



## PRODUCT DATA

DIMENSIONS, TECHNICAL INFORMATION AND PERFORMANCE  
SPECIFICATION

# trend**vario** 6200+



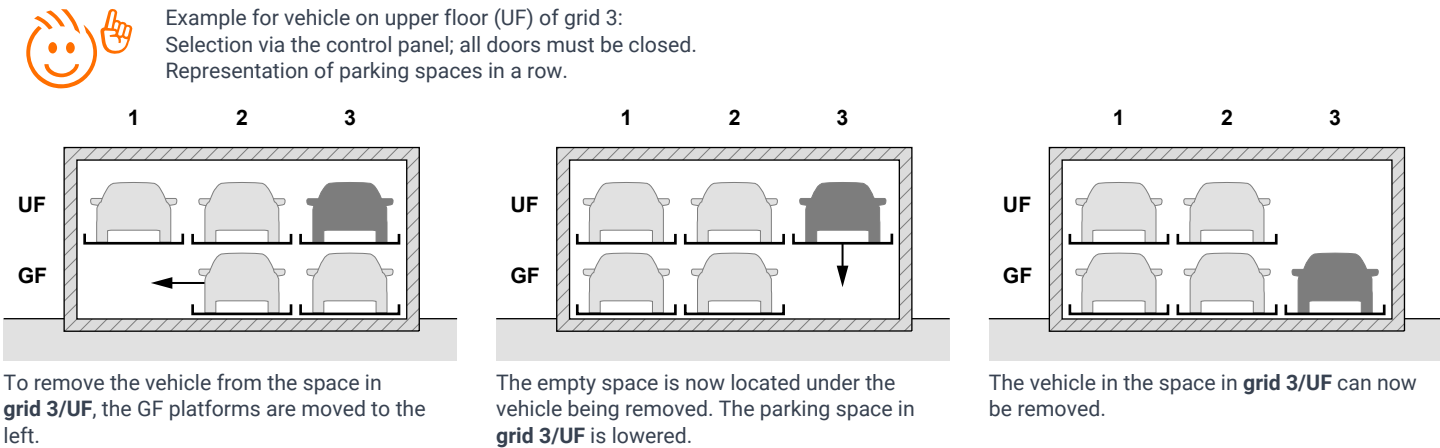
## Table of contents

|                                                     |   |                                              |    |
|-----------------------------------------------------|---|----------------------------------------------|----|
| Explanation of symbols.....                         | 2 | Arrangement of grids – KombiSystem.....      | 8  |
| Function diagram with standard designation.....     | 2 | Access incline.....                          | 9  |
| Dimensions and tolerances.....                      | 2 | Clearance for installations.....             | 9  |
| Overview of building configuration.....             | 3 | CE conformity.....                           | 10 |
| Vehicle data.....                                   | 3 | Electrical installation.....                 | 11 |
| Overview of system types and ceiling heights.....   | 4 | Technical information.....                   | 12 |
| Width dimension and door height.....                | 5 | Performance specification.....               | 13 |
| Configuration with standard sliding door.....       | 5 | Services to be provided by the customer..... | 15 |
| Configuration with plus sliding door.....           | 6 | Subject to technical changes.....            | 15 |
| Detail of building configuration - rail system..... | 7 |                                              |    |
| Loading schedule.....                               | 8 |                                              |    |

## Explanation of symbols

-  Platforms accessible horizontally.
-  max. load per parking space in kg.  
Upweighting over 2000 kg possible with surcharge (see "Vehicle data", page 3).
-  Parking space load can be subsequently upweighted (see "Vehicle data", page 3).
-  Traversable and can be combined with other TrendVario systems as a KombiSystem.
-  The systems provided are consistent with DIN EN 14010, the VDMA 15423 specification and the EC Machinery Directive 2006/42/EC.
-  This system has also undergone a voluntary compliance test conducted by TÜV SÜD.

## Function diagram with standard designation

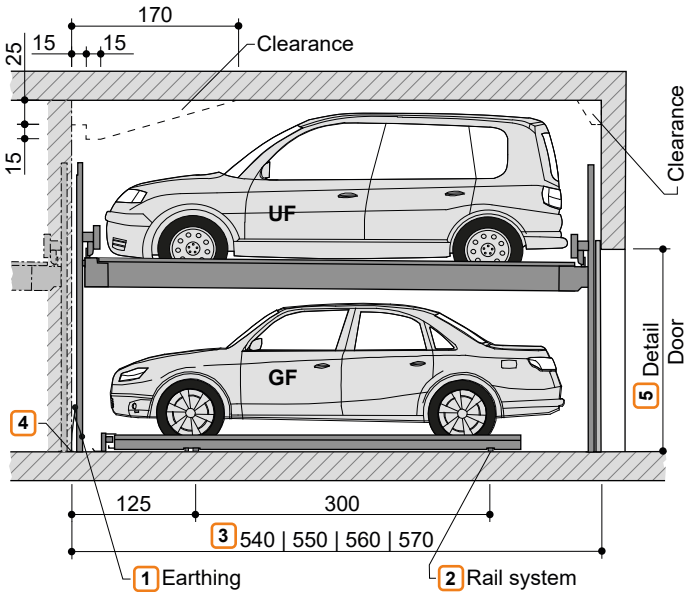


## Dimensions and tolerances

-  All dimensions and minimum final dimensions.  
Tolerance for dimensions +3/-0. Dimensions in cm.  
In order to adhere to the minimum final dimensions, the tolerances in accordance with the German Construction Tendering and Contract Regulations [VOB], Part C (DIN 18330 and 18331) and DIN 18202 must also be taken into account.

# Overview of building configuration

## Configuration with standard sliding door 5



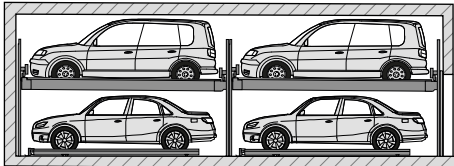
- 1 Equipotential bonding from the foundation earth connection to the system (on site).
- 2 The tolerances for evenness of the roadway (floor) must be adhered to in accordance with DIN 18202, Table 3, row 3. (see "Detail of building configuration - rail system", page 7).
- 3
  - 540 cm for vehicles up to 5.0 m long
  - 550 cm for vehicles up to 5.1 m long
  - 560 cm for vehicles up to 5.2 m long
  - 570 cm for vehicles up to 5.3 m long
Shorter versions are possible on request - observe local regulations on parking space lengths.  
We recommend a minimum length of 560 cm for comfortable use of your parking space and increasingly longer vehicles.
- 4 No fillets/haunches are permitted at the transition from the pit floor to the walls. If fillets/haunches are required, the systems must be narrower or the pits wider.
- 5 Door detail and other door variants (see "Configuration with standard sliding door", page 5 and see "Configuration with plus sliding door", page 6).



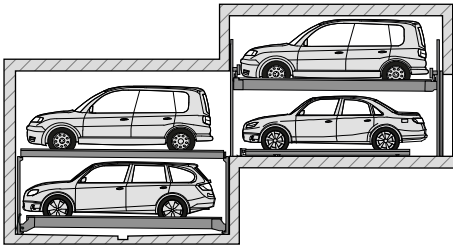
If fire-extinguishing systems are required, the customer must ensure that sufficient clearance is provided.

## KombiSystem examples

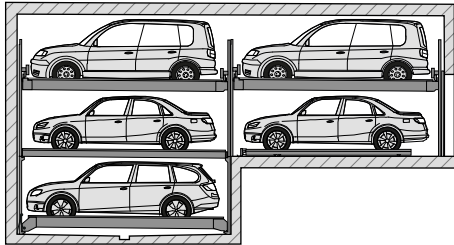
### Combination 6200+ with 6200+



### Combination 6100 with 6200+



### Combination 6300 with 6200+



# Vehicle data

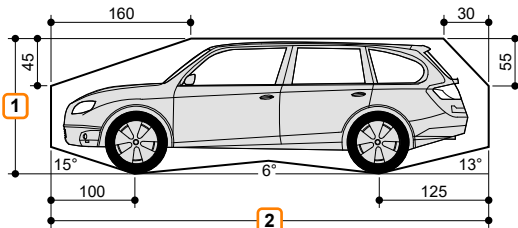
## Parking options

Series vehicles:  
saloon, estate, SUV, van in accordance with clearance gauge and maximum parking space load.

|            | UF   GF 3 |         |         |
|------------|-----------|---------|---------|
| Weight 4   | 2000 kg   | 2600 kg | 3000 kg |
| Wheel load | 500 kg    | 650 kg  | 750 kg  |

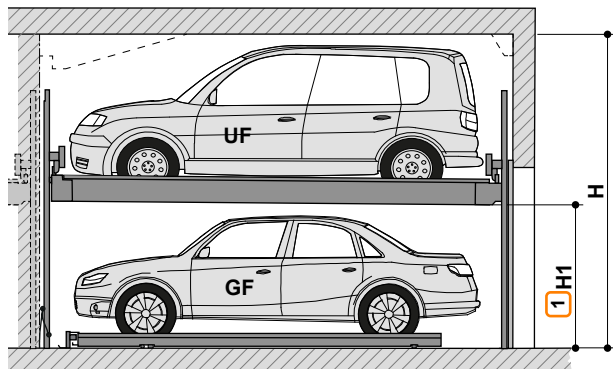
- 1 Vehicle height (see "Overview of system types and ceiling heights", page 4)
- 2 Vehicle length (see "Overview of building configuration", page 3)
- 3 UF = upper floor| GF = ground floor
- 4 Individual space loads can also be subsequently upweighted to 3000 kg.

## Clearance gauge



Vehicle width 190 cm with platform width 230 cm.  
Correspondingly wider vehicles can be parked with wider platforms.

## Overview of system types and ceiling heights



H: Ceiling height  
 H1: Headroom

| Type      | H1  | Vehicle height GF | Vehicle height UF |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----------|-----|-------------------|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|           |     |                   | 150               | 155 | 160 | 165 | 170 | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 |
| 6200+/160 | 160 | 150               | 330               | 335 | 340 | 345 | 350 | 355 | 360 | 365 | 370 | 375 | 380 | 385 | 390 | 395 | 400 |
| 6200+/165 | 165 | 155               | 335               | 340 | 345 | 350 | 355 | 360 | 365 | 370 | 375 | 380 | 385 | 390 | 395 | 400 | 405 |
| 6200+/170 | 170 | 160               | 340               | 345 | 350 | 355 | 360 | 365 | 370 | 375 | 380 | 385 | 390 | 395 | 400 | 405 | 410 |
| 6200+/175 | 175 | 165               | 345               | 350 | 355 | 360 | 365 | 370 | 375 | 380 | 385 | 390 | 395 | 400 | 405 | 410 | 415 |
| 6200+/180 | 180 | 170               | 350               | 355 | 360 | 365 | 370 | 375 | 380 | 385 | 390 | 395 | 400 | 405 | 410 | 415 | 420 |
| 6200+/185 | 185 | 175               | 355               | 360 | 365 | 370 | 375 | 380 | 385 | 390 | 395 | 400 | 405 | 410 | 415 | 420 | 425 |
| 6200+/190 | 190 | 180               | 360               | 365 | 370 | 375 | 380 | 385 | 390 | 395 | 400 | 405 | 410 | 415 | 420 | 425 | 430 |
| 6200+/195 | 195 | 185               | 365               | 370 | 375 | 380 | 385 | 390 | 395 | 400 | 405 | 410 | 415 | 420 | 425 | 430 | 435 |
| 6200+/200 | 200 | 190               | 370               | 375 | 380 | 385 | 390 | 395 | 400 | 405 | 410 | 415 | 420 | 425 | 430 | 435 | 440 |
| 6200+/205 | 205 | 195               | 375               | 380 | 385 | 390 | 395 | 400 | 405 | 410 | 415 | 420 | 425 | 430 | 435 | 440 | 445 |
| 6200+/210 | 210 | 200               | 380               | 385 | 390 | 395 | 400 | 405 | 410 | 415 | 420 | 425 | 430 | 435 | 440 | 445 | 450 |
| 6200+/215 | 215 | 205               | 385               | 390 | 395 | 400 | 405 | 410 | 415 | 420 | 425 | 430 | 435 | 440 | 445 | 450 | 455 |
| 6200+/220 | 220 | 210               | 390               | 395 | 400 | 405 | 410 | 415 | 420 | 425 | 430 | 435 | 440 | 445 | 450 | 455 | 460 |

H - Ceiling height

H - Ceiling height

1 Maximum vehicle height for the passage = H1 - 5 cm

### Example configuration



Example: Vehicle height, GF 165 cm and vehicle height, UF 180 cm.  
 Type: 6200+/175  
 Ceiling height: 375 cm

| Type      | H1  | Vehicle height GF | Vehicle height UF |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |
|-----------|-----|-------------------|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|
|           |     |                   | 150               | 155 | 160 | 165 | 170 | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 |   |
| 6200+/160 | 160 | 150               | 330               | 335 | 340 | 345 | 350 | 355 | 360 | 365 | 370 | 375 | 380 | 385 | 390 | 395 | 400 | H |
| 6200+/165 | 165 | 155               | 335               | 340 | 345 | 350 | 355 | 360 | 365 | 370 | 375 | 380 | 385 | 390 | 395 | 400 | 405 |   |
| 6200+/170 | 170 | 160               | 340               | 345 | 350 | 355 | 360 | 365 | 370 | 375 | 380 | 385 | 390 | 395 | 400 | 405 | 410 |   |
| 6200+/175 | 175 | 165               | 345               | 350 | 355 | 360 | 365 | 370 | 375 | 380 | 385 | 390 | 395 | 400 | 405 | 410 | 415 |   |
| 6200+/180 | 180 | 170               | 350               | 355 | 360 | 365 | 370 | 375 | 380 | 385 | 390 | 395 | 400 | 405 | 410 | 415 | 420 |   |

H

## Width dimension and door height

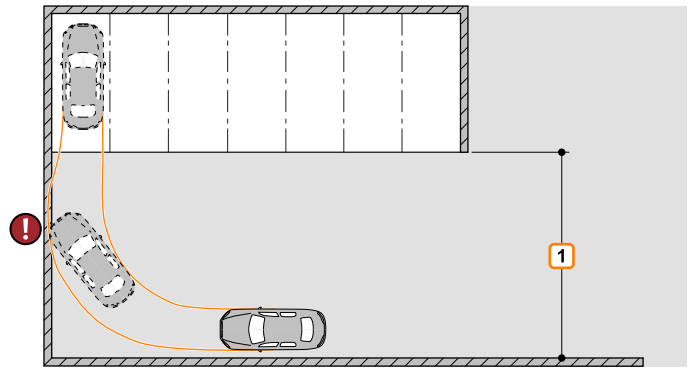


We recommend platform widths of minimum 250 cm and driving lane widths of 650 cm in order that vehicles can comfortably access the Multiparking system and enter and leave without difficulty.

Narrower platforms may impede parking according to the following criteria.

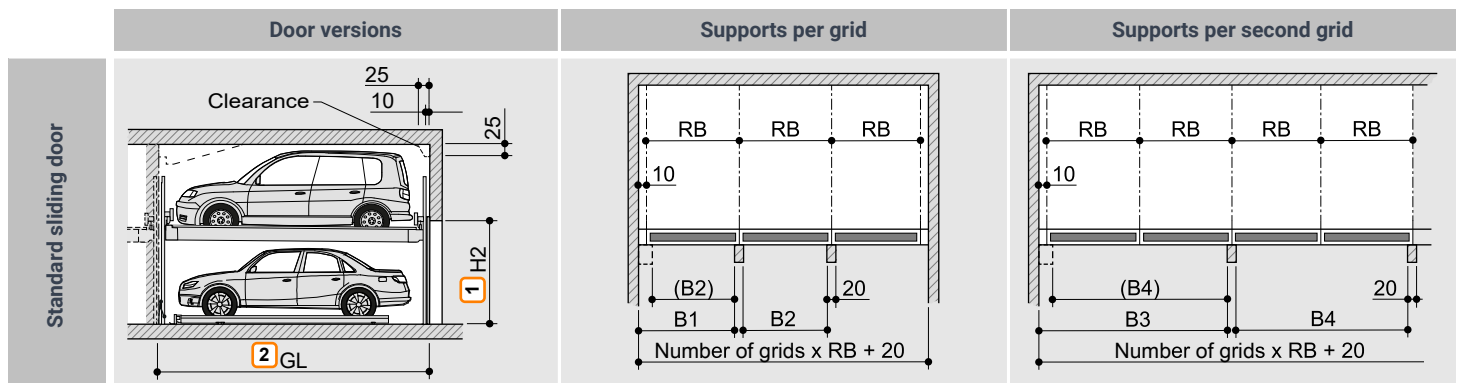
- Driving lane width
- Entrance conditions
- Vehicle dimensions

1 Observe minimum driving lane width in accordance with local regulations.



For commercial use of doors with electrical drive systems, an inspection log is required in accordance with ASR A1.7 'Technical rules for workplaces' in Germany. The door must be inspected by an expert before commissioning and annually thereafter and the result entered in the inspection log. The inspection must be carried out independently of maintenance. Observe local regulations on operation of electrical doors.

### Configuration with standard sliding door



|                  | Clear platform width |     | RB 3 | Supports per grid |     | Supports per second grid |     |
|------------------|----------------------|-----|------|-------------------|-----|--------------------------|-----|
|                  | UF                   | GF  |      | B1                | B2  | B3                       | B4  |
| Width dimensions | 230                  | 220 | 250  | 250               | 230 | 500                      | 480 |
|                  | 240                  | 230 | 260  | 260               | 240 | 520                      | 500 |
|                  | 250                  | 240 | 270  | 270               | 250 | 540                      | 520 |
|                  | 260                  | 250 | 280  | 280               | 260 | 560                      | 540 |
|                  | 270                  | 260 | 290  | 290               | 270 | 580                      | 560 |

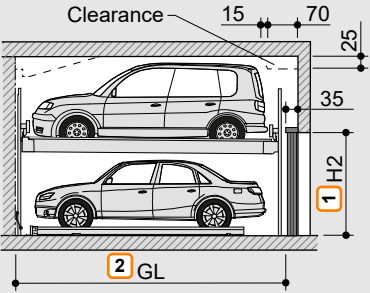
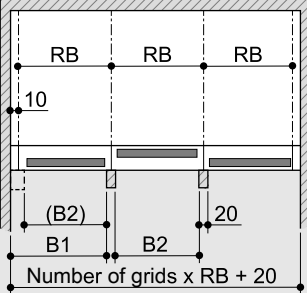
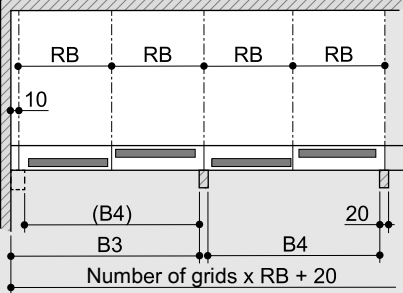
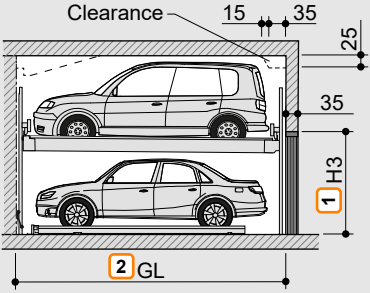
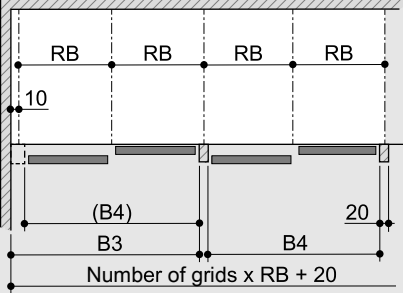
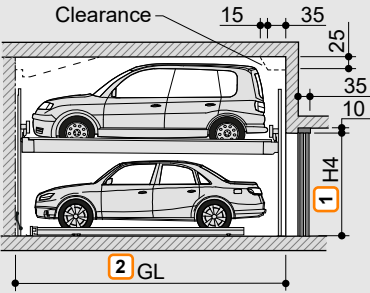
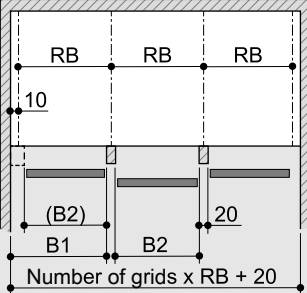
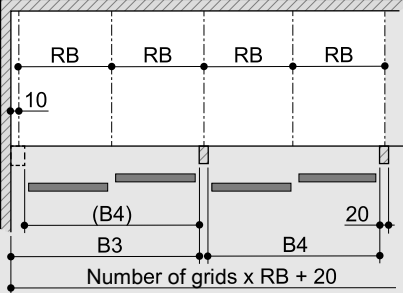
|    | max. vehicle height UF   GF |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----|-----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|    | 150                         | 155 | 160 | 165 | 170 | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 |
| H2 | 210                         | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 215 | 220 | 225 | 230 | 235 |

1 Observe minimum clear height H2 in accordance with local regulations.

2 GL = building length (see "Overview of building configuration", page 3).

3 RB = grid width. These dimensions **must** be adhered to.

Configuration with plus sliding door

|                                               | Door versions                                                                      |     |                 | Supports per grid                                                                   |     |                          | Supports per second grid                                                             |     |     |     |     |     |     |     |     |
|-----------------------------------------------|------------------------------------------------------------------------------------|-----|-----------------|-------------------------------------------------------------------------------------|-----|--------------------------|--------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Plus sliding door<br>behind the supports      |   |     |                 |   |     |                          |   |     |     |     |     |     |     |     |     |
|                                               |                                                                                    |     |                 |                                                                                     |     |                          |                                                                                      |     |     |     |     |     |     |     |     |
| Plus sliding door<br>inside the supports      |   |     |                 | Not possible!                                                                       |     |                          |   |     |     |     |     |     |     |     |     |
|                                               |                                                                                    |     |                 |                                                                                     |     |                          |                                                                                      |     |     |     |     |     |     |     |     |
| Plus sliding door<br>in front of the supports |  |     |                 |  |     |                          |  |     |     |     |     |     |     |     |     |
|                                               |                                                                                    |     |                 |                                                                                     |     |                          |                                                                                      |     |     |     |     |     |     |     |     |
| Width<br>dimensions                           | Clear platform width                                                               |     | RB <sup>3</sup> | Supports per grid                                                                   |     | Supports per second grid |                                                                                      |     |     |     |     |     |     |     |     |
|                                               | UF                                                                                 | GF  |                 | B1                                                                                  | B2  | B3                       | B4                                                                                   |     |     |     |     |     |     |     |     |
|                                               | 230                                                                                | 220 | 250             | 250                                                                                 | 230 | 500                      | 480                                                                                  |     |     |     |     |     |     |     |     |
|                                               | 240                                                                                | 230 | 260             | 260                                                                                 | 240 | 520                      | 500                                                                                  |     |     |     |     |     |     |     |     |
|                                               | 250                                                                                | 240 | 270             | 270                                                                                 | 250 | 540                      | 520                                                                                  |     |     |     |     |     |     |     |     |
|                                               | 260                                                                                | 250 | 280             | 280                                                                                 | 260 | 560                      | 540                                                                                  |     |     |     |     |     |     |     |     |
|                                               | 270                                                                                | 260 | 290             | 290                                                                                 | 270 | 580                      | 560                                                                                  |     |     |     |     |     |     |     |     |
|                                               | max. vehicle height UF   GF                                                        |     |                 |                                                                                     |     |                          |                                                                                      |     |     |     |     |     |     |     |     |
|                                               | 150                                                                                | 155 | 160             | 165                                                                                 | 170 | 175                      | 180                                                                                  | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 |
| H2                                            | 210                                                                                | 210 | 210             | 210                                                                                 | 210 | 210                      | 210                                                                                  | 210 | 210 | 210 | 215 | 220 | 225 | 230 | 235 |
| H3                                            | 220                                                                                | 220 | 220             | 220                                                                                 | 220 | 220                      | 220                                                                                  | 220 | 220 | 220 | 225 | 230 | 235 | 240 | 245 |
| H4                                            | 210                                                                                | 210 | 210             | 210                                                                                 | 210 | 210                      | 210                                                                                  | 210 | 210 | 210 | 215 | 220 | 225 | 230 | 235 |

- <sup>1</sup> Observe minimum clear height H2/H3/H4 in accordance with local regulations.  
<sup>2</sup> GL = building length (see "Overview of building configuration", page 3).  
<sup>3</sup> RB = grid width. These dimensions **must** be adhered to.

## Detail of building configuration - rail system

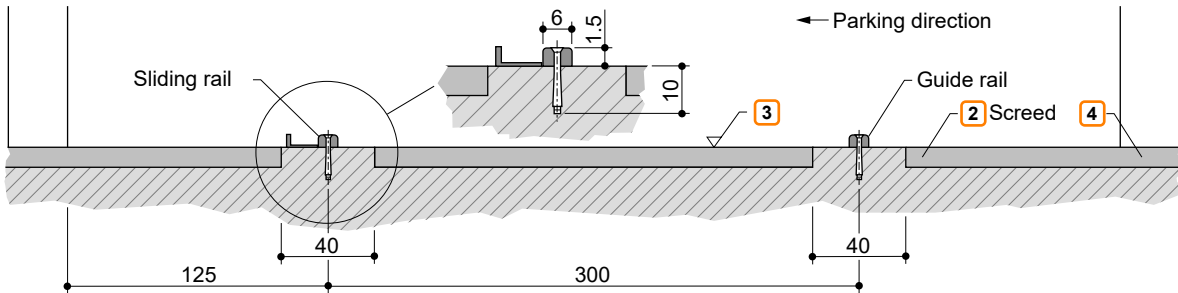


Various options are available for rail installation depending on the structural conditions.

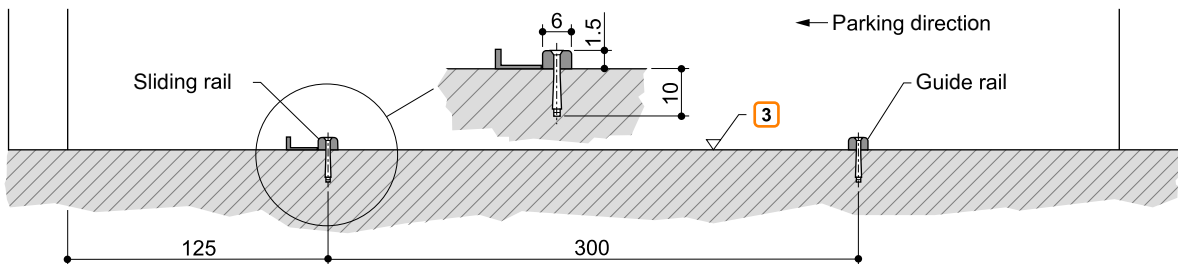
Rail load due to a moving traffic load:

- With parking space load 2000 kg: 6.5 kN per wheel
- With parking space load 2600 kg: 8.0 kN per wheel
- With parking space load 3000 kg: 9.0 kN per wheel

### Laying on strip foundation <sup>1</sup>



### Laying on finished floor <sup>1</sup>



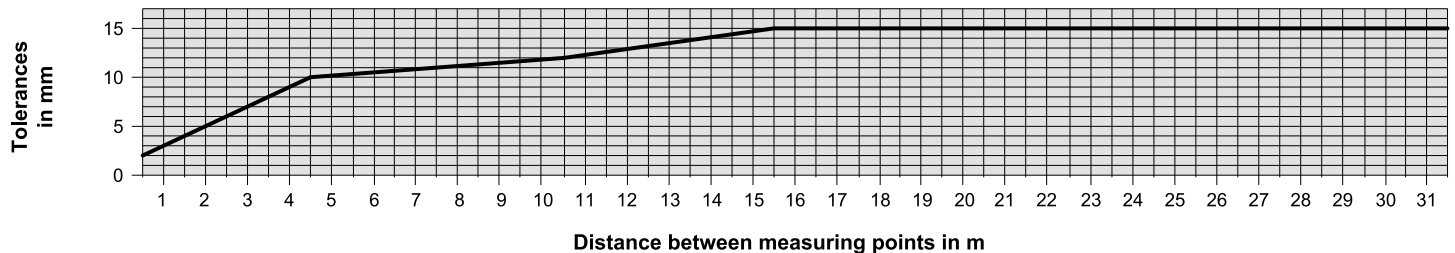
- <sup>1</sup> The tolerances for evenness of the roadway (floor) must be adhered to in accordance with DIN 18202, Table 3, row 3. There must be no building joints or expansion joints in the area around the rail system.
- <sup>2</sup> We do not recommend using poured asphalt.
- <sup>3</sup> Upper edge finished floor
- <sup>4</sup> Plugging of the sliding door rails

### Evenness tolerance – extract from DIN 18202, Table 3



The safety clearance between the outer lower edges of the ParkBoard and the floor must not exceed 2 cm. To comply with the requirement in DIN EN 14010 and to reach the requisite floor evenness, the evenness of the finished floor in accordance with DIN 18202, Table 3, row 3 must not be exceeded. The customer does not, therefore, need to level the floor.

| Row | Reference                                                                                                                                  | Inside micrometer as limit values in mm<br>with measuring point distances in m to <sup>1</sup> |   |    |    |    |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---|----|----|----|
|     |                                                                                                                                            | 0.1                                                                                            | 1 | 4  | 10 | 15 |
| 3   | Finished floors, e.g. screeds as floor screeds, screeds for floor coverings, floor coverings, tile coverings, levelled and glued coverings | 2                                                                                              | 4 | 10 | 12 | 15 |

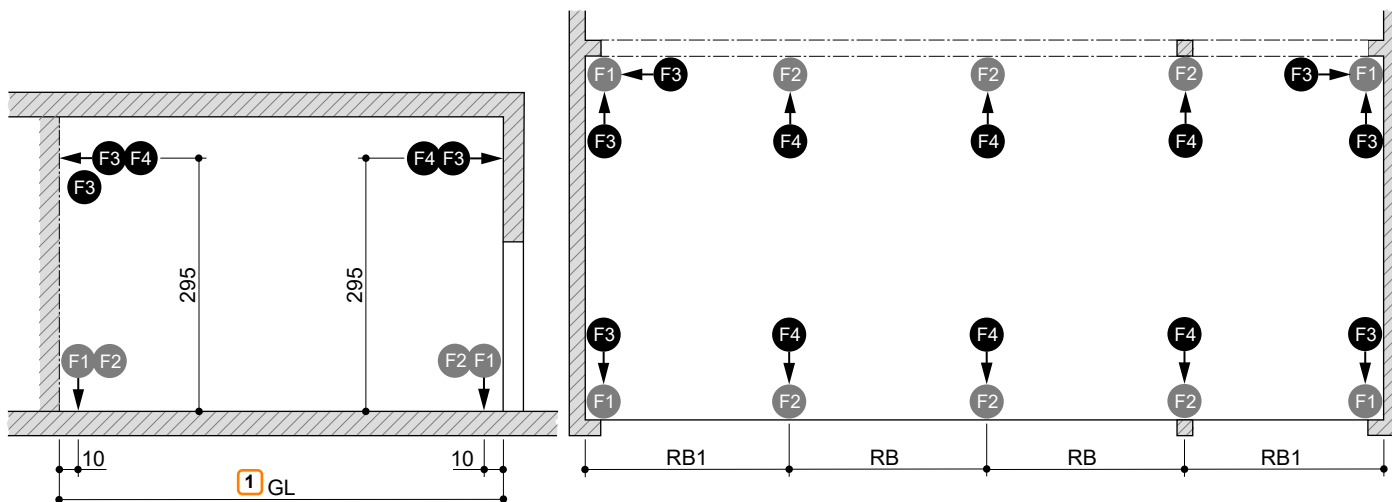


- <sup>1</sup> Intermediate values can be found in the diagram and should be rounded up.

## Loading schedule



The systems are dowelled into the ground. The drill hole depth in the floor plate is approx. 15 cm, in the walls approx. 12 cm.  
 The floor plate and walls must be from concrete (quality min. C20/25).  
 The dimensions for the bearing points have been rounded. If the precise figures are required, please consult KLAUS Multiparking.

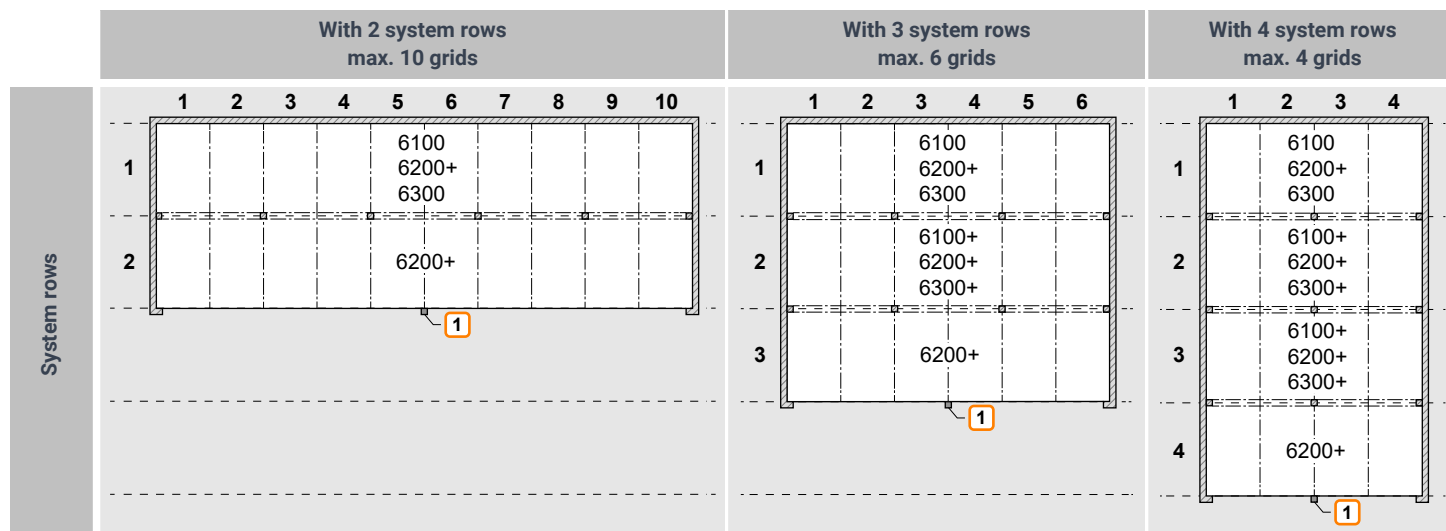


| Parking space load | F1                    | F2                    | F3       | F4       |
|--------------------|-----------------------|-----------------------|----------|----------|
| 2000 kg            | + 9.0 kN<br>- 0.1 kN  | + 18.0 kN<br>- 0.2 kN | ± 0.5 kN | ± 1.0 kN |
| 2600 kg            | + 12.0 kN<br>- 0.3 kN | + 24.0 kN<br>- 0.6 kN | ± 0.8 kN | ± 1.6 kN |
| 3000 kg            | + 13.0 kN<br>- 0.4 kN | + 26.0 kN<br>- 0.8 kN | ± 1.0 kN | ± 2.0 kN |

| Clear plat-<br>form width UF | RB 2 | RB1 |
|------------------------------|------|-----|
| 230                          | 250  | 260 |
| 240                          | 260  | 270 |
| 250                          | 270  | 280 |
| 260                          | 280  | 290 |
| 270                          | 290  | 300 |

- 1 GL = building length  
 2 RB = grid width. These dimensions **must** be adhered to.

## Arrangement of grids – KombiSystem

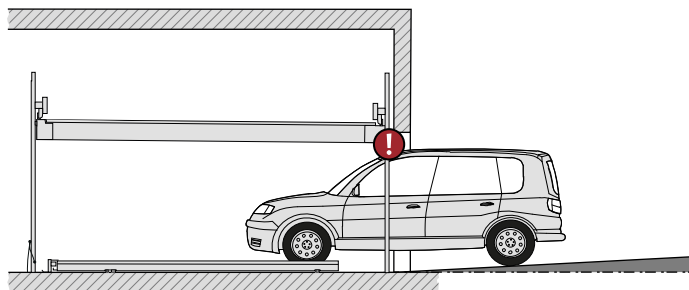


- 1 Control panel

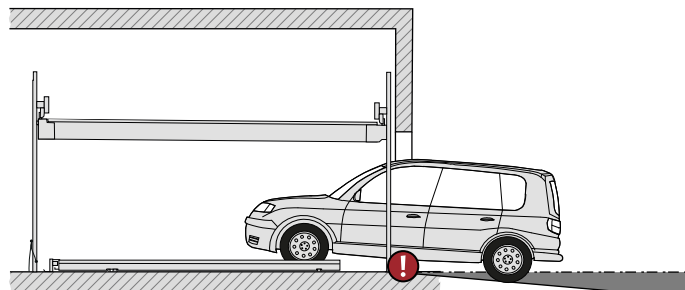
## Access incline



The maximum access inclines specified in the symbol sketch must not be exceeded. Improper configuration can lead to extreme difficulty accessing the system, for which KLAUS Multiparking cannot be held liable. Where above-ground garages are on a slope, provision of a drainage gutter in the access is recommended.

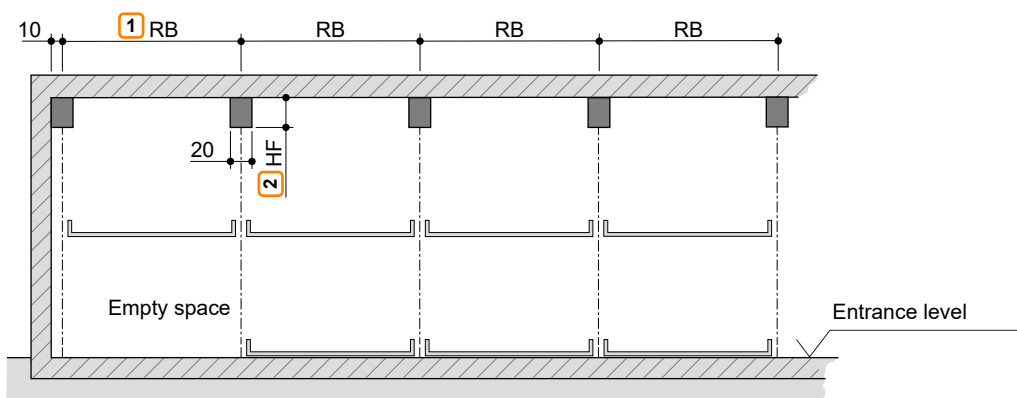


max. 3% slope



max. 5% gradient

## Clearance for installations



1 RB = grid width. These dimensions **must** be adhered to.

2 HF: Clearance height = building height (H) - 305 cm | where CH max. = 45 cm (see "Overview of system types and ceiling heights", page 4).

■ Clearance for lengthways cable routing

**CE conformity**

The systems provided are consistent with DIN EN 14010, the VDMA 15423 specification and the EC Machinery Directive 2006/42/EC. This system has also undergone a voluntary compliance test conducted by TÜV SÜD.

ZERTIFIKAT ♦ CERTIFICATE ♦ 認証証書 ♦ CERTIFICADO ♦ CERTIFICAT

  
Industrie Service

### Certificate concerning the examination of conformity

Certificate no:

CA 695

Certification body:

TÜV SÜD Industrie Service GmbH  
Westendstr. 199  
80686 München – Germany

Applicant / Certification holder:

KLAUS Multiparking GmbH  
Hermann-Krum-Str. 2  
88319 Aitrach – Germany

Manufacturer:

KLAUS Multiparking GmbH  
Hermann-Krum-Str. 2  
88319 Aitrach – Germany

Product:

Equipment for power driven parking of motor vehicles

Type:

TrendVario 6200+  
2.000 kg, 2.600 kg, 3.000 kg

Directive:

2006 / 42 / EC, Annex I

Test specifications:

DIN EN 14010:2003+A1:2009

Date and number of the test report / mark of conformity:

No. CA 695 from 2023-03-17

Result:

The equipment fulfils the requirements of the test specifications for the respective scope of application stated in the annex (page 1) of this certificate, keeping the mentioned conditions.

Date of issue:

2023-03-31

Validity:

2028-03-30

  
Bernd Gründig  
Zertifizierstelle der Fördertechnik





## Electrical installation

### Switch cabinet and master switch

Access to the switch cabinet (about 60 x 60 x 21 cm) must be possible without danger. The lockable master switch must be positioned so that the entire entry area of the facility can be surveyed.

With wall opening from switch cabinet to system (consultation with KLAUS Multiparking required).

### Hydraulic unit

- 3.0 kW, three-phase current 230/400 V AC / 50 Hz / 8 A

#### Alternative versions for a surcharge:

- 5.2 kW, three-phase current 230/400 V AC / 50 Hz / 13.8 A
- One hydraulic unit per row (3 kW or 5.2 kW) for shorter access times.

### Supply cable to master switch

#### Standard sliding doors

##### With one hydraulic unit:

Customer-provided supply cable min. 5 x 2.5 mm<sup>2</sup> (3 PH+N+PE) to master switch with pre-fuse 3 x 16 A (slow T) or circuit breaker 3 x 16 A (trip characteristic K).

##### With multiply hydraulic units:

Customer-provided supply cable min. 5 x 6 mm<sup>2</sup> (3 PH+N+PE) to master switch with pre-fuse 3 x 32 A (slow T) or circuit breaker 3 x 32 A (trip characteristic K or C).

National and local laws and regulations regarding electrical energy supply must be observed (see "Supply cable to master switch - foundation earth", page 15).

#### Plus sliding doors

##### With one hydraulic unit:

Customer-provided supply cable min. 5 x 2.5 mm<sup>2</sup> (3 PH+N+PE) to master switch with pre-fuse 3 x 16 A (slow T) or circuit breaker 3 x 16 A (trip characteristic J).

##### With multiply hydraulic units:

Customer-provided supply cable min. 5 x 6 mm<sup>2</sup> (3 PH+N+PE) to master switch with pre-fuse 3 x 32 A (slow T) or circuit breaker 3 x 32 A (trip characteristic K or C).

National and local laws and regulations regarding electrical energy supply must be observed (see "Supply cable to master switch - foundation earth", page 15).

### Control panel with emergency-stop

- Attachment at a clear point (e.g. pillar).
- Secured against external operation.

## Technical information

### Usage area

The system is suitable for a fixed group of users as standard. Where users change (e.g. short-term parking in office buildings or hotels), structural modifications to the Multiparking system are required. Please request a consultation if required.

### Units

Low-noise, bearing-mounted hydraulic units are installed on rubber-metal blocks. Consequently, we recommend separating the garage body from the residential building.

### Parking space designation

Please consult the function diagram for the standard designation of the parking spaces (see *"Function diagram with standard designation"*, page 2). Alternative designations are possible with a surcharge.

Please note the following specifications:

- The empty space is situated on the left as standard.
- Any alternative designations must be notified 8 to 10 weeks before delivery.

### Ambient conditions

Ambient conditions for the areas around Multiparking systems:  
 Temperature range  $-10$  to  $+40^{\circ}\text{C}$ . Relative humidity 50 % to a maximum external temperature of  $+40^{\circ}\text{C}$ .  
 If ascent/descent times are specified, these relate to an ambient temperature of  $+10^{\circ}\text{C}$  and with the system positioned immediately adjacent to the hydraulic unit. These times are increased at lower temperatures or with longer hydraulic lines.

### Building application documents

Multiparking systems generally require approval. Please observe local regulations and stipulations.

### Care

To prevent corrosion damage, please observe our special cleaning and care instructions and ensure that your garage is well ventilated.

### Corrosion protection

In accordance with the 'Corrosion protection information' supplement.

### Electrically driven doors

For commercial use of doors with electrical drive systems, an annual inspection is required in accordance with ASR A1.7 'Technical rules for workplaces' in Germany. We urgently recommend concluding a maintenance contact as these services are included for the complete system.

### CE conformity

The systems provided are consistent with DIN EN 14010, the VDMA 15423 specification and the EC Machinery Directive 2006/42/EC. This system has also undergone a voluntary compliance test conducted by TÜV SÜD.

### Noise protection

#### Standard noise protection:

In accordance with DIN 4109-1 Noise protection in high-rise - Section 9:  
 Maximum sound pressure level in living and sleeping areas 30 dB (A).  
 User noise is not subject to the requirements.

The following dimensions are required for adherence to this value:

- Noise protection package in accordance with quote/order (KLAUS Multiparking)
- Sound insulation dimension of the building structure of min.  $R'w = 57\text{ dB}$  (service to be provided by the customer)

#### Increased sound protection (special agreement):

In accordance with DIN 4109-5 Increased noise protection in high-rise - Section 8:  
 Maximum sound pressure level in living and sleeping areas 25 dB (A).  
 User noise is not subject to the requirements.

The following dimensions are required for adherence to this value:

- Noise protection package in accordance with quote/order (KLAUS Multiparking)
- Sound insulation dimension of the building structure of min.  $R'w = 62\text{ dB}$  (service to be provided by the customer)

#### Note:

User noise is noise that can be influenced individually by the user of our Multiparking systems. This includes, e.g., accessing the platform, the slamming of vehicle doors, engine and brake noise.

## Performance specification

### Description

Multiparking system for independent parking of vehicles one on top of and next to one another.

The system is traversable and can be combined with the TrendVario 6100, 6100+, 6200+, 6300 and 6300+ (details on these systems can be found on the corresponding product sheets).

Dimensions in accordance with the underlying building, width and height dimensions.

Access to the parking spaces horizontally (installation tolerance  $\pm 1\%$ ).

An access must be provided over the entire width of the system (minimum driving lane width in accordance with local regulations).

The parking spaces are arranged on 2 levels one on top of the other. Vehicles park on stable steel platforms.

The platforms on the upper floor (UF) move vertically, the platforms on the ground floor (GF) move horizontally. At entrance level (GF), there is always 1 parking space less. This empty space is used for sideways movement of the GF parking spaces to allow a parking space on the UF above to lower to entrance level. Consequently, 3 parking spaces (1 on GF, 2 on UF) is the smallest unit for this parking system.

Vehicle positioning in any parking space by positioning aid mounted on one side (to be adjusted in accordance with the operating instructions).

For safety reasons, the movement operation of the platforms always takes place behind locked doors.

All requisite safety equipment is integrated into the system. This essentially comprises a chain monitoring system, locking levers for the upper platforms and locked doors. The doors can only be opened when the selected parking space has reached its parking position.

### Steel frame (secured to the floor) comprising:

- Supports (arranged in rows)
- Crossbeams and lengthways beams
- Sliding rails for the sideways moving GF platforms

### Platform comprising:

- Platform profiles
- Adjustable positioning aid
- Chamfered ramp
- Side beams
- Crossbeams
- Screws, nuts, washers, spacers, etc.

### Lifting equipment for platforms on the UF comprising:

- Hydraulic cylinders with solenoid valves
- Chain wheels
- Chains
- Limit switches
- The platforms are each suspended at 4 points and are guided at the supports by means of plastic plain bearings

### Drive unit for sideways moving platforms on GF:

- Gear motor with chain wheel
- Chains
- Sliding and guide rollers (low-noise)
- Power supply via energy chain

### Hydraulic unit comprising:

- Hydraulic unit (low-noise, fitted to bracket and bearing mounted on rubber-metal block)
- Hydraulic oil tank
- Oil filling
- Internal gear pump
- Pump holder
- Coupling
- Three-phase motor
- Noise protection, motor protection switch and control fuse
- Test pressure gauge
- Pressure relief valve
- Hydraulic hoses (to attenuate noise transmission to the hydraulic pipes)

### Control:

- Central control point (control panel with emergency-stop) for selecting the desired parking space
- The electrical wiring from the system cabinet is provided by the supplier

### Sliding doors - standard:

#### Size

Dimensions adjusted to the underlying widths and height dimensions.

The door comprises two door leaves

#### Frame

- Frame structure with two vertical centre rungs from extruded aluminium profiles (anodised, coating thickness approx. 20  $\mu\text{m}$ )
- There is a rubber lip on the closing edge for a clean seal with the building.

#### Door filling

Aluminium perforated plate

- Thickness 1.5 mm, RV 8-14 E6/EV1, anodised, coating thickness approx. 20  $\mu\text{m}$
- Ventilation cross-section of the filling approx. 30%

Plain aluminium sheet

- Thickness 2 mm, E6/EV1, anodised, coating thickness approx. 20  $\mu\text{m}$

Wire mesh

- Thickness 3 mm, mesh size 12 x 12 mm, V2A

#### Sliding rails

The ceiling and floor sliding rails of the doors are attached to the steel frame of the system.

#### Door actuation

■ Electrical drive system by means of electric motor, above the door frame. For safety reasons, the movement operation of the platforms always takes place behind locked doors. An electrical signal generator is used to query the positions 'door open' and 'door closed'.

#### Please note:

Door apertures (at the side, covers over the sliding rails, etc.) and door suspensions are not included with the standard configuration but can be supplied as special equipment with a surcharge.

## Plus sliding door

### Size

- Sliding doors, size approx. 2500 mm x 2000 mm (width x height).

### Frame

- Frame structure with one vertical centre rung from extruded aluminium profile (anodised, coating thickness approx. 20 µm)
- A handle shell is provided in a vertical aluminium profile for opening the doors.
- There is a rubber lip on the closing edge for a clean seal with the building.

### Standard door filling

#### Aluminium perforated plate

- Thickness 2 mm, RV 5-8 E6/EV1, anodised, coating thickness approximately 20 µm
- Ventilation cross-section of the filling approx. 40%

### Alternative door filling

#### Plain aluminium sheet

- Thickness 2 mm E6/EV1, anodised, coating thickness approximately 20 µm

#### Corrugated steel sheet

- Thickness 1 mm galvanised, coating thickness approximately 20 µm
- Additional powder coating, coating thickness approx. 25 µm on the outside and approx. 12 µm on the inside
- Colour options on the outside (building view):
 

|                            |                          |
|----------------------------|--------------------------|
| RAL 1015 (light ivory)     | RAL 3003 (ruby red)      |
| RAL 5014 (pigeon blue)     | RAL 6005 (moss green)    |
| RAL 7016 (anthracite grey) | RAL 7035 (light grey)    |
| RAL 7040 (window grey)     | RAL 8014 (sepia brown)   |
| RAL 9006 (white aluminium) | RAL 9016 (traffic white) |

- Door inside in a light grey tone

#### Wood filling

- Nordic spruce in A sorting
- Vertical tongue and groove boards
- Colourless, pre-coated

#### Composite safety glass

- Composite safety glass from 8/4 mm

#### Wire mesh

- Mesh size 12 x 12 mm
- Wire diameter 2 mm, galvanised, coating thickness approx. 20 µm
- Ventilation cross-section of the filling approx. 70%

### Sliding rails

- The running gear comprises 2 double-pair roll systems per door, height-adjustable
- The sliding rails of the doors are attached to brackets with cover bushings or directly to the concrete lintel or a building-specific door suspension
- The lower guide comprises 2 plastic rollers on a base plate which is dowelled to the floor
- Sliding rails, cover bushings, guide roller base plate are galvanised

### Door actuation

- Electrical drive system by means of electric motor attached to the rail system in the turning point of the sliding doors. The drive pinion engages a chain attached to the door.

For safety reasons, the movement operation of the platforms always takes place behind locked doors. An electrical signal generator is used to query the positions 'door open' and 'door closed'.

### Separation (if required)

- On request

### Please note:

Door apertures (at the side, cover over the sliding rails, etc.) and door suspensions are not included with the standard configuration but can be supplied as special equipment with a surcharge.

## Services to be provided by the customer

### Barriers

Barriers that may be required in accordance with DIN EN ISO 13857 where there are roadways immediately in front of, adjacent to or behind the systems. This also applies during the construction stage.

### Parking space numbering

Parking space numbering, if required.

### Building services systems

Any lighting, ventilation, fire-extinguishing and fire-alarm systems that may be required, plus clarification and compliance with corresponding official documentation.

### Lighting

The customer must observe local regulations pertaining to the illumination of parking spaces and roadways. In accordance with DIN EN 12464-1 'Light and lighting - Lighting of work places', an illumination level of min. 200 lx is recommended for the parking spaces and operating area of the system. A floating contact can be provided for actuation of parking space lighting provided by the customer.

### Floor structure – rails

Floor structure in accordance with the details on the product data sheet (see "Detail of building configuration - rail system", page 7).

Recesses, tolerances for evenness of the roadway must be adhered to in accordance with DIN 18202, Table 3, row 3.  
Lining for the rail system by means of cement screed over the entire length.  
Laying the screed

### Wall openings

Wall openings, if required.

### Supply cable to master switch - foundation earth

The customer must lay the supply cable to the master switch during assembly. Functional capability can be checked by our engineers on site, in conjunction with the electronics engineer. If this is not possible during assembly for reasons attributable to the customer, the customer must commission an electronics engineer.

The customer must earth the steel structure with a foundation earth connection (earthing distance max. 10 m) and equipotential bonding in accordance with DIN EN 60204.

### Door suspensions

Please note that if the specified clear heights (see "Width dimension and door height", page 5) are not adhered to, additional measures for door attachment (door suspensions) will be required for a surcharge.

### Door apertures

Door apertures, if required. This may be requested from KLAUS Multiparking for a surcharge.

## Subject to technical changes

In the course of technical progress, KLAUS Multiparking shall be entitled to use newer or different technologies, systems, processes or standards to provide the services than initially offered, provided that this does not disadvantage the customer in any way.

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