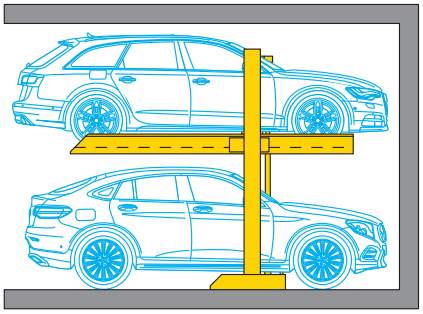
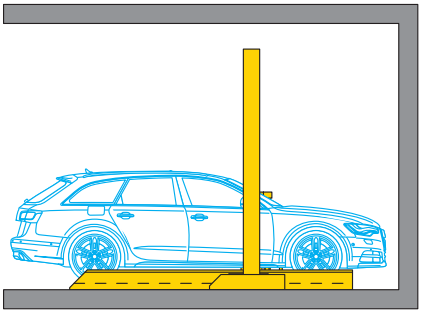
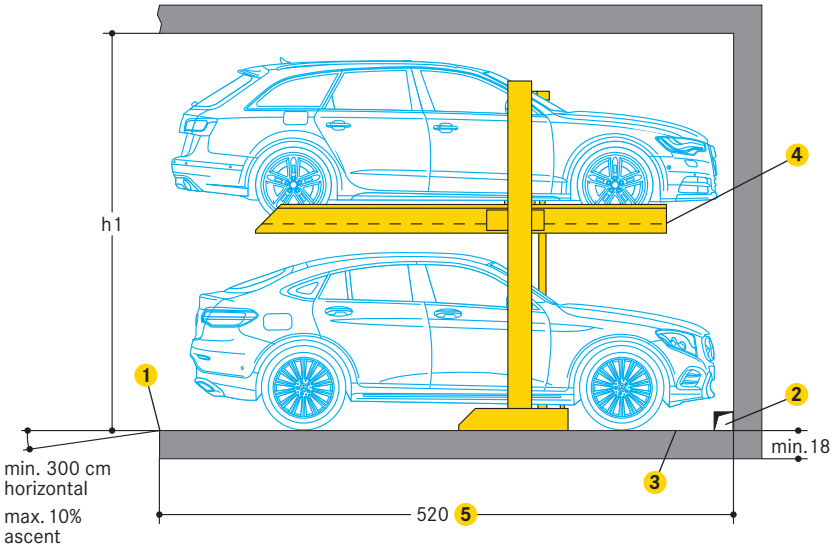
Data Sheet
WÖHR PARKLIFT 411/5

- **Single units: 2 cars**
- **Platform load options:**
  – max. 2000 kg, load per wheel 500 kg
- **Dependent parking**
- **For outdoor installation:**
  – in snowfall areas with customer performed roofing





Length dimensions underground car park (height dimensions see page 2)



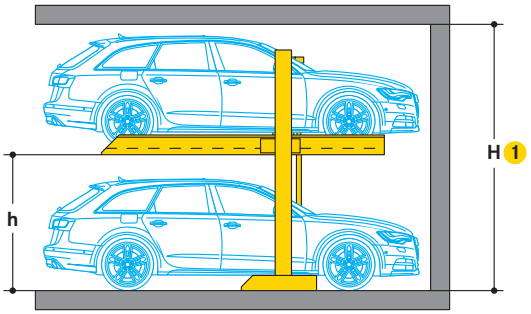
1. Yellow-black safety marking (performed by the customer):
   – compliant to ISO 3864, 10 cm wide, at a distance of 100 cm from the front edge of the platform (see page 3 »Static calculations and construction works requirements«)
2. In case of intermediate walls (performed by the customer):
   – 15 x 15 cm opening for electric and hydraulic system cables and piping
   – after installation, do not close the opening
3. Channels or undercuts/concrete haunches (performed by the customer):
   – not allowed along the floor-to-wall joints
   – should channels or undercuts be necessary, the system width needs to be reduced or the installation widths needs to be increased
4. Platform length = 372 cm
5. 500 cm vehicle length = 520 cm installation length

Dimensions

– all dimensions specified are the minimum, finished dimensions
– tolerances must be taken into consideration
– all dimensions are given in cm

WÖHR Autoparksysteme GmbH | Ölgrabenstr. 14 | 71292 Friolzheim | Germany
+49 [0] 7044 46-0 | +49 [0] 7044 46-149 | info@woehr.de | woehr.de

Height dimensions Standard type

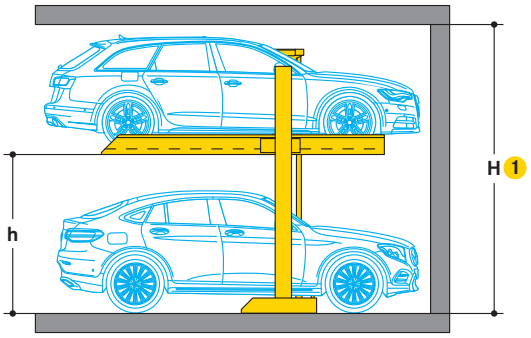


Type	Height (H) 1	Vehicle height 2 UL	LL	Platform distance (h)
411/5-155	320	L+S 150	L+S 150	155
411/5-165	330	L+S 150	L+S 160	165
411/5-175	340	L+S 150	L+S 170	175

1 With an increase in headroom available, correspondingly taller cars will be able to park on the upper platform.

2 UL= upper level / LL = lower level
L = Limousine / S = Station wagon

Height dimensions Comfort type



Type	Height (H) 1	Vehicle height 2 UL	LL	Platform distance (h)
411/5-185	350	L+S 150	L+S 180	185
411/5-195	360	L+S 150	L+S 190	195
411/5-205	370	L+S 150	L+S 200	205

1 With an increase in headroom available, correspondingly taller cars will be able to park on the upper platform.

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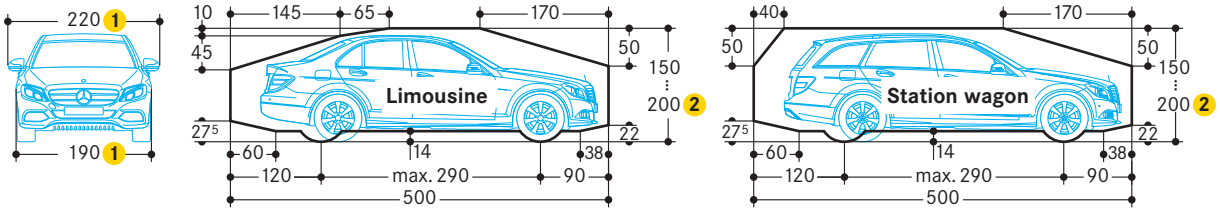
Clearance profile (for standard vehicles)



1 For a 250 cm platform width

2 The overall vehicle height including roof luggage rails and antenna mounts must not exceed the max. vehicle height dimensions specified

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Decision support for the vehicle height

Choosing the right vehicle height for your project is essentially based on any building regulations, user expectations and building specifications. Criteria can include:

Residential buildings:
Different parking space heights are conceivable and can affect the sales price. For example, lower parking spaces could be provided for higher vehicles. This results in more convenient access to the vehicle. Less high vehicles in the upper parking spaces and thus reduced building height and less enclosed space. The ramp to the underground car park will be less steep or less long. To make it easier to sell and use parking spaces, we recommend that the vehicle heights be the same.

Office buildings:
For this parking concept, we recommend the same vehicle height for all parking spaces. If permanently assigned parking spaces are preferred for parking permittees, different parking space heights could be provided.

Hotels:
Whether city hotel, vacation hotel or vacation apartments: With changing occupancy, all parking spaces should have the same vehicle height. Maximum parking space heights should be selected to allow parking for vehicles with roof-mounted structures, if necessary.

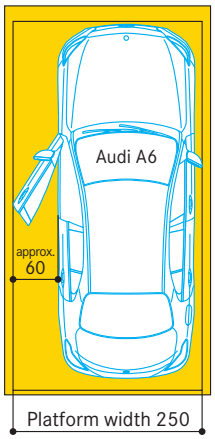
Passenger car registrations in Germany*

Orientation aid for height dimensions: With a system type, which for example covers cars up to 180 cm in height, 93.76 % of all cars registered new in 2022 in Germany can be parked.

Height	Examples of models	Passenger car registrations
143,5	Opel Corsa	33,27 % — up to 150 cm*
144,1	VW Passat	
148,0	Skoda Octavia	
156,2	VW ID.3	63,62 % — up to 160 cm*
157,8	BMW i3	
158,5	Audi Q3	
162,1	BMW X4	91,25 % — up to 170 cm*
168,1	Skoda Kodiaq	
169,4	Peugeot 5008	
177,6	Volvo XC90	93,76 % — up to 180 cm*
177,8	Ford Explorer	
179,7	Mercedes Benz GLE	
184,8	Renault Kangoo	97,29 % — up to 190 cm*
187,0	Toyota Land Cruiser	
189,5	Opel Zafira	
193,8	VW ID.Buzz	98,98 % — up to 200 cm*
196,9	Mercedes Benz G	
199,4	VW Caravelle	

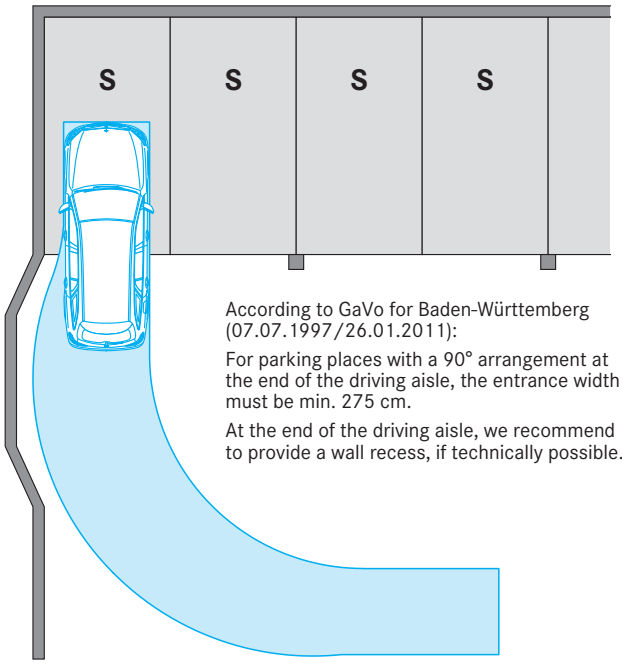
* Due to different equipment, vehicles of the same design may have different heights. The maximum heights have been taken into account.
Source: German Federal Motor Transport Authority, 2022 (evaluation for motor vehicles registered in Germany for passenger transport with up to 9 seats).

Door opening dimensions



Depending on the vehicle model and the parking position of the vehicle on the platform, the space for opening the door varies. We recommend platform widths of 250 cm.

Wall recess



According to GaVo for Baden-Württemberg (07.07.1997/26.01.2011):

For parking places with a 90° arrangement at the end of the driving aisle, the entrance width must be min. 275 cm.

At the end of the driving aisle, we recommend to provide a wall recess, if technically possible.

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Width dimensions

Plattformbreiten:

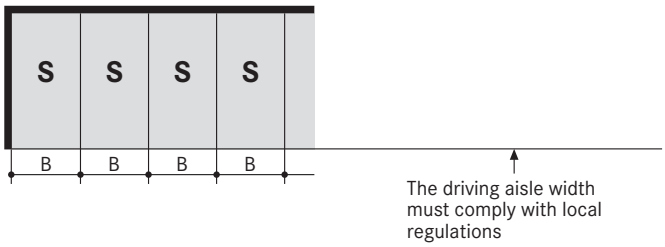
250 cm:
– for 190 cm vehicle width (without outside mirror)

For comfortable parking, entry and exit conditions platform widths upon 250 cm are recommended. Reduced platform width means reduced parking comfort depending on the vehicle width, vehicle type, individual driving style, access situation of the garage.

Width dimensions (underground car park)

Single unit (2 cars)

Row arrangement

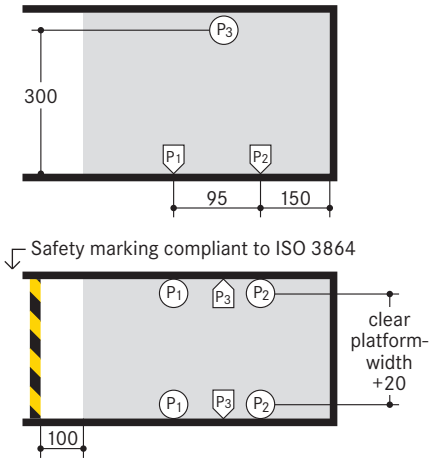


space requirements B	clear platform width*
265	230
275	240
285	**250**

* Special platform widths are available (e.g. 210, 220 cm), please check if they correspond with local regulations

Static calculations and construction works requirement

Parklift 411/5-2,0



P1	+ 15 kN*
P2	+ 1 kN
P3	+ 3 kN

*specified load bearing data includes the vehicle weight

Fixing of the system frames to the floor slab:
– using adhesive anchor bolts
– hole depth to 12–14 cm
– concrete thickness of at least 18 cm

Concrete quality grade:
– compliant to the static requirements of the construction
– min. C20/25 grade (for dowel fastening)

Special foundations are required with asphalt floors or paving-stones.

Frame bearing points:
– the specified lengths are expressed as mean value
– for the exact data, specific TÜV-tested data sheets are available

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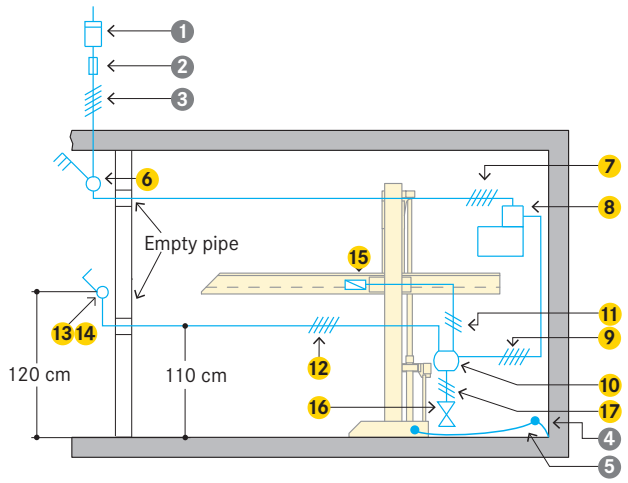
Electrical specifications

Installation diagram



Cabling preparation to be performed by the customer:

- up to the main switch to be in place prior to starting the installation operations
- connection to the main switch during installation
- clockwise rotating field must be applied
- system functional check testing can be performed by WÖHR together with the electrician provided by the customer
- if requested at a later date, functional check testing can be performed by WÖHR at extra-cost

Grounding and potential equalisation:

- to be performed by the customer compliant to DIN EN 60204
- connections required every 10 metres

To be performed by the customer

Item	Quantity	Description	Position	Recurrence
1	1 piece	power meter	in the feed cable	
2	1 piece	fuse protection or automatic circuit breaker compliant to DIN VDE 0100 part 430: – 3 x 16 A slow blow for 3,0 kW power pack (starting current 24 A)	in the feed cable	1 x per power pack
3	based on site conditions	compliant to local power supply regulations 3 phases + N + PE* 230/400 V, 50 Hz	feed cables to main switch	1 x per power pack
4	every 10 m	grounding and potential equalisation lead-out connection	along floor edges/rear wall	
5	1 piece	grounding and potential equalisation compliant to DIN EN 60204	from lead-out connection to system	1 x per system

* to DIN VDE 0100 sections 410 and 430 (no permanent load) 3 phases + N+ PE (three phase current)

Note: for garages with doors the door manufacturer must be consulted before the electrical feed cabling is laid.

Scope of delivery by WÖHR (unless otherwise specified)

Item	Description
6	Lockable main switch
7	5 x 1,0 mm² control cable leading from the main switch to the power pack
8	Hydraulic power pack with three-phase motor 3,0 kW. Ready-wired switching cabinet with motor safety contactor
9	5 x 1,0 mm² control cable from power pack to branch connector
10	Branch connector
11	3 x 0,75 mm² control cable from branch connector to unlock magnet
12	5 x 1,0 mm² control cable from branch connector to operating device
13	UP/down operating unit with EMERGENCY STOP. Possibly located on the left, but always out of the platform's range of movement. Cable feed-in strictly from below leading upwards (2 keys for each parking space).
14	Operating instructions
15	Unlock magnet
16	Cylinder valve
17	3 x 0,75 mm² control cable for the cylinder valve lead

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Notes and directions

Scope of application

- suitable for residential buildings, office buildings and business premises, hotels
- only for long-term users that have been instructed on how to use the system
- for frequently changing users (e.g. for office, hotel and business premises or similar):
  - only parking on lower parking place
  - performance of technical system adjustments is necessary
  - consultation with WÖHR is mandatory

Noise protection

Basis is the German DIN 4109 “Noise protection in buildings”.

With the following conditions required 30 dB (A) in rooms can be provided:

- noise protection package from our accessory
- insulation figure of the construction of min. $R'_W = 57$ dB
- walls which are bordering the parking systems must be done as single wall and deflection resistant with min. m’= 300 kg/m²
- solid ceiling above the parking systems with min. m’= 400 kg/m²

At differing constructional conditions additional sound absorbing measures are to be provided by the customer.

The best results are reached by separated sole plates from the construction.

Increased noise protection:

If increased noise protection must be provided planning has to be confirmed on a project basis by WÖHR.

Temperature

- system operating range: +5° bis +40°C (with unloaded platforms lowering speed is reduced if less than +5° C)
- humidity: 50 % at +40° C
- in the event of changes to system conditions please consult with WÖHR

Lighting

- sufficient lighting of the driving aisle and of the parking places must be performed by the customer

Fire safety

- all fire safety requirements and all mandatory equipment (fire extinguisher and fire alarm systems, etc.) must be performed by the customer

Hydraulic power pack

- the hydraulic power unit must be accessible via the entrance level
- sheltered from wind and weather (not in residential buildings)
- space requirements: 100 x 140 x 35 cm (H x W x D)
- up to max. 8 systems per power pack
- sound insulation hood for protection against rain and airborne sound transmission at extra cost
- please consider lengthier lowering time when outside temperatures are low
- system standstill possible when temperatures are below zero

Conformity examination (TÜV)

- voluntary conformity assessment by the TÜV SÜD

The parking systems are compliant to:
- EC Machinery Directive 2006/42/EC
- DIN EN 14010

Railings

If walkways are arranged directly to the side or behind the systems, railings have to be provided by client acc. to local requirements. This is applicable during the construction phase too.

Maintenance

- WÖHR and all the WÖHR partners abroad provide an installation and customer service network
- regular, annual maintenance is provided subject to the stipulation of a maintenance agreement

Prevention of corrosion damage

- all operations listed in the WÖHR Cleaning and Maintenance Instructions are to be performed regularly (independently of maintenance operations)
- zinc-plated parts, components and platforms are to be kept clean of dirt, road-salt and any other debris (due to corrosion hazards)
- always keep the garage well ventilated and deaerated

Surface protection

- please consider the information on surface protection Parklift 411!

Tender specification

- please consider the specifications!

Electromobility

- please consider the product information Power Supply!
- depending on the position of the charging point on the electric vehicle, collision points with protruding plugs and charging cables can occur

Construction formalities

- the documentation necessary for construction permit applications is provided by WÖHR on demand

Construction alterations and/or modifications

- the right to construction or model modifications and/or variations is hereby reserved
- the right to any subsequent part modification and/or variation and amendments in procedures and standards due to technical and engineering progresses or due to environmental regulation changes is also hereby reserved

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