DPU Industrial Sectional Door

Technical Manual: Issue 01.07.2011

Contents

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

All dimensions in mm.
Subject to design changes.

Product Description

Door type	Door leaf
Sectional door DPU, double-skinned steel sections, 500 mm high	
• With torsion spring shaft • With direct drive operator	Door sections consisting of double-skinned, hot-galvanized steel sections with uniform horizontal ribbing (does not match SPU 40), Stucco-textured. Door sections 500 mm high, depth 80 mm. Surface protection with polyester-primer coating. Door sections with compound glazing are possible in the illustrated fitting area. Fewer compound glazings or different arrangements are possible subject to the minimum distances.

Frame / track application

Enclosed, moulded angle frame, made of hot-galvanized steel with screwed safety tracks.
Including ThermoFrame frame support with thermal break.

Door lock

Manually operated	Inside locking using a shootbolt, rotary latch (with track applications that have 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). For door type DPU with direct drive operator via the operator, tubular shaft and carrying cables on the side (size range with door width LZ > 6000 mm or door height RM > 5000 mm).

Safety-related equipment according to DIN EN 12604

- Manually operated doors with one torsion spring, with approved catch safety device *)
- Manually operated doors with more than one torsion spring, with approved spring safety device *)

* European patent

Seals

Floor seal made of 3-chamber EPDM profile with flexible adjustment lip, side seal, double lintel seal, intermediate seal between the sections.

Technical Data Overview
Aluminium Frame Infill

Construction and quality features

Resistance to wind load EN 12424	Class	4 [1]
Water tightness EN 12425	Door without wicket door, class	3 (70 Pa)
Air permeability EN 12426	Door without wicket door, class	3
Acoustic insulation EN 717-1	Door without wicket door R = . . . dB	25
Thermal insulation EN 13241-1, appendix B EN 12428	Door without wicket door, U = W/m²K [2]	0.48
	Section, U = W/m²K	0.30
Design	Self-supporting	●
	Depth, mm	80
Door sizes	Max. width mm, LZ	6000 (10000 [4])
	Max. height mm, RM [3]	5000 (8000 [4])
Space requirement	From page 6	
Material, door leaf	Double-skinned steel 80 mm	●
Surface, door leaf	Galvanized steel, coated RAL 9002	●
	Galvanized steel, coated RAL 9006	○
	Galvanized steel, coated RAL to choose	○
Glazings	Type A section window	○
	Aluminium glazing frame	○
Seals	All-round on 4 sides	●
	Intermediate seal between the door sections	●
ThermoFrame	PVC hard / soft seal	●
Locking systems	Inside locking	●
	Outside / inside locking	○
Safety equipment	Side trap guard	●
	Spring break safeguard for manual operation	●
	Safety catch for doors with shaft operator	●
Fastening options	Concrete	●
	Steel	●
	Brickwork	●
	Others on request	

● = Standard
○ = Optional

1) Class 4 up to 8000 mm door width, class 3 over 8000 mm
2) For a door surface of 5000 × 5000 mm
3) Door height over 7000 mm on request
4) Doors with direct drive operator

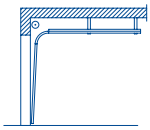
Aluminium frame infill

Infill type	Abbreviation
Double synthetic pane, 45 mm, version: clear, U_g = 2.7 W/m²K	K2
Triple synthetic pane, 45 mm, version: clear, U_g = 1.6 W/m²K	K3
Quadruple synthetic pane, 45 mm, version: clear, U_g = 1.3 W/m²K	K4

Overview of Track Applications

DPU with torsion spring shaft

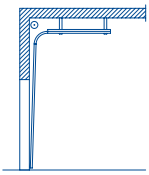
NB



Normal track application

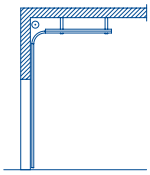
Door height RM ≥ 3000 mm

HB



High-lift track
(with door height RM ≤ 2500 mm,
technical inspection required)

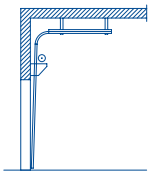
KG



As with track application HB with steep track
and minimum slot width of 165 mm
(for loading ramp doors)
(with door height RM ≤ 2500 mm,
technical inspection required)

Door width LZ ≤ 3500 mm
Door height RM ≤ 5000 mm

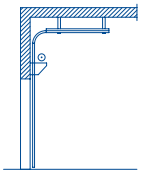
RB



Like track application HB with low-mounted
torsion spring shaft

Door height RM ≤ 5000 mm

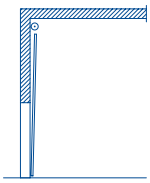
TG



Like track application RB with steep track
and minimum slot width of 165 mm
(for loading ramp doors)

Door width LZ ≤ 3500 mm
Door height RM ≤ 5000 mm

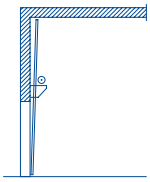
VB



Vertical track application
(Additional hand pulley required
with manually operated doors!)

Door width LZ ≤ 6000 mm
Door height RM ≤ 5000 mm

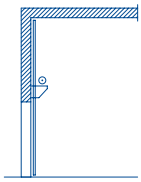
WB



Like track application VB with low-mounted
torsion spring shaft
(Additional hand pulley required with
manually operated doors!)

Door width LZ ≤ 6000 mm
Door height RM ≤ 5000 mm

MG

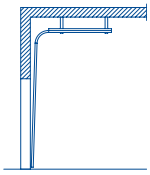


Like track application WB with steep
track and minimum slot width of 165 mm
(for loading ramp doors)
(Additional chain hoist required
with manually operated doors!)

Door width LZ ≤ 3500 mm
Door height RM ≤ 5000 mm

DPU with direct drive operator

HB



High-lift track application without torsion spring

Size range:

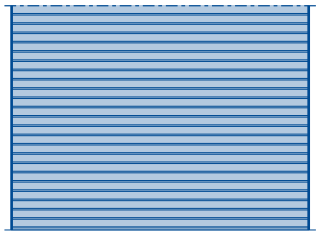
- Door width LZ ≤ 6000 mm × door height
  RM ≤ 8000 mm, RM > 8000 mm on request
- Door width LZ ≤ 10000 mm × door height
  RM ≤ 5000 mm

Sectional Door DPU with Torsion Spring Shaft

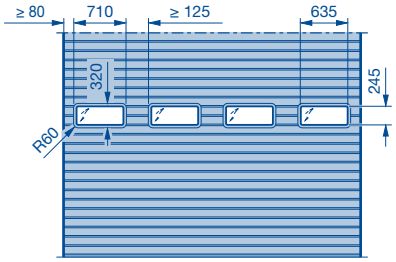
Double-skinned steel sections

500 mm high

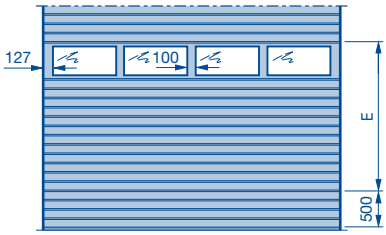
External views



Compound glazing type A

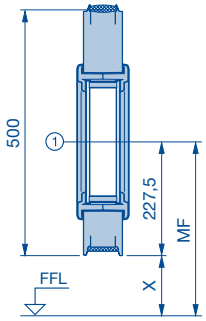


Glazing frame



Calculating the glazing heights for compound window type A. See column A under Size range for the number of door sections! The illustration shows a section depth of 80 mm.

Type A



Door section height 500 mm

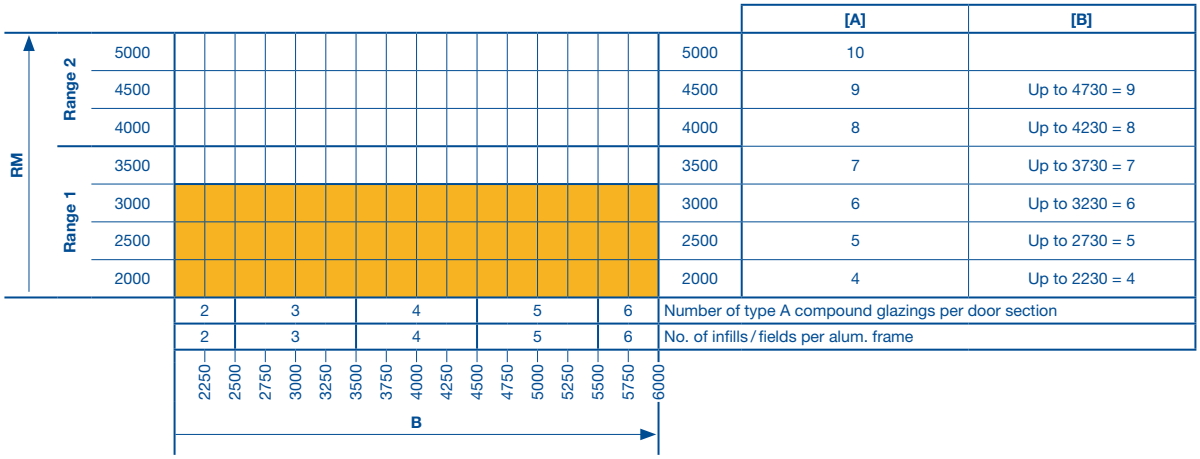
Glazing height type A
① = x + 227.5

x = Sum of door section heights + 60 mm from FFL

Note:
Intermediate heights between the grid height and grid height + 60 mm are available on request.

Size range

In the size range shown, any door width can be manufactured in 10-mm increments and any door height in the 500-mm grid, taking the min. ceiling height into account. Intermediate heights are possible by shortening top door section!



	[A]	[B]
5000	10	
4500	9	Up to 4730 = 9
4000	8	Up to 4230 = 8
3500	7	Up to 3730 = 7
3000	6	Up to 3230 = 6
2500	5	Up to 2730 = 5
2000	4	Up to 2230 = 4
2 3 4 5 6	Number of type A compound glazings per door section	
2 3 4 5 6	No. of infills / fields per alum. frame	

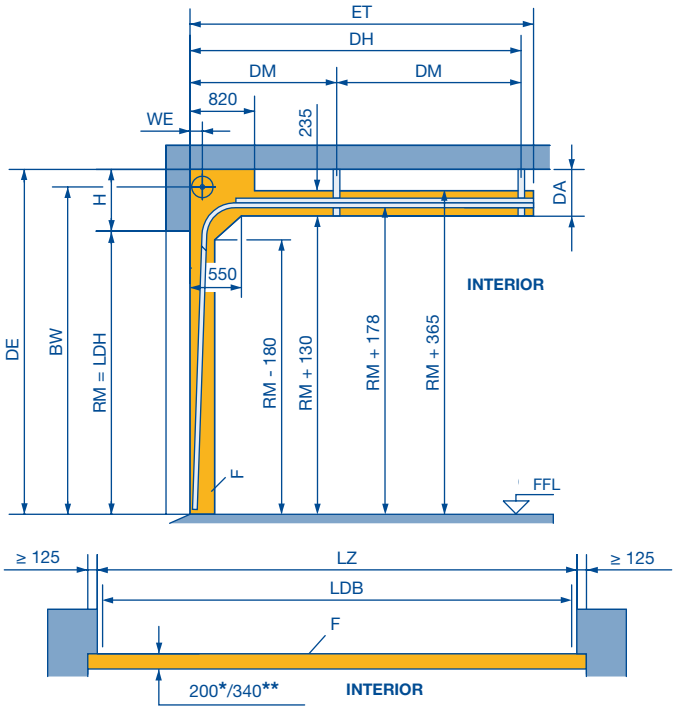
NB is **not** possible, HB, KG, RB and TG on request

[A] Number of door sections TH = 500 mm
[B] Number of door sections for intermediate heights
RM Grid height

MF Centre of window from FFL
E Fitting area for frame with glazing
B Width **(from 2000 mm)**

Track Application: NB

Normal track application



Notes:

- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- Observe the permissible size range on page 6!

- Door weights for roof loads: DPU = 400 N/m²
- Observe the min. sideroom, see page 15

	H	WE	DA
NB 1/2	500	160	370

LDH Clear passage height
RM Grid height
BW Position of shaft support
NB 1 + NB 2 = RM + 395
ET Min. distance back
NB 1 + NB 2 = RM + 480
With shaft operator
NB 1 + NB 2 = RM + 690
DH Rear ceiling anchor
NB 1 + NB 2 = RM + 229
DM Centre ceiling anchor (see page 19)
WE Shaft centre from lintel (see table)
H Min. headroom (see table)
DA Distance to ceiling (see table)
DE Ceiling height
LZ Clear frame dimension
LDB Clear passage width with ThermoFrame (see page 15)
F Space for fitting the door
***** Without operator
****** With operator

Min. headroom

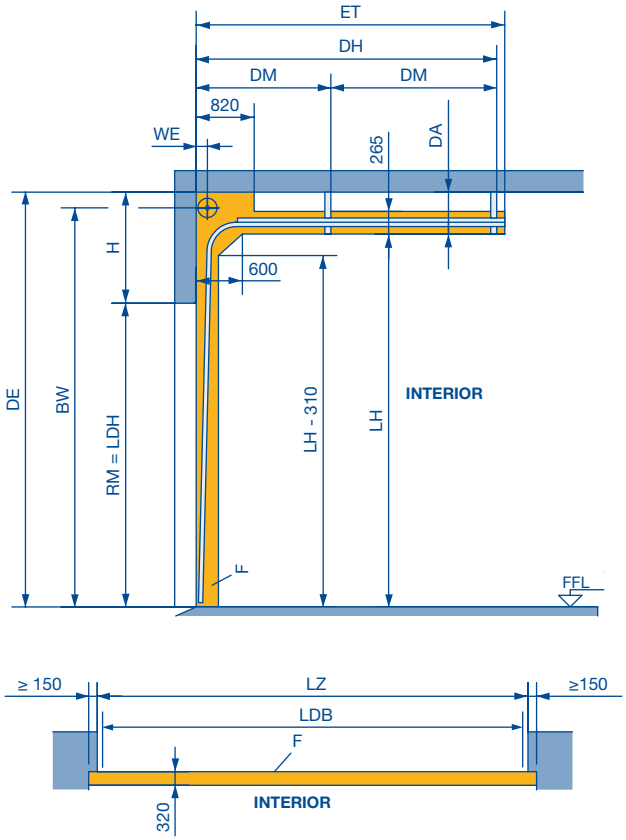
Track size	Headroom
NB 1	500
NB 2	500
HB / KG 4	880
HB 5	1085***
KG 5	910
RB / TG 4 / 5	1810
VB 6 / 7	RM + 590
VB 7	RM + 780***
WB 6 / 7	RM + 350
MG 6 / 7	RM + 350

*** With version with double spring shaft

Dimensions in mm

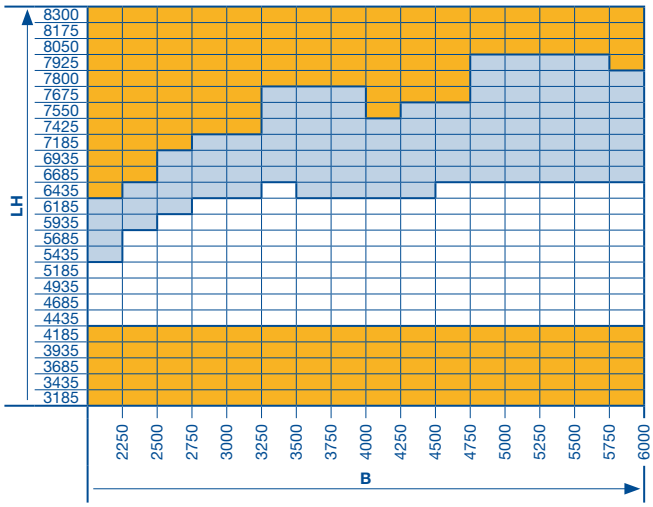
Track Application: HB

High-lift track application



ET = min. distance back		
HB 4 + 5	2 × RM – LH + 1155	For manual operation with long spring buffer (standard)
	2 × RM – LH + 685	For manual operation with short spring buffer (special)
	2 × RM – LH + 915	For shaft operator with long spring buffer (LH – RM ≤ 1000)
	2 × RM – LH + 685	For shaft operator with short spring buffer (LH – RM > 1000)

Table 2
Demarcation of track height for track application HB



Please note:
Please have the factory check the track heights!

Notes:
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- Observe the permissible size range on page 6!

- Other versions on request
- Observe the min. sideroom, see page 15

Table 1: Track heights (LH)
For track application HB

Door height RM	Min. LH	Max. LH		Door height RM	Min. LH	Max. LH	
3500	3960	6185	HB 4, WE = 160				
3375	3835	5935		5000	5460	8300	HB 5, WE = 180
3250	3710	5685		4875	5335	8175	
3125	3585	5435		4750	5210	8050	
3000	3460	5185		4625	5085	7925	
2875	3335	4935		4500	4960	7800	
2750	3210	4685		4375	4835	7675	
2625	3085	4435		4250	4710	7550	
2500	2960	4185		4125	4585	7425	
2375	2835	3935		4000	4460	7185	
2250	2710	3685		3875	4335	6935	
2125	2585	3435		3750	4210	6685	
2000	2460	3185		3625	4085	6435	

ET Min. distance back
LDH Clear passage height
RM Grid height
LH Track height (see tables 1 + 2)
BW Position of shaft support
HB 4 + 5 = LH + 280
DH Rear ceiling anchor
HB 4 + HB 5 = 2 × RM – LH + 653 (long spring buffer)
HB 4 + HB 5 = 2 × RM – LH + 413 (short spring buffer)
HB 4 + HB 5 = 2 × RM – LH + 413 (long spring buffer + WA 400)
DM Centre ceiling anchor (see page 19)
WE Shaft centre from lintel (see table 1)
H Min. headroom (see page 7)
DA Min. distance to ceiling
HB 4 = 420
HB 5 = 450, 625 with double spring shaft
DE Ceiling height
LZ Clear frame dimension
LDB Clear passage width with ThermoFrame (see page 15)
F Space for fitting the door

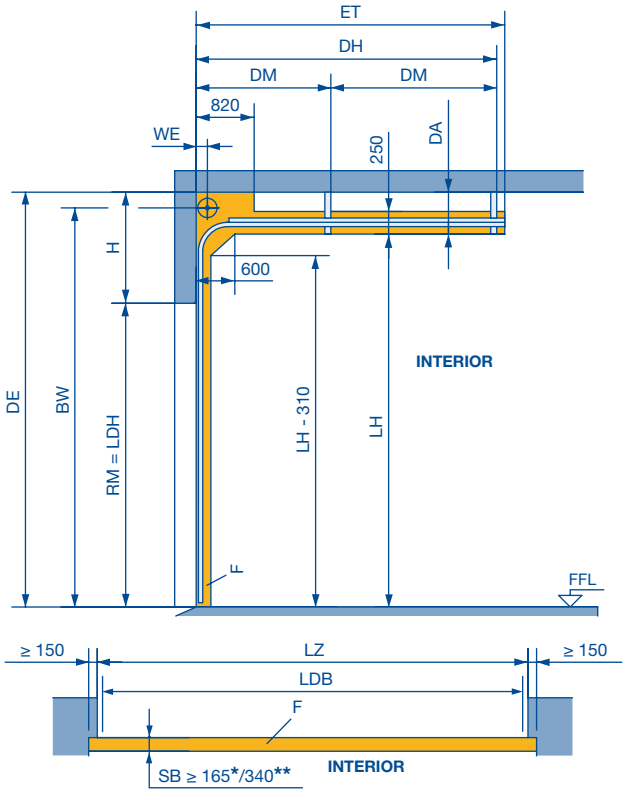
DPU doors are possible.

DPU doors are possible, versions with compound glazing and aluminium frames on request.

On request

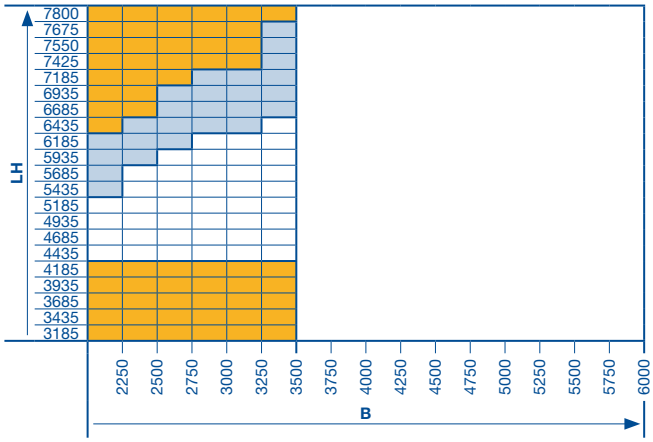
Track Application: KG

High-lift track application with steep track (Application for loading ramp doors)



ET = min. distance back		
KG 4 + 5	2 × RM – LH + 1155	For manual operation with long spring buffer (standard)
	2 × RM – LH + 685	For manual operation with short spring buffer (special)
	2 × RM – LH + 915	For shaft operator with long spring buffer (LH – RM ≤ 1000)
	2 × RM – LH + 685	For shaft operator with short spring buffer (LH – RM > 1000)

Table 4
Demarcation of track height for track application KG



Please note:
Please have the factory check the track heights!

Notes:
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- Observe the permissible size range on page 6! (door width LZ ≤ 3500)!

- Other versions on request
- Observe the min. sideroom, see page 15

Table 3: Track heights (LH)
For track application KG

Door height RM	Min. LH	Max. LH		Door height RM	Min. LH	Max. LH	
3500	3960	6185	KG 4, WE = 160				
3375	3835	5935		5000	5460	7800	KG 5, WE = 180
3250	3710	5685		4875	5335	7800	
3125	3585	5435		4750	5210	7800	
3000	3460	5185		4625	5085	7800	
2875	3335	4935		4500	4960	7800	
2750	3210	4685		4375	4835	7675	
2625	3085	4435		4250	4710	7550	
2500	2960	4185		4125	4585	7425	
2375	2835	3935		4000	4460	7185	
2250	2710	3685		3875	4335	6935	
2125	2585	3435		3750	4210	6685	
2000	2460	3185		3625	4085	6435	

LDH Clear passage height
RM Grid height
LH Track height (see tables 3 + 4)
BW Position of shaft support
KG 4 + 5 = LH + 280
DH Rear ceiling anchor
KG 4 + KG 5 = 2 × RM – LH + 613 (long spring buffer)
KG 4 + KG 5 = 2 × RM – LH + 373 (short spring buffer)
KG 4 + KG 5 = 2 × RM – LH + 373 (long spring buffer + WA 400)
DM Centre ceiling anchor (see page 19)
WE Shaft centre from lintel (see table 3)
H Min. headroom (see page 7)
DA Min. distance to ceiling
KG 4 = 420
KG 5 = 450, 625 with double spring shaft
ET Min. distance back
DE Distance to ceiling
LZ Clear frame dimension
LDB Clear passage width with ThermoFrame (see page 15)
SB Slot width
F Space for fitting the door
* Without operator
** With operator

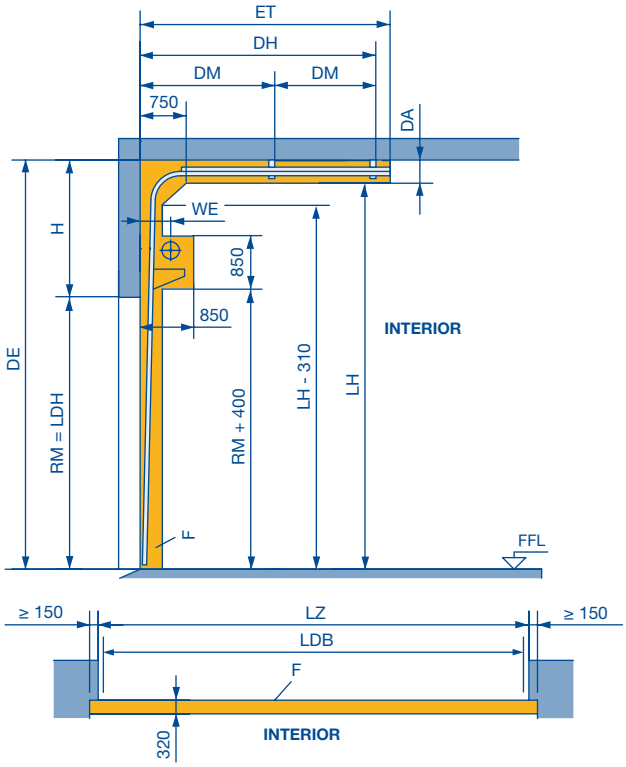
DPU doors are possible.

DPU doors are possible, versions with compound glazing and aluminium frames on request.

On request

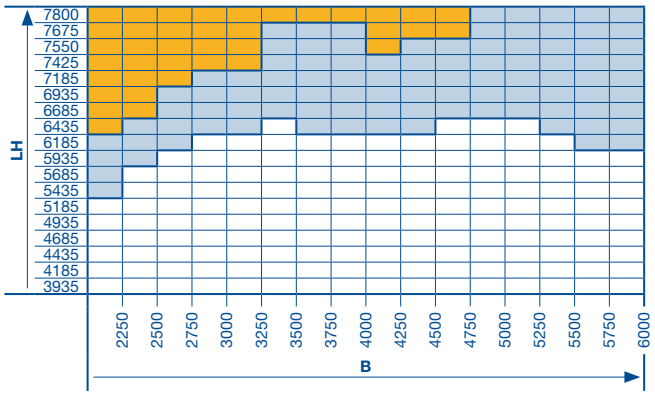
Track Application: RB

High-lift track application with low-mounted torsion spring shaft



ET = min. distance back		
RB 4 + 5	2 × RM – LH + 1120	For manual operation with long spring buffer (standard)
	2 × RM – LH + 680	For manual operation with short spring buffer (special)
	2 × RM – LH + 880	For shaft operator with long spring buffer (LH – RM ≤ 1000)
	2 × RM – LH + 680	For shaft operator with short spring buffer (LH – RM > 1000)

Table 6
Demarcation of track height for track application RB



Please note:
Please have the factory check the track heights!

Notes:
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- Please have the factory check the track heights!
- Observe the permissible size range on page 6!

- Other versions on request
- Observe the min. sideroom, see page 15

Table 5: Track heights (LH)
For track application RB

Door height RM	Min. LH	Max. LH		Door height RM	Min. LH	Max. LH	
3500	5010	6185	RB 4, WE = 355	5000	6510	7800	RB 5, WE = 375
3375	4885	5935		4875	6385	7800	
3250	4760	5685		4750	6260	7800	
3125	4635	5435		4625	6135	7800	
3000	4510	5185		4500	6010	7800	
2875	4385	4935		4375	5885	7675	
2750	4260	4685		4250	5760	7550	
2625	4135	4435		4125	5635	7425	
2500	4010	4185		4000	5510	7185	
2375	3885	3935		3875	5385	6935	
				3750	5260	6685	
				3625	5135	6435	

LDH Clear passage height
RM Grid height
LH Track height (see tables 5 + 6)
ET Distance back
DH Rear ceiling anchor
RB 4 + RB 5 = 2 × RM – LH + 663 (long spring buffer)
RB 4 + RB 5 = 2 × RM – LH + 423 (short spring buffer)
RB 4 + RB 5 = 2 × RM – LH + 423 (long spring buffer + WA 400)
DM Centre ceiling anchor (see page 19)
WE Shaft centre from lintel (see table 5)
H Min. headroom (see page 7)
DA Min. distance to ceiling = 300
DE Ceiling height
LZ Clear frame dimension
LDB Clear passage width with ThermoFrame (see page 15)
F Space for fitting the door

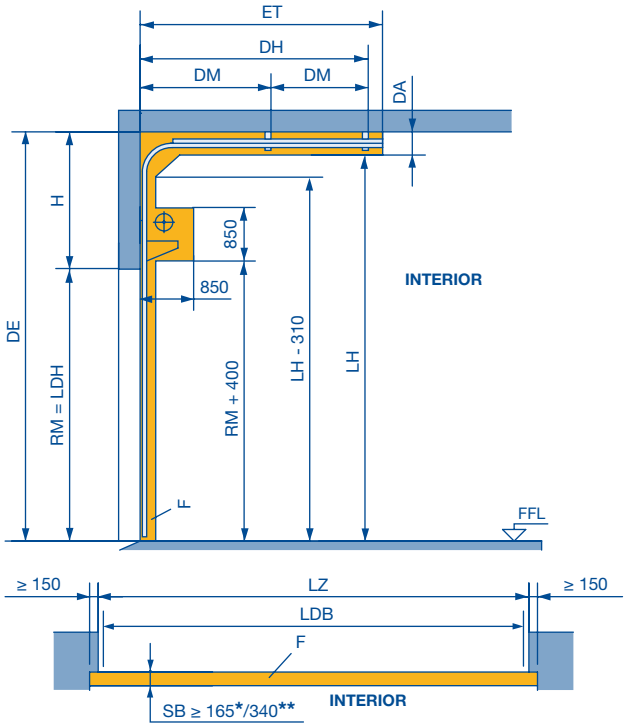
DPU doors are possible.

DPU doors are possible, versions with compound glazing and aluminium frames on request.

On request

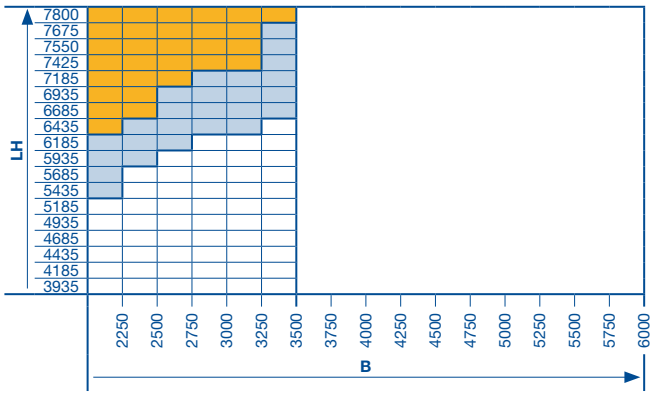
Track Application: TG

High-lift track application with low-mounted torsion spring shaft and steep track (Application for loading ramp doors)



	ET = min. distance back	
TG 4 + 5	2 × RM – LH + 1060	For manual operation with long spring buffer (standard)
	2 × RM – LH + 600	For manual operation with short spring buffer (special)
	2 × RM – LH + 820	For shaft operator with long spring buffer (LH – RM ≤ 1000)
	2 × RM – LH + 600	For shaft operator with short spring buffer (LH – RM > 1000)

Table 8
Demarcation of track height for track application TG



Please note:
Please have the factory check the track heights!

Notes:
- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- Please have the factory check the track heights!
- Observe the permissible size range on page 6 (door width LZ ≤ 3500)!

- Other versions on request
- Observe the min. sideroom, see page 15

Table 7: Track heights (LH)
For track application TG

Door height RM	Min. LH	Max. LH		Door height RM	Min. LH	Max. LH	
3500	5010	6185	TG 4, WE = 355	5000	6510	7800	TG 5, WE = 375
3375	4885	5935		4875	6385	7800	
3250	4760	5685		4750	6260	7800	
3125	4635	5435		4625	6135	7800	
3000	4510	5185		4500	6010	7800	
2875	4385	4935		4375	5885	7675	
2750	4260	4685		4250	5760	7550	
2625	4135	4435		4125	5635	7425	
2500	4010	4185		4000	5510	7185	
2375	3885	3935		3875	5385	6935	
				3750	5260	6685	
				3625	5135	6435	

LDH Clear passage height
RM Grid height
LH Track height (see tables 7 + 8)
ET Distance back
DH Rear ceiling anchor
TG 4 + TG 5 = 2 × RM – LH + 632 (long spring buffer)
TG 4 + TG 5 = 2 × RM – LH + 383 (short spring buffer)
TG 4 + TG 5 = 2 × RM – LH + 383 (long spring buffer + WA 400)
DM Centre ceiling anchor (see page 19)
WE Shaft centre from lintel (see table 7)
H Min. headroom (see page 7)
DA Min. distance to ceiling = 300
DE Ceiling height
LZ Clear frame dimension
LDB Clear passage width with ThermoFrame (see page 15)
SB Slot width
F Space for fitting the door
* Without operator
** With operator

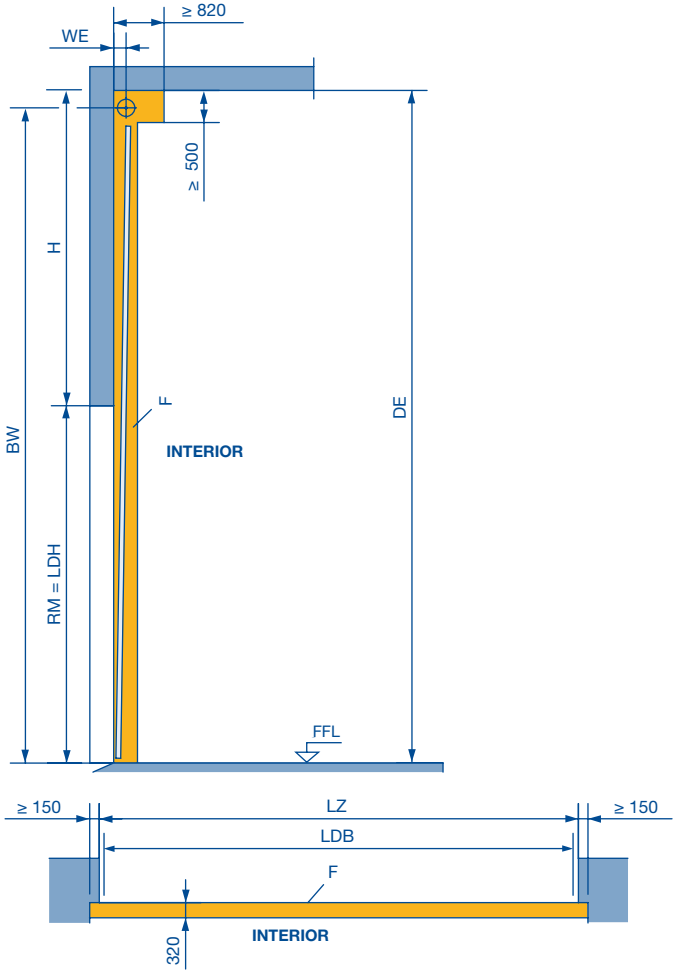
DPU doors are possible.

DPU doors are possible, versions with compound glazing and aluminium frames on request.

On request

Track Application: VB

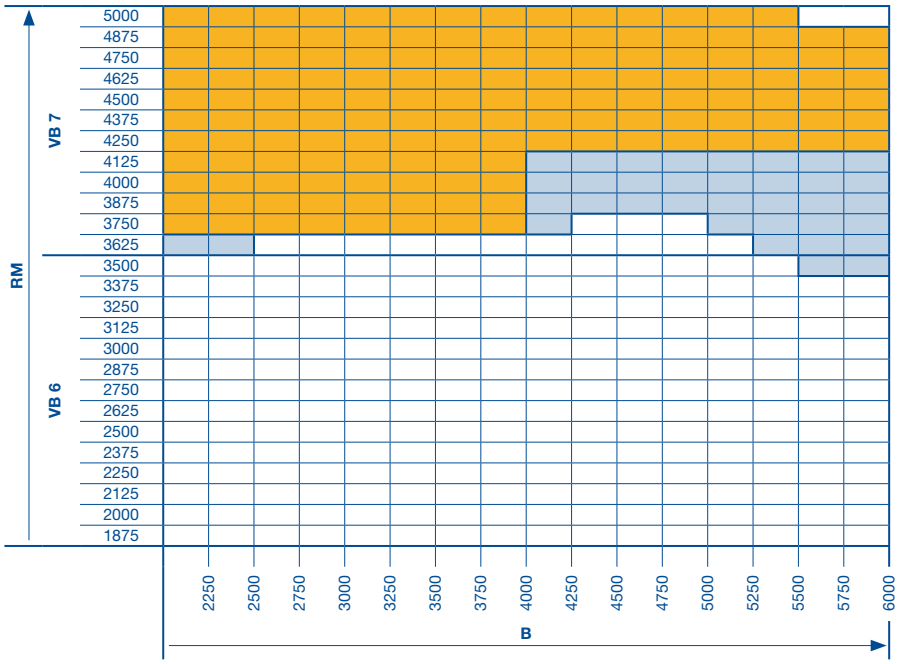
Vertical track application



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

- Observe the min. sideroom, see page 15

LDH Clear passage height
RM Grid height
WE Shaft centre from lintel
VB 6 = 180, VB 7 = 180
H Min. headroom (see page 7)
BW Position of shaft support
2 × RM + 435 (VB 6)
2 × RM + 435 (VB 7)
DE Ceiling height
2 × RM + 590 (VB 6)
2 × RM + 590 (VB 7)
2 × RM + 780 (VB 7 with double spring shaft)
LZ Clear frame dimension
LDB Clear passage width with ThermoFrame (see page 15)
F Space for fitting the door



Note:
Observe the permissible size range on page 6!

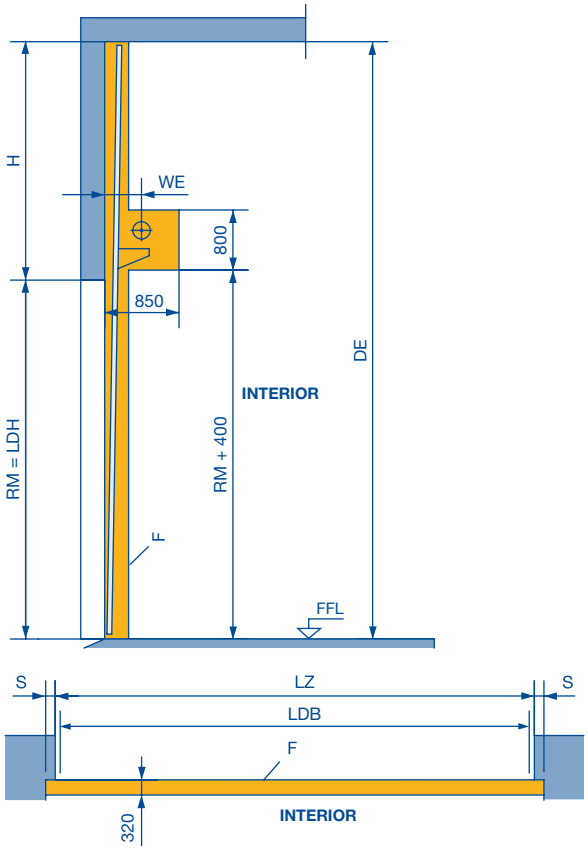
DPU doors are possible.
DPU doors are possible, versions with compound glazing and aluminium frames on request.
On request

RM Grid height
B Width **(from 2000 mm)**

Dimensions in mm

Track Application: WB

Vertical track application with low-mounted torsion spring shaft

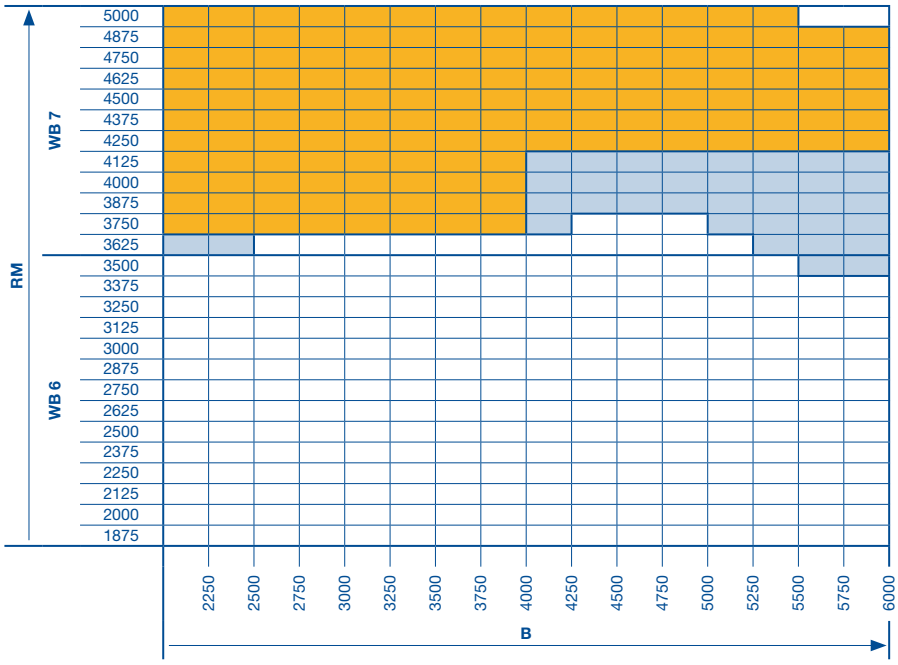


The clearance required for fitting the door must be free of supply lines, heater fans, etc.

Track application	S
WB 6	125
WB 7	140

- Observe the min. sideroom, see page 15

LDH Clear passage height
RM Grid height
WE Shaft centre from lintel
WB 6 = 335
WB 7 = 355
H Min. headroom (see page 7)
DE Ceiling height
2 × RM + 350
LZ Clear frame dimension
LDB Clear passage width with ThermoFrame (see page 15)
F Space for fitting the door
S Min. sideroom



Note:
Observe the permissible size range on page 6!

DPU doors are possible.

DPU doors are possible, versions with compound glazing and aluminium frames on request.

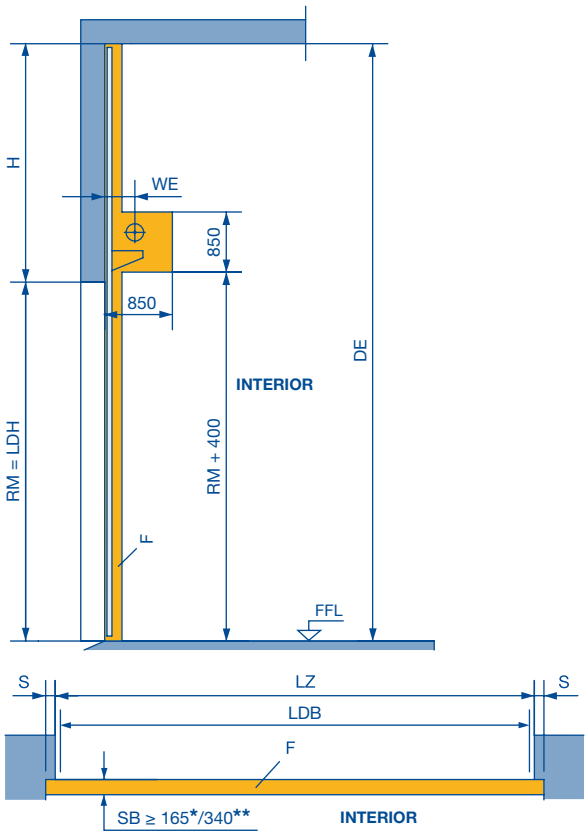
On request

RM Grid height
B Width **(from 2000 mm)**

Dimensions in mm

Track Application: MG

Vertical track application with low-mounted torsion spring shaft and steep track (Application for loading ramp doors)

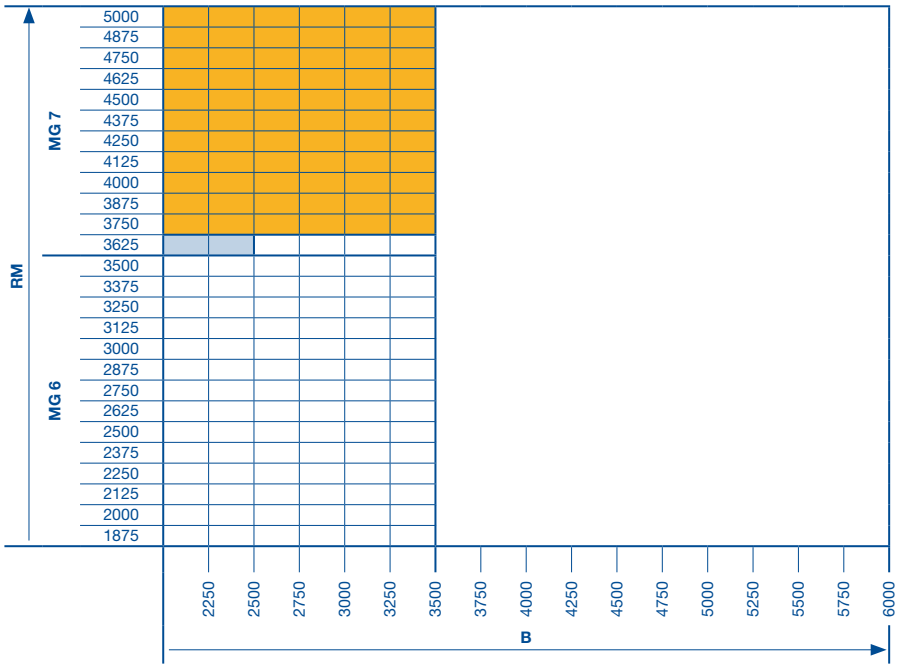


The clearance required for fitting the door must be free of supply lines, heater fans, etc.

Track application	S
MG 6	125
MG 7	140

- Observe the min. sideroom, see page 15

LDH Clear passage height
RM Grid height
WE Shaft centre from lintel
MG 6 = 335
MG 7 = 355
H Min. headroom (see page 7)
DE Ceiling height
2 × RM + 350
LZ Clear frame dimension
LDB Clear passage width with ThermoFrame (see page 15)
SB Slot width
F Space for fitting the door
S Min. sideroom
* Without operator
** With operator



Note:
Observe the permissible size range on page 6!

DPU doors are possible.
DPU doors are possible, versions with compound glazing and aluminium frames on request.
On request

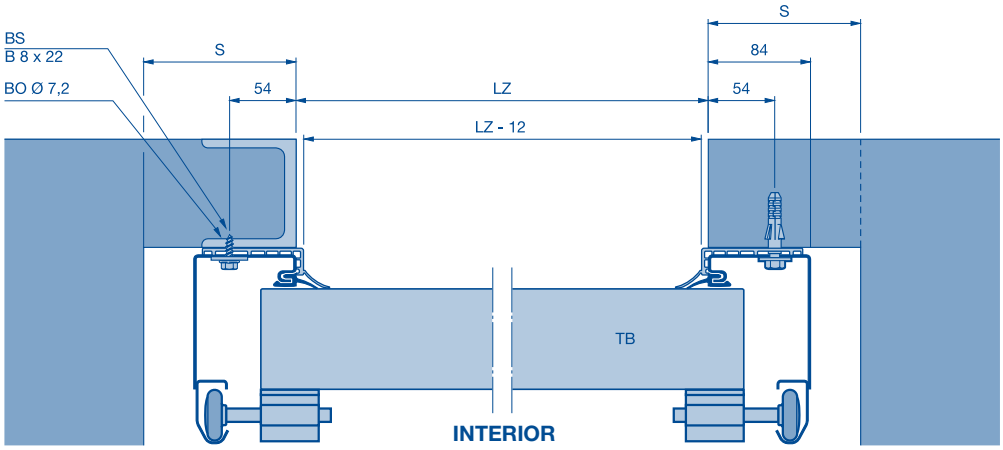
RM Grid height
B Width **(from 2000 mm)**

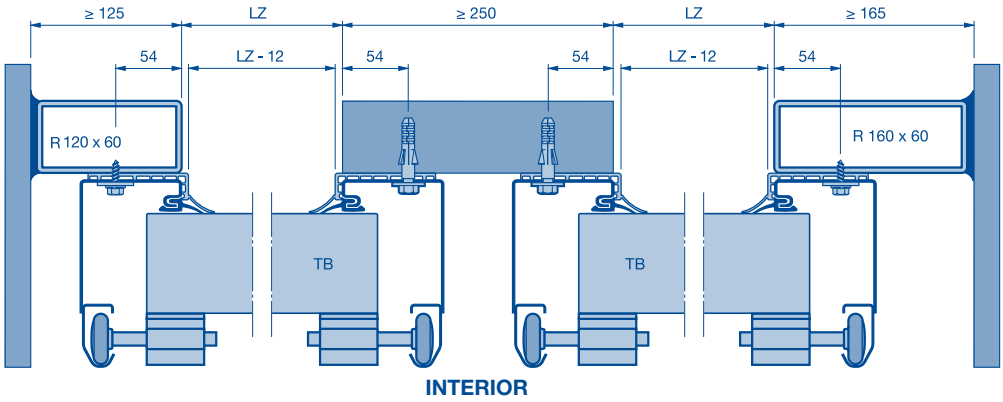
Dimensions in mm

Sideroom Details

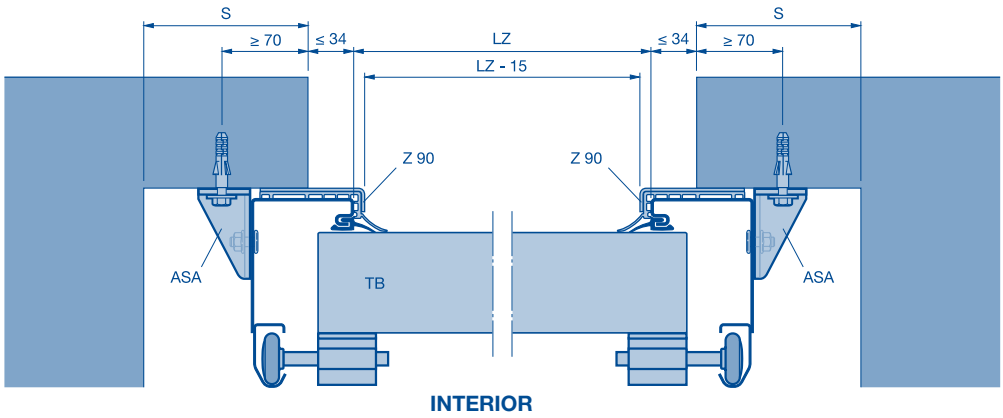
Required sideroom S

Track application / designation		S
NB, WB 6, MG 6		125
WB 7, MG 7		140
HB, KG, RB, TG, VB		150
Hand pulley	NB, WB, MG	140
	HB, KG, RB, TG, VB	150
Chain hoist		Page 18
Shaft operators		Pages 20 – 23
Direct drive operators		Page 26





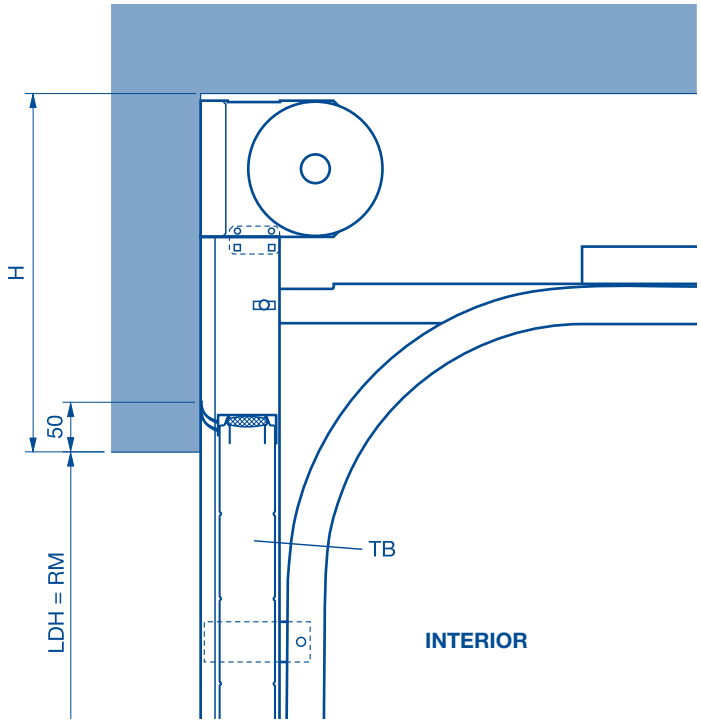
Sideroom with frame covering



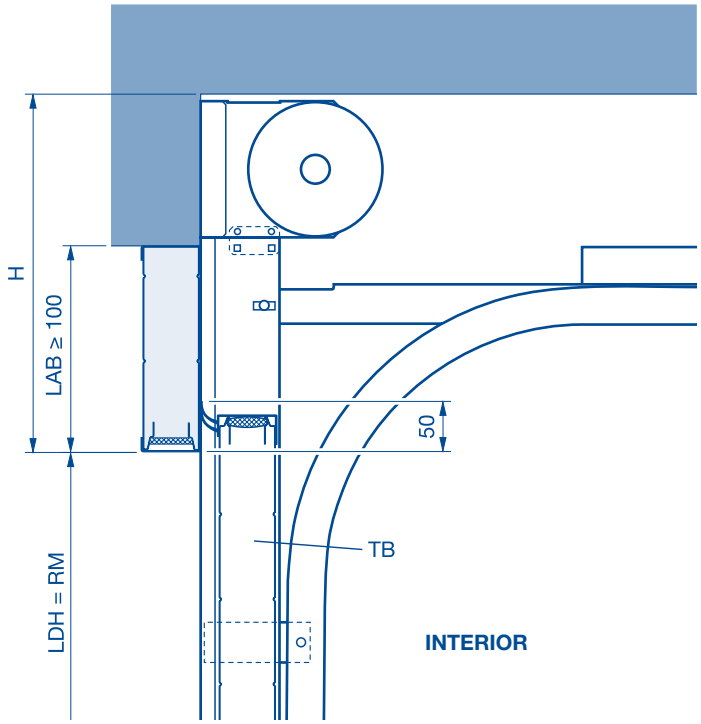
HS Self-tapping screw
BO Hole
RM Grid height
LZ Clear frame dimension
R Tube
TB Door leaf
ASA Screw-on anchor 70 × 40

Headroom Details

Normal headroom, lintel variation up to 50 mm high

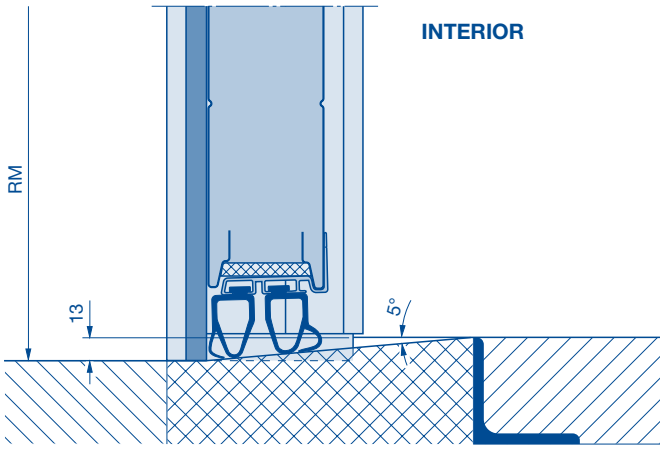


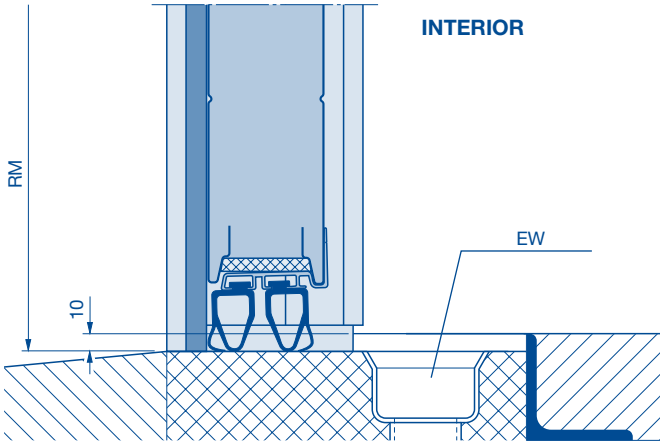
PU fascia panel to make up for insufficient headroom from 100 mm

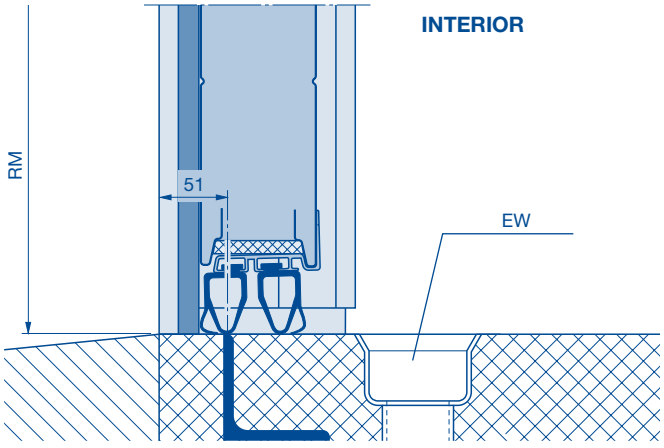


LAB Fascia panel
TB Door leaf
H Headroom
LDH Clear passage height
RM Grid height

Floor Details





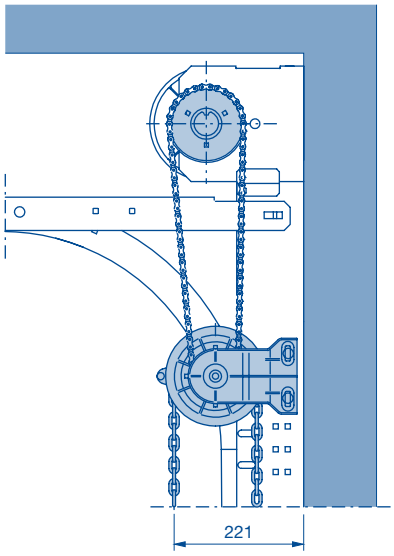


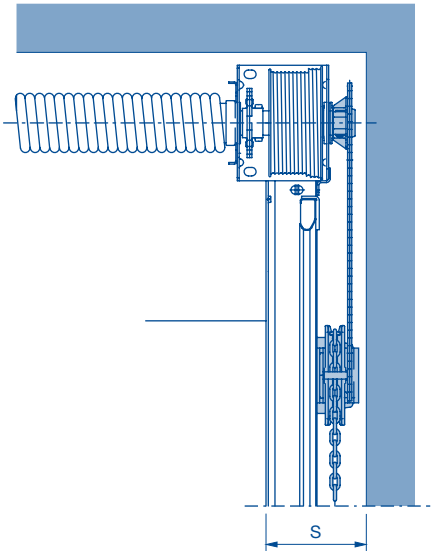
EW Drainage
RM Grid height

Chain Hoist
Hand Pulley
With rope or link steel chain

Chain hoist

Track applications NB, HB, RB, KG, TG, WB, MG



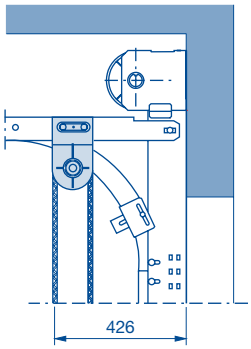


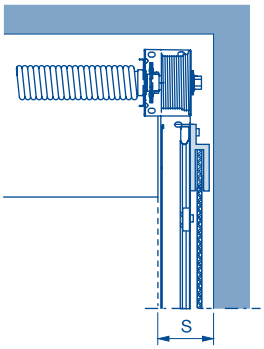
Track application	S
NB, WB 6, MG 6	165
HB, RB, KG, TG, WB 7, MG 7	185

Hand pulley with rope or link steel chain

Track applications up to 20 m2 door surface

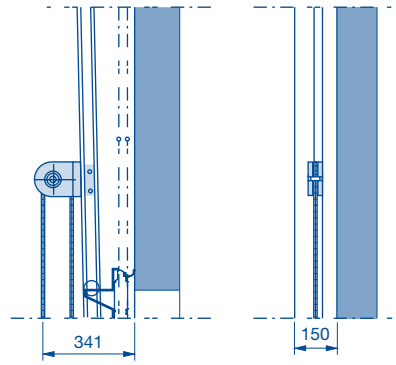
NB, HB, KG
With rope or link steel chain



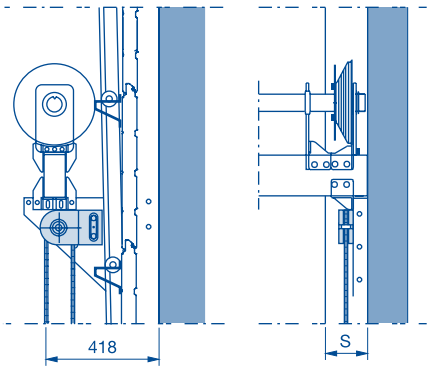


Track application	S
NB	140
HB, KG	150

VB
With rope or link steel chain



RB, TG, WB, MG
With rope or link steel chain

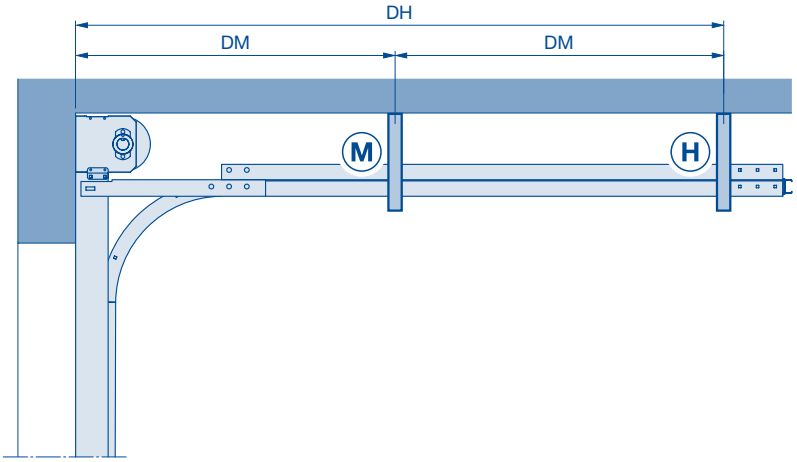


Track application	S
WB 6, MG 6	125
WB 7, MG 7	140
RB, TG	150

Ceiling Anchors

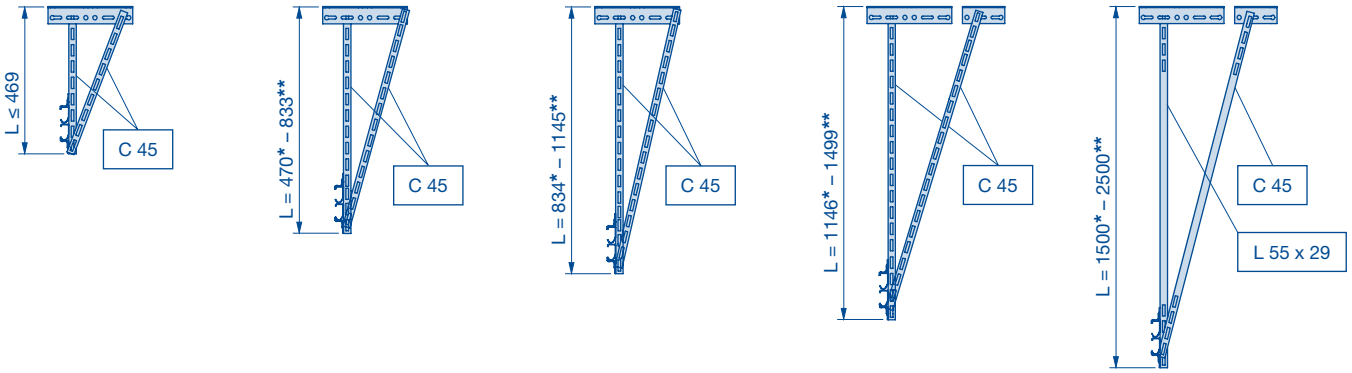
Track suspensions for all track applications except VB, WB and MG

Track suspensions as ceiling anchors in five lengths, standard length 469 mm.
DH = rear ceiling anchor (see pages 7 – 14), door weights for roof loads (see pages 7 – 14).



Double track (suspensions), door heights RM ≤ 5000

DH	M	H	DM
– 1555	–	1	–
1560 – 3720	1	1	DH / 2
3730 – 5195	2	1	DH / 3



* Min.
** Max.

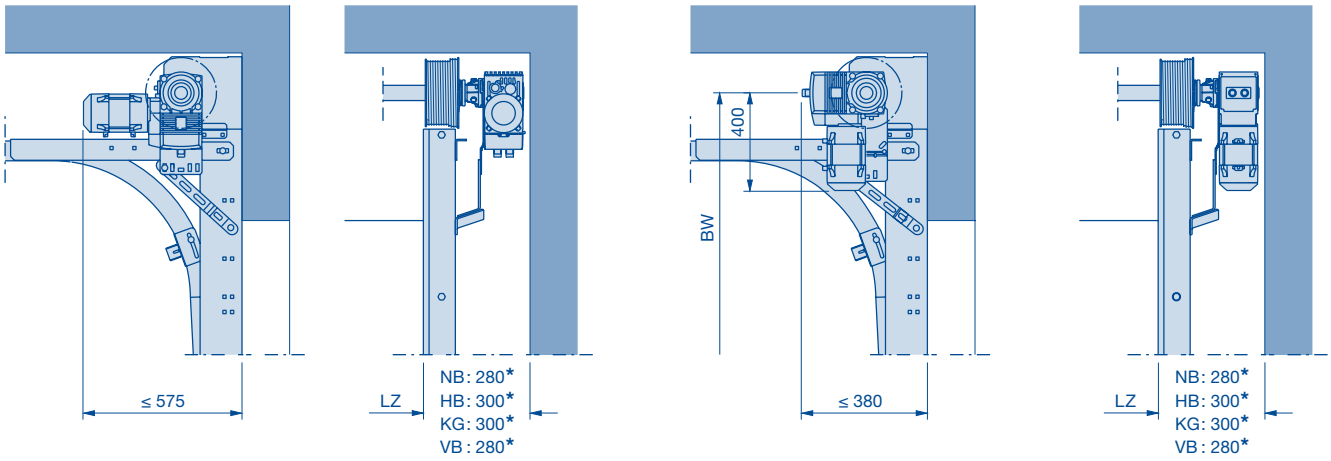
DH Rear ceiling anchor
DM Centre ceiling anchor

Shaft Operator WA 400

As a frame-mounted operator

Shaft operator WA 400 for track applications NB, HB, KG and VB

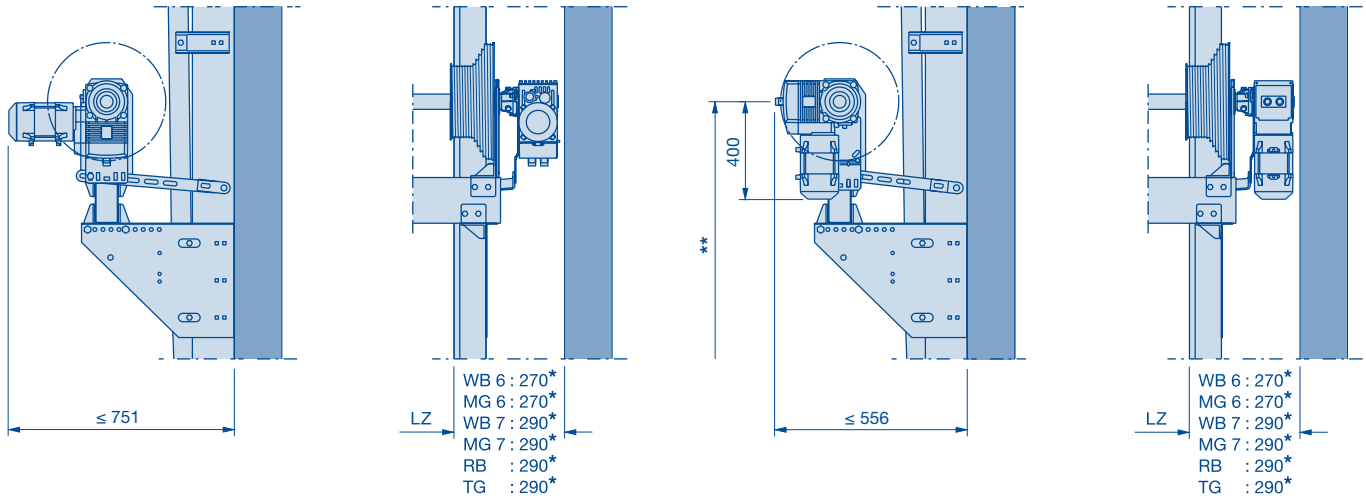
As shown in the figure, the operator can be fitted either left or right, viewed from the inside.



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

Shaft operator WA 400 for track applications RB, TG, WB and MG

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

LZ Clear frame dimension

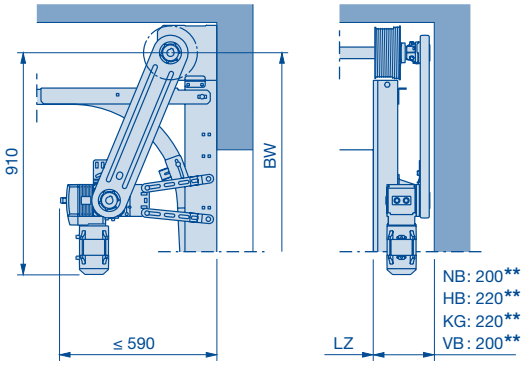
Shaft Operator WA 400

With chain box

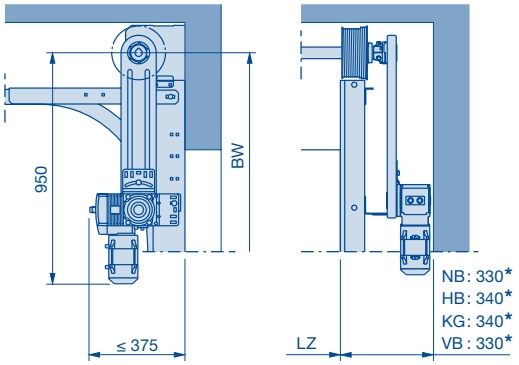
Shaft operator WA 400 for track applications NB, HB, KG and VB

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.

Fitting example ⑤ right



Fitting example ⑥ right

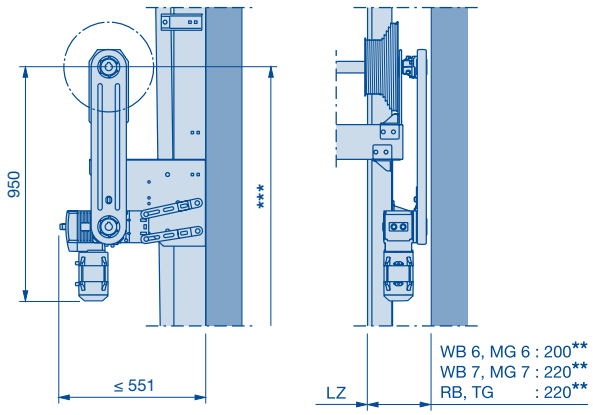


Note:
* Dimension + 75 mm if using a non-jointed emergency crank handle
** Dimension + 40 mm if using a non-jointed emergency crank handle

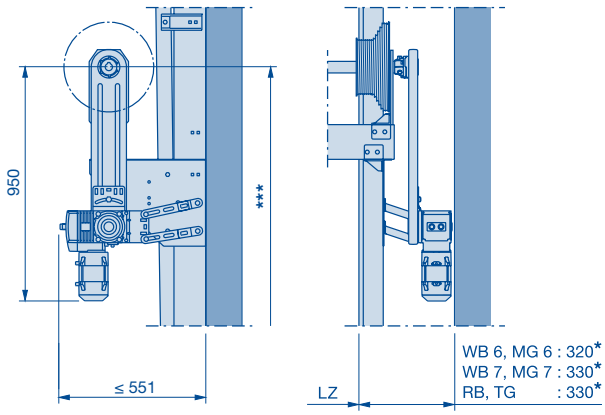
Shaft operator WA 400 for track applications RB, TG, WB and MG

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.

Fitting example ⑤ right



Fitting example ⑥ right



Note:
* Dimension + 75 mm if using a non-jointed emergency crank handle
** Dimension + 40 mm if using a non-jointed emergency crank handle

*** On request

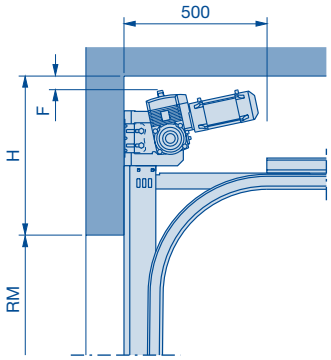
BW Position of shaft support
LZ Clear frame dimension

Shaft Operator WA 400

For central mounting

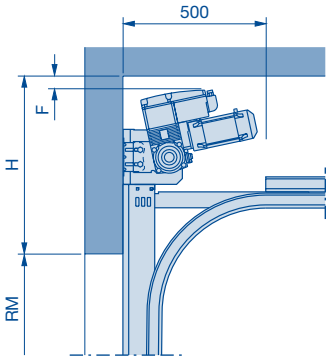
Shaft operator WA 400 for track application NB

Control A / B 445, 460



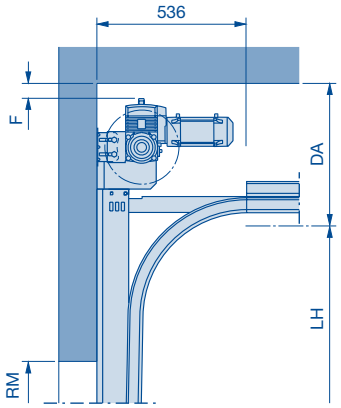
Track application	A / B 445, 460		B 460 FU	
	H min.	F min.	H min.	F min.
NB 1	610	50	675	45
NB 2	610	50	675	45

Control B 460 FU



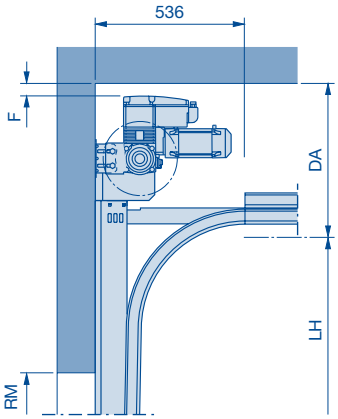
Shaft operator WA 400 for track applications HB and KG

Control A / B 445, 460



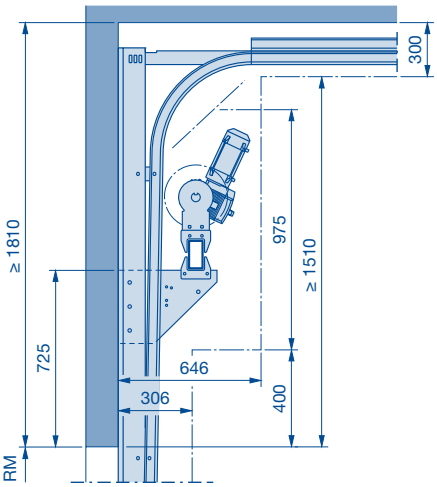
Track application	A / B 445, 460		B 460 FU	
	DA min.	F min.	DA min.	F min.
HB 4	500	50	540	45
HB 5	500	50	540	45

Control B 460 FU

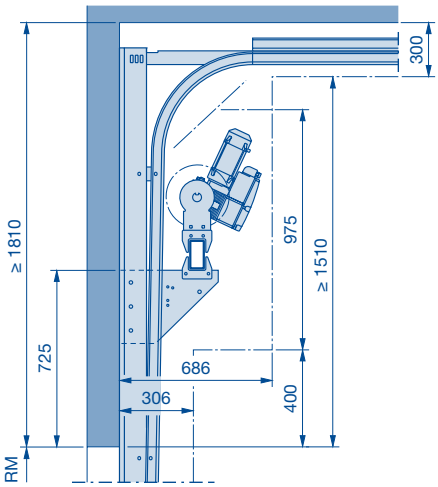


Shaft operator WA 400 for track applications RB and TG

Control A / B 445, 460



Control B 460 FU



Note:
WA 400 as a centre motor in conjunction with double spring shaft on request!

H	Headroom	**LH**	Track height
RM	Grid height	**F**	Clearance ceiling / shaft operator
DA	Distance to ceiling		

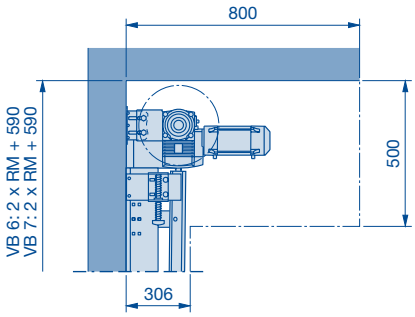
Shaft Operator WA 400

For central mounting

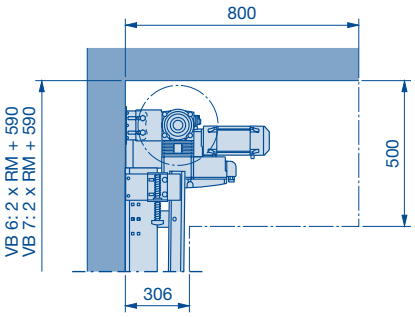
Door Leaf Speeds

Shaft operator WA 400 for track application VB

Control A / B 445, 460



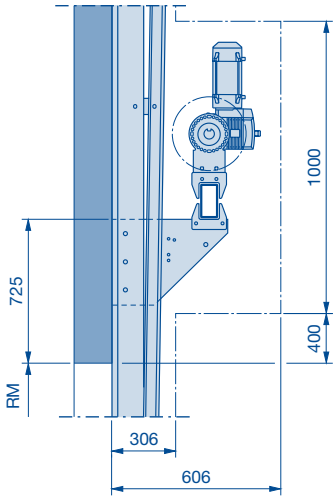
Control B 460 FU



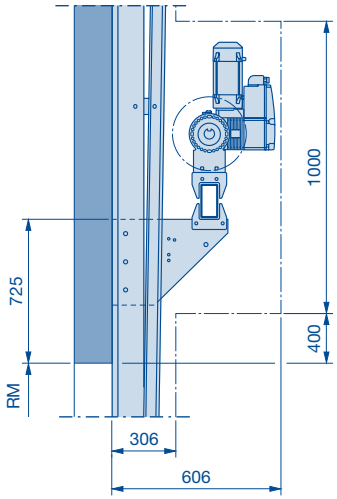
Note:
WA 400 as a centre motor in conjunction with double spring shaft on request!

Shaft operator WA 400 for track applications WB and MG

Control A / B 445, 460



Control B 460 FU



Door leaf speeds WA 400

Control A / B 445 and 460					Control B 460 FU		Without twin roller	With twin roller
Track application	Frame-mounted operator	Max. speed in mm/s, open / close	Chain drive operator	Max. speed in mm/s, open / close	Frame-mounted operator	Chain drive operator	Max. speed in mm/s, open / close	Max. speed in mm/s, open / close
NB1	30 rpm	190	30 rpm	190	Yes	Yes	300 / 200	300 / 200
NB2	24 rpm	210	24 rpm	210	Yes	Yes	300 / 200	470 / 200
HB4	24 / 19 rpm [1]	230	24 / 19 rpm [1]	230	Yes	Yes	300 / 200	400 / 200
HB5	19 / 16 rpm [1]	230	19 / 16 rpm [1]	230	Yes	Yes	300 / 200	520 / 200
KG4	24 / 19 rpm [1]	230	24 / 19 rpm [1]	230	Yes	Yes	300 / 200	400 / 200
KG5	19 / 16 rpm [1]	230	19 / 16 rpm [1]	230	Yes	Yes	300 / 200	520 / 200
RB4	24 / 19 rpm [1]	230	24 / 19 rpm [1]	230	Yes	Yes	300 / 200	400 / 200
RB5	19 / 16 rpm [1]	230	19 / 16 rpm [1]	230	Yes	Yes	300 / 200	520 / 200
TG4	24 / 19 rpm [1]	230	24 / 19 rpm [1]	230	Yes	Yes	300 / 200	400 / 200
TG5	19 / 16 rpm [1]	230	19 / 16 rpm [1]	230	Yes	Yes	300 / 200	520 / 200
VB6	19 rpm	230	19 rpm	230	Yes	Yes	440 / 200 [2]	
VB7	16 rpm	230	16 rpm	230	Yes	Yes	480 / 200 [2]	
WB6	19 rpm	230	19 rpm	230	Yes	Yes	440 / 200 [2]	
WB7	16 rpm	230	16 rpm	230	Yes	Yes	480 / 200 [2]	
MG6	19 rpm	230	19 rpm	230	Yes	Yes	440 / 200 [2]	
MG7	16 rpm	230	16 rpm	230	Yes	Yes	480 / 200 [2]	

[1] Speed corresponding to high-lift

[2] Twin rollers are not necessary with track applications VB, WB and MG!

Note:
Double spring shaft only possible in conjunction with control B 460 FU!

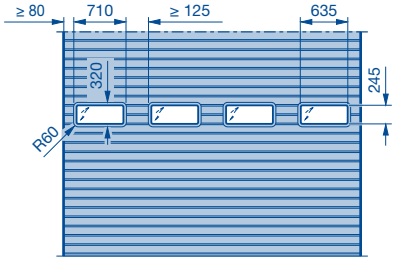
Sectional Door DPU with Direct Drive Operator

Double-skinned steel sections

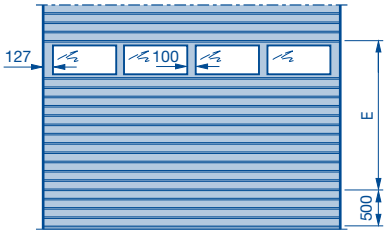
500 mm high

External views

Compound glazing type A



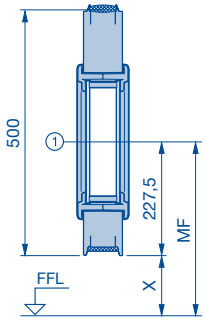
Glazing frame



Calculating the glazing heights for compound window type A. See column A under Size range for the number of door sections! The illustration shows a section depth of 80 mm.

Note:
From door width LZ > 6000 mm glazing only possible in max. 2 door sections!

Type A



Door section height 500 mm

Glazing height type A
① = x + 227.5

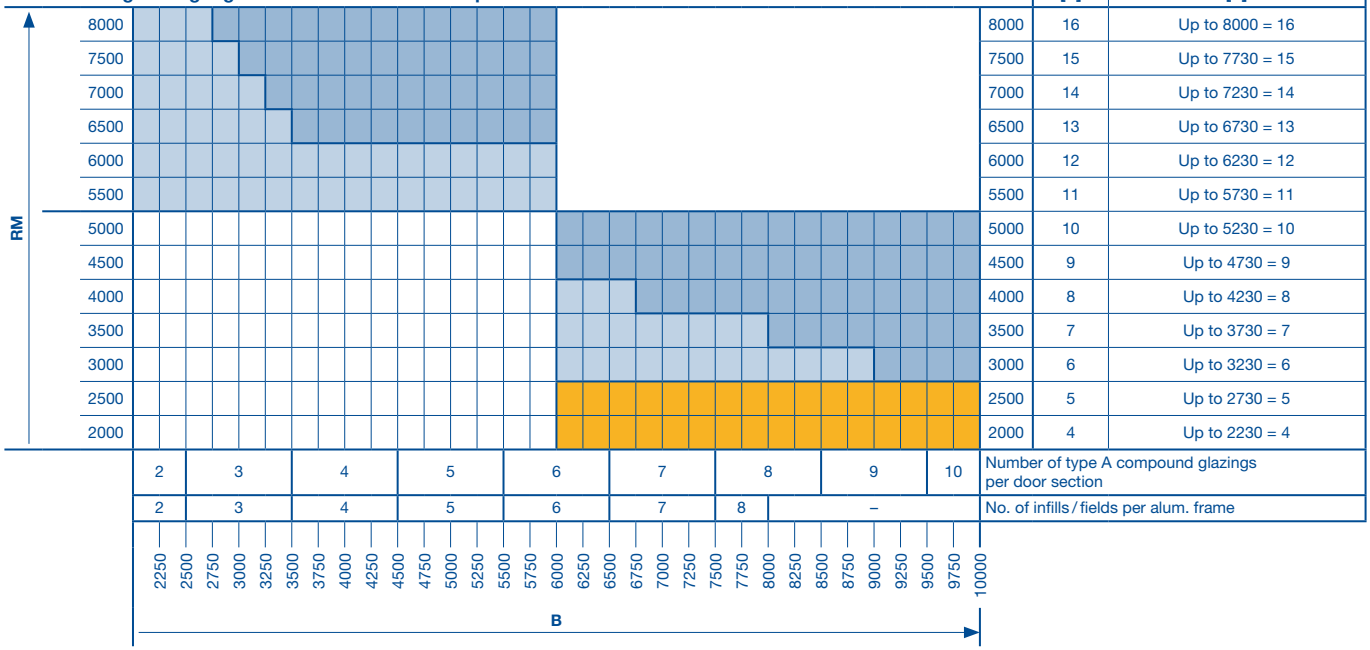
x = Sum of door section heights + 60 mm from FFL

Note:
Intermediate heights between the grid height and grid height + 60 mm are available on request.

Size range

In the size range shown, any door width can be manufactured in 10-mm increments and any door height in the 500-mm grid, taking the min. ceiling height into account. Intermediate heights are possible by shortening top door section!

Doors with a grid height greater than 8000 mm on request



	[A]	[B]
8000	16	Up to 8000 = 16
7500	15	Up to 7730 = 15
7000	14	Up to 7230 = 14
6500	13	Up to 6730 = 13
6000	12	Up to 6230 = 12
5500	11	Up to 5730 = 11
5000	10	Up to 5230 = 10
4500	9	Up to 4730 = 9
4000	8	Up to 4230 = 8
3500	7	Up to 3730 = 7
3000	6	Up to 3230 = 6
2500	5	Up to 2730 = 5
2000	4	Up to 2230 = 4

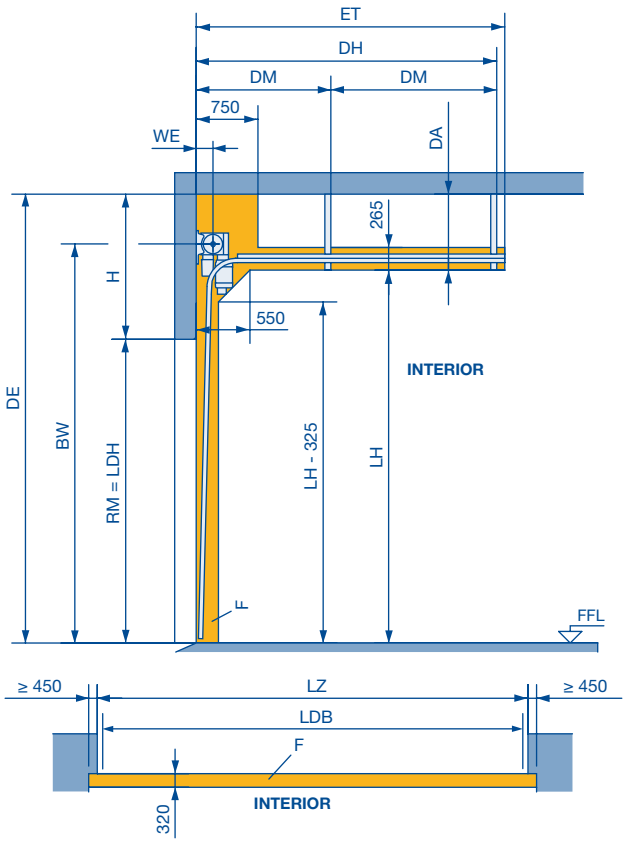
2 3 4 5 6 7 8 9 10	Number of type A compound glazings per door section
2 3 4 5 6 7 8 –	No. of infills / fields per alum. frame

On request
Torsion spring area
Direct drive operator S75 with 750 Nm
Direct drive operator S140 with 1400 Nm

[A] Number of door sections TH = 500 mm
[B] Number of door sections for intermediate heights
RM Grid height
MF Centre of window from FFL
E Fitting area for frame with glazing
B Width **(from 2000 mm)**

Track Application: HB with Direct Drive Operator

High-lift track application



Notes:

- The clearance required for fitting the door must be free of supply lines, heater fans, etc.
- Observe the permissible size range on page 24!

- Door weights for roof loads: DPU = 500 N/m²
- Other versions on request
- Observe the min. sideroom, see page 15

LDH Clear passage height
RM Grid height
LH Track height = ceiling height – 840
Min. LH = RM + 460
Max. LH = 2 x RM – 815 (max. LH < 10000)
BW Position of shaft support
HB 8 = LH + 350
ET Min. distance back
HB 8 = 2 × RM – LH + 685
DH Rear ceiling anchor
HB 8 = 2 × RM – LH + 419
DM Centre ceiling anchor (see page 26)
WE Shaft centre from lintel

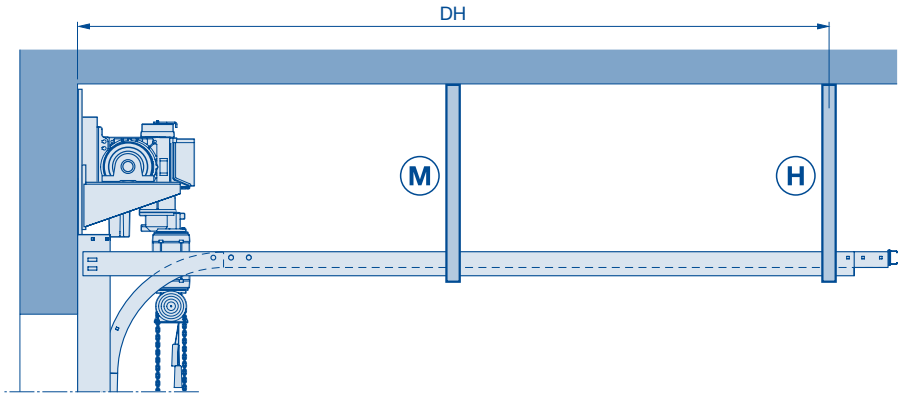
WE	RM	Cable drum
145	≤ 6000	Ø 250
205	> 6000	Ø 355

H Min. headroom = 1300
DA Min. distance to ceiling
HB 8 = 840
DE Ceiling height
LZ Clear frame dimension
LDB Clear passage width with ThermoFrame (see page 15)
F Space for fitting the door

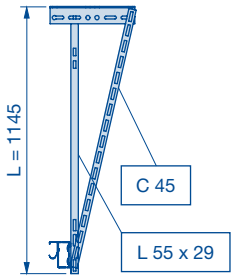
Ceiling Anchors

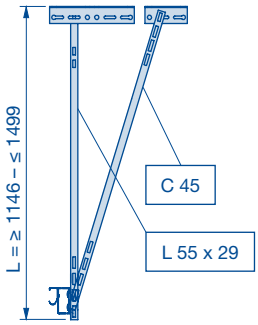
Track suspensions for all track applications except VB and WB

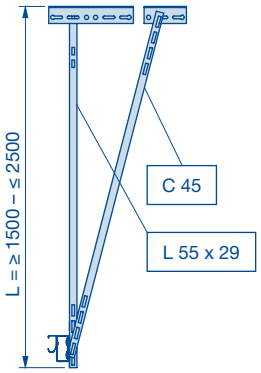
Track suspensions as ceiling anchors in five lengths, standard length 1145 mm.
DH = rear ceiling anchor (see page 25), door weights for roof loads (see page 25).



C-rail (suspensions) only track application size HB8				
LZ	**DH**	**M**	**H**	**DM**
≤ 6000	1234 ≤ 1561	–	1	–
	1562 ≤ 7976	1	1	DH / 2
> 6000	1234 ≤ 1561	–	1	–
	1562 ≤ 3726	1	1	DH / 2
	3727 ≤ 5976	2	1	DH / 3





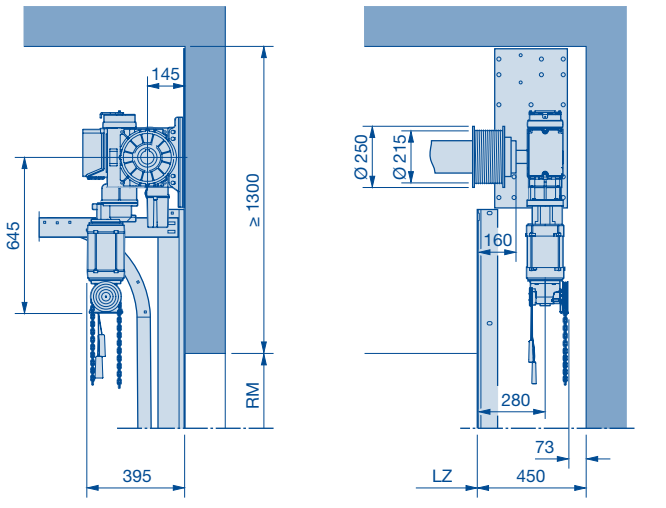


DH Rear ceiling anchor
DM Centre ceiling anchor
M Centre suspension
H Rear suspension
LZ Clear frame dimension

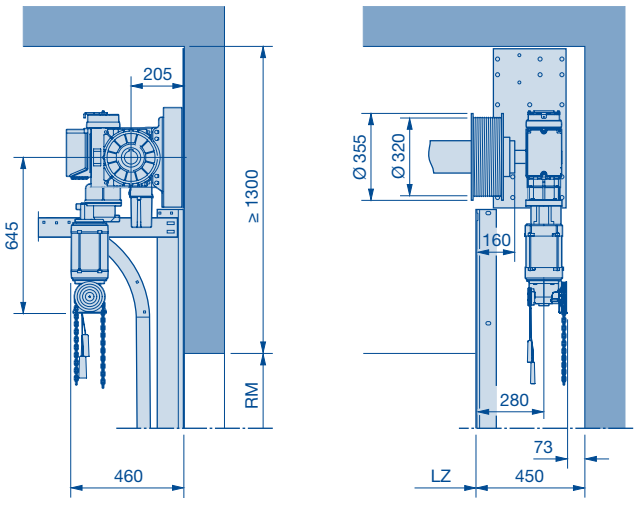
Direct Drive Operator S75 and S140

Direct drive operators S75 and S140 for track application HB

RM ≤ 6000



RM > 6000



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 dimension
RM Grid height

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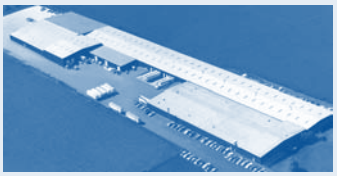
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