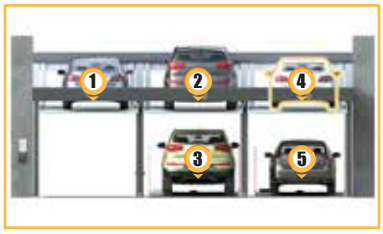
“ Parking with pleasure...”

Parkolay

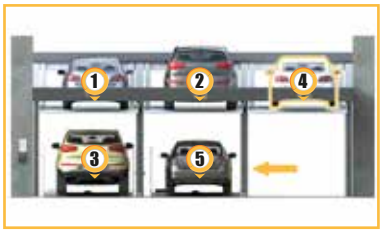
Parkonfor 11

M.Multi-grid system = min. 2 grids (for 3 cars), max. 10 grids (for 19 cars)
Standard: Car weight max. 2.200 kg, wheel load: max. 550 kg
Option: Car weight max. 2.800 kg, wheel load: max. 700 kg

Parkonfor Series



When platform #4 is requested.



Platform #3 and #5 shift to the left.

Then platform #4 is lowered to the entrance level.

Parkonfor 11 is a semi-automatic car parking system that allows vehicles to be parked independently and side-by-side on two parking floors, by taking advantage of the single empty space at the entrance level to allow for the sliding movement.

ADVANTAGES »

- Comfortable and independent parking, without the need for any system operator.
- Unique maneuvering comfort at the entrance of the parking lot from the corridor; as the parking system doesn't include any columns between its platforms.
- Easy access to the platforms thanks to the low slope platforms entry edges.
- Comfortable walking and driving thanks the flat platform sheets.
- The capacity of the two-storey parking unit is up to 3 consecutive rows and 10 side-to-side grids.
- A hold-to-run or other optional automatic operation modes are in use, in addition to the user-friendly touch screen control panel.
- Wide access openings thanks to the optional multi-panel doors with remote control.

CE

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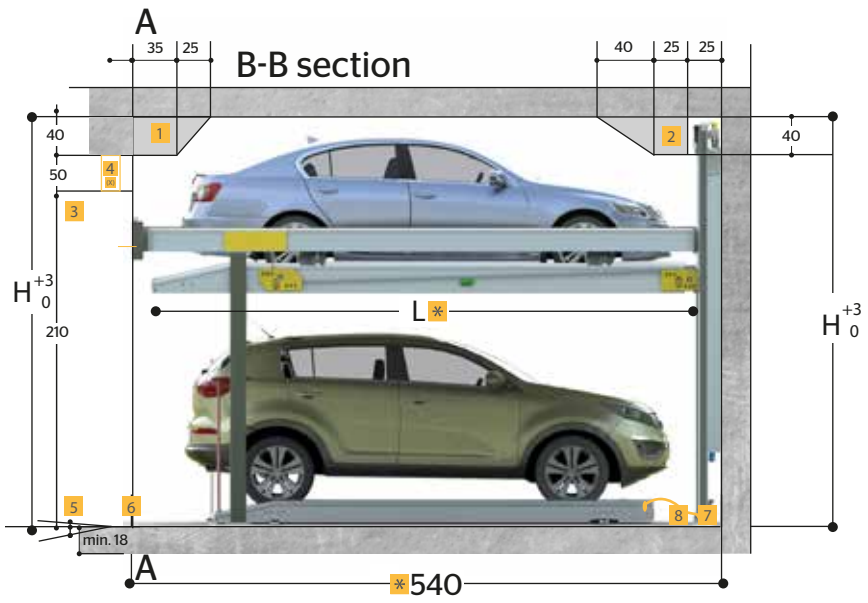
1 2 Free space.
3 Lintel; clear height, min 210 cm or according to regulations.

4 (X) for door, 20 cm; only applicable if doors are fitted !



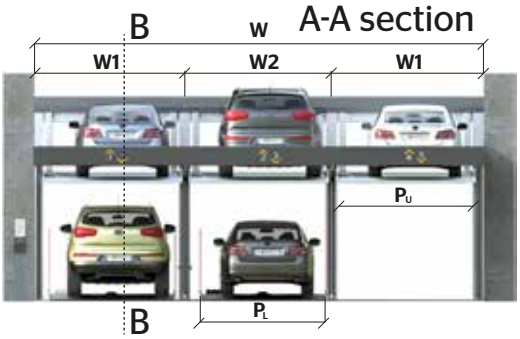
5 300 cm plain, max slope +3%/ -5%.
6 Yellow/ black marking 10 cm wide on the edge to parking area according to ISO 3864.

7 No haunches, voutes on the joints between ground and walls.

8 Grounding: Potential equalization from system to foundation grounding according to DIN EN 60204. Foundation earth connector every 10 m.

* Upper Platform length: In long or short version (503/ 458 cm) available.

! Points 1 et seq. are the responsibility of customer and must be noted. Unless otherwise stated they are executed, supplied and/ or connected by customer.



Example shows 3 grids, 5 spaces. 1 empty space on entrance level is necessary for movement. 4 grids = 7 spaces, 5 grids = 9 spaces, etc. Each grid is enter/exit

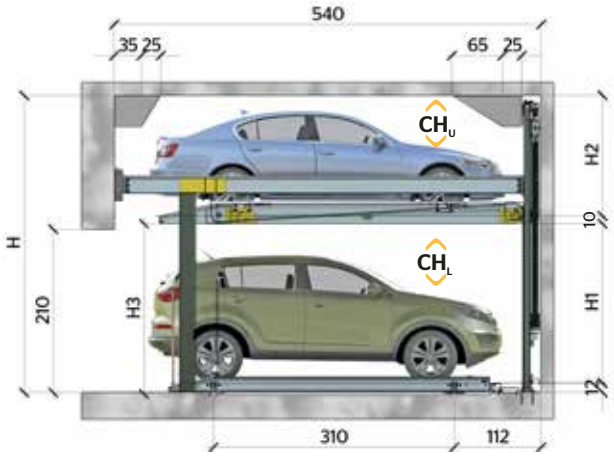
Platform Widths and Variant For Car Height

CH_U	CH_L	H	H1	H2	H3
150	150	330	155	153	167
165	165	360	170	168	182
170	170	370	175	173	187
180	180	390	185	183	197
200	200	430	205	203	217
205	205	440	210	208	222

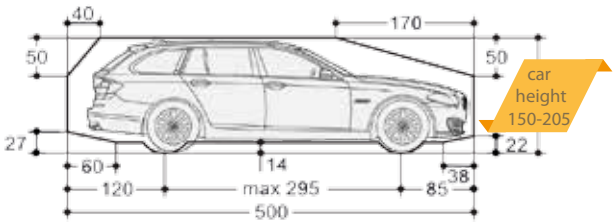
Height of the car at the lower platform is 180 cm considering the comfort of driver's head height.
Ceiling height of structure is taking acoount for upper car height.

Advised platform width 250 cm (190 cm net car width).

Dimensions (cm)				W			
P_U	P_L	W1	W2	2 grid	3 grid	4 grid	5 grid
230	207	260	250	520	770	1020	1270
240	217	270	260	540	800	1060	1320
250	227	280	270	560	830	1100	1370
260	227	280	280	580	860	1140	1420
270	227	300	290	600	890	1180	1470



Car Profile Dimension »



The "car height" including roof rails, antenna and others must not exceed the mentioned max car height dimension.

Electrical Supply »

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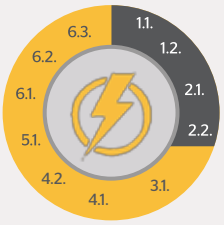
6.3 Control cable goes to locks .
6.2. Control cable goes to user interface panel.
6.1. Upper limit switch and platform valve control cable.
5.1. Control cable line goes to other side platform system
4.2. 4.0 kW, 400V, 50Hz hydraulic power unit for each system.
4.1. Touch panel for each sytem (prefably located in driver side so that being reachable, outside of system range motion). Its cable is organized as cable entrance under panel.
Remote control available as an option.

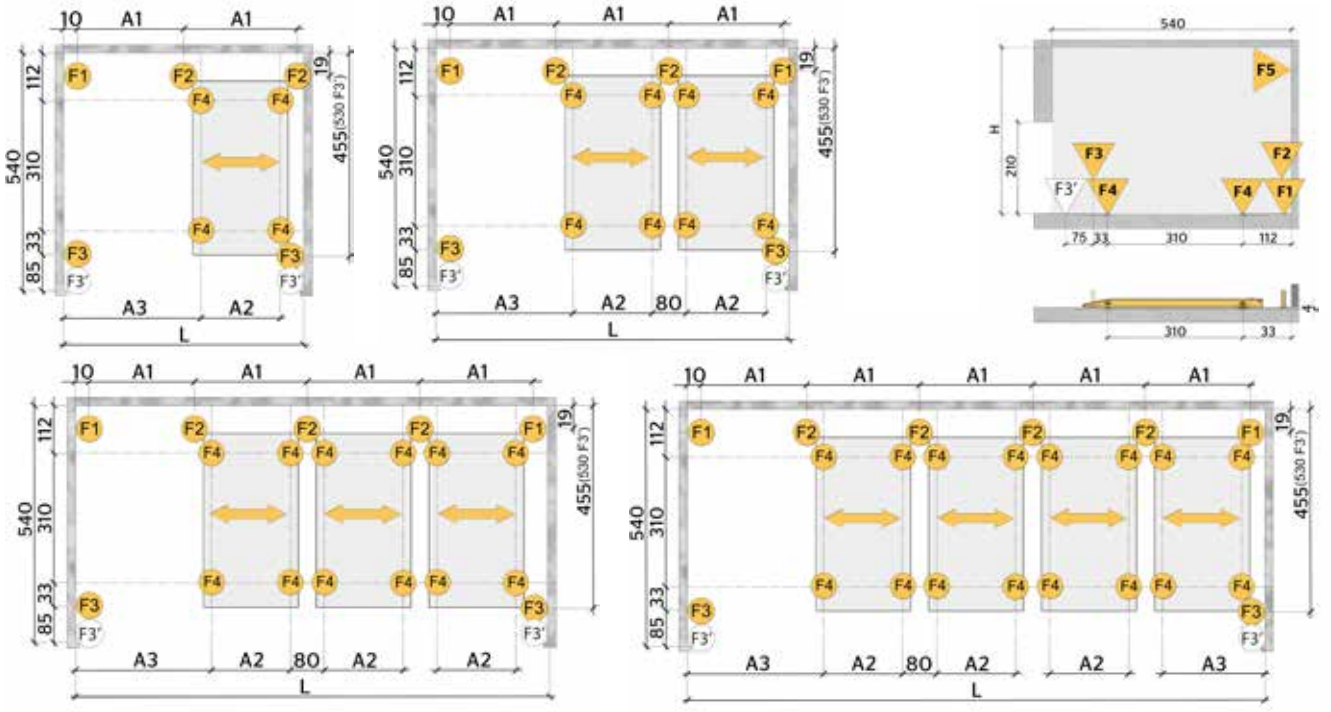


Customer

1.1. Electric power distribution panel.
1.2. 3 x 16 A slow character MCB-(Miniature Circuit Braker) for each control panel and hydrolic power unit set.
2.1. Equipotential earthing connection according to DIN TS EN 60204.
2.2. 5 x 4 mm2 supply cable (4.0 kW, 400V, 50Hz) goes from customer power distrubition panel to system control panel set for each control panel and hydrolic power unit.
3.1. Motor, limit switch supply and earthing line for traveller platform.

Switch cabinet: The switch cabinet must placed outside the movement range of the system. The position should be adjacent to the system and provide overview to it. The size of switch cabinet is about 80 x 120 x 25 cm and in front of the cabinet must be 100 cm free space and fixed area for door opening and service operator.

Structural Forces »



Forces kN**	Max. car version kg	
	2.200	2.800*
F1	14	19
F2	25	33
F3***(F3')	23/34/45/56	30/45/58/72
F4	7	10
F5	5	7

*Option ** with car weight. *** 2/3/4/5 column gap F3 or (F3')

Dimensions (cm)							L			
P_U	P_A	W1	W2	A1	A2	A3	2 grid	3 grid	4 grid	5 grid
230	207	260	250	250	170	300	520	770	1020	1270
240	217	270	260	260	180	310	540	800	1060	1320
250	227	280	270	270	190	320	560	830	1100	1370
260	227	280	280	280	190	330	580	860	1140	1420
270	227	300	290	290	190	340	600	890	1180	1470

Advised platform width 250 cm. (190 cm net car width)

FOUNDATION »
Systems are fixed by heavy duty anchor bolts with a drilling depth of approx. 14 cm.
Floor plate made of reinforced concrete, min thickness 18cm, quality minimum C20/ 25. Chemical anchors are option for water-proof concrete.

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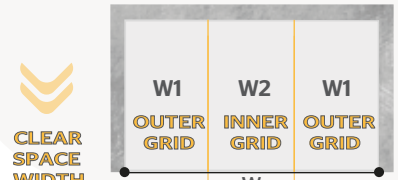
System Width

Between walls

Picture shows 3 grids

3 grids = 5 spaces, min. is 2 grids



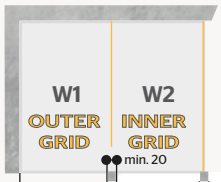
CLEAR SPACE WIDTH	W	Total Width (w) 2	3	4	5	6	7	8	9	10
230	260 – 250 – 260	520	770	1020	1270	1520	1770	2020	2270	2520
240	270 – 260 – 270	540	800	1060	1320	1580	1840	2100	2360	2620
250	280 – 270 – 280	560	830	1100	1370	1640	1910	2180	2450	2720
260	290 – 280 – 290	580	860	1140	1420	1700	1980	2260	2540	2820
270	300 – 290 – 300	600	890	1180	1470	1760	2050	2340	2630	2920

Driving lane according to regulation.

Behind the pillars

Picture shows +2 grids

2 grids = 3 spaces



CLEAR SPACE WIDTH	
230	250 – 230
240	260 – 240
250	270 – 250
260	280 – 260
270	290 – 270

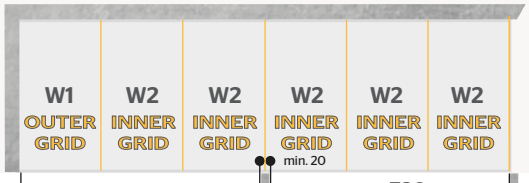
Picture shows + 4 grids

4 grids = 7 spaces

500	480
520	500
540	520
560	540
580	560

Picture shows + 6 grids

6 grids = 11 spaces



750	730
780	760
810	790
840	820
870	850

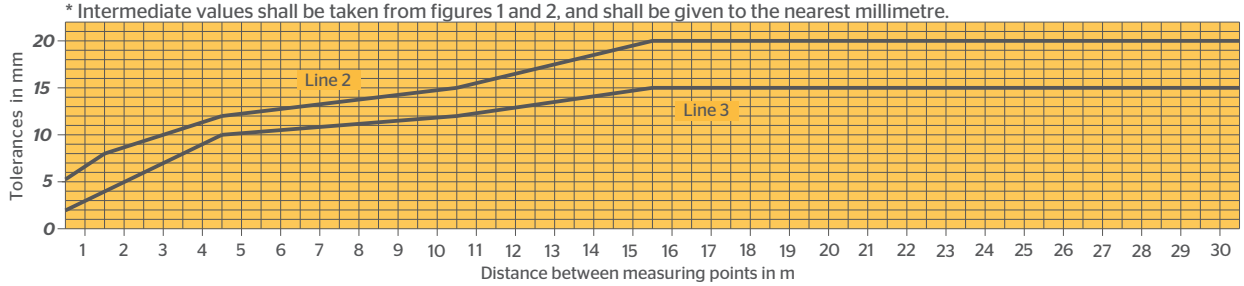
Driving lane according to regulation

Evenness and Tolerances (extract from DIN 18 202, table 3)

The distance between the lower flange of the pallets and the garage ground must therefore not exceed 2 cm. 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
		Position deviations (limit values), in mm, for distances between measuring points, in m, up*				
Line	Applicable to	0,1	1	4	10	15
2	Unfinished upper surfaces of floors, subfloors and concrete bases subject to more stringent requirements. (e.g. to receive floating screed, industrial floors, tile flooring and bonded screed), and finished surfaces for minor purposes (e.g. in storerooms or basements)	5	8	12	15	20
3	Finished floors (e.g. screed as wearing courses or screed to receive a flooring, trowelled or bonded floorings)	2	4	10	12	15

* Intermediate values shall be taken from figures 1 and 2, and shall be given to the nearest millimetre.



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For comfortable walking

“A savior” flat platform surface design.

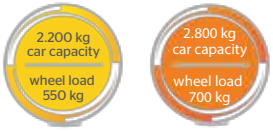
Users deserve more comfort. Our platform design offers comfort beyond your expectations.
The flat platforms provide much comfort while walking and driving on.
Whoever use, it like it:Old or young, male or female.

High heels are no longer an issue.

Design: Safety & Comfort

STRONG BUT SMOOTH LOW BUT ROBUST »

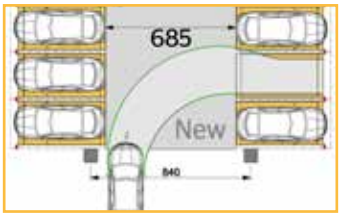
The profiles on both sides of the platform are strong due to them being constituted of one single long piece, in addition to their soft slope from low to high. This latter eliminated the risk of collision that may damage the vehicle and the wheels and provides easy and safe maneuvering. The teardrop pattern used at the entry ramp facilitates holding the vehicles’ wheels and prevents slipping. Due to their low height, the profiles on both sides are both robust and eliminate the risk of collision while opening the doors. Moreover, adjustable wheel stoppers are used to assist the driver in positioning the vehicle on the platform.



WE OFFER WHAT YOU NEED »

CAR CAPACITY AND WHEEL LOAD »

Cars with overweight. The biggest Switzerland motorcyclist association remeasured the weight of cars, which is figured out in the car registration certificate according to regulation 92/21/EEC. In most of the cases the car was heavier than stated on document. Often individual options are not calculated. Sliding roof, bigger wheels, hifi systems, motors for seats, etc. might increase the weight, which can be up to 150 - 200 kg higher on a car like Mercredes E-Class, BMW 5-Series, Audi A6. Therefore the supplier offers a standard parking space capacity of 2.200 kg and 550 kg wheel load, option 2.800 kg and 700 kg wheel load.



MORE COMFORT FOR PARK IN PROCESS »

The design offers recessed system columns to take profit from an increased driving lane. The driving lane and platform entry width are the deciding factors for the parking comfort. A plus of 50 cm driving lane can be equated with 10 cm parking space width. Specific design to **Parkonfor** can increase the driving lane up to 100 cm. This can be valued like 20 cm parking place width on the left and right side of the driving lane.

Undoubtely, this valuable effect will increase the profit in the driving curve radius and thus will make the drive in process onto the parking space more convenient and comfortable.

CONTROL SOUND EMISSIONS »

Car parking systems are sustainable, but also produce sound emissions that can affect health and care during use and operation. Compliance of sound emissions is important and effects R&D, planning and execution. We differ between air borne and body sound emission. For the latter the heavy duty support as well as the hydraulic insulation are of importance. Driving noise from the platform are part of the subjective perception and affect the quality impression.

CLEANING AND VALUE PRESERVATION »

A car parking system represents a major investment financially. Cleaning and care services can ensure a proper appearance, value preservation, function, availability and might lengthen the life time cycle. In reality one main reason for the poor and sometimes rusty look is, that the platform design is exceptionally difficult to clean and thus the necessary processes often are neglected. The supplier has developed a user friendly platform design, that provides the possibility to clean and maintain professionally.

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Parkolay

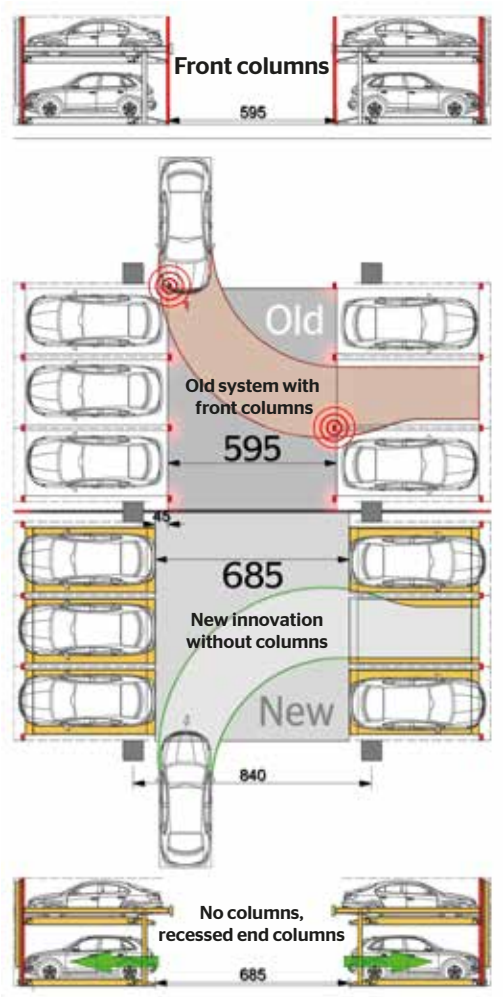
Parking Comfort Advantage »

RECEDED SYSTEM COLUMNS FOR THE SYSTEM BLOCK

The most valuable feature on this system is the receded system columns. The system columns limits the units only in the end of the width. The system's front span can be from 2 to 5 grids, without having difficulties by adding front columns.

In case of 10 grids total, there will be 2 x 5 grids span with 19 spaces. There will be only two receded system columns at both end of the system. And in the middle there will be only one front column (for shifting the sliding platform) instread of 11 in total.
The system width is calculated by span combination as usual with W1, W2, W1 and does not increase total width.

This extraordinary concept is especially favourable, when it is on the open public area or when the building pillars are designed according to the conventional parking. The profit will be taken from the receded system pillars and people will daily enjoy the parking comfort advantage.



MORE COMFORT FOR PARK IN PROCESS

The design offers receded system columns to take profit from an increased driving lane. The driving lane and plattform width are the deciding factors for the parking comfort.

A plus of 50 cm driving lane can be equated with 10 cm parking space width. Practically the special design can increase the driving lane up to 100 cm. This can be valued like 20 cm parking place width on the left and right side of the driving lane. The system provides:

- More comfort in drive
- Better curve radius
- Faster drive in process
- More safety by less collision risks (missing the front columns)
- More drive in width
- Optical and practical increased driving lane
- User oriented philosophy - Parking with pleasure -

Undoubtely, this valuable effect will increase the profit in the driving curve radius and thus will make the drive in process onto the parking space more convenient and comfortable.

Critical Comment: LIMITED USER COMFORT WHEN COLUMNS IN FRONT.
Drivers still suffer today about the parking spaces had been built decades ago. Whether they are single garages, quarter garages, underground garages or parking lots: The problem is always having too narrow drive in space, either limited by the structure or the pillars. And this problem is now more serious with the today's increased car width. The trend is to build wider pillar spans, without pillars, wide entrances and spaces without limitations.

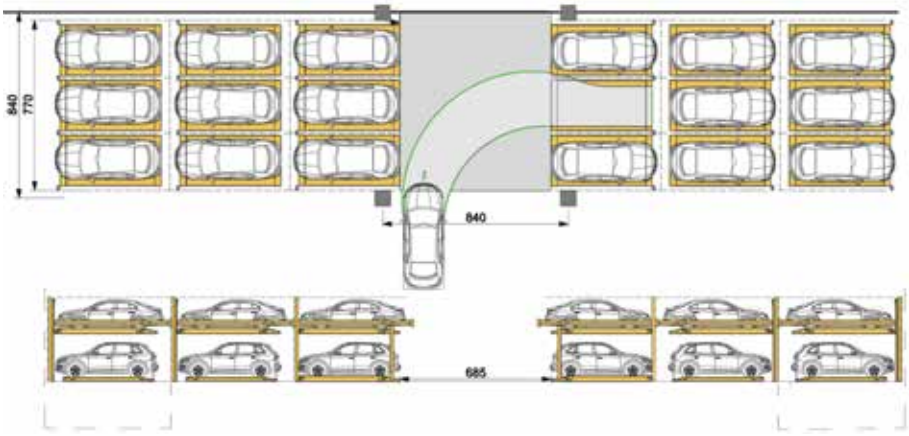
A woman recently said: "Imagine a parking space with 230 cm width and limited on entrance with fixed columns. How to enter daily, when the size of my BMW 3-series with mirrors is just 209 cm. There are just 10 cm left on each side and how to drive in from the driving lane by 90 degrees?

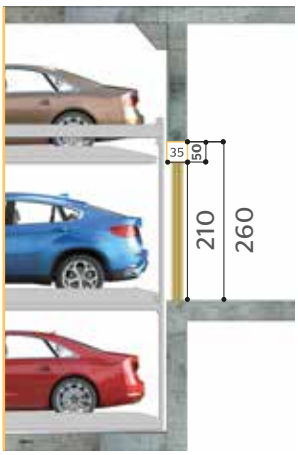
Arrangements Increase Efficiency »

WHEN THE PLOT IS SMALL - THERE ARE SOLUTIONS TO INCREASE EFFICIENCY: DOUBLE OR TRIPLE DEEP.

With the triple row arrangement, there are 3 x 3 grids and 5 spaces per line, in total 15 spaces. Mirrored on the driving lane that will be 30 spaces, instead of 6 conventional spaces. The third row can be also exposed with the **Parkonfor 11**, 3 levels with pit. Then there are 3 more spaces available per line. In total 36 spaces instead of 6 conventional spaces.

This solution needs additional gates, at least before the second row, to be sure no persons are inside the system.





Sliding Doors »

Gates can be used as optional for **Parkonfor 11**. Door control is integrated with all the system operation; it can only be opened when selected parking platform reaches the entry / exit position.

The revision, maintenance or system requirements that may occur according to local regulations are the responsibility of the customer and the necessary technical requirements must be reported to the supplier in advance.

DOOR TYPES

Manually operated
Electrical drive
Optional remote control

MULTI-PART SLIDING DOORS

3 grid : 4-piece sliding doors
2 grid: 3-piece sliding doors

PARKING COMFORT IS ENHANCED BY THE MULTI SLIDING DOORS AND COLUMN-FREE DESIGN, WHICH PROVIDE MORE MANOEUVRING SPACE.

PATENT-PENDING

2018-GE-213441

Control Panel »

The user-friendly software of the ergonomically designed control panel allows you to easily call your parking space from the system. The movement of the parking spaces and door panels is managed by the software by entering the parking space's number on the control panel or by using the bluetooth remote control.

Corossion protection and Prevention

Besides the maintenance, the systems have to be cleaned regularly. This is for the systems, at least for the platforms as well as for all parts being exposed to corrosive substances, e.g. salt water, dirt, car fluids, sand, etc..
Garages also have to be ventilated and deaerated, The base plates have to be dewatered and dry.

Marking band

ISO 3864

According to DIN EN 14010/ ISO 3864 a yellow/ black 10cm wide safety warning band must be placed at the edge of the parking area by customer.

Safety fences DIN EN ISO 13857

According to DIN EN ISO 13857 safety fences have to be provided by customer for pathways directly around the parking boxes (besides or behind the units).
Also during construction.

Fire safety

Designing fire safety in the proposed garage or area must comply with local/ regional regulations. The compliance must be managed by customer. Depending on the location and the fire department there might be very dfferent and specific requirements. The supplier has to be in informed in advance by the customer.

Dewatering

Dewatering involves controlling water in the system area with possibility of pumping it out of a water collecting pump sump. Water may occur from snow on the car, leaking shell, ground water, wet cleaning the systems (to prevent corossion) or others. It can be solved by a drainage system with pump sump (50 x 50 x 20 cm).

Car development

The size and weight of new generation of cars have been increased due to the extra equipment, which means that the weight of upper middle class cars oftenly exceed 2.000 kg. Parallelly to that, the manufacturer offers a 2.200 kg load capacity as standard. Optionally, 2.800 kg can be provided for heavier cars. In this case, the manufacturer recommends as ideal platform width of 250 cm and min. height of 160 cm according to the increased dimensions of the new generation cars.

Sound insulation DIN 4109: 2016-07

"Sound insulation in buildings". According to the german norm a value of 30 dB(A) is allowed in living quarters. This can be fullfilled with: option noise protection according to offer supplier. Sound insulation of building R'w = 57 dB. Surrounding walls/ ceilings (e.g. monolithic and rigid) of parking should be made of min m' = 300/ 400 kg/ m².

The adjacent critical building element should be min m' = 580 kg/ m. User noises are created by individual users. These can be from driving up/ down the platforms, slamming of vehicle doors, motor and brake noises. They are not subject to the limit. "Increased sound insulation" is made on special offer and discussion and needs more space.

MINIMUM DIMENSIONS & TOLERANCES »

Shown dimensions are minimum. Tolerances according to VOB part C (DIN 18330 and 18331) and the DIN 18202 have to be considered additionally. Tolerances for space requirements are +3 cm/ 0 cm. Dimensions are in cm.

ENVIRONMENTAL RANGE »

Temperature range -10 to +40° C. Relative humidity 50% at maximum outside temperature of +40° C.

LIGHTING »

There must be sufficient ligthing in the parking garage and parking area according to regulations, supplied by customer.

CE AND CONFORMITY »

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

RIGHTS TO CHANGE »

The manufacturer reserves the right to change, alter, modify parts, groups or general design in procedures or standards due to technical progress.

HYDRAULIC POWER UNITS »

Several units/block can be operated with one power unit. The power unit(s) need(s) additional space (depth 35 cm), which has to be in/ near the parking area and should be clarified with the drawing approval (e.g. wall recesses, moving with platform, others).

The general planning/supply of the garage with the building structure, statics, tolerances, free spaces, wall cutting, drainage, noise protection, fire demands, electricity, grounding, driveway, illumination, ventilation, numbering of spaces, yellow-black marking band, safety fences and others has to be arranged according to local requirements by the customer and must be also in accordance with the delivery/ requests of the parking system supplier.

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