

\* In case of short time user (e.g. for offices, hotels, a.s.o.) technical adjustments are required. Please contact WÖHR!

Platforms are in horizontal position to drive on.

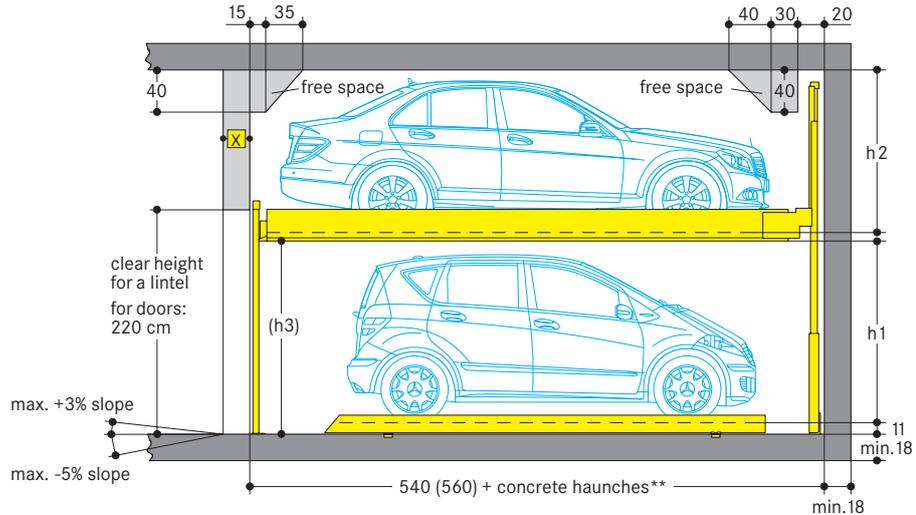
**Load per platform max. 2000 kg (load per wheel max. 500 kg)**

Special reinforced units for higher parking platform load are available (see 551-2,6).

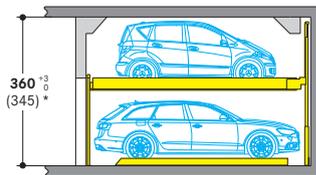
**X** = to be clarified with door supplier

Dimensions in cm

\*\* see notes, point 6



## Standard type 551 · 2000 kg



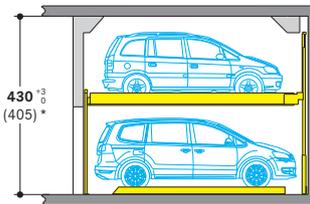
	car height	distance
<b>UL</b>	Cars/Station wagons up to 165 cm	$h_2 = 168$
<b>EL</b>	Cars/Station wagons up to 165 cm	$h_1 = 170$

UL = upper level, EL = entrance level

Access height  $h_3 = 181$  cm.

\* If cars and station wagons with a height of up to **150 cm** are parked on the **upper level**, a clear height of **345 cm** above the entrance level is sufficient.

## Comfort type 551 · 2000 kg



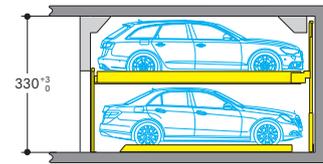
	car height	distance
<b>UL</b>	Cars/Vans up to 200 cm	$h_2 = 203$
<b>EL</b>	Cars/Vans up to 200 cm	$h_1 = 205$

Cars/Vans up to 2000 kg max.

Access height  $h_3 = 216$  cm.

\* If cars and vans with a height of up to **175 cm** are parked on the **upper level**, a clear height of **405 cm** above the entrance level is sufficient.

## Compact type 551 · 2000 kg

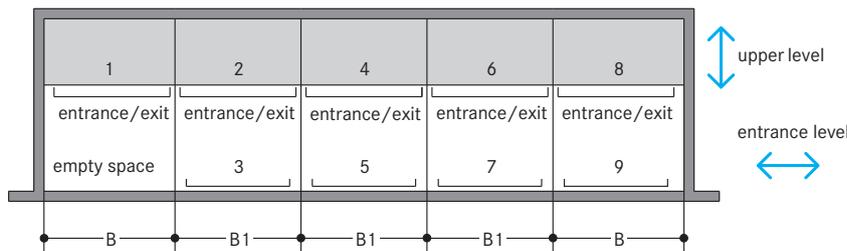


	car height	distance
<b>UL</b>	Cars/Station wagons up to 150 cm	$h_2 = 153$
<b>EL</b>	Cars/Station wagons up to 150 cm	$h_1 = 155$

Access height  $h_3 = 166$  cm.

Please attend to restricted car- and platform distance height!

## Width dimensions



Space required	gives clear platform width UL	gives clear platform width EL
B 260	B1 250	230
270	260	240
<b>280</b>	<b>270</b>	<b>250</b>
<b>290</b>	<b>280</b>	<b>260</b>
<b>300</b>	<b>290</b>	<b>270</b>

\* the space to get in and out of the car for platforms in entrance level is increased by 35 cm driver side.

In each grid a entrance/exit is necessary.

## Notes

- For standard version no doors are necessary. Doors can be installed either for manual or automatic opening.
- Arrangements start with 2 grids for 3 cars, 3 grids for 5 cars.
- Installation length of 540 cm for car length of a max. of 500 cm. Clear platform width of 250 cm for car widths of 190 cm. For large touring sedans we recommend a clear platform width of at least 260–270 cm.
- For large touring sedans an installation length of 560 cm is recommended. This length offers larger safety distances for potential future developments or projects with short term parkers such as hotels or similar.
- In front of each grid a 10 cm wide, yellow-black marking according to ISO 3864 has to be provided by the purchaser (see "statics and construction requirements" on page 3).
- It is not possible to have channels or undercuts and/or concrete haunches along the intersection joints connecting the floor and the front building support columns and along the floor-to-rear wall joints. In the event that channels or undercuts are necessary, the total installation length needs to be increased based on the dimensions of said channels or undercuts.
- The manufacturer reserves the right to construction or model modifications and/or alterations. Furthermore, the right to any subsequent part modification and/or variations and amendments in procedures and standards due to technical and engineering progresses in the art or due to environmental regulation changes, are also hereby reserved.

## Evenness tolerances

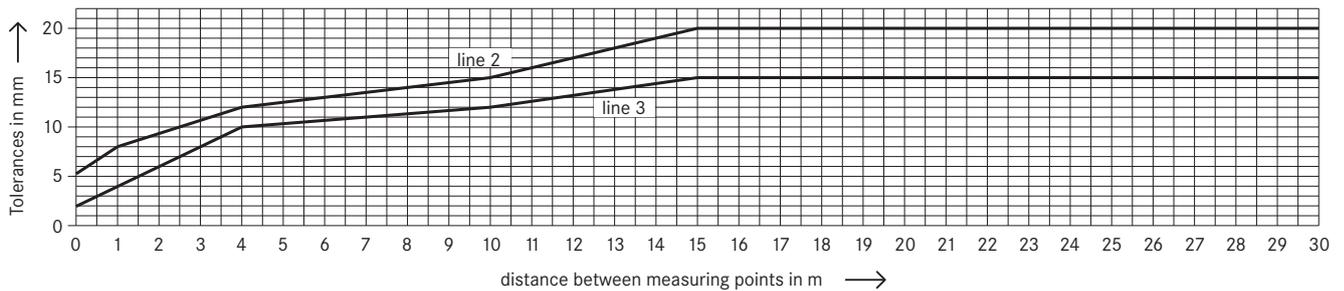
According to EN 14010 the danger of trapping between nonparallel platforms edges and the ground has to be prevented. The distance between the lower flange of the platforms and the garage ground must therefore not exceed 2cm.

To adhere to the safety regulations 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.

## Abstract from DIN 18202, table 3

column	1	2	3	4	5	6
line	reference	Vertical measurements as limits in mm with measuring points distances in m to*				
		0,1	1	4	10	15
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, compound floor paving. Finished surfaces for minor purposes, e.g. warehouses, cellars	5	8	12	15	20
3	Finished grounds, e.g. floor pavement serving as foundation for coverings. Coverings, tile coverings, PVC flooring and glued coverings.	2	4	10	12	15

\* Intermediate values are to be taken out the diagram and must be rounded-off to mm.



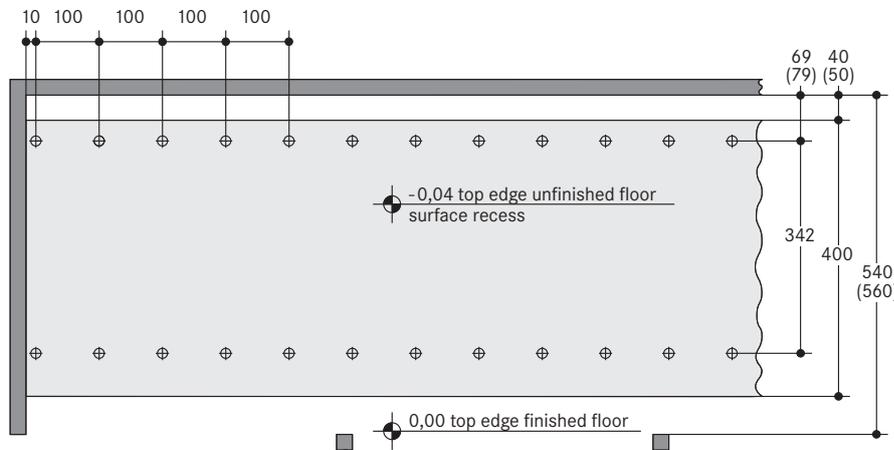
## Check points

The evenness of a surface is checked independently of its position and slope by bore hole gauges between two check points on the surface. WÖHR normally make a random test using single measurements in case of obviously inaccurate surfaces.

For uniform examination of the evenness of the ground surface the following points are defined as measuring and check points:

- a) for surface recess.
- b) for finished floor.

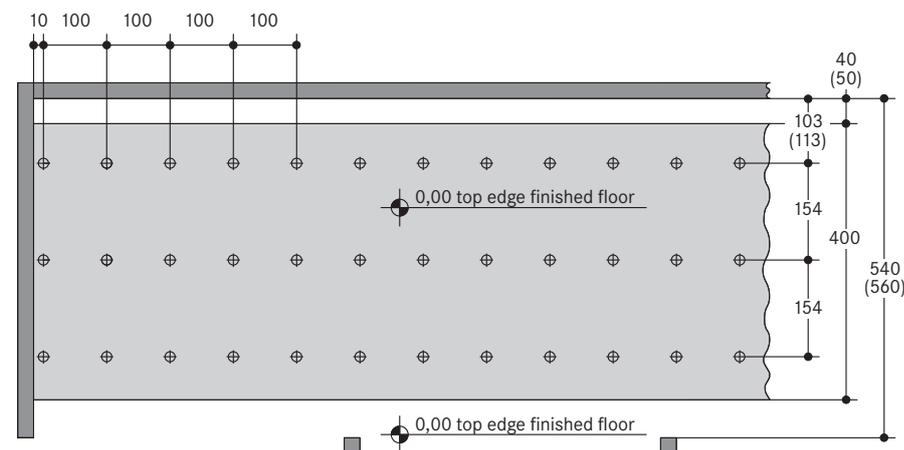
### a) Layout for surface recess width 4m



⊕ Measuring points at 100 cm points for checking the unevenness acc. to DIN 18202, table 3, line 2, or acc. diagram

( ) dimensions in brackets for increased length

### b) Layout for finished floor after placing floor pavement



⊕ Measuring points at 100 cm points for checking the unevenness acc. to DIN 18202, table 3, line 3, or acc. diagram

( ) dimensions in brackets for increased length

## Track Installation · Flooring works · Drainage

The moving rail load of each platform wheel is max. 6 kN.

The evenness of the floor + screed must be achieved according to DIN 18202, table 3, line 2. After checking the floor + screed the levelling rails are mounted on top of the highest point.

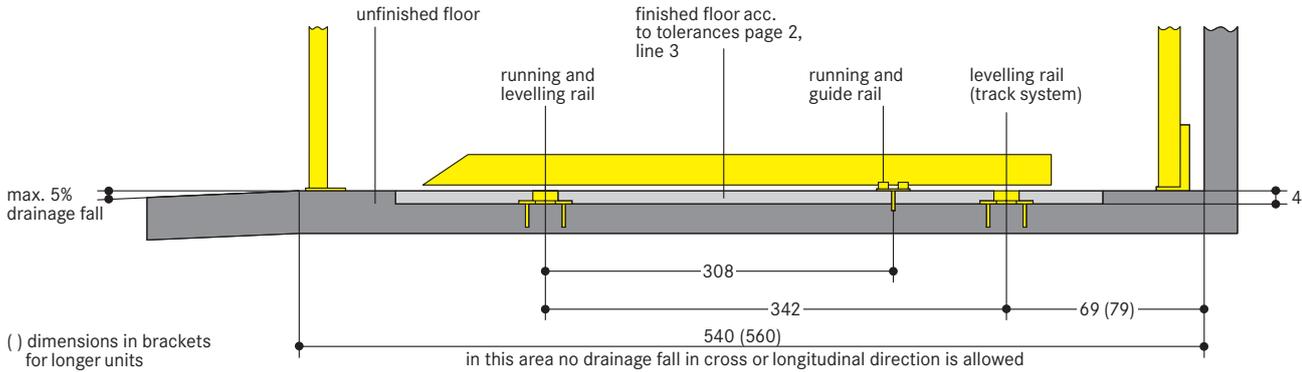
The underlining and fixing of the levelling rails occurs at the intended fixing points. For the laying of the running and levelling rails a meter tear is to be attached permanently for every railway track provided by the customer.

The screed is to be peeled off by the client on height of the levelling rails. Do not use mastic asphalt.

The running and guide rails are fastened after placement of the screed with bolts. Evenness according to DIN 18202, table 3, line 3.

In the area of the railway track no expansion gap or building dividing gaps are allowed.

Due to the technical requirements there is no drainage fall allowed in the area of the system.

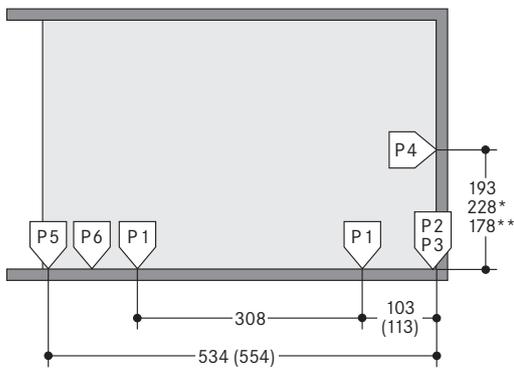


( ) dimensions in brackets for longer units

## Width dimensions and statics

All dimensions shown are minimum. Constructional tolerances must be taken into consideration. All dimensions in cm.

Section



( ) dimensions in brackets for longer units

\* dimensions for comfort type

\*\* dimensions for compact type

P1 = + 6,0 kN<sup>1)</sup>

P2 = - 10,0 kN

P3 = + 25,0 kN

P4 = ± 1,0 kN

P5 = + 9,0 kN

- 7,0 kN

P6 = - 1,0 kN

<sup>1)</sup> all static loadings include the weight of the car

Bearing loads are transmitted by wall plates with min. 30 cm<sup>2</sup> surface and the floor by base plates with min. 350 cm<sup>2</sup> surface.

Wall and base plates to be fixed by heavy duty anchor bolts to a drilling depth of 10-12 cm. When fixing to the waterproof concrete floors chemical anchors are employed (to be advised by WÖHR).

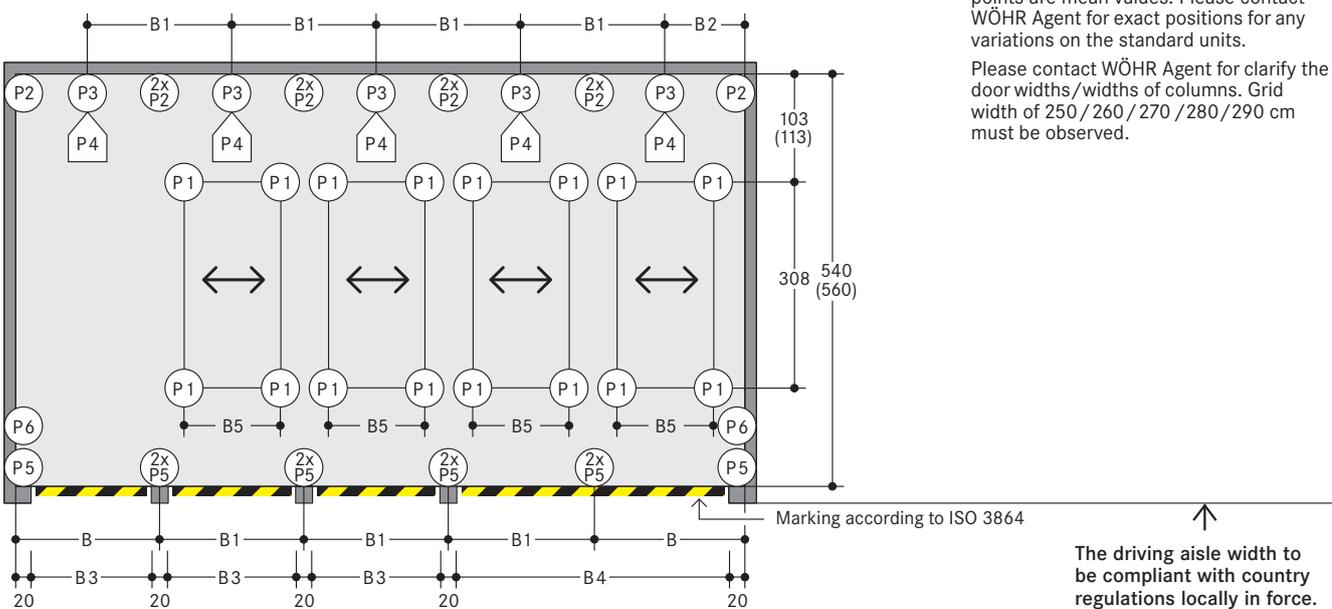
Base plate thickness min. 18 cm. Rear wall and base plate must be formed of concrete and must have a flat surface without protrusions.

Concrete quality according to the static building requirements, however for the dowel fixing concrete quality of min. C20/25 is required.

The specified lengths to the support points are mean values. Please contact WÖHR Agent for exact positions for any variations on the standard units.

Please contact WÖHR Agent for clarify the door widths/widths of columns. Grid width of 250/260/270/280/290 cm must be observed.

Ground plan



The driving aisle width to be compliant with country regulations locally in force.

B	Space required				gives clear platform width	
	B1	B2	B3	B4	EL (B5)	UL
260	250	135	230	480	207	230
270	260	140	240	500	217	240
<b>280</b>	<b>270</b>	<b>145</b>	<b>250</b>	<b>520</b>	<b>227</b>	<b>250</b>
<b>290</b>	<b>280</b>	<b>150</b>	<b>260</b>	<b>540</b>	<b>227</b>	<b>260</b>
<b>300</b>	<b>290</b>	<b>155</b>	<b>270</b>	<b>560</b>	<b>227</b>	<b>270</b>

## Hydraulic power packs

For the accommodation of the hydraulic power packs an additional space is required which will be determined during the verifications of the drawings,

e.g. in a wall recess.  
Dimensions:  
length = 100 cm  
height = 140 cm  
depth = 35 cm

## Electrical data

Circuit connections 230/400V, 50 Hz, 3 phases. Max power consumption 1.5/3.0 kW. Circuit breaker or 3 x 16A time-lag fuse automatic circuit breaker unit (compliant to the DIN VDE 0100 standard requirements) and a 3 phase + N + PE feed cable, compliant to the prescriptions set forth by the local facilities supply company up to the electric

controls cabinet, further to the installation of the feed cables into the electric controls cabinet, to be performed basically on-site. In compliance with the DIN EN 60204 standard provisions, all systems must be connected directly on site with an earthed equipotential bonding. The lead-out connection must be at a 10 m distance!

## Switch cabinet

1. Main switch is installed well accessible at driveway in a height of 160 cm to 190 cm.
2. The switch cabinet must be installed visible and near by the system. Area for installation has to be provided by the customer. The size of the switch cabinet is 80 x 110 x 21 cm.
3. The wall opening of 15 cm diameter is required between the switch cabinet and the system itself. Please contact WÖHR Agent to clarify.
4. The control is designed to operate between +5° and +40°C. Atmospheric Humidity: 50% at +40°C. If the local circumstances differ from the above please contact WÖHR (if necessary, the switch cabinet has to be provided with a heating).
5. If the system is installed outside the switch cabinet needs to be inside a sun-/water-/wind proof box. In front of the switch cabinet an area of 100 cm is required to work.

## General product information

The combilift Type 551 consists of 2 platform rows, one above the other. In front (to the full width) of the installations is a drive way which is situated on the lower platform row (access level). The lower platform row consists of one platform less than the upper level. In order to access a platform on the upper level, the lower level

platforms (access level) shift laterally into the free space. The selected upper platform is now lowered vertically into the free space provided in the access level. The lowering of the platform is by means of push button control (hold-to-run-device), the hoisting of the platform is fully automatic.

## Hotel garage

If used by hotel guests, the installation requires special planning and construction. Please ask for details.

## 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.  $m^2 = 300$  kg/m<sup>2</sup>
- solid ceiling above the parking systems with min.  $m^2 = 400$  kg/m<sup>2</sup>

At differing constructional conditions additional sound absorbing measures are necessary.

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

The installation is designed to operate between +5° and +40°C. Atmospheric Humidity: 50% at +40°C. If the local circumstances differ from the above please contact WÖHR.

## Numbering of the parking spaces

1. The empty space of the Combilift is always on the left in the entrance level.
2. The numbering is as follows:

UL	1	2	4	6	8
EL		3	5	7	9
3. The numbering for each system starts with 1 as above.
4. Different numbering of parking spaces is possible at a surcharge (software changes are necessary).

## Conformity test

All our systems are checked according to EC machinery directive 2006/42/EC and EN 14010.

## Illumination

Illumination has to be considered acc. to local requirements by the customer.

## Free spaces

Special drawings for free spaces to accommodate air ducts or other pipes can be requested at WÖHR Agent!

## Railings

If walkways are arranged directly to the side or behind the systems, railings have to be provided by the customer acc. to local requirements, height min. 200 cm - this is applicable during the construction phase too.

## Maintenance

WÖHR and its foreign partners have an assembly and customer network. Annual maintenance is performed at conclusion of a maintenance contract.

## Protection against corrosion

Independent of a maintenance workings has to be carried out acc. to WÖHR Cleaning and Maintenance Instruction regularly.

Clean up galvanized parts and platforms of dirt and road salt as well as other pollution (corrosion danger)!

Pit must always be ventilated and deaired well.

## Parking place width

We recommend a clear platform width of at least 250 cm.

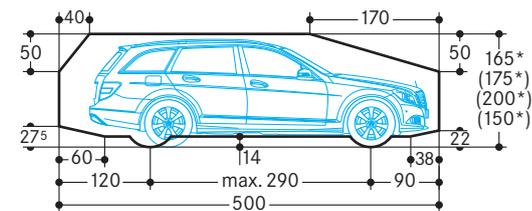
## Dimensions

All dimensions shown are minimum. Construction tolerances must be taken into consideration. All dimensions in cm.

## Fire safety

Each and every fire safety requirement and all possible mandatory item(s) and equipment(s) (fire extinguishing systems and fire alarm systems, etc.) are to be provided by the customer.

## Clearance profile (standard saloon/estate car)



\* The total car height includes roof rail and antenna fixture and must not exceed the mentioned max. height dimension.

## Note

If doors are planned we recommend installing an empty pipe for cabling to the control panel from the rear. This empty pipe should be 120 cm above ground level in the centre of a column.