

# **KLAUS Multiparking GmbH**

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info@multiparking.com www.multiparking.com

# Loadable up to 3000 kg!

Individual parking spaces can even be loaded retrospectively!

#### **Dimensions**

All space requirements are minimum finished dimensions.

PRODUCT DATA

trendvario 6200+

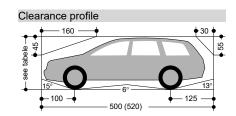
2000 kg / 2600 kg / 3000 kg

Tolerances for space requirements <sup>+3</sup> dimensions in cm.

#### Suitable for

Standard passenger vehicle: Limousine, Station Sagon, SUV, Van according to clearance and maximum surface load.

Width 3	190 cm	190 cm	190 cm
Weight	max.	max. 1	max. 1
	2000 kg	2600 kg	3000 kg
Wheel load	max.	max.	max.
	500 kg	650 kg	750 kg



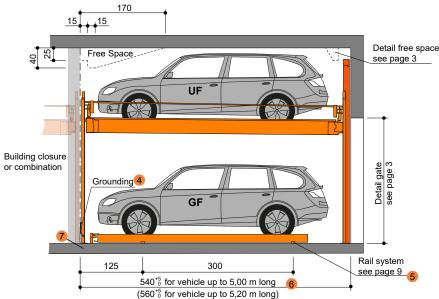
# **Building version with vertical gate**

Gate variants see pages 3 to 6

Combination 6200+ with 6200+

**Examples KombiSystem** 

540 (560)



width dimensions

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Section

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width

Page 4 Sliding gate

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dimensions

Vertical gate

dimensions

Height dimensions

Vehicle data

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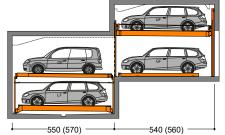
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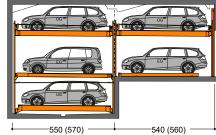
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Combination 6100 with 6200+

# Combination 6300 with 6200+



- 1 Maximum load possible at additional cost.
- 2 To follow the minimum finished dimensions, make sure to consider the tolerances according to VOB, part C (DIN 18330 and 18331) and the DIN 18202

540 (560)

- 3 Vehicle width for platform width 230 cm. If wider platforms are used it is also possible to park wider vehicle.
- 4 Potential equalization from foundation grounding connection to system (provided by the customer).
- 5 Tolerances for the evenness of the carriageway (floor) must be strictly complied with in accordance with DIN 18202, chart 3, line 3...
- 6 For convenient use of your parking space and due to the fact that the cars keep becoming longer we recommend a pit length of 560 cm.
- 7 At the transition section between pit floor and walls no hollow mouldings/coves are possible. If hollow mouldings/coves are required, the systems must be designed smaller or the pits accordingly wider.



If sprinklers are required make sure to provide the necessary free spaces during the planning stage.

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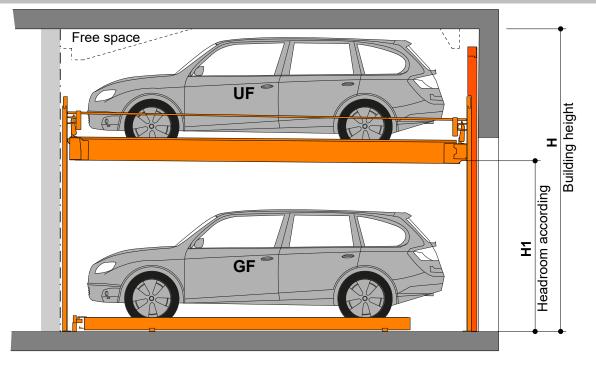
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# **Height dimensions**



	Vehicle				Vehicle height UF													
Туре	H1	height GF	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	١.
6200+ / 175	175	165	345	350	355	360	365	370	375	380	385	390	395	400	405	410	415	4
6200+ / 180	180	170	350	355	360	365	370	375	380	385	390	395	400	405	410	415	420	3
6200+ / 185	185	175	355	360	365	370	375	380	385	390	395	400	405	410	415	420	425	2017
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	

# **Example of a configuration**



Example : Vehicle height GF 175 cm & Vehicle height UF 190 cm

Type : 6200+ /185 Headroom according (H1) : 185 cm Building height : 395 cm

		Vehicle							Vehic	le hei	ght U	=					
Type	H1	height															
		GF	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	3'70	375	380	385	390	395	400
6200+ / 165	165	155	335	340	345	350	355	360	365	370	3'75	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	955	300	305	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

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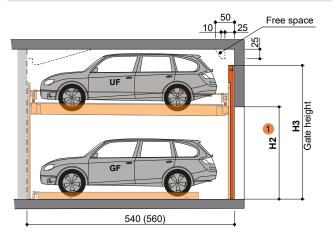
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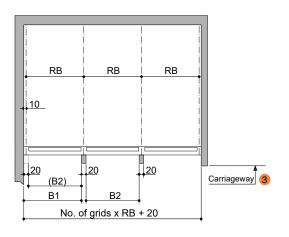
# Garages with vertical gates | Width dimensions

# Gate behind columns



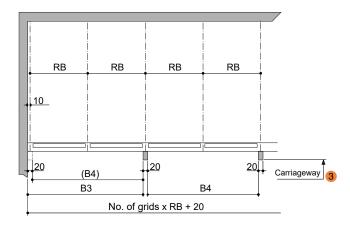
max. Vehicle height UF / GF	H2	нз
150	210	325
155	210	335
160	210	335
165	210	335
170	210	335
175	210	335
180	210	360
185	210	360
190	210	360
195	210	360
200	215	360
205	220	385
210	225	385
215	230	385
220	235	385

## Columns per each grid unit



	2		
Usable platform width	RB	B1	B2
230	250	250	230
240	260	260	240
250	270	270	250
260	280	280	260
270	290	290	270

# Columns every second grid unit



Usable platform width	RB	В3	B4
230	250	500	480
240	260	520	500
250	270	540	250
260	280	560	540
270	290	580	560



In accordance with ASR A1.7, an inspection book is required for a gate with electric drive that is intended for commercial use. Prior to commissioning and annually thereafter, the gate must be inspected by a qualified expert and the findings recorded in the inspection book. The inspection must be performed independently of any maintenance work.

We generally recommend our maximum platform width of 270 cm for corner boxes and boxes with dividing walls. The adjoining grid must be taken into account during planning. Narrower platform widths can cause problems during operation (depending on the vehicle type, access situation and individual driving behaviour).

For large limousinesand SUVs, the access lanes may need to be widened (especially in the case of corner boxes with an insufficient manoeuvring radius)

- 1 Minimum clear height H2 to local regulations.
- 2 RB = Grid unit width must strictly conform to dimensions quotes!
- 3 Observe minimum carriageway width according to local regulations.

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Vertical gate width dimensions

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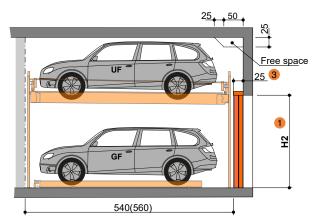
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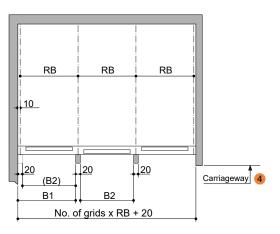
# Garages with sliding gates | Widths dimensions

## Sliding gate behind columns



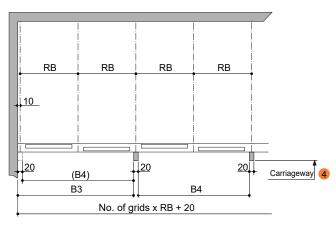
max. Vehicle height UF / GF	H2
150	210
155	210
160	210
165	210
170	210
175	210
180	210
185	210
190	210
195	210
200	215
205	220
210	225
215	230
220	235

# Columns per each grid unit



	2		
Usable platform width	RB	B1	B2
230	250	250	230
240	260	260	240
250	270	270	250
260	280	280	260
270	290	290	270

# Columns every second grid unit



Usable platform width	RB	В3	B4
230	250	500	480
240	260	520	500
250	270	540	250
260	280	560	540
270	290	580	560



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- 1 Minimum clear height H2 to local regulations.
- 2 RB = Grid unit width must strictly conform to dimensions quotes!
- 3 Only applies to manually operated gates. The electrically driven gates must have 35 cm.
- Observe minimum carriageway width according to local regulations.

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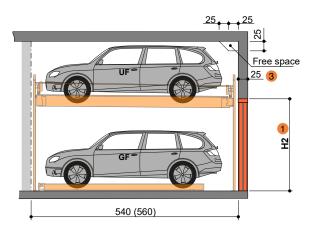
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# Garages with sliding gates | Widths dimensions

# Sliding gate between columns

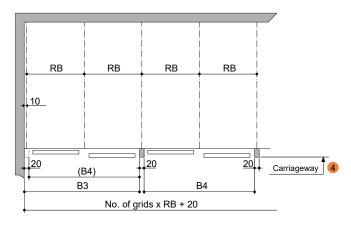


max. Vehicle height UF / GF	H2
150	220
155	220
160	220
165	220
170	220
175	220
180	220
185	220
190	220
195	220
200	225
205	230
210	235
215	240
220	245

## Columns per each grid unit

# Not applicable!

## Columns every second grid unit



	2		
Usable platform width	RB	В3	B4
230	250	500	480
240	260	520	500
250	270	540	250
260	280	560	540
270	290	580	560



In accordance with ASR A1.7, an inspection book is required for a gate with electric drive that is intended for commercial use. Prior to commissioning and annually thereafter, the gate must be inspected by a qualified expert and the findings recorded in the inspection book. The inspection must be performed independently of any maintenance work.

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Page 2 Height dimensions

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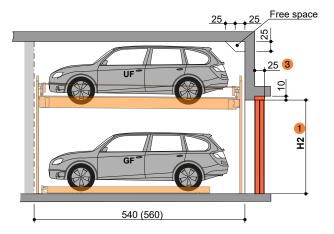
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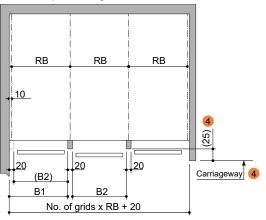
# Garages with sliding gates | Widths dimensions

## Sliding gate in front of columns



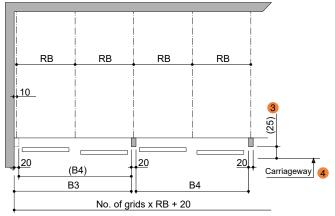
max. Vehicle height UF / GF	H2
150	210
155	210
160	210
165	210
170	210
175	210
180	210
185	210
190	210
195	210
200	215
205	220
210	225
215	230
220	235

## Columns per each grid unit



Usable platform width	RB	B1	B2		
230	250	250	230		
240	260	260	240		
250	270	270	250		
260	280	280	260		
270	290	290	270		

## Columns every second grid unit



	2		
Usable platform width	RB	В3	B4
230	250	500	480
240	260	520	500
250	270	540	250
260	280	560	540
270	290	580	560



In accordance with ASR A1.7, an inspection book is required for a gate with electric drive that is intended for commercial use. Prior to commissioning and annually thereafter, the gate must be inspected by a qualified expert and the findings recorded in the inspection book. The inspection must be performed independently of any maintenance work.

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- Observe minimum carriageway width according to local regulations.

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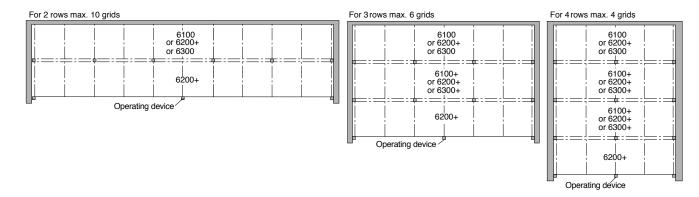
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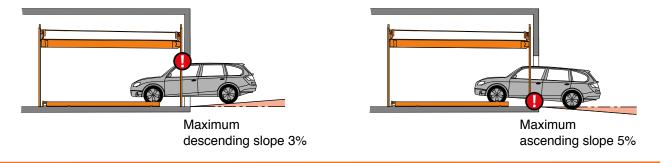
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# Arrangement of the grid combination system



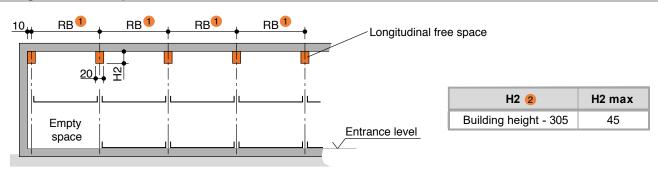
# **Approach**





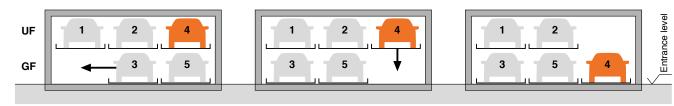
The illustrated maximum approach angle must not be exceeded. Incorrect approach angle will cause serious maneouvring & positioning problems on the parking system for which the local agency of KLAUS Multiparking accepts no responsibility.

# Longitudinal free space



# Function with standard numbering and identification of parking levels

e.g. for parking space No. 4: Check first that all gates are closed, then select No. 4 on operating panel..



For driving the vehicle off platform No. 4 the ground floor parking platforms are shifted to the left

The empty space is now below the vehicle which shall be driven off the platform. The platform No. 4 will be loweredt.

The vehicle on platform No. 4 can now be driven off the platform.

- 1 RB = Grid unit width must strictly conform to dimensions quotes!
- 2 Building height see page 2.

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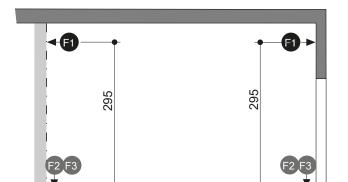
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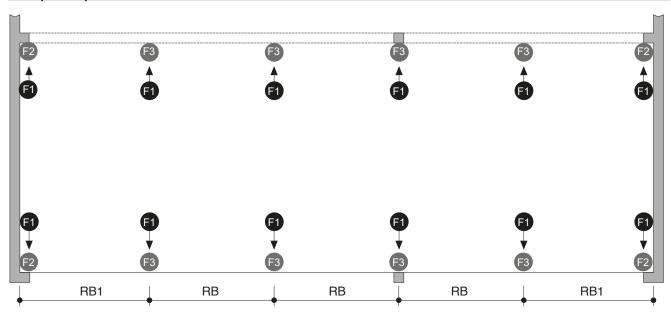


540 (560)

# Load plan - top view

10

Load plan



10

Usable platform width	RB	RB1
230	250	260
240	260	270
250	270	280
260	280	290
270	290	300

# Platform load

Platform load	F1	F2	F3	•
2000 kg	±0,5	+9	+18	
2600 kg	±0,8	+12	+24	
3000 kg	±1,0	+13	+26	



The system is dowelled to the floor and walls. The drilling depth in the base plate is approx. 15cm. The drilling depth in the walls is approx. 12cm.

The base plate and walls must be made of concrete (concrete quality min. C20/25)!

The dimensions of the support points are rounded. If the exact location is required, please contact KLAUS Multiparking.

1 RB = Grid unit width **must** strictly conform to dimensions quotes!

2 All forces in kN

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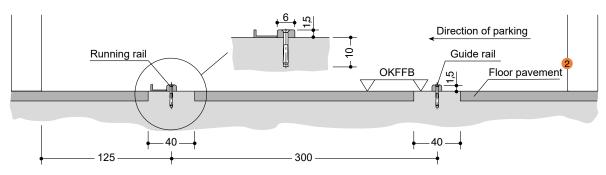
## Recess/Rail system

Dependent upon the structural conditions of the garage, several different options are available for installation of the rails..

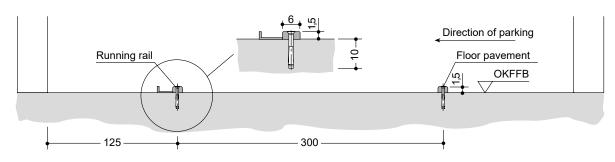
Rail load by moving traffic load:

- For surface load 2000 kg: 6,5 kN per wheel
- For surface load 2600 kg: 8 kN per wheel
- For surface load 3000 kg: 9 kN per wheel

# Laying on strip foundations



# Laying on finished floor

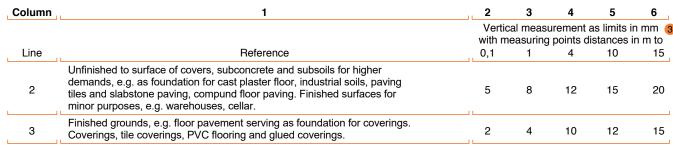


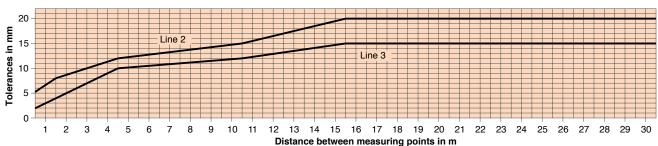
OKFFB = Top edge of finished floor.

- 1 Tolerances for the evenness of the carriageway must be strictly complied with in accordance with DIN (= German Industrial Standard)
  No. 18202, chart 3, line 3. No expansion joints are permitted within the area of the rail system.
- 2 We do not recommend mastic asphalt.

# **Evenness and Tolerances (abstract from DIN 18 202, table 3)**

The distance between the lower flange of the ParkBoards and the garage ground must therefore not exceed 2 cm [4"]. To adhere to the safety regulations and DIN EN 14 010 recommendations and to get the necessary even ground, the tolerances of evenness to DIN 18202, table 3, line 3, must not be exceeded. Therefore exact levelling of the ground by the client is essential.





3 Intermediate values are to be take out the diagram and rounded to whole mm.

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### Field of application

By default, the system are only for a fixed number of users. Ilf different users use the system (e.g. short-time parkers in office buildings or hotels) the Multiparking system needs to be adjusted. If required, would you please contact us

### **Available documents**

- wall recess plans
- maintenance offer/contract
- declaration of conformity
- test sheet on airborne and slide borne sound

#### Units

Low-noise power units mounted to rubber-bonded-to metal mountings are installed. Nevertheless we recommend that parking system's garage be built separately from the dwelling.

### Numbering

Standard numbering of the parking spaces:



Entrance level

Different numbering is only possible at extra cost

Please take note of the following specifications:

- In general, the empty space must be arranged to the left.
- The numbers must be provided 8 10 weeks before the delivery date.

### **Environmental conditions**

Environmental conditions for the area of multiparking systems: Temperature range -10 to +40°C.

Relative humidity 50% at a maximum outside temperature of +40°C.

If lifting or lowering times are specified, they refer to an environmental temperature of +10°C and with the system set up directly next to the hydraulic unit. At lower temperatures or with longer hydraulic lines, these times increase.

### Sound insulation

## Normal sound insulation

As per DIN 4109-1 sound insulation in building construction: The Maximum sound level in living rooms and bedrooms must not exceed 30 dB (A).

User noises are not subject to the requirements (DIN 4109-1, section 9).

The following measures are required to comply with this value:

- Sound protection package according to offer/order (KLAUS Multiparking GmbH).
- Minimum sound insulation of the building of min. R'w = 57 dB (service/item to be provided by the customer)

# Increased sound insulation (special agreement):

As per VDI 4100 sound insulation in building construction: The Maximum sound level in living rooms and bedrooms must not exceed25 dB (A).

User noises are not subject to the requirements (VDI 4100, paragraph 1).

The following measures are required to comply with this value:

- Sound protection package according to offer/order (KLAUS Multiparking GmbH).
- Minimum sound insulation of the building of min. R'w = 62 dB (service/item to be provided by the customer)

Note: User noises are basically noises that can be individually influenced by users of our multiparking systems.

These include, for example, driving on the platform, slamming vehicle gates, engine and brake noises.

### Electrically driven gates

In accordance with ASR A1.7 commercially used power-driven gates must be subjected to annual inspections. We urgently recommend concluding a maintenance agreement that includes this service for the entire system.

### **Building application documents**

According to LBO and GaVo (garage regulations) the Multiparking systems are subject to approval. We will provide the required building application documents.

#### Caro

To avoid damages resulting from corrosion, make sure to follow our cleaning and care instructions and to provide good ventilation of your garage.

#### Corrosion protection

See separate sheet regarding corrosion protection.

#### **CE-Certification**

The systems on offer comply with DIN EN 14010 and EC Machine Directive 2006/42/EC. Furthermore, this system underwent voluntary conformity testing by TÜV SÜD.

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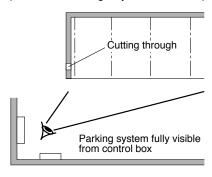
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# **Electrical data**

#### Control box

The control box must be accessible at all times from outside! Dimensions approx.  $40 \times 60 \times 30$  cm.

Cutting through of wall from control box to parking system (contact the local agency of KLAUS Multiparking for clarification).



# Electrical supply to the control box / Foundation earth connector

Suitable electrical supply min. 5 x 2,5 mm2 (3 PH+N+PE) to control box with main fuse 3 x 16 A slow or over-current cut-out 3 x 16 A.

Trigger characteristic K or C. DIN/VDE and local regulations must be taken into consideration.

Suitable electrical supply to the control box must be provided by the customer during installation. The functionality can be monitored on site by our fitters together with the electrician. If this cannot be done during installation for some reason for which the customer is responsible, the customer must commission an electrician at their own expense and risk.

In accordance with DIN EN 60204 (Safety of Machinery. Electrical Equipment), grounding of the steel structure is necessary, provided by the customer (distance between grounding max. 10 m)

### Operating device

Easy-to-survey positioning (e.g. on column).

Protection against unauthorized use.

May also be recessed in wall if required.

# To be performed by the customer

### Safety fences

Any constraints that may be necessary according to DIN EN ISO13857 in order to provide protection, for pathways directly in front, next to or behind the unit. This is also valid during construction.

### Numbering of parking spaces

Consecutive numbering of parking spaces.

### **Building services**

Any required lighting, ventilation, fire extinguishing and fire alarm systems as well as clarification and compliance with the relevant regulatory requirements.

### Wall cuttings

Any necessary wall cuttings.

### Electrical supply to the control box / Foundation earth connector

Suitable electrical supply to the control box must be provided by the customer during installation. The functionality can be monitored on site by our fitters together with the electrician. If this cannot be done during installation for some reason for which the customer is responsible, the customer must commission an electrician at their own expense and risk.

In accordance with DIN EN 60204 (Safety of Machinery. Electrical Equipment), grounding of the steel structure is necessary, provided by the customer (distance between grounding max. 10 m)

# **Gate suspensions**

The lintel height H1 (see page 3 to 6) is absolutely necessary. With different heights, additional fixings (gate suspensions) are required for extra charge.

# Gate shields

Gate shields that may be necessary. If desired, they can be ordered from KLAUS Multiparking for an additional charge..

#### Floor / Rails

Flooring structure in accordance with our instructions, please see page 9 (recesses, rail systems).

Recesses, tolerances for the evenness of the driving lane must adhere to DIN 18202, sheet 3, line 3.

Stuffing of rail system with cement floor for the whole length. Bringing in of floor pavement.

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# Description

### General description

Multiparking system providing independent parking spaces for vehicle, one on top of the other and side by side.

The system is a drive-though system and can be combined with TrendVario 6100, 6100+,6200+, 6300 and 6300+ (for details about these systems please refer to the relevant product data sheets).

Dimensions are in accordance with the underlying dimensions of height and width.

The parking bays are accessed horizontally (installation deviation ±1%).

Along the complete width of the parking automat an approach lane (driving lane in accordance with local regulations) must be available.

Parking spaces are arranged on two different levels, one level on topof the other.

The platforms of the upper floor (UF) are moved vertically, the platformson the ground floor (GF) horizontally. At approach level (GF) there is always one parking space less available. This vacant space is used for shifting the ground floor (GF) parking spaces sideways, thus enabling the upper platform (UF) parking space located above to be lowered to approach/ground level. Consequently, a unit of three parking spaces (1 on the ground floor, 2 on the upper floor) is the smallest unit available for this parking system.

For safety reasons the platforms can only be moved behind locked gates.

All necessary safety devices are installed. This consists mainly of a chain monitoring system, locking lever for the upper platforms and locked gates. The gates can only be opened if the selected parking space has reached the park position.

### A steel framework mounted to the floor consisting of:

- Columns (arranged in rows)
- Cross and longitudinal members
- running rails for the transversely movable ground floor (GF) platforms

# Platforms consisting of:

- Platform profiles
- Adjustable wheel stops
- Canted access plate
- Side members
- Traverses
- Screws, nuts, washer, distance tubes, etc.

## Lifting device for upper floor (UF) platforms:

- Hydraulic cylinder with solenoid valve
- Chain wheels
- Chains
- Limit switches
- The platforms are suspended on four points and guided along the supports using plastic sliding bearings

### Drive unit of transversely movable platforms on the ground floor (GF):

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

### Hydraulic unit consisting of:

- Hydraulicpower unit (low-noise, installed onto a console with a rubber-bonded-to-metal mounting)
- Hydraulic oil reservoir
- Oil filling
- Internal geared wheel pump
- Pump holder
- Clutch
- AC-motor (3,0 kW, 230/400 V, 50 Hz)
- Motor circuit breaker
- Test manometer
- Pressure relief valve
- Hydraulic hoses (which reduce noise transmission onto the hydraulic pipe

#### Control system:

- Central control panel (operating device) used to select the desired parking space
- With series installation, the gates are opened manually If desired, this can also be done using electric motors
- Electric wiring is made from the electric cabinet by the manufacturer

# Vertical gate:

#### Size

Dimensions modified based on width and height measurements. Gate consists of two segments.

- Frame construction with two vertical centre stay bars made from extruded aluminium profiles (anodized, layer thickness approx. 20 µm)
- For a neat connection to the building, a rubber lip is attached to the closing edge.

# Standard gate panel

Perforated aluminium plate

- Thickness 2 mm, RV 11/8 E6/EV1, anodized, layer thickness approx. 20 µm
- Ventilation cross-section of the panelling approx. 40%

# Please note:

Gate panels (on the side, cover for running rails, etc.) and gate suspensions are not included in the standard version but can be delivered against surcharge as special equipment.

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# Description

### Sliding gates

## Size

Sliding gate, dimensions: approx. 2500 mm x 2000 mm(width x height).

#### Frame

- Frame construction with vertical centre stay bar made from extruded aluminium profiles (anodized, layer thickness approx 20 µm).
  - gates a recessed grip is integrated in the aluminium profile.
- A rubber lip is used for the finishing of the closing edge to the building.

### Standard gate panel

Perforated steel plate

- Thickness 1 mm, RV 5/8, galvanized, layer thickness: approx. 20  $\mu m$
- Ventilation cross-section of the panel approx. 40%
- Not suitable for outdoor garages

# Alternative gate panel

Perforated aluminium plate

- Thickness 2 mm, RV 5/8 E6/EV1, anodized, layer thickness: approx. 20 µm.
- Ventilation cross-section of the panel approx. 40%

#### Beaded steel plate

- Thickness 1mm, galvanized, layer thickness: approx. 20 μm.
- additional power coating, layer thickness: approx. 25  $\mu$ m on the outside and approx. 12  $\mu$ m [0.0005"] on the inside.
- Colour options for the outside (building view):
   RAL 1015 (light ivory), RAL 3003 (ruby),
   RAL 5014 (pigeon blue), RAL 6005 (moss green),
   RAL 7016 (anthracite grey), RAL 7035 (light grey),
   RAL 7040 (window grey), RAL 8014 (sepia),
   RAL 9006 (white aluminium), RAL 9016 (traffic white)
- Inside of the gates in light grey

### Plain aluminium sheet

- Thickness 2 mm, E6/EV1, anodized, layer thickness: approx. 20  $\mu m.$ 

## Wooden panelling

- Nordic spruce in grade A
- vertical tongue and groove boards
- preimpregnated colourless

### Verbundsicherheitsalas

- VSG aus ESG 8/4 mm

# Wire grating

- Mesh size 12 x 12 mm

# Running rails

- The running gear of each gatesconsists of 2 twin-pair rolling gadgets, adjustable in height
- The running rails of the gates are fixed to brackets or the concrete lintel, or on a building-specific gate suspension using ceiling fittings
- The guide consists of 2 plastic rollers mounted to a base plate, which is dowelled to the floor
- Running rails, ceiling fittings and guide roller base plate are hot-dip galvanized

#### **Gate actuation**

#### Standard:

- Manually, i.e. the gate is opened and closed by hand

#### Alternatively:

 Electric drive via electric motor mounted to the rail system at the turning point of the sliding gates. The drive pinion engages into the chain mounted to the gate.

For safety reasons the movement of the platforms is always made behind locked gates. Position sensing, i.e. "gate open" and "gate closed" is effected by electric signalers.

### Separation (if necessary):

- Upon request

### Please note:

Gatepanels (on the side, cover for running rails, etc.) and gate suspensions are not included in the standard version but can be delivered against surcharge as special equipment.

# We reserve the right to change this specification without further notice

KLAUS Multiparking reserves the right in the course of technical progress to use newer or other technologies, systems, processes, procedures or standards in the fulfillment of their obligations other than those originally offered provided the customer derives no disadvantage from their so doing