside and outside with uniform horizontal ribbing, or Micrograin with fine horizontal embossing on outside and Stucco-textured inside. Surface protection with high-quality exterior coil coating and interior primer coating. Other door sections with glazing made of anodised aluminium extrusion profiles with thermal break. Depth: 67 mm. All door sections without finger trap protection. Infill: Clear synthetic triple pane, 51 mm (S3).
Wicket door	Depending on the door type, made of anodised aluminium extrusion profiles with thermal breaks, installed into the centre fields of the door. Cannot be fitted in the outer fields – note the arrangement! Only opening outwards, LH or RH hinged. In doors with wicket door without threshold rail, the clear frame dimensions (ordering size, LZ) must not exceed the clear opening width + 10 mm. Attention (for threshold rail): If the wicket door has the same number of door sections as the sectional door, the clear opening height must not be lower than the door height (RM).
Sectional door ALR 67 Thermo: glazed aluminium sectional door with thermal break	
Door leaf	Door sections of anodised aluminium extrusion profiles with thermal break. Depth: 67 mm. All door sections without finger trap protection. Bottom door section made of PU-foamed infill with 51 mm Stucco-textured aluminium sheet cover on both sides (FU), other door sections with 51 mm clear synthetic triple panes (S3).
Wicket door	Depending on the door type, made of anodised aluminium extrusion profiles with thermal breaks, installed into the centre fields of the door. Cannot be fitted in the outer fields – note the arrangement! Only opening outwards, LH or RH hinged. In doors with wicket door without threshold rail, the clear frame dimensions (ordering size, LZ) must not exceed the clear opening width + 10 mm. Attention (for threshold rail): If the wicket door has the same number of door sections as the sectional door, the clear opening height must not be lower than the door height (RM).
Sectional door ALR 67 Thermo Glazing: extensive glazing, aluminium sectional door with thermal break, real glass	
Door leaf	Door sections of anodised aluminium extrusion profiles with thermal break. Depth: 67 mm. All door sections without finger trap protection. All door section infills with double panes made of single-pane safety glass 26 mm. Uniform infill heights.
Frame / track application	
Enclosed, moulded angle frame, made of hot-galvanized steel with screwed track and double radius 510 mm.	

Product descriptions

Door lock	
Manually operated	Inside locking using a shootbolt, rotary latch (for track applications with low-mounted torsion spring shaft on request) or floor locking.
Power-driven	Inside locking using a shootbolt

Counterbalance
Torsion springs, with carrying cables on the side (with a low headroom track application, a combination of carrying chain and carrying cable). The torsion springs for N, ND, NS, NK, NA, NH, GD and GS track applications are designed for at least 25,000 closing cycles and for all other track applications for at least 50,000 closing cycles. For version with direct drive operator via the operator, shaft and carrying cables on the side.

Safety-related equipment according to DIN EN 12604
- Manually operated doors using one torsion spring on both sides with approved catch safety device and integrated anti-lift kit ^{*)} - Manually operated doors using more than one torsion spring with approved spring safety device and with approved catch safety device on both sides as well as integrated anti-lift kit (not for version with direct drive operator) ^{*)} - Power-driven doors with break-in-resistant anti-lift kit *) European patent

Notice on trap guard:
To comply with the safety requirements of door product standard DIN EN 13241-1, the following door systems require an operator and a light grille HLG 550. The light grille must be fitted in the reveal to secure gaps resulting during door travel. This safeguarding must take place up to a height of 2500 mm above FFL or a different permanent access level:

Door type:		SPU 67 Thermo	APU 67 Thermo	ALR 67 Thermo	ALR 67 Thermo Glazing
Track applications:	N, NA, ND, NS, NK	Door height ≤ 3125	Door height ≤ 3165		
	NH, GD, GS, GK	Door height ≤ 3000	Door height ≤ 3040		
	L, LD	Door height ≤ 3250	Door height ≤ 3290		
	H, HA, HD, HS, HK, VS after technical inspection	Door height ≤ 3125	Door height ≤ 3165		

Seals
Bottom seal made of 1-chamber profile internally and 3-chamber EPDM profile externally with flexible adjustment lip, side seal, lintel seal, intermediate seal between the door sections.

Note regarding surface coating			
For the following colours, sectional doors SPU 67 Thermo, APU 67 Thermo and ALR 67 Thermo with door widths from 5010 to 5500 mm in combination with track applications NH, GD, GS, GK, H, HD, HS, HK, HA, HU, RD, RS, RK, V, VA, VS, VU and WS are equipped with door leaf reinforcements to reduce the possibility of section deflection caused by sun exposure and require technical inspection.			
RAL 3007 Black red RAL 5003 Sapphire blue RAL 5004 Black blue RAL 5011 Steel blue RAL 5013 Cobalt blue RAL 5020 Ocean blue RAL 5022 Night blue	RAL 6004 Blue green RAL 6005 Moss green RAL 6007 Bottle green RAL 6008 Brown green RAL 6009 Fir green RAL 6012 Black green RAL 6015 Black olive	RAL 6022 Olive drab RAL 7016 Anthracite grey RAL 7021 Black grey RAL 7043 Traffic grey RAL 8014 Sepia brown RAL 8016 Mahogany brown RAL 8017 Chocolate brown	RAL 8019 Grey brown RAL 8022 Black brown RAL 8028 Terra brown RAL 9004 Signal black RAL 9005 Jet black RAL 9011 Graphite black RAL 9017 Traffic black
Colour CH 703			

Technical data overview

Construction and quality features						
			SPU 67 Thermo	APU 67 Thermo	ALR 67 Thermo	ALR 67 Thermo Glazing
Resistance to wind load EN 12424	Door without wicket door	LZ ≤ 4000, class	4 5) 10)	4 5)	4 5)	4 4) 5)
		LZ ≤ 8000, class	3 6) 10)	3 6)	3 6)	3 4) 6)
		LZ > 8000, class	3 6) 10)	3 6)	3 6)	–
		LZ > 9000, class	2 7) 10)	2 7)	2 7)	–
	Door with wicket door	LZ ≤ 4000, class	4 6) 10)	4 6)	4 6)	–
		LZ > 4000, class	2 7) 10)	2 7)	2 7)	–
Water tightness EN 12425	Door without / with wicket door, class		3 (70 Pa)	3 (70 Pa)	3 (70 Pa)	3 (70 Pa)
Air permeability EN 12426	Door without wicket door, class		2 8)	2 8)	2 8)	2 8)
	Door with wicket door, class		1 9)	1 9)	1 9)	1 9)
Acoustic value EN 717-1	Door without wicket door $R_w = \dots$ dB		25 11)	23	23 (30 11)	30 11)
	Door with wicket door $R_w = \dots$ dB		24 11)	22 (29 11)	22 (29 11)	–
Thermal resistance EN 13241-1, appendix B EN 12428	Door without wicket door, $U = W/m^2 \cdot K^{2)}$		0.62 (0.51 3)	2.1 (2.0 3)	2.2 (2.1 3)	–
	- Optional PU sandwich infill, $U = W/m^2 \cdot K^{2)}$		–	1.4 (1.3 3)	1.4 (1.3 3)	–
	- Optional quadruple panes $U = W/m^2 \cdot K^{2)}$		–	1.8 (1.7 3)	1.9 (1.8 3)	–
	- Optional climatic double panes made of single-pane safety glass, $U = W/m^2 \cdot K^{2)}$		–	1.6 (1.5 3)	1.7 (1.6 3)	1.8 (1.7 3)
	- Optional double glazing made of single-pane safety glass $U = W/m^2 \cdot K^{2)}$		–	2.6 (2.5 3)	2.7 (2.6 3)	3.0 (2.9 3)
	Door with wicket door, $U = W/m^2 \cdot K^{2)}$		0.82 (0.75 3)	2.3 (2.2 3)	2.4 (2.3 3)	–
	- Optional quadruple panes $U = W/m^2 \cdot K^{2)}$		–	2.0 (1.9 3)	2.1 (2.1 3)	–
Design	Self-supporting		●	●	●	●
	Depth, mm		67	67	67	67
Door sizes	Max. width mm, LZ		10000	10000	10000	5500
	Max. height mm, RM		7500	7500	7500	4000
Space requirement	From page 39					
Material, door leaf	Steel, double-skinned, 67 mm		●	●	–	–
	Aluminium, profile with thermal break		–	●	●	●
Surface finish, door leaf	Galvanized steel, high-quality exterior coating in RAL 9002		●	○	–	–
	Galvanized steel, high-quality exterior coating in RAL 9006		○	●	–	–
	Galvanized steel, high-quality exterior coating in RAL to choose		○	○	–	–
	Anodised aluminium E6 / C0		○	●	●	●
	Aluminium, high-quality coating in RAL to choose		○	○	○	○
Door leaf reinforcement	From LZ mm		5510	5510	5510	3340
	Note regarding surface coating, see page 5 from LZ mm		5010	5010	5010	3340
Wicket door			○	○	○	–
Side door	Matching the door		○	○	○	○
Glazings	Section window type A		○	–	–	–
	Section window type D		○	–	–	–
	Section window type F		○	–	–	–
	Glazing frame		○	●	●	●
Seals	All-round on 4 sides		●	●	●	●
	Intermediate seal between the door sections		●	●	●	●
ThermoFrame	PVC hard and soft seal		○	○	○	○
Locking system	Inside locking		●	●	●	●
	Outside and inside locking		○	○	○	–
Security features	Anti-lift kit		●	●	●	●
	RC2 security features		○	–	–	–
Safety features in acc. with EN 13241	Side trap guard		●	●	●	●
	Safety catch		●	●	●	●
Fastening options	Concrete		●	●	●	●
	Steel		●	●	●	●
	Brickwork		●	●	●	●
	Others on request		○	○	○	○

● Standard

○ Optional

1) With optional double pane (single-pane safety glass)

2) For a door surface of 5000 x 5000 mm

3) Optionally with ThermoFrame

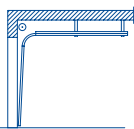
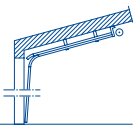
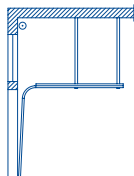
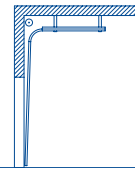
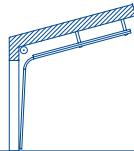
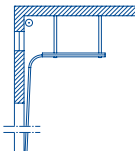
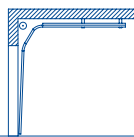
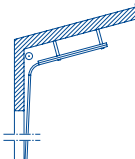
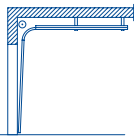
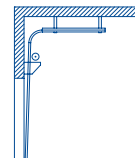
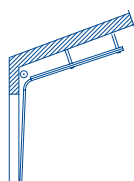
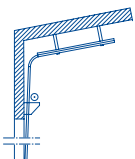
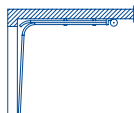
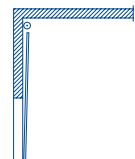
4) Door width up to 5500 mm

5) Class 4 = 1.0 kN/m² or 144 km/h6) Class 3 = 0.7 kN/m² or 120 km/h7) Class 2 = 0.45 kN/m² or 96 km/h8) Class 2 = 12 m³/m²h9) Class 1 = 24 m³/m²h

10) Lower class rating may apply for doors with compound glazing

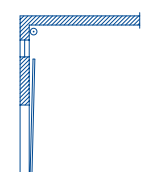
11) For doors without glazing frame

Overview of track applications

N  Normal track application A WA 500 FU is required for track application N3 with operator!	LD  As with track application L with inclination (maximum 30°) Door height RM ≤ 5000 mm
NA  As with track application N, with high-mounted torsion spring shaft Door height RM ≤ 5000 mm	H  High-lift track application
ND  As with track application N with inclination (maximum 46°) A WA 500 FU is required for track application ND3 with operator at an inclination of up to 6°!	HA  As with track application H, with high-mounted torsion spring shaft Door height RM ≤ 3500 mm
NS  As with track application N with double radius Door height RM ≤ 5000 mm RC2 version only possible with angle C = 40° and 45°.	HD  As with track application H with inclination (maximum 30°)
NH  As with track application N, with minimum high-lift Double radius 361 mm Door leaf speed up to 500 mm/s possible. Door height > 5000 mm A WA 500 FU is required for track application NH3 with operator!	HU  As with track application H, with low-mounted torsion spring shaft
GD  As with track application NH with inclination (maximum 28°) Double radius 361 mm Door height RM ≤ 5000 mm	RD  As with track application HU, with inclination Door height RM ≤ 5000 mm
L  Low headroom track application Door height RM ≤ 5000 mm	V  Vertical track application (Additional hand pulley required for manually operated doors!)

Overview of track applications

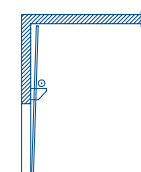
VA



As with track application V, with high-mounted torsion spring shaft
(Additional hand pulley required for manually operated doors!)

Door height RM ≤ 3500 mm

VU

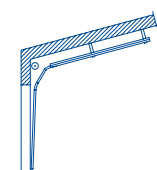


As with track application V, with low-mounted torsion spring shaft
(Additional hand pulley required for manually operated doors!)

Note:

An in-factory technical inspection is required for the following track applications!

NK

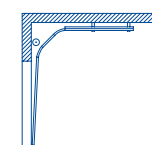


As with track application NS, but the degree values of both radii are adapted to the situation on-site

Door height RM ≤ 5000 mm

RC2 version only possible with angle C = 40° and 45°.

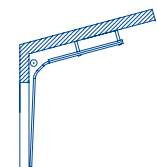
GS



As with track application NH with double radius

Door height RM ≤ 5000 mm

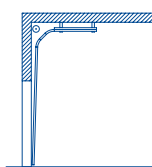
GK



As with track application NH with double radius and inclination
Double radius 361 mm

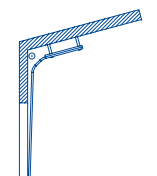
Door height RM ≤ 5000 mm

HS



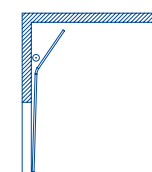
As with track application H with double radius

HK



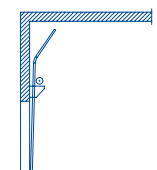
As with track application H, with double radius and inclination

VS



As with track application V, but in the top sections the tracks are diverted using radii where the ceiling is too low
(Additional hand pulley required for manually operated doors!)

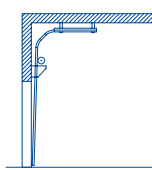
WS



As with track application VU, but in the top sections the tracks are diverted using radii where the ceiling is too low
(Additional hand pulley required for manually operated doors!)

Door height RM ≥ 2250 mm

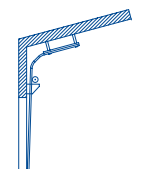
RS



As with track application HU with double radius

Door height RM ≤ 5000 mm

RK



As with track application HU, with double radius and inclination

Door height RM ≤ 5000 mm

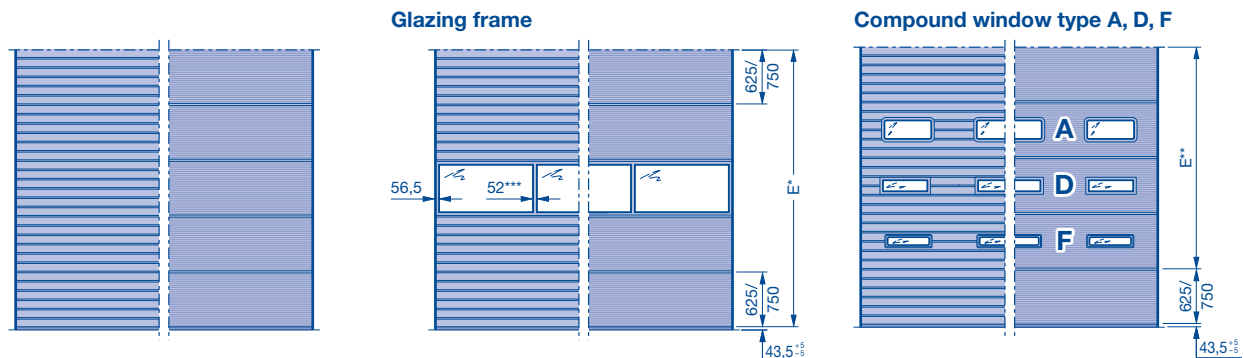
Sectional door SPU 67 Thermo

Double-skinned steel sectional door with thermal break

Stucco-textured / Micrograin

Door sections 625 and 750 mm high

External views



For dimensions of the compound windows, see page 15.

E* Fitting area for frames with glazing

E** Fitting area for compound glazing

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Any door width in 10 mm increments possible. Intermediate heights using glazing frames or shortened top door section are possible!

		TH 625		TH 750	
		n ₁			
Range 3	7500	1	+	10	
	7375	1	+	9	
	7250	2	+	8	
	7125	3	+	7	
	7000	4	+	6	
	6875	5	+	5	
	6750	1	+	9	
	6625	1	+	8	
	6500	2	+	7	
	6375	3	+	6	
Range 2	6250	4	+	5	
	6125	5	+	4	
	6000	1	+	8	
	5875	1	+	7	
	5750	2	+	6	
	5625	3	+	5	
	5500	4	+	4	
	5375	5	+	3	
	5250	1	+	6	
	5125	2	+	5	
Range 1	5000	3	+	4	
	4875	4	+	3	
	4750	5	+	2	
	4625	1	+	5	
	4500	2	+	4	
	4375	3	+	3	
	4250	4	+	2	
	4125	5	+	1	
	4000	1	+	4	
	3875	2	+	3	
Range 0	3750	3	+	2	
	3625	4	+	1	
	3500	5	+	0	
	3375	1	+	4	
	3250	2	+	3	
	3125	3	+	2	
	3000	4	+	1	
	2875	5	+	0	
	2750	1	+	3	
	2625	2	+	2	
Range -1	2500	3	+	1	
	2375	4	+	0	
	2250	5	+	-1	
	2125	1	+	3	
	2000	2	+	2	
	1875	3	+	1	
	1750	4	+	0	
	1625	5	+	-1	
	1500	1	+	3	
	1375	2	+	2	

Notes:

- When using a shaft operator (installation example 5), the door locking is always opposite the operator side.
- For a view of the matching appearance with doors with wicket door see pages 26–28.
- Doors with more than 2 glazing frames on request.
- Versions with glazing S4, U4, A4, B4, M4, C4 on request.

- On request: torsion spring shaft or direct drive operator
- Versions with glazing frame on request
- For notice on trap guard, see page 5

- [1] Type A → 1670, Type D, F → 1630
 n₁ No. of door sections
 RM Grid height
 LZ Clear frame dimensions (from 1200) up to LZ
 → Rail width
 SPB Door section height
 TH Top door section 500 mm

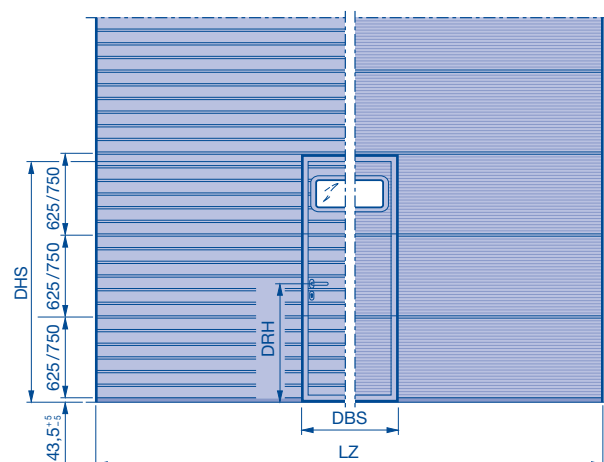
Sectional door SPU 67 Thermo

with wicket door and trip-free threshold

Double-skinned steel sectional door with thermal break

Stucco-textured / Micrograin, door sections 625 and 750 mm high

External views



** Note on fitting compound glazings:

For door widths from 1750–3000 mm, a compound glazing can **only** be fitted in the wicket door.

No compound glazing can be fitted to the left or right of the wicket door.

Wicket door clear passage width (DBS) = 905 mm*

* For a door width of 1750–1840 mm, the clear passage width is 798 mm.

For door widths below 1750 mm, the clear passage width (DBS) depends on the door width and is much smaller than standard dimensions.

Lever heights (DRH)

Bottom door section 625 = 960.5

Bottom door section 750 = 1085.5

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Any door width in 10 mm increments possible. Intermediate heights using glazing frames or a shortened top door section above the wicket door are possible!

		SH		n ₁		DHS	
		TH 625	TH 750	TH 625	TH 750	DHS	
Range 3	7500	–	10	2195			
	7375	1	+	9	2195		
	7250	2	+	8	2195		
	7125	3	+	7	2195		
	7000	4	+	6	2195		
	6875	5	+	5	2195		
	6750	–	9	2195			
	6625	1	+	8	2195		
	6500	2	+	7	2195		
	6375	3	+	6	2195		
Range 2	6250	4	+	5	2195		
	6125	5	+	4	2195		
	6000	–	8	2195			
	5875	1	+	7	2195		
	5750	2	+	6	2195		
	5625	3	+	5	2195		
	5500	4	+	4	2195		
	5375	5	+	3	2195		
	5250	–	7	2195			
	5125	1	+	6	2195		
Range 1	5000	2	+	5	2195		
	4875	3	+	4	2195		
	4750	4	+	3	2195		
	4625	5	+	2	2070		
	4500	–	6	2195			
	4375	1	+	5	2195		
	4250	2	+	4	2195		
	4125	3	+	3	2195		
	4000	4	+	2	2070		
	3875	5	+	1	1945		
Range 0	3750	–	5	2195			
	3625	1	+	4	2195		
	3500	2	+	3	2195		
	3375	3	+	2	2070		
	3250	4	+	1	1945		
	3125	5	–	1820			
	3000	–	4	2195			
	2875	1	+	3	2195		
	2750	2	+	2	2070		
	2625	3	+	1	1945		
Range -1	2500	4	–	1820			
	2375	4***	–	1820			
	2250	–	3	2115			
	2125	1	+	2	1990		
	2000	2	+	1	1865		
		Number of infills / fields per glazing frame					
		Number of compound glazings per door section**					
		2	3	4	5		
		1750	2000	2250	2500	2750	3000
		3250	3500	3750	4000	4250	4500
		4750	5000	5250	5500	5750	6000
		SPB 52					
		LZ					

Notes:

- When using a shaft operator (installation example 5), the door locking is always opposite the operator side.
- For a view of the matching appearance with doors without wicket door see pages 26–28.
- Doors with more than 2 glazing frames on request.
- Versions with glazing S4, U4, A4, B4, M4, C4 on request.

- On request: torsion spring shaft or direct drive operator
- Versions with glazing frame on request
- For notice on trap guard, see page 5
- Glazings on request
- Range change
- Range change with glazing frame

- n₁ No. of door sections
- DHS Clear passage heights of wicket door to grid height
- SH Threshold height (rising from 5 to 10)
- SPB Rail width
- TH Door section height
- DHS Wicket door clear passage height
- RM Grid height
- DBS Wicket door clear passage width
- DRH Lever height
- LZ Clear frame dimensions (from 1500)
- *** Top door section 500 mm

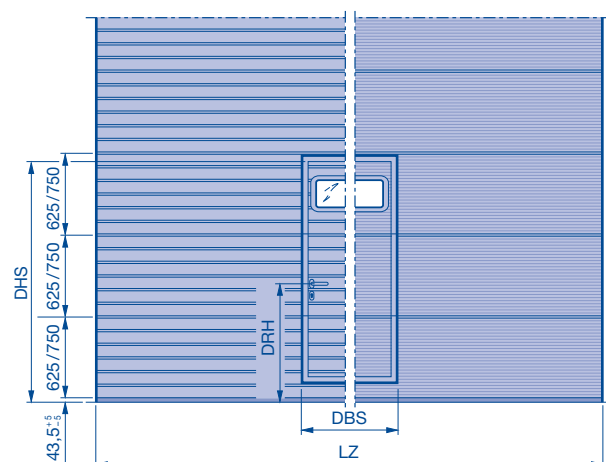
Sectional door SPU 67 Thermo

with wicket door and threshold rail

Double-skinned steel sectional door with thermal break

Stucco-textured / Micrograin, door sections 625 and 750 mm high

External views



** Note on fitting compound glazings:

For door widths from 1750–3000 mm, a compound glazing can **only** be fitted in the wicket door.
No compound glazing can be fitted to the left or right of the wicket door.

Wicket door clear passage width (DBS) = 905 mm*

* For a door width of 1750–1840 mm, the clear passage width is 798 mm.
For door widths below 1750 mm, the clear passage width (DBS) depends on the door width and is much smaller than standard dimensions.

Lever heights (DRH)

Bottom door section 625 = 960.5

Bottom door section 750 = 1085.5

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Possible for any door width in 10 mm increments. Intermediate heights using glazing frames or a shortened top door section above the wicket door are possible!

		SH ₁					SH ₂	n ₁		DHS										
								TH 625		TH 750										
RM	Range 3	7500						7500	—		10	2195								
		7375						7375	1	+	9	2195								
		7250						7250	2	+	8	2195								
		7125						7125	3	+	7	2195								
		7000						7000	4	+	6	2195								
		6875						6875	5	+	5	2195								
		6750						6750	—		9	2195								
		6625						6625	1	+	8	2195								
		6500						6500	2	+	7	2195								
		6375						6375	3	+	6	2195								
		6250						6250	4	+	5	2195								
		6125						6125	5	+	4	2195								
		6000						6000	—		8	2195								
		5875						5875	1	+	7	2195								
		5750						5750	2	+	6	2195								
		5625						5625	3	+	5	2195								
		5500						5500	4	+	4	2195								
		5375						5375	5	+	3	2195								
		5250						5250	—		7	2195								
		5125						5125	1	+	6	2195								
RM	Range 2	5000						5000	2	+	5	2195								
		4875						4875	3	+	4	2195								
		4750						4750	4	+	3	2195								
		4625						4625	5	+	2	2070								
		4500						4500	—		6	2195								
		4375						4375	1	+	5	2195								
		4250						4250	2	+	4	2195								
		4125						4125	3	+	3	2195								
		4000						4000	4	+	2	2070								
		3875						3875	5	+	1	1945								
RM	Range 1	3750						3750	—		5	2195								
		3625						3625	1	+	4	2195								
		3500						3500	2	+	3	2195								
		3375						3375	3	+	2	2070								
		3250						3250	4	+	1	1945								
		3125						3125	5	—	—	1820								
		3000						3000	—		4	2195								
		2875						2875	1	+	3	2195								
		2750						2750	2	+	2	2070								
		2625						2625	3	+	1	1945								
2500						2500	4	—	—	1820										
2375						2375	4***	—	—	1820										
2250						2250	—		3	2195										
2125						2125	1	+	2	2070										
2000						2000	2	+	1	1945										
		3					4	5	Number of infills/fields per glazing frame											
		2					3	4	5	Number of compound glazings per door section**										
		1750	2000	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000	
		SPB 52																		
		LZ																		

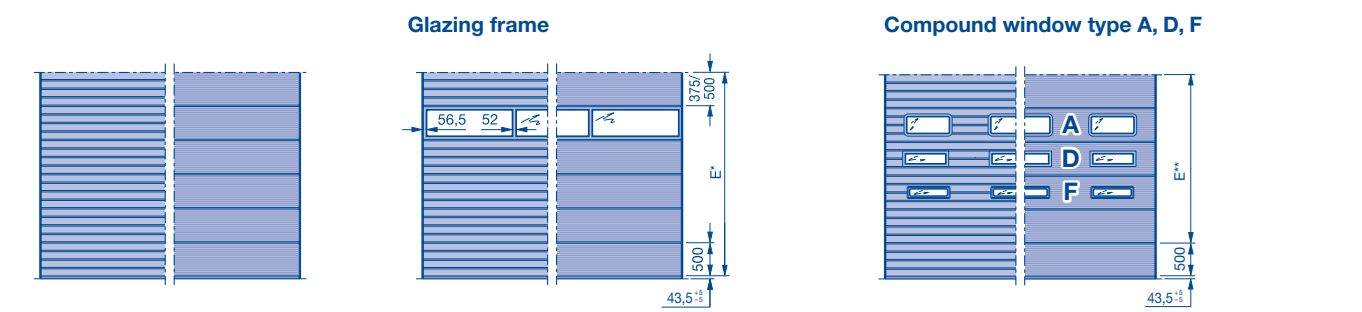
Sectional door SPU 67 Thermo

Double-skinned steel sections

Double-skinned steel sectional door with thermal break

Stucco-textured / Micrograin, door sections 375 and 500 mm high

External views



For dimensions of the compound windows, see page 15.

E* Fitting area for frame 500 with glazing
E** Fitting area for compound glazing

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Any door width in 10 mm increments possible. Intermediate heights using glazing frames or shortened top door section are possible!

Notes:

- For a view of the matching appearance with doors with wicket door see pages 26–28.
- Doors with more than 2 glazing frames on request.
- Versions with glazing S4, U4, A4, B4, M4, C4 on request.

On request: torsion spring shaft or direct drive operator

On request and only direct drive operator S140 with track application H

Versions with glazing frame on request

For notice on trap guard, see page 5

Range change

Range change with glazing frame

[1] Type A → 1670, Type D, F → 1630

n₁ No. of door sections

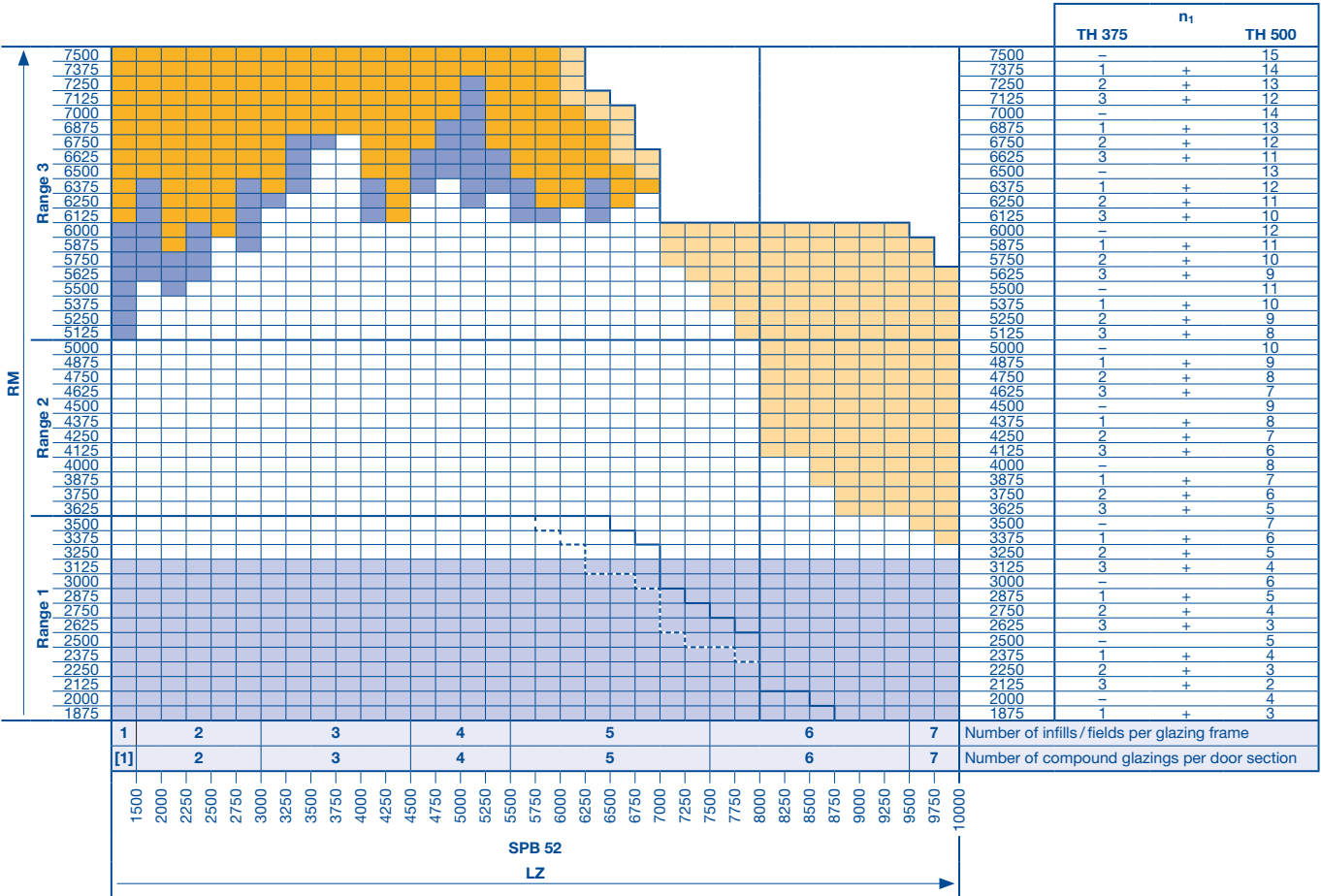
RM Grid height

LZ Clear frame dimensions (from 1200)

→ up to LZ

SPB Rail width

TH Door section height



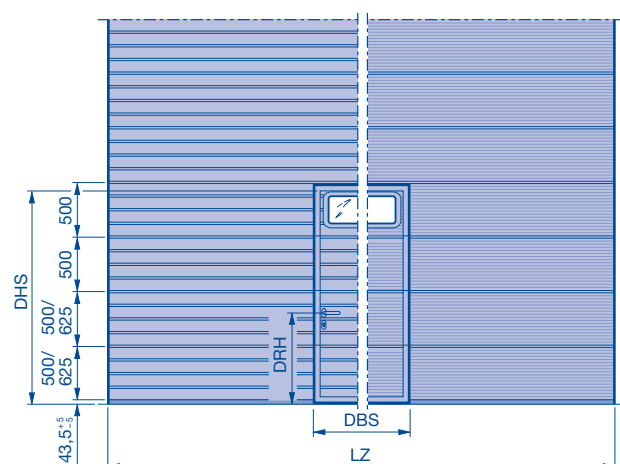
Sectional door SPU 67 Thermo

with wicket door and trip-free threshold

Double-skinned steel sectional door with thermal break

Stucco-textured / Micrograin, door sections 375 and 500 mm high

Exterior view



** Note on fitting compound glazings:

For door widths from 1750–3000 mm, a compound glazing can **only** be fitted in the wicket door.
No compound glazing can be fitted to the left or right of the wicket door.

Wicket door clear passage width (DBS) = 905 mm*

* For a door width of 1750–1840 mm, the clear passage width is 798 mm.

For door widths below 1750 mm, the clear passage width (DBS) depends on the door width and is much smaller than standard dimensions.

Lever heights (DRH)

Bottom door section 500 = 835.5

Bottom door section 625 = 960.5

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Any door width in 10 mm increments possible. Intermediate heights using glazing frames or a shortened top door section above the wicket door are possible!

	SH ₁										SH ₂		n ₁		DHS
													TH 375	TH 500	
Range 3	7500												7500	15	1945
	7375												7375	1	1945
	7250												7250	2	1945
	7125												7125	3	1945
	7000												7000	4	1945
	6875												6875	1	1945
	6750												6750	2	1945
	6625												6625	3	1945
	6500												6500	4	1945
	6375												6375	1	1945
Range 2	6250												6250	2	1945
	6125												6125	3	1945
	6000												6000	4	1945
	5875												5875	1	1945
	5750												5750	2	1945
	5625												5625	3	1945
	5500												5500	4	1945
	5375												5375	1	1945
	5250												5250	2	1945
	5125												5125	3	1945
Range 1	5000												5000	4	1945
	4875												4875	1	1945
	4750												4750	2	1945
	4625												4625	3	1945
	4500												4500	4	1945
	4375												4375	1	1945
	4250												4250	2	1945
	4125												4125	3	1945
	4000												4000	4	1945
	3875												3875	1	1945
Range 0	3750												3750	2	1945
	3625												3625	3	1945
	3500												3500	4	1945
	3375												3375	1	1945
	3250												3250	2	1945
	3125												3125	3	1945
	3000												3000	4	1945
	2875												2875	1	1945
	2750												2750	2	1945
	2625												2625	3	1945
Range -1	2500												2500	4	1945
	2375												2375	1	1945
	2250												2250	2	1945
	2125												2125	3	1945
	2000												2000	4	1945

Note:

- For a view of the matching appearance with doors without wicket door, see pages 26–28.
- Doors with more than 2 glazing frames on request.
- For versions with real glass infill in the wicket door, the threshold height **SH₂** begins at LZ 4510 mm.
- Versions with glazing S4, U4, A4, B4, M4, C4 on request.

	On request: torsion spring shaft or direct drive operator
	Versions with glazing frame on request
	For notice on trap guard, see page 5
	Glazings on request
	Range change
	Range change with glazing frame
n ₁	No. of door sections
DHS	Clear passage heights of wicket door to grid height
RM	Grid height
LZ	Clear frame dimensions (from 1500)
SH ₁	Threshold height (rising from 5 to 10)
SH ₂	Threshold height (approx. 13)
SPB	Rail width
TH	Door section height
DHS	Wicket door clear passage height
DBS	Wicket door clear passage width
DRH	Lever height
***	Bottom door section TH = 625

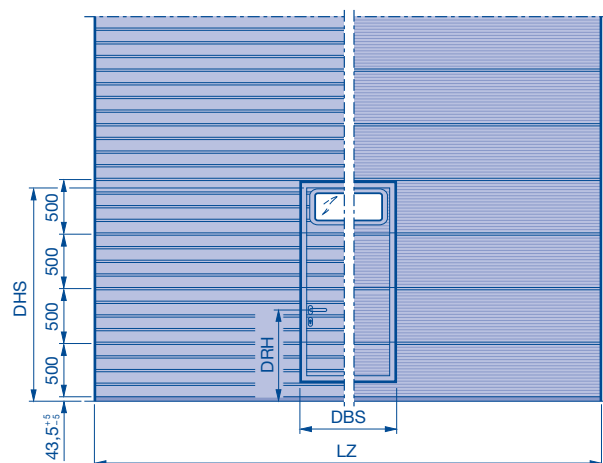
Sectional door SPU 67 Thermo

with wicket door and threshold rail

Double-skinned steel sectional door with thermal break

Stucco-textured / Micrograin, door sections 375 and 500 mm high

Exterior view



** Note on fitting compound glazings:

For door widths from 1750 – 3000 mm, a compound glazing can **only** be fitted in the wicket door.

No compound glazing can be fitted to the left or right of the wicket door.

Wicket door clear passage width (DBS) = 905 mm*

* For a door width of 1750 – 1840 mm, the clear passage width is 798 mm.

For door widths below 1750 mm, the clear passage width (DBS) depends on the door width and is much smaller than standard dimensions.

Lever heights (DRH)

Bottom door section 500 = 835.5

Bottom door section 625 = 960.5 (only for SH₂)

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Any door width in 10 mm increments possible. Intermediate heights using glazing frames or a shortened top door section above the wicket door are possible!

RM	Range 3	SH ₁										SH ₂										n ₁		DHS																			
		TH 375										TH 500										TH 375	TH 500																				
Range 2	7500																					7500	—	15	1945																		
	7375																					7375	1	+	14	1945																	
	7250																					7250	2	+	13	1945																	
	7125																					7125	3	+	12	1945																	
	7000																					7000	—	+	14	1945																	
	6875																					6875	1	+	13	1945																	
	6750																					6750	2	+	12	1945																	
	6625																					6625	3	+	11	1945																	
	6500																					6500	—	+	13	1945																	
	6375																					6375	1	+	12	1945																	
	6250																					6250	2	+	11	1945																	
	6125																					6125	3	+	10	1945																	
	6000																					6000	—	+	12	1945																	
	5875																					5875	1	+	11	1945																	
	5750																					5750	2	+	10	1945																	
	5625																					5625	3	+	9	1945																	
	5500																					5500	—	+	11	1945																	
	5375																					5375	1	+	10	1945																	
	5250																					5250	2	+	9	1945																	
	5125																					5125	3	+	8	1945																	
	5000																					5000	—	+	10	1945																	
	Range 1	4875																					4875	1	+	9	1945																
		4750																					4750	2	+	8	1945																
		4625																					4625	3	+	7	1945																
4500																						4500	—	+	9	1945																	
4375																						4375	1	+	8	1945																	
4250																						4250	2	+	7	1945																	
4125																						4125	3	+	6	1945																	
4000																						4000	—	+	8	1945																	
3875																						3875	1	+	7	1945																	
3750																						3750	2	+	6	1945																	
3625																						3625	3	+	5	1945																	
3500																						3500	—	+	7	1945																	
3375																					3375	1	+	6	1945																		
3250																					3250	2	+	5	1945																		
3125																					3125	3	+	4	1945																		
3000																					3000	—	+	6	1945																		
2875																					2875	1	+	5	1945																		
2750																					2750	2	+	4	1945																		
2625																					2625	—	+	5***	2070																		
2500																					2500	—	+	5	1945																		
2375																					2375	1	+	4	1945																		
2250																					2250	2	+	3	1820																		
2125																					2125	—	+	4***	2070																		
2000																					2000	—	+	4	1945																		
		3										4										5										Number of infills / fields per glazing frame											
		2										3										4										5										Number of compound glazings per door section**	
		1750	2000	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000	6250	6500	6750	7000																				
SPB 52																																											
LZ																																											

Notes:

- From LZ > 5500 mm bottom door section with deviating heights TH = 625 / 750 mm (made of 375 / 500 mm sections and 2 x 125 mm aluminium bottom profile).
- For a view of the matching appearance with doors without wicket door, see pages 26–28.
- Doors with more than 2 glazing frames on request.
- For versions with real glass infill in the wicket door, the threshold height **SH₂** begins at LZ 4510 mm.
- Versions with glazing S4, U4, A4, B4, M4, C4 on request.

- On request: torsion spring shaft or direct drive operator
- Versions with glazing frame on request
- For notice on trap guard, see page 5
- Glazings on request
- Range change
- Range change with glazing frame

- n₁ No. of door sections
- DHS Clear passage heights of wicket door to grid height
- RM Grid height
- LZ Clear frame dimensions (from 1500)
- SH₁ Threshold height (220)
- SH₂ Threshold height (317), bottom door section with 250 mm aluminium bottom section, glazing from 625 mm
- SPB Rail width
- TH Door section height
- DHS Wicket door clear passage height
- DBS Wicket door clear passage width
- *** Bottom door section TH = 625

Glazing heights for matching external appearance

SPU 67 Thermo Stucco-textured / Micrograin

(Centre of window from FFL)

Door section heights 500, 625 and 750 mm

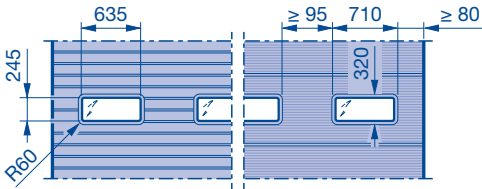
Glazing heights for matching external appearance of compound window type A, D and F.

RM	Glazing heights (centre of window from FFL)											
	1160	1285	1535	1660	1785	1910	2035	2160	2285	2410	2535	2660
7500		•			•							
7375	•	•		•	•							•
7250	•	•	•	•	•		•		•		•	•
7125	•	•	•	•	•	•	•	•	•	•	•	•
7000		•			•				•			
6875	•	•		•	•			•	•			•
6750	•	•			•		•				•	•
6625	•	•		•	•	•	•			•	•	•
6500		•			•				•			
6375	•	•		•	•			•	•			•
6250	•	•	•	•	•		•	•	•		•	•
6125	•	•	•	•	•	•	•	•	•	•	•	•
6000		•			•							
5875	•	•		•	•							•
5750	•	•	•	•	•		•		•		•	•
5625	•	•	•	•	•	•	•	•	•	•	•	•
5500		•			•				•			
5375	•	•		•	•			•	•			•
5250	•	•			•		•				•	•
5125	•	•		•	•	•	•			•	•	•
5000		•			•				•			
4875	•	•		•	•			•	•			•
4750	•	•	•	•	•		•		•		•	•
4625	•	•	•	•	•	•		•	•	•	•	
4500		•			•							
4375	•	•		•	•							•
4250	•	•	•	•	•	•	•		•	•	•	•
4125	•	•	•	•	•	•	•	•	•	•	•	•
4000		•			•				•			
3875	•			•	•			•	•			
3750	•	•			•		•				•	•
3625	•	•		•	•	•	•			•	•	•
3500		•			•				•			
3375	•	•		•	•				•			
3250	•		•	•	•			•	•			
3125		•	•	•	•			•				
3000					•							
2875	•	•		•	•							•
2750	•	•	•	•	•						•	
2625	•		•	•	•					•		
2500									•	•		
2375				•				•				
2250	•	•					•					
2125	•					•						
2000					•							
1875				•								

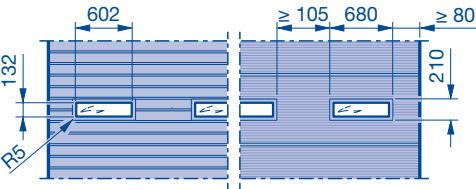
RM Grid height

Dimensions of compound windows

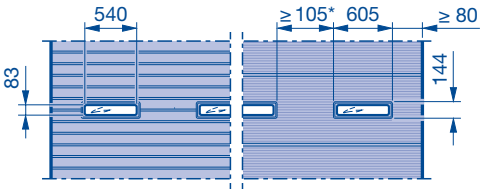
Compound window **type A**, door section height 500, 625 and 750 mm



Compound window **type D**, door section height 500, 625 and 750 mm



Compound window **type F**, door section height 500, 625 and 750 mm



* With RC2 version min. 500 mm

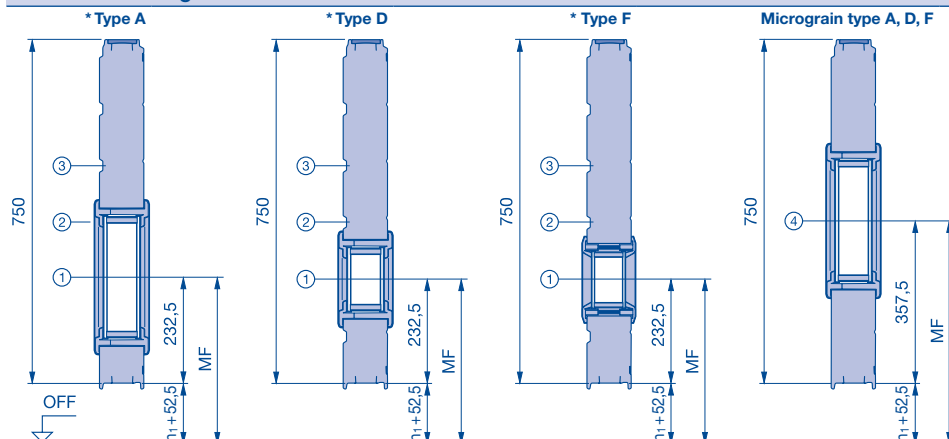
Calculating the glazing heights for SPU 67 Thermo

(Centre of window from FFL)

Door section heights 500, 625 and 750 mm

Calculating the glazing heights for compound glazing type A, D and type F.
See door type for number of door sections and glazing areas! Depth: 67 mm.

Door section height 750 mm



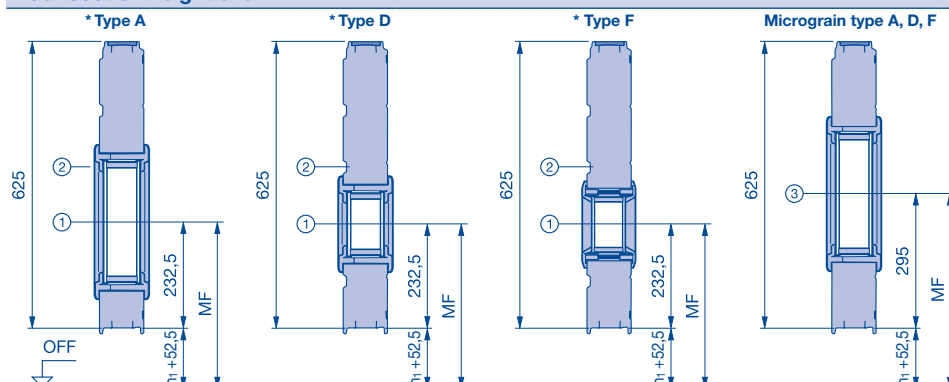
Glazing height type A, D and F

- ① = $n_1 + 52.5 + 232.5$
- ② = $n_1 + 52.5 + 232.5 + 125$
- ③ = $n_1 + 52.5 + 232.5 + 250$
- ④ = $n_1 + 52.5 + 357.5$

Note:

Glazing height type F with RC2 version requires a distance of min. 500 mm between the glazings!

Door section height 625 mm



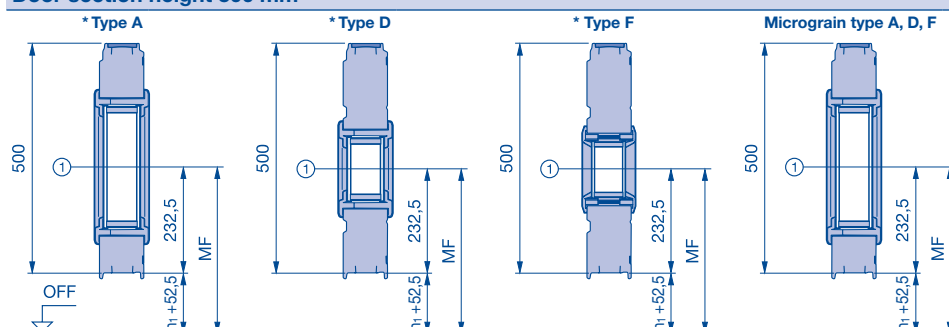
Glazing height type A, D and F

- ① = $n_1 + 52.5 + 232.5$
- ② = $n_1 + 52.5 + 232.5 + 125$
- ③ = $n_1 + 52.5 + 295$

Note:

Glazing height type F with RC2 version requires a distance of min. 500 mm between the glazings!

Door section height 500 mm



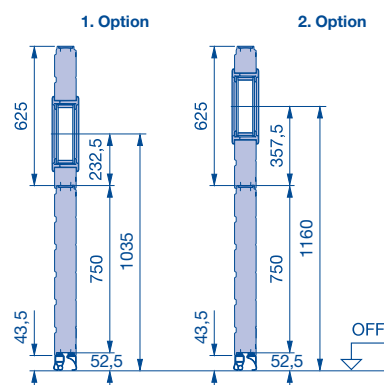
Glazing height type A, D and F

- ① = $n_1 + 52.5 + 232.5$

Note:

Glazing height type F with RC2 version requires a distance of min. 500 mm between the glazings!

Calculation example



Given:

- Door type SPU 67 Thermo; grid height (RM) = 3250 mm; glazing type A; for position see number of door sections below (see table of door types)
- Door section 625 mm = 4 ×
- Door section 750 mm = 1 ×

Option	Door section/position	Glazing height
1	in 2nd door section 625 mm at position 1	$750 + 52.5 + 232.5 = 1035$ mm from FFL
2	in 2nd door section 625 mm at position 2	$750 + 52.5 + 232.5 + 125 = 1160$ mm from FFL
3	in 3rd door section 625 mm at position 1	$750 + 625 + 52.5 + 232.5 = 1660$ mm from FFL
4	in 3rd door section 625 mm at position 2	$750 + 625 + 52.5 + 232.5 + 125 = 1785$ mm from FFL
etc.		

- * Stucco / Micrograin
- MF Centre of window from FFL
- n_1 No. of door sections
- OFF Finished floor level

Sectional door APU 67 Thermo

Glazed aluminium sectional door with thermal break

With steel bottom section

Exterior view

Door height – bottom section height –

TH = $\frac{35}{\text{Number of door section frames}}$

* On request 115 mm in order to match the appearance of a sectional door with wicket door with trip-free threshold with the same door height.

Note:

When using a shaft operator (installation example 5), the door locking is always opposite the operator side.

For a view of the matching appearance with doors with wicket door see pages 26–28.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Any door width in 10 mm increments possible.

RM	LZ ≤ 8000				LZ > 8000			
	n ₁	SO ₇₅₀	n ₁	SO ₁₅₀₀	n ₁	SO ₇₅₀	n ₁	SO ₁₅₀₀
7500		7500		7500		7500		7500
7375								
7250	9		8		12			7240
7125						7060		7230
7000						7050	10	
6875		6790		6790				6670
6750		6780		6780	11			6660
6625						6490		
6500	8		7			6480	9	
6375								
6250		6040		6040	10			6100
6125		6030		6030		5920		6090
6000						5910	8	
5875								
5750	7		6		9			5530
5625								5520
5500								
5375		5290		5290		5350		
5250		5280		5280		5340	7	
5125					8			5000
5000	6		5			4780		4950
4875						4770	6	
4750								
4625		4540		4540	7			4390
4500		4530		4530				4380
4375	5		4			4210	5	
4250						4200		
4125								
4000					6			3820
3875		3790		3790				3810
3750		3780		3780		3640		
3625						3630	4	
3500	4		3		5			3250
3375								3240
3250		3040		3040		3070		
3125		3030		3030		3060	3	
3000								
2875								2680
2750	3		2		4			2670
2625								
2500		2290		2290		2500		
2375		2280		2280		2490	2	
2250					3			
2125	2		1			1930		2110
2000						1920	1	2100
1875		1875		1875	2			

Note:

Glazing S4, U4, A4, B4, M4, XU, C4 on request.

On request: torsion spring shaft or direct drive operator

On request and only direct drive operator S140 with track application H

For notice on trap guard, see page 5

Range change

SO₇₅₀

SO₁₅₀₀

n₁

RM

LZ

SPB

TH

Bottom section height 750 mm (standard)

Bottom section height 1500 mm

Number of glazing frames

Grid height

Clear frame dimensions (from 1200)

Rail width

Door section height

01933 448850

Technical manual: Industrial sectional doors depth 67 mm / series 60 / 10.2024

www.samsondoors.co.uk

17

02/26

Sectional door APU 67 Thermo

with wicket door and trip-free threshold

Glazed aluminium sectional door with thermal break

With steel bottom section, bottom section height 750

Exterior view

Lever height on request

Wicket door clear passage width (DBS) = 905 mm**

Clear passage height of wicket door (DHS) = $Sn_1 \times TH + (\text{bottom section height} - 55^*)$

Sn_1 Number of frames in the wicket door

* Attention: If there is no frame above the wicket door, then - 100 instead of - 55.

** For a door width of 1750 - 1840 mm, the clear passage width is 798 mm.

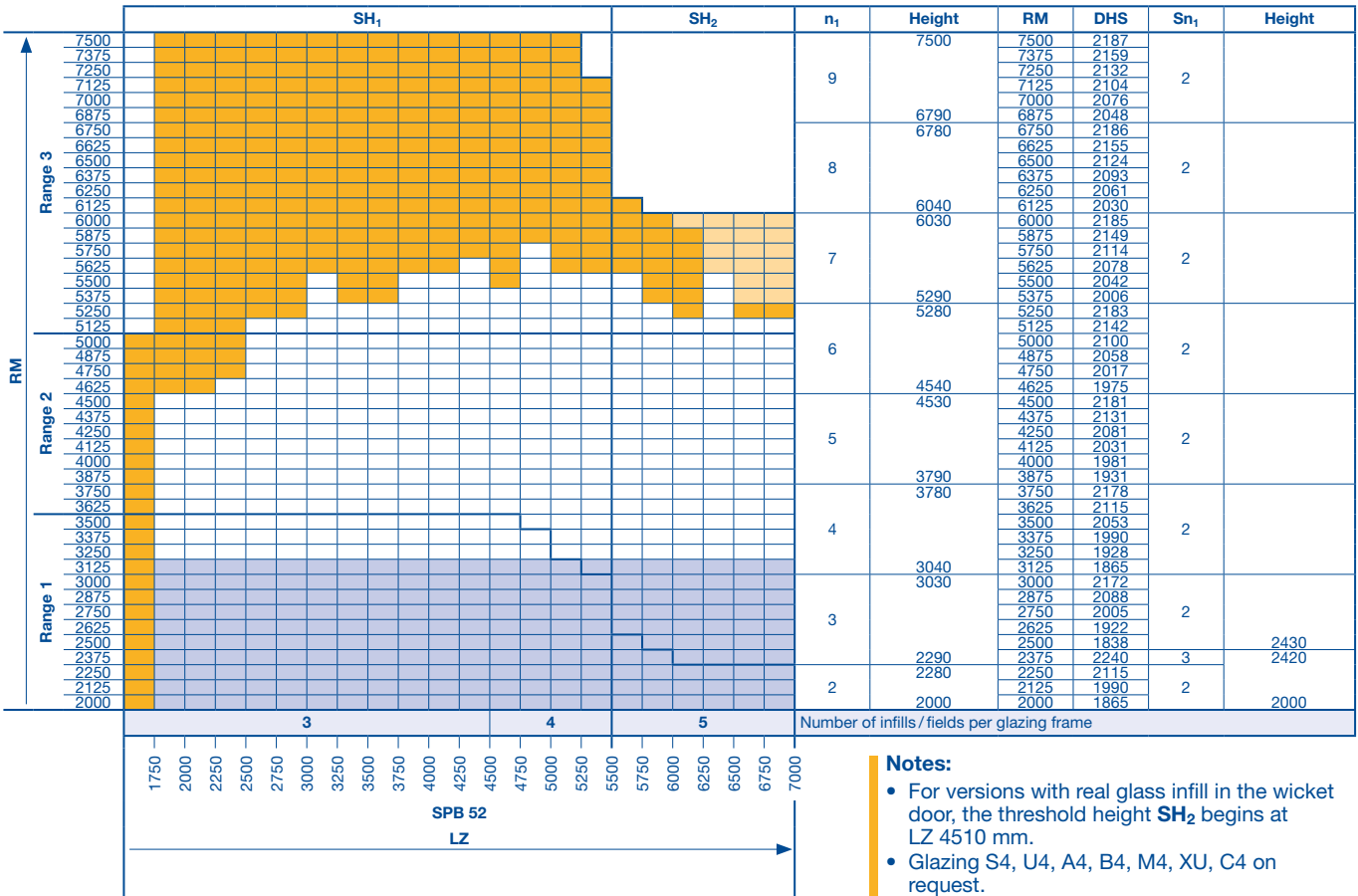
For door widths below 1750 mm, the clear passage width (DBS) depends on the door width and is much smaller than standard dimensions.

Note:

- When using a shaft operator (installation example 5), the door locking is always opposite the operator side.
- For a view of the matching appearance with doors without wicket door see pages 26 – 28.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Any door width in 10 mm increments possible.



On request: torsion spring shaft or direct drive operator	DHS Wicket door clear passage height	SH₂ Threshold height (approx. 13)
On request and only direct drive operator S140 with track application H	DBS Wicket door clear passage width	n₁ Number of glazing frames
For notice on trap guard, see page 5	DRH Lever height	Sn₁ Number of glazing frames in the wicket door
Range change	LZ Clear frame dimensions (from 1500)	TH Door section height
	RM Grid height	
	SPB Rail width	
	SH₁ Threshold height (rising from 5 to 10)	

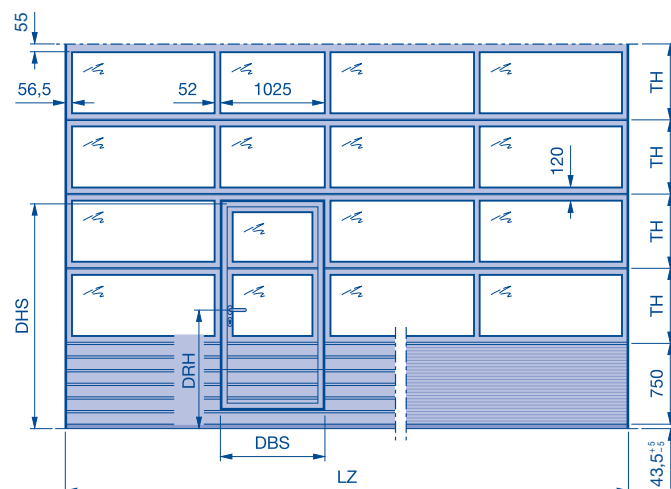
Sectional door APU 67 Thermo

with wicket door and threshold rail

Glazed aluminium sectional door with thermal break

With steel bottom section, bottom section height 750

Exterior view



Lever height on request

Wicket door clear passage width (DBS) = 905 mm*

Wicket door passage height (DHS) = $Sn_1 \times TH$ + (bottom section height - 55)

Sn_1 Number of frames in the wicket door

For a door width of 1750 - 1840 mm, the clear passage width is 798 mm.

For door widths below 1750 mm, the clear passage width (DBS) depends on the door width and is much smaller than standard dimensions.

Note:

- When using a shaft operator (installation example 5), the door locking is always opposite the operator side.
- Bottom door section made of 375 / 500 mm section and 2 x 125 mm aluminium bottom profile for door widths > 5500 mm.
- For a view of the matching appearance with doors without wicket door see pages 26 - 28.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Any door width in 10 mm increments possible.

		SH ₁										SH ₂										n ₁	Height	RM	DHS	Sn ₁	Height																																																		
RM	↑	Range 3																						9	7500	7500	2187	2																																																	
																									7375	7375	2159																																																		
																									7250	7250	2132																																																		
																									7125	7125	2104																																																		
																									7000	7000	2076																																																		
																									6875	6875	2048																																																		
																									6750	6750	2020																																																		
																									6625	6625	1992																																																		
																									6500	6500	1964																																																		
																									6375	6375	1936																																																		
																									6250	6250	1908																																																		
																									6125	6125	1880																																																		
																									6000	6000	1852																																																		
																									5875	5875	1824																																																		
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																									5375	5375	1712																																																		
																									5250	5250	1684																																																		
																									5125	5125	1656																																																		
																									Range 2																						6	5000	5000	2100	2																										
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4500	4500	1934																																																																											
4375	4375	1892																																																																											
4250	4250	1850																																																																											
4125	4125	1808																																																																											
4000	4000	1766																																																																											
3875	3875	1724																																																																											
3750	3750	1682																																																																											
3625	3625	1640																																																																											
3500	3500	1598																																																																											
3375	3375	1556																																																																											
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Range 1																						5	3000	3000																								2100	2																												
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																							-15000	-15000	1766																																																				
																							Range -18																						-14																								-16000	-16000	2100					2	
																																																																					-16875	-16875	2058						
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																																																																					-16625	-16625	1975						
																																																																					-16500	-16500	1934						
																																																																					-16375	-16375	1892						
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																																														-16000	-16000	1766																													
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																																																																					-17875	-17875	2058						
																																																																					-17750	-17750	2017						
																																																																					-17625	-17625	1975						
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																																																																					-17375	-17375	1892						
-17250	-17250	1850																																																																											
-17125	-17125	1808																																																																											
-17000	-17000	1766																																																																											
Range -20																						-16																																															-18000	-18000	2100			2			
																																																																					-18875	-18875	2058						
																																																																					-18750	-18750	2017						
																																																																					-18625	-18625	1975						
																																																																					-18500	-18500	1934						
																																																																					-18375	-18375	1892						
																							-18250	-18250	1850																																																				
																							-18125	-18125	1808																																																				
																							-18000	-18000	1766																																																				
																							Range -21																						-17																								-19000	-19000	2100					2	
																																																																					-19875	-19875	2058						
																																																																					-19750	-19750	2017						
																																																																					-19625	-19625	1975						
																																																																					-19500	-19500	1934						
																																																																					-19375	-19375	1892						
																																														-19250	-19250	1850																													
																																														-19125	-19125	1808																													
																																														-19000	-19000	1766																													
																																														Range -22																															

Notes:

- For versions with real glass infill in the wicket door, the threshold height **SH₂** begins at LZ 4510 mm.
- Glazing S4, U4, A4, B4, M4, XU, C4 on request.

On request: torsion spring shaft or direct drive operator	DHS Wicket door clear passage height
On request and only direct drive operator S140 with track application H	DBS Wicket door clear passage width
For notice on trap guard, see page 5	DRH Lever height
Range change	LZ Clear frame dimensions (from 1500)
	RM Grid height
	SPB Rail width
	SH₁ Threshold height (220)

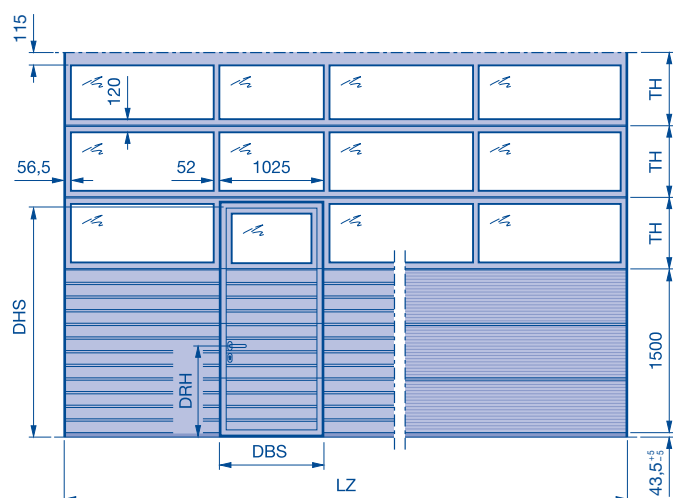
SH₂ Threshold height (317)
n₁ Number of glazing frames
Sn₁ Number of glazing frames in the wicket door
TH Door section height

Sectional door APU 67 Thermo with wicket door and trip-free threshold

Glazed aluminium sectional door with thermal break

With steel bottom section, bottom section height 1500

Exterior view



Lever height (DRH):

$$LZ \leq 6000 = 1080.5$$
$$LZ > 6000 = 830.5$$

Wicket door clear passage width (DBS) = 905 mm**

Clear passage height of wicket door (DHS) = $S_{n1} \times TH + (\text{bottom section height} - 55^*)$

Sn₁ Number of frames in the wicket door

- Attention: If there is no frame above the wicket door, then - 100 instead of - 55.

.. For a door width of 1750 - 1840 mm, the clear passage width is 798 mm.

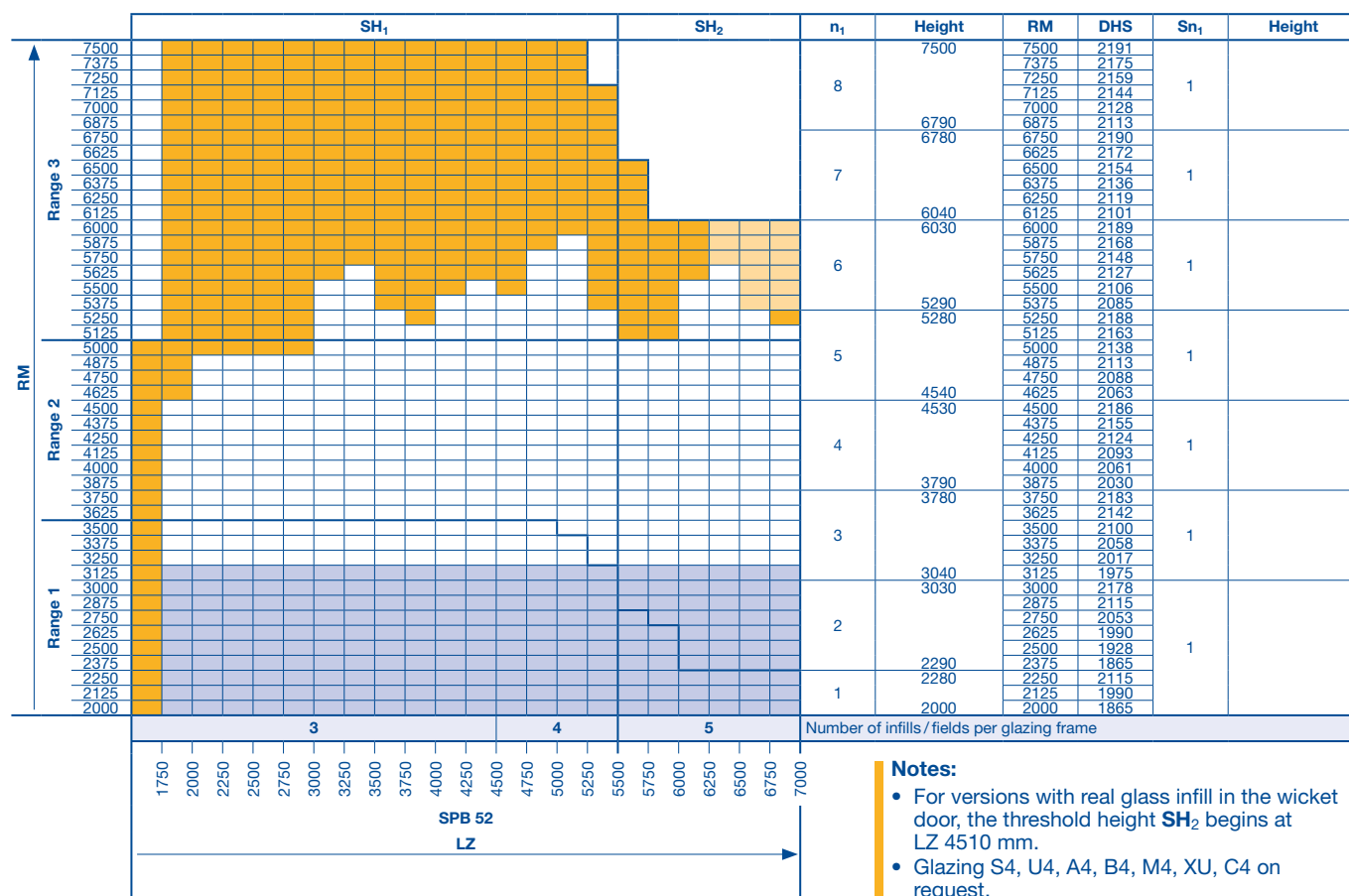
For door widths below 1750 mm, the clear passage width (DBS) depends on the door width and is much smaller than standard dimensions.

Note:

- When using a shaft operator (installation example 5), the door locking is always opposite the operator side.
- For a view of the matching appearance with doors without wicket door see pages 26–28.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Any door width in 10 mm increments possible.



- | | |
|---|---|
|  | On request: torsion spring shaft or direct drive operator |
|  | On request and only direct drive operator S140 with track application H |
|  | For notice on trap guard, see page 5 |
|  | Range change |

DHS	Wicket door clear passage height
DBS	Wicket door clear passage width
DRH	Lever height
LZ	Clear frame dimensions (from 1500)
RM	Grid height
SPB	Rail width
SH₁	Threshold height (rising from 5 to 10)

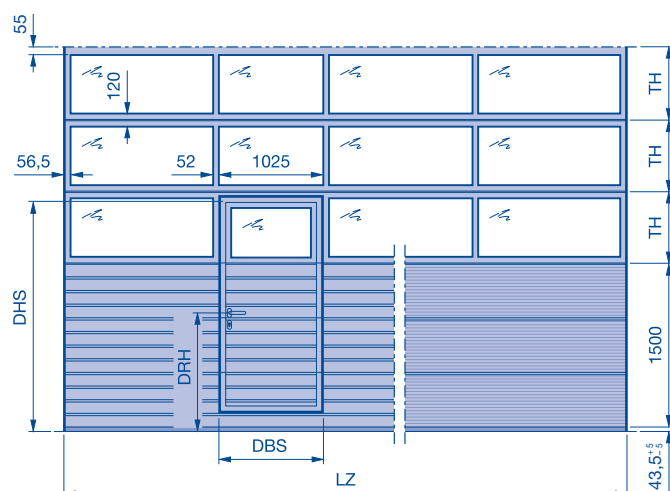
SH₂	Threshold height (approx. 13)
n₁	Number of glazing frames
Sn₁	Number of glazing frames in the wicket door
TH	Door section height

Sectional door APU 67 Thermo with wicket door and threshold rail

Glazed aluminium sectional door with thermal break

With steel bottom section, bottom section height 1500

Exterior view



Lever height on request

Wicket door clear passage width (DBS) = 905 mm*

Wicket door passage height (DHS) = $S_{n1} \times TH + (\text{bottom section height} - 55)$

Sn₁ Number of frames in the wicket door

- For a door width of 1750 - 1840 mm, the clear passage width is 798 mm.

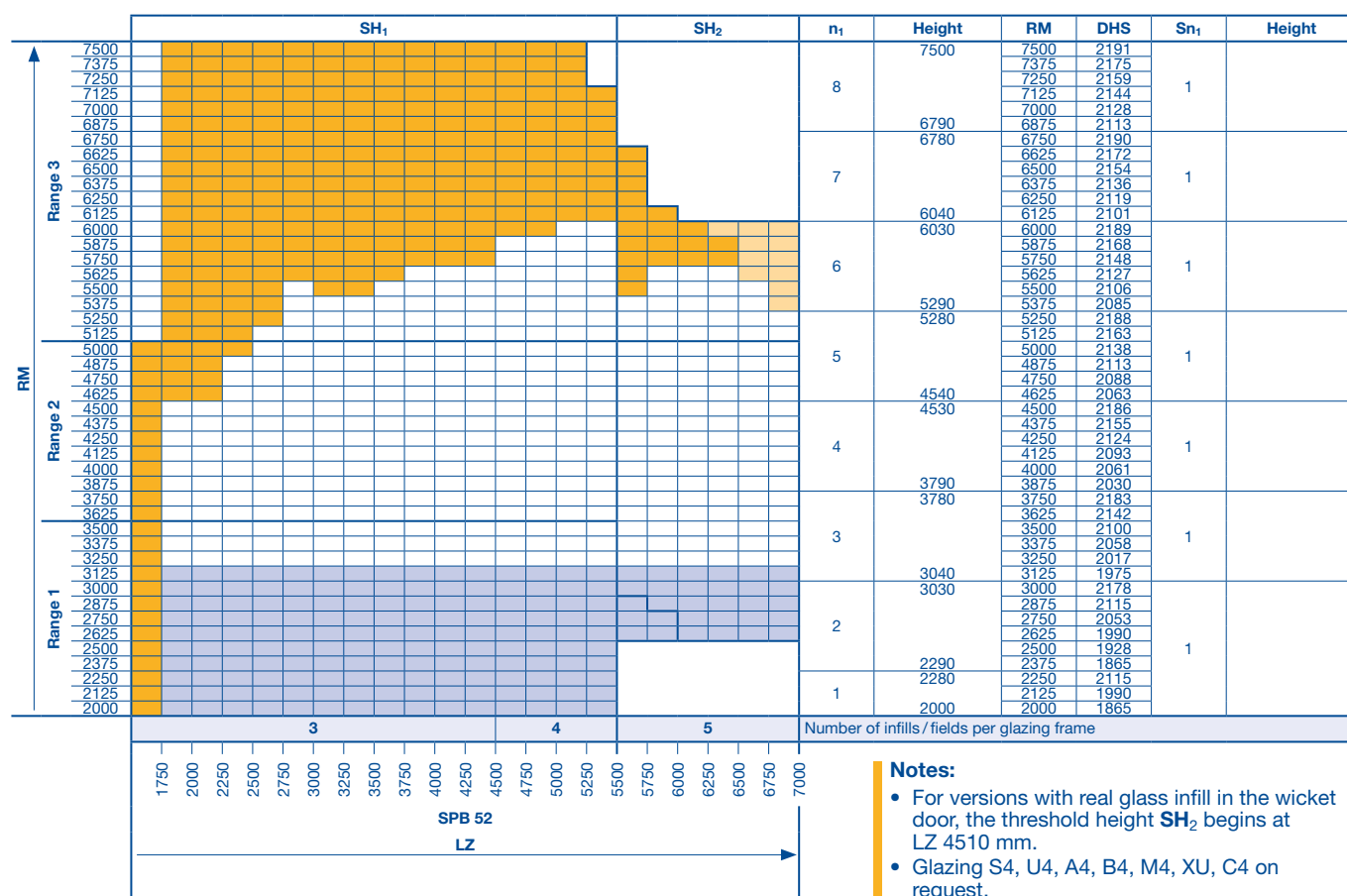
For door widths below 1750 mm, the clear passage width (DBS) depends on the door width and is much smaller than standard dimensions.

Note:

- When using a shaft operator (installation example 5), the door locking is always opposite the operator side.
- Bottom door section made of 375 / 500 mm section and 2 x 125 mm aluminium bottom profile for door widths > 5500 mm.
- For a view of the matching appearance with doors without wicket door see pages 26–28.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Any door width in 10 mm increments possible.



Notes:

- For versions with real glass infill in the wicket door, the threshold height **SH₂** begins at LZ 4510 mm.
- Glazing S4, U4, A4, B4, M4, XU, C4 on request.

	On request: torsion spring shaft or direct drive operator
	On request and only direct drive operator S140 with track application H
	For notice on trap guard, see page 5
	Range change

DHS	Wicket door clear passage height
DBS	Wicket door clear passage width
DRH	Lever height
LZ	Clear frame dimensions (from 1500)
RM	Grid height
SPB	Rail width
SH ₁	Threshold height (220)

SH₂	Threshold height (317)
n₁	Number of glazing frames
Sn₁	Number of glazing frames in the wicket door
TH	Door section height

Sectional door ALR 67 Thermo

Glazed aluminium sectional door with thermal break

Exterior view

TH = $\frac{\text{Door height} - 35}{\text{Number of door section frames}}$

*

On request 115 mm in order to match the appearance of a sectional door with wicket door with trip-free threshold with the same door height.

Note:

•

When using a shaft operator (installation example 5), the door locking is always opposite the operator side.

•

For door widths from 5510 mm, diagonal struts are fitted into the bottom door section (not visible with closed infills).

•

For a view of the matching appearance with doors with wicket door see pages 26 – 28.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Any door width in 10 mm increments possible.

Range 3

7500

7375

7250

7125

7000

6875

6750

6625

6500

6375

6250

6125

6000

5875

5750

5625

5500

5375

5250

5125

5000

4875

4750

4625

4500

4375

4250

4125

4000

3875

3750

3625

3500

3375

3250

3125

3000

2875

2750

2625

2500

2375

2250

2125

2000

1875

Range 2

4875

4750

4625

4500

4375

4250

4125

4000

3875

3750

3625

3500

3375

3250

3125

3000

2875

2750

2625

2500

2375

2250

2125

2000

1875

Range 1

3500

3375

3250

3125

3000

2875

2750

2625

2500

2375

2250

2125

2000

1875

RM

7500

7375

7250

7125

7000

6875

6750

6625

6500

6375

6250

6125

6000

5875

5750

5625

5500

5375

5250

5125

5000

4875

4750

4625

4500

4375

4250

4125

4000

3875

3750

3625

3500

3375

3250

3125

3000

2875

2750

2625

2500

2375

2250

2125

2000

1875

SPB 52

1500

1750

2000

2250

2500

2750

3000

3250

3500

3750

4000

4250

4500

4750

5000

5250

5500

5750

6000

6250

6500

6750

7000

7250

7500

7750

8000

8250

8500

8750

9000

9250

9500

9750

10000

LZ

1

2

3

4

5

6

7

Number of infills/fields per glazing frame

1

2

3

4

5

6

7

RM

7500

7375

7250

7125

7000

6875

6750

6625

6500

6375

6250

6125

6000

5875

5750

5625

5500

5375

5250

5125

5000

4875

4750

4625

4500

4375

4250

4125

4000

3875

3750

3625

3500

3375

3250

3125

3000

2875

2750

2625

2500

2375

2250

2125

2000

1875

Sn₁

10

9

8

7

6

5

4

3

Height

7500

6790

6780

6040

6030

5290

5280

4540

4530

3790

3780

3040

3030

2290

2280

1875

n₁

14

13

12

11

10

9

8

7

6

5

4

Height

7450 - 7500

7440

6880

6870

6310

6300

5740

5730

5170

5160

4600

4590

4030

4020

3460

3450

2890

2880

2320

2310

Note:

Glazing S4, U4, A4, B4, M4, XU, C4 on request.

- On request: torsion spring shaft or direct drive operator

On request and only direct drive operator S140 with track application H

For notice on trap guard, see page 5

Range change
- n₁

Number of glazing frames

Sn₁

Number of glazing frames in the wicket door

RM

Grid height

LZ

Clear frame dimensions (from 1200)

SPB

Rail width

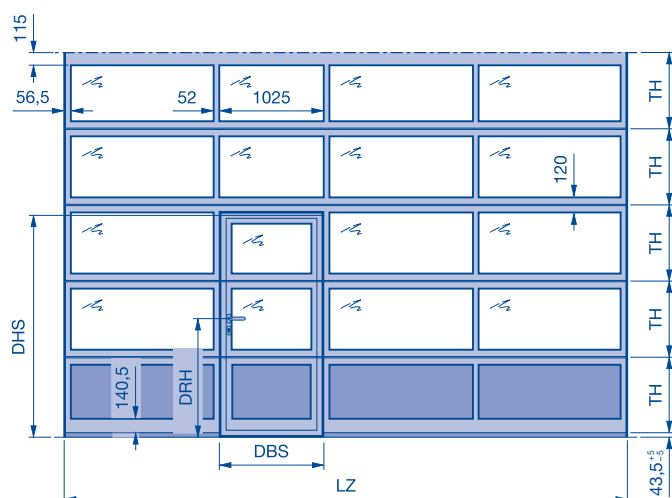
TH

Door section height

Sectional door ALR 67 Thermo with wicket door and trip-free threshold

Glazed aluminium sectional door with thermal break

Exterior view



Lever height on request

Wicket door clear passage width (DBS) = 905 mm**

Clear passage height of wicket door (DHS) = $S_{n1} \times TH - 55^*$

Sn₁ Number of frames in the wicket door

- Attention: If there is no frame above the wicket door, then - 100 instead of - 55.

.. For a door width of 1750 - 1840 mm, the clear passage width is 833 mm.

For door widths below 1750 mm, the clear passage width (DBS) depends on the door width and is much smaller than standard dimensions.

Note:

- When using a shaft operator (installation example 5), the door locking is always opposite the operator side.
- For door widths from 5510 mm (from 4510 mm with real glass infill in the wicket door), diagonal struts are fitted into the bottom door section – not visible with closed infills.
- For a view of the matching appearance with doors without wicket door see pages 26–28.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Any door width in 10 mm increments possible.

[illegible]

Notes:

- For versions with real glass infill in the wicket door, the threshold height **SH₂** begins at LZ 4510 mm.
- Glazing S4, U4, A4, B4, M4, XU, C4 on request.

	On request: torsion spring shaft or direct drive operator
	On request and only direct drive operator S140 with track application H
	For notice on trap guard, see page 5
	Range change

DHS	Wicket door clear passage height
DBS	Wicket door clear passage width
DRH	Lever height
LZ	Clear frame dimensions (from 1500)
RM	Grid height
SPB	Rail width
SH₁	Threshold height (rising from 5 to 10)

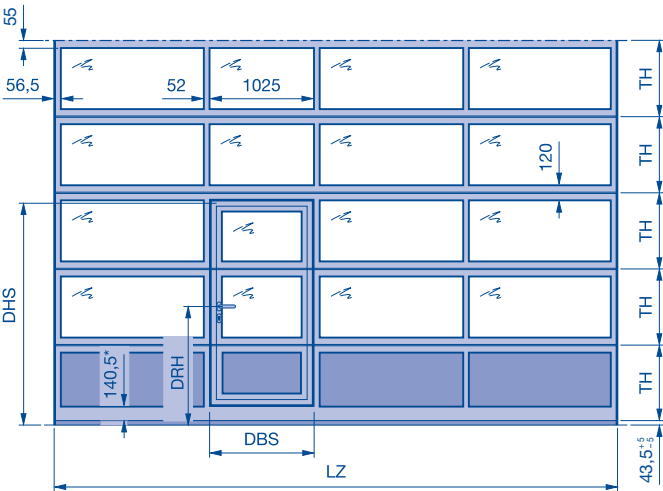
SH₂	Threshold height (approx. 13)
n₁	Number of glazing frames
Sn₁	Number of glazing frames in the wicket door
TH	Door section height

Sectional door ALR 67 Thermo

with wicket door and threshold rail

Glazed aluminium sectional door with thermal break

Exterior view



Lever height on request

Wicket door clear passage width (DBS) = 905 mm**

Clear passage height of wicket door (DHS) = Sn₁ × TH – 55

Sn₁ Number of frames in the wicket door

* 265.5 with SH₂

** For a door width of 1750 - 1840 mm, the clear passage width is 798 mm.
For door widths below 1750 mm, the clear passage width (DBS) depends on the door width and is much smaller than standard dimensions.

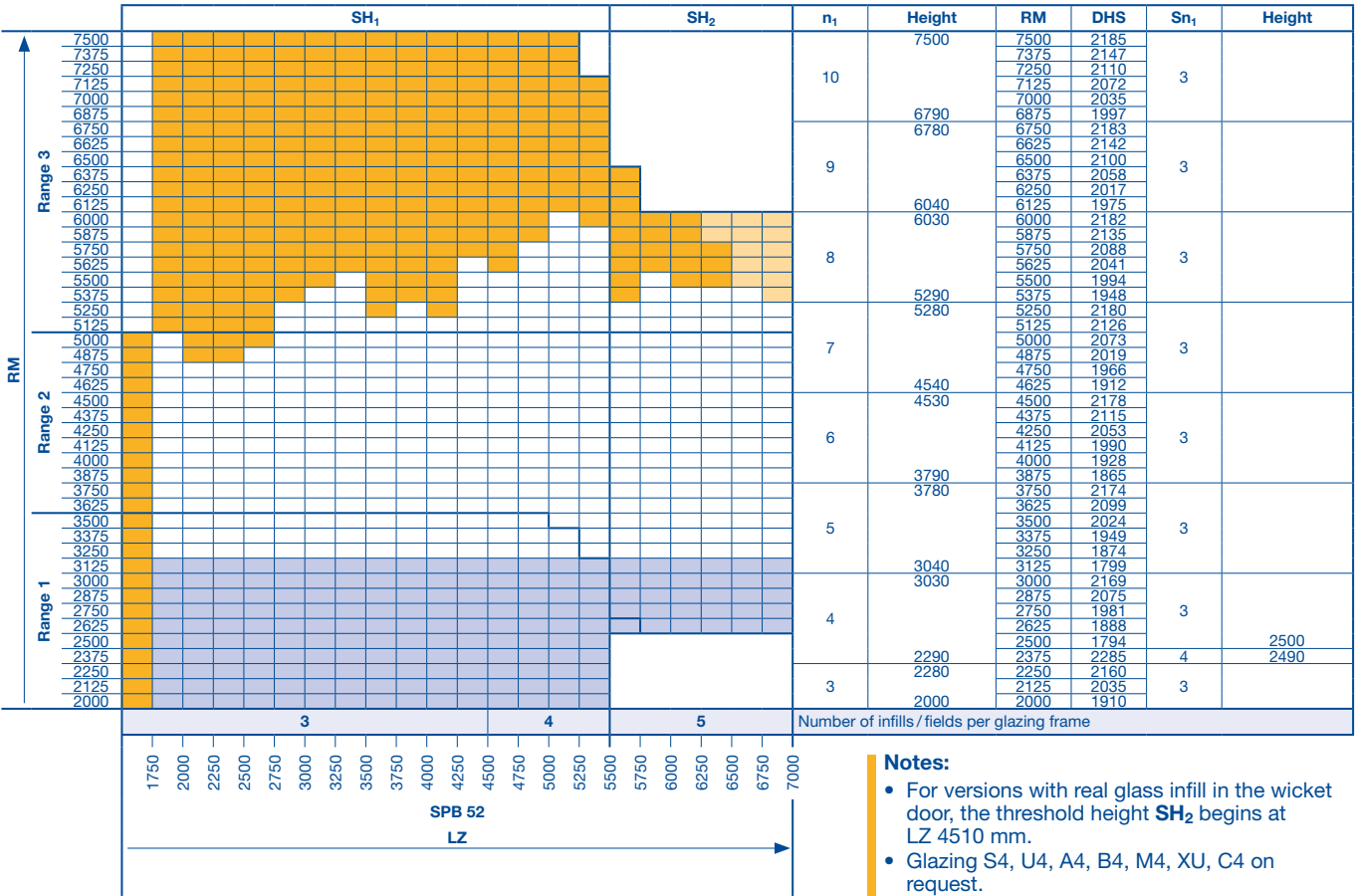
Note:

When using a shaft operator (installation example 5), the door locking is always opposite the operator side.

For a view of the matching appearance with doors without wicket door see pages 26 – 28.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Any door width in 10 mm increments possible.

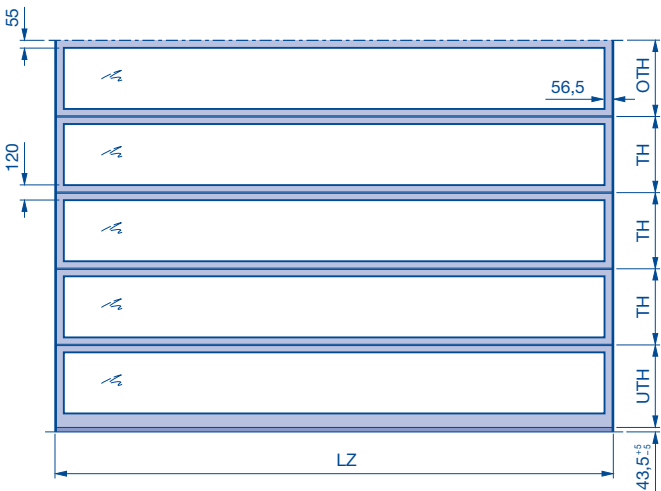


On request: torsion spring shaft or direct drive operator	DHS Wicket door clear passage height	SH₂ Threshold height (317)
On request and only direct drive operator S140 with track application H	DBS Wicket door clear passage width	n₁ Number of glazing frames
For notice on trap guard, see page 5	DRH Lever height	Sn₁ Number of glazing frames in the wicket door
Range change	LZ Clear frame dimensions (from 1500)	TH Door section height
	RM Grid height	
	SPB Rail width	
	SH₁ Threshold height (192)	

Sectional door ALR 67 Thermo Glazing

Aluminium sectional door with extensive glazing with thermal break, real glass

Exterior view



TH = $\frac{\text{Door height} - 119}{\text{Number of door section frames}}$

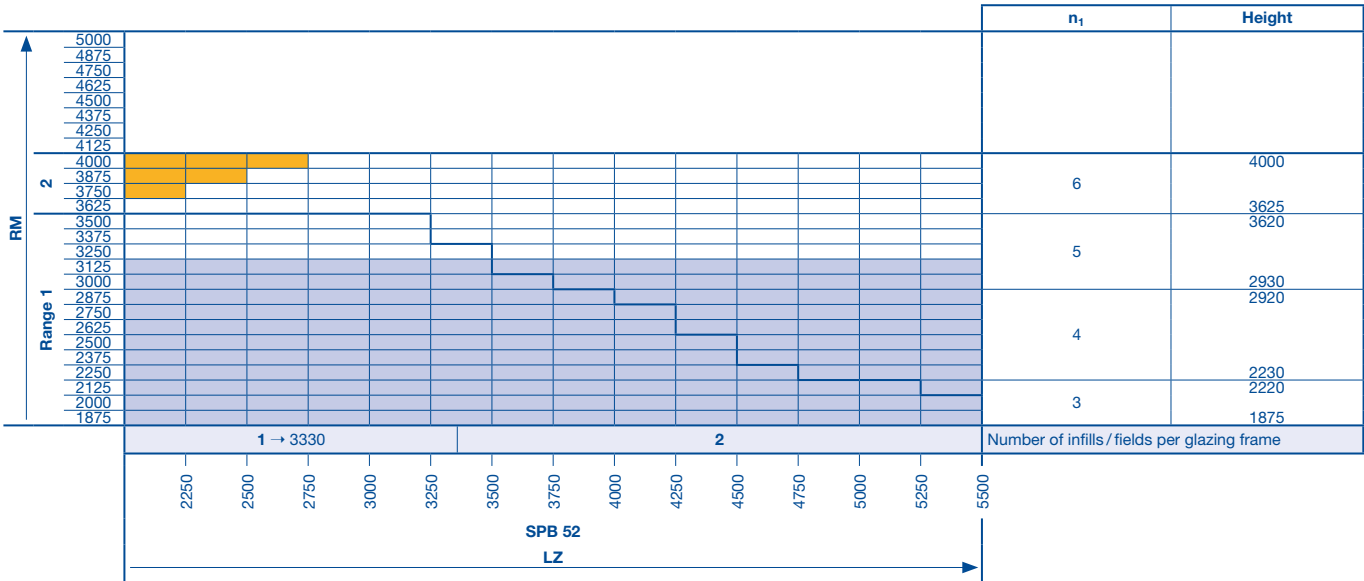
UTH = TH + 84 ≤ 785

OTH = TH + 35

- Note:
- When using a shaft operator (installation example 5), the door locking is always opposite the operator side.
 - All track applications on request.

Size range

The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account. Any door width in 10 mm increments possible.



on request

For notice on trap guard, see page 5

Range change

Grid height

Clear frame dimensions (from 2000)

→ up to LZ

SPB Rail width

n₁ Number of glazing frames

UTH Bottom door section height

TH Door section height

OTH Upper door section height

Glazing and wicket door arrangements

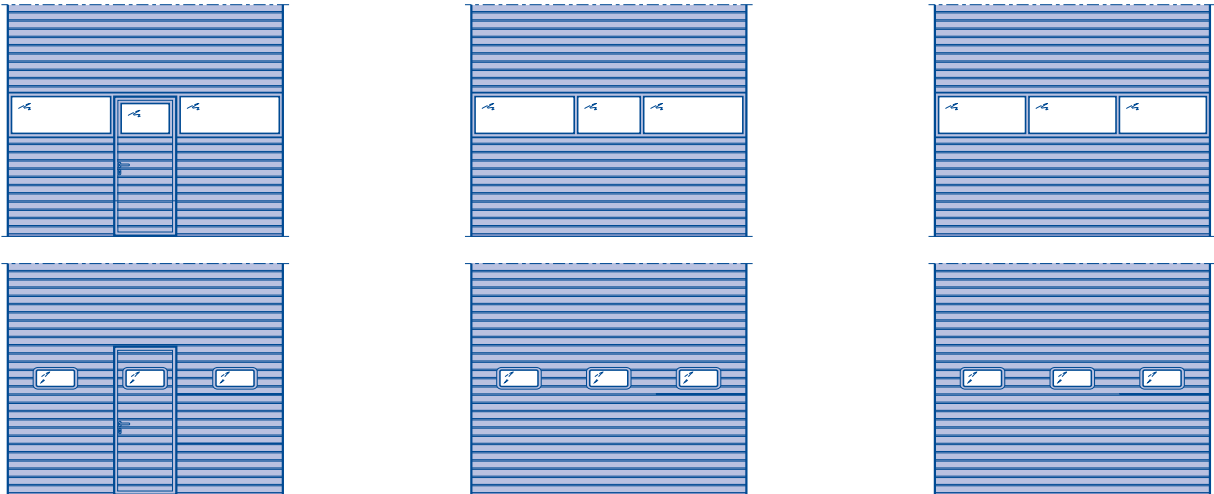
Sectional doors with 3 infills, fields

Glazing arrangements – external view

Sectional door SPU 67 Thermo with wicket door with trip-free threshold

Sectional door SPU 67 Thermo, matching the wicket door versions

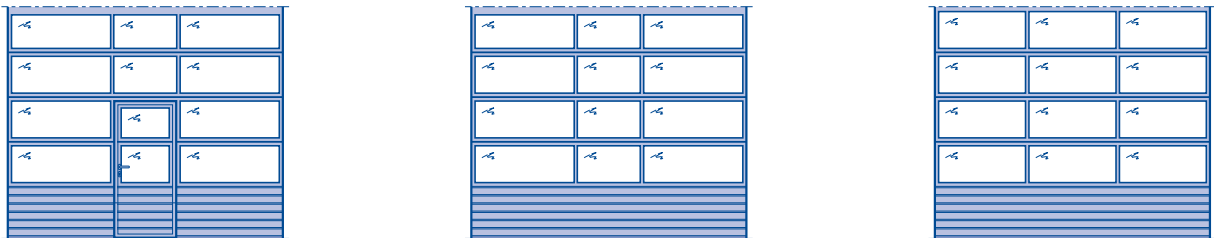
Sectional door SPU 67 Thermo with standard window division



Sectional door APU 67 Thermo with wicket door with trip-free threshold

Sectional door APU 67 Thermo, matching the wicket door versions

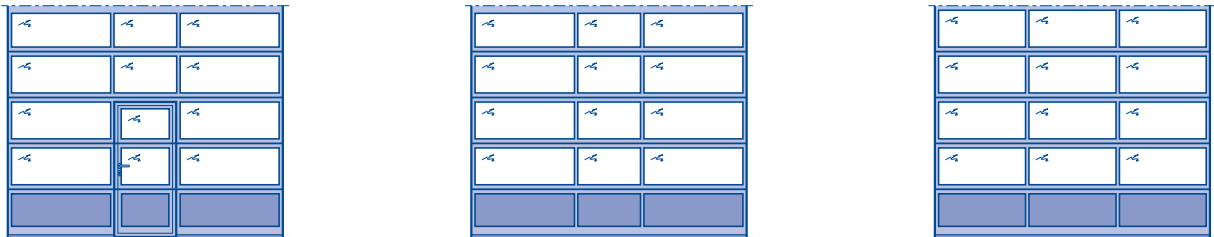
Sectional door APU 67 Thermo with standard window division



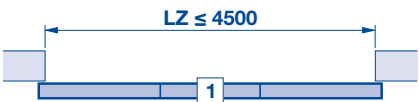
Sectional door ALR 67 Thermo with wicket door with trip-free threshold

Sectional door ALR 67 Thermo, matching the wicket door versions

Sectional door ALR 67 Thermo with standard window division



Arrangement of the wicket door



- Notes:
- Wicket door clear passage width (DBS) = 905 mm.
 - Wicket door only opening outwards.

Wicket door with short distance to outside door edge



The short distance to the outside door edge is optionally possible on the left or right.

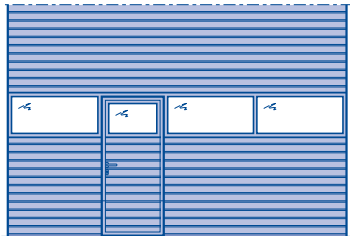
- Note:
- Not possible for doors with real glass.

Glazing and wicket door arrangements

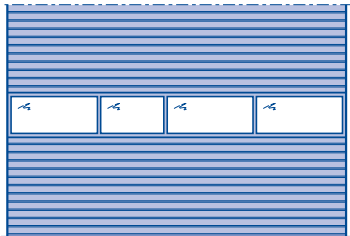
Sectional doors with 4 infills, fields

Glazing arrangements – external view

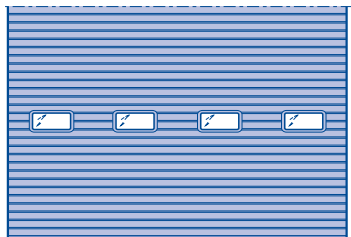
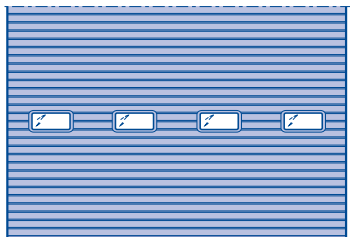
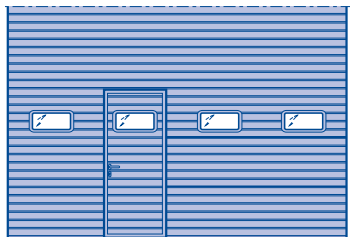
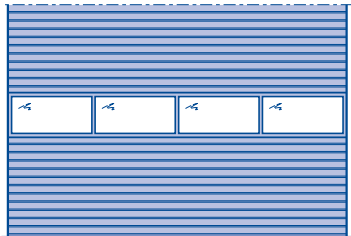
Sectional door SPU 67 Thermo with wicket door with trip-free threshold



Sectional door SPU 67 Thermo, matching the wicket door versions



Sectional door SPU 67 Thermo with standard window division



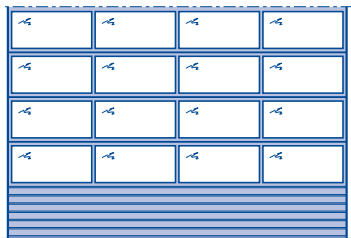
Sectional door APU 67 Thermo with wicket door with trip-free threshold



Sectional door APU 67 Thermo, matching the wicket door versions



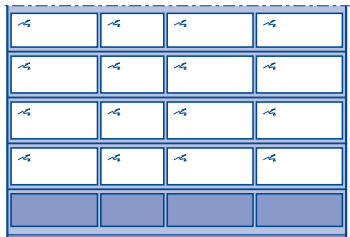
Sectional door APU 67 Thermo with standard window division



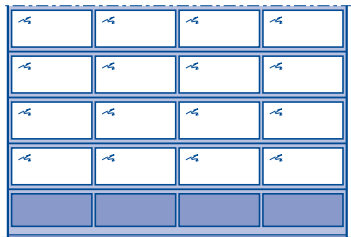
Sectional door ALR 67 Thermo with wicket door with trip-free threshold



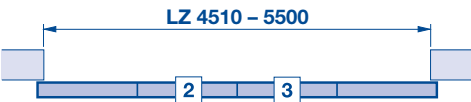
Sectional door ALR 67 Thermo, matching the wicket door versions



Sectional door ALR 67 Thermo with standard window division

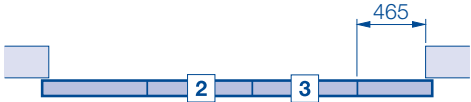


Arrangement of the wicket door



- Notes:**
- Wicket door clear passage width (DBS) = 905 mm.
 - Wicket door only opening outwards.

Wicket door with short distance to outside door edge



The short distance to the outside door edge is optionally possible on the left or right.

- Note:**
- Not possible for doors with real glass.

Glazing and wicket door arrangements

Sectional doors with 5 infills, fields

Glazing arrangements – external view

Sectional door SPU 67 Thermo with wicket door with trip-free threshold

Sectional door SPU 67 Thermo, matching the wicket door versions

Sectional door SPU 67 Thermo with standard window division

Sectional door APU 67 Thermo with wicket door with trip-free threshold

Sectional door APU 67 Thermo, matching the wicket door versions

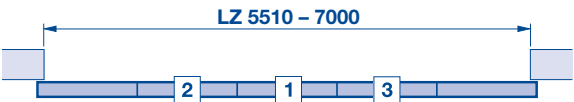
Sectional door APU 67 Thermo with standard window division

Sectional door ALR 67 Thermo with wicket door with trip-free threshold

Sectional door ALR 67 Thermo, matching the wicket door versions

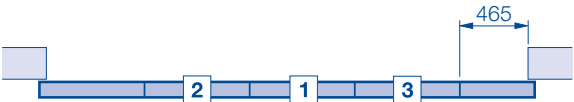
Sectional door ALR 67 Thermo with standard window division

Arrangement of the wicket door



- Notes:
- Wicket door clear passage width (DBS) = 905 mm.
 - Wicket door only opening outwards.

Wicket door with short distance to outside door edge



- The short distance to the outside door edge is optionally possible on the left or right.
- Note:
- Not possible for doors with real glass.

Wind load class

Resistance to wind load

Detailed technical data can be found in the product configurator.

	Wind classes acc. to EN 12424																																					
SPU 67 Thermo	4																		3																			
APU 67 Thermo, ALR 67 Thermo	4																		3																			
ALR 67 Thermo Glazing	3																																					
	1200	1500	2000	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000	6250	6500	6750	7000	7250	7500	7750	8000	8250	8500	8750	9000	9250	9500	9750	10000			
	LZ																																					

Wind load class for sectional doors with wicket door

	Wind classes acc. to EN 12424																																						
SPU 67 Thermo	4																		2																				
APU 67 Thermo, ALR 67 Thermo	4																		2																				
	1200	1500	2000	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000	6250	6500	6750	7000	7250	7500	7750	8000	8250	8500	8750	9000	9250	9500	9750	10000				
	LZ																																						

Increased wind load class only for sectional doors without wicket door

	Wind classes acc. to EN 12424																																					
											Set 1			Set 2		Set 3																						
SPU 67 Thermo	4										4			4		4						3																
APU 67 Thermo, ALR 67 Thermo	4										4			4		4						3																
	1200	1500	2000	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000	6250	6500	6750	7000	7250	7500	7750	8000	8250	8500	8750	9000	9250	9500	9750	10000			
	LZ																																					

Please note:

- A technical inspection is required for an increased wind load class with special requirements!
- Additional information in the table on page 6, technical manual depth 67 mm.
- Not possible for ALR 67 Glazing.

Set 1

Door leaf reinforcement 85, reinforced hardware

Set 2

Door leaf reinforcement 85, reinforced hardware, twin roller

Set 3

Door leaf reinforcement 100, reinforced hardware, twin roller

LZ Clear frame dimensions
→ up to LZ

Side door NT 80 Thermo

Possible handing options

Fitting in the opening

Fitting next to the garage door, opening inwards or outwards, RH or LH hinged

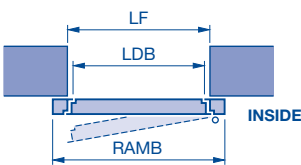


Fitting in the opening, opening inwards or outwards, RH or LH hinged



Fitting behind the opening

Only opening inwards, RH or LH hinged



Structural opening	Ordering size
	Overall frame dimensions RAMB x RAMH
875 x 2000	855 x 1990
875 x 2125	855 x 2115
1000 x 2000	980 x 1990
1000 x 2125	980 x 2115

Size range: width: RAMB 770 to 1300, height: RAMH 1865 to 2525 (indicate overall frame dimensions)

Doors with multiple-point locking: RAMH ≥ 1920 mm

Clear passage dimensions:

Opening angle	Width	Height
136°	RAMB – 164	RAMH – 70
90°	RAMB – 215	

LF	Structural opening	LDH	Clear passage height
RAMB	Overall frame width	LZ	Clear frame dimensions
RAMH	Overall frame height		
LDB	Clear passage width		

Side door NT 80 Thermo

with S-ribbed Stucco-textured / L-ribbed Micrograin infills



Note:

- Compound window with RC2 version not possible.

* See page 30
LF Structural opening
RAMB Overall frame width
RAMH Overall frame height

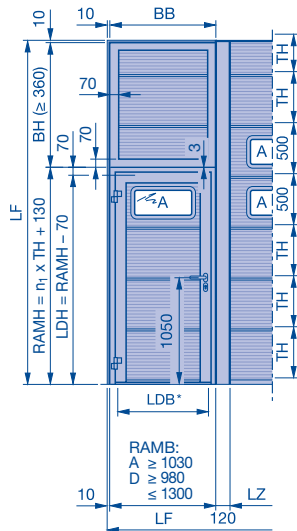
BH Panel height
BB Panel width
LDB Clear passage width
LDH Clear passage height

TH Door section height
SO Bottom section height
LZ Clear frame dimensions
n₁ Number of door sections / glazing frames

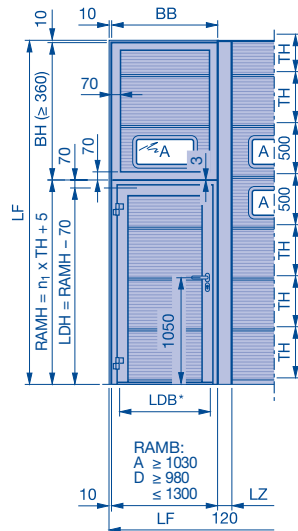
Side door NT 80 Thermo

with L-ribbed Micrograin infills

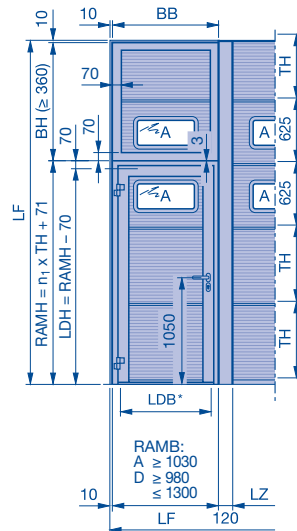
Compound glazing type A TH = 500



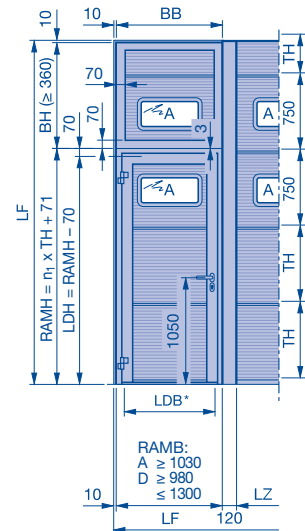
Compound glazing type A TH = 625 and 750



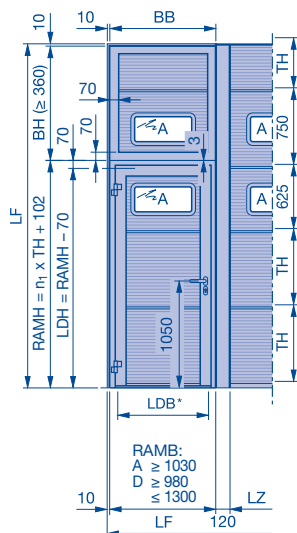
Compound glazing type A TH = 625 and 750



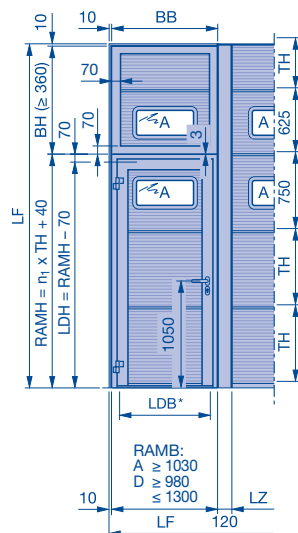
and 750



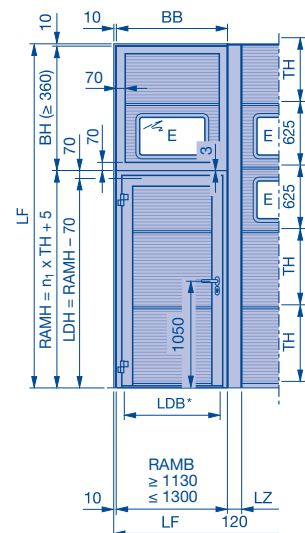
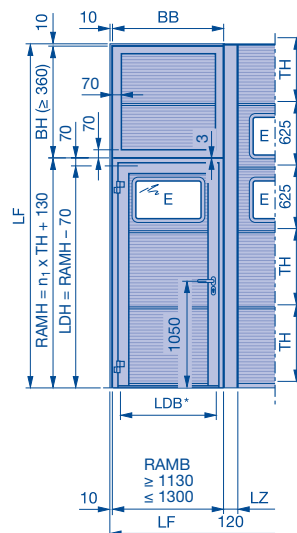
Compound glazing type A TH = 625 / 750 and 750 / 625



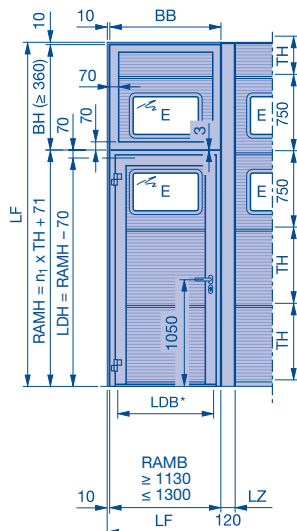
50 and 750 / 625 Compound glazing type E TH = 625



Compound glazing type E TH = 625



Compound glazing type E TH = 750



Note:

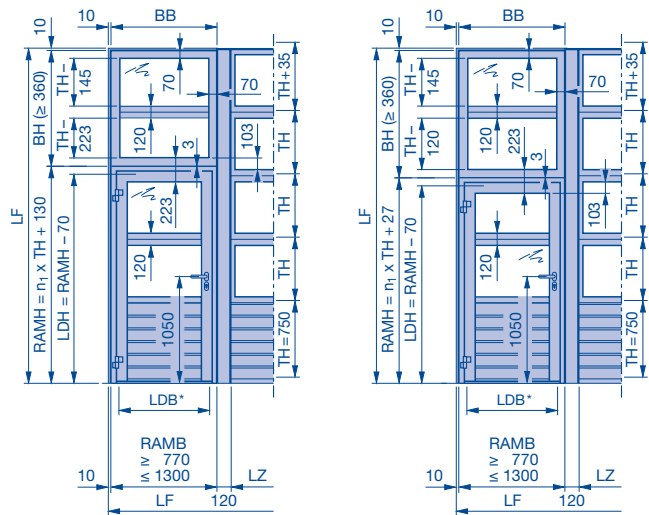
- Compound window with RC2 version not possible.

(Legend see page 31)

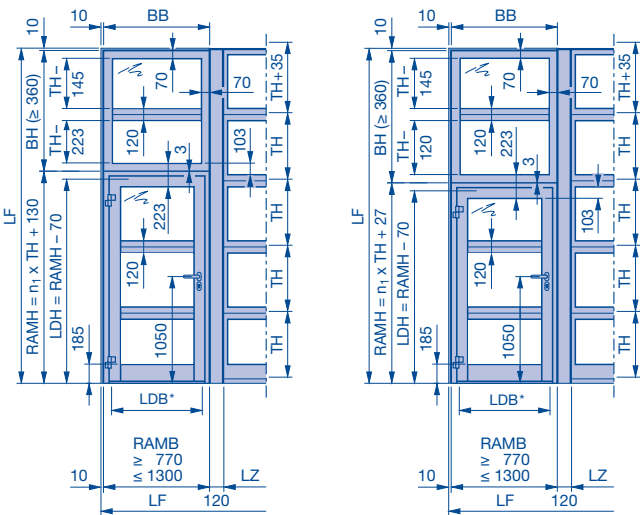
Side door NT 80 Thermo

with S-ribbed Stucco-textured / L-ribbed Micrograin infills

Side door NT 80 Thermo matching door type APU 67 Thermo



Side door NT 80 Thermo matching door type ALR 67 Thermo



*	See page 30	BH	Panel height	TH	Door section height
LF	Structural opening	BB	Panel width	SO	Bottom section height
RAMB	Overall frame width	LDB	Clear passage width	LZ	Clear frame dimensions
RAMH	Overall frame height	LDH	Clear passage height	n1	Number of door sections / glazing frames

Side door NT 80 Thermo

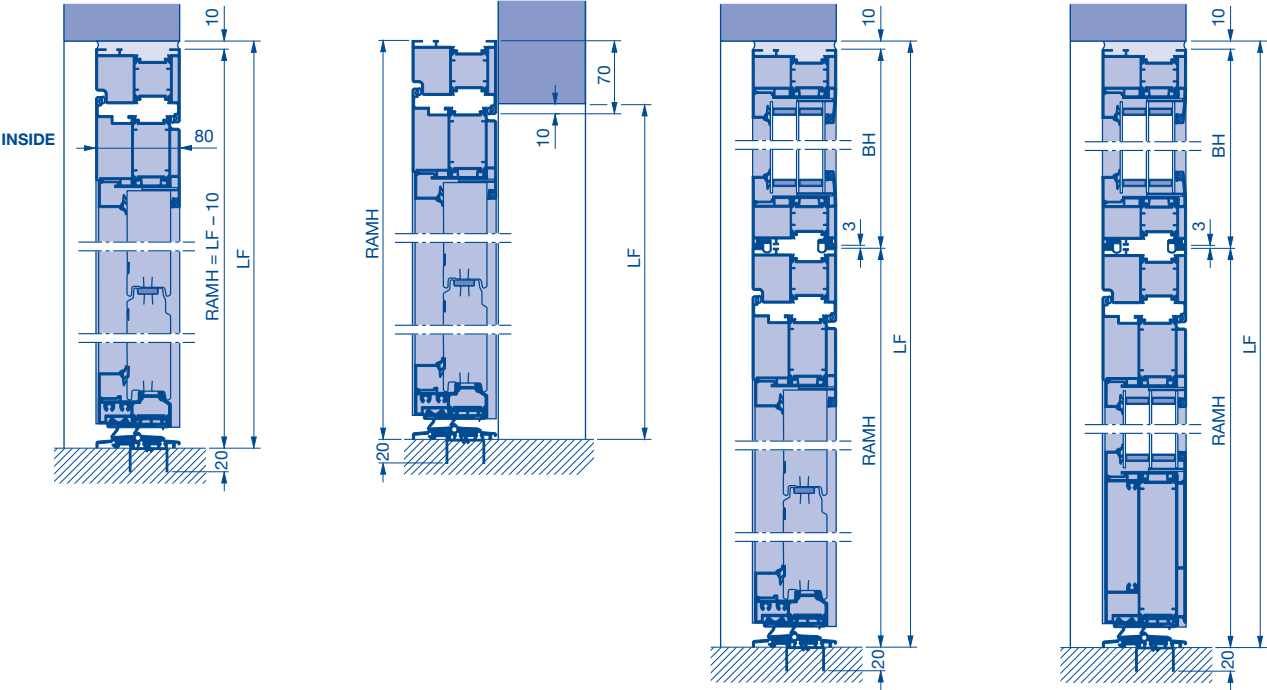
Possible fitting options

Possible fitting options

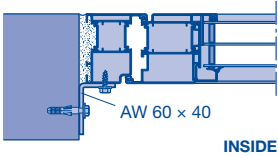
- SPU in the opening

No window section, no compound glazing
- SPU behind the opening

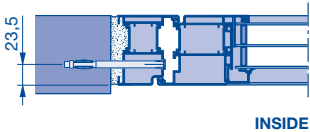
No window section, no compound glazing
- SPU, APU with fascia panel
- ALR with fascia panel



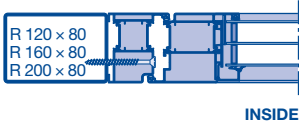
In the opening



Plugs for metal frame

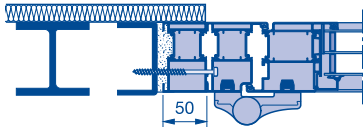


Tapping screw with countersunk head
B 6.3 x 80

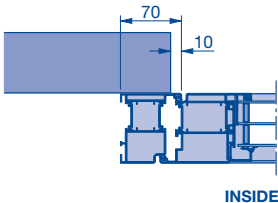


(Bottom illustration with 50 mm* extension profile for all-over insulation)

* Optionally with 25 mm



Behind the opening



Note:
Fitting with thermal break requires on-site preparations.

R	Box section	BH	Panel height
AW	Aluminium angle	RAMH	Overall frame height
SW	Steel angle	LF	Structural opening

Side door NT 80 Thermo RC2

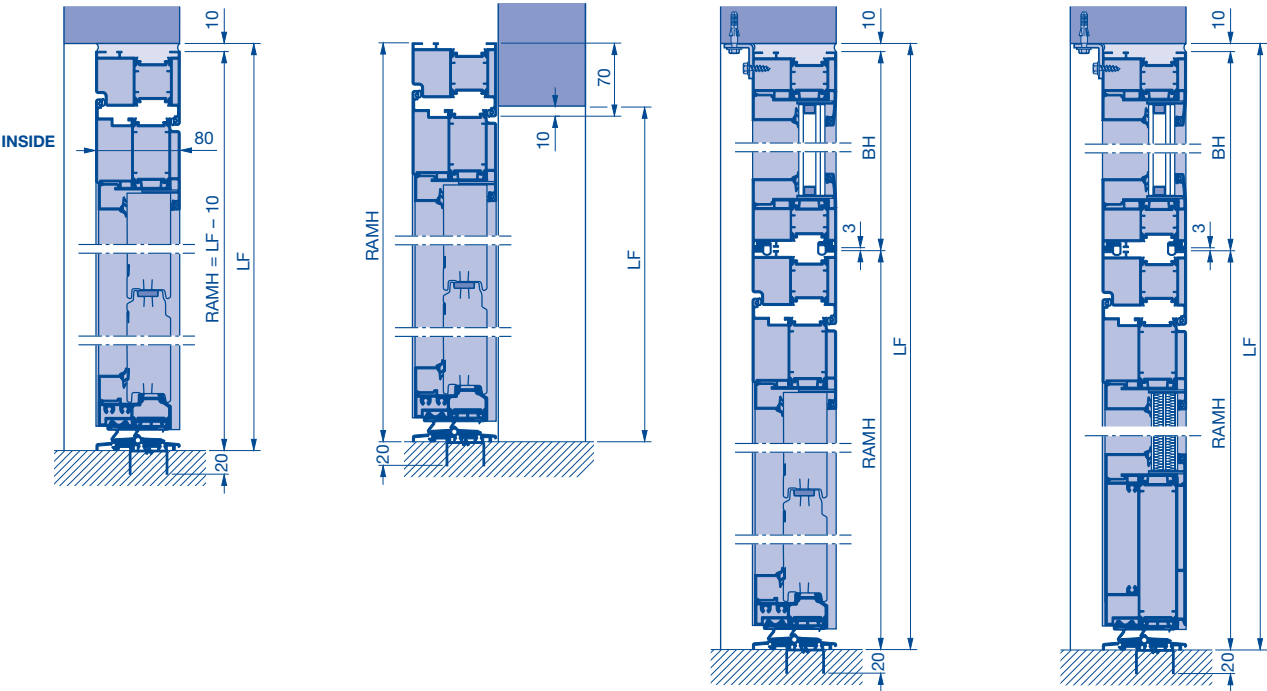
Possible fitting options

Possible fitting options

Note:

The side door and panel must be fitted in accordance with DIN EN 1627.

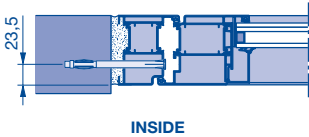
- SPU in the opening
- No window section, no compound glazing
- SPU behind the opening
- No window section, no compound glazing
- SPU, APU with fascia panel
- ALR with fascia panel



In the opening



Plugs for metal frame

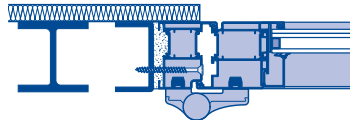
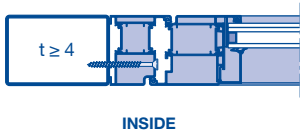


Tapping screw with countersunk head

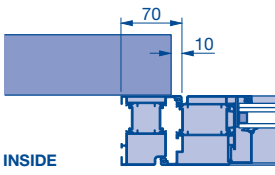
B 6.3 × 80

Note:

Only use plugs for metal frame and tapping screw with countersunk head when fitting the side door.



Behind the opening



Note:

Fitting with thermal break requires on-site preparations.

R	Box section	BH	Panel height	LF	Structural opening
AW	Aluminium angle	RAMH	Overall frame height		
SW	Steel angle	LDB	Clear passage width		

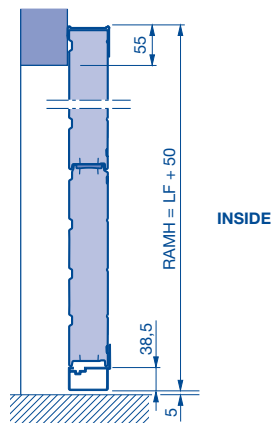
Fixed elements

Possible fitting options and fitting examples

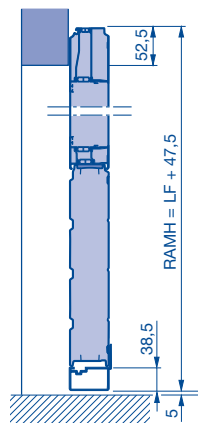
Possible fitting options

SPU 67 Thermo behind the opening

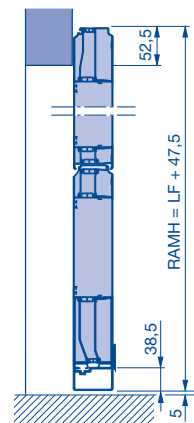
No window section, no compound glazing



APU 67 Thermo behind the opening

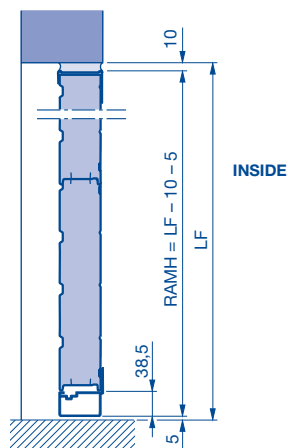


ALR 67 Thermo behind the opening

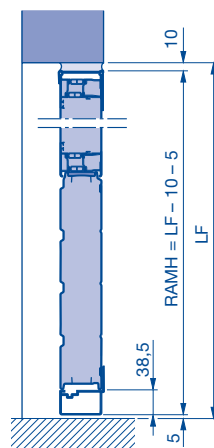


SPU 67 Thermo in the opening

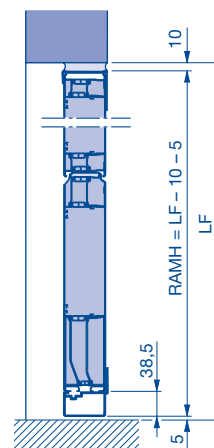
No window section, no compound glazing



APU 67 Thermo in the opening

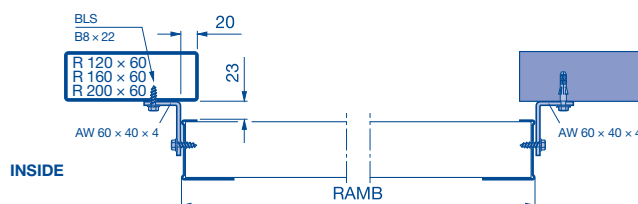
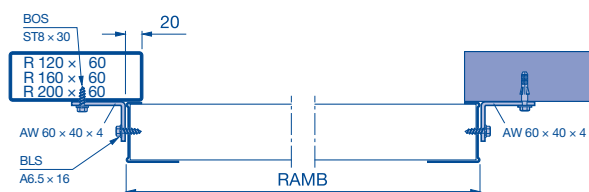


ALR 67 Thermo in the opening

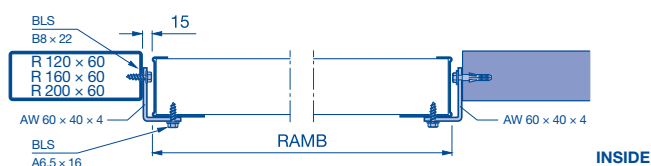


Fitting examples

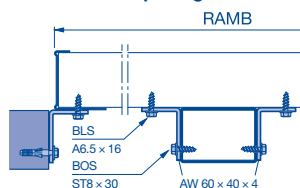
Behind the opening



In the opening



In front of the opening



Note:
Fitting with thermal break
requires on-site
preparations.

AW Aluminium angle
LF Structural opening
RAMB Overall frame width

RAMH Overall frame height

Clear passage

Series 60

Track applications N / NA / ND / NS / NK

	without operator and without chain hoist	HKZ or WA 500 / 500 FU	WA 300	ITO / SupraMatic**
LZ ≤ 5500				
Without wicket door	RM - 100	RM	RM - 30	RM
Wicket door with threshold rail	RM - 120	RM - 20	RM - 50	RM - 20
Wicket door without threshold rail	RM - 165	RM - 65	RM - 95	RM - 65
LZ > 5500				
Without wicket door	RM - 150	RM - 50	RM - 80	RM - 50
Wicket door with threshold rail	RM - 170	RM - 70	RM - 100	RM - 70
Wicket door without threshold rail ***	RM - 185	RM - 135	RM - 165	RM - 135
LZ > 8000				
Without wicket door	RM - 100	RM - 100	–	–

Track application L with swivel mechanism

	without operator and without chain hoist	HKZ or WA 500 / 500 FU	WA 300	ITO
LZ ≤ 5500				
Without wicket door*	–	RM	RM - 30	–
Wicket door with threshold rail	–	RM - 50	RM - 80	–
Wicket door without threshold rail	–	RM - 65	RM - 95	–
LZ > 5500				
Without wicket door	–	RM - 50	RM - 80	–
Wicket door with threshold rail	–	RM - 100	RM - 130	–
Wicket door without threshold rail	–	RM - 135	RM - 165	–

Note:

For wicket door arrangement 2 and 4 (LH hinged) or 3 and 5 (RH hinged) with opposite operator side, the clear passage can be found in the product configurator!

Track application L without swivel mechanism

	without operator and without chain hoist	HKZ or WA 500 / 500 FU	WA 300	ITO / SupraMatic
LZ ≤ 5500				
Without wicket door	RM - 325	RM - 130	RM - 160	RM
Wicket door with threshold rail	RM - 375	RM - 150	RM - 180	RM - 50
Wicket door without threshold rail	RM - 440	RM - 190	RM - 240	RM - 85
LZ > 5500				
Without wicket door	RM - 375	RM - 180	RM - 210	RM - 50
Wicket door with threshold rail	RM - 375	RM - 200	RM - 230	RM - 100
Wicket door without threshold rail ***	RM - 475	RM - 260	RM - 290	RM - 165

* For ALR / ALR Thermo with real glass infill VG, E2 and G2 and ALR Vitraplan LZ > 3000;
ALR Glazing LZ > 3330 and ALR / ALR Thermo LZ > 5000, the calculation applies to a wicket door with threshold rail

** Track applications NS and NK not possible.

*** For versions with real glass infill LZ > 4500

Clear passage

Series 60

Track application LD with swivel mechanism

	without operator and without chain hoist	HKZ or WA 500 / 500 FU		WA 300		ITO
a°		< 6°	6° – 10°	< 6°	6° – 10°	
LZ ≤ 5500						
Without wicket door	–	RM		RM - 30		–
Wicket door with threshold rail	–	RM - 50	RM - 30	RM - 80	RM - 60	–
Wicket door without threshold rail	–	RM - 65		RM - 95		–
LZ > 5500						
Without wicket door	–	RM - 50		RM - 80		–
Wicket door with threshold rail	–	RM - 100	RM - 80	RM - 130	RM - 110	–
Wicket door without threshold rail	–	RM - 135		RM - 195		–

Note:

For wicket door arrangement 2 and 4 (LH hinged) or 3 and 5 (RH hinged) with opposite operator side, the clear passage can be found in the product configurator!

Track application LD without swivel mechanism

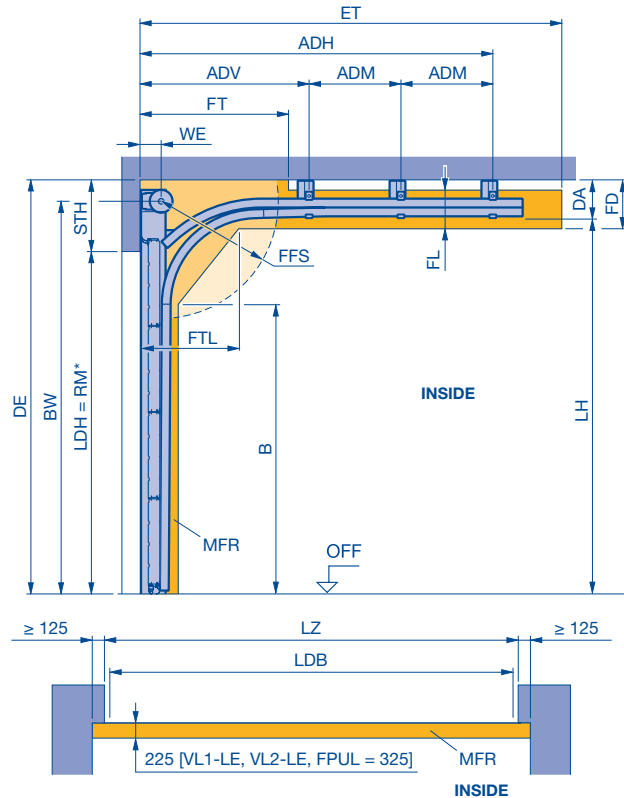
	without operator and without chain hoist	HKZ or WA 500 / 500 FU		WA 300		ITO / SupraMatic	
a°		2° – 16°	18° – 30°	2° – 16°	18° – 30°	2° – 16°	18° – 30°
LZ ≤ 5500							
Without wicket door	RM - 325	RM - 125 + (a° × 2,86)	RM - 110 + (a° × 2,08)	RM - 155 + (a° × 2,86)	RM - 140 + (a° × 2,08)	RM - (a° × 2,86)	RM - (a° × 2,08)
Wicket door with threshold rail	RM - 375	RM - 150 + (a° × 3,2)	RM - 165 + (a° × 3,75)	RM - 180 + (a° × 3,2)	RM - 195 + (a° × 3,75)	RM - 50 + (a° × 2,86)	RM - 65 + (a° × 2,08)
Wicket door without threshold rail	RM - 440	RM - 190 + (a° × 3,2)	RM - 210 + (a° × 3,75)	RM - 240 + (a° × 3,2)	RM - 260 + (a° × 3,75)	RM - 85 + (a° × 3,2)	RM - 100 + (a° × 3,75)
LZ > 5500							
Without wicket door	RM - 375	RM - 175 + (a° × 2,86)	RM - 160 + (a° × 2,08)	RM - 205 + (a° × 2,86)	RM - 190 + (a° × 2,08)	RM - 50 + (a° × 2,86)	RM - 65 + (a° × 2,08)
Wicket door with threshold rail	RM - 375	RM - 200 + (a° × 3,2)	RM - 215 + (a° × 3,75)	RM - 230 + (a° × 3,2)	RM - 245 + (a° × 3,75)	RM - 100 + (a° × 3,2)	RM - 115 + (a° × 3,75)
Wicket door without threshold rail***	RM - 475	RM - 260 + (a° × 3,2)	RM - 280 + (a° × 3,75)	RM - 290 + (a° × 3,2)	RM - 310 + (a° × 3,75)	RM - 165 + (a° × 3,2)	RM - 180 + (a° × 3,75)

*** For versions with real glass infill LZ > 4500

Track application: N

Normal track application

Detailed technical data can be found in the product configurator.



ADH	Distance to rear ceiling anchor	FTL	Clearance door section in the double radius
ADM	Distance to central ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 65)
ADV	Distance to front ceiling anchor	LDH	Clear passage height
B	Start of double radius	LH	Track height
BW	Position of shaft support	LZ	Clear frame dimensions
DA	Min. distance to ceiling	MFR	Space for fitting the door
DAL	Anchor length	OFF	Finished floor level
DE	Min. ceiling height	RM	Grid height
ET	Min. distance back	STH	Min. headroom
FD	Min. ceiling clearance	WE	Shaft centre from lintel
FFS	Spring compression clearance		
FL	Track clearance		
FPUL	Spring buffers below the track		
FT	Clearance for door operation		

Door weights for roof loads:

SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

Observe min. sideroom, see page 65.

Notes:

- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track in the area of the spring buffer is reduced by 70 mm.
- For version with wicket door, manually operated: chain hoist recommended!

* Note:

Observe clear passage height LDH, see page 37.

	STH	WE	DA	BW	FT
N 1	425	140	205	RM + 345	2 × WE
N 2	475	160	253	RM + 370	
N 3	585	180	363	RM + 450	
with double spring shaft	795		563	RM + 450	

B	DE	FFS	FD	FL	FTL	LH
RM - 295	STH + RM	Min. 90° (745)	DA + 65	250	695	RM + 222

ET***		
N 1 / N 2	RM + 415	Manual operation with short spring buffer
	RM + 685	Shaft operator with long spring buffer
N 3	RM + 685	For manual operation and shaft operator with long spring buffer

*** Simplified calculation

Min. headroom

Track size	Headroom	Track size	Headroom	Track size	Headroom
N 1, NS 1, NK 1	425	GS 1, GK 1	567	V 6	RM + 560
N 2, NS 2, NK 2	475	GS 1, GK 2	617	V 7	RM + 600
N 3	585	L 1, LD 1, L 2, LD 2	250	V 9	RM + 695
NA 1	435	H 4, HD 4	780	VA 6	RM + 570
NA 2	485	H 5, HD 5	840	VS 6, VS 7	**
ND 1	445	H 8, HD 8	880	VS 9	**
ND 2	475	HA 4	790	VU 6	RM + 330
ND 3	585	HU 4, HU 5, HU 8, RD 4, RD 5, RD 8	1775	VU 7	RM + 330
ND 6	525	HS 4, HK 4	805	VU 9	RM + 330
ND 7	545	HS 5, HK 5	835	WS 6, WS 7, WS 9	**
NH 1, GD 1	579	HS 8, HK 8	875		
NH 2, GD 2	644	RS 4, RK 4, RS 5, RK 5	1477		
NH 3	719				

Dimensions in mm

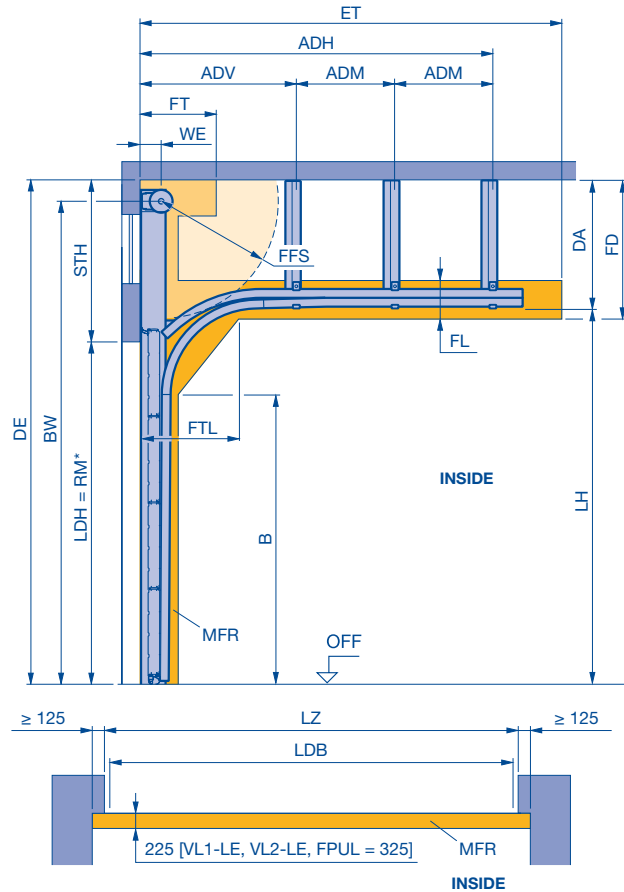
** Dimensions can be found in the product configurator.

Track application: NA

Normal track application

With high-mounted torsion spring shaft

Detailed technical data can be found in the product configurator.



ADH	Distance to rear ceiling anchor	FTL	Clearance door section in the double radius
ADM	Distance to central ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 65)
ADV	Distance to front ceiling anchor	LDH	Clear passage height
B	Start of double radius	LH	Track height
BW	Position of shaft support	LZ	Clear frame dimensions
DA	Min. distance to ceiling (depends on order)	MFR	Space for fitting the door
DE	Ceiling height (depends on order)	OFF	Finished floor level
ET	Min. distance back	RM	Grid height
FD	Ceiling clearance	STH	Max. headroom (depends on order)
FFS	Spring compression clearance	WE	Shaft centre from lintel
FL	Track clearance		
FPUL	Spring buffers below the track		
FT	Clearance for door operation		

Door weights for roof loads:

SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

Observe min. sideroom, see page 65.

Notes:

- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track in the area of the spring buffer is reduced by 70 mm.

* Note:

Observe clear passage height LDH, see page 37.

	STH	WE	DA	BW min.	BW max
NA 1	435	140	(BW + 80) - (RM + 222)	RM + 355	7820, DE - 80
NA 2	485	160	(BW + 105) - (RM + 222)	RM + 380	7995, DE - 105

FT	DE	B	FFS
2 x WE	STH + RM	RM - 295	Min. 90° (745)

FD	FL	FTL	LH
DA + 65	250	695	RM + 222

ET**		
NA 1 / NA 2	RM + 415	Manual operation with short spring buffer
	RM + 685	Shaft operator with long spring buffer

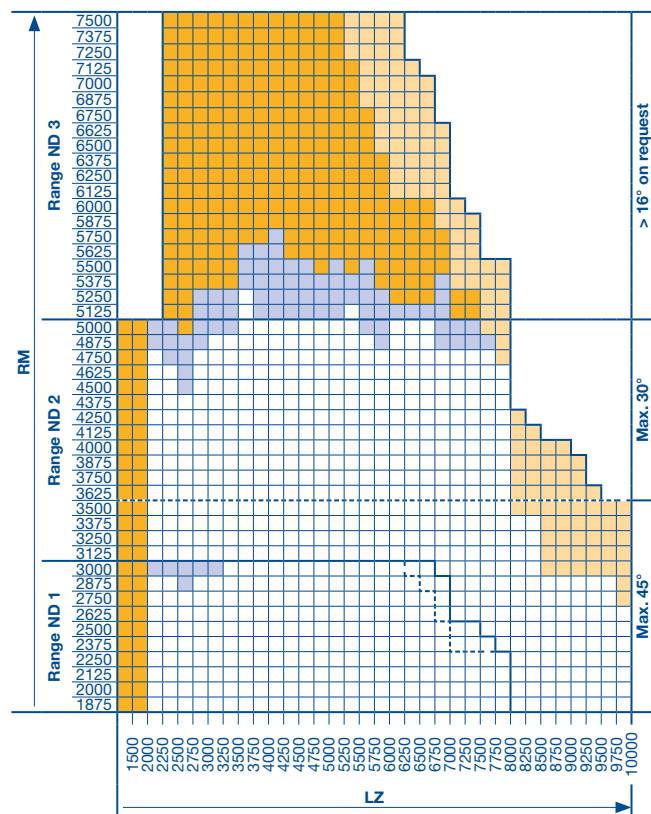
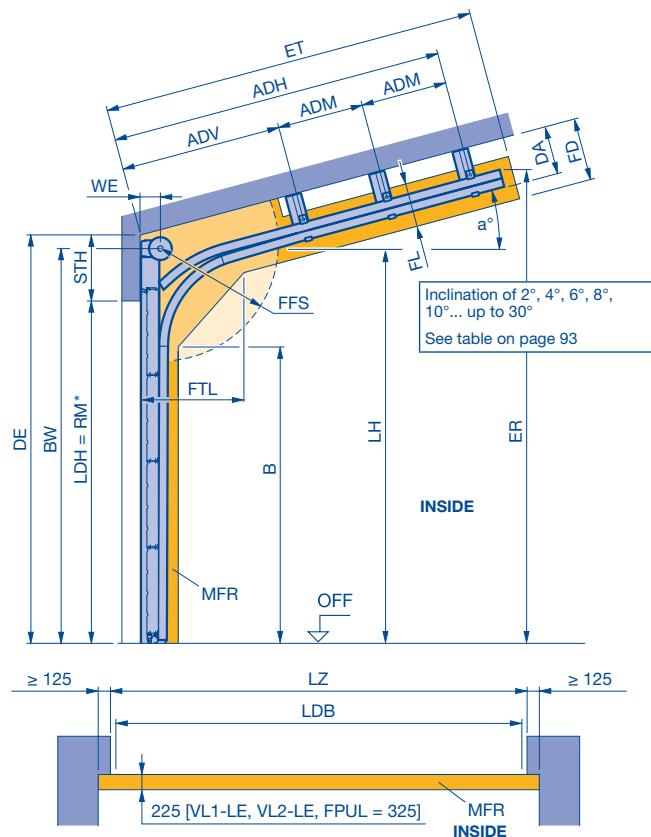
** Simplified calculation

Track application: ND

Normal track application

with inclination up to max. 30

Detailed technical data can be found in the product configurator.



a°	Inclination	FPUL	Spring buffers below the track
ADH	Distance to rear ceiling anchor	FTL	Clearance door section in the double radius
ADM	Distance to central ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 65)
ADV	Distance to front ceiling anchor	LDH	Clear passage height
B	Start of double radius	LH	Track height
BW	Position of shaft support	LZ	Clear frame dimensions (from 1200)
DA	Distance to ceiling on request	MFR	Space for fitting the door
DE	Ceiling height	OFF	Finished floor level
ER	Corner point, top edge of track (depth and height)	RM	Grid height
ET	Min. distance back	STH	Min. headroom
FD	Ceiling clearance	WE	Shaft centre from lintel
FFS	Spring compression clearance		
FL	Track clearance		

Door weights for roof loads:

SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

Observe min. sideroom, see page 65.

Note:

- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track in the area of the spring buffer is reduced by 70 mm.

* Note:

Observe clear passage height LDH, see page 37.

Note:

- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
- ALR 67 Thermo Glazing and doors with wicket door on request.
- To determine the roof slope see page 93.
- Roof slope on request for $RM \leq 3500$ and $> 30^\circ$ or > 3500 and $> 16^\circ$.

	STH	WE	BW	FT	FTL
ND 1, $\leq 30^\circ$	435	140	RM + 365	2 x WE	695, $< 16^\circ$
ND 2, $\leq 30^\circ$	475	160	RM + 370		525, $\geq 16^\circ$
ND 3, $\leq 30^\circ$	585	180	RM + 450		695, $< 16^\circ$
With double spring shaft	795		RM + 450		525, $\geq 16^\circ$

ET	DA	DE	FFS	FD	FL	LH	ER	B
**	**	STH + RM	Min. 90° (745)	DA + 65	250	**	**	**

** Dimensions can be found in the product configurator.

All door types available in any version.

Door types APU 67 Thermo and ALR 67 Thermo on request.

Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).

On request

Track limit for SPU 67 Thermo

Track limit for APU 67 Thermo and ALR 67 Thermo

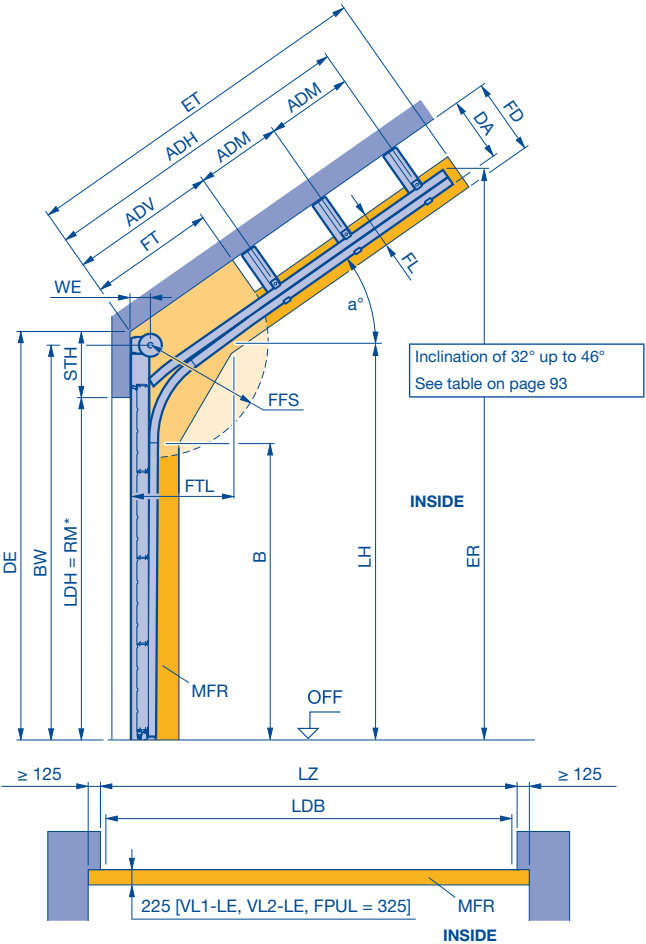
Dimensions in mm

Track application: ND

Normal track application

With inclination of 32° up to max. 46

Detailed technical data can be found in the product configurator.



a°	Inclination	FPUL	Spring buffers below the track
ADH	Distance to rear ceiling anchor	FTL	Clearance door section in the double radius
ADM	Distance to central ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 65)
ADV	Distance to front ceiling anchor	LDH	Clear passage height
B	Start of double radius	LH	Track height
BW	Position of shaft support	LZ	Clear frame dimensions (from 1200)
DA	Distance to ceiling on request	MFR	Space for fitting the door
DE	Ceiling height	OFF	Finished floor level
ER	Corner point, top edge of track (depth and height)	RM	Grid height
ET	Min. distance back	STH	Min. headroom
FD	Ceiling clearance	WE	Shaft centre from lintel
FFS	Spring compression clearance		
FL	Track clearance		

Door weights for roof loads:

SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

Observe min. sideroom, see page 65.

Note:

- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track in the area of the spring buffer is reduced by 70 mm.

* Note:

Observe clear passage height LDH, see page 37.

Note:

- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
- ALR 67 Thermo Glazing and doors with wicket door on request.
- To determine the roof slope see page 93.

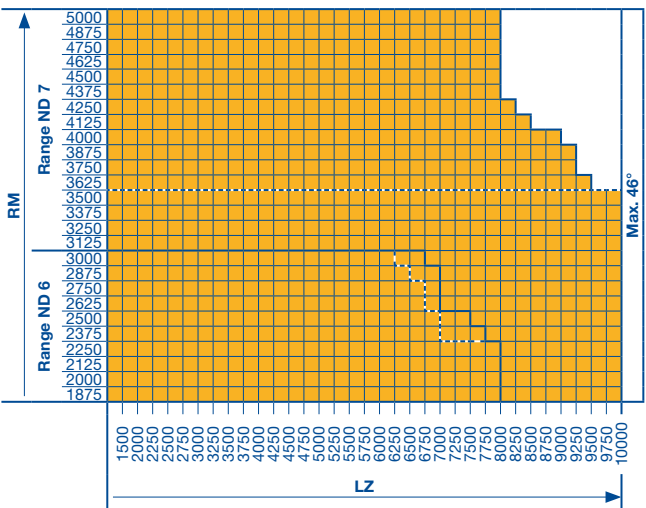
	STH	WE	BW	FT	FTL
ND 6, $\geq 32^\circ$	525	160	RM + 420	2 x WE	525
ND 7, $\geq 32^\circ$	535	180	RM + 440		

ET	DA	DE	FFS	FD	FL	LH	ER	B
**	**	STH + RM	Min. 90° (745)	DA + 65	250	**	**	**

** Dimensions can be found in the product configurator.

- On request
- Track limit for SPU 67 Thermo
- Track limit for APU 67 Thermo and ALR 67 Thermo

Dimensions in mm

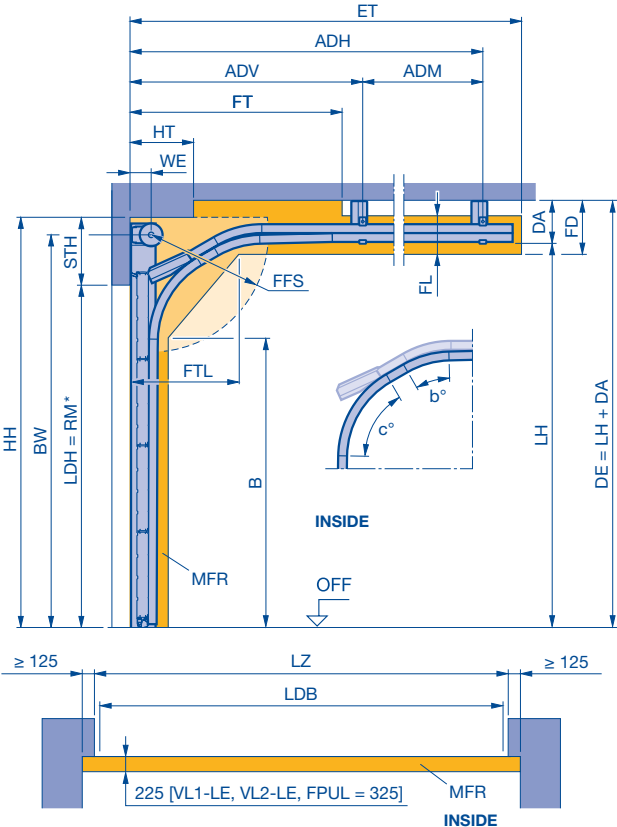


Track application: NS

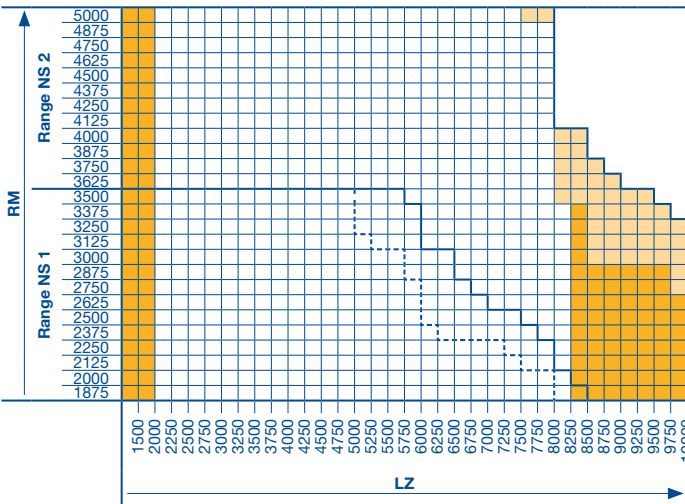
Normal track application

with double radius

Detailed technical data can be found in the product configurator.



- Note:**
- Be sure to observe the permissible size ranges of the door types on pages 9–14 and 17–25!
 - ALR 67 Thermo Glazing and doors with wicket door on request



b°/c°	Contour angle	FTL	Clearance door section in the double radius
ADH	Distance to rear ceiling anchor	HH	Obstruction height
ADM	Distance to central ceiling anchor	HT	Obstruction depth
ADV	Distance to front ceiling anchor	LH	Track height
B	Start of double radius	LDB	Clear passage width with ThermoFrame (see page 65)
BW	Position of shaft support	LDH	Clear passage height
DA	Min. distance to ceiling	LZ	Clear frame dimensions (from 1200)
DE	Ceiling height	MFR	Space for fitting the door
ET	Min. distance back on request	OFF	Finished floor level
FD	Ceiling clearance	RM	Grid height
FFS	Spring compression clearance	STH	Min. headroom
FPUL	Spring buffers below the track	WE	Shaft centre from lintel
FT	Clearance for door operation		

Door weights for roof loads:	
SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

Observe min. sideroom, see page 65.

- Note:**
- A technical inspection is required!
 - The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
 - The clearance required for fitting the door must be free of supply lines, heater fans, etc.
 - If using the spring buffer below the track, the clear height under the track in the area of the spring buffer is reduced by 70 mm.

- * Note:**
- Observe clear passage height **LDH**, see page 37.

	STH	WE	DA	BW
NS 1	425	140	205	RM + 345
NS 2	475	160		RM + 370

FT	DE	B	ET	FFS	FD	FL	FTL	LH
2 × WE	LH + 203	**	**	Min. 90° (745)	DA + 65	250	**	**

** Dimensions can be found in the product configurator.

- All door types available in any version.
- Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
- On request
- Track limit for SPU 67 Thermo
- - - Track limit for APU 67 Thermo and ALR 67 Thermo

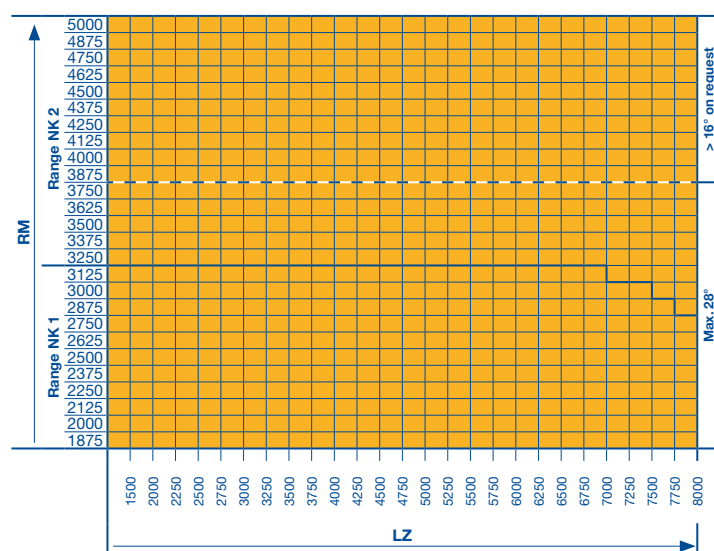
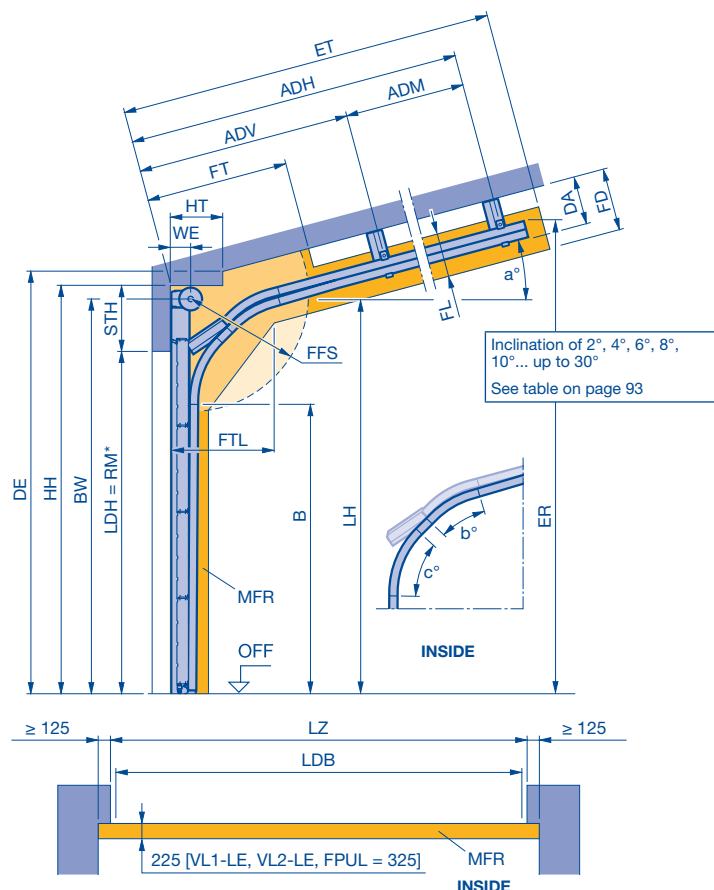
Dimensions in mm

Track application: NK

Normal track application

with double radius and inclination up to max. 30°

Detailed technical data can be found in the product configurator.



a°	Inclination	FT	Clearance for door operation
b°/c°	Contour angle	FTL	Clearance door section in the double radius
ADH	Distance to rear ceiling anchor	HH	Obstruction height
ADM	Distance to central ceiling anchor	HT	Obstruction depth
ADV	Distance to front ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 65)
B	Start of double radius	LDH	Clear passage height
BW	Position of shaft support	LH	Track height
DA	Distance to ceiling on request	LZ	Clear frame dimensions (from 1200)
DE	Ceiling height	MFR	Space for fitting the door
ER	Top edge corner point	OFF	Finished floor level
ET	Min. distance back	RM	Grid height
FD	Ceiling clearance	STH	Min. headroom
FFS	Spring compression clearance	WE	Shaft centre from lintel
FL	Track clearance		
FPUL	Spring buffers below the track		

Door weights for roof loads:

SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

Observe min. sideroom, see page 65.

Notes:

- A technical inspection is required!
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer under the track, the clear height under the track in the area of the spring buffer is reduced by 70 mm.
- Be sure to observe the permissible size ranges of the door types on pages 9–14 and 17–25!
- ALR 67 Thermo Glazing and doors with wicket door on request.
- To determine the roof slope see page 93.

* Note:

Observe clear passage height LDH, see page 37.

	STH	WE	DA	BW
NK 1	425	140	205	RM + 345
NK 2	475	160		RM + 370

FT	DE	B	ET	FFS	FD	FL	FTL	LH
2 × WE	LH + 203	**	**	Min. 90° (745)	DA + 65	250	**	**

** Dimensions can be found in the product configurator.

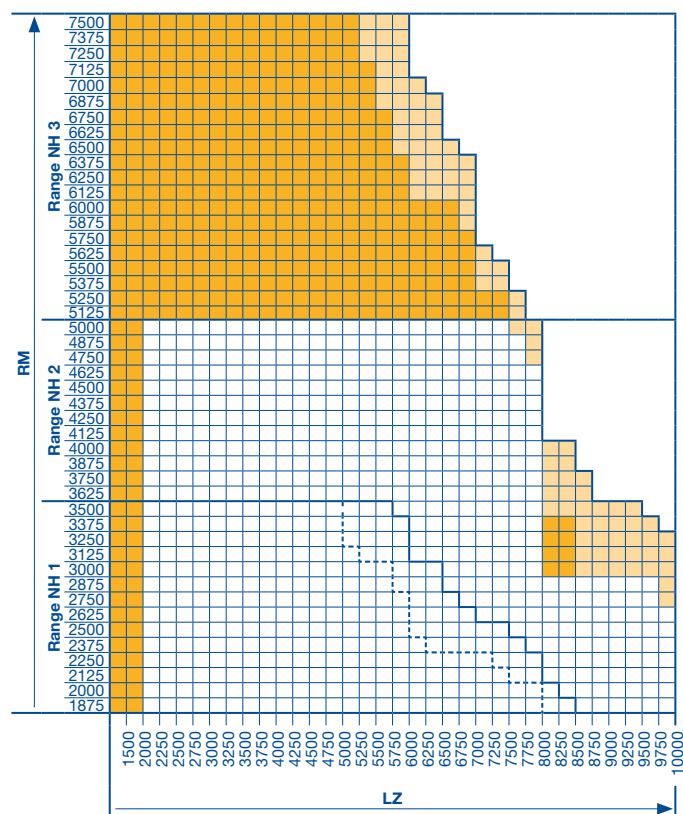
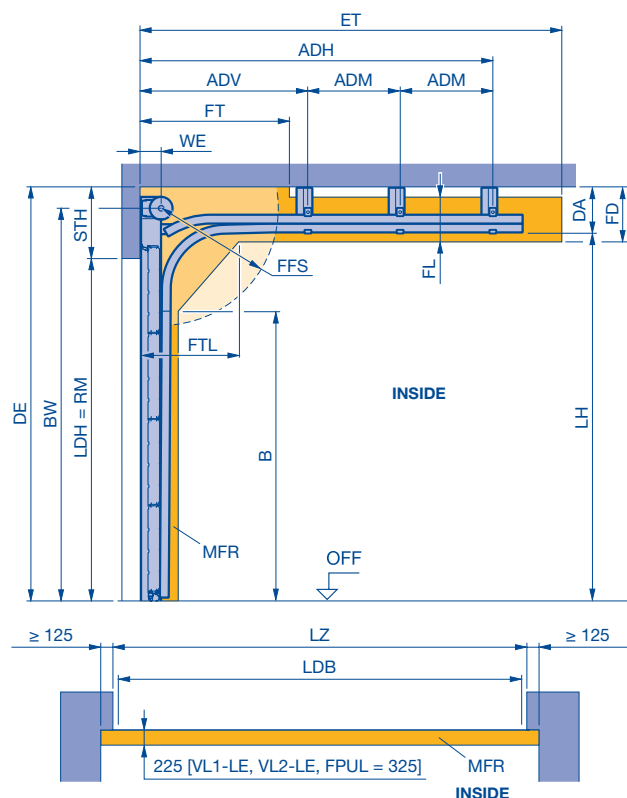
All door types and versions on request.

Dimensions in mm

Track application: NH

Normal track application
with minimum high-lift

Detailed technical data can be found in the product configurator.



ADH	Distance to rear ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 65)
ADM	Distance to central ceiling anchor	LDH	Clear passage height
ADV	Distance to front ceiling anchor	LH	Track height
B	Start of double radius	LZ	Clear frame dimensions (from 1200)
BW	Position of shaft support	MFR	Space for fitting the door
DA	Min. distance to ceiling	OFF	Finished floor level
DE	Ceiling height	RM	Grid height
ET	Min. distance back	STH	Min. headroom
FD	Ceiling clearance	WE	Shaft centre from lintel
FFS	Spring compression clearance	RM	Grid height
FL	Track clearance	STH	Min. headroom
FPUL	Spring buffers below the track	WE	Shaft centre from lintel
FT	Clearance for door operation		
FTL	Clearance door section in the double radius		
L	Anchor length		

Door weights for roof loads:

SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

Observe min. sideroom, see page 65.

Notes:

- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track in the area of the spring buffer is reduced by 70 mm.
- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
- ALR 67 Thermo Glazing and doors with wicket door on request.

	STH	WE	DA	BW
NH 1	579	140	225	LH + 140
NH 2	644	160	290	LH + 180
NH 3	719	180	365	LH + 225
with double spring shaft	760		565	

FT	DE	B	FFS	FD	FL	FTL	LH	ET
2 x WE	STH + RM	LH - 366	Min. 90° (745)	DA + 65	275	670	Min. RM + 354 Max. RM + 500	**

** Dimensions can be found in the product configurator.

- All door types available in any version.
- Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
- On request
- Track limit for SPU 67 Thermo
- Track limit for APU 67 Thermo and ALR 67 Thermo

Dimensions in mm

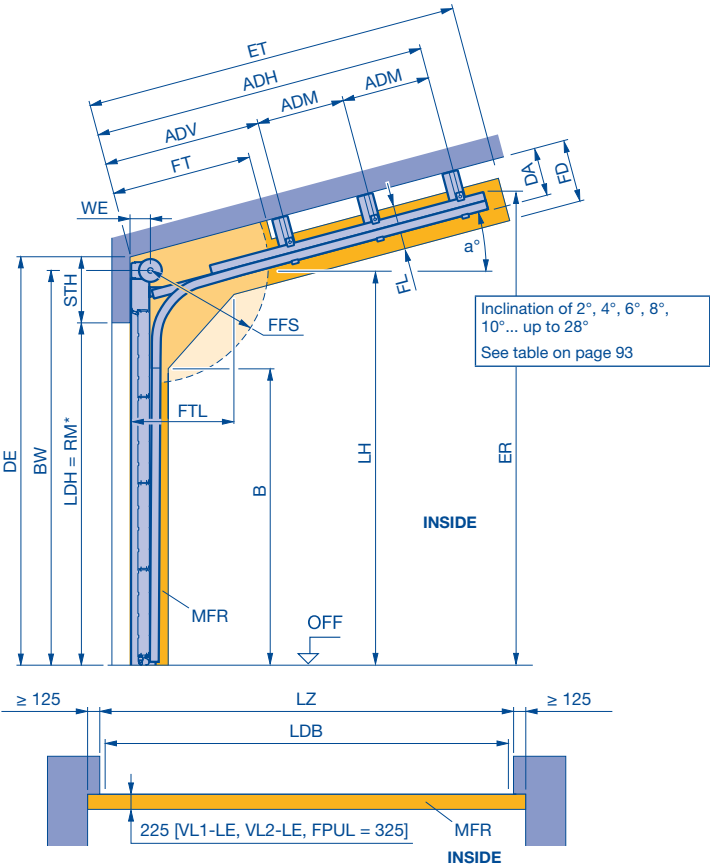
Track application: GD

Normal track application

with inclination up to max. 28

Minimum high-lift

Detailed technical data can be found in the product configurator.

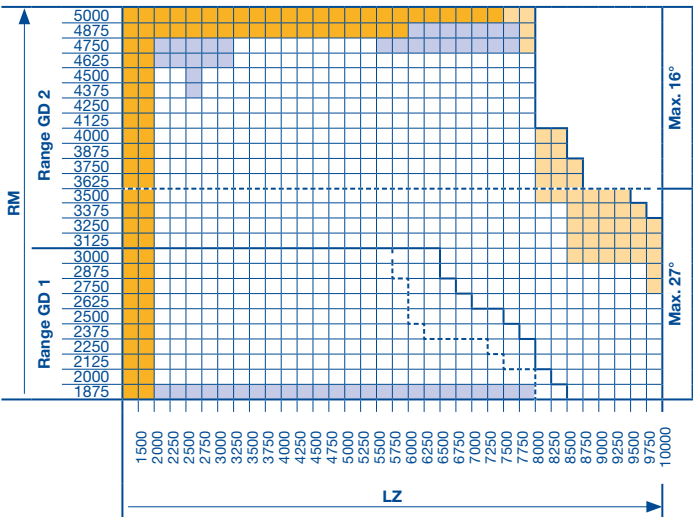


a°	Inclination	FPUL	Spring buffers below the track
ADH	Distance to rear ceiling anchor	FT	Clearance for door operation
ADM	Distance to central ceiling anchor	FTL	Clearance door section in the double radius
ADV	Distance to front ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 65)
B	Start of double radius, factory specification	LDH	Clear passage height
BW	Position of shaft support	LH	Track height
DA	Distance to ceiling on request	LZ	Clear frame dimensions (from 1200)
DE	Ceiling height	MFR	Space for fitting the door
ER	Top edge corner point	OFF	Finished floor level
ET	Track height (depth and height)	RM	Grid height
FL	Min. distance back	STH	Min. headroom
FD	Ceiling clearance	WE	Shaft centre from lintel
FFS	Spring compression clearance		

Door weights for roof loads:	
SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

Observe min. sideroom, see page 65.

- Notes:**
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
 - The clearance required for fitting the door must be free of supply lines, heater fans, etc.
 - If using the spring buffer below the track, the clear height under the track in the area of the spring buffer is reduced by 70 mm.
 - Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
 - ALR 67 Thermo Glazing and doors with wicket door on request.
 - To determine the roof slope see page 93.



	STH	WE	DA	BW	FT	DE
GD 1	579	140	**	LH + 140	2 × WE	STH + RM
GD 2	644	160		LH + 180		

ET	B	FFS	FD	FL	FTL	LH	ER
**	LH - 366	Min. 90° (745)	DA + 65	275	670	Min. RM + 354 Max. RM + 500	**

** Dimensions can be found in the product configurator.

- All door types available in any version.
- Door types APU 67 Thermo and ALR 67 Thermo on request.
- Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
- On request
- Track limit for SPU 67 Thermo
- Track limit for APU 67 Thermo and ALR 67 Thermo

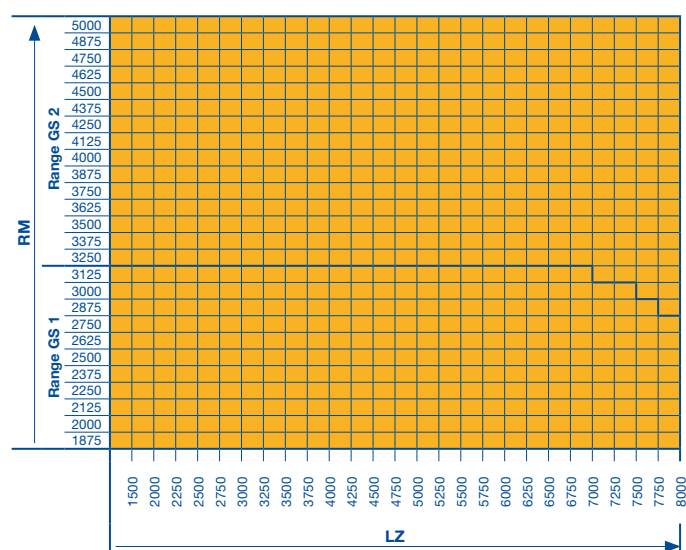
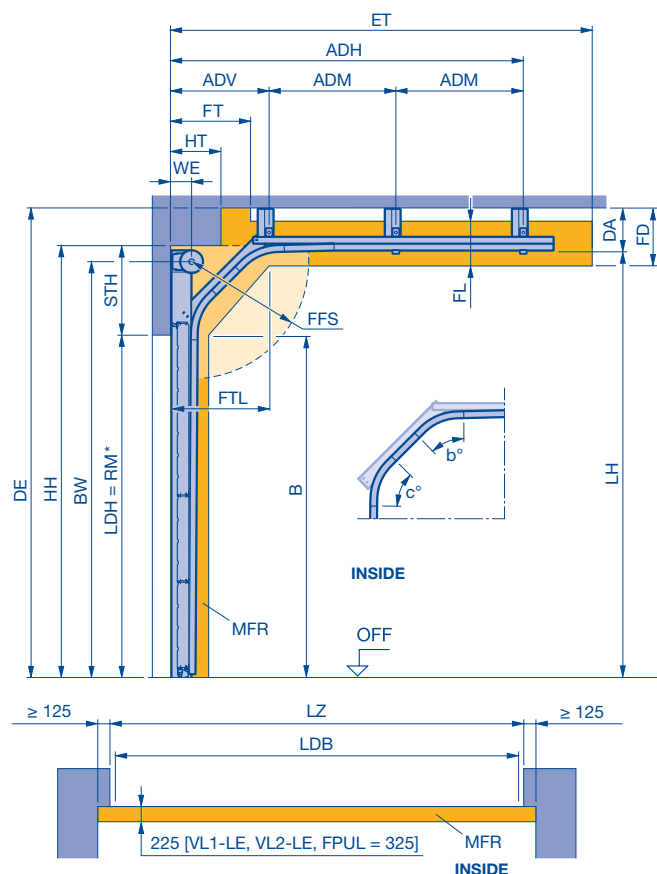
Dimensions in mm

Track application: GS

Normal track application

with double radius and minimum high-lift

Detailed technical data can be found in the product configurator.



b° / c°	Contour angle	FTL	Clearance door section in the double radius
ADH	Distance to rear ceiling anchor	HH	Obstruction height
ADM	Distance to central ceiling anchor	HT	Obstruction depth
ADV	Distance to front ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 65)
B	Start of double radius, factory specification	LDH	Clear passage height
BW	Position of shaft support	LH	Track height
DA	Distance to ceiling on request	LZ	Clear frame dimensions (from 1200)
DE	Ceiling height	MFR	Space for fitting the door
ET	Min. distance back	OFF	Finished floor level
FD	Ceiling clearance	RM	Grid height
FFS	Spring compression clearance	STH	Min. headroom
FL	Track clearance	WE	Shaft centre from lintel
FPUL	Spring buffers below the track		
FT	Clearance for door operation		

Door weights for roof loads:

SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

Observe min. sideroom, see page 65.

Notes:

- A technical inspection is required!
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track in the area of the spring buffer is reduced by 70 mm.
- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
- ALR 67 Thermo Glazing and doors with wicket door on request.
- To determine the roof slope see page 93.

	STH	WE	DA	BW	FT	DE
GS 1	567	140	205	B + 510	2 × WE	LH + 183
GS 2	617	160		B + 535		

FFS	FD	FL	FTL	LH	ET
Min. 90° (745)	DA + 65	275	**	**	**

** Dimensions can be found in the product configurator.

All door types and versions on request.

Dimensions in mm

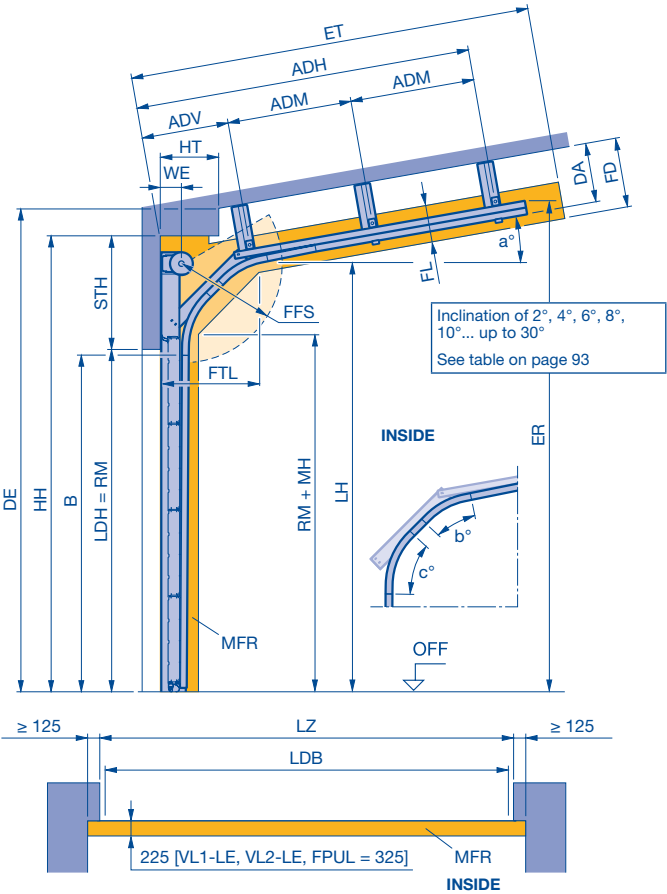
Track application: GK

Normal track application

with double radius and inclination up to max. 30°

Minimum high-lift

Detailed technical data can be found in the product configurator.



a°	Inclination	FT	Clearance for door operation
b°/c°	Contour angle	FTL	Clearance door section in the double radius
ADH	Distance to rear ceiling anchor	HH	Obstruction height
ADM	Distance to central ceiling anchor	HT	Obstruction depth
ADV	Distance to front ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 65)
B	Start of double radius, factory specification	LDH	Clear passage height
BW	Position of shaft support	LH	Track height
DA	Distance to ceiling on request	LZ	Clear frame dimensions (from 1200)
DE	Ceiling height	MFR	Space for fitting the door
ER	Top edge corner point	OFF	Finished floor level
ET	Track height (depth and height)	RM	Grid height
FD	Min. distance back	STH	Min. headroom
FFS	Ceiling clearance	WE	Shaft centre from lintel
FL	Spring compression clearance		
FPUL	Track clearance		
	Spring buffers below the track		

Door weights for roof loads:	
SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

Observe min. sideroom, see page 65.

Notes:

- A technical inspection is required!
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track in the area of the spring buffer is reduced by 70 mm.
- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
- ALR 67 Thermo Glazing and doors with wicket door on request.
- To determine the roof slope see page 93.

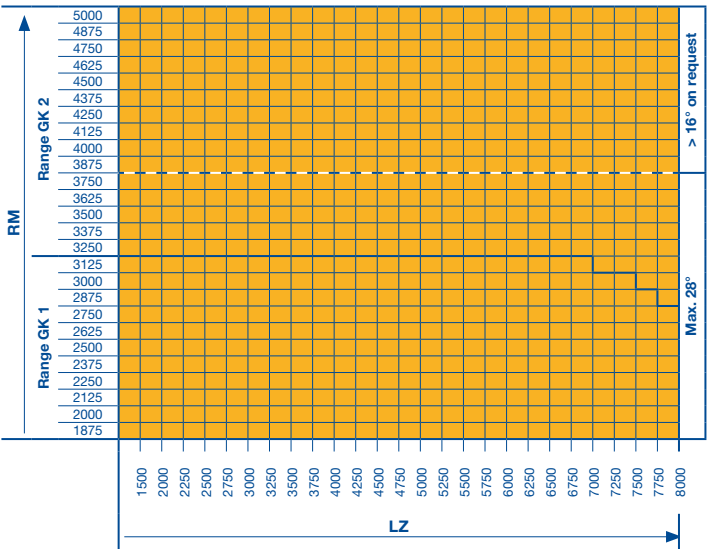
	STH	WE	DA	BW	FT	DE
GK 1	567	140	205	B + 510	2 × WE	LH + 183
GK 2	617	160		B + 535		

FFS	FD	FL	FTL	LH	ET
Min. 90° (745)	DA + 65	275	**	**	**

** Dimensions can be found in the product configurator.

All door types and versions on request.

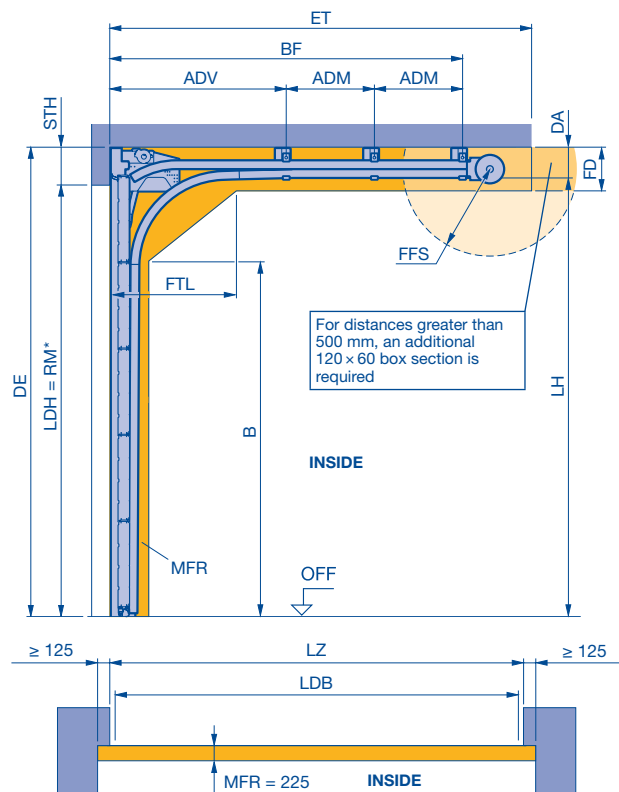
Dimensions in mm



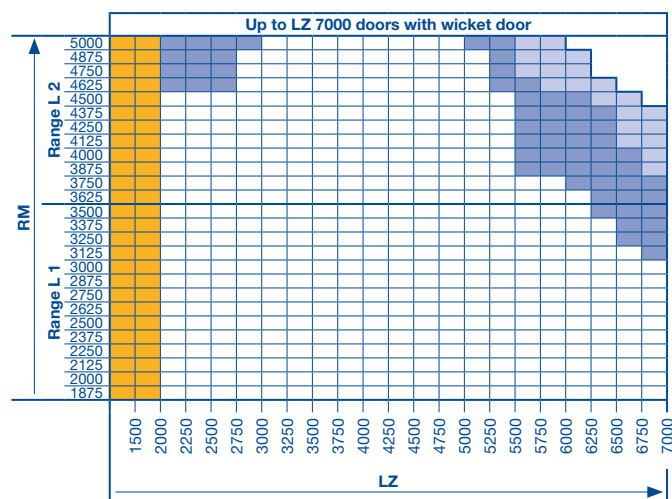
Track application: L

Low headroom track application

Detailed technical data can be found in the product configurator.



MFR = 285	Trap protection for swivel mechanism RM < 2800
MFR = 325	Leading photocell VL1/VL2



ADM	Distance to central ceiling anchor	LH	Track height
ADV	Distance to front ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 65)
B	Start of double radius	LDH	Clear passage height
BF	Position of spring shaft	LZ	Clear frame dimensions (from 1200)
ET	Min. distance back	MFR	Space for fitting the door
DA	Min. distance to ceiling	OFF	Finished floor level
DE	Min. ceiling height	RM	Grid height
FD	Min. ceiling clearance	STH	Min. headroom
FFS	Spring compression clearance		
FTL	Clearance door section in the double radius		

Door weights for roof loads:

SPU 67 Thermo	= 450 N/m ²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m ²
ALR 67 Thermo Glazing	= 600 N/m ²

Observe min. sideroom, see page 65.

Door operation:

- Manually operated: rope or chain hoist (recommended for manual operation!)
- Power-driven: WA 500 / 500 FU only with chain box! ITO only possible without swivel mechanism!
- WA 300 on request!

Notes:

- When using the swing mechanism and door lock for outside and inside operation, there may be restrictions in the passage height of up to 40 mm in the area of the lock.
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
- ALR 67 Thermo Glazing on request.

* Note:

Observe clear passage height LDH, see page 37.

B	BF**	DA***	DE	ET**
LH - 517	RM + 695	191	STH + RM	RM + 1007
FD	FFS	FTL	LH	STH
DA + 65	Min. 90° (745)	675	RM + 59	250

** With swivel mechanism, ET = RM + 916 and BF = RM + 604

*** ≥ 500 – 1092 suspension in special length
> 1092 base construction required

□ All door types available in any version.

■ All door types on request.

■ Door type APU 67 Thermo and ALR 67 Thermo on request.

■ All doors with wicket doors on request.

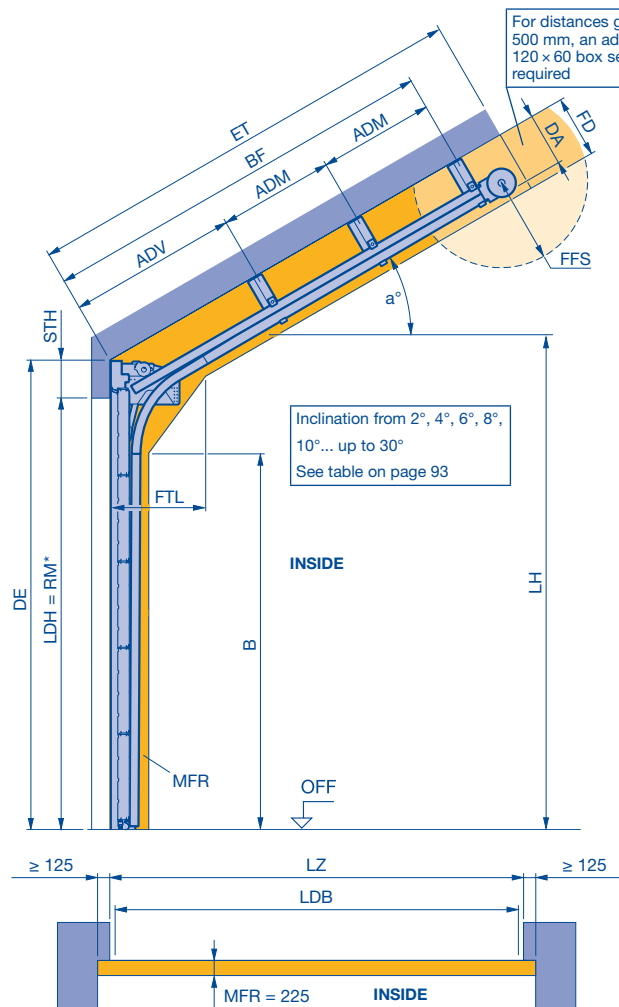
— Track limit

Dimensions in mm

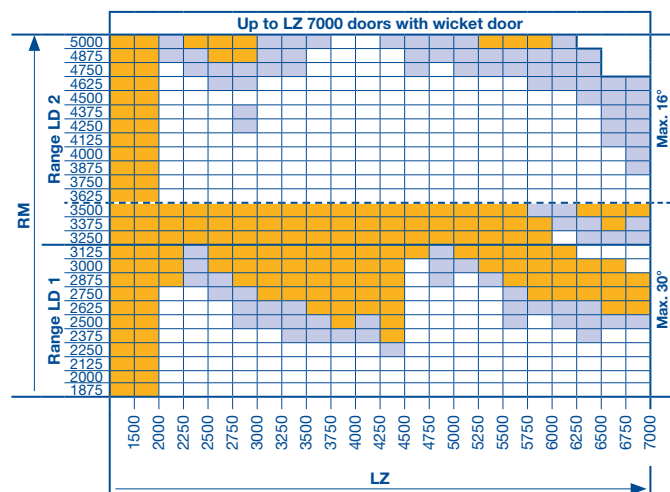
Track application: LD

Low headroom track application
with inclination up to max. 30°

Detailed technical data can be found in the product configurator.



MFR = 285	Trap protection for swivel mechanism RM < 2800
MFR = 325	Leading photocell VL1/VL2



a°	Inclination	FTL	Clearance door section in the double radius
ADM	Distance to central ceiling anchor on request	LDB	Clear passage width with ThermoFrame (see page 65)
ADV	Distance to front ceiling anchor	LDH	Clear passage height
B	Start of double radius on request	LZ	Clear frame dimensions (from 1200)
BF	Position of spring shaft on request	MFR	Space for fitting the door
DA	Distance to ceiling on request	OFF	Finished floor level
DE	Min. ceiling height	RM	Grid height
ET	Min. distance back	STH	Min. headroom
FD	Min. ceiling clearance		
FFS	Spring compression clearance		

Door weights for roof loads:

SPU 67 Thermo	= 450 N/m²
APU 67 Thermo / ALR 67 Thermo	= 500 N/m²
ALR 67 Thermo Glazing	= 600 N/m²

Observe min. sideroom, see page 65.

Door operation:

- Manually operated: rope or chain hoist (recommended for manual operation!)
- Power-driven: WA 500 / 500 FU only with chain box! ITO or SupraMatic HT only possible without swivel mechanism!

Notes:

- When using the swing mechanism and door lock for outside and inside operation, there may be restrictions in the passage height of up to 40 mm in the area of the lock.
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
- ALR 67 Thermo Glazing and doors with wicket door as well as glazings with S4, U4, A4, B4, M4, E2, G2, C4 must be requested.
- Doors with WA 300 on request!
- To determine the roof slope see page 93.

* Notes:

- Observe clear passage height LDH, see page 37.
- The swivel mechanism is only possible up to 10°.

	DE	LH	STH	FD
LD 1 / LD 2	STH + RM	**	250	DA + 65
	B	DA	FFS	FTL
	**	**	Min. 90° (745)	675

** Dimensions can be found in the product configurator.

	ET
LD 1 / LD 2	(RM + 1089) - (3,6 × a°) a° = 2° - 16° (RM + 1128) - (6,6 × a°) a° = 18° - 30° (RM + 969) - (2,6 × a°) a° = 2° - 10°
	without swivel mechanism with swivel mechanism

□ All door types available in any version.

■ All door types on request.

■ Door types APU 67 Thermo and ALR 67 Thermo on request.

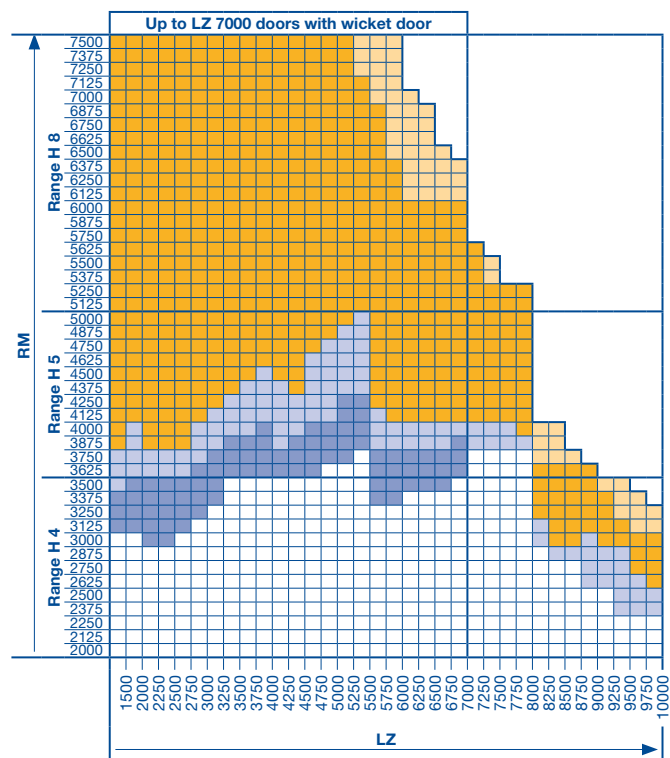
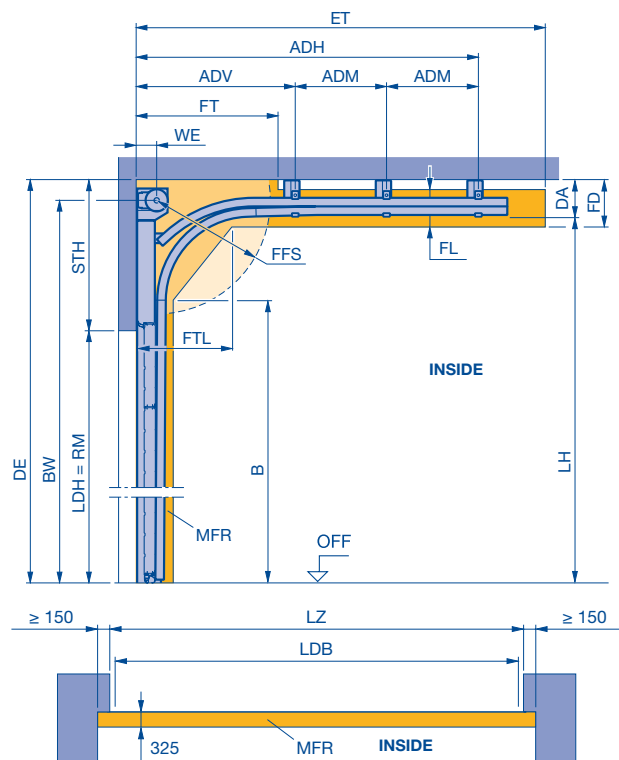
— Track limit

Dimensions in mm

Track application: H

High-lift track application

Detailed technical data can be found in the product configurator.



- All door types available in any version.
- Door types APU 67 Thermo and ALR 67 Thermo on request.
- All door types with wicket door on request.
- Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
- All door types on request.

ADH	Distance to rear ceiling anchor	FTL	Clearance door section in the double radius
ADM	Distance to central ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 65)
ADV	Distance to front ceiling anchor	LDH	Clear passage height
B	Start of double radius	LH	Track height
BW	Position of shaft support	LZ	Clear frame dimensions (from 1200)
DA	Min. distance to ceiling	MFR	Space for fitting the door
DE	Min. ceiling height	OFF	Finished floor level
ET	Min. distance back	RM	Grid height
FD	Min. ceiling clearance	STH	Min. headroom
FFS	Spring compression clearance	WE	Shaft centre from lintel
FL	Track clearance		
FT	Clearance for door operation		

Please note:

Select required track height according to the door height in table.

Note:

- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track in the area of the spring buffer is reduced by 70 mm.

Notes:

- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
- ALR 67 Thermo Glazing on request.

Observe min. sideroom, see page 65.

	STH	WE	DA	BW
H 4	LH - RM + 280	160	280	LH + 140
H 5	LH - RM + 340 (515*)	180	340 (515*)	LH + 170
H 8	LH - RM + 380 (540*)	205	380 (540*)	LH + 195

* with double spring shaft

B	DE	FD	FFS	FL	FT	FTL
LH - 513	STH + RM	DA + 65	Min. 90° (745)	275	2 x WE	675

ET*		
H 4/H 5	2 x RM - LH + 982 + 297	For manual operation with long spring buffer (standard)
	2 x RM - LH + 712 + 297	For shaft operator with long spring buffer LH - RM ≤ 1000
	2 x RM - LH + 712 + 297	For shaft operator WA 300 with long spring buffer LH - RM > 1000
	2 x RM - LH + 712 + 27	For shaft operator WA 500 / WA 500 FU with spring buffer, short LH - RM > 1000
H 8	2 x RM - LH + 712 + 297	All versions

* Simplified calculation

Table: track heights (LH)

Door height RM	Min. LH	Max. LH	Door height RM	Min. LH	Max. LH
5000	5500	8350	H 5	7500	8605
4875	5375	8225		7375	8480
4750	5250	8100		7250	8355
4625	5125	7975		7125	8230
4500	5000	7850		7000	8105
4375	4875	7725		6875	7980
4250	4750	7600		6750	7855
4125	4625	7475		6625	7730
4000	4500	7235		6500	7605
3875	4375	6985		6375	7480
3750	4250	6735	H 4	6250	7355
3625	4125	6485		6125	7230
3500	4000	6235		6000	7105
3375	3875	5985		5875	6980
3250	3750	5735		5750	6855
3125	3625	5485		5625	6730
3000	3500	5235		5500	6605
2875	3375	4985		5375	6480
2750	3250	4735		5250	6355
2625	3125	4485		5125	6230
2500	3000	4235			
2375	2875	3985			
2250	2750	3735			
2125	2625	3485			
2000	2500	3235			

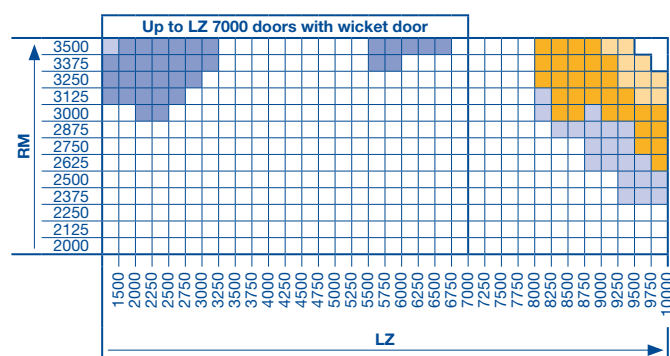
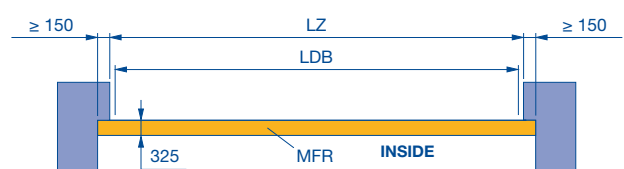
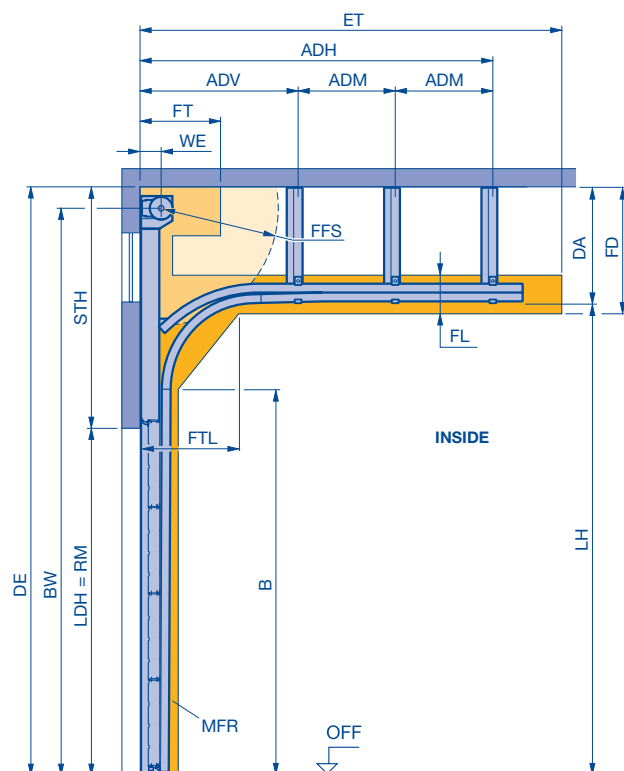
All door types and versions available on request

Track application: HA

High-lift track application

With high-mounted torsion spring shaft

Detailed technical data can be found in the product configurator.



ET*		
HA 4	2 × RM - LH + 982 + 297	For manual operation with long spring buffer (standard)
	2 × RM - LH + 712 + 297	For shaft operator with long spring buffer LH - RM ≤ 1000
	2 × RM - LH + 712 + 297	For shaft operator WA 300 with long spring buffer LH - RM > 1000
	2 × RM - LH + 712 + 27	For shaft operator WA 500/WA 500 FU with spring buffer, short LH - RM > 1000

* Simplified calculation

ADH	Distance to rear ceiling anchor	FTL	Clearance door section in the double radius
ADM	Distance to central ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 65)
	(see page 71)	LDH	Clear passage height
ADV	Distance to front ceiling anchor	LH	Track height
B	Start of double radius	LZ	Clear frame dimensions (from 1200)
BW	Position of shaft support	MFR	Space for fitting the door
DA	Min. distance to ceiling	OFF	Finished floor level
DE	Min. ceiling height	RM	Grid height
ET	Min. distance back	STH	Min. headroom
FD	Ceiling clearance	WE	Shaft centre from lintel
FFS	Spring compression clearance		
FL	Track clearance		
FT	Clearance for door operation		

Please note:

Select required track height according to the door height in table.

Note:

- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track in the area of the spring buffer is reduced by 70 mm.

Observe min. sideroom, see page 65.

	STH	DA	DE	B	Min. BW
HA 4	(BW + 140) - RM	(BW + 140) - LH	STH + RM	LH - 513	LH + 150

BW max.	FD	FFS	FL	FT	FTL	WE
8120, DE - 140	DA + 65	Min. 90° (745)	275	2 × WE	675	160

Table: track heights (LH)

Door height RM	Min. LH	Max. LH	HA 4
3500	4000	6215	
3375	3875	5965	
3250	3750	5715	
3125	3625	5465	
3000	3500	5215	
2875	3375	4965	
2750	3250	4715	
2625	3125	4465	
2500	3000	4215	
2375	2875	3965	
2250	2750	3715	
2125	2625	3465	
2000	2500	3215	

Notes:

- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
- ALR 67 Thermo Glazing on request.

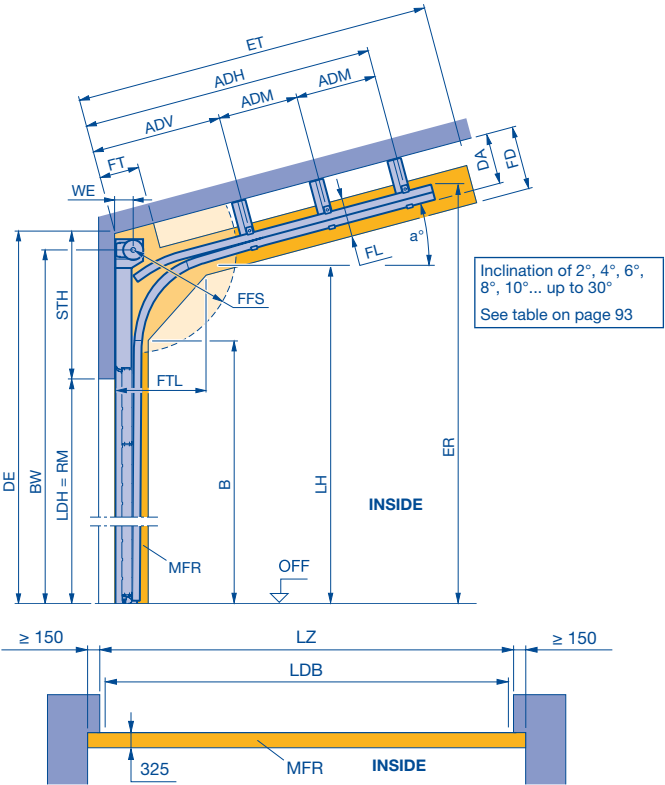
	All door types available in any version.
	Door types APU 67 Thermo and ALR 67 Thermo on request.
	All door types with wicket door on request.
	Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
	All door types on request.

Dimensions in mm

Track application: HD

High-lift track application
with inclination up to max. 30

Detailed technical data can be found in the product configurator.



a°	Inclination	FT	Clearance for door operation
ADH	Distance to rear ceiling anchor	FTL	Clearance door section in the double radius
ADM	Distance to central ceiling anchor on request	LDB	Clear passage width with ThermoFrame (see page 65)
ADV	Distance to front ceiling anchor	LDH	Clear passage height
B	Start of double radius	LH	Track height (see table on page 51)
BW	Position of shaft support	LZ	Clear frame dimensions (from 1200)
DA	Distance to ceiling on request	MFR	Space for fitting the door
DE	Min. ceiling height	OFF	Finished floor level
ER	Top edge corner point	RM	Grid height
ET	Track height (depth and height)	STH	Min. headroom
FD	Min. distance back	WE	Shaft centre from lintel
FFS	Ceiling clearance		
FL	Spring compression clearance		
	Track clearance		

Please note:
Select required track height according to the door height in the table on page 51.

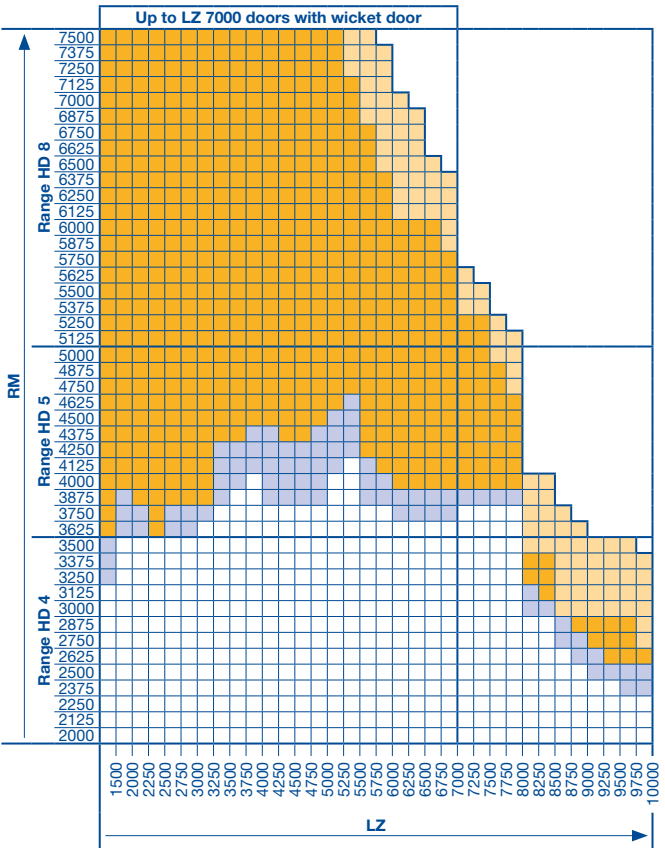
- Notes:**
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
 - The clearance required for fitting the door must be free of supply lines, heater fans, etc.
 - If using the spring buffer below the track, the clear height under the track in the area of the spring buffer is reduced by 70 mm.
 - Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
 - ALR 67 Thermo Glazing on request.
 - To determine the roof slope see page 93.
 - Inclination > 10° to 30° on request.

Observe min. sideroom, see page 65.

	STH	BW	WE	DA	B
HD 4	780	LH + 140	160	**	LH - 513
HD 5	840	LH + 170	180		
HD 8	880	LH + 195	205		

FT	FL	FTL	FFS	FD	ET	ER
2 x WE	275	675	Min. 90° (745)	DA + 65	**	**

** Dimensions can be found in the product configurator.



- All door types available in any version.
- Door types APU 67 Thermo and ALR 67 Thermo on request.
- Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
- All door types on request.

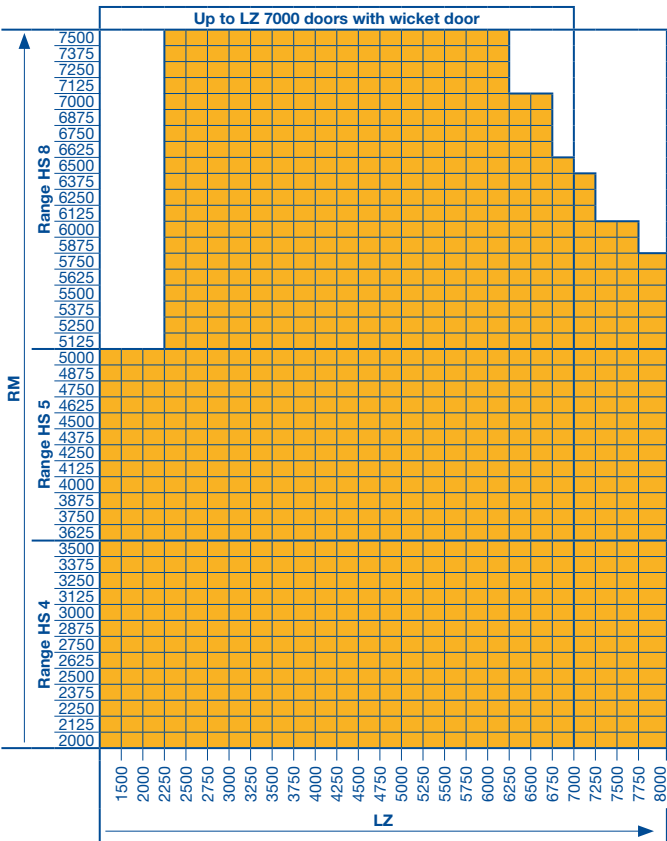
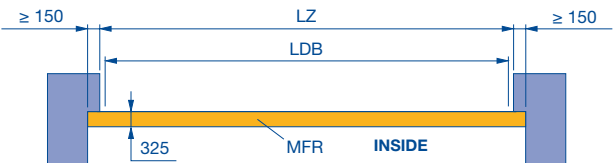
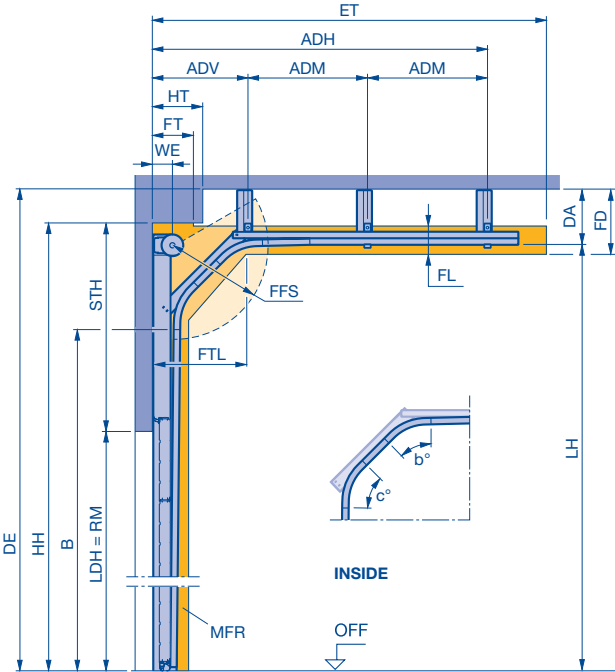
Dimensions in mm

Track application: HS

High-lift track application

with double radius

Detailed technical data can be found in the product configurator.



b°/c°	Contour angle	FTL	Clearance door section in the double radius
ADH	Distance to rear ceiling anchor	FFW	Spring shaft clearance
ADM	Distance to central ceiling anchor	HH	Obstruction height
ADV	Distance to front ceiling anchor	HT	Obstruction depth
B	Start of double radius, factory specification	LDB	Clear passage width with ThermoFrame (see page 65)
DA	Distance to ceiling on request	LDH	Clear passage height
DE	Min. ceiling height	LH	Track height
ET	Distance back	LZ	Clear frame dimensions (from 1200)
FD	Ceiling clearance	MFR	Space for fitting the door
FFS	Spring compression clearance	OFF	Finished floor level
FL	Track clearance	RM	Grid height
FT	Clearance for door operation, on request	STH	Min. headroom
		WE	Shaft centre from lintel

Please note:
Select required track height according to the door height in the table on page 51.

- Note:**
- A technical inspection is required!
 - The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
 - The clearance required for fitting the door must be free of supply lines, heater fans, etc.

- Notes:**
- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
 - ALR 67 Thermo Glazing on request.

Observe min. sideroom, see page 65.

	STH	WE	DA	DE	B
HS 4	785	160	**	LH + 203	**
HS 5	812	180			
HS 8	852	205			

BW	FT	FL	FTL	FFS	FD	ET	ER
**	2 x WE	275	**	Min. 90° (745)	DA + 65	**	**

** Dimensions can be found in the product configurator.

All door types and versions on request.

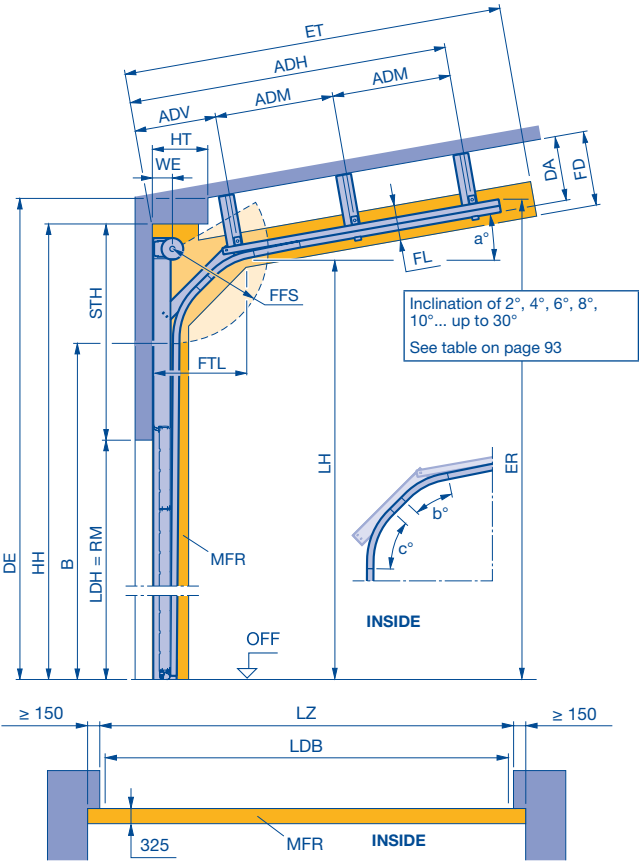
Dimensions in mm

Track application: HK

High-lift track application

with double radius and inclination up to max. 30°

Detailed technical data can be found in the product configurator.



a°	Inclination	FTL	Clearance door section in the double radius
b°/c°	Contour angle	FFW	Spring shaft clearance
ADH	Distance to rear ceiling anchor	HH	Obstruction height
ADM	Distance to central ceiling anchor	HT	Obstruction depth
ADV	Distance to front ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 65)
B	Start of double radius, factory specification	LDH	Clear passage height
DA	Distance to ceiling on request	LH	Track height
DE	Min. ceiling height	LZ	Clear frame dimensions (from 1200)
ER	Top edge corner point	MFR	Space for fitting the door
FD	Ceiling clearance	OFF	Finished floor level
FFS	Spring compression clearance	RM	Grid height
FL	Track clearance	STH	Min. headroom
FT	Clearance for door operation, on request	WE	Shaft centre from lintel

- Please note:**
- Select required track height according to the door height in the table on page 51.
- Note:**
- A technical inspection is required!
 - The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
 - The clearance required for fitting the door must be free of supply lines, heater fans, etc.

- Notes:**
- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
 - ALR 67 Thermo Glazing on request.
 - To determine the roof slope see page 93.
 - Roof slope > 10° to 30° on request.

Observe min. sideroom, see page 65.

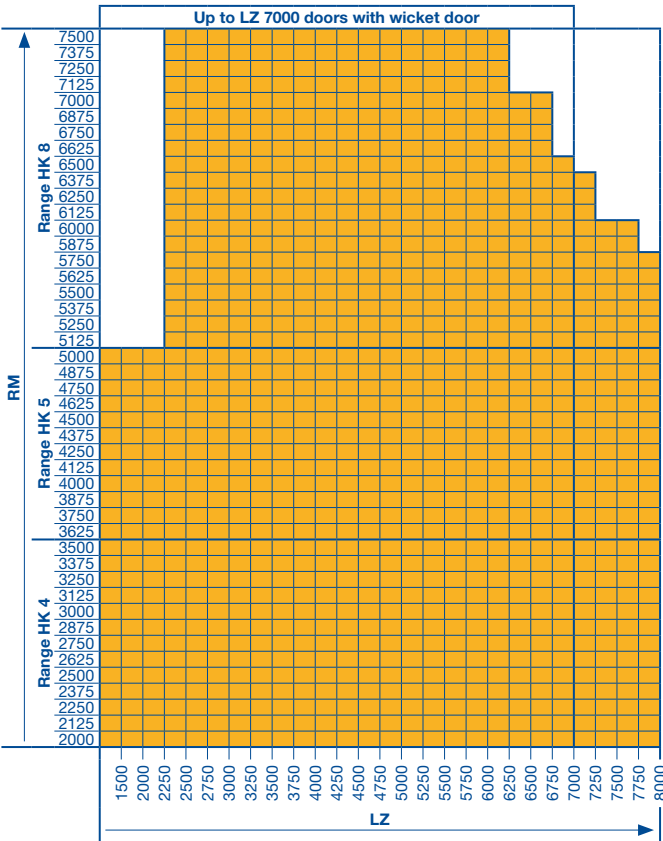
	STH	WE	DA	DE	B
HK 4	785	160	**	LH + 203	**
HK 5	812	180			
HK 8	852	205			

BW	FT	FL	FTL	FFS	FD	ET	ER
**	2 x WE	275	**	Min. 90° (745)	DA + 65	**	**

** Dimensions can be found in the product configurator.

All door types and versions on request.

Dimensions in mm

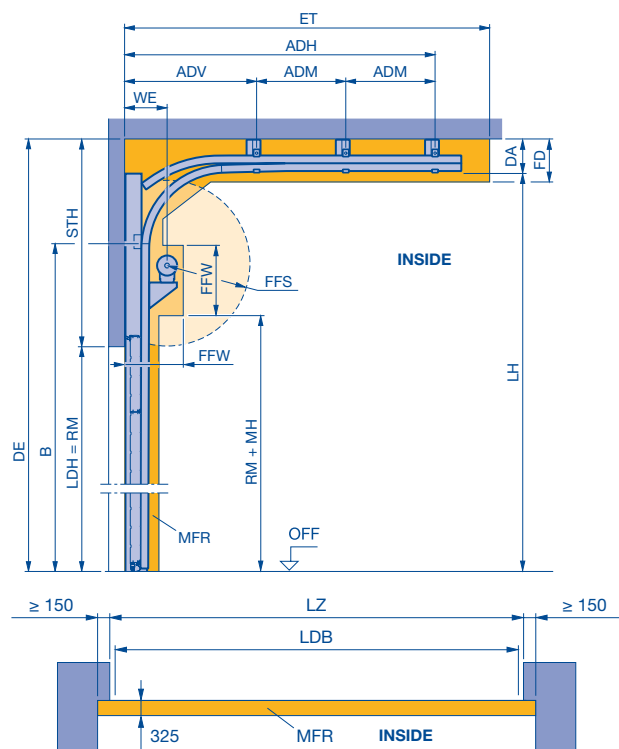


Track application: HU

High-lift track application

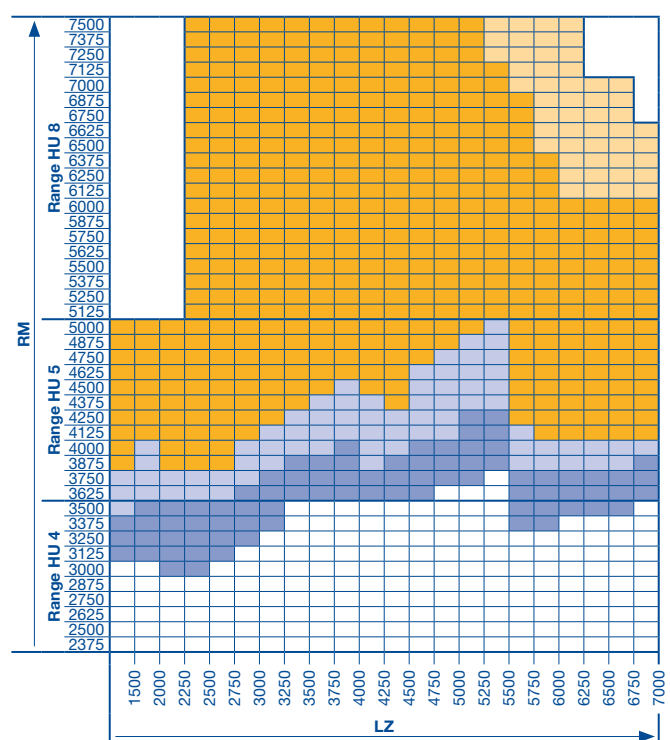
with low-mounted torsion spring shaft

Detailed technical data can be found in the product configurator.



ET*		
HU 4 / HU 5	2 × RM - LH + 982 + 297	For manual operation with long spring buffer (standard)
	2 × RM - LH + 712 + 297	For shaft operator WA 300 with long spring buffer
HU 4 / HU 5	2 × RM - LH + 712 + 27	For shaft operator WA 500 / WA 500 FU with short spring buffer
HU 8	2 × RM - LH + 712 + 297	All versions

* Simplified calculation.



ADH	Distance to rear ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 65)
ADM	Distance to central ceiling anchor	LDH	Clear passage height
ADV	Distance to front ceiling anchor	LH	Track height
B	Start of double radius	LZ	Clear frame dimensions (from 1200)
DA	Min. distance to ceiling	MFR	Space for fitting the door
DE	Min. ceiling height	MH	Fitting height
ET	Min. distance back	OFF	Finished floor level
FD	Min. ceiling clearance	RM	Grid height
FFS	Spring compression clearance	STH	Min. headroom
FFW	Spring shaft clearance	WE	Shaft centre from lintel

Please note:

Select required track height according to the door height in table.

Note:

- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.

Observe min. sideroom, see page 65.

	STH	WE	DA	FFW
HU 4	LH - RM + 215	335	215	500 × 850
HU 5		355		540 × 850
HU 8		395		620 × 850

B	DE	FD	FFS	MH
LH - 513	STH + RM	DA + 65	Min. 90° (745)	400

Table: track heights (LH)

Door height RM	Min. LH	Max. LH	Door height RM	Min. LH	Max. LH
5000	6560	8350	HU 5	7500	9060
4875	6435	8225		7375	8935
4750	6310	8100		7250	8810
4625	6185	7975		7125	8685
4500	6060	7850		7000	8560
4375	5935	7725		6875	8435
4250	5810	7600		6750	8310
4125	5685	7475		6625	8185
4000	5560	7235		6500	8060
3875	5435	6985		6375	7935
3750	5310	6735	HU 4	6250	7810
3625	5185	6485		6125	7685
3500	5060	6235		6000	7560
3375	4935	5985		5875	7435
3250	4810	5735		5750	7310
3125	4685	5485		5625	7185
3000	4560	5235		5500	7060
2875	4435	4985		5375	6935
2750	4310	4735		5250	6810
2625	4185	4485		5125	6685
2500	4060	4235			
2375	3935	3985			

Notes:

- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
- ALR 67 Thermo Glazing on request.

	All door types available in any version.
	Door types APU 67 Thermo and ALR 67 Thermo on request.
	All door types with wicket door on request.
	Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
	All door types on request.

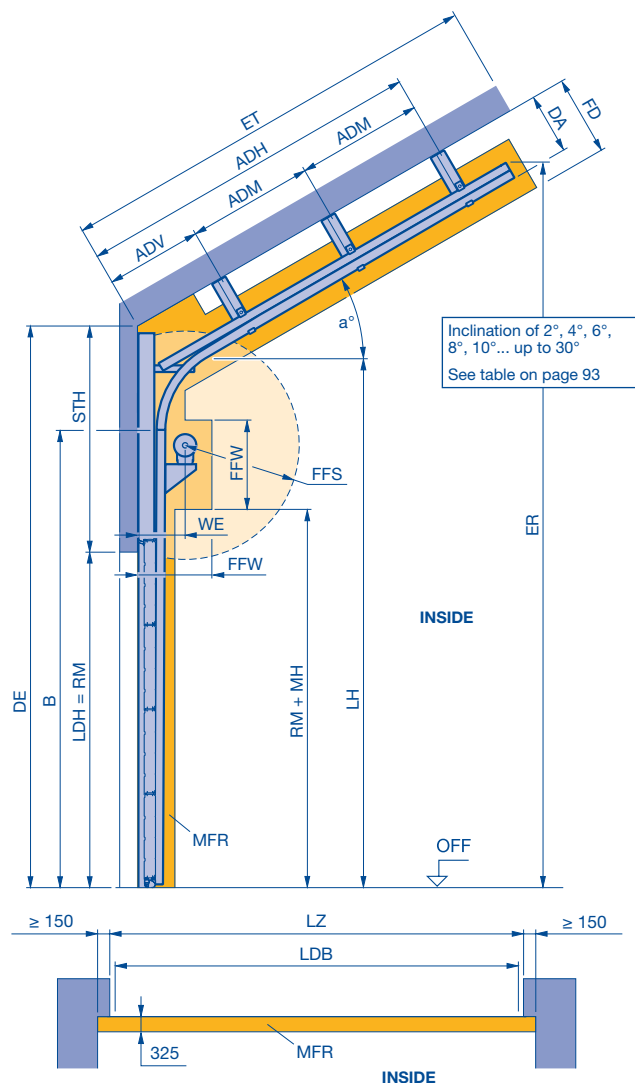
Dimensions in mm

Track application: RD

High-lift track application

with low-mounted torsion spring shaft and inclination up to max. 30°

Detailed technical data can be found in the product configurator.



- | | | | |
|------------|------------------------------------|------------|---|
| a° | Inclination | LDB | Clear passage width with |
| ADH | Distance to rear ceiling anchor | | ThermoFrame (see page 65) |
| ADM | Distance to central ceiling anchor | LDH | Clear passage height |
| ADV | Distance to front ceiling anchor | LH | Track height |
| B | Start of double radius | LZ | Clear frame dimensions (from 1200) |
| DA | Distance to ceiling on request | MFR | Space for fitting the door |
| DE | Min. ceiling height | MH | Fitting height |
| ER | Top edge corner point | OFF | Finished floor level |
| | Track height (depth and height) | RM | Grid height |
| ET | Min. distance back | STH | Min. headroom |
| FD | Ceiling clearance | WE | Shaft centre from lintel |
| FFS | Spring compression clearance | | |
| FFW | Spring shaft clearance | | |

Please note:

Select required track height according to the door height in the table on page 56.

Note:

- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.

Notes:

- Be sure to observe the permissible size ranges of the door types on pages 9–14 and 17–25!
- ALR 67 Thermo Glazing and doors with wicket door on request.
- To determine the roof slope see page 93.
- Inclination > 10° to 30° on request.

Observe min. sideroom, see page 65.

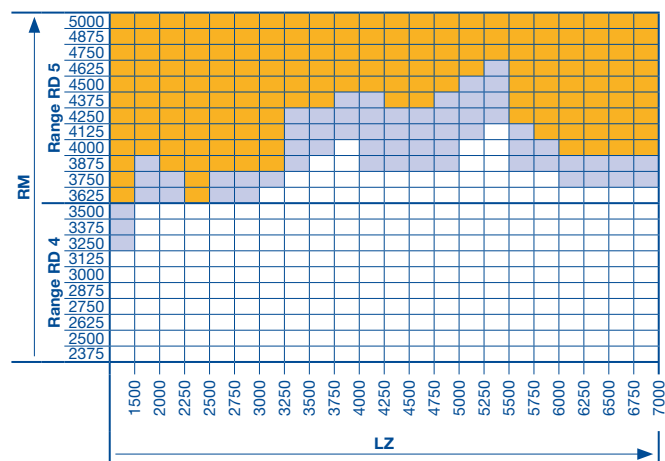
	WE	FFW	STH	DA	DE
RD 4	335	500 × 850	1775	**	STH + RM
RD 5	355	540 × 850			

B	FFS	FD	ET	ER	MH
LH - 513	Min. 90° (745)	DA + 65	**	**	400

** Dimensions can be found in the product configurator.

- ☐ All door types available in any version.
- ☒ Door types APU 67 Thermo and ALR 67 Thermo on request.
- ☐ All door types on request.
- ☐ All door types and versions on request.

Dimensions in mm

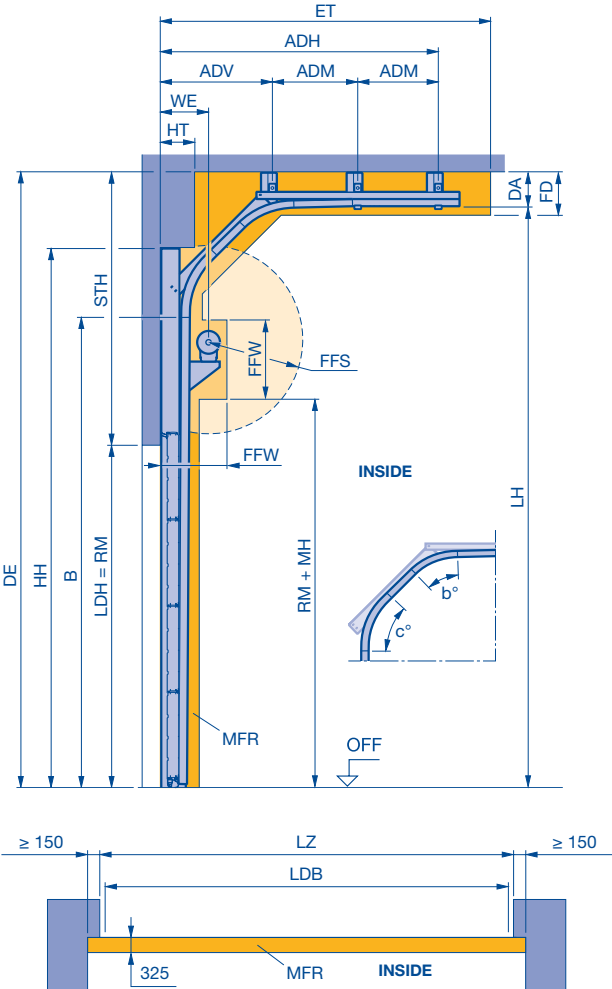


Track application: RS

High-lift track application

with double radius and low-mounted torsion spring shaft

Detailed technical data can be found in the product configurator.



b°/ c°	Contour angle	HT	Obstruction depth
ADH	Distance to rear ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 65)
ADM	Distance to central ceiling anchor	LDH	Clear passage height
ADV	Distance to front ceiling anchor	LH	Track height
B	Start of double radius, factory specification	LZ	Clear frame dimensions (from 1200)
DA	Distance to ceiling on request	MFR	Space for fitting the door
DE	Min. ceiling height	MH	Fitting height
ET	Distance back	OFF	Finished floor level
FD	Ceiling clearance	RM	Grid height
FFS	Spring compression clearance	STH	Min. headroom
FFW	Spring shaft clearance	WE	Shaft centre from lintel
HH	Obstruction height		

Please note:
Select required track height according to the door height in the table on page 56.

- Note:**
- A technical inspection is required!
 - The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
 - The clearance required for fitting the door must be free of supply lines, heater fans, etc.

- Notes:**
- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
 - ALR 67 Thermo Glazing on request.

Observe min. sideroom, see page 65.

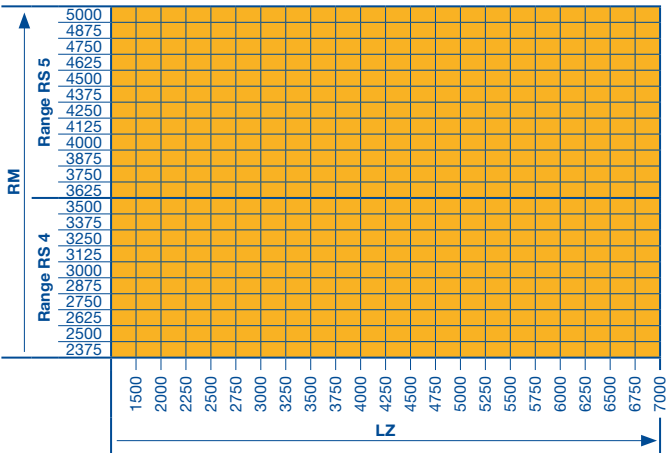
	WE	FFW	STH	DA	DE
RS 4	335	500 × 850	1477	203	LH + 183
RS 5	355	540 × 850			

B	FFS	FD	ET	ER	MH
**	Min. 90° (745)	DA + 65	**	**	400

** Dimensions can be found in the product configurator.

All door types and versions on request.

Dimensions in mm

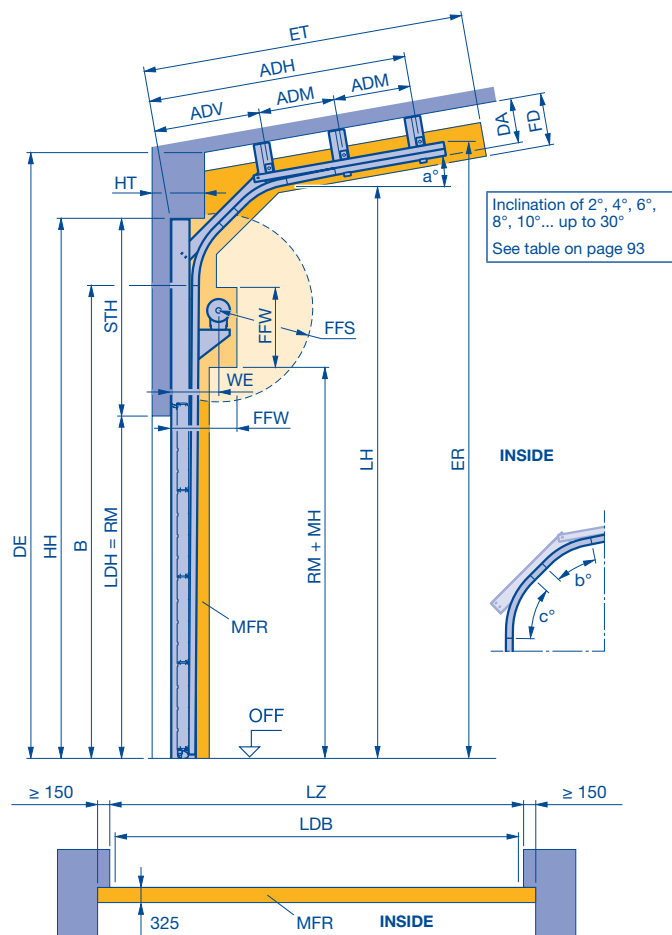


Track application: RK

High-lift track application

with double radius and inclination up to max. 30°

Detailed technical data can be found in the product configurator.



a°	Inclination	HH	Obstruction height
b°/c°	Contour angle	HT	Obstruction depth
ADH	Distance to rear ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 65)
ADM	Distance to central ceiling anchor	LDH	Clear passage height
ADV	Distance to front ceiling anchor	LH	Track height
B	Start of double radius, factory specification	LZ	Clear frame dimensions (from 1200)
DA	Distance to ceiling on request	MFR	Space for fitting the door
DE	Min. ceiling height	MH	Fitting height
ER	Top edge corner point	OFF	Finished floor level
FFD	Track height (depth and height)	RM	Grid height
FFS	Ceiling clearance	STH	Min. headroom
FFW	Spring compression clearance	WE	Shaft centre from lintel

Please note:

Select required track height according to the door height in the table on page 56.

Note:

- A technical inspection is required!
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.

Notes:

- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
- ALR 67 Thermo Glazing on request.
- To determine the roof slope see page 93.
- Inclination > 10° to 30° on request.

Observe min. sideroom, see page 65.

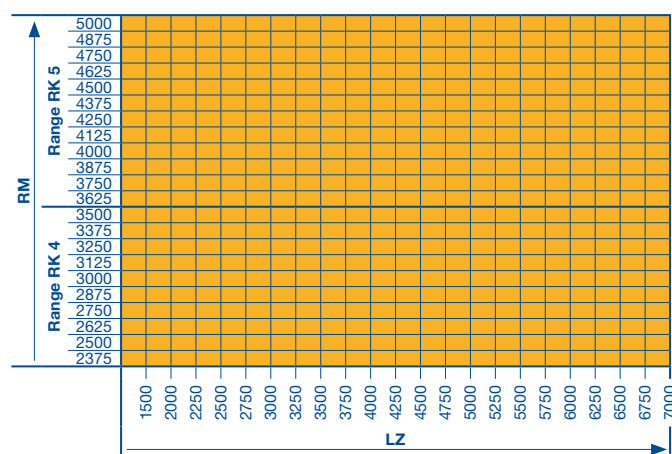
	WE	FFW	STH	DA	DE
RK 4	335	500 × 850	1477	203	LH + 183
RK 5	355	540 × 850			

B	FFS	FD	ET	ER	MH
**	Min. 90° (745)	DA + 65	**	**	400

** Dimensions can be found in the product configurator.

All door types and versions on request.

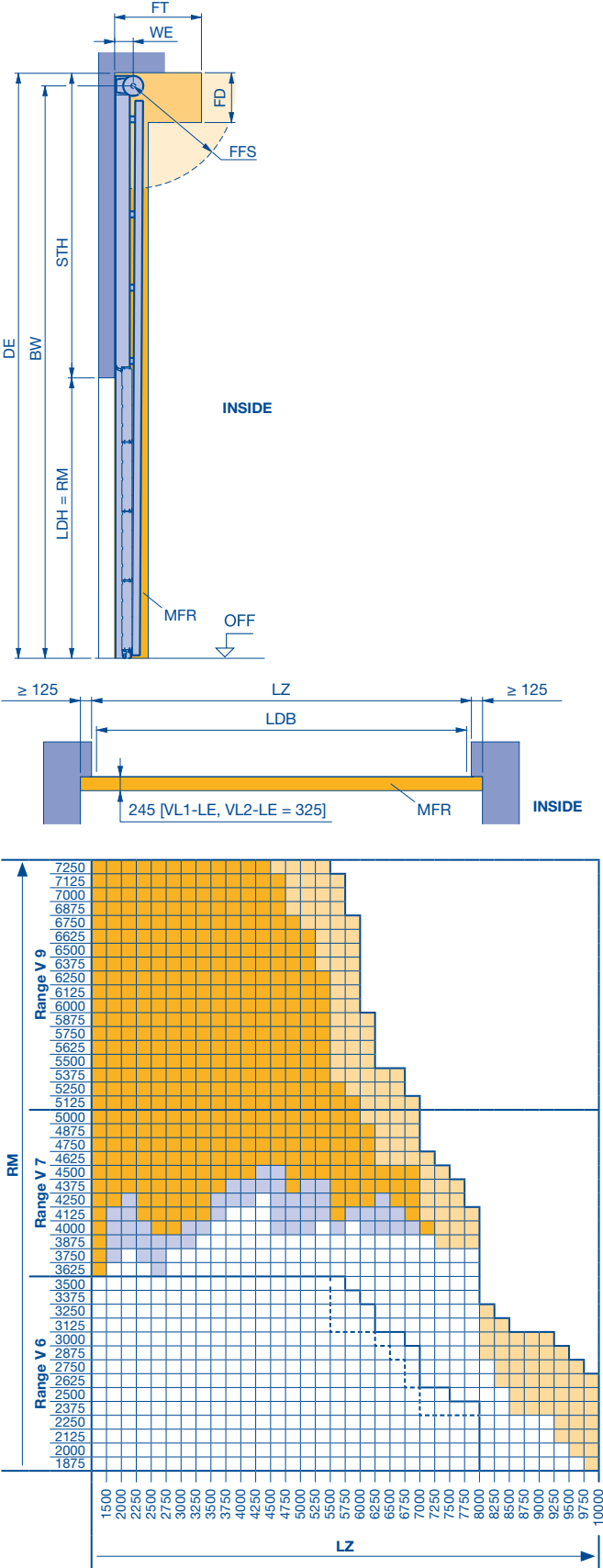
Dimensions in mm



Track application: V

Vertical track application

Detailed technical data can be found in the product configurator.



BW	Position of shaft support	LDH	Clear passage height
DE	Min. ceiling height	LZ	Clear frame dimensions (from 1200)
FD	Min. ceiling clearance	MFR	Space for fitting the door
FFS	Spring compression clearance	OFF	Finished floor level
FT	Clearance for door operation	RM	Grid height
LDB	Clear passage width with ThermoFrame (see page 65)	WE	Shaft centre from lintel
		STH	Min. headroom

- Notes:
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
 - The clearance required for fitting the door must be free of supply lines, heater fans, etc.
 - Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!
 - ALR 67 Thermo Glazing and doors with wicket door on request.

Observe min. sideroom, see page 65.

	STH	WE	DE	BW
V 6	RM + 560	160	2 × RM + 560	2 × RM + 420
V 7	RM + 600 (790*)	180	2 × RM + 600 (790*)	2 × RM + 445
V 9	RM + 695 (840*)	205	2 × RM + 695 (840*)	2 × RM + 495

* with double spring shaft

FD	FFS	FT
500	Min. 90° (745)	2 × WE

- Track limit
- Track limit for APU 67 Thermo and ALR 67 Thermo.
- All door types available in any version.
- Door types APU 67 Thermo and ALR 67 Thermo on request.
- Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
- All door types on request.

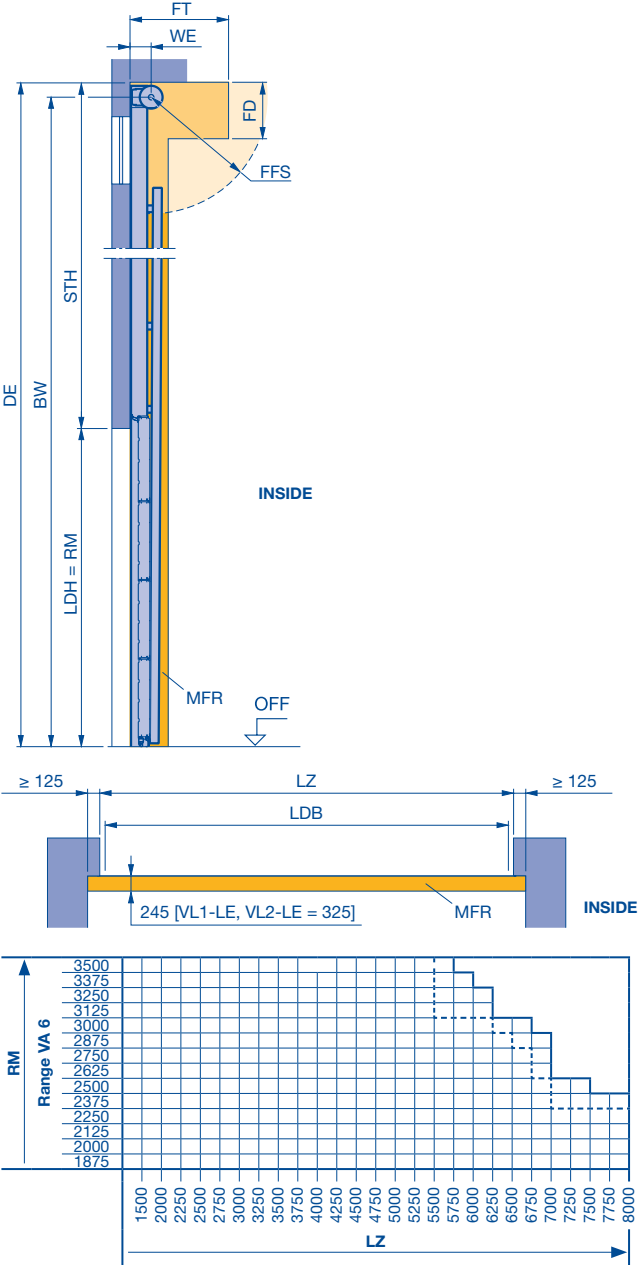
Dimensions in mm

Track application: VA

Vertical track application

With high-mounted torsion spring shaft

Detailed technical data can be found in the product configurator.



BW	Position of shaft support	LZ	Clear frame dimensions (from 1200)
DE	Min. ceiling height	MFR	Space for fitting the door
FD	Ceiling clearance	OFF	Finished floor level
FFS	Spring compression clearance	RM	Grid height
FT	Clearance for door operation	STH	Min. headroom
LDB	Clear passage width with ThermoFrame (see page 65)	WE	Shaft centre from lintel
LDH	Clear passage height		

Notes:

- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!

Observe min. sideroom, see page 65.

	STH	DE	BW	WE	FD	FFS	FT
VA 6	RM + 570	BW + 140	Min. 2 × RM + 430 max. DE – 140 (7895)	160	500	min. 90° (745)	2 × WE

Note:

ALR 67 Thermo Glazing and doors with wicket door on request.

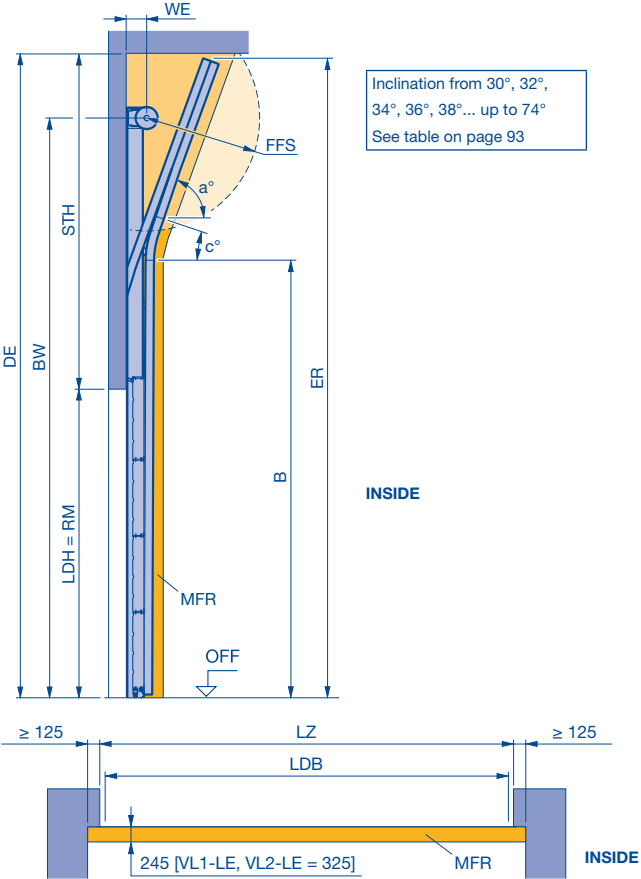
- Track limit
 - Track limit for APU 67 Thermo and ALR 67 Thermo.
 - All door types available in any version.
- Dimensions in mm

Track application: VS

Vertical track application

With inclination

Detailed technical data can be found in the product configurator.



a°	Inclination	LDH	Clear passage height
c°	Contour angle	LZ	Clear frame dimensions (from 1200)
B	Start of double radius	MFR	Space for fitting the door
BW	Position of shaft support	OFF	Finished floor level
DE	Min. ceiling height	RM	Grid height
ER	Top edge corner point	STH	Min. headroom
FFS	Spring height (depth and height)	WE	Shaft centre from lintel
LDB	Spring compression clearance		
	Clear passage width with ThermoFrame (see page 65)		

- Notes:
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
 - A technical inspection is required!
 - The clearance required for fitting the door must be free of supply lines, heater fans, etc.
 - Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!

Observe min. sideroom, see page 65.

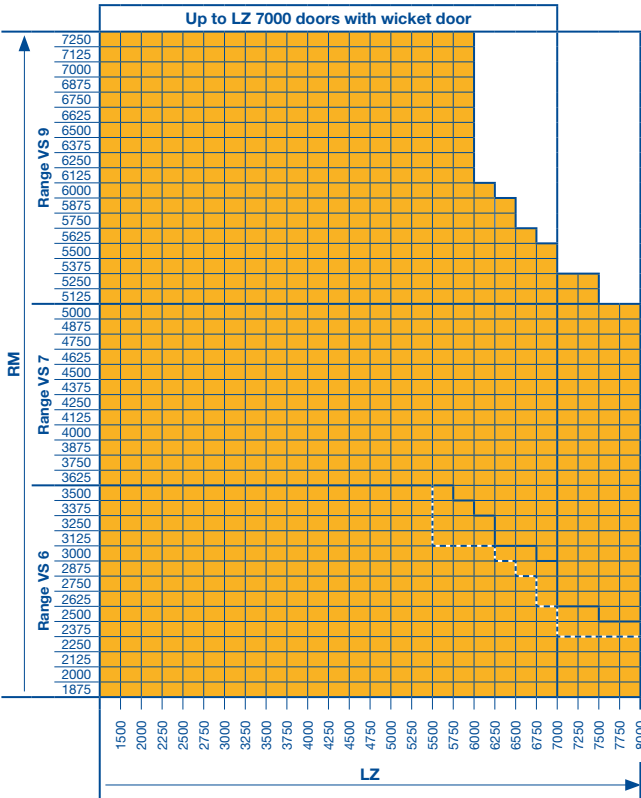
	STH	DE	B	BW	WE	FFS	ER
VS 6	on request	on request	Min. RM + 20	**	160	min. 90°	on request
VS 7			max. 2 × RM – 1075		180	(745)	
VS 9					205		

** Dimensions can be found in the product configurator.

Note:
ALR 67 Thermo Glazing and doors with wicket door on request.

- Track limit
- Track limit for APU 67 Thermo and ALR 67 Thermo.
- All door types on request.

Dimensions in mm

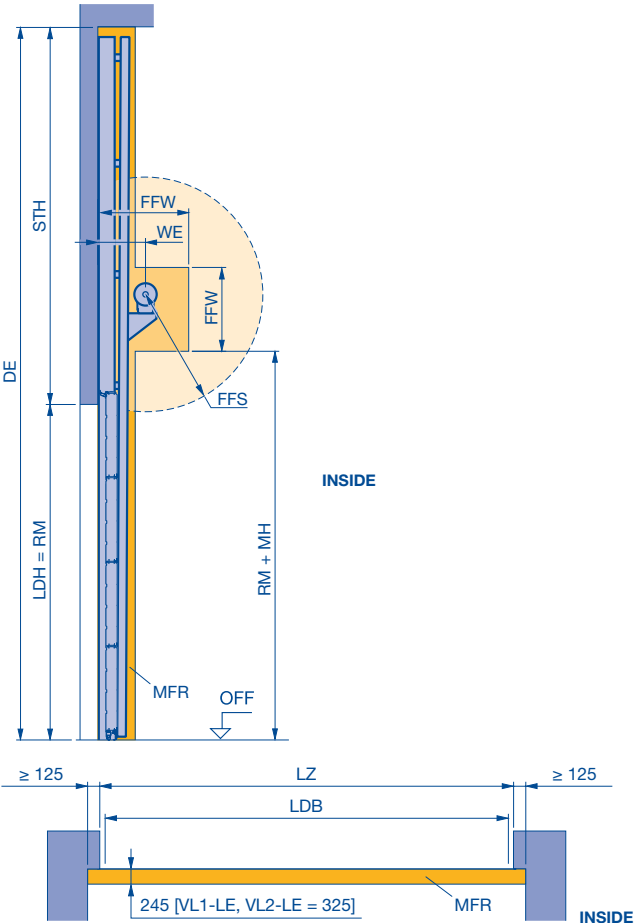


Track application: VU

Vertical track application

with low-mounted torsion spring shaft

Detailed technical data can be found in the product configurator.



DE	Min. ceiling height	MFR	Space for fitting the door
FFW	Spring shaft clearance	MH	Fitting height
FFS	Spring compression clearance	OFF	Finished floor level
LDB	Clear passage width with ThermoFrame (see page 65)	RM	Grid height
LDH	Clear passage height	STH	Min. headroom
LZ	Clear frame dimensions (from 1200)	WE	Shaft centre from lintel

- Notes:**
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
 - The clearance required for fitting the door must be free of supply lines, heater fans, etc.
 - Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!

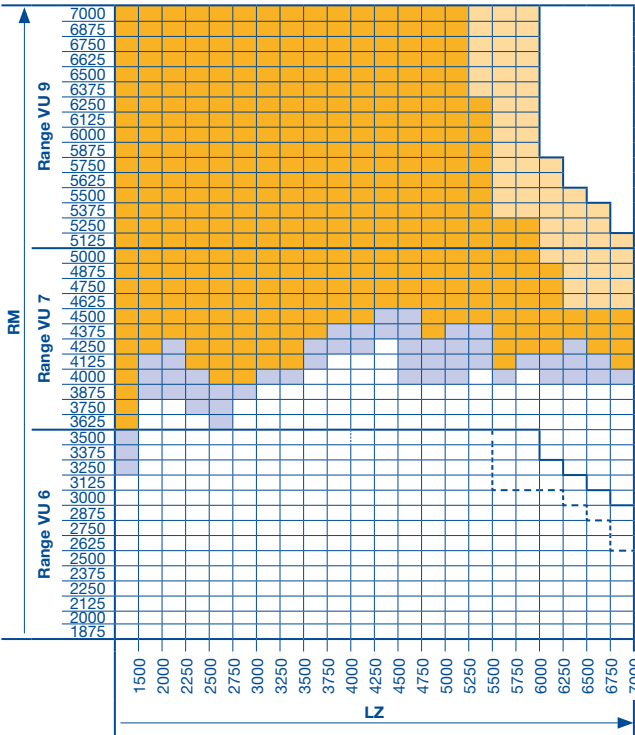
Observe min. sideroom, see page 65.

	STH	DE	WE	FFS	MH	FFW
VU 6	RM + 330	STH + RM	335	Min. 90° (745)	400	500 × 850
VU 7			355			540 × 850
VU 9			395			620 × 850

- Note:**
- ALR 67 Thermo Glazing and doors with wicket door on request.

- Track limit
- Track limit for APU 67 Thermo and ALR 67 Thermo.
- All door types available in any version.
- Door types APU 67 Thermo and ALR 67 Thermo on request.
- Door type SPU 67 Thermo on request (APU 67 Thermo and ALR 67 Thermo not possible).
- All door types on request.

Dimensions in mm

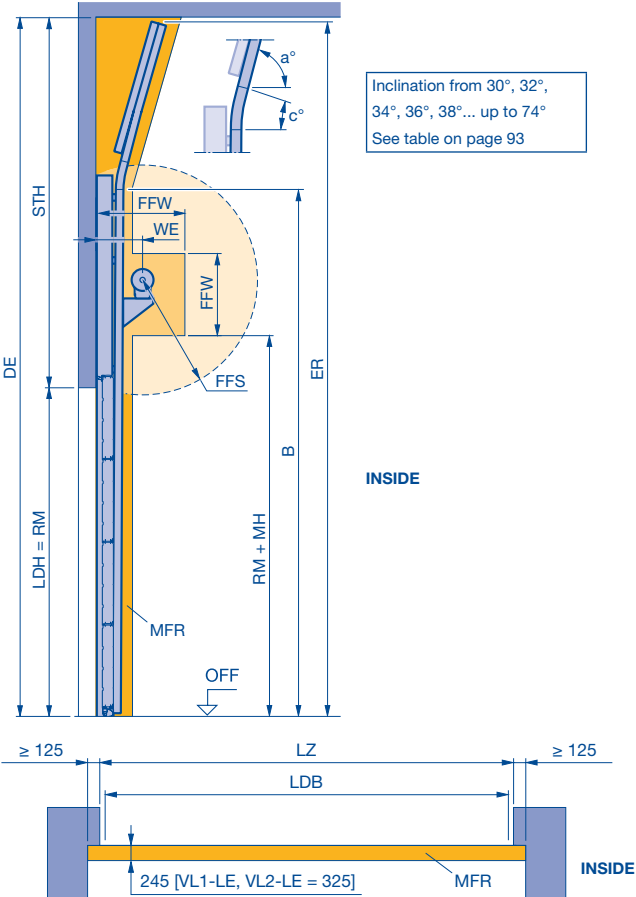


Track application: WS

Vertical track application

with inclination and low-mounted torsion spring shaft

Detailed technical data can be found in the product configurator.



a°	Inclination	LDH	Clear passage height
c°	Contour angle	LZ	Clear frame dimensions (from 1200)
B	Start of double radius	MFR	Space for fitting the door
DE	Min. ceiling height	MH	Fitting height
ER	Top edge corner point	OFF	Finished floor level
	Track height (depth and height)	RM	Grid height
FD	Ceiling clearance	STH	Min. headroom
FFW	Spring shaft clearance	WE	Shaft centre from lintel
FFS	Spring compression clearance		
LDB	Clear passage width with ThermoFrame (see page 65)		

- Notes:
- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
 - A technical inspection is required!
 - The clearance required for fitting the door must be free of supply lines, heater fans, etc.
 - Be sure to observe the permissible size ranges of the door types on pages 9 – 14 and 17 – 25!

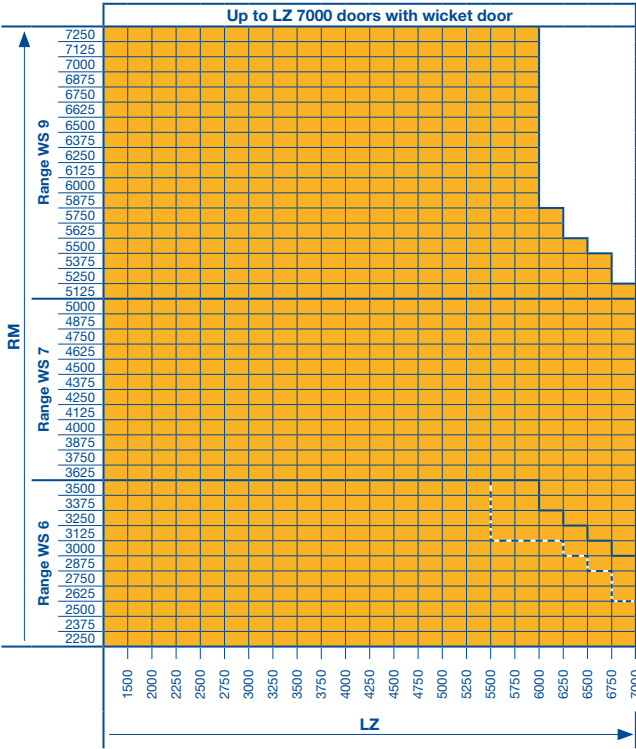
Observe min. sideroom, see page 65.

	WE	FFW	STH	B	DE	FFS	MH	ER
WS 6	335	500 × 850	on request	Min. RM + 1200	on request	Min. 90° (745)	400	on request
WS 7	355	540 × 850		max.				
WS 9	395	620 × 850		2 × RM – 1000				

** Dimensions can be found in the product configurator.

- All door types and versions on request.
- Track limit
- Track limit for APU 67 Thermo and ALR 67 Thermo.

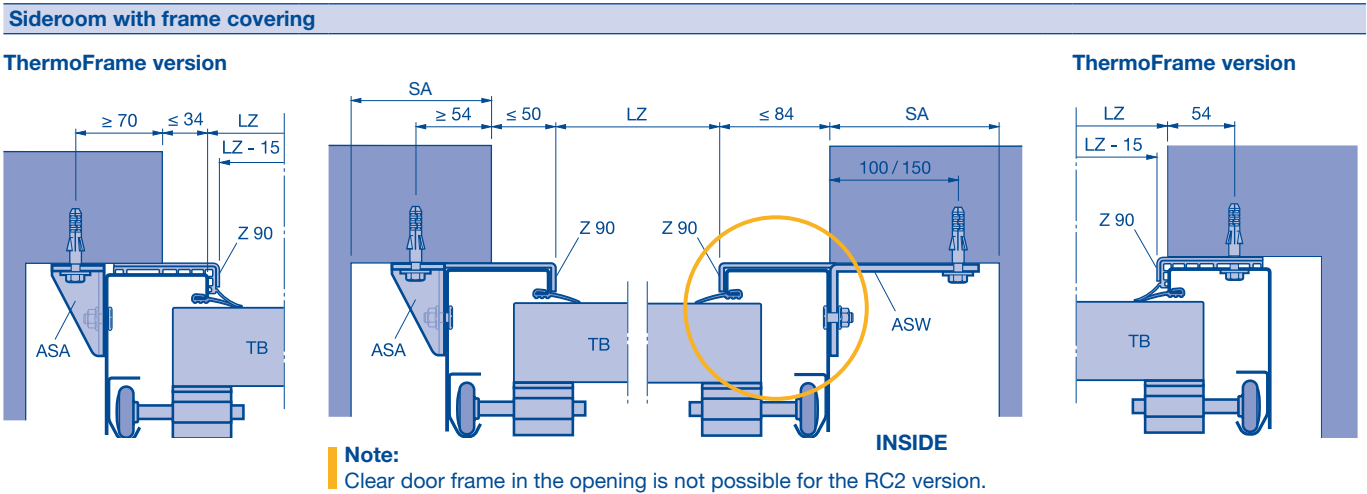
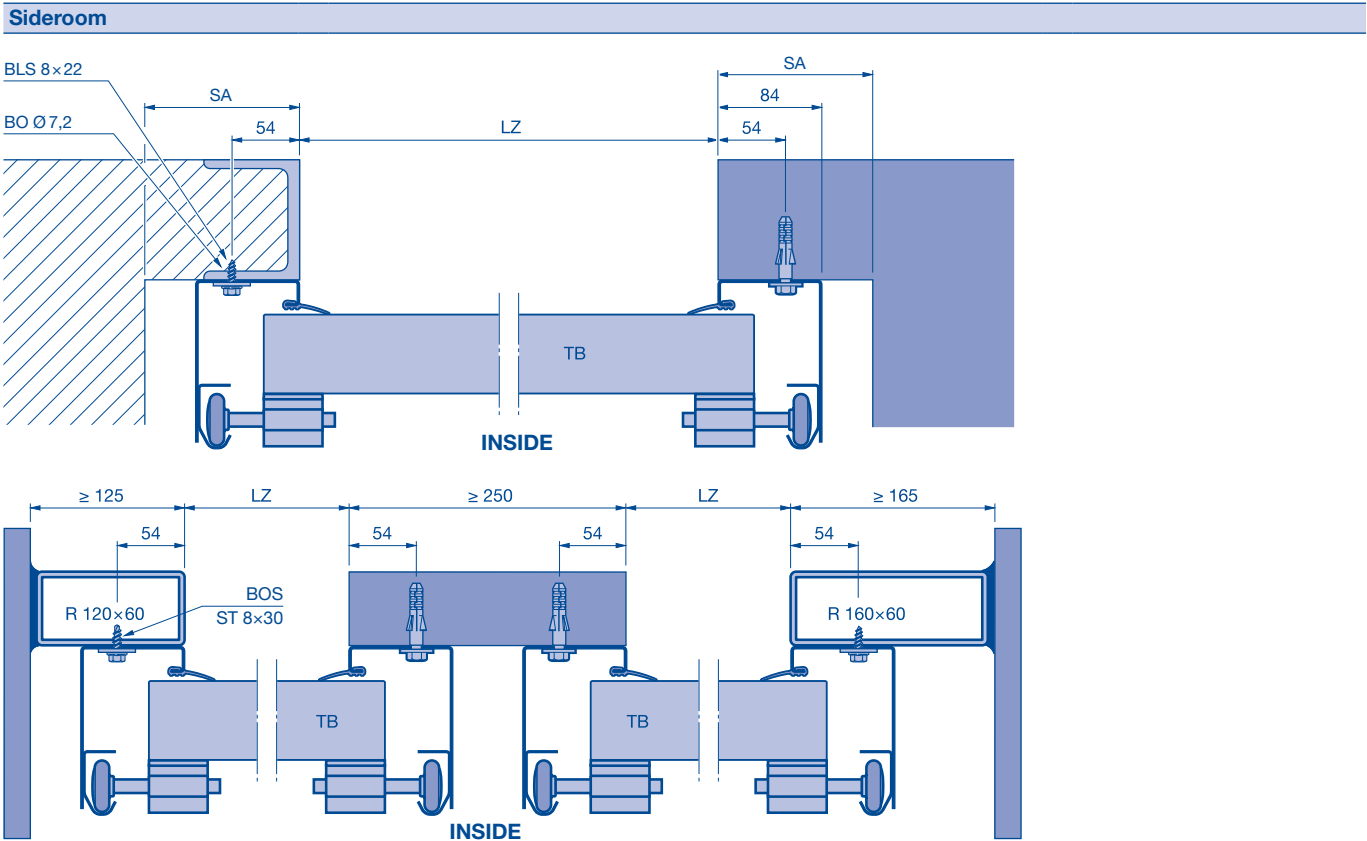
Dimensions in mm



Siderooms

Required sideroom			
Track application / designation		SA	Track application / designation
N*, NA, ND*, NH*, NS, NK, GD, V, VA, VU, GK, GS, VS, WS		125	Manual
H, HA, HD, HU, RD, HK, HS, RS, RK		150	
L, LD		125	
With use of the C-rail (page 68 – 69)		170	Chain hoist
			Shaft operators
			Page 69
			Page 74 – 81

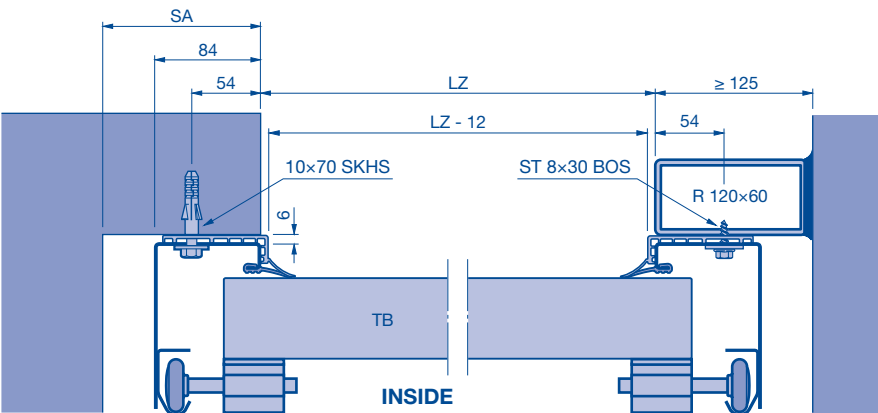
* The sideroom changes due to the track application range (see pages 52 – 60).



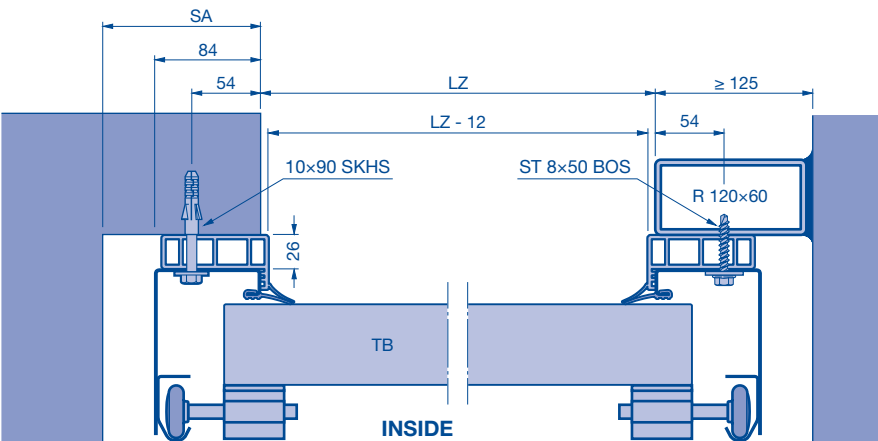
LZ	Clear frame dimensions	BLS	self-tapping screw	SA	Sideroom
BO	Hole	TB	Door leaf	ASA	Screw-on anchor 70 x 40
BOS	drilling screw	R	Box section	ASW	Screw-on bracket 70 x 120/170

Siderooms

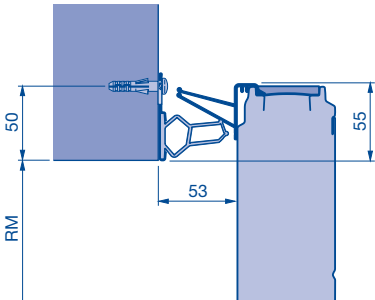
ThermoFrame sideroom 6 mm



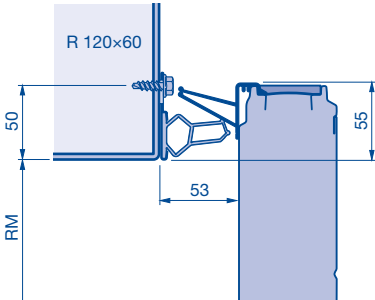
ThermoFrame sideroom 26 mm with lintel counter seal



Fitting to brickwork



Box section fitting (120, 160, 200)

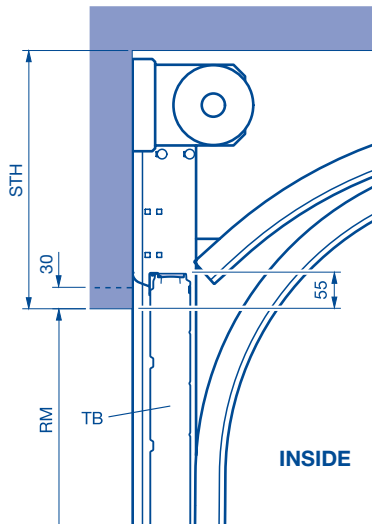


Note:
Door versions with facade door, panels or frame covering as well as frame fitting with screw-on bracket are not possible.

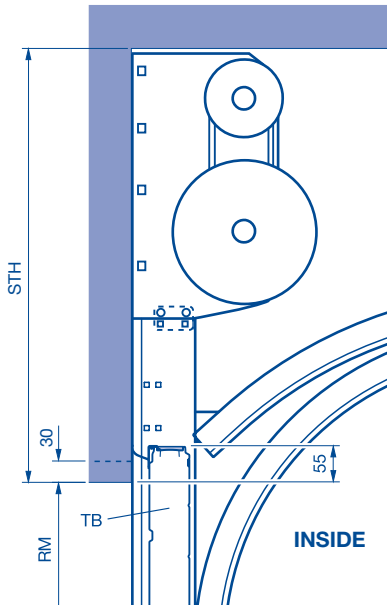
BOS	drilling screw	SA	Sideroom
LZ	Clear frame dimensions	SKHS	Hexagon wood screw
R	Box section	TB	Door leaf
RM	Standard size		

Lintel fittings

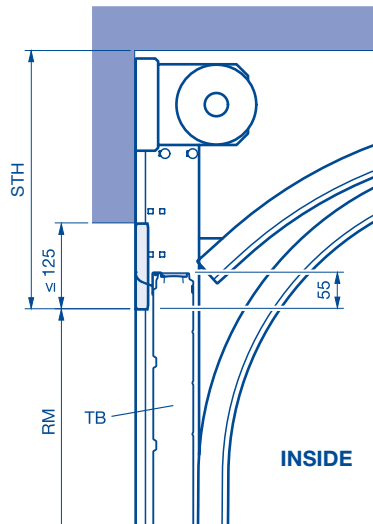
Normal lintel fitting
Insufficient headroom up to 30 mm high



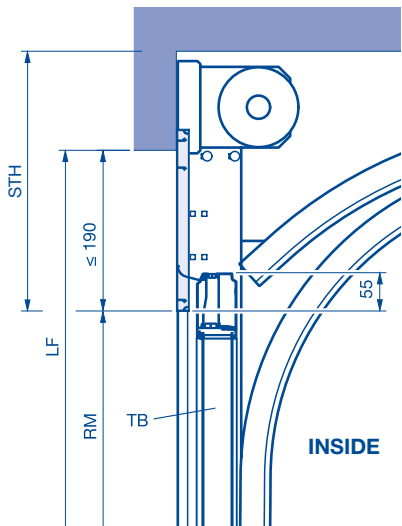
Normal lintel fitting
Double spring shaft



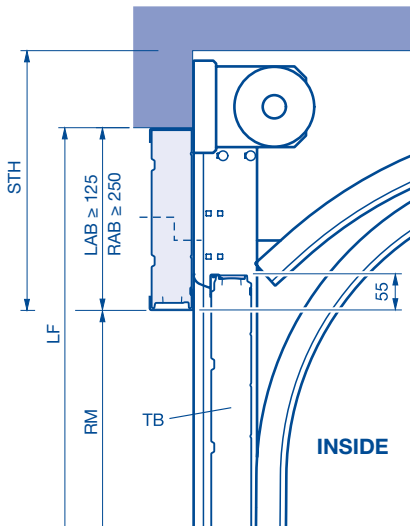
Single-skinned steel fascia for
SPU 67 Thermo to make up for insufficient
headroom up to 125 mm height and
LZ ≤ 8000 mm
(only for track application N)



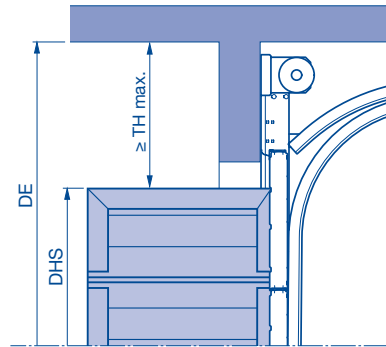
Smooth panel, anodised,
for APU 67 Thermo, ALR 67 Thermo and
ALR 67 Thermo Glazing to make up for
insufficient headroom from 31 to 190 mm
and LZ ≤ 7000 mm (only for track application N)



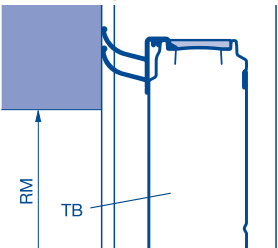
PU fascia panel to make up for insufficient
headroom from 125 mm
Aluminium fascia profile to make up for
insufficient headroom (see table)



Fitting clearance for multiple-point locking



Lintel fitting with ThermoFrame



Aluminium fascia panels	
Height	Infill type
≥ 250	FU, XU, S3, S4, U3, U4, A3, A4, B3, B4, M3, M4, C3, C4

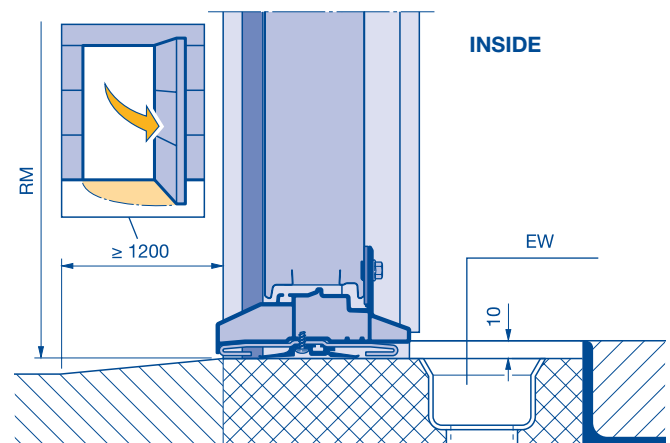
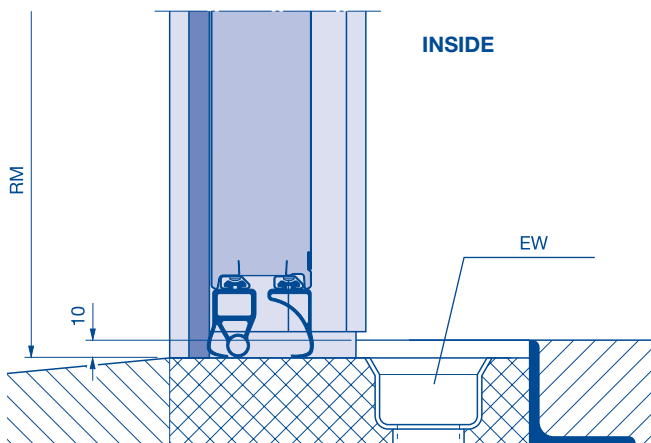
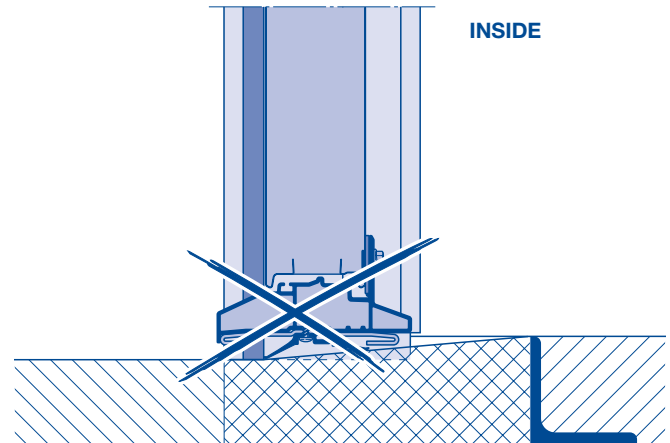
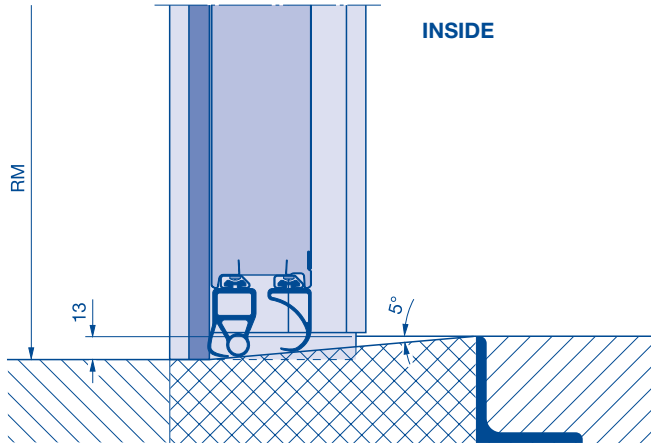
- Aluminium frame fascia panel with real glass infill E2 and G2 on request.

STH	Min. headroom (see page 39)
DHS	Wicket door clear passage height
RM	Grid height
TB	Door leaf
TH	Door section height
LAB	Fascia panel
RAB	Frame fascia panel
LF	Structural opening
LZ	Clear frame dimensions

Bottom edge

without wicket door / with wicket door and threshold rail

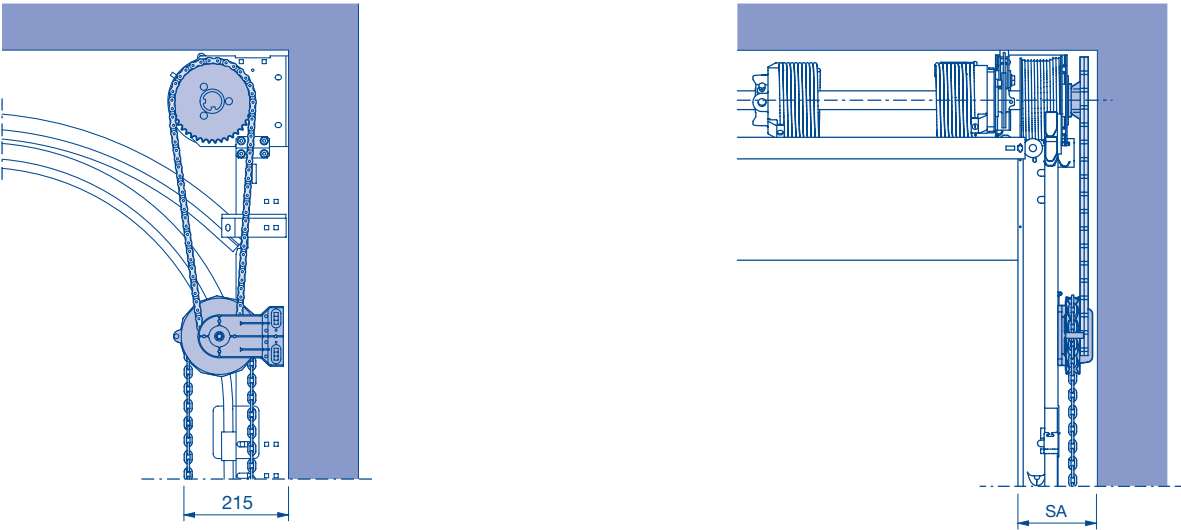
with wicket door and trip-free threshold



EW Drainage
RM Grid height

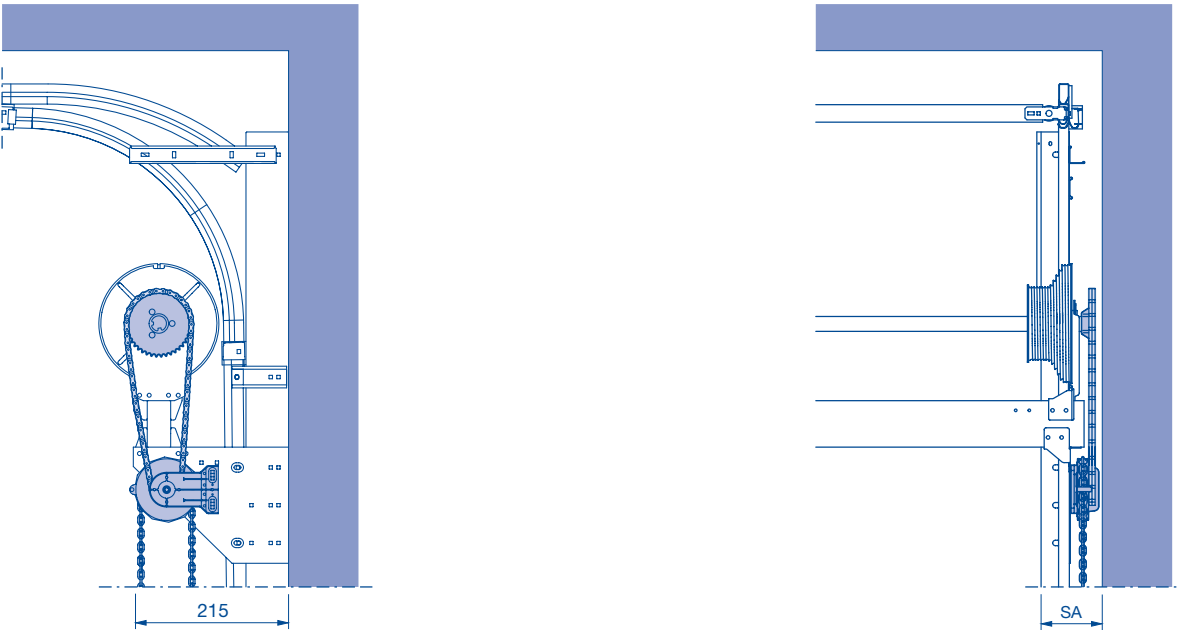
Chain hoist

Chain hoist for all track applications except HU, RD, RS, RK, VU, WS



Track application	N, NA, ND, NS, NK	NH, GD, GS, GK	L, LD	H, HA, HD, HS, HK	V, VA, VS
SA	165	165	165	185	165

Chain hoist for track applications HU, RD, RS, RK, VU, WS



Track application	HU, RD, RS, RK	VU, WS
SA	185	185

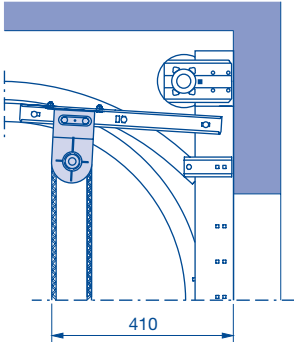
SA Sideroom

Manual

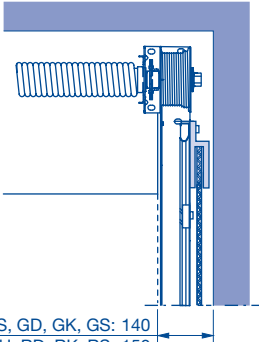
with rope or link steel chain

Track applications up to 20 m² door surface

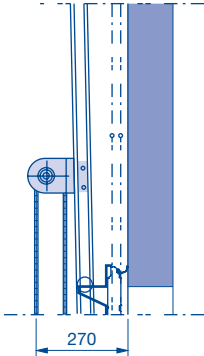
with rope or link steel chain



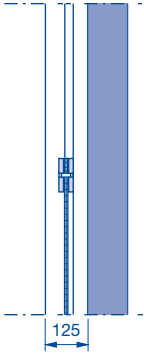
N, NA, ND, NH, NS, GD, H, HA, HD, HU, RD



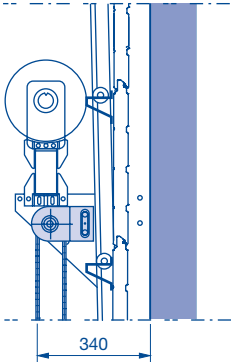
with rope or link steel chain



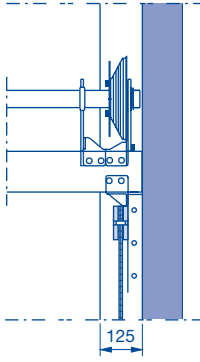
V, VA, VS



with rope or link steel chain



VU, WS



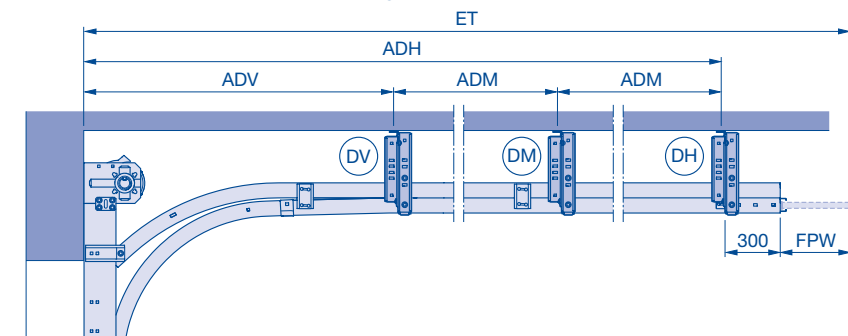
Ceiling anchor

Double track

Track suspensions for all track applications except V, VA, VS, VU and WS

Door weights for roof loads (see pages 39 – 50).

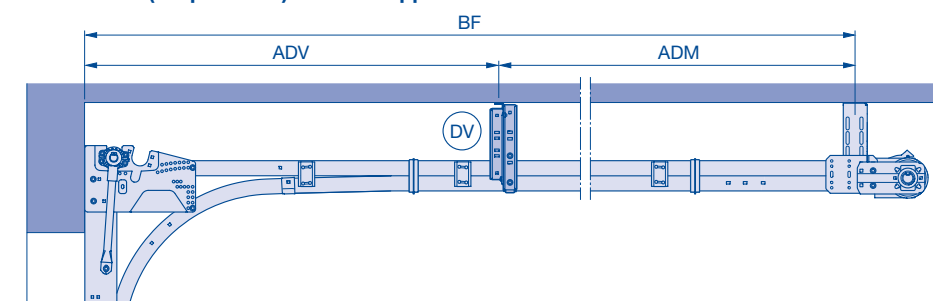
Double track (suspensions), door heights $RM \leq 5000$



Notes:

- Detailed technical data can be found in the product configurator.
- On-site fastening elements must be able to withstand forces of up to 1.5 kN per fixing point!
- Always obtain the permission of the structural engineer before fastening the door system to supporting structural elements.
- Deviations may occur due to the simplified calculation of the distance back. Detailed technical data can be found in the product configurator.

Double track (suspensions) for track application L



Track suspensions with double track

Track application	LZ	ET	Number of suspensions per side	DV	DM	DH / BF	ADV	ADM	ADH / BF	FPW
N, NA	≤ 7000	2289–3934	2	1	0	1	1400	–	ET - 597	Long
								ET - 327	ET - 327	Short
		3935–5685	3	1	1	1	1400	(ET - ADV - 597) / 2	ET - 597	Long
								(ET - ADV - 327) / 2	ET - 327	Short
	> 7000	2289–2934	2	1	0	1	1400	–	ET - 597	Long
								ET - 327	ET - 327	Short
		2935–4060	3	1	1	1	1400	(ET - ADV - 597) / 2	ET - 597	Long
								(ET - ADV - 327) / 2	ET - 327	Short
L	≤ 7000	4061–5685	4	1	2	1	1400	(ET - ADV - 597) / 3	ET - 597	Long
								(ET - ADV - 327) / 3	ET - 327	Short
		2882–3540	2	1	0	1	1400	–	RM + 695	–
		3541–5666	3	1	1	1	1400	(BF - ADV) / 2		
H, HA, HU	≤ 7000	5667–6007	4	1	2	1	1400	(BF - ADV) / 3		
		1915–2201	1	0	0	1	–	–	ET - 597	Long
								ET - 327	ET - 327	Short
		2202–3982	2	1	0	1	1400	–	ET - 597	Long
								ET - 327	ET - 327	Short
		3983–5488	3	1	1	1	1400	(ET - ADV - 597) / 2	ET - 597	Long
	> 7000							(ET - ADV - 327) / 2	ET - 327	Short
		5489–5719	4	1	2	1	1400	(ET - ADV - 327) / 3	ET - 327	Short
		1915–2201	1	0	0	1	1400	–	ET - 597	Long
								ET - 327	ET - 327	Short
		2202–2991	2	1	0	1	1400	–	ET - 597	Long
								ET - 327	ET - 327	Short
NH, ND, GD, LD, HD, RD, VS, WS	> 7000	2991–3864	3	1	1	1	1400	(ET - ADV - 597) / 2	ET - 597	Long
								(ET - ADV - 327) / 2	ET - 327	Short
		3865–5219	4	1	2	1	1400	(ET - ADV - 597) / 3	ET - 597	Long
								(ET - ADV - 327) / 3	ET - 327	Short

Dimensions can be found in the product configurator

ADH Distance to rear ceiling anchor
ADM Distance to central ceiling anchor
ADV Distance to front ceiling anchor
BF Position of spring shaft

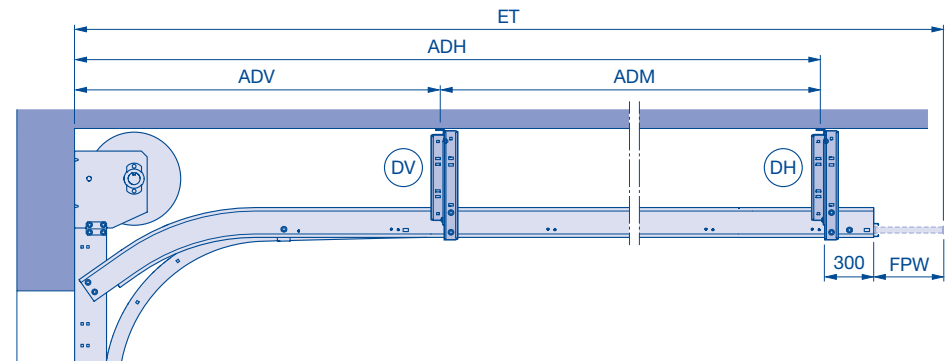
DA Distance to ceiling
DAL Ceiling anchor length
DH Rear ceiling anchor
DM Centre ceiling anchor

DV Ceiling anchor front
ET Min. distance back
FPW Spring buffer travel
LZ Clear frame dimensions

Ceiling anchor

C track

C-rail (suspensions) all track sizes except NS, NK, GS, GK, V, VA, VS, VU, WS



Note:
Deviations may occur due to the simplified calculation of the distance back. Detailed technical data can be found in the product configurator.

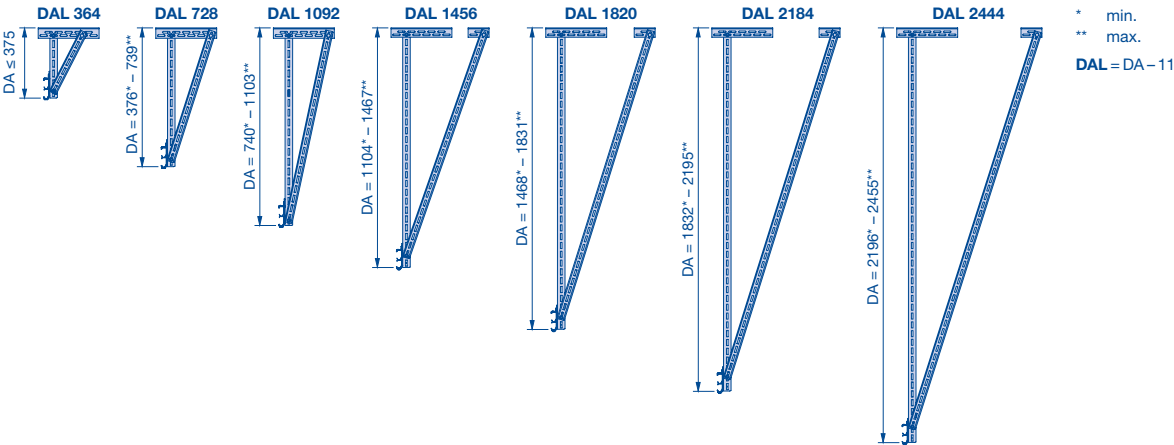
All door types RM > 4500 and LZ > 6250, all door types RM > 5000 except for track application L / LD doors with real glass RM > 3500 and LZ > 5000

Track application	LZ	ET	Number of suspensions per side	DV	DM	DH / BF	ADV	ADM	ADH / BF	FPW
N, NA	≤ 8000	≤ 6685	2	1	0	1	ADH / 2	–	ET - 597	Long
		> 6685	3	1	1	1	ADH / 3	(ET - ADV - 597) / 2 (ET - ADV - 327) / 2	ET - 327	Short
L	≤ 7000	≤ 6007	2	1	0	1	BF / 2	–	RM + 695	–
H, HA, HU	≤ 8000	≤ 6739	2	1	0	1	ADH / 2	–	ET - 597	Long
		> 6739	3	1	1	1	ADH / 3	(ET - ADV - 597) / 2 (ET - ADV - 327) / 2	ET - 327	Short
NH, ND, GD, LD, HD, RD, VS, WS	Dimensions can be found in the product configurator									

Use of C-rail to reduce suspensions

Track application	LZ	ET	Number of suspensions per side	DV	DM	DH / BF	ADV	ADM	ADH / BF	FPW
N, NA	≤ 5500	≤ 3810	1	0	0	1	–	–	ET - 597	Long
									ET - 327	Short
		> 3810	2	1	0	1	ADH / 2	–	ET - 597	Long
									ET - 327	Short
L		≤ 3541	1	0	0	1	–	–	–	–
		3542–5916	2	1	0	1	BF / 2	–	RM + 695	
		> 5916	3	1	1	1	BF / 3	(BF - ADV) / 2	RM + 695	
H, HA, HU		≤ 3740	1	0	0	1	–	–	ET - 597	Long
									ET - 327	Short
		> 3740	2	1	0	1	ADH / 2	–	ET - 597	Long
								ET - 327	Short	
NH, ND, GD, LD, HD, RD, VS, WS	Dimensions can be found in the product configurator									

Track suspensions for distance to ceiling in seven lengths, standard length for DA = 375 mm



ADH	Distance to rear ceiling anchor	DA	Distance to ceiling	DV	Ceiling anchor front
ADM	Distance to central ceiling anchor	DAL	Ceiling anchor length	ET	Min. distance back
ADV	Distance to front ceiling anchor (max. 3000)	DH	Rear ceiling anchor	FPW	Spring buffer travel
BF	Position of spring shaft	DM	Centre ceiling anchor	LZ	Clear frame dimensions

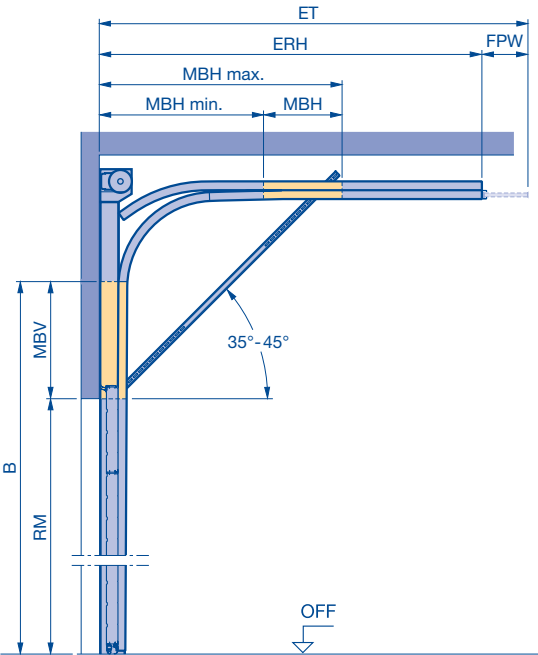
Diagonal strut

Detailed technical data can be found in the product configurator.
Deviations may occur due to the simplified calculation of the distance back.

Please note:
A technical inspection is required!

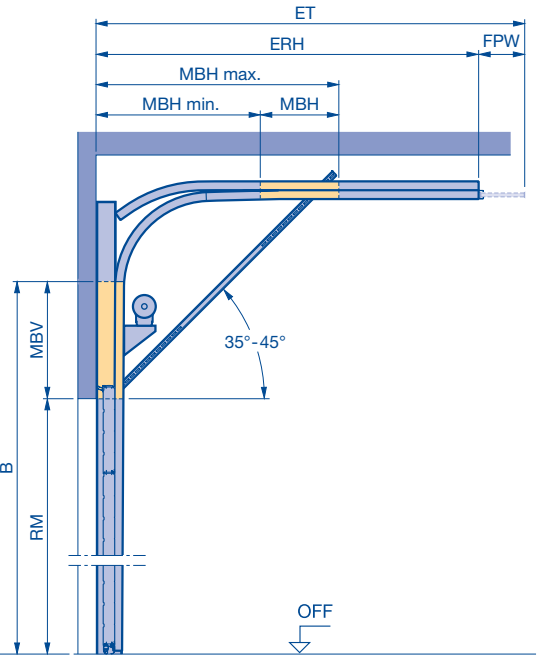
- Notes:**
- Application range of LZ ≤ 3000 and RM ≤ 3250
 - Max. distance back 2297
 - Not for door type ALR 67 Thermo Glazing.

Track application H



Other required technical data for track application H must be observed (see page 51).

Track application HU

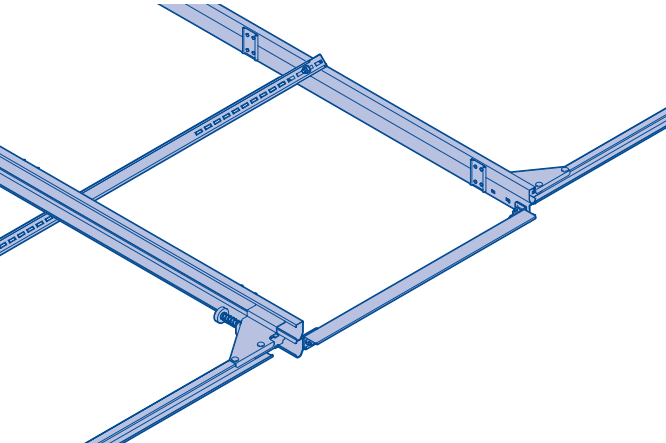


Other required technical data for track application HU must be observed (see page 56).

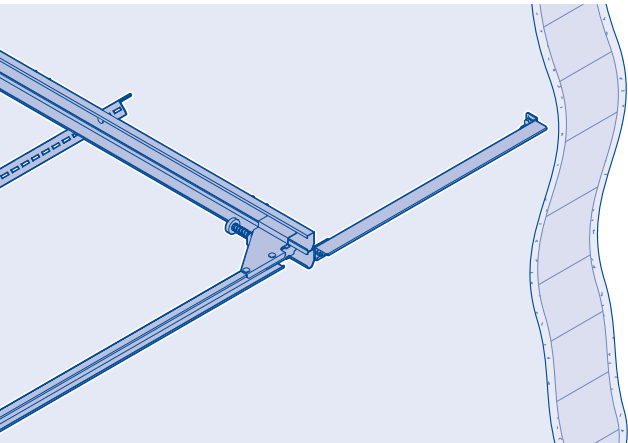
ET	ERH	Min. MBH	Max. MBH	FPW*		MBH	MBV		
				min.	max.		Track application H		Track application HU
Max. 2297	ET – FPW (max. 2000)	ERH / 2	3 × ERH / 4	27	297	Max. MBH – min.	RM	B	on request
							Min. MBH	Max. MBH	

* Dimensions can be found in the product configurator.

Connection door – door



Connection door – wall



B Start of double radius
ET Min. distance back
ERH Corner point track horizontal

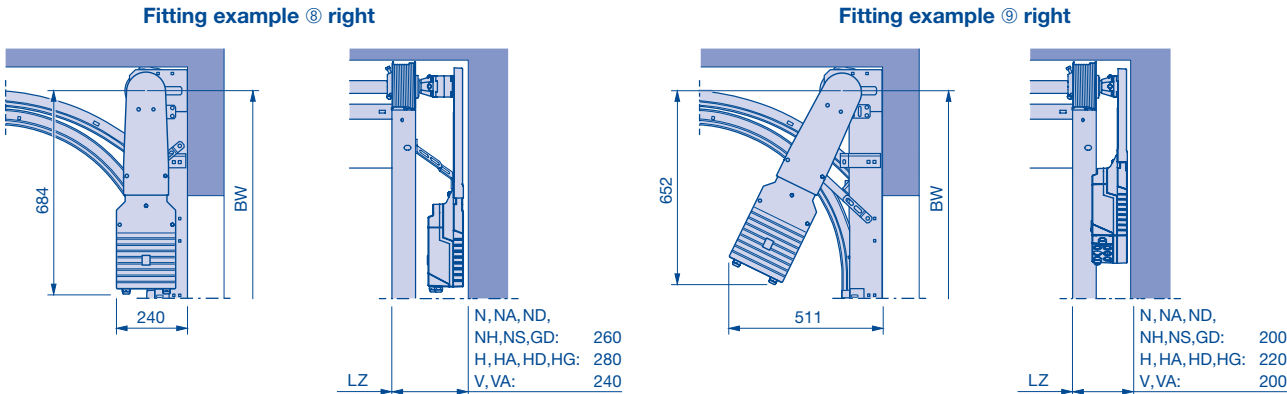
FPW Spring buffer travel
MBH Fitting area horizontal
MBV Fitting area vertical

OFF Finished floor level
RM Grid height

Shaft operator WA 300

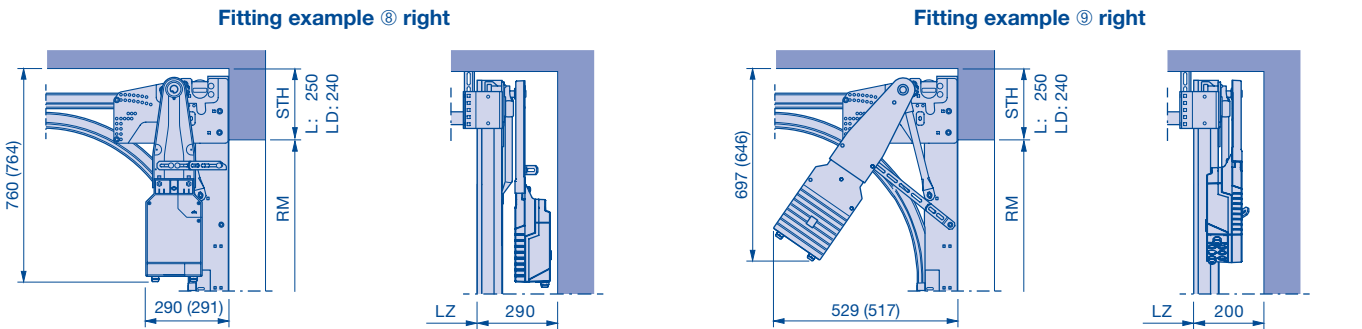
Shaft operator WA 300 for track applications N, NA, ND, NS, NH, NK, GD, GS, GK, H, HA, HD, HS, HK, V, VA and VS

As shown in the figure, the operator can be fitted either left or right, viewed from the inside.



Shaft operator WA 300 for track applications L and LD

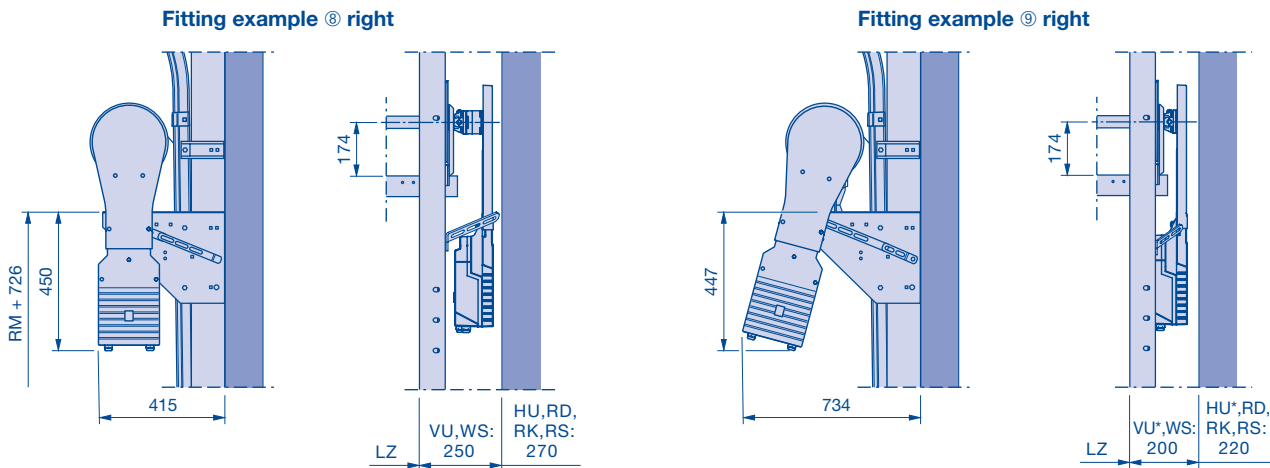
As shown in the figure, the operator can be fitted either left or right, viewed from the inside. In fitting example 9: on the side opposite the door lock.



Dimensions in brackets () for low headroom track application with swivel mechanism.

Shaft operator WA 300 for track applications HU, RD, RS, RK, VU and WS

As shown in the figure, the operator can be fitted either left or right, viewed from the inside.



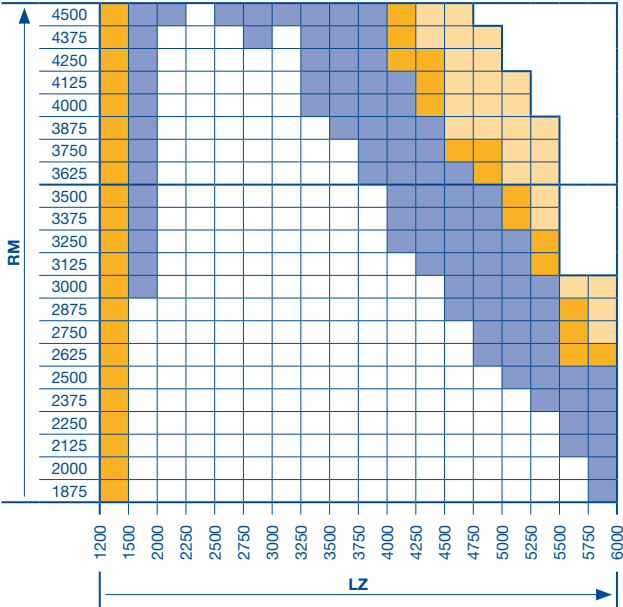
*** Note:**
In the door range $LZ \leq 3000$ and $RM \leq 3500$ the track applications VU and HU are not possible

BW Position of shaft support
LZ Clear frame dimensions

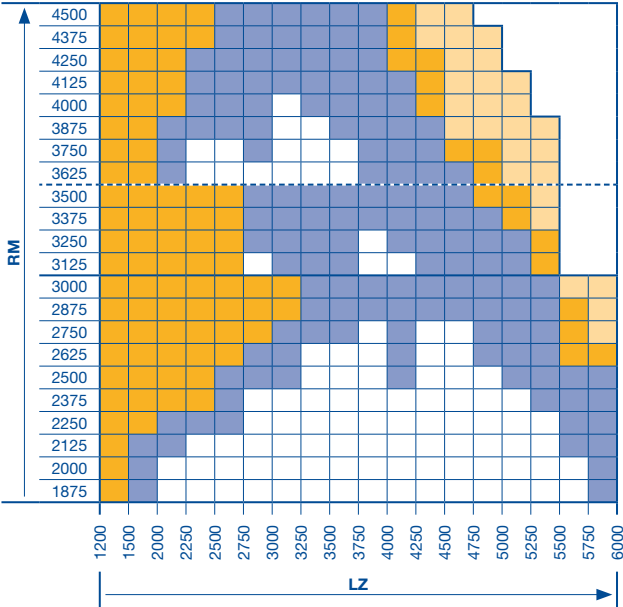
Shaft operator WA 300

Size range WA 300

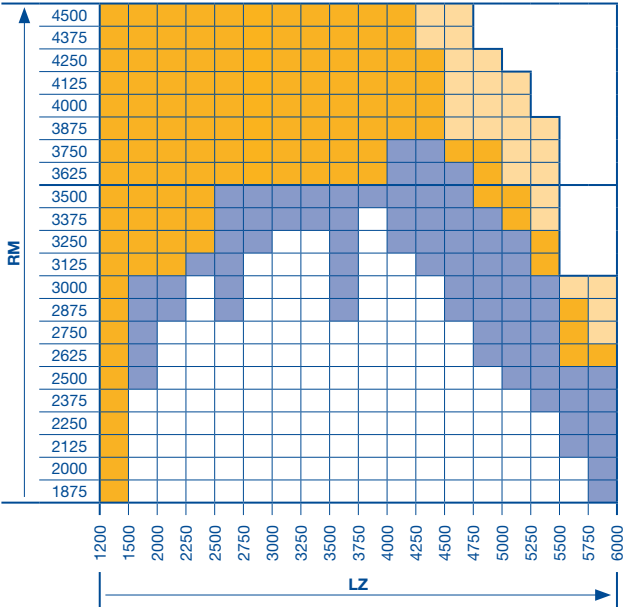
Track applications: N, NA and NH



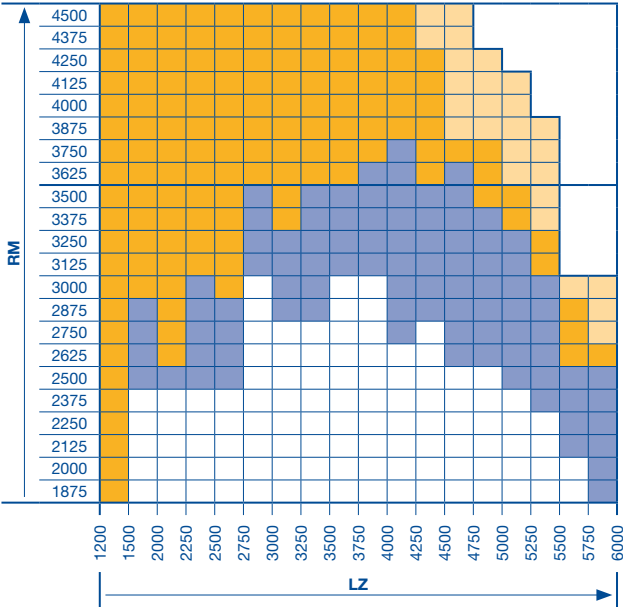
Track applications: ND and GD



Track application: H, HA, HG, HU and RG



Track application: HD and RD



- All door types available in any version.
- Door types APU 67 Thermo and ALR 67 Thermo on request.
- Only door type SPU 67 Thermo on request.
Door type APU 67 Thermo and ALR 67 Thermo not possible.
- All door types and versions on request.

Note:

Track application NS on request!

LZ

Clear frame dimensions

RM

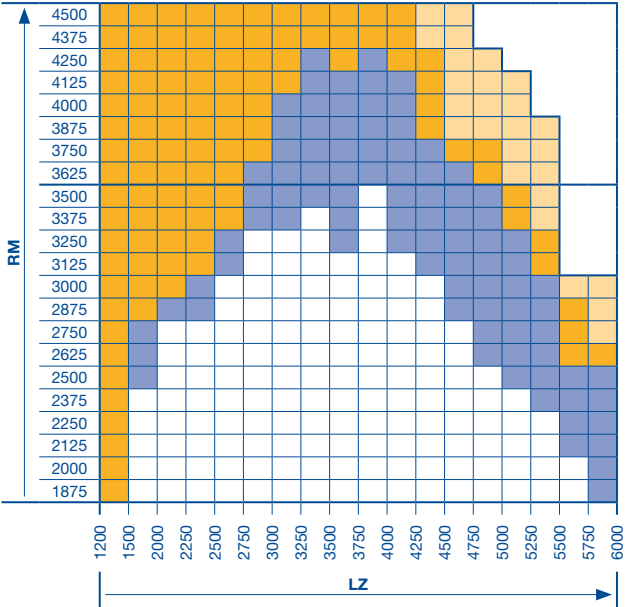
Grid height

Dimensions in mm

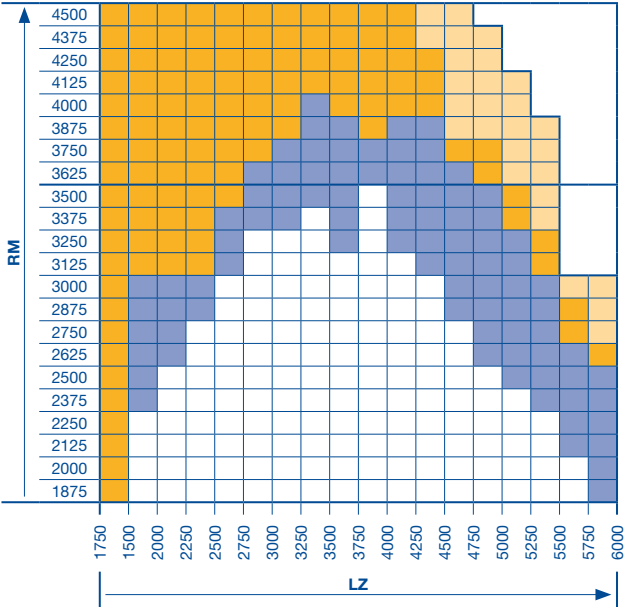
Shaft operator WA 300

Size range WA 300

Track application: V and VA



Track application: VU and WG



- All door types available in any version.
- Door types APU 67 Thermo and ALR 67 Thermo on request.
- Only door type SPU 67 Thermo on request.
Door type APU 67 Thermo and ALR 67 Thermo not possible.
- All door types and versions on request.

LZ Clear frame dimensions
RM Grid height

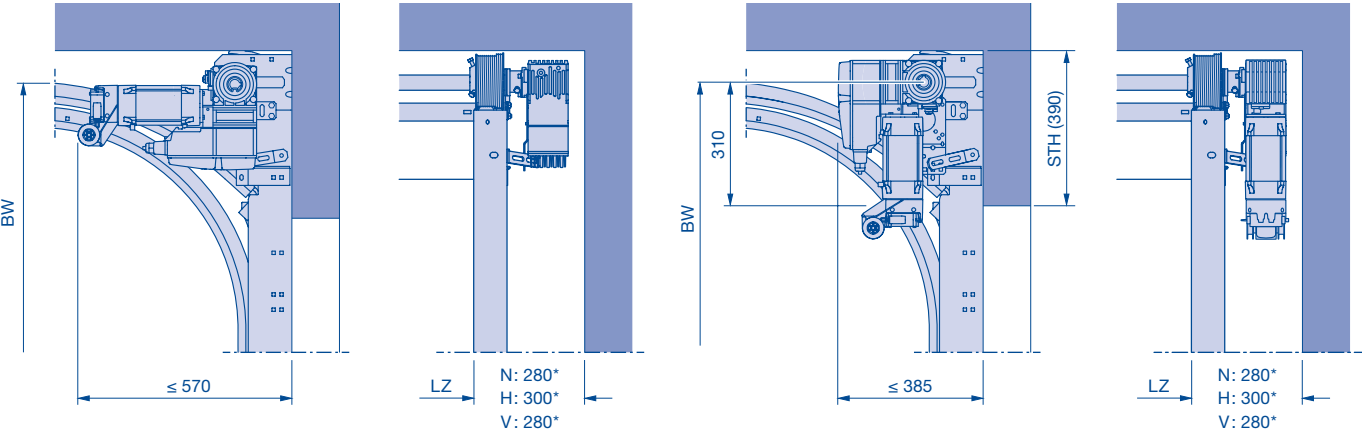
Dimensions in mm

Shaft operator WA 500 / 500 FU

As a frame-mounted operator

Shaft operator WA 500 / WA 500 FU for all track applications, except L, LD, HU, RD, RS, RK, VU and WS

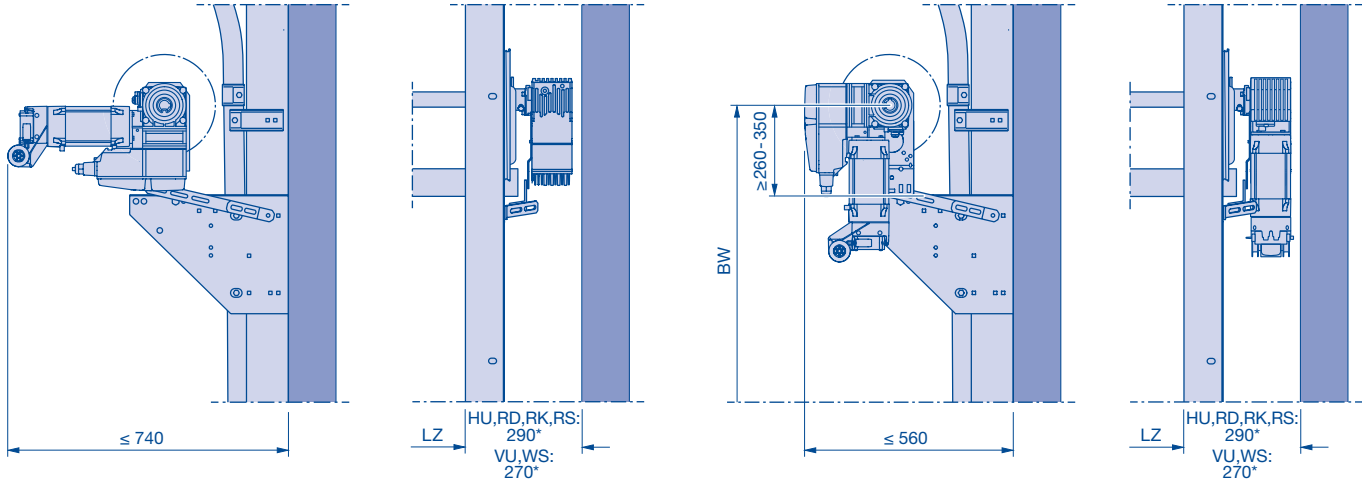
As shown in the figure, the operator can be fitted either left or right, viewed from the inside.



*** Note:**
Dimension 75 mm if using a non-jointed emergency crank handle

Shaft operator WA 500 / WA 500 FU for track applications HU, RD, RS, RK, VU and WS

As shown in the figure, the operator can be fitted either left or right, viewed from the inside.



*** Note:**
Dimension 75 mm if using a non-jointed emergency crank handle

** On request

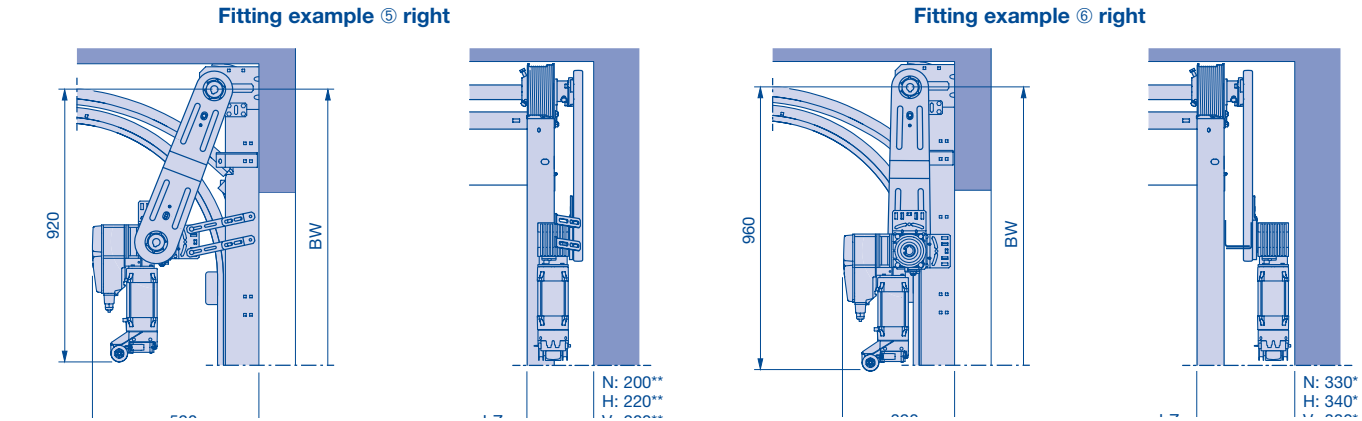
BW Position of shaft support
LZ Clear frame dimensions

Shaft operator WA 500 / 500 FU

with chain box

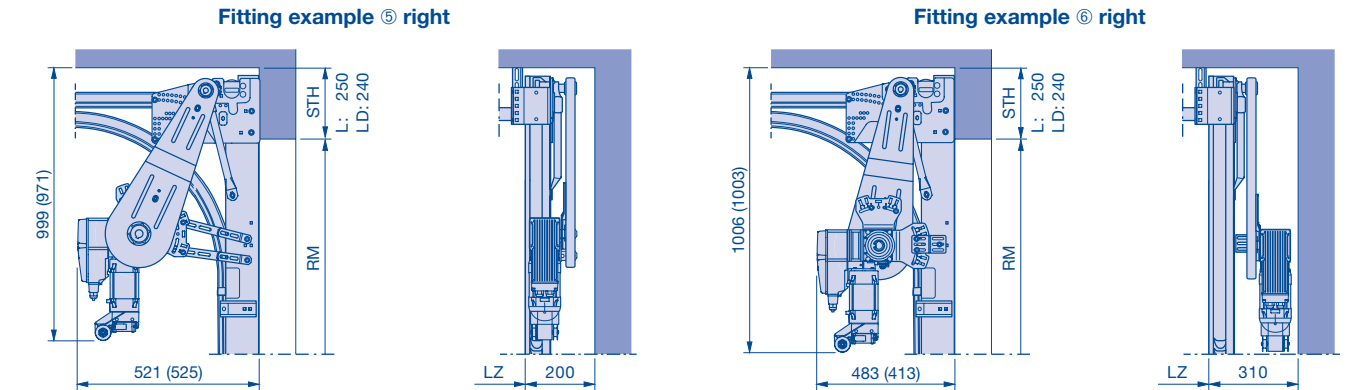
Shaft operator WA 500 / WA 500 FU for all track applications, except L, LD, HU, RD, RS, RK, VU and WS

As shown in the figure, the operator can be fitted either left or right, viewed from the inside. In fitting example 5: on the side opposite the door lock.



Shaft operator WA 500 / WA 500 FU for the track applications L and LD

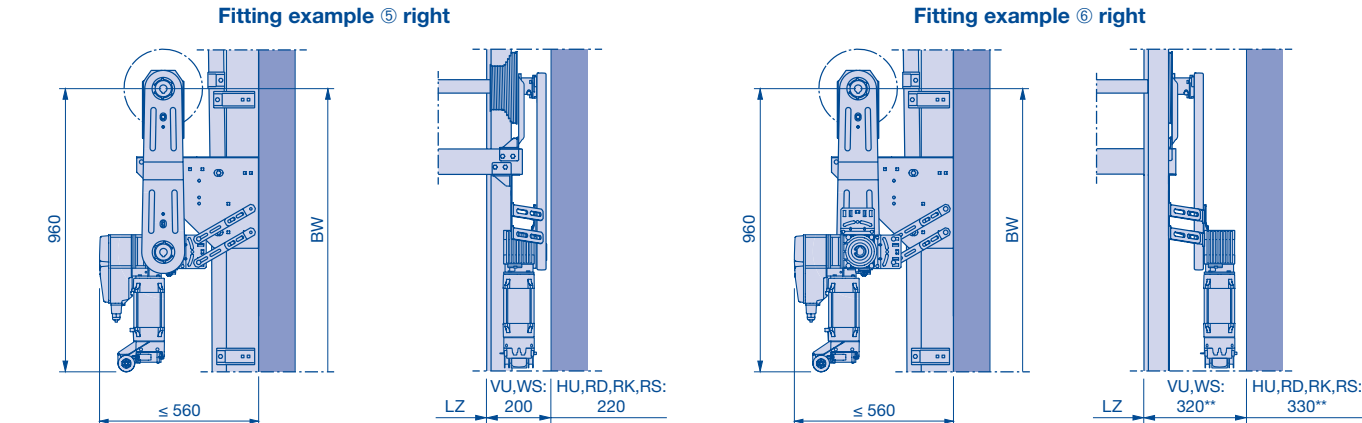
As shown in the figure, the operator can be fitted either left or right, viewed from the inside. In fitting example 5: on the side opposite the door lock.



Dimensions in brackets () for low headroom track application with swivel mechanism.

Shaft operator WA 500 / WA 500 FU for track applications HU, RD, RS, RK, VU and WS

As shown in the figure, the operator can be fitted either left or right, viewed from the inside. In fitting example 5: on the side opposite the door lock.



*** Note:**
Dimension 75 mm if using a non-jointed emergency crank handle

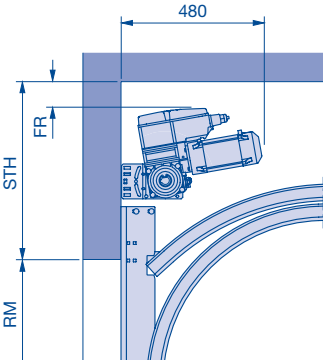
**** Note:**
Dimension 40 mm if using a non-jointed emergency crank handle

BW Position of shaft support
LZ Clear frame dimensions

Shaft operator WA 500 / 500 FU

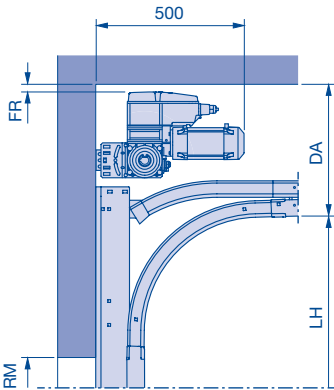
for central mounting

Shaft operator WA 500 / WA 500 FU for track applications: N and ND



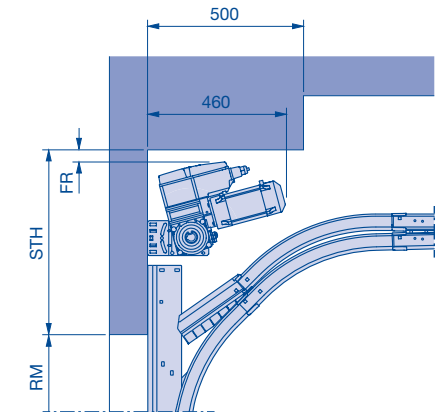
Track application	WA 500 / WA 500 FU	
	STH min.	FR min.
N 1	625	45
N 2	650	45
N 3	710	45
ND 1	585	48
ND 2	605	48
ND 3	710	48
ND 6	595	48
ND 7	675	48

Shaft operator WA 500 / WA 500 FU for track application: NH and GD



Track application	WA 500 / WA 500 FU	
	Min. DA	FR min.
NH 1 / GD 1	480	45
NH 2 / GD 2	485	45
NH 3	565	45

Shaft operator WA 500 / WA 500 FU for track applications: NS, NK, GS and GK



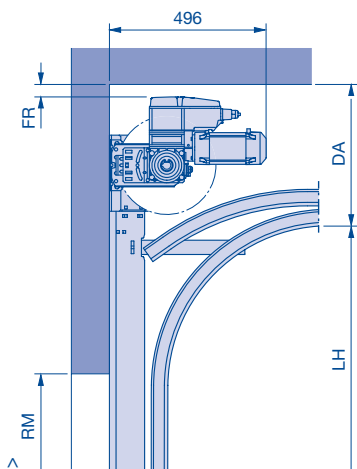
Track application	WA 500 / WA 500 FU	
	STH min.	FR min.
NS 1 / NK 1	650	45
NS 2 / NK 2	675	45
GS / GK	on request	

Note:
Centre motor in conjunction with double spring shaft on request!

DA	Distance to ceiling	LH	Track height	STH	Headroom
FR	Clearance ceiling / shaft operator	RM	Grid height		

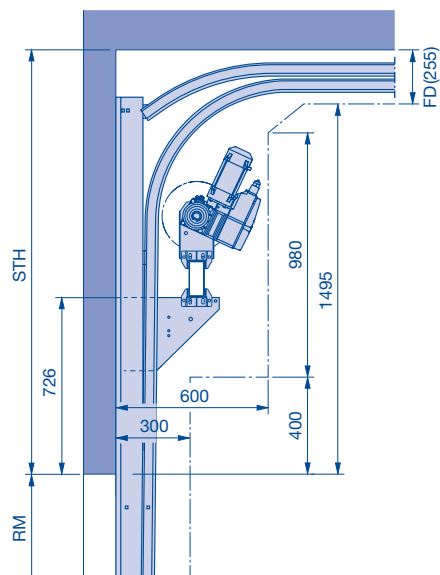
for central mounting

Shaft operator WA 500 / WA 500 FU for track applications: H, HD, HS and HK



Track application	WA 500 / WA 500 FU	
	Min. DA	FR min.
H 4	540	45
H 5	540	45
H 8	565	45
HD / HS / HK	on request	

Shaft operator WA 500 / WA 500 FU for track applications: HU, RD, RS and RK



Track application	WA 500/WA 500 FU
RS/RK	on request

Note:

Centre motor in conjunction with double spring shaft on request!

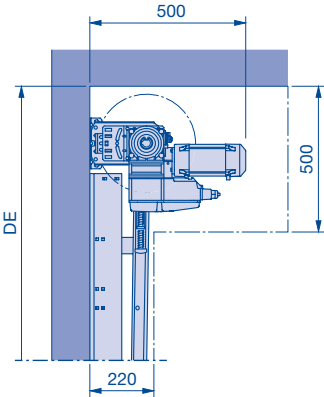
DA	Distance to ceiling
FR	Clearance ceiling / shaft operator

LH	Track height
RM	Grid height

Shaft operator WA 500 / 500 FU

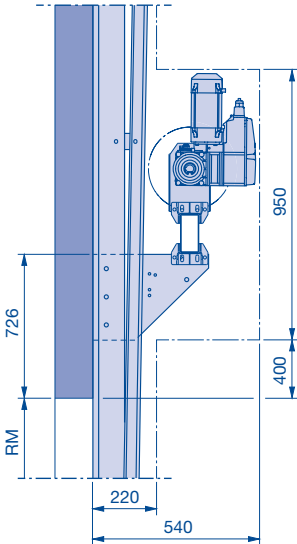
for central mounting

Shaft operator WA 500 / WA 500 FU for track applications: V and VS



Track application	WA 500 / WA 500 FU
VS	on request

Shaft operator WA 500 / WA 500 FU for track applications: VU and WS



Note:

Centre motor in conjunction with double spring shaft on request!

DA

Distance to ceiling

RM

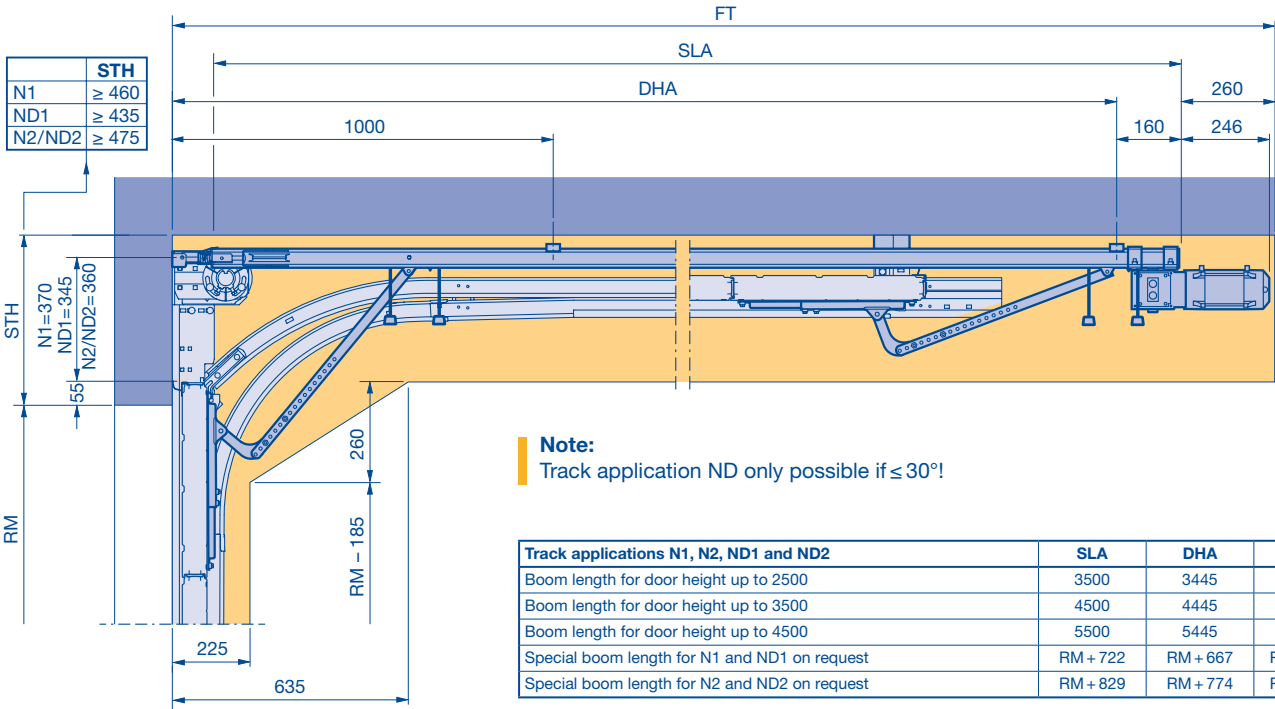
Grid height

LH

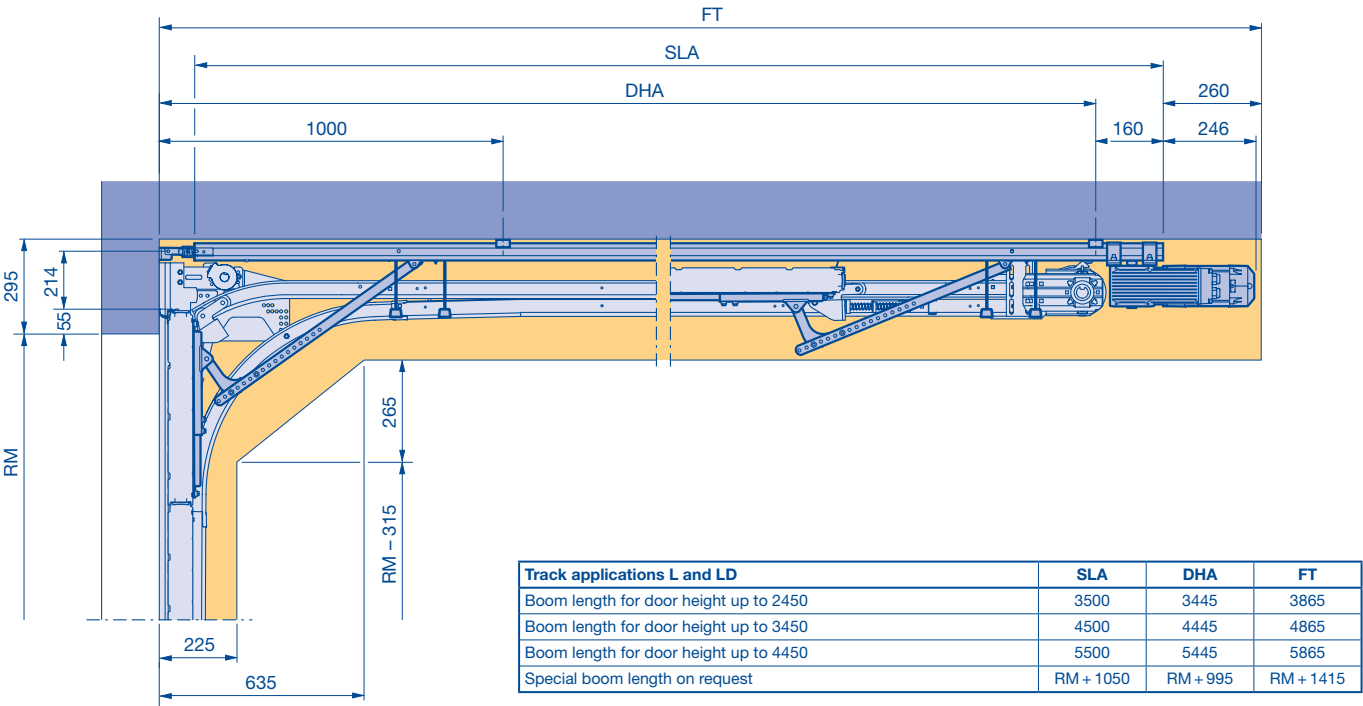
Track height

Chain drive operator ITO 500 FU

ITO 500 FU track applications N and ND (doors with wicket door on request)



ITO 500 FU track applications L and LD (doors with wicket door on request)



DHA

FT

RM

SLA

Operator rear ceiling anchor

Clearance for door operator

Grid height

Operator boom length

STH

Headroom

Door leaf speeds

WA 300 / WA 500

ATTENTION! The stated speeds can **only be achieved under optimum conditions** regarding door size and track size. More detailed information on request, as this is dependent on fitting, door and track heights.

Track range	WA 300 S4		WA 500							
	Integrated / external control 360		Control 545 and 560							
			Frame-mounted operator / centre motor				Chain box operator			
										
		 [3]								
	  	 		 				 		
N1, NA1, NS1, ND1 ≤ 30°, NK1	190	95	30	190	30	190	30	190	30	190
GD1, GK1, GS1, NH1	190	95	16	100	16	100	16	100	16	100
ND6 > 30°	160 / 190 [1]	80 / 95 [1]	16	170 [1]	24	300 [1]	16	170 [1]	24	300 [1]
N2, NA2, NS2, ND2 ≤ 30°, NK2	210	105	24	210	30	265	24	210	30	265
GD2, GK2, GS2, NH2	210	105	16	142	16	142	16	142	16	142
ND7 > 30°	190 [1]	95 [1]	19 [2]	275 [1,2]	19	275 [1]	13	180 [1]	19	275 [1]
N3, NH3, ND3 < 6°	–		–				–			
ND3 ≥ 6°										
L1, LD1	210	105	–				13	160	19	190
L2, LD2							24	150	24	150
H4, HA4, HK4, HS4, HU4, HD4, RD4, RK4, RS4	160 / 190 [1]	80 / 95 [1]	19 / 16	170 [1]	30 / 24	290 [1]	19 / 16	170 [1]	30 / 24	290 [1]
H5, HA5, HU5, HD5, RD5	210 [1]	105 [1]	24 / 19 [2]	290 [1,2]	24 / 19		16 / 13		24 / 19	
H8, HD8, HK8, HS8, HU8	–		–				16 [2]	250 [2]	16	250
V6, VA6, VU6, VS6, WG6, WS6	160 / 190 [1]	80 / 95 [1]	16	170 [1]	24	300 [1]	16	170 [1]	24	300 [1]
V7, VU7, VS7, WG7, WS7	190 [1]	95 [1]	19 [2]	275 [1,2]	19	275 [1]	13		19	275 [1]
V9, VU9, VS9, WS9	–		–				16 [2]	250 [2]	16	250

- [1] Max. door leaf speed depending on the high-lift / door height (RM) / door width (LZ)
- [2] Only possible with press-and-hold operation
- [3] Speed reduction in the range from 2500 mm above FFL to FFL to comply with EN 13241.

Note
Double spring shaft only possible in conjunction with WA 500 FU!

	Speed in mm/s		Open / Close direction of movement		Optosensors, 8k2 strip
	Speed in rotations per minute		Open direction of movement		Leading photocell VL1/VL2
	Power limit		Close direction of movement		Light grille HLG

Door leaf speeds

WA 500 FU

ATTENTION! The stated speeds can **only be achieved under optimum conditions** regarding door size and track size. More detailed information on request, as this is dependent on fitting, door and track heights.

Track range	WA 500 FU									
	Control 545									
	Frame-mounted operator / centre motor				Chain box operator					
										
		   				   				
N1, NA1, NS1, ND1 ≤30°, NK1	350	200	250		350	200	250			
GD1, GK1, GS1, NH1										
ND6 >30°										
N2, NA2, NS2, ND2 ≤30°, NK2	500	500			500	500				
GD2, GK2, GS2, NH2		200	300	500		200	300	500		
ND7 >30°		500				500				
N3, ND3										
NH3		200	300	500		200	300	500		
L1, LD1	—				375	200			300	375
L2, LD2						375				
H4, HA4, HK4, HS4, HU4, HD4, RD4, RK4, RS4	350	200	250		350	200	250			
H5, HA5, HU5, HD5, RD5	500	500			500	500				
H8, HD8, HK8, HS8, HU8										
V6, VA6, VU6, VS6, WS6	350	200	250		350	200	250			
V7, VU7, VS7, WS7	500	500			500	500				
V9, VU9, VS9, WS9										

Max. door leaf speed from the Open end-of-travel position in the Close direction up to approx. 3200 mm above FFL

Max. door leaf speed from the Open end-of-travel position in the Close direction up to approx. 500 mm above FFL

Note
Double spring shaft only possible in conjunction with control WA 500 FU!

	Speed in mm/s		Open / Close direction of movement		Optosensors, 8k2 strip
	Speed in rotations per minute		Open direction of movement		Leading photocell VL1/VL2
	Power limit		Close direction of movement		Light grille HLG

Door leaf speeds

WA 500 FU

ATTENTION! The stated speeds can **only be achieved under optimum conditions** regarding door size and track size. More detailed information on request, as this is dependent on fitting, door and track heights.

Track range	WA 500 FU											
	Control 560											
	Frame-mounted operator / centre motor				Chain box operator				Top speed (mm/s) [4]			
N1, NA1, NS1, ND1 ≤ 30°, NK1	500 575 [4]				500 575 [4]				700 [4]	200	300	500
GD1, GK1, GS1, NH1	500	200	300	500	500	200	300	500	–			
ND6 > 30°	500				500				700 [4]	200	300	500
N2, NA2, NS2, ND2 ≤ 30°, NK2	500 825 [4]	500	500	500 825	500 825 [4]	500	500	500 825	1000 [4]	500	500	1000
GD2, GK2, GS2, NH2	500	200	300	500	500	200	300	500	–			
ND7 > 30°	500 825 [4]	500	500	500 825	500 825 [4]	500	500	500 825	1000 [4]	500	500	1000
N3, ND3	1000 [4]	500	500	500	1000 [4]	500	500	500	1000 [4]	500	500	1000
NH3	500	200	300	500	500	200	300	500	–			
L1, LD1	–				375	200	300	375	1000 [4]	200	300	500
L2, LD2	–				575 [4]			500		500	500	1000
H4, HA4, HK4, HS4, HU4, HD4, RD4, RK4, RS4	500 700 [4]	200	300	500	500 700 [4]	200	300	500	700 [4]	200	300	500
H5, HA5, HU5, HD5, RD5	500 825 [4]	500	500	500 825	500 825 [4]	500	500	500 825	1000 [4]	500	500	1000
H8, HD8, HK8, HS8, HU8	500	500	500	500	500	500	500	500	1000 [4]	500	500	1000
V6, VA6, VU6, VS6, WS6	500 700 [4]	200	300	500	500 700 [4]	200	300	500	700 [4]	200	300	500
V7, VU7, VS7, WS7	500 825 [4]	500	500	500 825	500 825 [4]	500	500	500 825	1000 [4]	500	500	1000
V9, VU9, VS9, WS9	500	500	500	500	500	500	500	500	1000 [4]	500	500	1000

[4] Max. door leaf speed with door width (LZ) ≤ 6000 mm; For door width (LZ) > 6000 mm only after technical inspection; not possible with roller holder type S

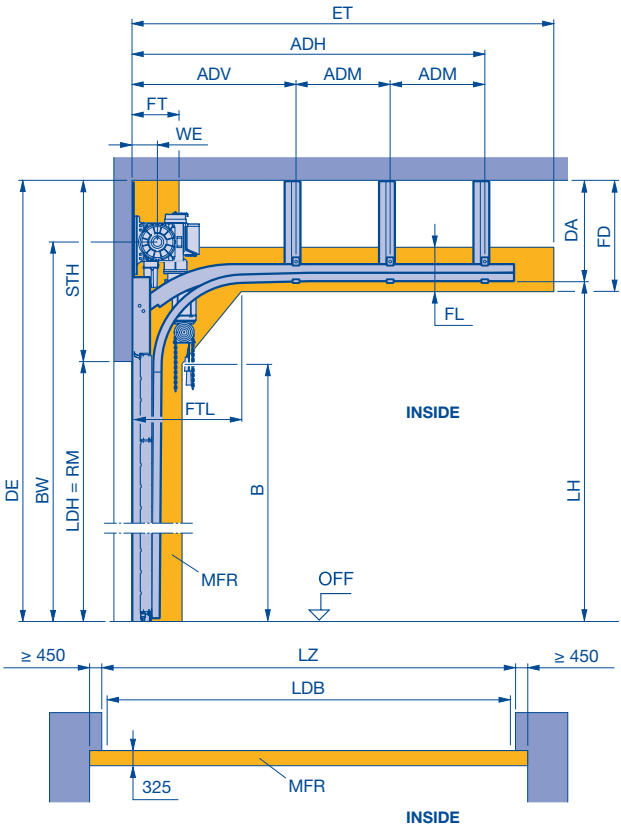
Max. door leaf speed from the Open end-of-travel position in the Close direction up to approx. 3200 mm above FFL

Max. door leaf speed from the Open end-of-travel position in the Close direction up to approx. 500 mm above FFL

Note
Double spring shaft only possible in conjunction with control WA 500 FU!

Track application: H with direct drive operator S75 / S140

High-lift track application



- ADH** Distance to rear ceiling anchor

ADM Distance to central ceiling anchor

ADV Distance to front ceiling anchor

B Start of double radius

BW Position of shaft support

DA Min. distance to ceiling

DE Min. ceiling height

ET Min. distance back

FD Min. ceiling clearance

FL Track clearance

FT Clearance for door operation

FTL Clearance door section in the double radius
- LDB** Clear passage width with ThermoFrame (see page 66)

LDH Clear passage height

LH Track height

LZ Clear frame dimensions

MFR Space for fitting the door

OFF Finished floor level

RM Grid height

STH Min. headroom

WE Shaft centre from lintel

- Notes:
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.

The direct drive operator is generally available on request.

Door weights for roof loads:

- SPU 67 Thermo

= 450 N/m²
- APU 67 Thermo / ALR 67 Thermo

= 500 N/m²
- ALR 67 Thermo Glazing

= 600 N/m²

- Other versions on request
- Observe min. sideroom, see page 65

	STH	WE	DA	B	BW
H 10, RM ≤ 6000	LH - RM + 625	145	625	LH - 513	LH + 240
H 11, RM > 6000		205			

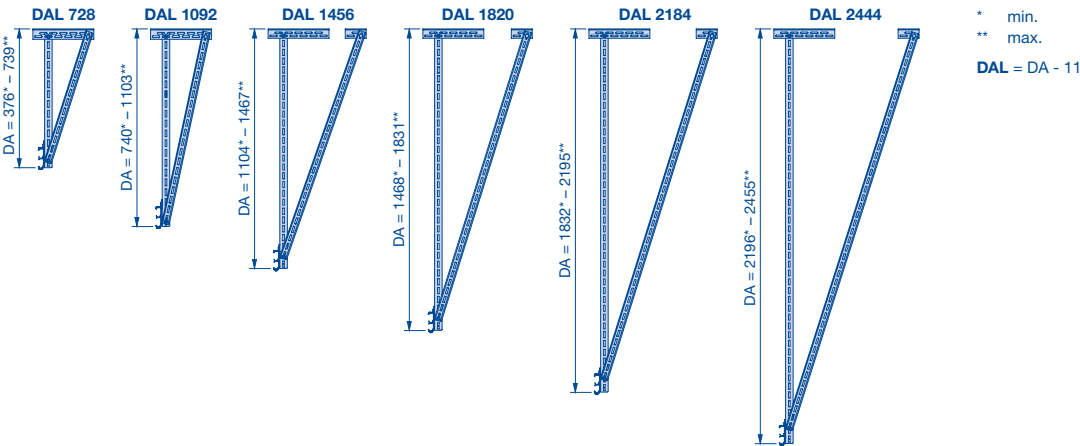
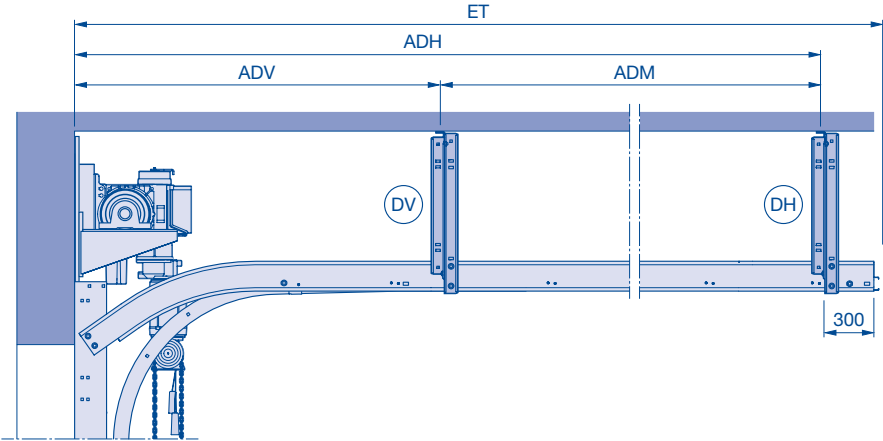
DE	ET*	FD	FL	FT	FTL	LH
STH + RM	2 × RM - LH + 962	DA + 65	275	2 × WE	675	Min. RM + 500 max. 10250

* Simplified calculation

Ceiling anchor

Track suspensions for track application H with direct drive operator

Track suspensions as ceiling anchors in five lengths, standard length 1040 mm.
DH = rear ceiling anchor (see page 86), door weights for roof loads (see page 86).



Suspension with C-rail for track application H with direct drive operator

Track application	LZ	ET	Number of suspensions per side	DV	DM	DH	ADV (max. 3000)	ADM	ADH
H10, H11	≤ 6000	≤ 2142	1	0	0	1	–	–	ET - 300
		2143–5732	2	1	0	1	ADH / 2	–	
		> 5733	3	1	1	1	ADH / 3	(ET - ADV - 300) / 2	
	> 6000	≤ 1907	1	0	0	1	–	–	
		1908–3492	2	1	0	1	ADH / 2	–	
		3493–5492	3	1	1	1	ADH / 3	(ET - ADV - 300) / 2	
		> 5493	4	1	2	1	ADH / 4	(ET - ADV - 300) / 3	

*** Dimensions can be found in the product configurator.

- DH

Rear ceiling anchor
- DM

Central ceiling anchor
- DV

Front ceiling anchor
- LZ

Clear frame dimensions
- DAL

Ceiling anchor length
- ADH

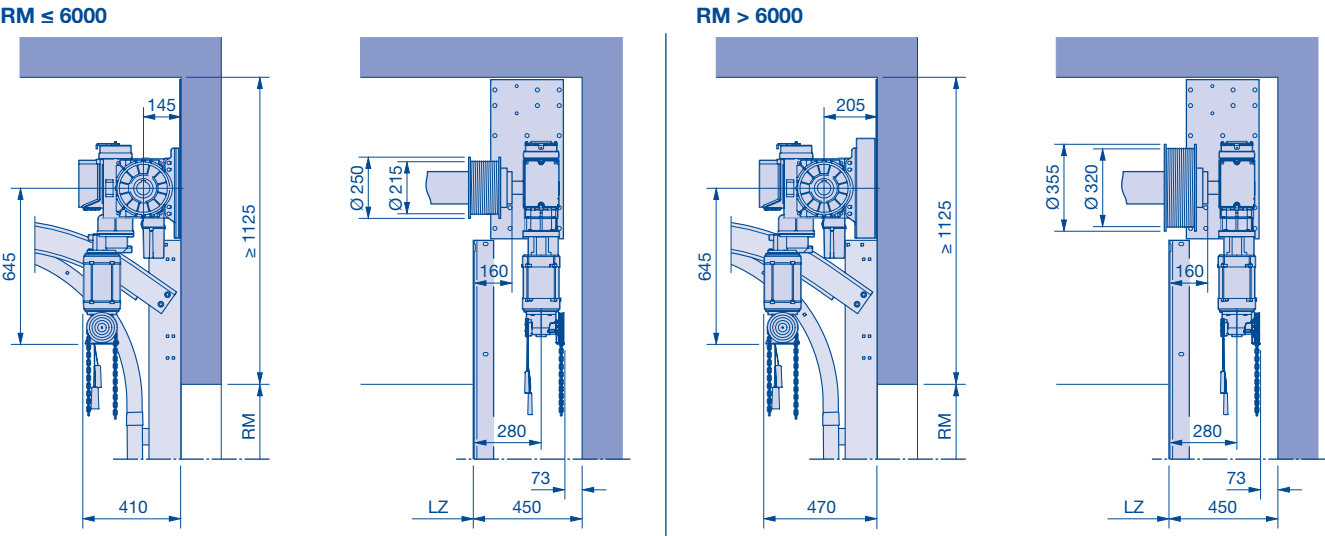
Distance to rear ceiling anchor
- ADM

Distance to central ceiling anchor
- ADV

Distance to front ceiling anchor

Direct drive operators S75 and S140

Direct drive operators S75 and S140 for track application H



Door leaf speeds – Control 445 R and 460 R

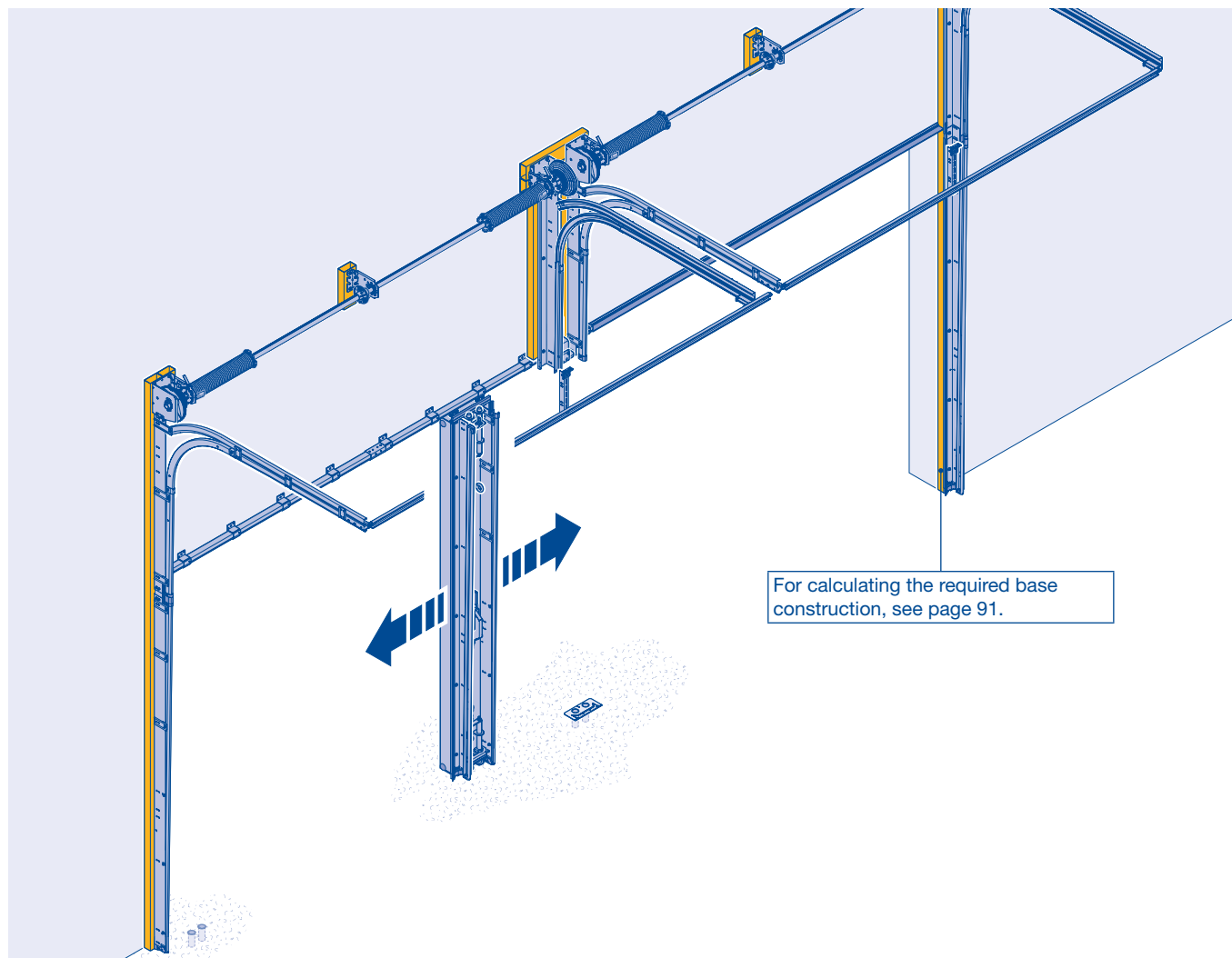
Direct drive operator	Cable drum diameter in mm	Max. speed in mm/s – Open / Close
S75	215	110
S75	320	170
S140	215	80
S140	320	120

LZ Clear frame dimensions
RM Grid height

Movable centre support

for industrial sectional doors with an opening width of up to 30 m

- This door combination allows for particularly large openings to be closed conveniently and economically by coupling two or three industrial sectional doors.
- This door combination is especially economical during transport, fitting and service.
- For complete opening, the doors are opened and the centre support is then unlocked and pushed to the side.
- The individual doors can also be opened independently of each other so that the opening can also be done in segments.



Notes:

- Only with track application H.
- All door types possible.
- Depth 67 mm, application areas from $LZ \leq 10000$ mm and $RM \leq 7500$ mm.
- Please refer to the technical manual for the depths!
- Version with plastic frame shoe.
- Wicket door version only possible with high threshold rail.
- Panel as lintel fitting not possible.
- No special versions (e.g. chamfered bottom section, lowered section, Parcel) possible.

Notes:

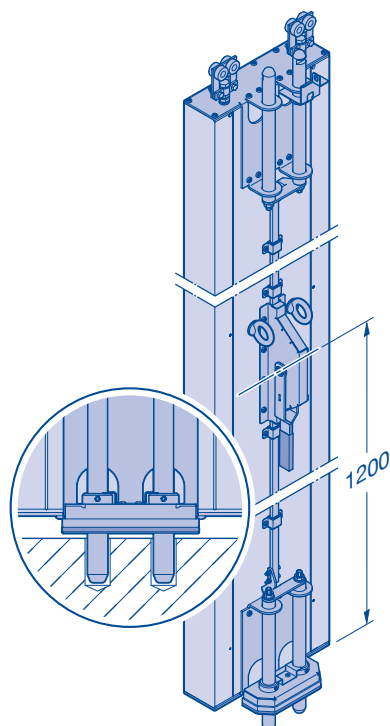
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- Factory drawing required. Approval only with drawing! Information about the structural conditions is relevant.
- Door fitting recommended for unheated buildings. Air permeability, acoustic value and thermal resistance – npd (not specified)
- Wind class 2 – 4 according to the technical manual.
- Available in standard programme!

LZ Clear frame dimensions
RM Grid height

Movable centre support

for industrial sectional doors with an opening width of up to 30 m

Centre support



Notes:

- Aluminium material version based on RAL 9002, exterior with line design.
- Surface with wet coating on exterior and interior
- Width: 375 mm
- Height: RM – 60 mm
- Shifting direction for a centre support, outer left or outer right.
- Shifting direction for two centre supports, outer left or outer right.
- The shifting direction depends on which door system the centre support is ordered for.
- Cladding of the centre support is not possible.

Door operation:

- Only power-driven with WA 500 FU.
- Flange, chain box and emergency operation are only possible with the exterior door systems.
- A centre door system can only be used as a chain box with fitting example 5.

Safety equipment:

- Safety edge is only possible with optosensors or 8K2 strip.

Operator accessories:

- A radio activating kit must be used for the centre door system!
- Further accessories on request.

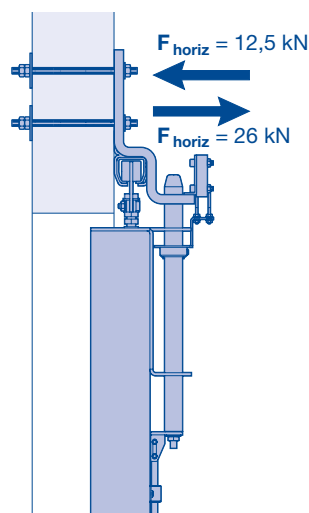
Fitting:

- The door system with centre support may only be assembled when the floor is finished.
- A base construction of 60 mm is required in the area of the door frame and the spring shaft.

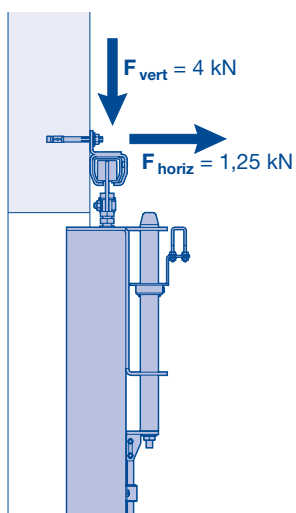
Recommendation: Industrial additional post 120/60/2.

Maximum load

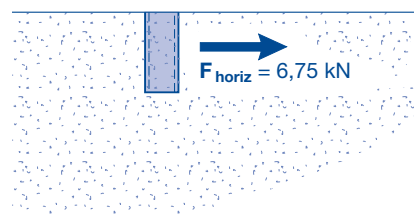
– on the head plate



- on the track



- per floor sleeve



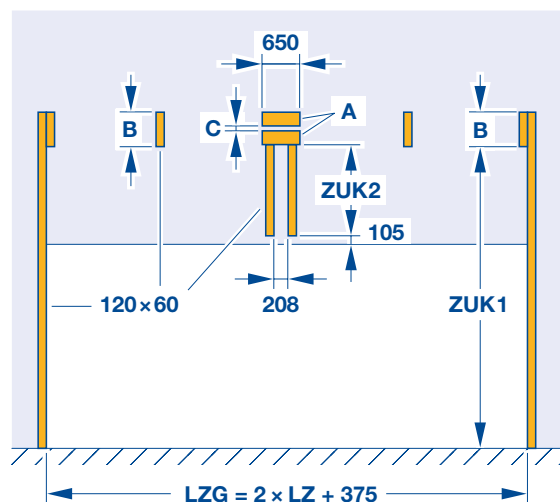
F_{horiz}	Horizontal force at the fixing point
F_{vert}	Vertical force at the fixing point
LZ	Clear frame dimensions
RM	Grid height

Movable centre support

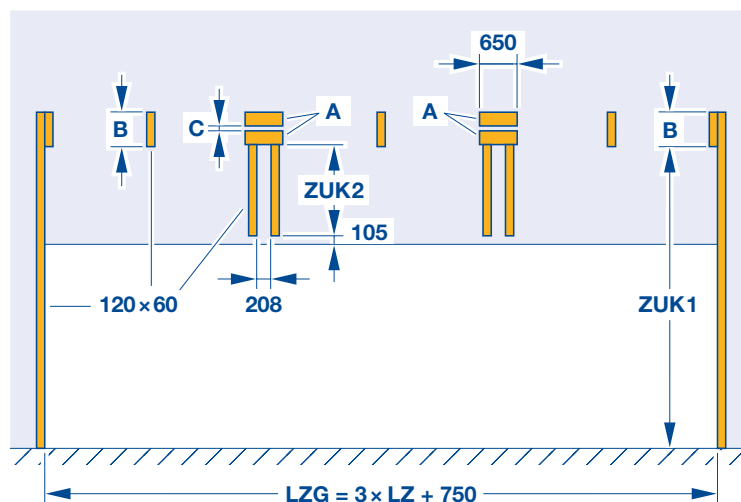
Possible variants of the base construction

Segmented base construction

Combination with **two** industrial sectional doors

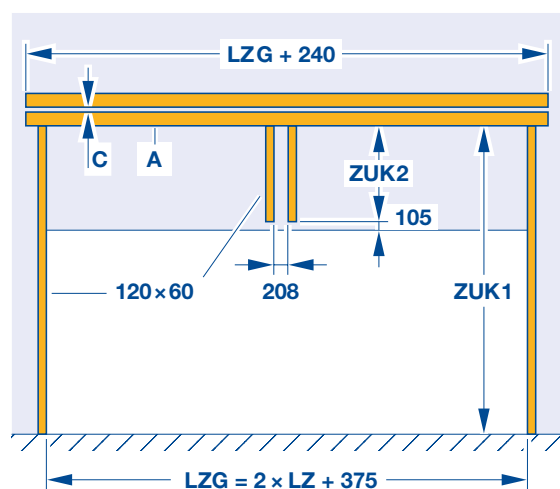


Combination with **three** industrial sectional doors

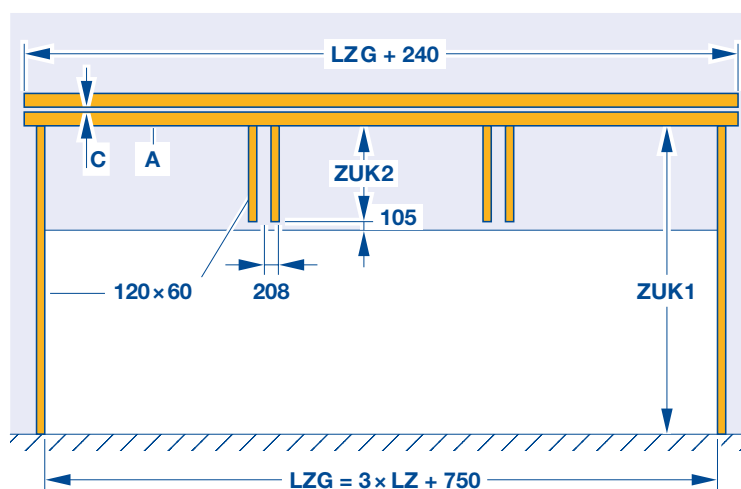


Solid base construction

Combination with **two** industrial sectional doors



Combination with **three** industrial sectional doors



Note:

Position of shaft support **BW**, see page 92.

	A	B	C	ZUK 1	ZUK 2
Simple spring shaft	120 x 60	300	0	BW – 205	BW – RM – 250
Double spring shaft	200 x 60	500	45	BW – 170	BW – RM – 220

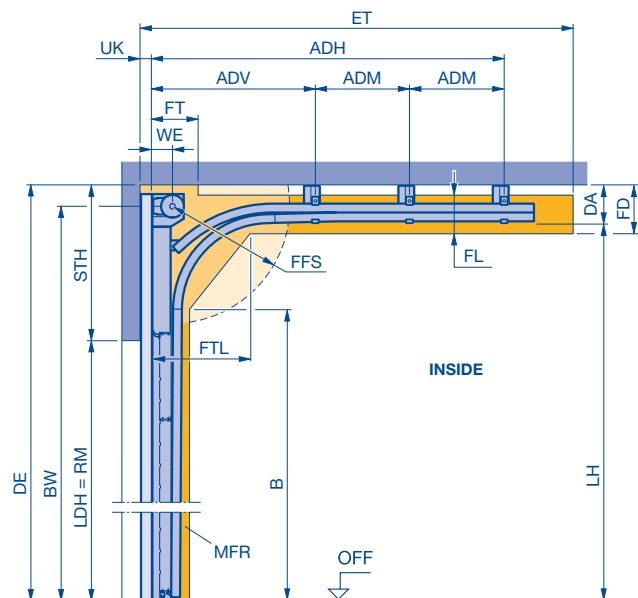
BW	Position of shaft support	ZUK	Door frame, base construction
LZ	Clear frame dimensions		
LZG	Total clear frame dimensions		
RM	Grid height		

Track application: H

High-lift track application

for sectional doors for and with centre support

Detailed technical data can be found in the product configurator.



ADH	Distance to rear ceiling anchor	LDB	Clear passage width with ThermoFrame (see page 66)
ADM	Distance to central ceiling anchor	LDBG	Total clear passage width
ADV	Distance to front ceiling anchor	LDH	Clear passage height
B	Start of double radius	LH	Track height
BW	Position of shaft support	LZ	Clear frame dimensions (from 1200)
DA	Min. distance to ceiling	LZG	Total clear frame dimensions
DE	Min. ceiling height	MFR	Space for fitting the door
ET	Min. distance back	Mn₁	Number of centre supports
F	Fixed	MST	Centre support
FD	Min. ceiling clearance	OFF	Finished floor level
FFS	Spring compression clearance	RM	Grid height
FL	Track clearance	STH	Min. headroom
FT	Clearance for door operation	UK	Base construction
FTL	Clearance door section in the double radius	V	Variable
		WE	Shaft centre from lintel

Please note:

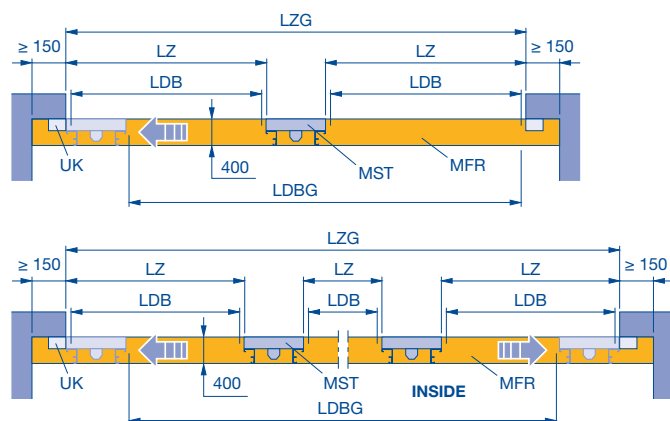
- A technical inspection is required!
- Select required track height according to the door height in table.

Notes:

- The validity tables with the size range shown are based on the standard door type version (see product description). In case of deviations, the valid size ranges in the product configurator must be taken into account.
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- If using the spring buffer below the track, the clear height under the track in the area of the spring buffer is reduced by 70 mm.
- Be sure to observe the permissible size ranges of the door types on pages 9–14 and 17–25!
- ALR 67 Thermo Glazing on request.

Table: track heights (LH)

RM	F	Min. LH	Max. LH		RM	F	Min. LH	Max. LH
5000	RM + 740	6345	8350					
4875	5615	6220	8225					
4750	5490	6095	8100					
4625	5365	5970	7975					
4500	5240	5845	7850					
4375	5115	5720	7725					
4250	4990	5595	7600					
4125	4865	5470	7475					
4000	4740	5345	7350					
3875	4615	5220	6985					
3750	4490	5095	6735					
3625	4365	4970	6485					
3500	4240	4845	6235					
3375	4115	4720	5985					
3250	3990	4595	5735					
3125	3865	4470	5485					
3000	3740	4345	5235					
2875	3615	4220	4985					
2750	3490	4095	4735					
2625	3365	3970	4485					
2500	3240	3845	4235					
2375	3115	3720	3985					
2250	2990	3595	3735					
2125	2865	3470	3485					
2000	2740	-	-					



		STH	WE	DA	BW
H 4	F	1060	160 + 60	320	RM + 890
	V	LH - RM + 290		290	LH + 150
H 5	F	1090 (1265*)	180 + 60	350 (525*)	RM + 920
	V	LH - RM + 350 (525*)		340 (515*)	LH + 180
H 8	F	1130 (1290*)	205 + 60	390 (550*)	RM + 945
	V	LH - RM + 390 (550*)		380 (540*)	LH + 195

* with double spring shaft

F = RM + 740, (LH - RM) < 1345, version generally with spring buffers underneath the track

V = (LH - RM) ≥ 1345

B	DE	FD	FFS	FL	FT	FTL
LH - 513	STH + RM	DA + 65	Min. 90° (745)	250	2 × WE	650 + 60

ET**		
H 4 / H 5 / H 8	2 × RM - LH + 692 + 60	Shaft operator WA 500 FU

** Simplified calculation

Clear passage:

- LDH = RM
- LDBG = LZG - (Mn₁ × 400)

Infill overview

Determination of the roof slope

Infill overview	SPU 67 Thermo	APU 67 Thermo	ALR 67 Thermo	ALR 67 Thermo Glazing
Infill type	Abbreviation			
PU infill, 51 mm with aluminium sheet cover Stucco-textured on both sides, $U_g = 0.54 \text{ W/m}^2\text{K}$	–	FU	FU	–
PU infill, 51 mm with smooth, anodised aluminium sheet cover on both sides, $U_g = 0.54 \text{ W/m}^2\text{K}$	–	XU	XU	–
PU infill, 26 mm with smooth, anodised aluminium sheet cover on both sides, $U_g = 1.2 \text{ W/m}^2\text{K}$ [3]	TU	TU	TU	–
Clear polycarbonate triple pane, 51 mm, $U_g = 2.7 \text{ W/m}^2\text{K}$	C3	C3	C3	–
Clear polycarbonate quadruple pane, 51 mm, $U_g = 2.7 \text{ W/m}^2\text{K}$	C4	C4	C4	–
Clear synthetic triple pane, 51 mm, $U_g = 1.6 \text{ W/m}^2\text{K}$	S3	S3	S3	–
Synthetic triple pane, crystal structure, 51 mm, $U_g = 1.6 \text{ W/m}^2\text{K}$	U3	U3	U3	–
Synthetic triple pane, grey tinted, 51 mm, $U_g = 1.6 \text{ W/m}^2\text{K}$	A3	A3	A3	–
Synthetic triple pane, white tinted (opal), 51 mm, $U_g = 1.6 \text{ W/m}^2\text{K}$	M3	M3	M3	–
Clear synthetic quadruple pane, 51 mm, $U_g = 1.3 \text{ W/m}^2\text{K}$	S4	S4	S4	–
Synthetic quadruple pane, crystal structure, 51 mm, $U_g = 1.3 \text{ W/m}^2\text{K}$	U4	U4	U4	–
Synthetic quadruple pane, grey tinted, 51 mm, $U_g = 1.3 \text{ W/m}^2\text{K}$	A4	A4	A4	–
Synthetic quadruple pane, white tinted (opal), 51 mm, $U_g = 1.3 \text{ W/m}^2\text{K}$	M4	M4	M4	–
Double pane made of single-pane safety glass, 26 mm, $U_g = 2.6 \text{ W/m}^2\text{K}$ [1]	E2	E2	E2	E2
Double pane made of laminated safety glass P4A, 26 mm, $U_g = 1.3 \text{ W/m}^2\text{K}$ [3]	W2	W2	W2	–
Climatic double pane made of single-pane safety glass, 26 mm, $U_g = 1.1 \text{ W/m}^2\text{K}$ [1]	G2	G2	G2	G2
Prepared for on-site infill [2]	BS	BS	BS	–

[1] Only for door width up to 6000 mm on request

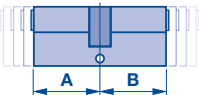
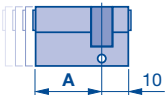
[2] On request; infill weight and thickness must be specified (anodised glazing beads required)

[3] Only NT 80 Thermo with RC2 version

Determining the roof slope in increments of two degrees (a°)								
a°	%	X (mm)	a°	%	X (mm)	a°	%	X (mm)
2	3,49	34,9	16	28,67	286,7	30	57,74	577,4
4	6,99	69,9	18	32,49	324,9	32	62,49	624,9
6	10,51	105,1	20	36,40	364,0	34	67,46	674,6
8	14,05	140,5	22	40,40	404,0	36	72,66	726,6
10	17,63	176,3	24	44,52	445,2	38	78,13	781,3
12	21,26	212,6	26	48,77	487,7	40	83,91	839,1
14	24,93	249,3	28	53,17	531,7	42	90,05	900,5
						44	96,57	965,7
						46	103,55	1035,5

Overview

Profile cylinders

Product type	 Double cylinder	 Half cylinder	Glazing frame	Door lock		Wicket door	Optional extras	Operator accessories
	PC length (L): Interior (A) + exterior (B)	PC length (L): Closing side (A) + blind side		Standard	Recessed			
SPU 67 Thermo APU 67 Thermo	L = 35 + 55	—	—	—	—	●	●	—
	—	L = 55 + 10	—	—	●	●	●	—
	—	L = 95 + 10	—	●	—	—	—	—
	—	L = 30 + 10	—	—	—	—	—	●
ALR 67 Thermo	L = 35 + 55	—	—	—	—	●	●	—
	—	L = 55 + 10	—	—	—	●	—	—
	—	L = 80 + 10	FU and XU	●	—	—	—	—
	—	L = 30 + 10	—	—	—	—	—	●
NT 80	L = 35 + 70	L = 35 + 10	—	—	—	—	—	—
NT 80 RC2	L = 35 + 60*	—	—	—	—	—	—	—

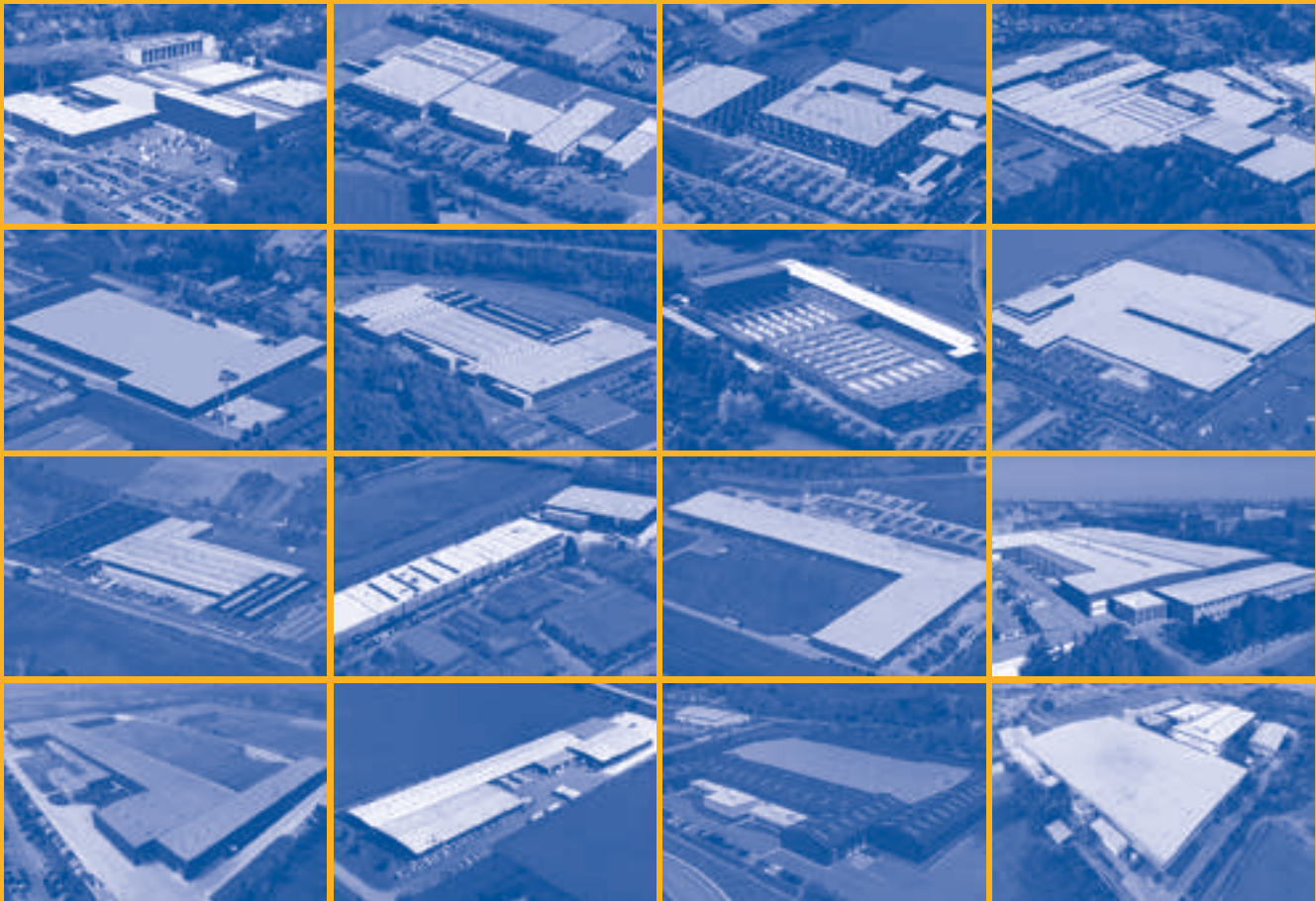
* Profile cylinder in acc. with DIN 1303
(digit 7 = grade 5, digit 8 = grade 1)

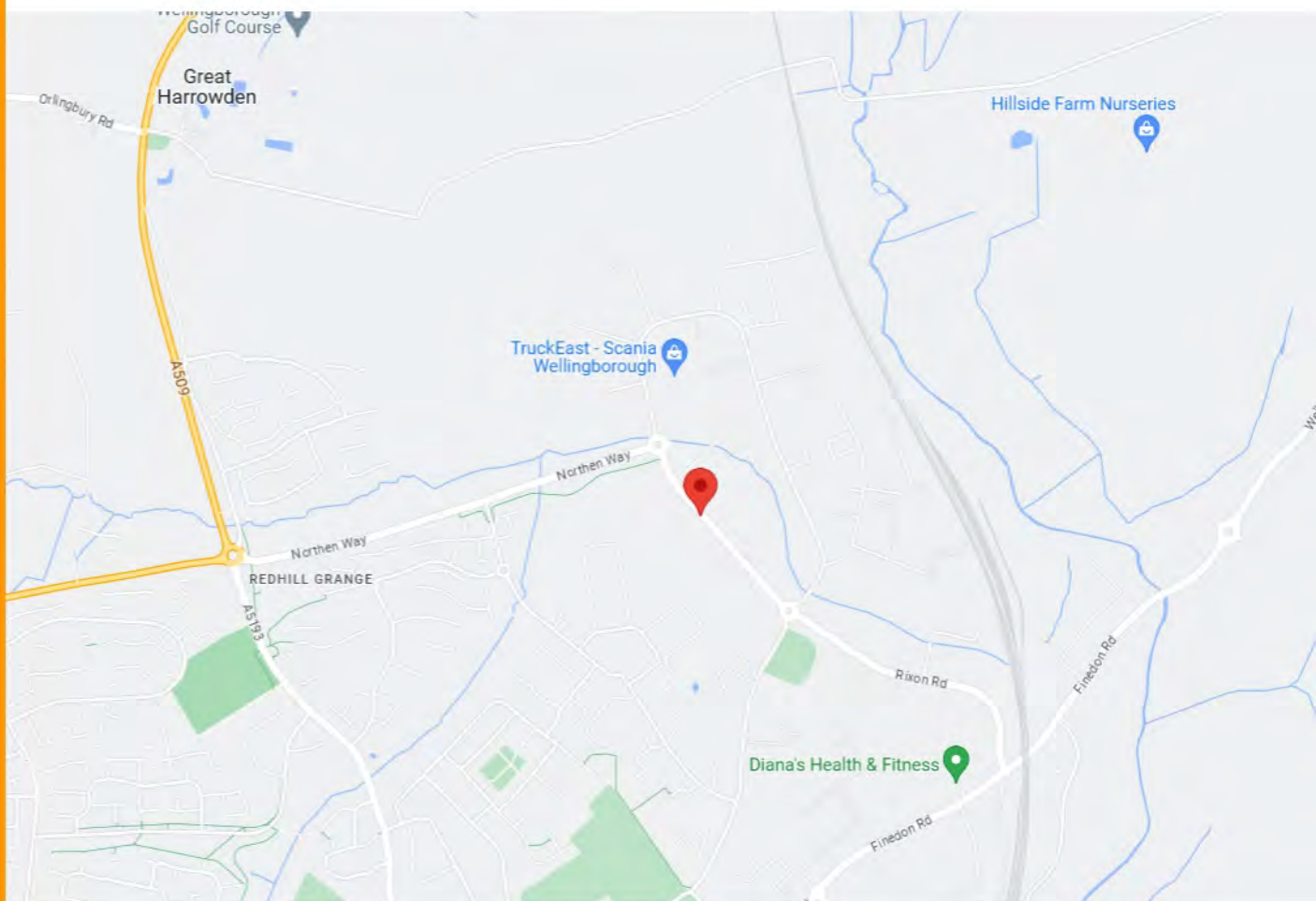
Notes

A large rectangular area filled with a fine grid of blue lines, typical of graph paper, intended for taking notes or technical drawings.

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The family-owned company Hörmann offers all important construction components for building and renovating projects from a single source. We manufacture in highly-specialised factories using the latest production technologies. Furthermore, our employees work intensively on new products, continual further developments and improvements to details. The results are patents and one-of-a-kind products you can depend on.

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