

# KLAUS

## MULTIPARKING

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### PRODUCT DATA



**parkboard** PE  
**parkboard** PH

longitudinally shifting

2000 kg [4400 lbs] <sup>①</sup>

2300 kg [5070 lbs] <sup>②</sup>

#### Top edge finished floor

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.

#### Dimensions

Tolerances for space

requirements  $+3 \begin{bmatrix} +1 \\ 0 \end{bmatrix}$  <sup>③</sup>

Dimensions: cm [ft] (1 cm = 0,393 in)

Weights: kg [lbs] (1 kg = 2.2 lbs)

Forces: kN [lbf] (1 kN = 224.8 lbf)

Temperature: °C [°F] (0° C = 32° F)

ParkBoard PE = 1 car

ParkBoard PH = 2 cars

#### ParkBoard PE / PH 2,0 to. [4400 lbs]

| Type   | L                 | B              | Travel path      |
|--------|-------------------|----------------|------------------|
| PE-215 | 500<br>[16'-5"]   | 215<br>[7'-1"] | 470<br>[15'-5"]  |
| PH-215 | 1000<br>[32'-10"] | 215<br>[7'-1"] | 970<br>[31'-10"] |

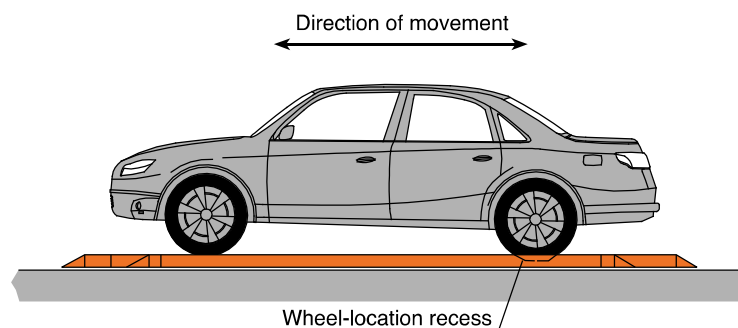
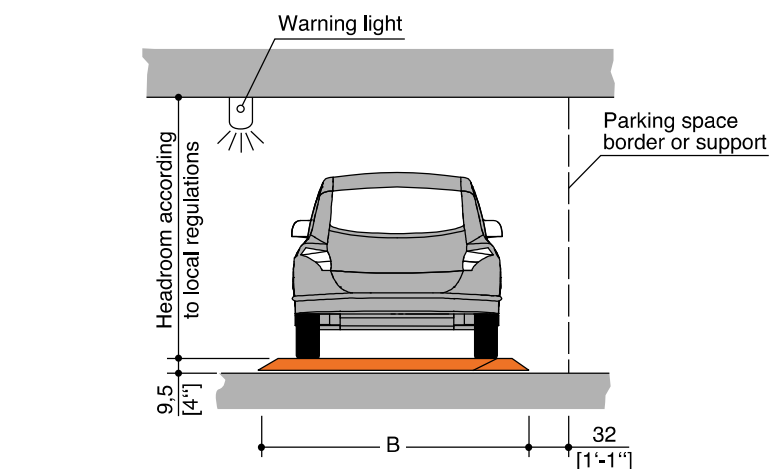
#### ParkBoard PE / PH 2,3 to. [5070 lbs] <sup>②</sup>

| Type   | L                | B              | Travel path       |
|--------|------------------|----------------|-------------------|
| PE-245 | 530<br>[17'-5"]  | 245<br>[8'-0"] | 500<br>[15'-5"]   |
| PH-245 | 1060<br>[34'-9"] | 245<br>[8'-0"] | 1030<br>[33'-10"] |

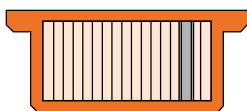
#### Suitable for

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

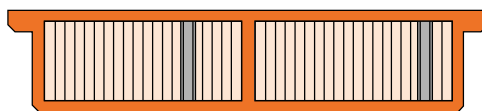
|            | Standard                         | Special <sup>②</sup>            |
|------------|----------------------------------|---------------------------------|
| width      | max. 190 cm<br>[max. 6'-3"]      | max. 190 cm<br>[max. 6'-3"]     |
| length     | max. 500 cm<br>[max. 16'-5"]     | max. 500 cm<br>[max. 16'-5"]    |
| height     | 10 cm [4"] less<br>than headroom |                                 |
| weight     | max. 2000 kg<br>[max. 4400 lbs]  | max. 2300 kg<br>[max. 5070 lbs] |
| wheel load | max. 500 kg<br>[max. 1100 lbs]   | max. 575 kg<br>[max. 1270 lbs]  |



ParkBoard PE



ParkBoard PH



#### Building law requirements

According to the German Building Code parking spaces on longitudinally shifting parking pallets are only permitted if the following requirements are met:

- Next to the ParkBoards a remaining driving lane width of 275 cm [9'-0"] minimum must be maintained.
- ParkBoards must not be installed before power-driven parking systems.
- In case of two-way traffic in the driving lane no through traffic is permitted.
- The ParkBoards must be traversable on all sides.
- Walkable areas must provide headroom of 200 cm [6'-7"]. Make sure to observe the ventilation systems, bearers or other installations. The ParkBoards have a height of 9,5 cm [4"].

<sup>①</sup> Standard type

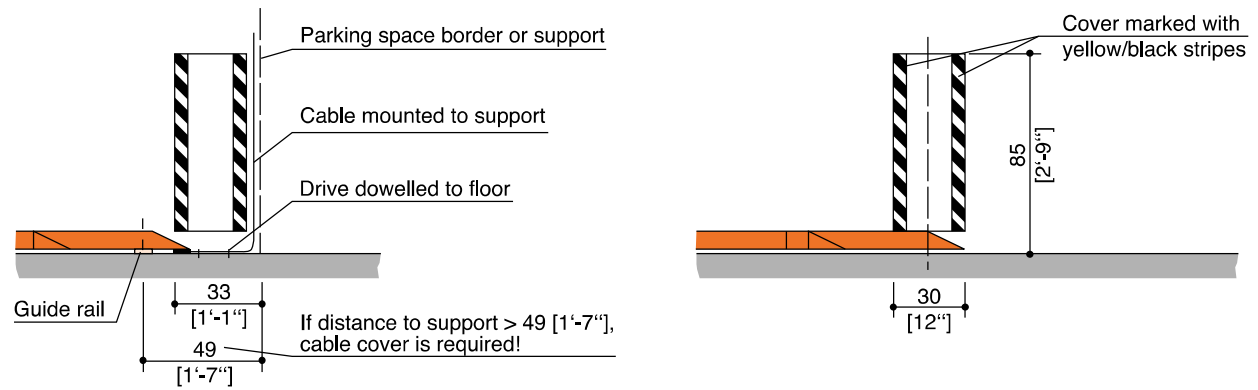
<sup>②</sup> Special system for extra charge.

<sup>③</sup> 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.

## Versions of the drive variants

### Above-floor drive (Drive S)

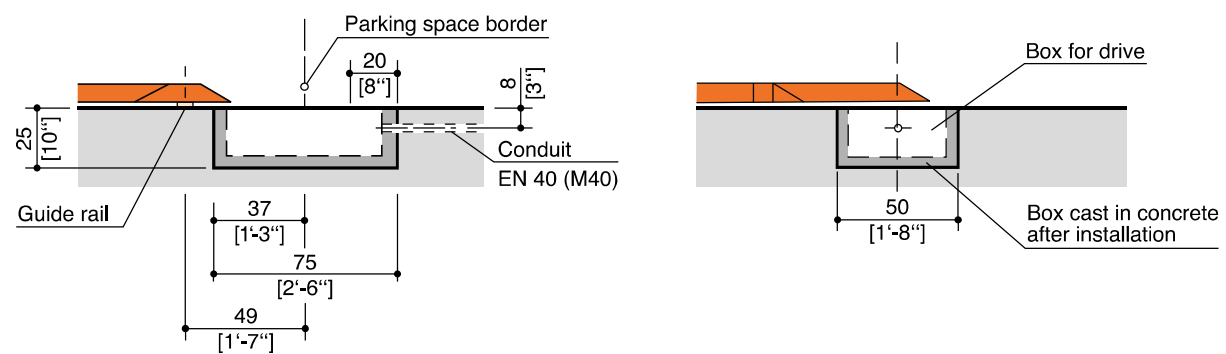
The drive is placed at the parking space boundary or support and does not require a recess in the floor.



### Underfloor Drive (Drive U)

The drive is mounted in a recess in the floor, if the support is to be mounted independently.

Precondition: Drive axis located in parking space axis; recess in floor.

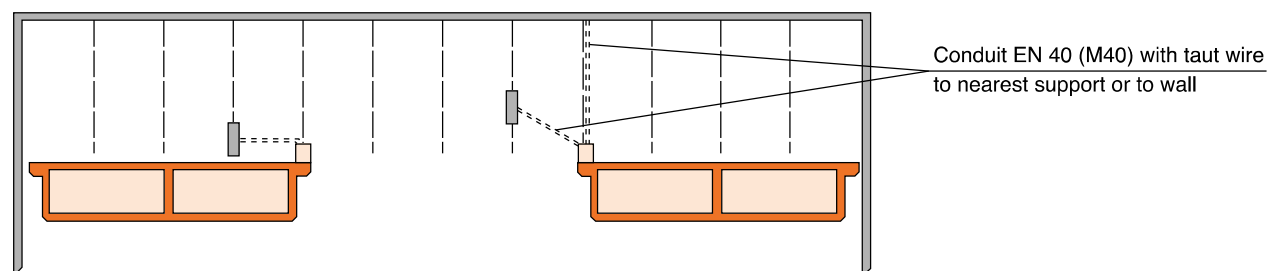


The drive housing does not provide complete protection against the ingress of running water. It must be ensured that no running water enters the area of the drive.

Conduit EN 40 with taut wire to nearest support or to wall.

For arrangement of longitudinal pallets, see example.

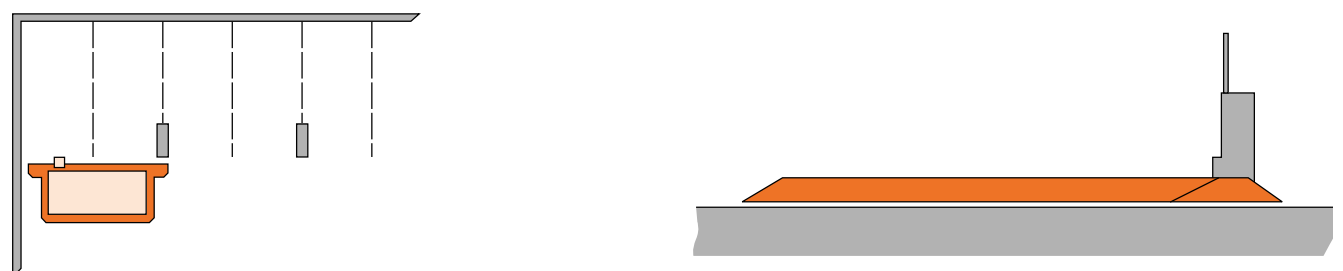
### 2 x ParkBoard PH

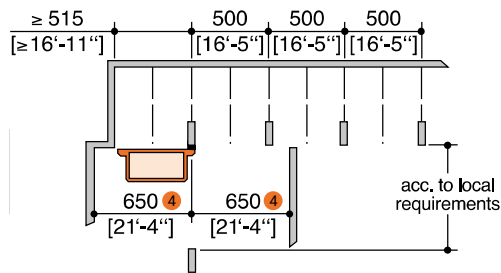
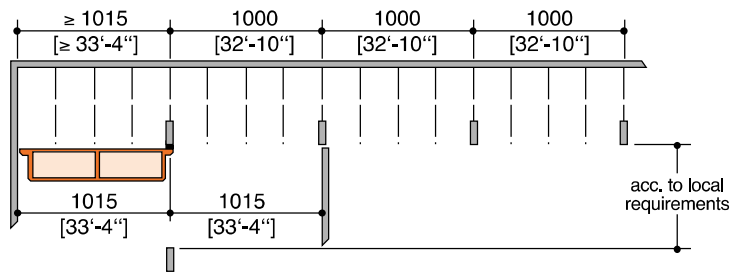
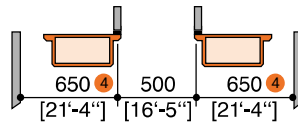
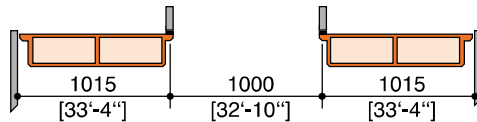
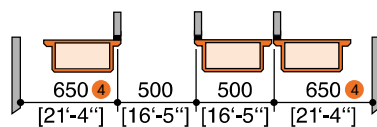
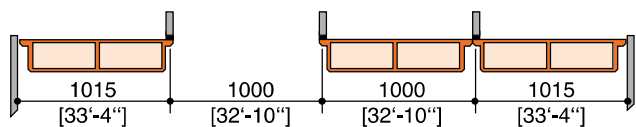


### Moving drive (Drive D)

The drive is mounted on the park board. The power is supplied via a tow cable or via a conductor rail.

**Attention:** The park board is not traversable in the drive area.



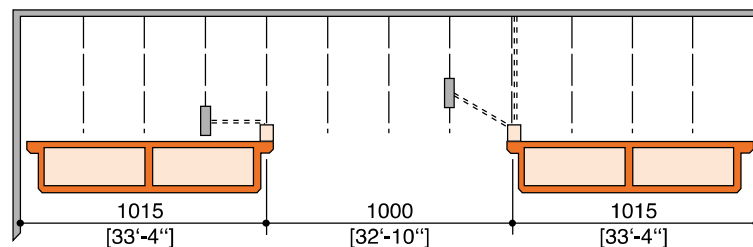
**Examples: Longitudinal pallets with above-floor drive (Drive S)****1 x ParkBoard PE****1 x ParkBoard PH****2 x ParkBoard PE****2 x ParkBoard PH****3 x ParkBoard PE****3 x ParkBoard PH****Combination**

At a length of 40 m [ $131'-3"$ ] up to 5 pallets can be arranged as group should their shifting path overlap. In this case the operating elements must be within a distance of 10 m [ $32'-10"$ ] of a possible point of contact between two pallets.

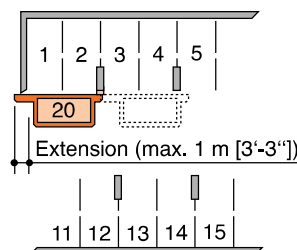
④ Recommendation of KLAUS Multiparking.

**Example: Longitudinal Pallets with Underfloor Drive (Drive U)**

2 x ParkBoard PH

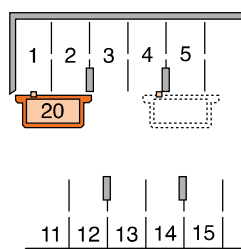
**Offset parking spaces**

One-sided extension for ParkBoard for **Drive S** and **Drive U**.



When using **Drive D**, no one-sided ParkBoard extensions are necessary.

**Drive D** allows longer travel path.



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Evenness  
tolerances

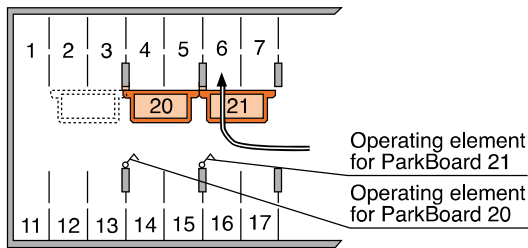
Page 6  
Rail system

Technical

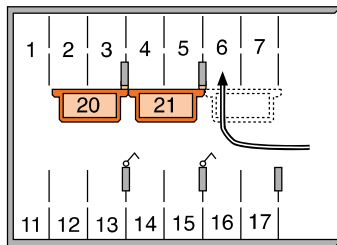
Page 7  
Electric

## Notes

### Accessing standard parking spaces (for example No. 6)

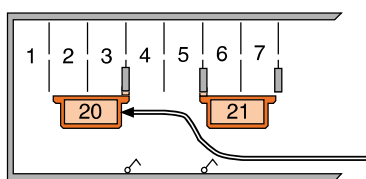


**If ParkBoard 21 is empty:**  
Passing of ParkBoard possible

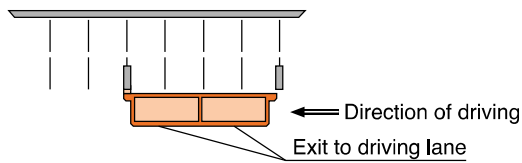


**If ParkBoard 21 is occupied:**  
Press corresponding pushbutton for no. 21 on operating element.  
Pallets 20 and 21 are moved together automatically, and parking spaces 6 (and 7) become free.

### Accessing the ParkBoard spaces

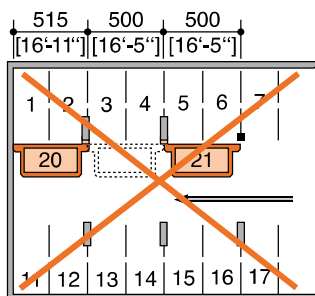


**Example with ParkBoard PE:**  
To access parking space no. 20 both ParkBoard 20 and 21 are moved in a way that the required driving lane is created.

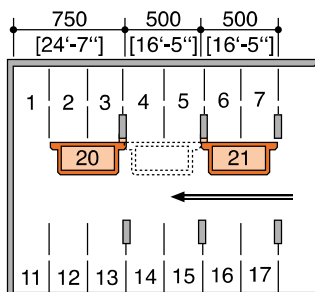


**Example with ParkBoard PH**

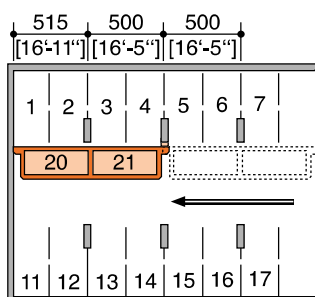
### ParkBoard PE at end of driving lane



**Unfavourable!**  
Parking spaces 1, 2, 11, 12 can only be accessed unfavourably since both driving and turning range are strongly restricted.

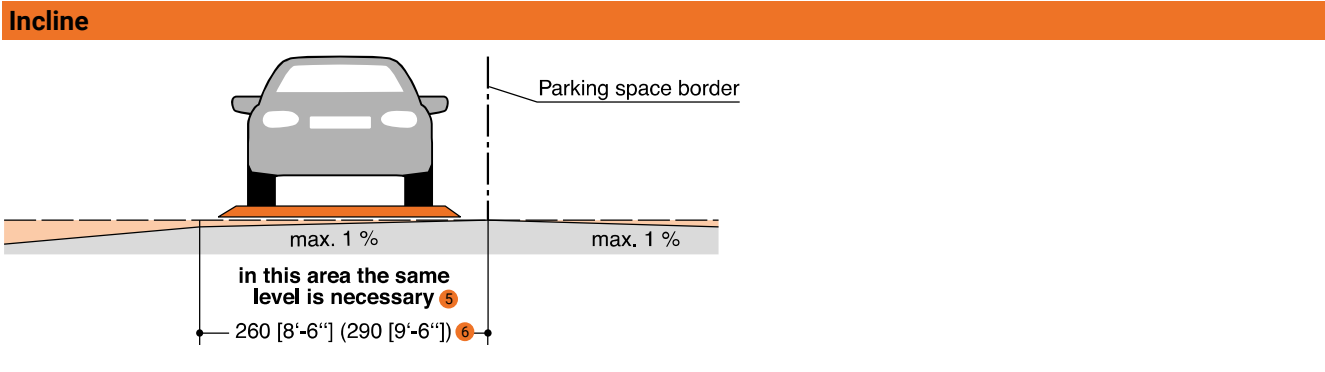


**Solution for ParkBoard PE:**  
Dislocate support or drive.  
Driving and turning range for parking spaces 1, 2, 11, 12 are improved!



**Solution for ParkBoard PH:**  
Use of one ParkBoard PH.  
Driving and turning range for parking spaces 1, 2, 11, 12 are improved!

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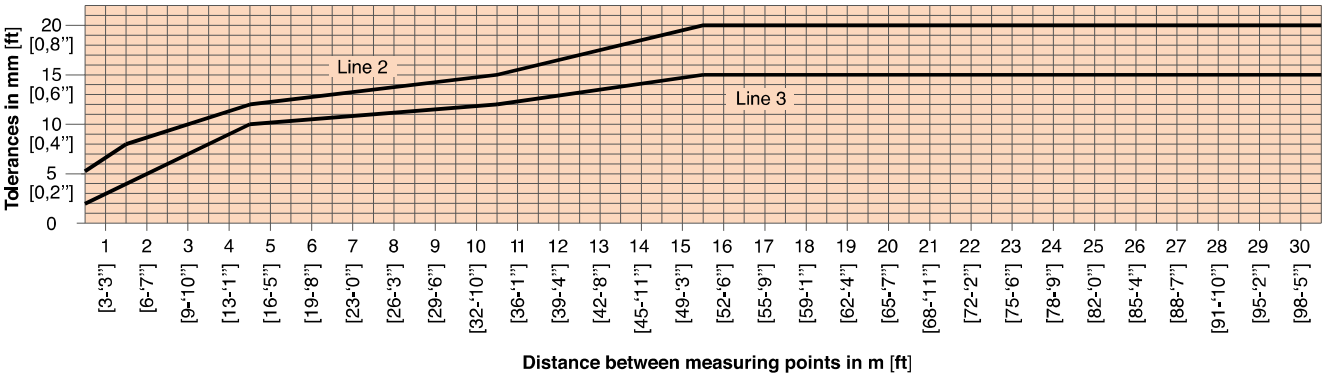


- 5 Tolerances for the evenness of the carriageway must be strictly complied with in accordance with DIN (= German Industrial Standard) No. 18202, chart 3, line 3. No expansion joints are permitted within the area of the rail system.
- 6 Dimensions in brackets for PE-245/PH-245.

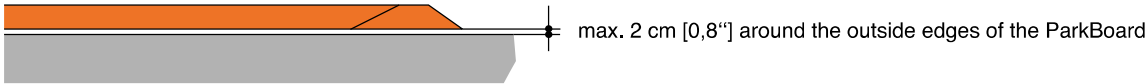
Evenness and tolerances (abstract from DIN 18202, table 3)

The distance between the lower flange of the ParkBoards and the garage ground must therefore not exceed 2 cm [0,8"]. To adhere to the safety regulations and DIN EN 14010 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.

| Column | 1                                                                                                                                                                                                                                                                  | 2                                                                                            | 3         | 4          | 5            | 6           |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------|------------|--------------|-------------|
| Line   | Reference                                                                                                                                                                                                                                                          | Vertical measurement as limits in mm with measuring points distances in m to 0,1 1 4 10 15 7 |           |            |              |             |
|        |                                                                                                                                                                                                                                                                    | 0,1 [4"]                                                                                     | 1 [3'-3"] | 4 [13'-1"] | 10 [32'-10"] | 15 [49'-3"] |
| 2      | Unfinished to surface of covers, subconcrete and subsoils for higher demands, e.g. as foundation for cast plaster floor, industrial soils, paving tiles and slabstone paving, compund floor paving. Finished surfaces for minor purposes, e.g. warehouses, cellar. | 5 [0,2"]                                                                                     | 8 [0,3"]  | 12 [0,5"]  | 15 [0,6"]    | 20 [0,8"]   |
| 3      | Finished grounds, e.g. floor pavement serving as foundation for coverings. Coverings, tile coverings, PVC flooring and glued coverings.                                                                                                                            | 2 [0,08"]                                                                                    | 4 [0,15"] | 10 [0,4"]  | 12 [0,5"]    | 15 [0,6"]   |



- 7 Intermediate values are to be taken out the diagram and must be rounded-off.

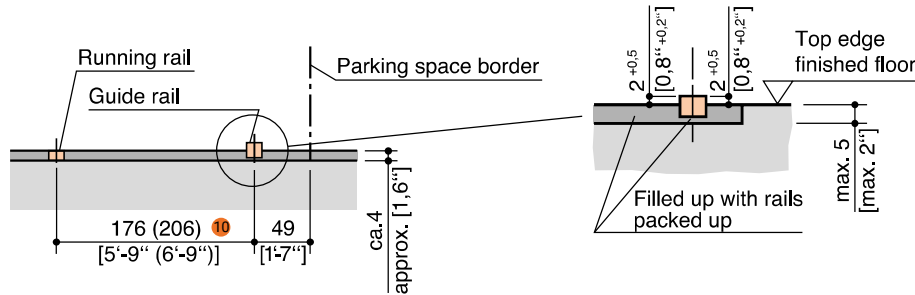


## Rail system

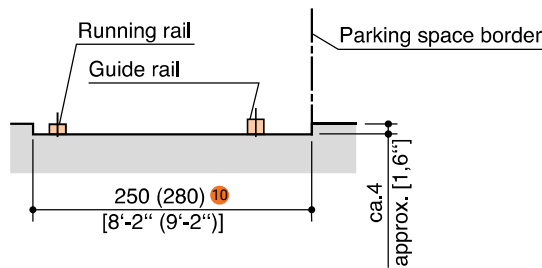
Rail load by moving traffic load

- For surface load 2000 kg [4400 lbs]: 3,5 kN [787 lbf] per wheel
- For surface load 2300 kg [5070 lbs]: 4 kN [899 lbf] per wheel

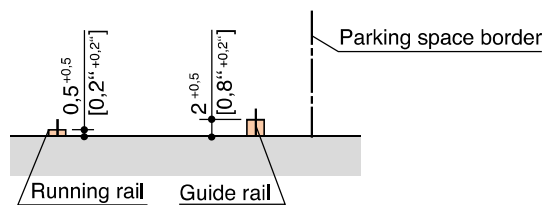
### Prior to floor pavement 8 9



### In recess 8 9



### On finished floor 8 9



Projection of the guide rail above top edge of finished floor is mandatory on both sides of the rail including the level for the drive!

The rails are dowelled directly onto the top edge of the finished floor.

Drill hole depth: approx. 9 cm [4"].

8 We do not recommend mastic asphalt.

9 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.

10 Dimensions in brackets for PE-245/PH-245.

## Technical data

### Range of application

By default, the system can only be used for a fixed number of users. If 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

- maintenance offer/contract
- declaration of conformity

### Corrosion protection

See separate sheet regarding corrosion protection.

### Environmental conditions

Environmental conditions for the area of multiparking systems:  
Temperature range -10 to +40° C [+14 to +104° F].  
Relative humidity 50% at a maximum outside temperature of +40° C [+104° F].

### 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.

### Care

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

### CE Certification

The systems offered correspond to DIN EN 14010 and the EC Machinery Directive 2006/42/EG.

### Noise emission

Ball bearing of the rollers provide a low sound level.

### On block operation

ParkBoards must only be operated on block if the operator's stand is not more than 10 m [32'-10"] from the platform edges that are to be operated on block, and if it is installed at least 1,60 m [5'-3"] above garage floor.

## Electrical installation

### Electrical supply / Control system

The customer must provide a supply of 5 x 2,5 mm<sup>2</sup> (3 PH+N+PE) to the electric cabinet (larger systems may require larger cross sections).

Proposals for position of control box and operating element are specified in the floor plans provided by KLAUS Multiparking.

### Operation

Operation via operating element with automatic reset function (two pushbuttons for left/right movement).

## To be performed by the customer

### Numbering of parking spaces

Consecutive numbering of stationary parking spaces and longitudinal shifting ParkBoards.

### Building services

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

### Marking

Any additional yellow-black markings on the platform edges according to ISO 3864.

### Floor / Rails

Flooring structure in accordance with our instructions, please see page 6 (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.

Conduit M40 with taut wire to underfloor drive.

### Electrical supply to the control box

Power supply: three phase 230/400 V/50 Hz with neutral and ground wire (other voltage network, voltage or frequency are possible after the technical checking by us).

Main fuse:

3 x fuse 10 A (slow) or circuit breaker 3 x 10 A (trigger characteristic K or C).

For 5 ParkBoards and more:

3 x fuse 16 A (slow) or circuit breaker 3 x 16 A (trigger characteristic K or C).

Supply line 5 x 2.5 mm<sup>2</sup> to the main cabinet, depending on line layout, line length or system size a larger cross sections may be required. DIN VDE 0100 and other relevant local standards must be observed

The supply line to the main cabinet 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.

## Description

### General description

Multiparking system for parking 1 or 2 vehicles per ParkBoard.

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

ParkBoards, which can be moved lengthwise are installed in the driving lane of underground garages. These parking pallets make it possible to achieve additional parking spaces in the driving lane, which is generally only used for maneuvering vehicles.

The ParkBoards can be driven on if vacant, or moved if occupied by a car when accessing parking spaces located in the back.

This operation uses dead man's control safety mechanism. Therefore, the operating elements are generally mounted to the opposite supports and the ParkBoards and parking spaces arranged by the controller can be seen.

Operating instructions are permanently mounted to each operating station in a clearly visible location.

These ParkBoards are available in the following designs:

- ParkBoard PE for 1 car
- ParkBoard PH for 2 cars in a row

### ParkBoard consisting of:

- Sloped steel frames with supported low-noise track and guide rollers
- Cross members
- Platform base sections (cover plates)
- Positioning aid
- Various small parts etc.
- ParkBoard height approx. 9,5 cm [4"] above finished floor

### Above-floor drive:

- Base plate mounted to the ground with geared motor
- Limit switch and housing
- The housing also serves as safety mechanism. The load transmission is carried out via a high-tension chain located in a U-profile which is open facing outwards. This chain is looped around two chain wheels and driven by the motor.

### Underfloor drive:

This drive unit is mounted in a floor recess which must be built by the customer. This drive consists of:

- 1 geared motor
- Chain wheels
- Limit switch
- Fully mounted in a stable underfloor housing with cover
- The load transmission is carried out identically to the „above-floor drive“

### Moving drive:

- Drive unit mounted to the ParkBoard
- Power is supplied via a drag-line cable (or via contact lines in exceptional cases)
- The load transmission is carried out using a chain, which is inlaid in a special rail (double rail)

### Rail system consisting of:

- Two rails mounted on the floor
- The rails protrude 5 – 20 mm [0,2"– 0,8"] above finished floor
- The rail on the entrance side is the guide rail and ensures safe guiding when shifting the ParkBoards.

### Electrical equipment consisting of:

- Operating device with 2 buttons (right/left)
- Emergency Stop
- Control box
- Blinking lights
- Various cables with accessories

### Control system

- The ParkBoards are operated using a push-button with corresponding direction definition in hold-to-run control
- Limit switches stop the ParkBoards when the maximum movement distance has been reached
- Warning lights blink during movement
- The electrical wiring originates in the control box

## 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.