

Installation Data

for roller shutters and roller grilles

1. Contents

1.	Contents.....	2
2.	General information	3
3.	Technical terms and list of abbreviations.....	3
4.	Emergency operation	3
5.	Profile cross-sections (roller shutter profiles)	4
6.	Honeycomb cross-sections (roller shutter honeycombs).....	6
7.	Guide rail requirements	8
8.	FS rear punched holes	9
9.	Guide rail profiles	10
10.	Required space direct drive.....	12
11.	Required space chain drive	13
12.	Required space direct drive and pressure shaft	14
13.	Required space chain drive and pressure shaft	15
14.	Required space tubular motor for headroom attachment	16
15.	Required space tubular motor for lateral attachment	18
16.	Required space direct drive with wall flange bracket.....	20
17.	Required space direct drive for lateral attachment	21
18.	Required space direct drive for roof installation.....	22
19.	Required space direct drive for hanging installation	23
20.	Required space with fixed side part	24
21.	Platzbedarf mit drehbarem Seitenteil	25
22.	Required space direct drive for ceiling installation.....	26
23.	Required space direct drive with external operation	27
24.	Required space EASY.....	28
25.	Weld-on plates for consoles	29
26.	3D view curtain installed with box	31
27.	Table of reference values ThermoTeck, steel, glavanized	32
28.	Table of reference values - 4020, aluminium	34
29.	Table of reference values - roller grille, steel, TG-S and TG-E.....	36
30.	Table of reference values - roller grille, aluminium, TG-A and TG-V.....	38
31.	Table of reference values - roller grille, aluminium, TG-X	40
32.	Table of reference values - High-speed roller shutter ThermoTeck, steel .	42
33.	Table of reference values - Easy ThermoTeck.....	43
34.	Wiring plan.....	44
35.	Roller shutter controls	45

2. General information



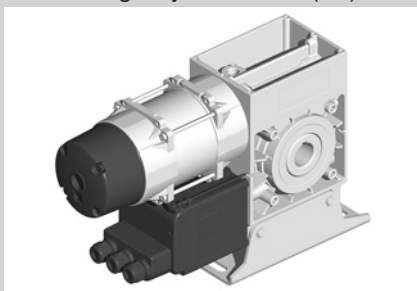
- The installation example shows a right-hand drive version, left-hand version available on request.
- For minimum headroom heights, please refer to the tables on page 32.
- The drive side is determined from the outside for external roller shutters.
- Measurement data for special designs or special wall connections, i.e. when there is insufficient space, on request.
- All dimensions in millimetres (mm), unless otherwise stated.
- Subject to technical changes.

3. Technical terms and list of abbreviations

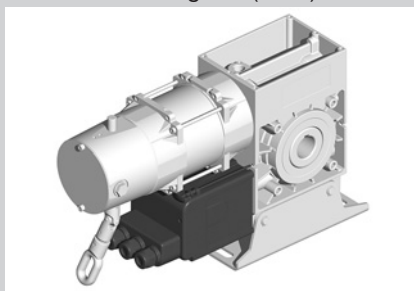
AF:	Sideroom anti-drop device	L:	Length
AK:	Sideroom chain drive with emergency handcrank (standard)	LDB:	Clearance width
AS:	Sideroom direct drive with emergency handcrank (standard)	LDH:	Clearance height
BB:	Order dimensions width	LS:	Sideroom on bearing side
BH:	Order dimensions height	N:	Eye for awning rod
BS:	Lateral part width	NWT:	Emergency operation
ET:	Installation depth (see page 32)	OFF:	Upper edge finished floor
FS:	Sideroom guide rail	OL:	Top light
GRAM:	Total RAM (overall frame size)	RAM:	Overall frame size
H:	Height	RRM:	Structural opening
KE:	Geared chain (emergency chain drive)	S:	Headroom (see page 32)
KKU:	Universal joint crank (folding)	TAR:	Teckentrup direct mount drive roller shutter
KU:	Crank (emergency handcrank)	TKR:	Teckentrup chain drive roller shutter
		TRR:	Teckentrup tubular motor roller shutter
		WWV:	Winding shaft

4. Emergency operation

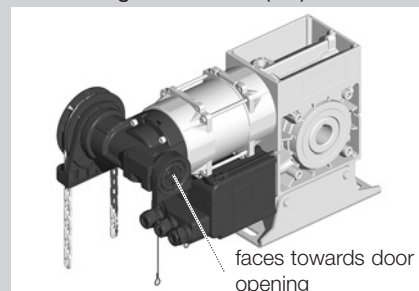
Direct drive with emergency handcrank (KU)



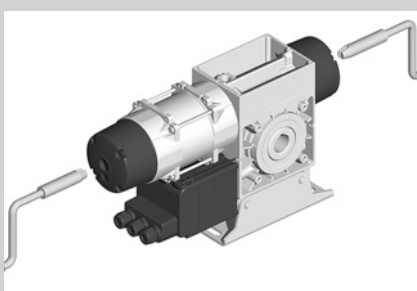
Direct drive with awning rod (NWT)



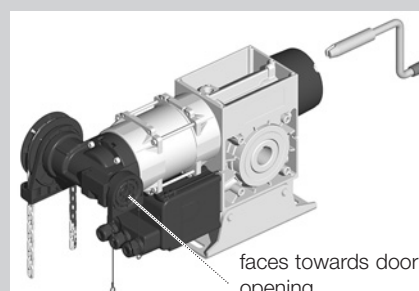
Direct drive with geared chain (KE)



Direct drive with crank / crank (KUKU)



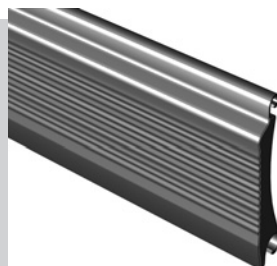
Direct drive with chain / crank (KEKU)



Images may differ from actual product.

5. Profile cross-sections (roller shutter profiles)

Roller shutter profiles - double-skinned



Profile	Profile type	4020 Stucco or "smooth" on both sides	ThermoTeck Micro-profiled / smooth interior
	Insulation	Styrofoam filling	PU foam core
	No. of laths per m door height	10	10.7
	Profile height in mm	116.5	106
	Profile partition in mm	100	93.7
Weights per square metre	at 0.4 mm	----	St 11.3 kg
	at 0.8 mm	Al 7.6 kg	----
	at 1.0 mm	Al 9.5 kg	----
	at 1.2 mm	----	----
Installation type	Internal / External roller	Yes / Yes	Yes / Yes ^①
	Min. winding shaft diameter	ø 159	ø 133
	Door seal	4013	ET-1
	Glazing / Ventilation	Yes / No	Yes / Yes (11% per square meter)
	Glazing dimensions	150x50 mm / 5 pcs/m	150x55 / 5 pcs/m
	Insulating values of the gate leaf	U-value ~3.5 W/m ² K (Al)	U-value ~3.5 W/m ² K (St) RW value: ~20 dB
Material thicknesses	Galvanized steel	----	0.4
	Aluminium	0.8 / 1,0	----
Max. door widths	WLK 1	18,000	18,000
	WLK 2 *	15,000	15,000
	WLK 3	8,500	8,500
	WLK 4	6,750	6,750

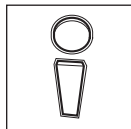
5. Profile cross-sections (roller shutter profiles)



Note:

* In accordance with EN13241-1, shutters installed in the facade must correspond to at least wind load class 2.

Exception: Internal shutters or shutters installed in fully wind protected door openings.

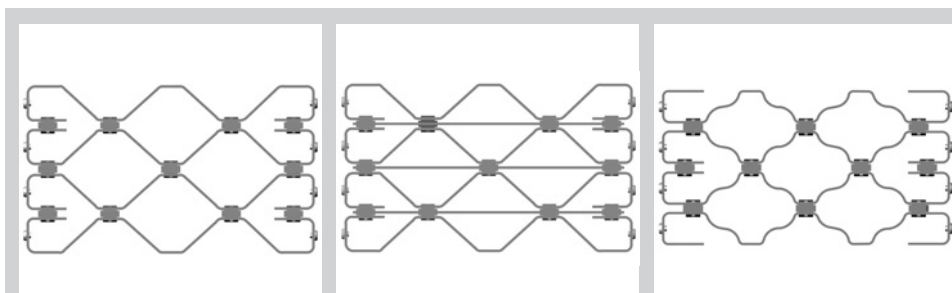


Reference:

For wind load class information, see page 8.

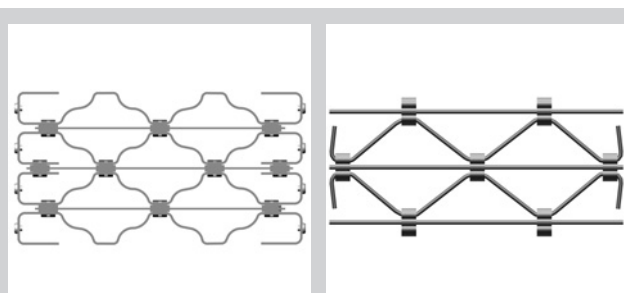
- ① With external (reverse coil) roller shutters, the actual inside is visible from the outside. The micro-profiling faces the inside.

6. Honeycomb cross-sections (roller shutter honeycombs)



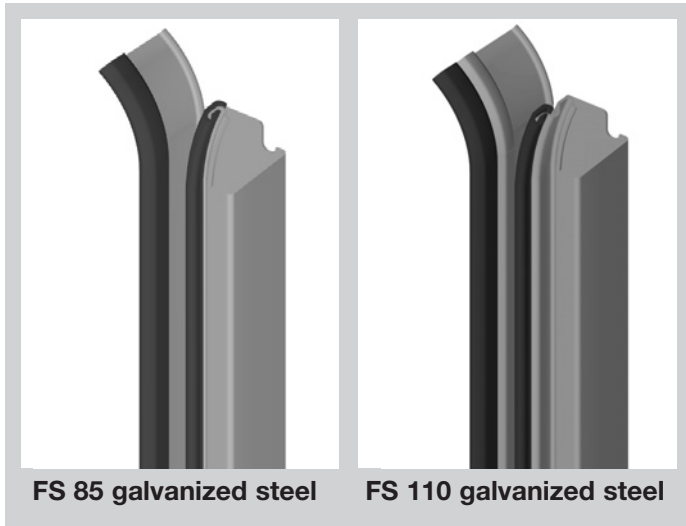
Grille	Grille type	Straight honeycomb 185		Straight honeycomb 185 with cross lath		Wave honeycomb 160	
	Description	TG-		TG-		TG-	
	Version	Steel / Stainless steel (E) / Aluminium		Steel / Stainless steel (E) / Aluminium		Steel / Stainless steel (E) / Aluminium	
	No. of honeycombs per m door height	~7.2		~7.2		~8.0	
	Honeycomb height in mm	~125		~125		~110	
	Honeycomb partition in mm	~138		~138		~124	
Weights per square metre	at 16x4	Al 5.5 kg / St 14.0 kg		Al 8.0 kg / St 22.0 kg		Al 5.5 kg / St 14.0 kg	
	at 20x4	Al 6.5 kg / St 16.0 kg		Al 9.0 kg / St 24.0 kg		Al 6.5 kg / St 16.0 kg	
	Oval lath 11x7	----		----		----	
Installation type	Internal / External roller	Yes / Yes		Yes / Yes		Yes / Yes	
	Min. winding shaft diameter	ø 133		ø 133		ø 133	
	Floor seal	Steel bracket		Steel bracket		Steel bracket	
	Ventilation cross-section	approx. 85%		approx. 82%		approx. 85%	
Max. door widths	Steel / Stainless steel	16x4	20x4	16x4	20x4	16x4	20x4
		4,500	11,000	4,500	11,000	4,500	11,000
	Aluminium	16x4	20x4	16x4	20x4	16x4	20x4
		4,000	14,000	4,000	14,000	4,000	14,000

6. Honeycomb cross-sections (roller shutter honeycombs)



Grille	Grille type	Wave honeycomb 160 with cross lath		Straight honeycomb 225 with cross lath	
	Description	TG-		TG-X	
	Version	Steel / Stainless steel (E) / Aluminium		Aluminium	
	No. of honeycombs per m door height	~8.0		~5.2	
	Honeycomb height in mm	~110		~170	
	Honeycomb partition in mm	~124		~190	
Weights per square metre	at 16x4	Al 8.0 kg / St 22.0 kg		----	
	at 20x4	Al 9.0 kg / St 24.0 kg		----	
	Oval lath 11x7	----		Al 5.8 kg	
Installation type	Internal / External roller type	Yes / Yes		Yes / Yes	
	Min. winding shaft diameter	ø 133		ø 133	
	Floor seal	Steel bracket		Bottom seal	
	Ventilation cross-section	approx. 82%		approx. 76%	
Max. door widths	Steel / Stainless steel	16x4 4,500	20x4 11,000	----	
	Aluminium	16x4 4,000	20x4 14,000	11x7 11,000	

7. Guide rail requirements



Note:

FS 110 suitable for wind hooks.

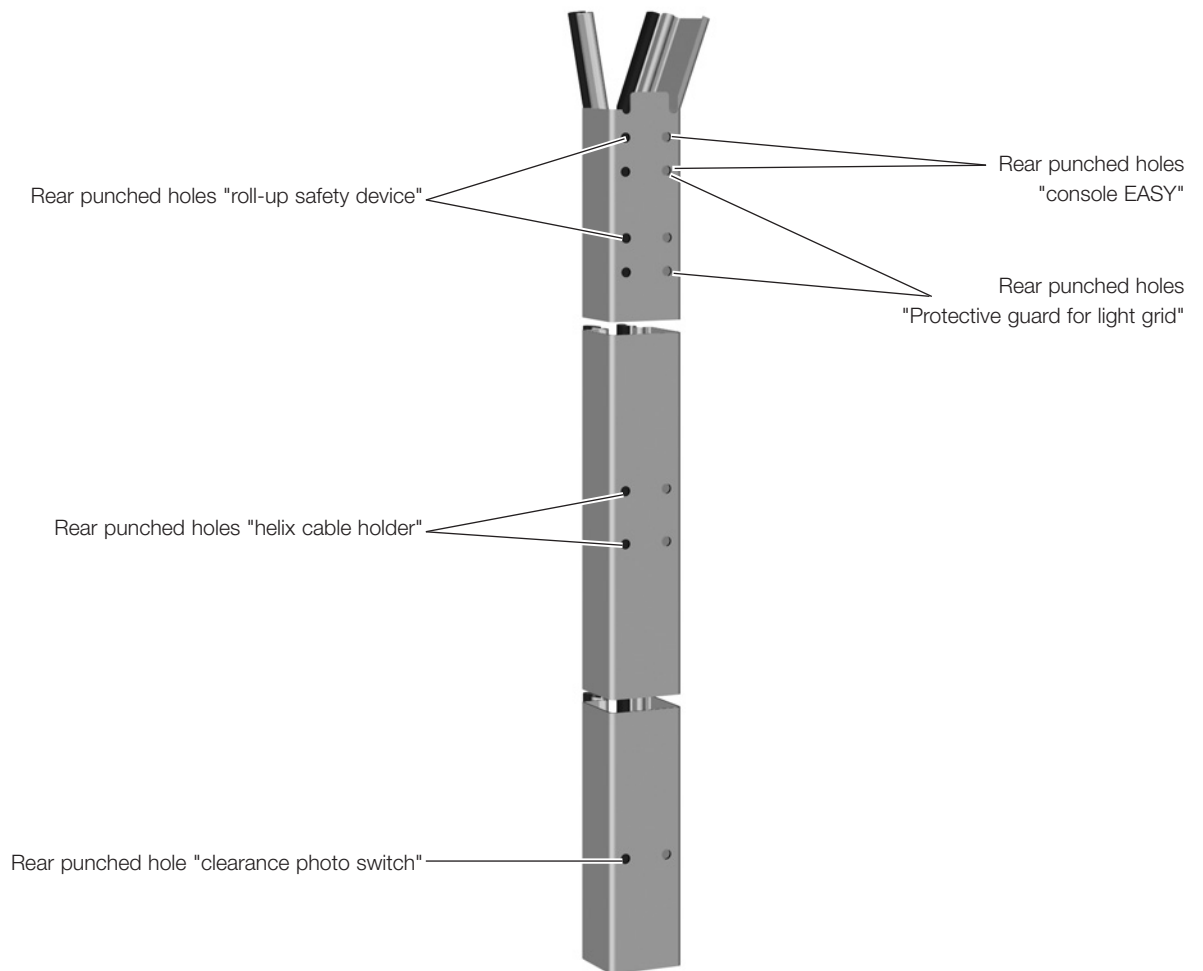
Profile	Version	Door width in mm		Wind hook application	Reinforcement-profile	max. Torbreite
		FS 85	FS 110			
4020	Aluminium	up to 6,000	from 6,001	from 6,501	from 8,001	18,000
ThermoTeck	Steel	up to 6,000	from 6,001	from 6,501	from 8,001	18,000
Rollgitter	Aluminium	up to 5,500	from 5,501	-	-	see pages 6 / 7
	Steel	up to 6,000	from 6,001	-	-	see pages 6 / 7

Wind load conversion

Wind load in	Wind load class	Pa (Pascal)	daN/m ²	km/h	m/s
	1	300	30	79	22
	2	450	45	96	27
	3	700	70	120	33
	4	1.000	100	144	40

Our roller shutters correspond to wind load class 2 and are tested in accordance with DIN EN 13241-1.
The information on the installation data apply for wind load class 2.
Other wind load classes on request.

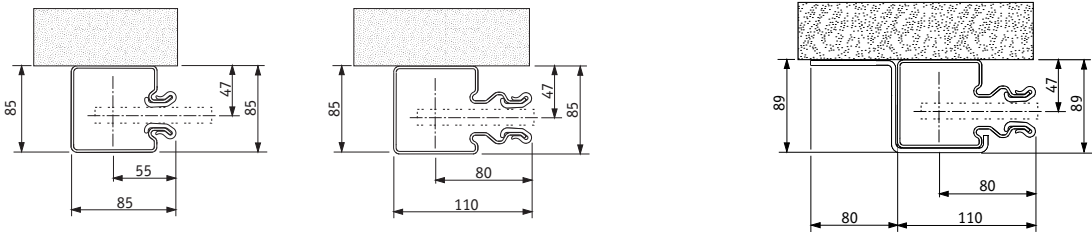
8. FS rear punched holes



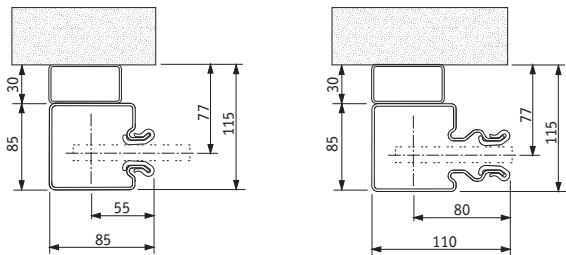
9. Guide rail profiles

FS 85	FS 110	FS 110 with reinforcing brackets
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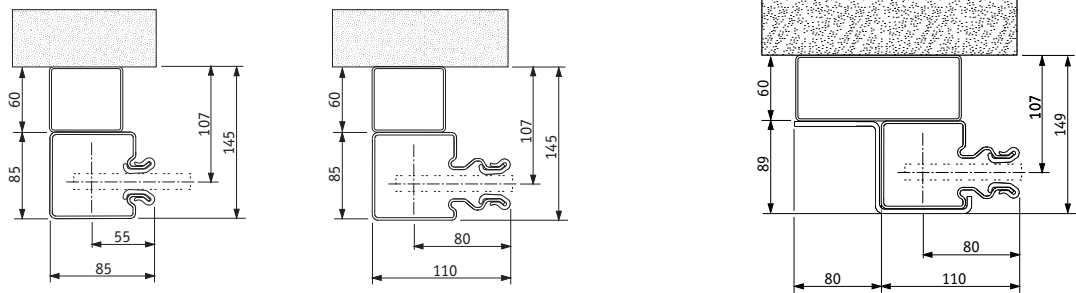
Without lining



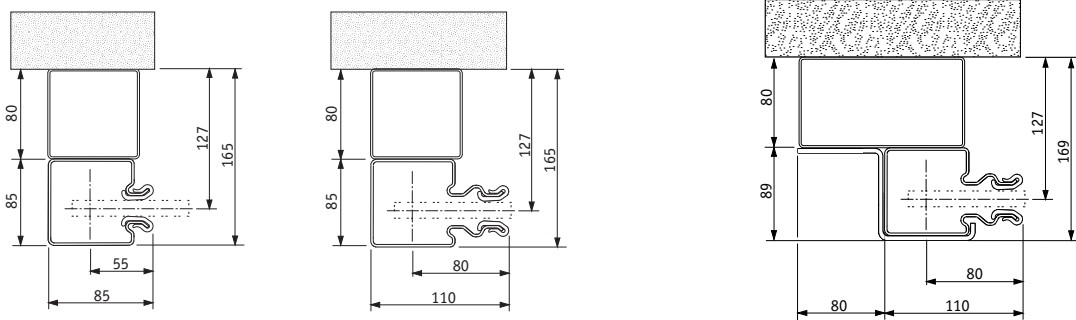
Lining 30 mm



Lining 60 mm



Lining 80 mm



9. Guide rail profiles



Note:

- The guide rail is factory fitted with a profiled lining.
- FS 85 only for shutters without wind hooks (for door widths, see page 8).
- FS 110 for shutters with/without wind hooks (for door widths, see page 8).
- FS 110 with reinforcing brackets from door width of 11,500 mm.

10. Required space direct drive

Required sideroom

Guide rail type:		FS 85	FS 110
FS		85	110
LS		175	200
AS with KU	TAR 1.xx	300	325
	TAR 2.xx	300	325
	TAR 3.xx	300	325
	TAR 5.xx	300	325
	TAR 6.xx	315	340
	TAR 7.xx	330	355
AS with KE	TAR 1.xx	240	265
	with KKU TAR 2.xx	240	265
	with NWT TAR 3.xx	240	265
	TAR 5.xx	250	275
	TAR 6.xx	290	315
	TAR 7.xx	300	325

All measurements in mm.

Installation possible on every substructure (except aerated concrete).

KU = crank (emergency handcrank)



KE = chain (emergency chain drive)



KKU = universal joint crank (folding)

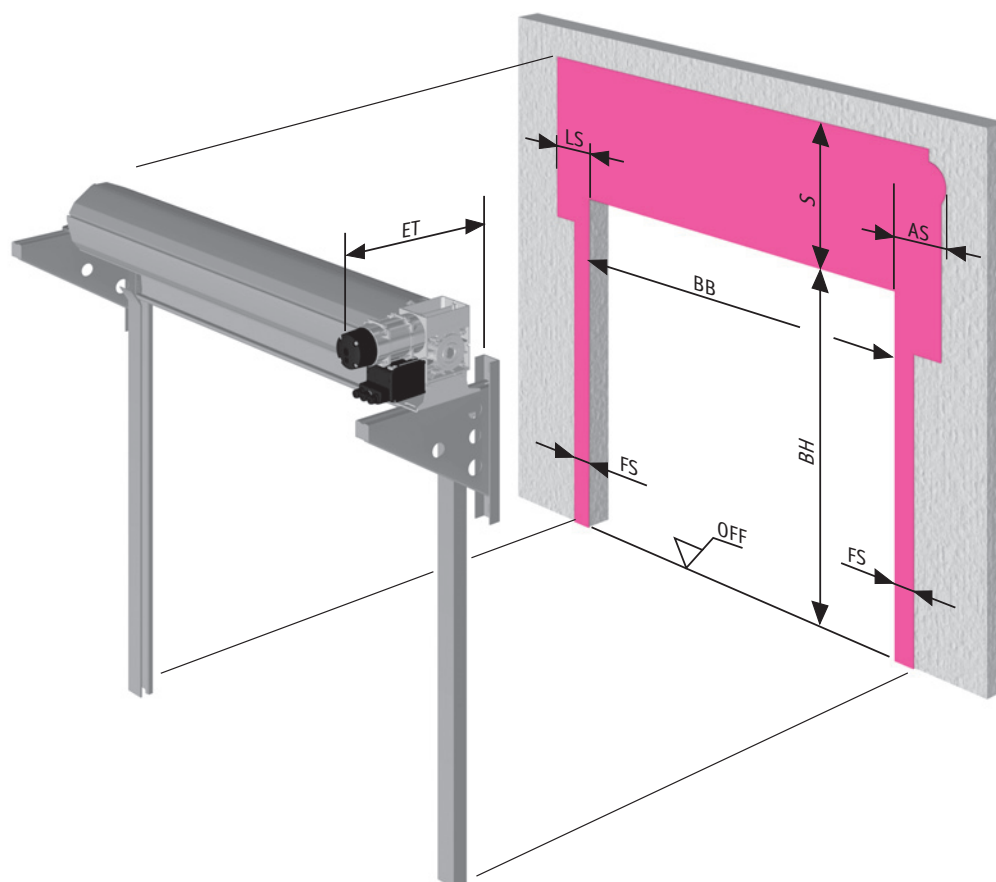


NWT = Emergency operation (with awning rod) only up to TAR 2.xx



- FS (dimensional requirements) see page 8.

- Drive (dimensional requirements) see page 32.



11. Required space chain drive

Required sideroom

Guide rail type:

FS 85

FS 110

FS		85	110
LS		240	265
AS with KU	TKR 20.xx	310	335
	TKR 30.xx	330	355
	TKR 30.xx	330	355
	TKR 50.xx	435	460
	TKR 70.xx	435	460
AS with KE	TKR 20.xx	310	335
	TKR 30.xx	330	355
	TKR 30.xx	330	355
	TKR 50.xx	-	-
	TKR 70.xx	-	-

KU = crank (emergency handcrank)



KE = chain (emergency chain drive)



- FS (dimensional requirements) see page 8.

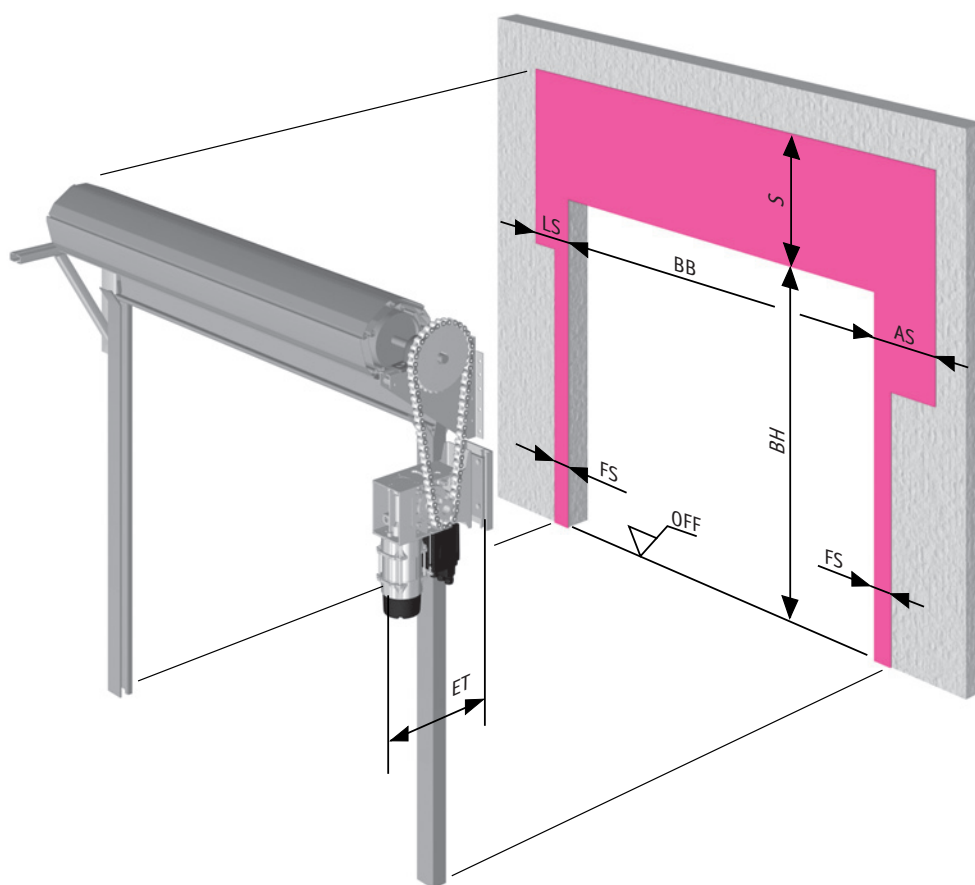
- Drive (dimensional requirements) see page 32.



The drives must be installed at a height of at least 2,500 mm.

All measurements in mm.

Installation possible on every substructure (except aerated concrete).



12. Required space direct drive and pressure shaft

Required sideroom

Guide rail type:		FS 85	FS 110
FS		85	110
LS		275	300
AS with KU	TAR 1.xx	400	425
	TAR 2.xx	400	425
	TAR 3.xx	400	425
	TAR 5.xx	400	425
	TAR 6.xx	415	440
	TAR 7.xx	430	455
AS with KE	TAR 1.xx	340	365
	with KKU TAR 2.xx	340	365
	with NWT TAR 3.xx	340	365
	TAR 5.xx	350	375
	TAR 6.xx	390	415
	TAR 7.xx	400	425

All measurements in mm.

Installation possible on every substructure (except aerated concrete).

KU = crank (emergency handcrank)



KE = chain (emergency chain drive)



KKU = universal joint crank (folding)



NWT = Emergency operation (with awning rod) only up to TAR 2.xx

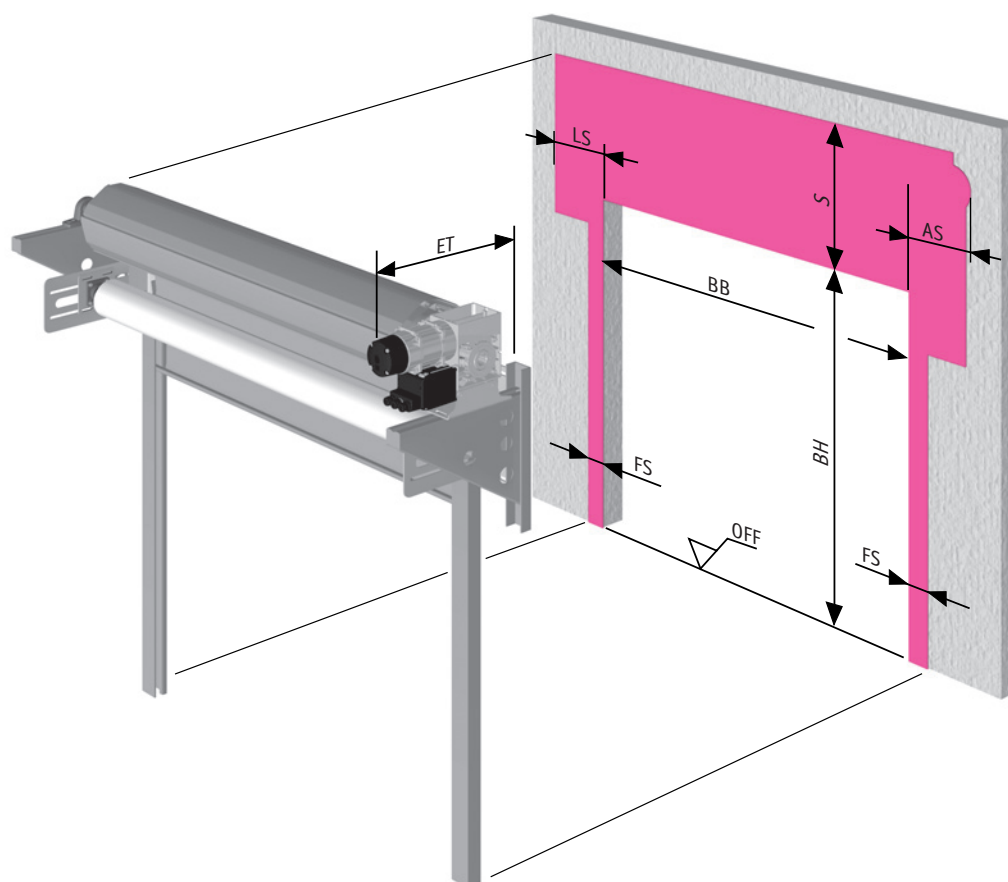


- FS (dimensional requirements) see page 8.
- Drive (dimensional requirements) see page 32.



The headroom height S is increased by 210 mm for doors with pressure shaft.

The increase in the lintel requirements is included in the tables of standard values, from borderline-pressure shaft.



13. Required space chain drive and pressure shaft

Required sideroom

Guide rail type:

FS 85

FS 110

FS		85	110
LS		340	365
AS with KU	TKR 20.xx	410	435
	TKR 30.xx	430	455
	TKR 30.xx	430	455
	TKR 50.xx	535	560
	TKR 70.xx	535	560
AS with KE	TKR 20.xx	410	435
	TKR 30.xx	430	455
	TKR 30.xx	430	455
	TKR 50.xx	-	-
	TKR 70.xx	-	-

All measurements in mm.

Installation possible on every substructure (except aerated concrete).

KU = crank (emergency handcrank)



KE = chain (emergency chain drive)

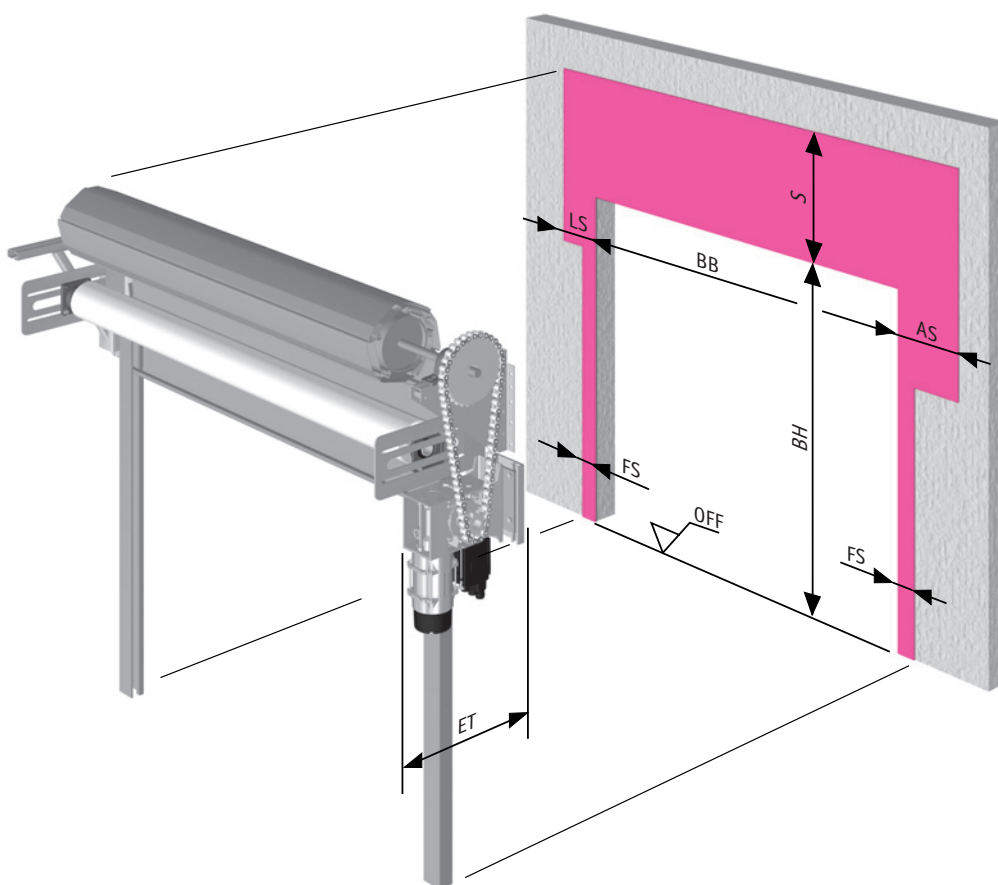


- FS (dimensional requirements) see page 8.
- Drive (dimensional requirements) see page 32.



The headroom height S is increased by 210 mm for doors with pressure shaft.

The increase in the lintel requirements is included in the tables of standard values, from borderline-pressure shaft.



14. Required space tubular motor for headroom attachment

Required sideroom

Guide rail type:		FS 60 (ALU)	FS 85	FS 110
FS		60	85	110
LS		145	170	195
AS	TRR 1.xx	155	180	205
	TRR 2.xx	155	180	205
	TRR 3.xx	155	180	205



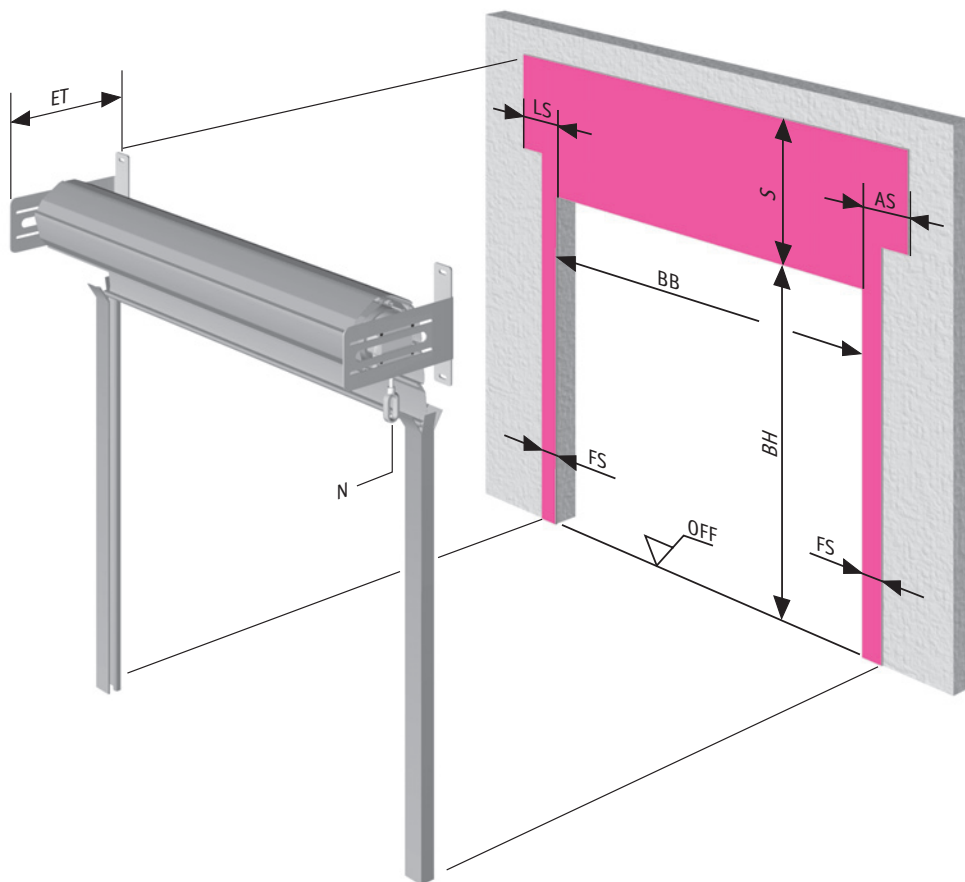
FS (dimensional requirements) see page 8.



- Tubular motors only available in 230 V~ (AC).
- Only available with 133 mm winding shaft.
- Not suitable for large number of door cycles.
- Standard operation is via a key-operated switch; pulse control is possible.
- Max. power-on time = 5 minutes at an ambient temperature of 20° C (20% ED (power-on time)).
- Max. number of door cycles per hour = 3x.

All measurements in mm.

Installation possible on every substructure (except aerated concrete).



14. Required space tubular motor for headroom attachment

S = Headroom height

UFU = Underfill height

ET = Insertion depth

T = Approx. shutter system opening time in seconds

Door height in mm		ThermoTeck profile	Roller grille TG-A/V/S/E	Roller grille TG-X
4,500	S	574	495	526
	ET	494	430	446
	UFU	30	without	without
	T	24	29	26
4,250	S	574	495	494
	ET	494	430	430
	UFU	30	without	without
	T	23	27	27
4,000	S	544	495	494
	ET	464	430	430
	UFU	without	without	without
	T	23	25	25
3,750	S	540	495	494
	ET	460	430	430
	UFU	without	without	without
	T	21	24	24
3,500	S	534	480	494
	ET	454	430	430
	UFU	without	without	without
	T	20	23	22
3,250	S	534	480	485
	ET	454	430	430
	UFU	without	without	without
	T	19	22	21
3,000	S	508	480	485
	ET	430	430	430
	UFU	without	without	without
	T	18	20	20
2,750	S	498	460	473
	ET	430	430	430
	UFU	without	without	without
	T	17	20	19
2,500	S	497	460	473
	ET	430	430	430
	UFU	without	without	without
	T	15	18	17
2,250	S	497	460	473
	ET	430	430	430
	UFU	without	without	without
	T	14	16	15
2,000	S	479	460	455
	ET	430	430	430
	UFU	without	without	without
	T	13	15	15

15. Required space tubular motor for lateral attachment

Required sideroom

Guide rail type:		FS 60 (ALU)	FS 85	FS 110
FS		60	85	110
LS		125	150	175
AS	TRR 1.xx	135	160	185
	TRR 2.xx	135	160	185
	TRR 3.xx	135	160	185

All measurements in mm.

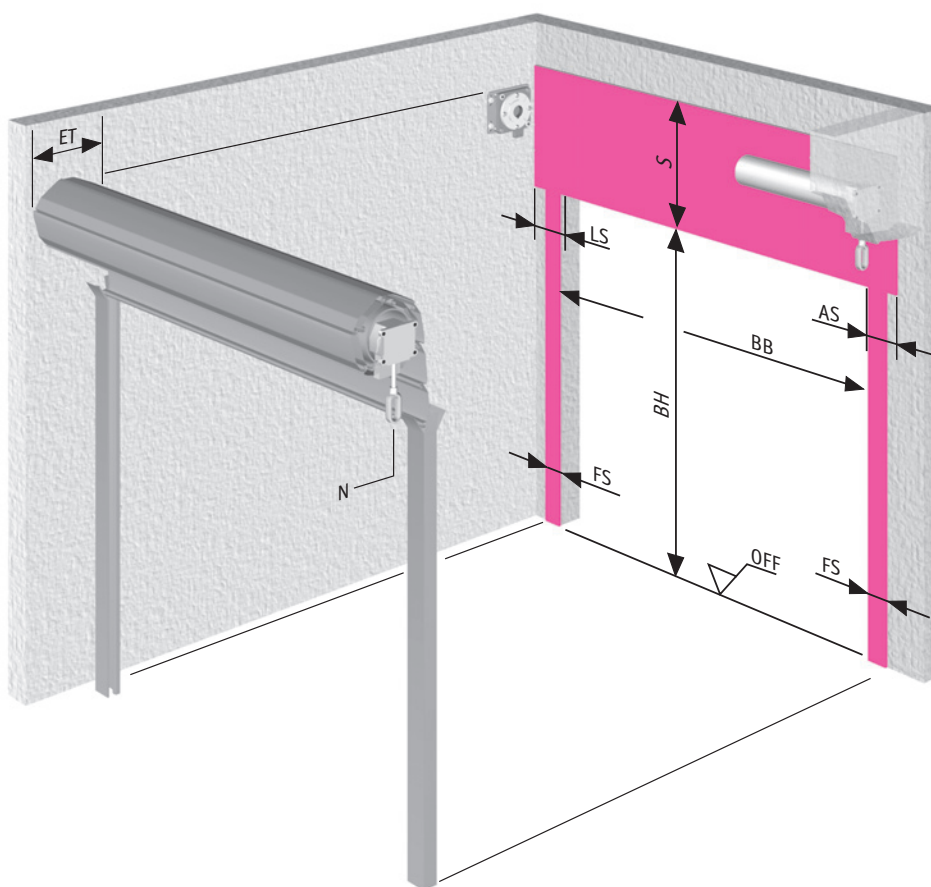
Installation possible on every substructure (except aerated concrete).



FS (dimensional requirements) see page 8.



- Tubular motors only available in 230 V~ (AC).
- Only available with 133 mm winding shaft.
- Not suitable for large number of door cycles.
- Standard operation is via a key-operated switch; pulse control is possible.
- Max. power-on time = 5 minutes at an ambient temperature of 20° C (20% ED (power-on time)).
- Max. number of door cycles per hour = 3x.



15. Required space tubular motor for lateral attachment

S = Headroom height

ET = Insertion depth

UFU = Underfill height

T = Approx. shutter system opening time in seconds

Door height in mm		ThermoTeck profile	Roller grille TG-A/V/S/E	Roller grille TG-X
4,500	S	574	490	526
	ET	494	410	446
	UFU	30	without	without
	T	24	29	26
4,250	S	574	490	488
	ET	494	410	408
	UFU	30	without	without
	T	23	27	27
4,000	S	544	490	488
	ET	464	410	408
	UFU	without	without	without
	T	23	25	25
3,750	S	540	490	488
	ET	460	410	408
	UFU	without	without	without
	T	21	24	24
3,500	S	534	460	488
	ET	454	380	408
	UFU	without	without	without
	T	20	23	22
3,250	S	534	460	470
	ET	454	380	390
	UFU	without	without	without
	T	19	22	21
3,000	S	508	460	470
	ET	428	380	390
	UFU	without	without	without
	T	18	20	20
2,750	S	496	420	446
	ET	416	340	366
	UFU	without	without	without
	T	17	20	19
2,500	S	494	420	446
	ET	414	340	366
	UFU	without	without	without
	T	15	18	17
2,250	S	494	420	446
	ET	414	340	366
	UFU	without	without	without
	T	14	16	15
2,000	S	458	420	410
	ET	378	340	330
	UFU	without	without	without
	T	13	15	15

16. Required space direct drive with wall flange bracket

Required sideroom

Guide rail type:		FS 85	FS 110
FS		85	110
LS / LS1		120	145
AS with KU	TAR 1.xx	300	325
	TAR 2.xx	300	325
	TAR 3.xx	300	325
	TAR 5.xx	-	-
	TAR 6.xx	-	-
	TAR 7.xx	-	-
AS with KE	TAR 1.xx	240	265
	with KKW TAR 2.xx	240	265
	with NWT TAR 3.xx	240	265
	TAR 5.xx	-	-
	TAR 6.xx	-	-
	TAR 7.xx	-	-

KU = crank (emergency handcrank)



KE = chain (emergency chain drive)



KKU = universal joint crank (folding)



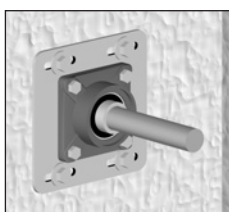
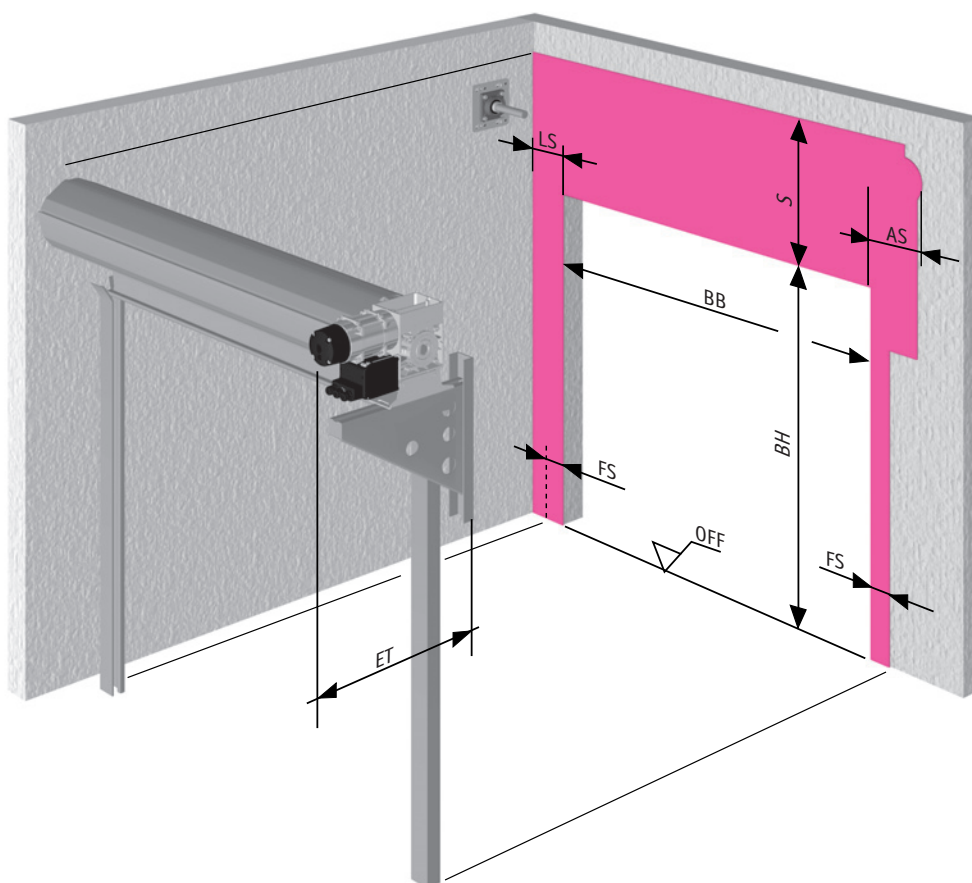
NWT = Emergency operation (with awning rod) only
up to TAR 2.xx



- FS (dimensional requirements) see page 8.
- Drive (dimensional requirements) see page 32.

All measurements in mm.

**Installation possible on every substructure
(except aerated concrete).**



Wall flange bearing simple version (LS)
up to TAR 3.50



Wall flange bearing with console, installation
on one side (1 shutter LS1) up to TAR 3.42

17. Required space direct drive for lateral attachment

Required sideroom

Guide rail type: FS 85 FS 110

FS		85	110
LS		175	200
AS with KU	TAR 1.xx	315	340
	TAR 2.xx	315	340
	TAR 3.xx	315	340
	TAR 5.xx	-	-
	TAR 6.xx	-	-
	TAR 7.xx	-	-
AS with KE	TAR 1.xx	315	340
	with KKU TAR 1.xx	315	340
	with NWT TAR 1.xx	315	340
	TAR 1.xx	-	-
	TAR 6.xx	-	-
	TAR 7.xx	-	-

KU = crank (emergency handcrank)



KE = chain (emergency chain drive)



KKU = universal joint crank (folding)



NWT = Emergency operation (with awning rod) only up to TAR 2.xx

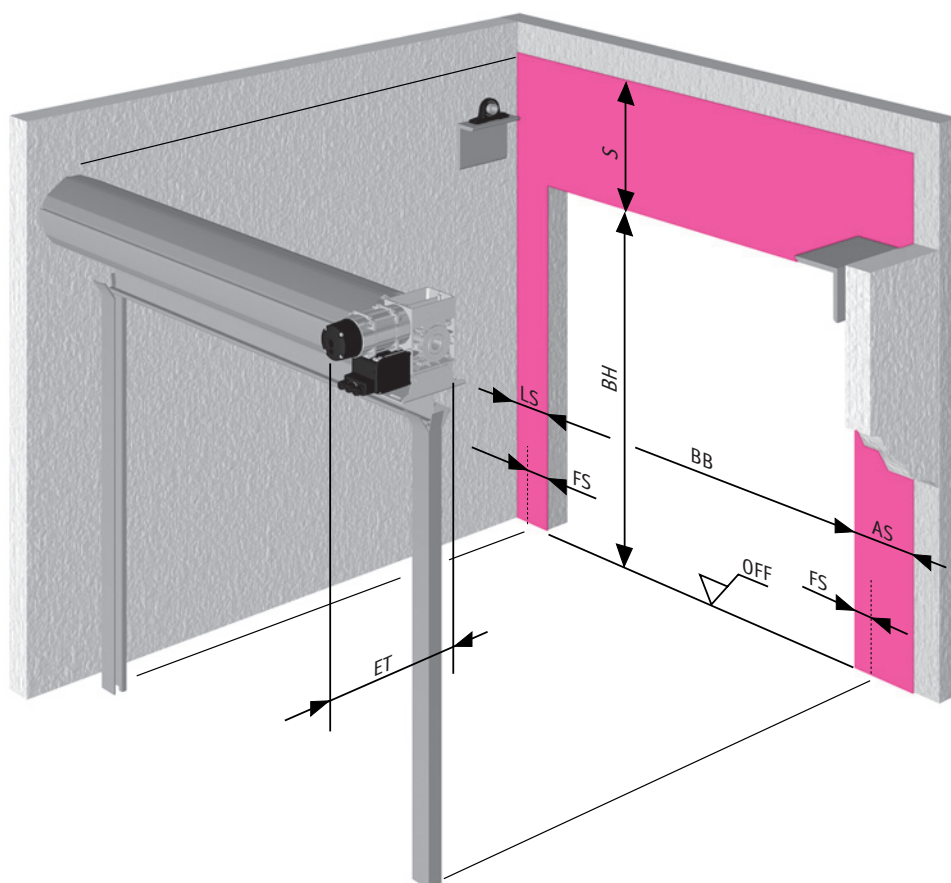


- FS (dimensional requirements) see page 8.

- Drive (dimensional requirements) see page 32.

All measurements in mm.

Installation possible on every substructure (except aerated concrete).



18. Required space direct drive for roof installation

Required sideroom

Guide rail type:		FS 85	FS 110
FS		85	110
LS		250	275
AS with KU	TAR 1.xx	300	325
	TAR 2.xx	300	325
	TAR 3.xx	300	325
	TAR 5.xx	300	325
	TAR 6.xx	315	340
	TAR 7.xx	330	355
AS with KE	TAR 1.xx	290	315
	with K KU TAR 2.xx	290	315
	with NWT TAR 3.xx	290	315
	TAR 5.xx	290	315
	TAR 6.xx	305	330
	TAR 7.xx	315	340

KU = crank (emergency handcrank)



KE = chain (emergency chain drive)



KKU = universal joint crank (folding)



NWT = Emergency operation (with awning rod) only
up to TAR 2.xx



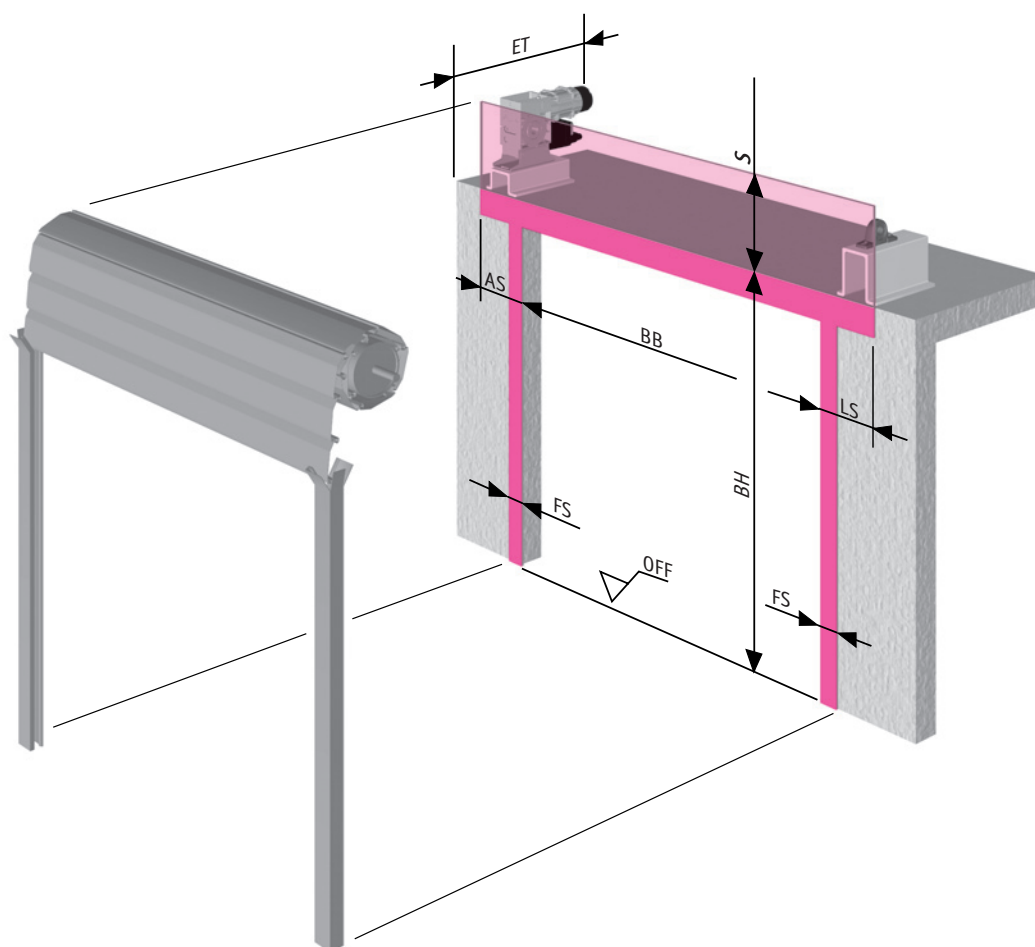
- FS (dimensional requirements) see page 8.
- Drive (dimensional requirements) see page 32.



Exterior view with drive side on the right!

All measurements in mm.

Installation possible on every substructure (except aerated concrete).



19. Required space direct drive for hanging installation

Required sideroom

Guide rail type:

FS 85

FS 110

FS		85	110
LS		175	200
AS with KU	TAR 1.xx	300	325
	TAR 2.xx	300	325
	TAR 3.xx	300	325
	TAR 5.xx	-	-
	TAR 6.xx	-	-
	TAR 7.xx	-	-
AS with KE with KKU	TAR 1.xx	240	265
	TAR 2.xx	240	265
	TAR 3.xx	240	265
	TAR 5.xx	-	-
	TAR 6.xx	-	-
	TAR 7.xx	-	-

KU = crank (emergency handcrank)



KE = chain (emergency chain drive)



KKU = universal joint crank (folding)



- FS (dimensional requirements) see page 8.

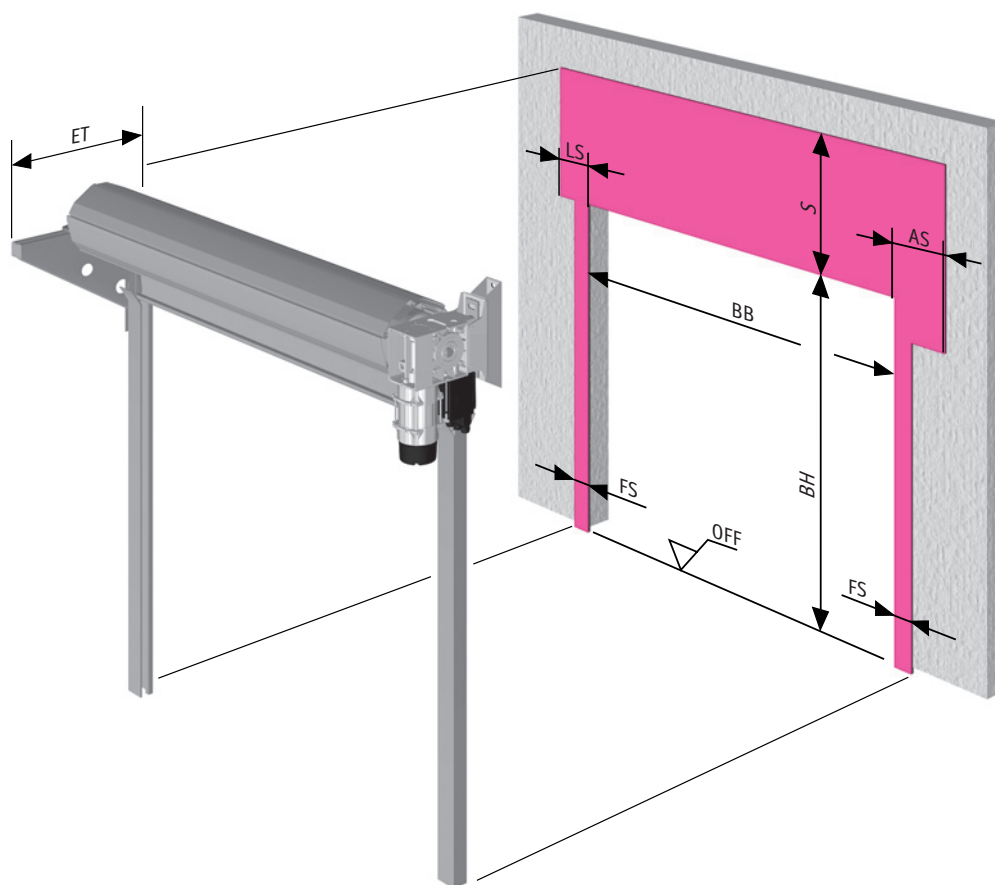
- Drive (dimensional requirements) see page 32.



The headroom height S can be reduced for hanging installation. Exact values on request.

All measurements in mm.

Installation possible on every substructure (except aerated concrete).



20. Required space with fixed side part

Required sideroom

Guide rail type:		FS 85	FS 110
FS		85	110
LS		175	200
AS with KU	TAR 1.xx	300	325
	TAR 2.xx	300	325
	TAR 3.xx	300	325
	TAR 5.xx	300	325
	TAR 6.xx	315	340
	TAR 7.xx	330	355
AS with KE	TAR 1.xx	240	265
	with KKKU TAR 2.xx	240	265
	with NWT TAR 3.xx	240	265
	TAR 5.xx	250	275
	TAR 6.xx	290	315
	TAR 7.xx	300	325

KU = crank (emergency handcrank)



KE = chain (emergency chain drive)



KKU = universal joint crank (folding)



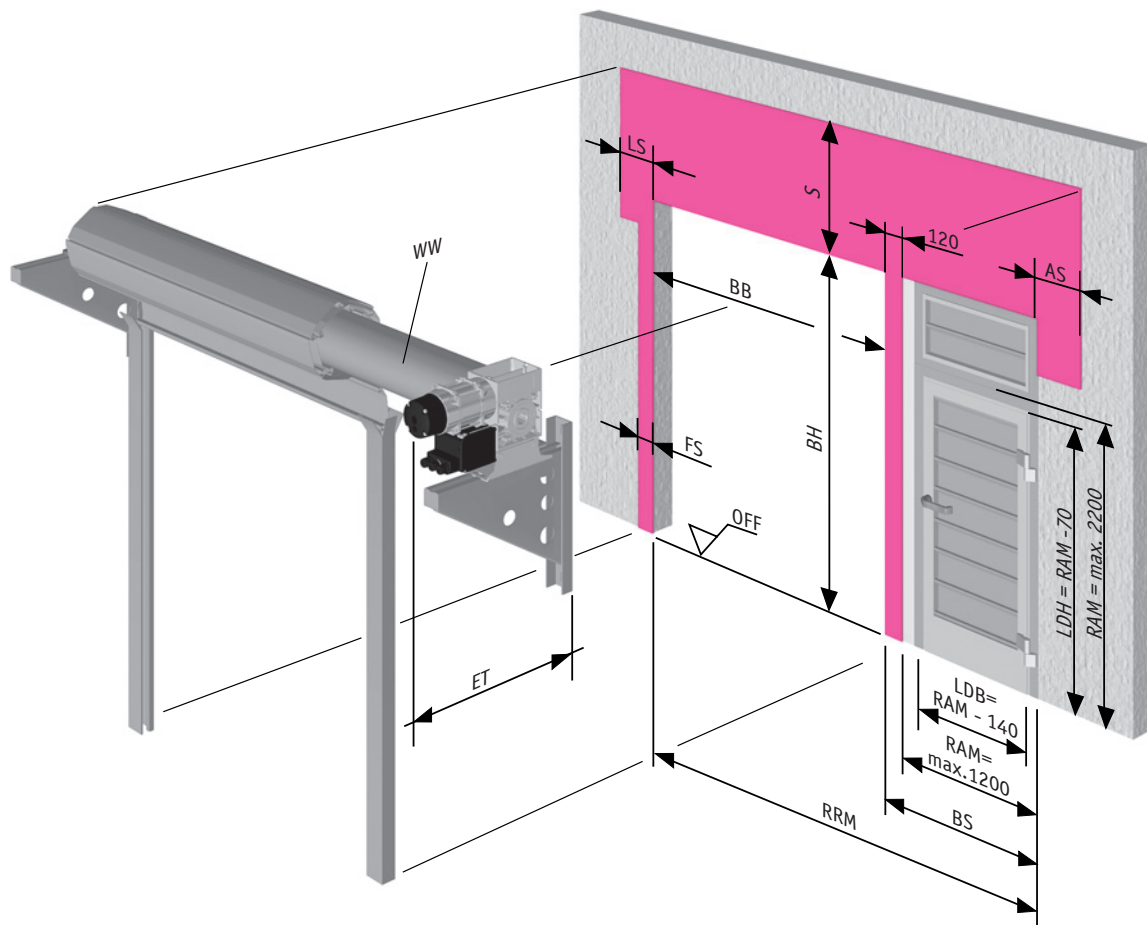
NWT = Emergency operation (with awning rod) only
up to TAR 2.xx



- FS (dimensional requirements) see page 8.
- Drive (dimensional requirements) see page 32.

All measurements in mm.

**Installation possible on every substructure
(except aerated concrete).**



Width side frame (BS):
Shaft extension (WW):

RAM + 120
Width side frame (BS) - FS

21. Platzbedarf mit drehbarem Seitenteil

Required sideroom

Guide rail type: FS 85 FS 110

FS		85	110
LS		175	200
AS with KU	TAR 1.xx	300	325
	TAR 2.xx	300	325
	TAR 3.xx	300	325
	TAR 5.xx	300	325
	TAR 6.xx	315	340
	TAR 7.xx	330	355
AS with KE	TAR 1.xx	240	265
	with KKU TAR 2.xx	240	265
	with NWT TAR 3.xx	240	265
	TAR 5.xx	250	275
	TAR 6.xx	290	315
	TAR 7.xx	300	325

KU = crank (emergency handcrank)



KE = chain (emergency chain drive)



KKU = universal joint crank (folding)



NWT = Emergency operation (with awning rod) only up to TAR 2.xx



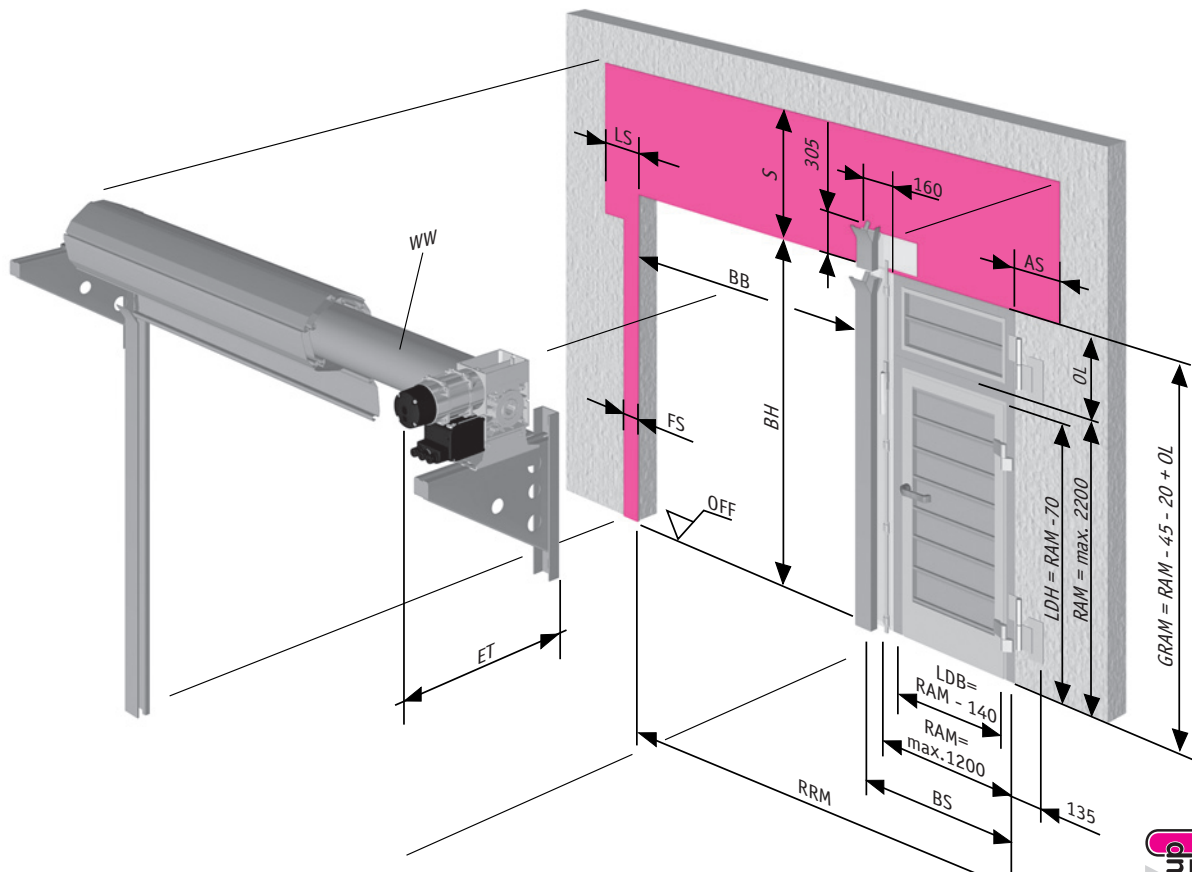
- FS (dimensional requirements) see page 8.
- Drive (dimensional requirements) see page 32.



- The headroom height is increased by 190 mm when using a rotating side part.
- The rotatable side part has a threshold that is approx. 45 mm high and cannot be used as an escape door.

All measurements in mm.

Installation possible on every substructure (except aerated concrete).



Shaft extension (WW):

Width side frame (BS):

Order measurement - door width:

Width side frame (BS) - FS

RAM + 160 + 20

RRM - RAM - 180

22. Required space direct drive for ceiling installation

Required sideroom

Guide rail type:		FS 85	FS 110
FS		85	110
LS		175	200
AS with KU	TAR 1.xx	330	355
	TAR 2.xx	330	355
	TAR 3.xx	330	355
	TAR 5.xx	-	-
	TAR 6.xx	-	-
	TAR 7.xx	-	-
AS with KE	TAR 1.xx	330	355
	with KKU TAR 2.xx	330	355
	with NWT TAR 3.xx	330	355
	TAR 5.xx	-	-
	TAR 6.xx	-	-
	TAR 7.xx	-	-

KU = crank (emergency handcrank)



KE = chain (emergency chain drive)



KKU = universal joint crank (folding)



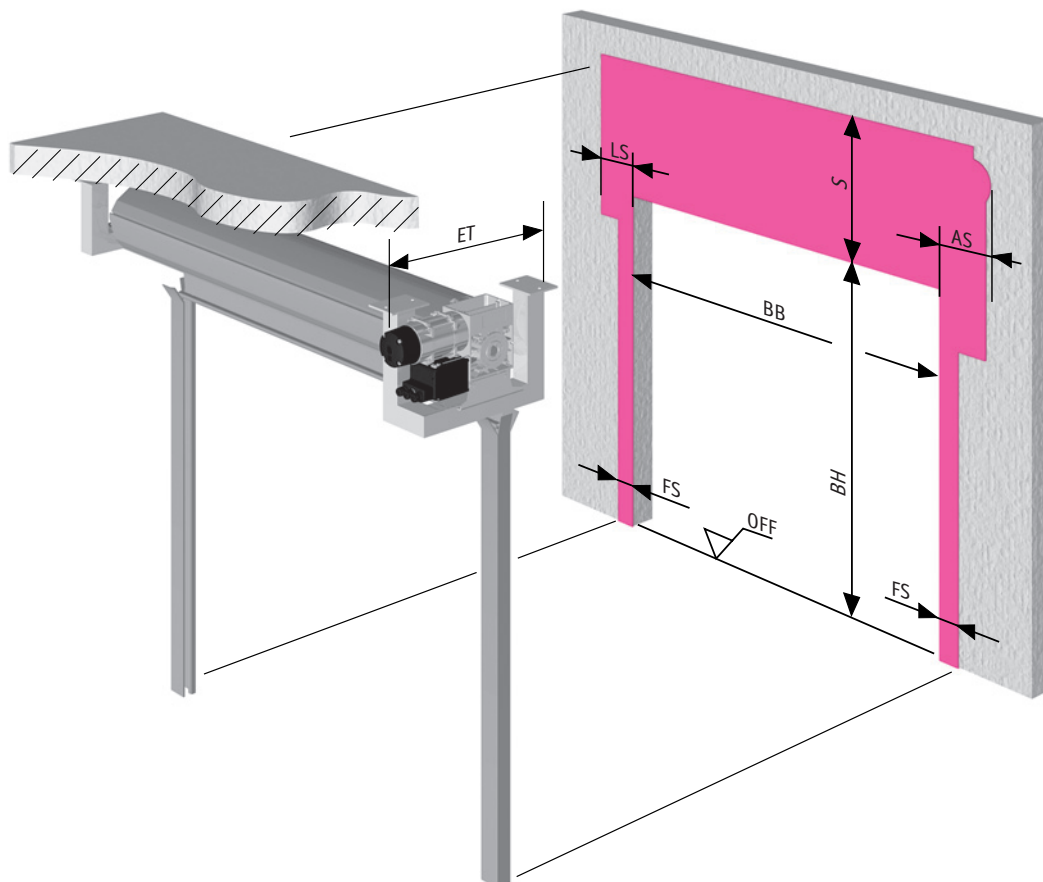
NWT = Emergency operation (with awning rod) only
up to TAR 2.xx



- FS (dimensional requirements) see page 8.
- Drive (dimensional requirements) see page 32.

All measurements in mm.

Installation only on steel or concrete.



23. Required space direct drive with external operation

Required sideroom

Guide rail type: FS 85 FS 110

FS	85	110
LS	175	200
AS with KUKUTAR 1.xx	-	-
TAR 2.xx	300	325
TAR 3.xx	300	325
TAR 5.xx	-	-
TAR 6.xx	-	-
TAR 7.xx	-	-
AS with KEKUTAR 1.xx	-	-
TAR 2.xx	300	325
TAR 3.xx	300	325
TAR 5.xx	-	-
TAR 6.xx	-	-
TAR 7.xx	-	-

KUKU = Crank (emergency handcrank) inside and outside



KEKU = Chain (emergency geared chain) inside and crank (emergency handcrank) outside

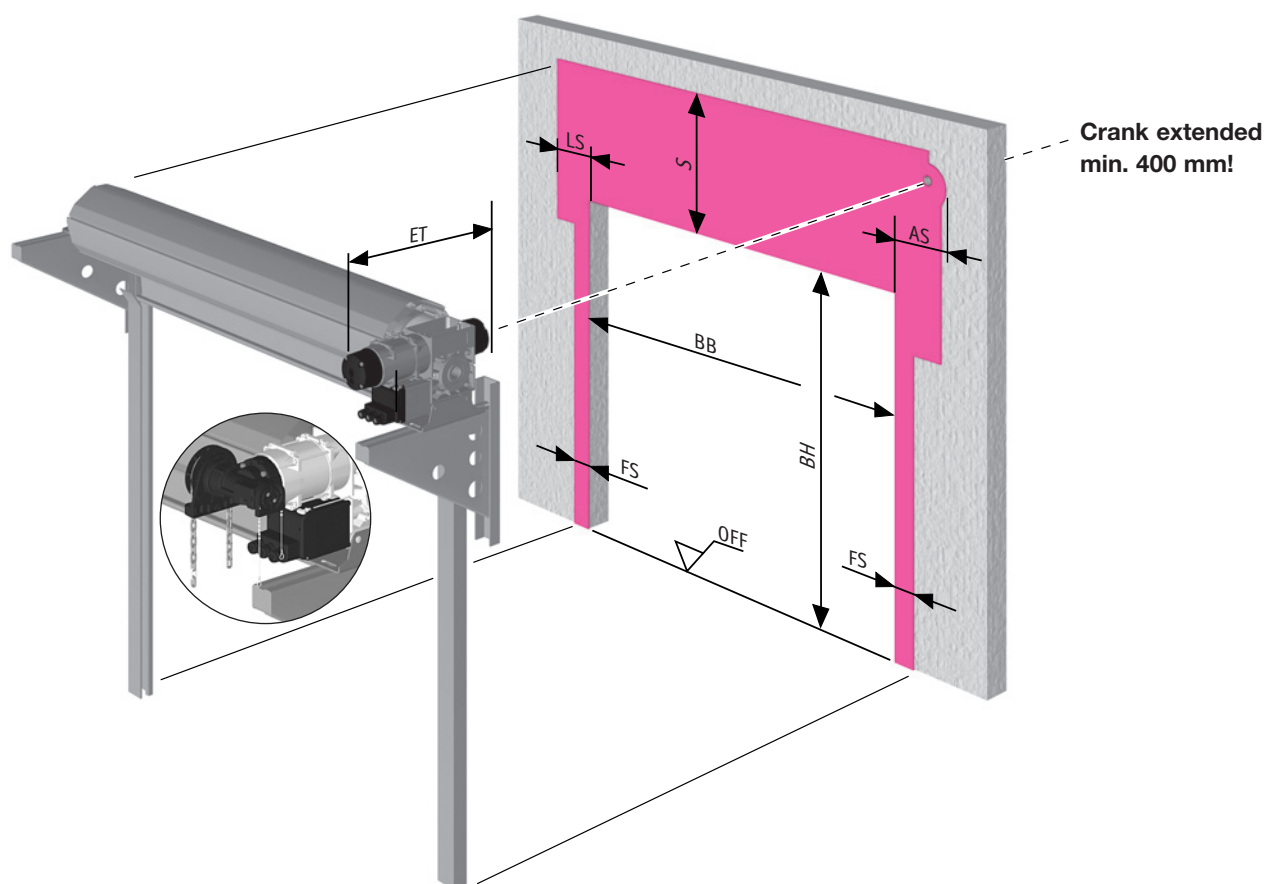


- FS (dimensional requirements) see page 8.

- Drive (dimensional requirements) see page 32.

All measurements in mm.

Installation possible on every substructure (except aerated concrete).



24. Required space EASY

Required sideroom

Guide rail type: FS 85

FS		85
LS		145
AS with KA	TAR 1.14 E	235
with KKU	TAR 2.20 E	265
	TAR 3.27 E	265
AS with KU	TAR 1.14 E	305
	TAR 2.20 E	310
	TAR 3.27 E	315

KA = handcrank adapter



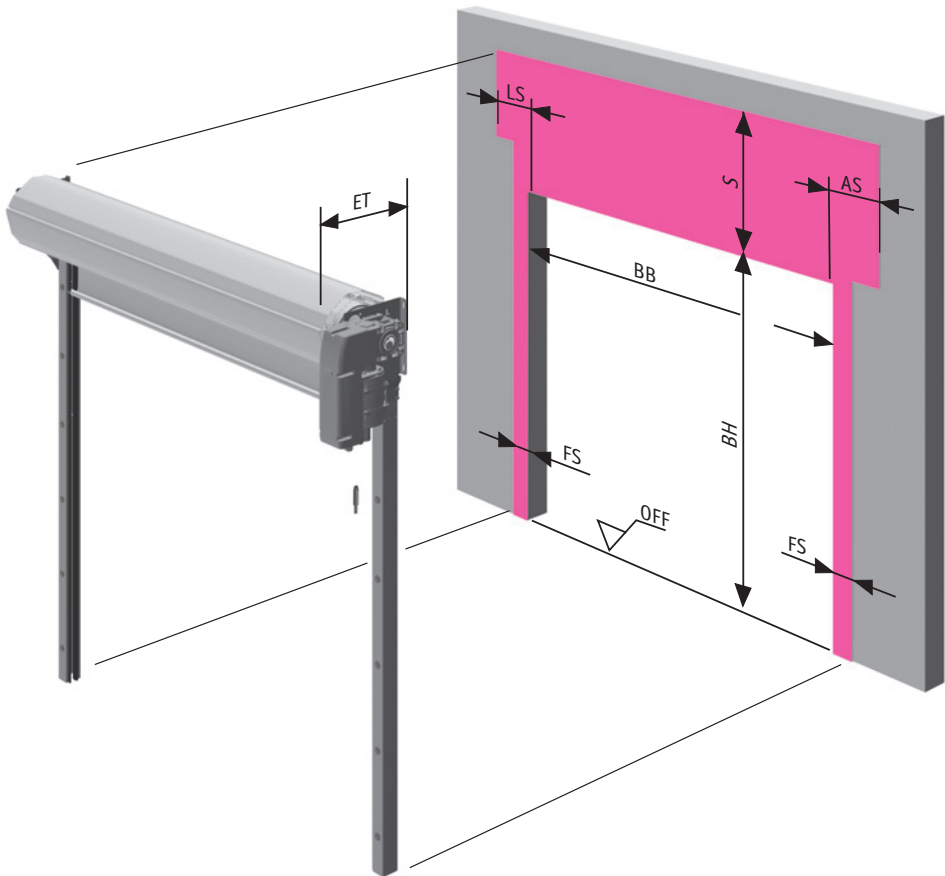
KU = crank (emergency handcrank)



KKU = universal joint crank (folding)



All measurements in mm.
Installation possible on every substructure (except aerated concrete).



25. Weld-on plates for consoles

Start points for weld-on plates (lower edge headroom to lower edge plate) for direct drives TAR 1.xx to TAR 3.xx

Door height in mm:	Roller grille		4020		ThermoTeck	
	TG-S, TG-A, TG-V, TG-E, TG-X		Aluminium		Steel	
	Drive X1	Bearing X2	Drive X1	Bearing X2	Drive X1	Bearing X2
8,000	170	70	120	20	150	50
7,500	180	80	120	20	150	50
7,000	180	80	140	40	155	55
6,500	195	90	140	40	165	65
6,000	195	90	140	40	165	65
5,500	230	130	200	95	215	110
5,000	240	140	200	95	215	115
4,500	240	140	205	105	220	120
4,000	260	155	220	120	235	130
3,500	260	155	220	120	235	130
3,000	275	175	245	145	255	155
2,500	280	180	250	145	255	155
2,000	290	190	255	155	275	175

Weld-on plate dimensions: 500 x 200 x 6 mm (Type 1)

All measurements in mm.

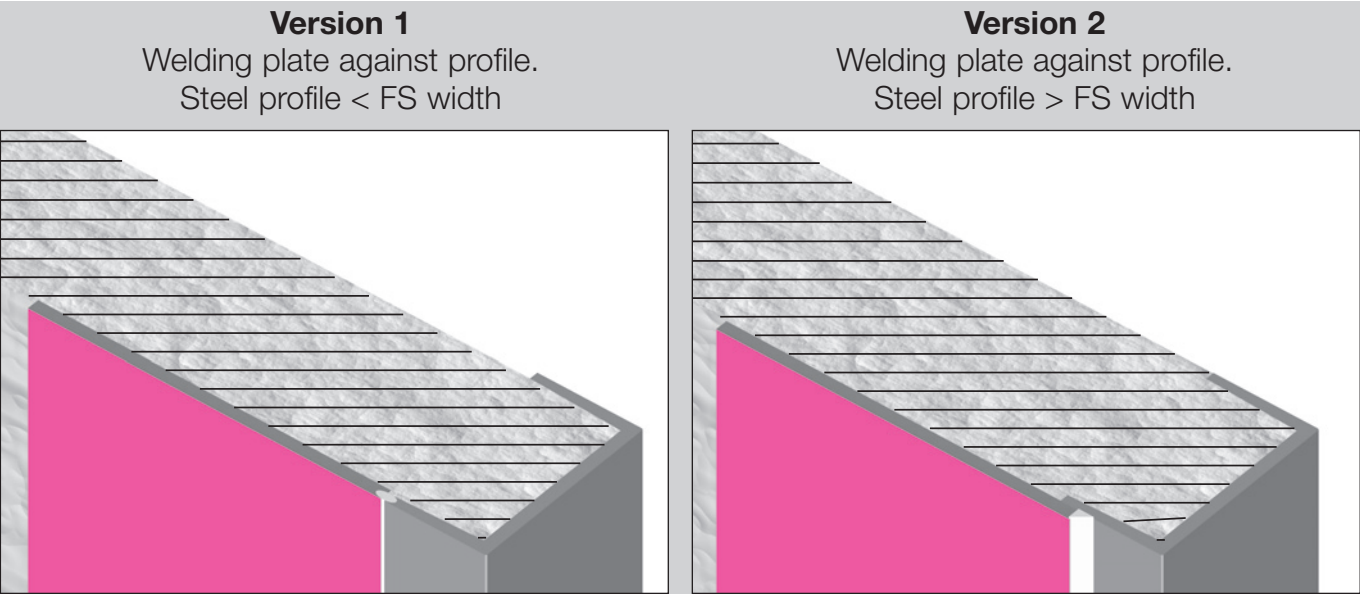
Start points for weld-on plates (lower edge headroom to lower edge plate) for direct drives TAR 5.xx, 6.xx and chain drive up to TKR 30.xx

Door height in mm:	Roller grille		4020		ThermoTeck	
	TG-S, TG-A, TG-V, TG-E, TG-X		Aluminium		Steel	
	Drive X1	Bearing X2	Drive X1	Bearing X2	Drive X1	Bearing X2
8,000	415	400	365	350	395	380
7,500	425	410	365	350	395	380
7,000	425	410	385	370	400	385
6,500	440	425	385	370	410	395
6,000	440	425	385	370	410	395
5,500	475	460	445	430	460	445
5,000	485	470	445	430	460	445
4,500	485	470	450	435	465	450
4,000	500	485	465	450	480	465
3,500	500	485	465	450	480	465
3,000	520	505	490	475	500	485
2,500	525	510	495	480	500	485
2,000	535	520	500	485	520	505

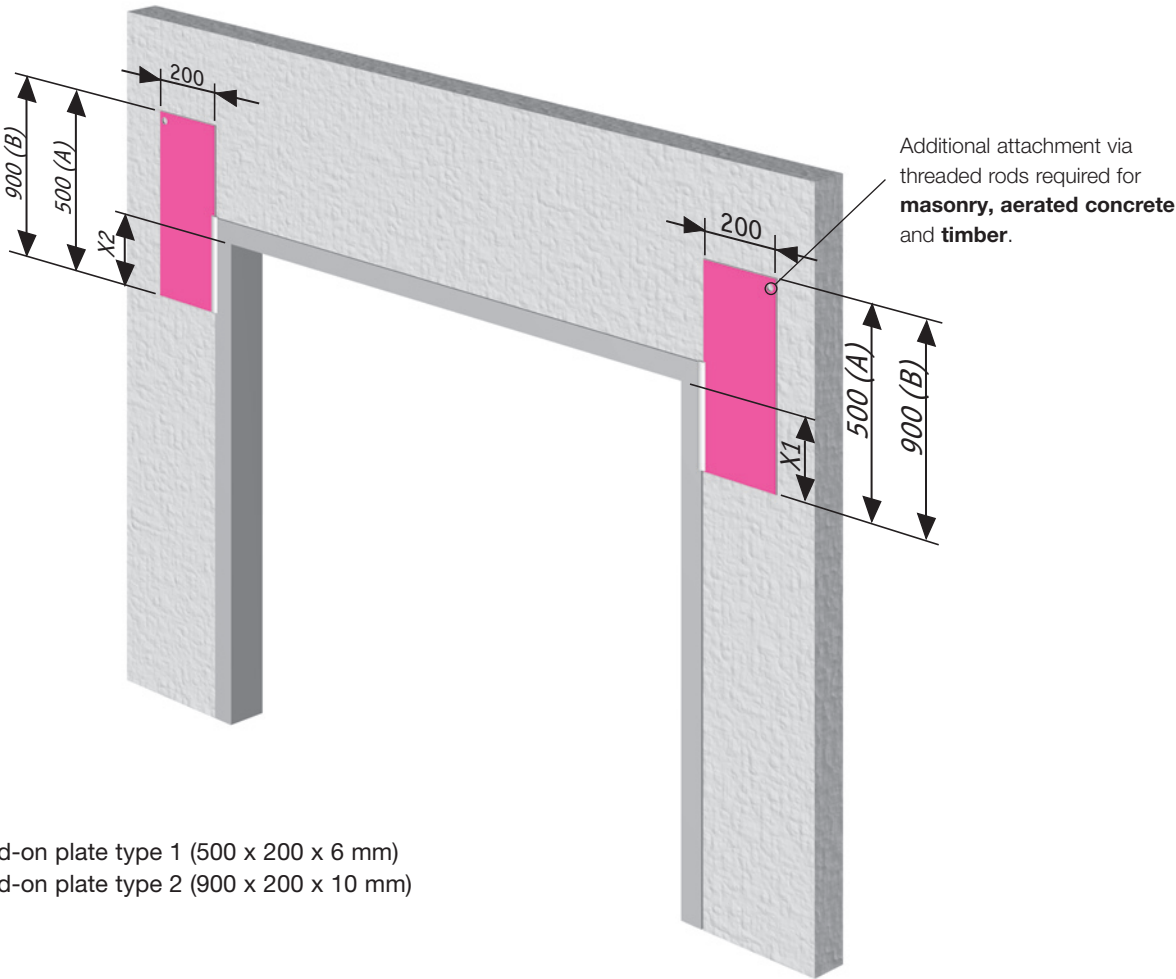
Weld-on plate dimensions: 900 x 200 x 8 mm (Type 2)

All measurements in mm.

25. Weld-on plates for consoles



Note:
Weld-on plates subject to additional charge.



- A: Weld-on plate type 1 (500 x 200 x 6 mm)
- B: Weld-on plate type 2 (900 x 200 x 10 mm)

26. 3D view curtain installed with box

The max. plate length for the upper and front plate is 3,000 mm.

For external shutters, we recommend drives with IP65 (additional charge).

Curtain box dimensions, special designs and special sizes available on request.

Important:

For chain drives, the box only covers the roller shutter curtain.

A chain drive cover must be provided by the customer.

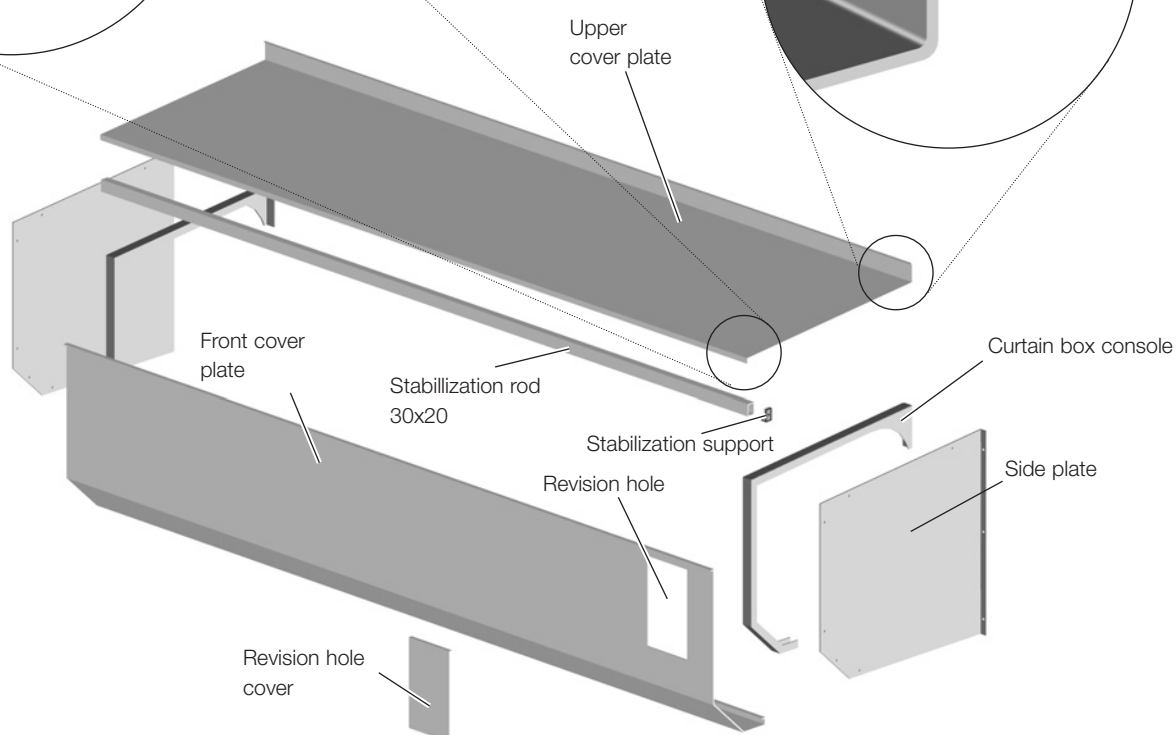
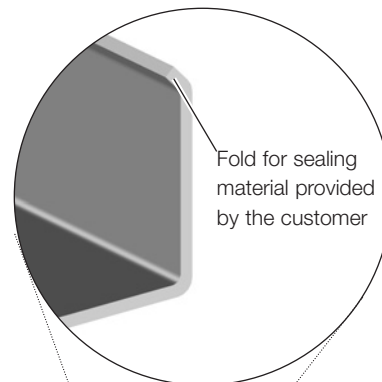
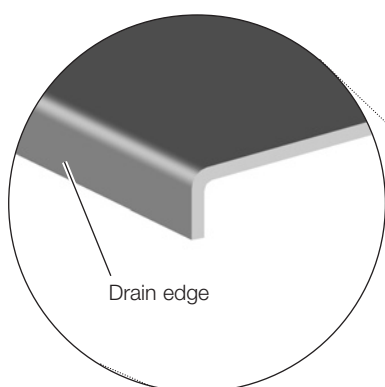
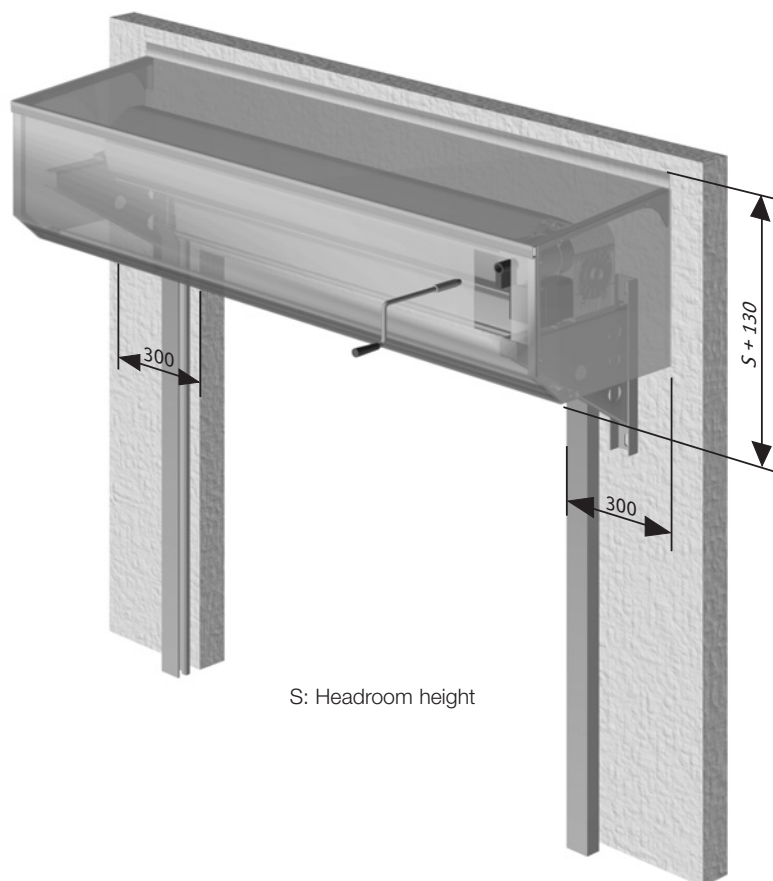
Available:

- in sizes 0, 1, 2 and 3,
- in aluminium or steel.



Note:

The emergency handcrank is extended by 400 mm!

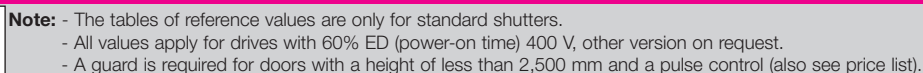


27. Table of reference values ThermoTeck, steel, glavanized

[illegible]

* If customers do not require pressure shafts, technical clarification must be provided.

27. Table of reference values ThermoTeck, steel, glavanized

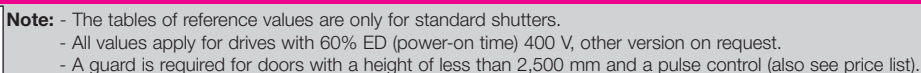


TKR 50.75													TKR 60.100								< Drive	
TAR 7.165		7,000	7,250	7,500	7,750	8,000	8,250	8,500	8,750	9,000	9,250	9,500	9,750	10,000	10,250	10,500	10,750	11,000	11,250	11,500	< Width	
1081	1081	1104	1104	1104	1104	1104	1104	1104	1104	1130	1130	1130	1130	1130	1130	1130	1130	1152	1152	1152	12,000	TKR 60.100
61	61	71	71	71	71	71	71	71	71	66	66	66	66	66	66	66	66	62	62	62		
1075	1075	1104	1104	1104	1104	1104	1104	1104	1104	1128	1128	1128	1128	1128	1128	1128	1128	1152	1152	1152		
60	60	69	69	69	69	69	69	69	69	69	64	64	64	64	64	64	64	64	61	61	11,750	
1064	1064	1084	1084	1084	1084	1084	1084	1084	1084	1122	1122	1122	1122	1122	1122	1122	1122	1142	1142	1142		
60	60	69	69	69	69	69	69	69	69	63	63	63	63	63	63	63	63	60	60	60		
1059	1059	1070	1070	1070	1070	1070	1070	1070	1070	1070	1120	1120	1120	1120	1120	1120	1120	1120	1118	1118	11,500	
59	59	69	69	69	69	69	69	69	69	62	62	62	62	62	62	62	62	62	60	60		
1059	1059	1070	1070	1070	1070	1070	1070	1070	1070	1114	1114	1114	1114	1114	1114	1114	1114	1114	1118	1118		
57	57	67	67	67	67	67	67	67	67	61	61	61	61	61	61	61	61	61	59	59	11,250	
1059	1059	1070	1070	1070	1070	1070	1070	1070	1070	1100	1100	1100	1100	1100	1100	1100	1100	1100	1118	1118		
56	56	52	65	65	65	65	65	65	65	60	60	60	60	60	60	60	60	60	58	58		
1053	1053	1053	1074	1074	1074	1074	1074	1074	1074	1074	1082	1082	1082	1082	1082	1082	1082	1082	1082	1118	11,000	
55	55	55	51	64	64	64	64	64	64	64	60	60	60	60	60	60	60	60	60	56		
1045	1045	1045	1072	1072	1072	1072	1072	1072	1072	1072	1084	1084	1084	1084	1084	1084	1084	1084	1084	1114		
54	54	54	50	62	62	62	62	62	62	62	58	58	58	58	58	58	58	58	58	55	10,250	
1039	1039	1039	1064	1064	1064	1064	1064	1064	1064	1064	1084	1084	1084	1084	1084	1084	1084	1084	1084	1114		
53	53	53	49	49	61	61	61	61	61	61	57	57	57	57	57	57	57	57	57	54		
1032	1032	1032	1062	1062	1062	1062	1062	1062	1062	1062	1084	1084	1084	1084	1084	1084	1084	1084	1084	1084	10,000	
52	52	52	48	48	48	60	60	60	60	60	56	56	56	56	56	56	56	56	56	56		
1022	1022	1022	1046	1046	1046	1046	1046	1046	1046	1046	1078	1078	1078	1078	1078	1078	1078	1078	1078	1078		
52	52	52	47	47	47	59	59	59	59	59	59	54	54	54	54	54	54	54	54	54	9,750	
1020	1020	1020	1020	1030	1030	1030	1030	1030	1030	1030	1030	1078	1078	1078	1078	1078	1078	1078	1078	1078		
50	50	50	50	47	47	47	59	59	59	59	59	53	53	53	53	53	53	53	53	53		
1020	1020	1020	1020	1030	1030	1030	1030	1030	1030	1030	1030	1070	1070	1070	1070	1070	1070	1070	1070	1070	9,500	
49	49	49	49	46	46	46	46	46	57	57	57	52	52	52	52	52	52	52	52	52		
1020	1020	1020	1020	1030	1030	1030	1030	1030	1030	1030	1048	1048	1048	1048	1048	1048	1048	1048	1048	1048		
42	48	48	48	44	44	44	44	44	44	55	55	55	52	52	52	52	52	52	52	52	9,250	
1010	1010	1010	1010	1030	1030	1030	1030	1030	1030	1030	1030	1038	1038	1038	1038	1038	1038	1038	1038	1038		
41	47	47	47	43	43	43	43	43	43	54	54	54	51	51	51	51	51	51	51	51		
1000	1000	1000	1000	1000	1024	1024	1024	1024	1024	1024	1024	1024	1038	1038	1038	1038	1038	1038	1038	1038	8,750	
41	41	46	46	46	42	42	42	42	42	42	53	53	49	49	49	49	49	49	49	49		
780	780	780	780	780	780	1016	1016	1016	1016	1016	1016	1016	1038	1038	1038	1038	1038	1038	1038	1038		
40	40	40	40	40	45	45	41	41	41	41	41	41	51	48	48	48	48	48	48	48	8,500	
775	775	775	775	775	775	1004	1004	1004	1004	1004	1004	1004	1036	1036	1036	1036	1036	1036	1036	1036		
39	39	39	39	39	44	40	40	40	40	40	40	40	46	46	46	46	46	46	46	46		
775	775	775	775	775	775	976	976	976	976	976	976	976	976	1030	1030	1030	1030	1030	1030	1030	8,250	
38	38	38	38	38	42	40	40	40	40	40	40	40	40	45	45	45	45	45	45	45		
770	770	770	770	770	770	984	984	984	984	984	984	984	984	1030	1030	1030	1030	1030	1030	1030		
37	37	37	37	37	37	39	39	39	39	39	39	39	39	44	44	44	44	44	44	44	8,000	
718	770	770	770	770	770	984	984	984	984	984	984	984	984	1016	1016	1016	1016	1016	1016	1016		
36	35	35	35	35	35	37	37	37	37	37	37	37	37	43	43	43	43	43	43	43		
710	750	750	750	750	750	982	982	982	982	982	982	982	982	982	998	998	998	998	998	998	7,750	
35	35	35	35	35	35	36	36	36	36	36	36	36	36	42	42	42	42	42	42	42		
708	750	750	750	750	750	974	974	974	974	974	974	974	974	974	998	998	998	998	998	998		
34	34	34	34	34	34	35	35	35	35	35	35	35	35	35	40	40	40	40	40	40	7,500	
708	731	731	731	731	731	960	964	964	964	964	964	964	964	964	964	996	996	996	996	996		
32	30	33	33	33	33	32	34	34	34	34	34	34	34	34	34	39	39	39	39	39		
688	688	731	731	731	731	941	942	942	942	942	942	942	942	942	942	942	992	992	992	992	7,250	
32	32	29	32	32	32	32	33	33	33	33	33	33	33	33	33	33	37	37	37	37		
674	674	731	731	731	731	941	942	942	942	942	942	942	942	942	942	990	990	990	990	990		
31	31	27	27	30	30	30	32	32	32	32	32	32	32	32	32	32	29	29	36	36	7,000	
638	638	701	701	701	701	911	911	912	912	912	912	912	912	912	912	912	950	950	950	950		
30	30	26	26	26	26	29	29	31	31	31	31	31	31	31	31	31	28	28	28	28		
636	636	636	641	641	641	871	871	910	910	910	910	910	910	910	910	910	926	926	926	926	6,750	
24	29	29	27	27	27	29	29	29	29	29	29	29	29	29	29	29	27	27	27	27		
636	636	636	639	639	639	849	849	906	906	906	906	906	906	906	906	906	926	926	926	926		
23	23	23	26	26	26	26	29	25	28	28	28	28	28	28	28	28	26	26	26	26	6,500	
614	614	614	639	639	639	849	849	849	888	888	889	889	889	889	889	889	926	926	926	926		
22	22	22	24	24	24	24	24	24	24	24	27	27	27	27	27	27	24	24	24	24		
602	602	602	602	639	639	849	849	849	874	874	874	874	882	882	882	882	882	924	924	924	6,250	
22	22	22	22	23	23	23	23	23	23	23	23	23	26	26	26	26	26	23	23	23		
598	598	598	598	637	637	849	849	849	849	874	874	874	874	874	882	882	882	882	916	916		
20	20	20	20	22	22	22	22	22	22	22	22	22	22	22	22	25	25	25	25	22	6,000	
582	594	594	594	597	597	597	597	597	597	597	656	656	656	656	656	656	656	656	882	912		
20	19	19	19	22	22	22	22	22	22	22	21	21	21	21	21	21	21	21	23	21		
582	590	590	590	590	590	597	597	597	597	597	646	646	646	646	646	646	646	646	864	864	5,750	
19	18	18	18	18	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	19		
582	564	564	564	564	597	597	597	597	597	597	626	626	626	626	626	626	626	626	848	848		
18	18	18	18	18	16	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	5,500	
542	542	558	558	558	558	597	597	597														

28. Table of reference values - 4020, aluminium

		ThermoTect glazing with a door width of up to 12,000 mm!																			
S = Min. headroom		Single doors up to 18 m on request!																			
T = Approx. shutter system opening time in seconds		Door systems up to 36 m on request.																			
Drive >		TAR 2.22	TAR 3.30					TAR 3.42			TAR 3.50			TAR 5.75						TAR 6.100	
Width >		2,000	2,250	2,500	2,750	3,000	3,250	3,500	3,750	4,000	4,250	4,500	4,750	5,000	5,250	5,500	5,750	6,000	6,250	6,500	
TAR 2.22	12,000	S	814	814	814	814	814	814	814	814	814	814	814	814	814	814	836	836	1070	1070	
		T	45	45	45	45	45	45	45	45	45	45	54	54	54	54	53	53	55	55	
	11,750	S	814	814	814	814	814	814	814	814	814	814	814	814	814	814	836	836	1054	1054	
		T	44	44	44	44	44	44	44	44	44	44	53	53	53	53	52	52	55	55	
	11,500	S	814	814	814	814	814	814	814	814	814	814	814	814	814	814	836	836	1054	1054	
		T	43	43	43	43	43	43	43	43	43	43	43	52	52	52	52	51	51	54	54
	11,250	S	814	814	814	814	814	814	814	814	814	814	814	814	814	814	832	832	1046	1050	
		T	42	42	42	42	42	42	42	42	42	42	42	50	50	50	50	50	50	53	
	11,000	S	794	794	794	794	794	794	794	794	794	794	794	794	794	794	800	800	1042	1050	
		T	42	42	42	42	42	42	42	42	42	42	42	51	51	51	51	51	49	51	
	10,750	S	766	766	766	766	766	766	766	766	766	766	766	766	766	766	766	796	796	1006	1050
		T	43	43	43	43	43	43	43	43	43	43	43	51	51	51	50	50	50	50	
	10,500	S	762	762	762	762	762	762	762	762	762	762	762	762	762	762	762	796	796	1006	1050
		T	42	42	42	42	42	42	42	42	42	42	42	50	50	49	49	49	49	49	
	10,250	S	762	762	762	762	762	762	762	762	762	762	762	762	762	762	762	792	796	1006	1050
		T	41	41	41	41	41	41	41	41	41	41	41	41	41	49	49	48	48	48	
	10,000	S	762	762	762	762	762	762	762	762	762	762	762	762	762	762	762	792	792	1006	1050
		T	40	40	40	40	40	40	40	40	40	40	40	40	40	40	48	47	46	47	
	9,750	S	762	762	762	762	762	762	762	762	762	762	762	762	762	762	762	792	792	1002	1002
		T	39	39	39	39	39	39	39	39	39	39	39	39	39	39	47	46	46	46	
	9,500	S	762	762	762	762	762	762	762	762	762	762	762	762	762	762	762	792	792	1002	1002
		T	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	44	44	44	
	9,250	S	762	762	762	762	762	762	762	762	762	762	762	762	762	762	762	792	780	1002	1002
		T	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	44	43	43	
	9,000	S	734	734	734	734	734	734	734	734	734	734	734	734	734	734	764	752	990	990	
		T	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	44	43	43	
	8,750	S	710	710	710	710	710	710	710	710	710	710	710	710	710	710	740	740	962	962	
		T	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	43	43	
	8,500	S	710	710	710	710	710	710	710	710	710	710	710	710	710	710	740	740	962	962	
		T	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	42	42	
	8,250	S	710	710	710	710	710	710	710	710	710	710	710	710	710	710	740	740	962	962	
		T	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	40	40	
	8,000	S	710	710	710	710	710	710	710	710	710	710	710	710	710	710	740	740	752	752	
		T	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	39	39	
TAR 3.30	7,750	S	710	710	710	710	710	710	710	710	710	710	710	710	710	710	740	740	752	752	
		T	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	32	38	
	7,500	S	710	710	710	710	710	710	710	710	710	710	710	710	710	710	740	740	730	730	
		T	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	31	38	
	7,250	S	680	680	680	680	680	680	680	680	680	680	680	680	680	680	710	710	710	704	
		T	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
	7,000	S	670	670	670	670	670	670	670	670	670	670	670	670	670	670	700	700	700	704	
		T	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	
	6,750	S	670	670	670	670	670	670	670	670	670	670	670	670	670	670	700	700	700	704	
		T	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	
	6,500	S	670	670	670	670	670	670	670	670	670	670	670	670	670	670	700	700	700	702	
		T	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	28	
	6,250	S	670	670	670	670	670	670	670	670	670	670	670	670	670	670	700	700	700	700	
		T	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	
	6,000	S	670	670	670	670	670	670	670	670	670	670	670	670	670	670	700	700	700	700	
		T	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	
	5,750	S	640	640	640	640	640	640	640	640	640	640	640	640	640	640	670	670	670	670	
		T	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	
	5,500	S	614	614	614	614	614	614	614	614	614	614	614	614	614	614	644	644	644	644	
		T	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	
	5,250	S	614	614	614	614	614	614	614	614	614	614	614	614	614	614	644	644	644	644	
		T	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	
	5,000	S	614	614	614	614	614	614	614	614	614	614	614	614	614	614	644	644	644	644	
		T	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	
	4,750	S	614	614	614	614	614	614	614	614	614	614	614	614	614	614	644	644	644	644	
		T	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	
	4,500	S	598	598	598	598	598	598	598	598	598	598	598	598	598	598	628	628	628	628	
		T	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	
	4,250	S	574	574	574	574	574	574	574	574	574	574	574	574	574	574	604	604	604	604	
		T	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	
	4,000	S	566	566	566	566	566	566	566	566	566	566	566	566	566	566	596	596	596	596	
		T	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	
	3,750	S	566	566	566	566	566	566	566	566	566	566	566	566	566	566	596	596	596	596	
		T	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
3,500	S	566	566	566	566	566	566	566	566	566	566	566	566	566	566	596	596	596	596		
	T	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18		
3,250	S	554	554	554	554	554	554	554	554	554	554	554	554	554	554	590	590	590	590		
	T																				

28. Table of reference values - 4020, aluminium



TAR 7.165										TKR 50.75										< Drive
6,750	7,000	7,250	7,500	7,750	8,000	8,250	8,500	8,750	9,000	9,250	9,500	9,750	10,000	10,250	10,500	10,750	11,000	11,250	11,500	< Width
1110	1110	1110	1110	1120	1120	1120	1120	1120	1120	1120	1120	1170	1170	1170	1170	1170	1170	1170	1170	12,000
59	59	59	59	56	56	56	56	70	70	70	70	63	63	63	63	63	63	63	63	
1094	1094	1094	1094	1120	1120	1120	1120	1120	1120	1120	1120	1120	1124	1124	1124	1124	1124	1124	1124	11,750
52	59	59	59	54	54	54	54	54	68	68	68	68	65	65	65	65	65	65	65	
1094	1094	1094	1094	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	11,500
51	58	58	58	53	53	53	53	53	53	67	67	67	63	63	63	63	63	63	63	
1090	1090	1090	1090	1090	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	11,250
50	50	57	57	57	52	52	52	52	52	52	65	65	62	62	62	62	62	62	62	
1090	1090	1090	1090	1090	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	1120	11,000
49	49	55	55	55	51	51	51	51	51	51	64	64	61	61	61	61	61	61	61	
1090	1090	1090	1090	1090	1080	1080	1080	1080	1080	1080	1080	1080	1120	1120	1120	1120	1120	1120	1120	10,750
48	48	48	54	54	52	52	52	52	52	52	65	59	59	59	59	59	59	59	59	
1090	1090	1090	1090	1090	1080	1080	1080	1080	1080	1080	1080	1080	1080	1120	1120	1120	1120	1120	1120	10,500
47	47	47	47	53	51	51	51	51	51	51	51	51	63	58	58	58	58	58	58	
1090	1090	1090	1090	1090	1080	1080	1080	1080	1080	1080	1080	1080	1080	1118	1118	1118	1118	1118	1118	10,250
46	46	46	46	46	52	49	49	49	49	49	49	49	49	57	57	57	57	57	57	
1090	1090	1090	1090	1090	1080	1080	1080	1080	1080	1080	1080	1080	1080	1118	1118	1118	1118	1118	1118	10,000
45	45	45	45	45	48	48	48	48	48	48	48	48	48	55	55	55	55	55	55	
1050	1050	1050	1050	1050	1050	1080	1080	1080	1080	1080	1080	1080	1080	1100	1100	1100	1100	1100	1100	9,750
46	46	46	46	46	46	47	47	47	47	47	47	47	47	55	55	55	55	55	55	
1040	1040	1040	1040	1040	1040	1080	1080	1080	1080	1080	1080	1080	1080	1080	1080	1080	1080	1080	1080	9,500
45	45	45	45	45	45	46	46	46	46	46	46	46	46	46	54	54	54	54	54	
1040	1040	1040	1040	1040	1040	1080	1080	1080	1080	1080	1080	1080	1080	1080	1080	1080	1080	1080	1080	9,250
44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	53	53	53	53	53	
1040	1040	1040	1040	1040	1040	1070	1070	1070	1070	1070	1070	1070	1070	1070	1080	1080	1080	1080	1080	9,000
42	42	42	42	42	42	44	44	44	44	44	44	44	44	44	51	51	51	51	51	
1040	1040	1040	1040	1040	1040	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1080	1080	1080	1080	8,750
41	41	41	41	41	41	44	44	44	44	44	44	44	44	44	50	50	50	50	50	
1002	1040	1040	1040	1040	1040	1040	1030	1030	1030	1030	1030	1030	1030	1030	1030	1080	1080	1080	1080	8,500
40	40	40	40	40	40	40	43	43	43	43	43	43	43	43	43	49	49	49	49	
1002	1040	1040	1040	1040	1040	1040	1030	1030	1030	1030	1030	1030	1030	1030	1030	1080	1080	1080	1080	8,250
38	35	39	39	39	39	39	42	42	42	42	42	42	42	42	42	47	47	47	47	
792	792	784	784	784	784	1010	1030	1030	1030	1030	1030	1030	1030	1030	1030	1076	1076	1076	1076	8,000
37	37	36	40	40	40	39	40	40	40	40	40	40	40	40	40	46	46	46	46	
792	792	784	784	784	784	994	1030	1030	1030	1030	1030	1030	1030	1030	1030	1052	1052	1052	1052	7,750
36	36	35	35	39	39	39	39	39	39	39	39	39	39	39	39	36	36	36	36	
770	770	784	784	784	784	994	994	1030	1030	1030	1030	1030	1030	1030	1030	1030	1048	1048	1048	7,500
36	36	33	33	33	37	37	37	38	38	38	38	38	38	38	38	38	35	35	44	
744	744	784	784	784	784	994	994	1030	1030	1030	1030	1030	1030	1030	1030	1030	1048	1048	1048	7,250
30	36	32	32	32	32	36	36	37	37	37	37	37	37	37	37	37	34	34	34	
744	744	744	780	780	780	994	994	986	986	986	986	986	986	986	986	986	1046	1046	1046	7,000
29	35	35	31	31	31	35	35	37	37	37	37	37	37	37	37	37	33	33	33	
744	744	744	780	780	780	990	990	986	986	986	986	986	986	986	986	986	986	1046	1046	6,750
28	28	28	30	30	30	30	34	32	36	36	36	36	36	36	36	36	36	32	32	
742	742	742	760	760	760	990	990	990	986	986	986	986	986	986	986	986	986	1046	1046	6,500
27	27	27	30	30	30	29	29	32	31	31	34	34	34	34	34	34	34	31	31	
742	742	742	740	740	740	950	950	950	986	986	986	986	986	986	986	986	986	1032	1032	6,250
26	26	26	29	29	29	29	29	29	29	29	33	33	33	33	33	33	33	30	30	
736	736	736	736	740	740	950	950	950	986	986	986	986	986	986	986	986	986	986	1016	6,000
25	25	25	25	28	28	28	28	28	28	28	28	28	28	32	32	32	32	32	29	
696	696	696	696	740	740	950	950	950	950	986	986	986	986	986	986	986	986	986	992	5,750
25	25	25	25	27	27	27	27	27	27	27	27	27	27	27	30	30	30	30	29	
696	696	696	696	732	732	950	950	950	950	986	986	986	986	986	986	986	986	986	990	5,500
24	24	24	24	26	26	26	26	26	26	26	26	26	26	26	26	26	29	29	27	
684	696	696	696	696	732	942	942	942	942	940	940	940	940	940	940	940	940	940	940	5,250
24	23	23	23	23	25	25	25	25	25	26	26	26	26	26	26	26	26	26	29	
684	696	696	696	696	728	942	942	942	942	942	940	940	940	940	940	940	940	940	940	5,000
23	22	22	22	22	24	24	24	24	24	24	25	25	25	25	25	25	25	25	25	
684	696	696	696	696	682	912	912	912	912	912	940	940	940	940	940	940	940	940	940	4,750
22	21	21	21	21	20	23	23	23	23	23	23	23	23	23	23	23	23	23	23	
668	668	690	690	690	690	892	892	892	892	892	940	940	940	940	940	940	940	940	940	4,500
21	21	20	20	20	20	23	23	23	23	23	22	22	22	22	22	22	22	22	22	
644	644	648	648	648	648	892	892	892	892	892	892	940	940	940	940	940	940	940	940	4,250
21	21	20	20	20	20	18	21	21	21	21	21	21	21	21	21	21	21	21	21	
636	636	636	648	648	648	682	682	682	682	682	682	682	680	680	680	680	680	940	940	4,000
20	20	20	19	19	19	17	17	17	17	20	20	20	21	21	21	21	21	20	20	
636	636	636	642	642	642	642	680	680	680	680	680	680	680	680	680	680	680	890	890	3,750
18	18	18	18	18	18	18	16	16	16	16	16	16	19	20	20	20	20	20	20	
636	636	636	642	642	642	642	632	632	632	632	632	632	632	680	680	680	680	890	890	3,500
17	17	17	16	16	16	16	16	16	16	16	16	16	16	18	18	18	18	18	18	
630	630	630	630	642	642	642	642	642	632	632	632	632	632	632	676	676	676	890	890	3,250
16	16	16	16	15	15	15	15	14	14	14	14	14	14	14	17	17	17	17	17	
590	590	590	590	594	594	594	594	630	630	630	630	630	630	630	676	676	676	886	886	3,00

29. Table of reference values - roller grille, steel, TG-S and TG-E

S = Min. headroom
T = Approx. shutter system opening time in seconds

Drive >		TAR 3.30		TAR 3.42			TAR 3.50			TAR 5.75				TAR 6.100			TAR 7.165				
Width >		2,000	2,250	2,500	2,750	3,000	3,250	3,500	3,750	4,000	4,250	4,500	4,750	5,000	5,250	5,500	5,750	6,000	6,250	6,500	
TAR 3.30	8,000	S	642	642	642	642	642	642	642	642	642	642	690	690	700	700	700	716	716	716	
		T	39	39	39	39	39	39	39	39	39	47	47	44	44	47	47	47	49	49	49
	7,750	S	620	620	620	620	620	620	620	620	620	620	620	670	670	674	674	674	716	716	716
		T	39	39	39	39	39	39	39	39	39	39	47	44	44	47	47	47	47	47	47
	7,500	S	620	620	620	620	620	620	620	620	620	620	620	670	670	674	674	674	674	525	525
		T	38	38	38	38	38	38	38	38	38	38	46	42	42	46	46	46	46	47	47
	7,250	S	620	620	620	620	620	620	620	620	620	620	620	654	654	654	674	674	674	525	525
		T	37	37	37	37	37	37	37	37	37	37	37	42	42	42	44	44	44	45	45
TAR 2.22	7,000	S	620	620	620	620	620	620	620	620	620	620	654	654	654	668	668	668	525	525	
		T	35	35	35	35	35	35	35	35	35	35	35	40	40	40	39	43	43	45	45
	6,750	S	610	610	610	610	610	610	610	610	610	610	610	654	654	654	668	668	668	525	525
		T	35	35	35	35	35	35	35	35	35	35	35	39	39	39	37	37	41	43	43
	6,500	S	592	592	592	592	592	592	592	592	592	592	592	648	648	648	648	648	648	525	525
		T	35	35	35	35	35	35	35	35	35	35	35	38	38	38	37	37	41	41	42
	6,250	S	592	592	592	592	592	592	592	592	592	592	592	636	636	636	636	634	634	634	676
		T	33	33	33	33	33	33	33	33	33	33	33	37	37	37	37	36	36	40	36
	6,000	S	592	592	592	592	592	592	592	592	592	592	592	620	620	620	620	634	634	634	676
		T	32	32	32	32	32	32	32	32	32	32	32	30	37	37	37	35	35	35	34
	5,750	S	592	592	592	592	592	592	592	592	592	592	592	620	620	620	620	630	630	630	642
		T	30	30	30	30	30	30	30	30	30	30	30	29	29	35	35	33	33	33	34
	5,500	S	550	550	550	550	550	550	550	550	550	550	550	584	584	584	584	592	592	592	592
		T	30	30	30	30	30	30	30	30	30	30	30	28	28	28	34	32	32	32	32
	5,250	S	530	530	530	530	530	530	530	530	530	530	530	580	580	580	580	574	574	574	574
		T	29	29	29	29	29	29	29	29	29	29	29	27	27	27	32	32	32	32	32
	5,000	S	530	530	530	530	530	530	530	530	530	530	530	570	570	570	570	570	574	574	574
		T	28	28	28	28	28	28	28	28	28	28	28	26	26	26	26	31	30	30	30
	4,750	S	530	530	530	530	530	530	530	530	530	530	530	540	540	540	540	540	440	440	440
		T	27	27	27	27	27	27	27	27	27	27	27	26	26	26	26	26	29	29	29
	4,500	S	510	510	510	510	510	510	510	510	510	510	510	540	540	540	540	540	440	440	440
		T	26	26	26	26	26	26	26	26	26	26	26	25	25	25	25	25	28	28	28
	TAR 1.14	4,250	S	510	510	510	510	510	510	510	510	510	510	540	540	540	540	540	540	440	440
			T	25	25	25	25	25	25	25	25	25	25	23	23	23	23	23	23	26	26
4,000		S	410	496	496	496	496	496	496	496	496	496	496	540	540	540	540	540	558	440	
		T	24	24	24	24	24	24	24	24	24	24	24	22	22	22	22	22	22	21	25
3,750		S	410	410	496	496	496	496	496	496	496	496	496	540	540	540	540	540	540	538	538
		T	22	22	22	22	22	22	22	22	22	22	22	20	20	20	20	20	20	20	20
3,500		S	410	410	496	496	496	496	496	496	496	496	496	506	506	506	506	506	506	506	530
		T	21	21	21	21	21	21	21	21	21	21	21	20	20	20	20	20	20	20	19
3,250		S	410	410	410	470	470	470	470	470	470	470	395	506	506	506	506	506	506	506	524
		T	20	20	20	20	20	20	20	20	20	20	20	19	19	19	19	19	19	19	18
3,000		S	410	410	410	410	460	460	460	460	460	460	460	506	506	506	506	506	506	506	506
		T	19	19	19	19	19	19	19	19	19	19	19	17	17	17	17	17	17	17	17
2,750		S	410	410	410	410	410	460	460	460	460	460	460	496	496	496	496	496	496	496	496
		T	17	17	17	17	17	17	17	17	17	17	17	16	16	16	16	16	16	16	16
2,500		S	410	410	410	410	410	410	385	385	385	385	385	486	486	486	486	486	486	486	486
		T	16	16	16	16	16	16	16	16	16	16	16	15	15	15	15	15	15	15	15
2,250		S	410	410	410	410	410	410	410	410	385	385	385	486	486	486	486	486	486	486	486
		T	15	15	15	15	15	15	15	15	15	15	15	13	13	13	13	13	13	13	13
2,000		S	410	410	410	410	410	410	410	410	410	385	385	460	460	460	395	395	395	395	395
		T	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Drive >	Height >	Width >	2,000	2,250	2,500	2,750	3,000	3,250	3,500	3,750	4,000	4,250	4,500	4,750	5,000	5,250	5,500	5,750	6,000	6,250	6,500
			TAR 1.14									TAR 2.22						TAR 3.30			

29. Table of reference values - roller grille, steel, TG-S and TG-E

		Note: - The tables of reference values are only for standard shutters. - The underfill height is always at least 40 mm for a pulse control. - A guard is required for doors with a height of less than 2,500 mm and a pulse control (also see price list).																			
TAR 7.165		TKR 50.75												TKR 60.100						< Drive	
6,750	7,000	7,250	7,500	7,750	8,000	8,250	8,500	8,750	9,000	9,250	9,500	9,750	10,000	10,250	10,500	10,750	11,000	11,250	11,500	< Width	
716	716	734	734	734	734	734	734	734	734	756	756	756	756	756	756	756	756	776	776	TKR 60.100	
49	49	15	15	15	15	15	15	15	15	13	13	13	13	13	13	13	13	13	13		
716	716	716	734	734	734	734	734	734	734	734	756	756	756	756	756	756	756	756	776		
47	47	47	14	14	14	14	14	14	14	14	13	13	13	13	13	13	13	13	12		
525	525	525	734	734	734	734	734	734	734	734	756	756	756	756	756	756	756	756	776		
47	47	47	14	14	14	14	14	14	14	14	12	12	12	12	12	12	12	12	12		
525	525	525	734	734	734	734	734	734	734	734	728	728	728	728	728	728	728	728	748	TKR 50.75	
45	45	45	13	13	13	13	13	13	13	13	12	12	12	12	12	12	12	12	12		
525	525	525	734	734	734	734	734	734	734	734	728	728	728	728	728	728	728	728	728		
45	45	45	39	13	13	13	13	13	13	13	12	12	12	12	12	12	12	12	12		
525	525	525	525	716	716	716	716	716	716	716	716	728	728	728	728	728	728	728	728		
43	43	43	43	38	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12		
525	525	525	525	525	525	694	694	694	694	694	694	728	728	728	728	728	728	728	728	TKR 60.100	
42	42	42	42	38	38	12	12	12	12	12	12	11	11	11	11	11	11	11	11		
525	525	525	525	525	525	525	525	694	694	694	694	694	720	720	720	720	720	720	720		
40	40	40	40	36	36	36	36	12	12	12	12	11	11	11	11	11	11	11	11		
525	525	525	525	525	525	525	525	525	694	694	694	694	720	720	720	720	720	720	720		
38	38	38	38	38	35	35	35	35	11	11	11	11	10	10	10	10	10	10	10		
642	525	525	525	525	525	525	525	525	525	525	694	694	720	720	720	720	720	720	720	TKR 50.75	
34	39	39	39	39	34	34	34	34	34	34	11	11	10	10	10	10	10	10	10		
612	612	612	495	495	495	495	495	495	495	495	495	664	664	670	670	670	670	670	670		
33	33	33	37	37	32	32	32	32	32	32	32	10	10	10	10	10	10	10	10		
612	612	612	612	495	495	495	495	495	495	495	495	495	495	670	670	670	670	670	670		
31	31	31	31	35	35	31	31	31	31	31	31	31	31	9	9	9	9	9	9		
612	612	612	612	612	495	495	495	495	495	495	495	495	495	495	670	670	670	670	670	TKR 60.100	
30	30	30	30	30	34	31	31	31	31	31	31	31	31	31	9	9	9	9	9		
612	612	612	612	612	612	495	495	495	495	495	495	495	495	495	650	650	650	650	650		
28	28	28	28	28	28	29	29	29	29	29	29	29	29	29	8	8	8	8	8		
440	455	455	455	455	455	612	495	495	495	495	495	495	495	495	495	650	650	650	650		
28	28	28	28	28	28	27	28	28	28	28	28	28	28	28	28	8	8	8	8		
440	455	455	455	455	455	455	495	495	495	495	495	495	495	495	495	650	650	650	650	TKR 50.75	
26	27	27	27	27	27	27	26	26	26	26	26	26	26	26	26	8	8	8	8		
440	570	570	455	455	455	455	455	495	495	495	495	495	495	495	495	495	630	630	630		
25	23	23	25	25	25	25	25	24	24	24	24	24	24	24	24	23	7	7	7		
440	440	570	570	455	455	455	455	495	495	495	495	495	495	495	495	495	495	495	495		
24	24	21	21	24	24	24	24	23	23	23	23	23	23	23	23	23	21	21	21		
440	440	440	440	440	440	455	455	455	495	495	495	495	495	495	495	495	495	495	495	TKR 60.100	
23	23	20	20	20	20	22	22	22	23	23	23	23	23	23	23	23	23	20	20		
524	524	440	440	440	440	440	440	455	455	495	495	495	495	495	495	495	495	495	495		
18	18	21	19	19	19	19	19	21	19	21	21	21	21	21	21	21	21	19	19		
518	518	518	440	440	440	440	440	440	440	455	455	455	495	495	495	495	495	495	495		
16	16	16	18	18	18	18	18	18	18	17	17	17	19	19	19	19	19	19	17		
504	504	504	504	440	440	440	440	440	440	455	455	455	455	455	455	495	495	495	495	TKR 60.100	
15	15	15	15	17	17	17	17	17	17	16	16	16	16	16	16	18	18	18	18		
400	488	488	488	440	440	440	440	440	440	440	455	455	455	455	455	455	455	455	495		
14	14	14	14	16	16	15	15	15	15	15	15	15	15	15	15	15	15	15	16		
400	400	488	488	488	440	440	440	440	440	440	455	455	455	455	455	455	455	455	455		
13	13	13	13	13	14	14	14	14	14	14	14	13	13	13	13	13	13	13	13		
395	395	400	400	395	395	504	504	440	440	440	440	455	455	455	455	455	455	455	455	TKR 60.100	
13	13	12	12	12	12	10	10	12	12	12	12	12	12	12	12	12	12	12	12		
6,750	7,000	7,250	7,500	7,750	8,000	8,250	8,500	8,750	9,000	9,250	9,500	9,750	10,000	10,250	10,500	10,750	11,000	11,250	11,500	Height ^	
TAR 3.30		TAR 3.42		TAR 3.50				TAR 5.75				TAR 6.100								Drive >	

30. Table of reference values - roller grille, aluminium, TG-A and TG-V

S = Min. headroom
T = Approx. shutter system opening time in seconds.

Drive >		TAR 1.14				TAR 2.22					TAR 3.30				TAR 3.42						
Width >		2,000	2,250	2,500	2,750	3,000	3,250	3,500	3,750	4,000	4,250	4,500	4,750	5,000	5,250	5,500	5,750	6,000	6,250	6,500	
TAR 1.14	8,000	S	642	642	642	642	642	642	642	642	642	642	690	690	690	690	690	690	690	690	
		T	39	39	39	39	39	39	39	39	39	39	36	36	36	36	36	36	36	36	
	7,750	S	620	620	620	620	620	620	620	620	620	620	670	670	670	670	670	670	670	670	
		T	39	39	39	39	39	39	39	39	39	39	36	36	36	36	36	36	36	36	
	7,500	S	620	620	620	620	620	620	620	620	620	620	670	670	670	670	670	670	670	670	
		T	38	38	38	38	38	38	38	38	38	38	35	35	35	35	35	35	35	35	
	7,250	S	620	620	620	620	620	620	620	620	620	620	654	654	654	654	654	654	654	654	
		T	37	37	37	37	37	37	37	37	37	37	35	35	35	35	35	35	35	35	
	7,000	S	620	620	620	620	620	620	620	620	620	620	654	654	654	654	654	654	654	654	
		T	35	35	35	35	35	35	35	35	35	35	34	34	34	34	34	34	34	34	
	6,750	S	610	610	610	610	610	610	610	610	610	610	654	654	654	654	654	654	654	654	
		T	35	35	35	35	35	35	35	35	35	35	32	32	32	32	32	32	32	32	
	6,500	S	592	592	592	592	592	592	592	592	592	592	648	648	648	648	648	648	648	648	
		T	35	35	35	35	35	35	35	35	35	35	31	31	31	31	31	31	31	31	
	6,250	S	592	592	592	592	592	592	592	592	592	592	636	636	636	636	636	636	636	636	
		T	33	33	33	33	33	33	33	33	33	33	31	31	31	31	31	31	31	31	
	6,000	S	592	592	592	592	592	592	592	592	592	592	620	620	620	620	620	620	620	620	
		T	32	32	32	32	32	32	32	32	32	32	30	30	30	30	30	30	30	30	
	5,750	S	592	592	592	592	592	592	592	592	592	592	620	620	620	620	620	620	620	620	
		T	30	30	30	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	
	5,500	S	550	550	550	550	550	550	550	550	550	550	584	584	584	584	584	584	584	584	
		T	30	30	30	30	30	30	30	30	30	30	28	28	28	28	28	28	28	28	
	5,250	S	530	530	530	530	530	530	530	530	530	530	580	580	580	580	580	580	580	580	
		T	29	29	29	29	29	29	29	29	29	29	27	27	27	27	27	27	27	27	
	5,000	S	530	530	530	530	530	530	530	530	530	530	570	570	570	570	570	570	570	570	
		T	28	28	28	28	28	28	28	28	28	28	26	26	26	26	26	26	26	26	
	4,750	S	530	530	530	530	530	530	530	530	530	530	540	540	540	540	540	540	540	540	
		T	27	27	27	27	27	27	27	27	27	27	26	26	26	26	26	26	26	26	
	4,500	S	510	510	510	510	510	510	510	510	510	510	540	540	540	540	540	540	540	540	
		T	26	26	26	26	26	26	26	26	26	26	25	25	25	25	25	25	25	25	
	4,250	S	510	510	510	510	510	510	510	510	510	510	540	540	540	540	540	540	540	540	
		T	25	25	25	25	25	25	25	25	25	25	23	23	23	23	23	23	23	23	
	4,000	S	410	410	410	410	410	410	410	410	410	410	540	540	540	540	540	540	540	540	
		T	24	24	24	24	24	24	24	24	24	24	22	22	22	22	22	22	22	22	
	3,750	S	410	410	410	410	410	410	410	410	410	410	540	540	540	540	540	540	540	540	
		T	22	22	22	22	22	22	22	22	22	22	20	20	20	20	20	20	20	20	
	3,500	S	410	410	410	410	410	410	410	410	410	410	410	410	410	506	506	506	506	506	
		T	21	21	21	21	21	21	21	21	21	21	20	20	20	20	20	20	20	20	
	3,250	S	410	410	410	410	410	410	410	410	410	410	410	410	410	410	506	506	506	506	
		T	20	20	20	20	20	20	20	20	20	20	19	19	19	19	19	19	19	19	
	3,000	S	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	506	506	
		T	19	19	19	19	19	19	19	19	19	19	17	17	17	17	17	17	17	17	
	2,750	S	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	
		T	17	17	17	17	17	17	17	17	17	17	16	16	16	16	16	16	16	16	
	2,500	S	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	
		T	16	16	16	16	16	16	16	16	16	16	15	15	15	15	15	15	15	15	
	2,250	S	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	
		T	15	15	15	15	15	15	15	15	15	15	13	13	13	13	13	13	13	13	
	2,000	S	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	
		T	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	
Drive >	Height ^	Width >	2,000	2,250	2,500	2,750	3,000	3,250	3,500	3,750	4,000	4,250	4,500	4,750	5,000	5,250	5,500	5,750	6,000	6,250	6,500
			TAR 1.14																		

30. Table of reference values - roller grille, aluminium, TG-A and TG-V

 Note: - The tables of reference values are only for standard shutters. - The underfill height is always at least 40 mm for a pulse control. - A guard is required for doors with a height of less than 2,500 mm and a pulse control (also see price list).																				
TAR 3.50				TAR 5.75						TAR 6.100		TAR 7.165								< Drive
6,750	7,000	7,250	7,500	7,750	8,000	8,250	8,500	8,750	9,000	9,250	9,500	9,750	10,000	10,250	10,500	10,750	11,000	11,250	11,500	< Width
700	700	700	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	8,000
35	35	35	39	39	39	39	39	39	39	40	40	45	45	45	45	45	45	45	45	41
674	674	674	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
35	35	35	38	38	38	38	38	38	38	38	38	38	43	43	43	43	43	43	43	40
674	674	674	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
34	34	34	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	42
674	674	674	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
33	33	33	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	42
668	668	668	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
32	32	32	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	42
668	668	668	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
31	31	31	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	42
648	648	648	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
31	31	31	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	42
636	636	636	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
31	31	31	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	42
620	620	620	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
30	30	30	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	42
620	620	620	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
29	29	29	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	42
584	584	584	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
28	28	28	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	42
580	580	580	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
27	27	27	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	42
580	580	580	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
26	26	26	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	42
570	570	570	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
25	25	25	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	42
540	540	540	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
25	25	25	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	42
540	540	540	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
23	23	23	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	42
540	540	540	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
22	22	22	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	42
540	540	540	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	42
506	506	506	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
20	20	20	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	42
506	506	506	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	42
506	506	506	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	42
496	496	496	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	42
486	486	486	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	42
486	486	486	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	42
410	410	410	716	716	716	716	716	716	716	734	734	734	734	734	734	734	734	734	734	756
13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	42
6,750	7,000	7,250	7,500	7,750	8,000	8,250	8,500	8,750	9,000	9,250	9,500	9,750	10,000	10,250	10,500	10,750	11,000	11,250	11,500	Height ^
TAR 1.14				TAR 2.22				TAR 3.30				TAR 3.50				TAR 5.75				Drive >

31. Table of reference values - roller grille, aluminium, TG-X

S

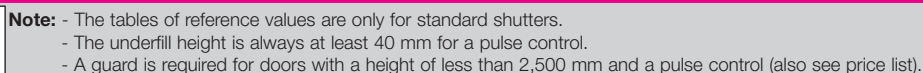
= Min. headroom

T

= Approx. shutter system opening time in seconds

Drive >		TAR 1.14			TAR 2.22						TAR 3.30						TAR 3.42				
Width >		2,000	2,250	2,500	2,750	3,000	3,250	3,500	3,750	4,000	4,250	4,500	4,750	5,000	5,250	5,500	5,750	6,000	6,250	6,500	
TAR 1.14	6,000	S	568	568	568	568	568	568	568	568	568	568	568	568	568	568	568	568	568	568	
		T	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	
	5,750	S	568	568	568	568	568	568	568	568	568	568	568	568	568	568	568	568	568	568	
		T	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	
	5,500	S	538	538	538	538	538	538	538	538	538	538	538	538	538	538	538	538	538	538	
		T	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
	5,250	S	410	410	410	410	410	410	410	410	410	500	500	500	500	500	500	500	500	500	
		T	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	
	5,000	S	410	410	410	410	410	410	410	410	410	410	500	500	500	500	500	500	500	500	
		T	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
	4,750	S	410	410	410	410	410	410	410	410	410	410	410	500	500	500	500	500	500	500	
		T	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	
	4,500	S	410	410	410	410	410	410	410	410	410	410	410	410	500	500	500	500	500	500	
		T	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	
	4,250	S	410	410	410	410	410	410	410	410	410	410	410	410	410	385	385	385	385	385	
		T	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	
	4,000	S	410	410	410	410	410	410	410	410	410	410	410	410	410	410	385	385	385	385	
		T	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	
	3,750	S	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	385	385	385	
		T	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	
	3,500	S	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	385	
		T	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	
	3,250	S	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	
		T	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	
	3,000	S	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	
		T	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
	2,750	S	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	
		T	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	
	2,500	S	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	
		T	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	
	2,250	S	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	
		T	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	
	2,000	S	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	410	
		T	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	
Drive >	Height ^	Width >	2,000	2,250	2,500	2,750	3,000	3,250	3,500	3,750	4,000	4,250	4,500	4,750	5,000	5,250	5,500	5,750	6,000	6,250	6,500
			TAR 1.14																		

31. Table of reference values - roller grille, aluminium, TG-X



	TAR 3.50					TAR 5.75						TAR 6.100						< Drive < Width	
TAR 3.42	7,000	7,250	7,500	7,750	8,000	8,250	8,500	8,750	9,000	9,250	9,500	9,750	10,000	10,250	10,500	10,750	11,000		
568	568	568	580	580	580	580	586	586	586	586	586	470	470	485	485	485	485	6,000	
33	33	33	31	31	31	31	29	29	29	29	29	35	35	35	35	35	35		
568	568	568	580	580	580	580	586	586	586	586	586	586	470	485	485	485	485	5,750	
32	32	32	30	30	30	30	28	28	28	28	28	28	34	33	33	33	33		
538	538	538	506	506	506	506	556	556	556	556	556	556	556	440	455	455	455	5,500	
30	30	30	31	31	31	31	27	27	27	27	27	27	27	32	32	32	32		
500	500	500	500	506	506	506	506	556	556	556	556	556	556	556	455	455	455	5,250	
31	31	31	31	30	30	30	30	30	25	25	25	25	25	25	30	30	30		
500	500	500	500	506	506	506	506	536	536	536	536	536	536	536	455	455	455	5,000	
30	30	30	30	28	28	28	28	25	25	25	25	25	25	25	29	29	29		
500	500	500	500	506	506	506	506	536	536	536	536	536	536	536	536	455	455	4,750	
28	28	28	28	27	27	27	27	24	24	24	24	24	24	24	24	28	28		
500	500	500	500	500	496	496	496	496	536	536	536	536	536	536	536	455	455	4,500	
27	27	27	27	27	26	26	26	26	22	22	22	22	22	22	22	27	27		
385	385	385	385	385	496	496	496	496	536	536	536	536	536	536	536	440	455	4,250	
27	27	27	27	27	24	24	24	24	21	21	21	21	21	21	21	23	25		
385	385	385	385	385	496	496	496	496	526	526	526	526	526	526	526	526	440	4,000	
26	26	26	26	26	23	23	23	23	20	20	20	20	20	20	20	20	21		
385	385	385	385	385	385	496	496	496	496	526	526	526	526	526	526	526	440	3,750	
24	24	24	24	24	24	21	21	21	21	19	19	19	19	19	19	19	20		
385	385	385	385	385	385	395	395	395	395	526	526	526	526	526	526	526	526	3,500	
22	22	22	22	22	22	21	21	21	21	18	18	18	18	18	18	18	18		
385	385	385	385	385	385	385	395	395	395	526	526	526	526	526	526	526	526	3,250	
22	22	22	22	22	22	22	20	20	20	16	16	16	16	16	16	16	16		
410	385	385	385	385	385	385	395	395	395	486	486	486	486	486	486	486	486	3,000	
20	20	20	20	20	20	20	18	18	18	16	16	16	16	16	16	16	16		
410	410	410	385	385	385	385	395	395	395	395	486	486	486	486	486	486	486	2,750	
19	19	19	19	19	19	19	17	17	17	17	15	15	15	15	15	15	15		
410	410	410	410	410	410	385	385	395	395	395	395	486	486	486	486	486	486	2,500	
17	17	17	17	17	17	17	17	16	16	16	16	13	13	13	13	13	13		
410	410	410	410	410	410	410	410	385	385	395	395	395	486	486	486	486	486	2,250	
15	15	15	15	15	15	15	15	15	14	14	14	14	12	12	12	12	12		
410	410	410	410	410	410	410	410	410	385	385	395	395	395	395	395	395	395	2,000	
14	14	14	14	14	14	14	14	14	14	12	12	12	12	11	11	11	11		
6,750	7,000	7,250	7,500	7,750	8,000	8,250	8,500	8,750	9,000	9,250	9,500	9,750	10,000	10,250	10,500	10,750	11,000	Height ^	
TAR 1.14					TAR 2.22					TAR 3.30					TAR 3.50				Drive >

32. Table of reference values - High-speed roller shutter ThermoTeck, steel

S = Min. headroom

T = Approx. shutter system opening time in seconds

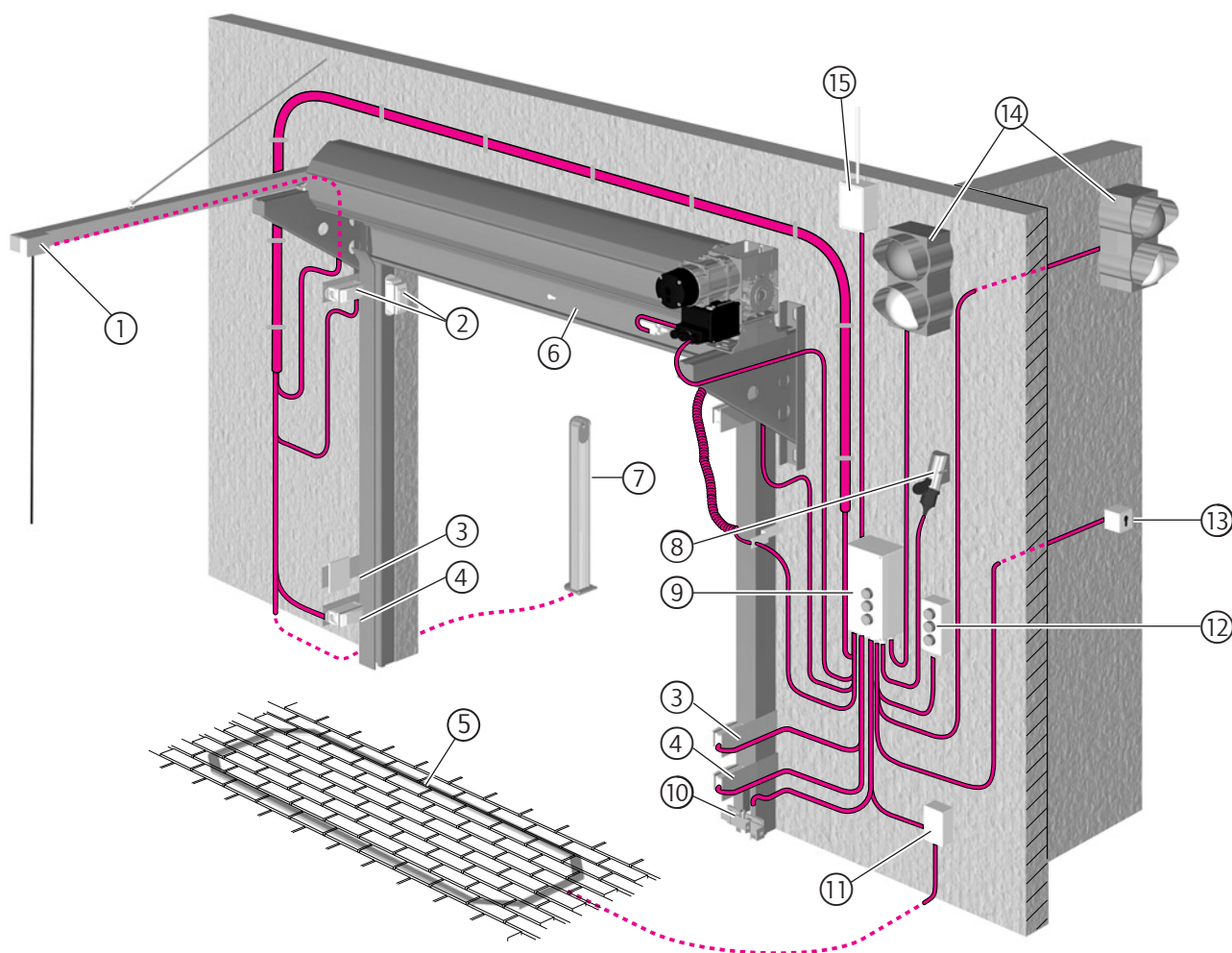
ThermoTeck glazing with a door width of up to 12,000 mm!

Drive >		TAR 5.75 SA																	
Width >		2,000	2,250	2,500	2,750	3,000	3,250	3,500	3,750	4,000	4,250	4,500	4,750	5,000	5,250	5,500	5,750	6,000	
TAR 3.40 SA	8,000	S	754	754	754	754	754	754	754	740	740	740	740	710	710	710	710	710	
		T	14	14	14	14	14	14	14	14	15	15	15	15	17	17	17	17	
	7,750	S	726	726	726	726	726	726	726	726	726	735	735	735	735	710	710	710	710
		T	14	14	14	14	14	14	14	14	14	15	15	15	15	16	16	16	16
	7,500	S	734	734	734	734	734	734	734	734	734	735	735	735	735	735	694	694	694
		T	14	14	14	14	14	14	14	14	14	15	15	15	15	15	16	16	16
	7,250	S	734	734	734	734	734	734	734	734	734	734	730	730	730	730	730	678	678
		T	13	13	13	13	13	13	13	13	13	13	14	14	14	14	14	16	16
	7,000	S	732	732	732	732	732	732	732	732	732	732	732	730	730	730	730	678	678
		T	13	13	13	13	13	13	13	13	13	13	13	14	14	14	14	16	16
	6,750	S	730	730	730	730	730	730	730	730	730	730	730	710	710	710	710	710	670
		T	12	12	12	12	12	12	12	12	12	12	12	13	13	13	13	13	15
	6,500	S	722	722	722	722	722	722	722	722	722	722	722	722	710	710	710	710	710
		T	12	12	12	12	12	12	12	12	12	12	12	12	13	13	13	13	13
	6,250	S	692	692	692	692	692	692	692	692	692	692	692	692	692	691	691	691	691
		T	12	12	12	12	12	12	12	12	12	12	12	12	12	13	13	13	13
	6,000	S	692	692	692	692	692	692	692	692	692	692	692	692	692	692	691	691	691
		T	11	11	11	11	11	11	11	11	11	11	11	11	11	11	12	12	12
TAR 3.32 SA	5,750	S	692	692	692	692	692	692	692	692	692	692	692	692	692	692	692	691	
		T	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	12	
	5,500	S	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	661	
		T	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	11	
	5,250	S	656	656	656	656	656	656	656	656	656	656	656	656	656	656	656	656	
		T	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
	5,000	S	638	638	638	638	638	638	638	638	638	638	638	638	638	638	638	638	
		T	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
	4,750	S	624	624	624	624	624	624	624	624	624	624	624	624	624	624	624	624	
		T	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
	4,500	S	624	624	624	624	624	624	624	624	624	624	624	624	624	624	624	624	
		T	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
	4,250	S	624	624	624	624	624	624	624	624	624	624	624	624	624	624	624	624	
		T	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
	4,000	S	616	616	616	616	616	616	616	616	616	688	688	688	688	688	688	688	
		T	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
	3,750	S	606	606	606	606	606	606	606	606	606	606	683	683	683	683	683	683	
		T	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
	3,500	S	586	586	586	586	586	586	586	586	586	586	586	673	673	673	673	673	
		T	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
	3,250	S	576	576	576	576	576	576	576	576	576	576	576	576	668	668	668	668	
		T	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
	3,000	S	576	576	576	576	576	576	576	576	576	576	576	576	576	576	668	668	
		T	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
	2,750	S	574	574	574	574	574	574	574	574	574	574	574	574	574	574	574	574	
		T	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
	2,500	S	637	637	637	637	637	637	637	637	637	637	637	637	637	637	637	637	
		T	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
	2,250	S	623	623	623	623	623	623	623	623	623	623	623	623	623	623	623	623	
		T	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
	2,000	S	623	623	623	623	623	623	623	623	623	623	623	623	623	623	623	623	
		T	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
Drive >	Height >	Width >	2,000	2,250	2,500	2,750	3,000	3,250	3,500	3,750	4,000	4,250	4,500	4,750	5,000	5,250	5,500	5,750	6,000
			TAR 3.32 SA													TAR 3.40 SA			

33. Table of reference values - Easy ThermoTeck

S		= Min. headroom																Note: For technical info. on the TG-X "easy", please contact the factory.	
T		= Approx. shutter system opening time in seconds																	
Drive >			TAR 1.14 E			TAR 2.20 E					TAR 3.27 E					< Drive			
Width >			2,000	2,250	2,500	2,750	3,000	3,250	3,500	3,750	4,000	4,250	4,500	4,750	5,000	< Width			
TAR 1.14 E	5,000	S	609	609	609	609	609	609	609	609	609	609	- / -	- / -	- / -	S	TAR 3.27 E		
		T	28	28	28	23	23	23	23	23	23	23	- / -	- / -	- / -	T			
	4,750	S	604	604	604	604	604	604	604	604	604	604	- / -	- / -	- / -	S			
		T	27	27	27	27	22	22	22	22	22	22	- / -	- / -	- / -	T			
	4,500	S	591	591	591	591	591	591	591	591	591	591	- / -	- / -	- / -	S			
		T	27	27	27	27	27	22	22	22	22	22	22	- / -	- / -	T			
	4,250	S	591	591	591	591	591	591	591	591	591	591	591	- / -	- / -	S			
		T	26	26	26	26	26	20	20	20	20	20	20	- / -	- / -	T			
	4,000	S	588	588	588	588	588	588	588	588	588	588	588	588	- / -	S			
		T	24	24	24	24	24	24	20	20	20	20	20	20	- / -	T			
	3,750	S	586	586	586	586	586	586	586	586	586	586	586	586	- / -	S			
		T	23	23	23	23	23	23	23	18	18	18	18	18	- / -	T			
	3,500	S	580	580	580	580	580	580	580	580	580	580	580	580	- / -	S			
		T	22	22	22	22	22	22	22	22	18	18	18	18	- / -	T			
	3,250	S	569	569	569	569	569	569	569	569	569	569	569	569	569	S			
		T	21	21	21	21	21	21	21	21	21	17	17	17	17	T			
	3,000	S	511	511	511	511	511	511	511	511	511	511	511	511	511	S			
		T	20	20	20	20	20	20	20	20	20	20	20	16	16	T			
	2,750	S	511	511	511	511	511	511	511	511	511	511	511	511	511	S			
		T	18	18	18	18	18	18	18	18	18	18	18	18	15	T			
	2,500	S	503	503	503	503	503	503	503	503	503	503	503	503	503	S			
		T	17	17	17	17	17	17	17	17	17	17	17	17	17	T			
	2,250	S	494	494	494	494	494	494	494	494	494	494	494	494	494	S			
		T	16	16	16	16	16	16	16	16	16	16	16	16	16	T			
	2,000	S	492	492	492	492	492	492	492	492	492	492	492	492	492	S			
		T	14	14	14	14	14	14	14	14	14	14	14	14	14	T			
Drive >	Height >	Width >	2,000	2,250	2,500	2,750	3,000	3,250	3,500	3,750	4,000	4,250	4,500	4,750	5,000	< Width	Height >	Drive >	
			TAR 1.14 E																

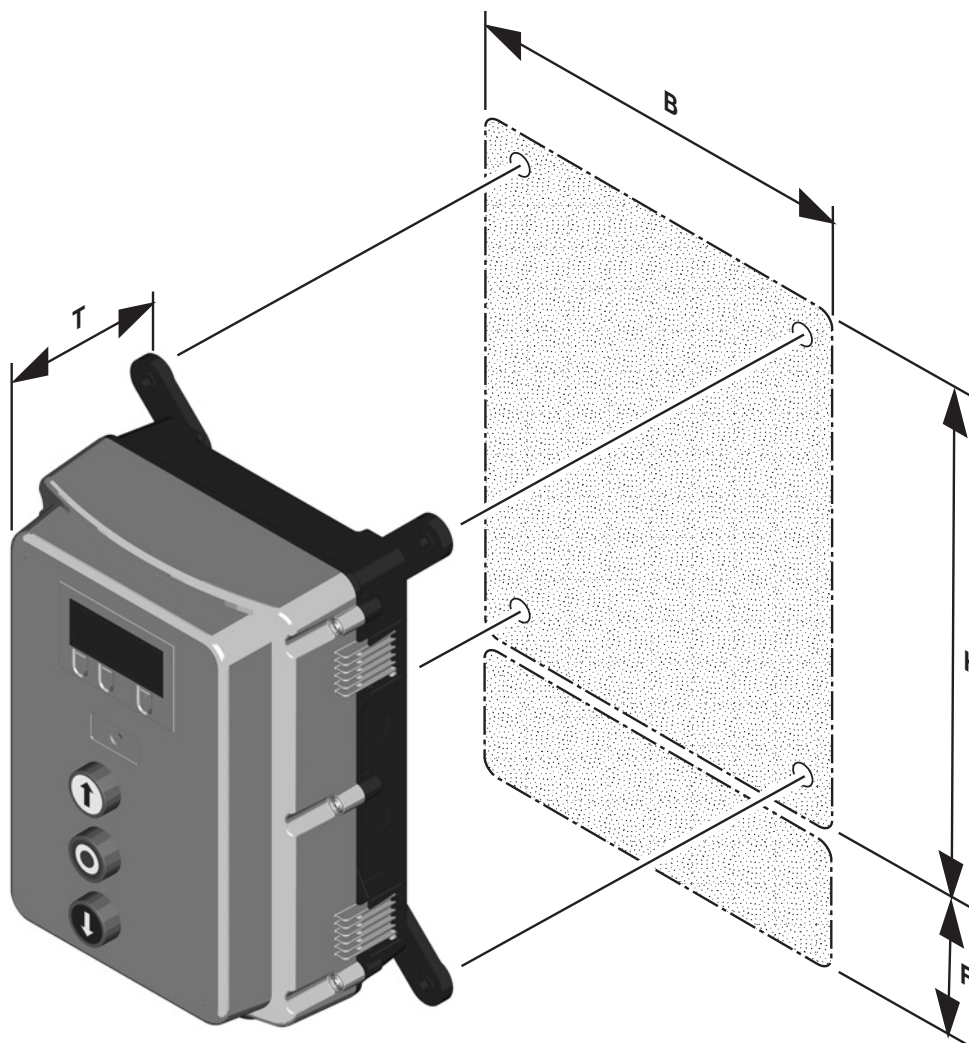
34. Wiring plan



Wiring plan legend

No.	Name	Voltage (V)	Wire gauge	Max. length (m)
1	Cantilever with pull switch	24	2 x 0.5 mm ²	25
2	Roll-up safety device	Transmitter (3 m incl.)	24	2 x 0.5 mm ²
		Receiver (12 m incl.)	24	4 x 0.5 mm ²
3	Clearance photo switch (reflex)	24	4 x 0.5 mm ²	25
4	Clearance photo switch (one-way)	Transmitter (3 m incl.)	24	2 x 0.5 mm ²
		Receiver (12 m incl.)	24	4 x 0.5 mm ²
5	Induction loop	–	–	–
6	Lockable bottom profile	24	2 x 0.5 mm ²	25
7	Aluminium standing column with key-operated switch	24	2 x 0.5 mm ² (per contact)	25
8	CEE socket 16 A / 5-core / 400 V	–	–	–
9	Control	–	Pre-wired as standard	–
10	Sliding bolt	24	2 x 0.5 mm ²	25
11	Evaluation unit for induction loop (feed cable)	230	3 x 1.5 mm ²	25
12	Push button	24	2 x 0.5 mm ² (per contact)	25
13	Key-operated switch	OPEN – CLOSE	24	3 x 0.5 mm ²
		OPEN – CLOSE with stop button	24	5 x 0.5 mm ²
14	Traffic light	230	5 x 1.5 mm ²	50
15	External radio receiver	24	6 x 0.5 mm ²	25

35. Roller shutter controls



Roller shutter control data							
Control designation		KDT **	CS 310	CS 400	CS 300 FU	RSE 100 *	MS 300 *
Housing width	B	70	235	320	230	180	215
Housing height	H	140	315	445	445	130	185
Housing depth	T	60	150	135	135	60	95
Required space for connections	F	min. 60	min. 60	min. 60	min. 60	min. 60	min. 60
Operating voltage	V	–	400 / 3~	400 / 3~	400 / 3~	230 / 1~	230 / 1~
Special voltage	V	–	230 / 3~	–	–	–	–
		–	230 / 1~	–	180-240 / 1~	–	–
Mains frequency	Hz	–	50	50	50-60	50-60	50
Control voltage	V	–	24	24	24	24	24
Max. load capacity	KW / A	–	2.2 / 6	2.2 / 6	3.0 / 10 (230 V / 3~)	0.92 / 4	1.1 / 4
Degree of protection	IP	65	65	65	65	54	54
Temperature range	°C	-10 / +50	-10 / +60	-10 / +50	-10 / +50	-10 / +50	-10 / +50

* only for tubular motors

** Push buttons, only for Easy shutters

Notes

[illegible]

Notes





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