



# Nussbaum

## PARKLINE N5803

THE SEMI-AUTOMATIC PARKING SYSTEM ON 3 LEVELS, WITHOUT PIT



SEMI-AUTOMATICS

### SHORT DESCRIPTION

- INDEPENDENT PARKING ON 3 LEVELS, WITHOUT PIT
- UPPER LEVEL WITH LIFTING PLATFORMS, MIDDLE LEVEL WITH LIFTING/SLIDING PLATFORMS, ENTRANCE LEVEL WITH SLIDING PLATFORMS. WITH 2 EMPTY SPACES PER SYSTEM
- MODULAR CONSTRUCTION: DEPENDING ON THE CONDITIONS ON SITE, IT CAN BE POSSIBLE TO ADD SEGMENTS AT WILL
- LOAD PER PARKING SPACE: STANDARD 2.000 KG  
OPTIONAL UP TO 2.300 KG OR 2.600 KG

### APPLICATION

- FOR INTERIORS AND EXTERIORS
- ONE AND MULTI- FAMILY DWELLINGS
- HOTELS
- OFFICE BUILDINGS
- CONDOMINIUMS
- COMMERCIALS
- CAR DEALERS
- FOR PERMANENT USERS ONLY

NOTE

The total height of the car including roof rail and antenna fixture must not exceed the maximum car height mentioned in the table below. Standard cars do not feature sport equipment (e.g. spoiler, etc.)

## HEIGHT MEASUREMENTS

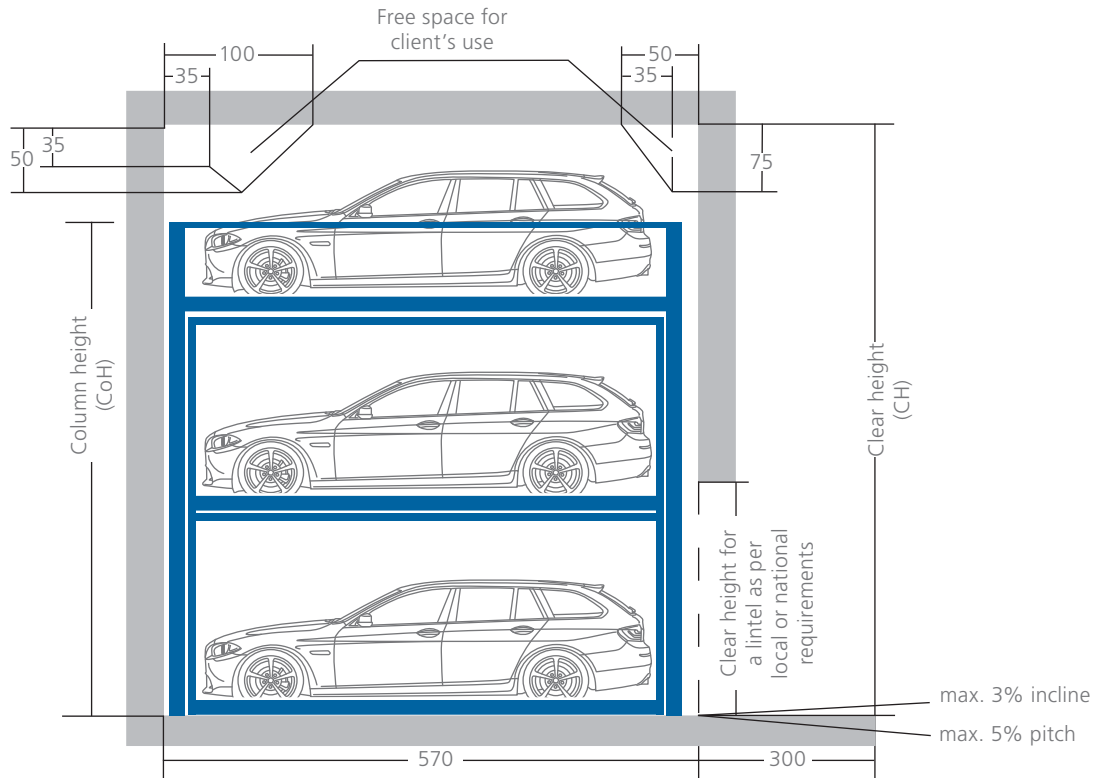


Modular construction extensible at will

Platforms are horizontally accessible.

For a constant, trained group of users.

All measurements are in cm.



System length 570 cm, for 500 cm long vehicles. Further dimensions available upon request.

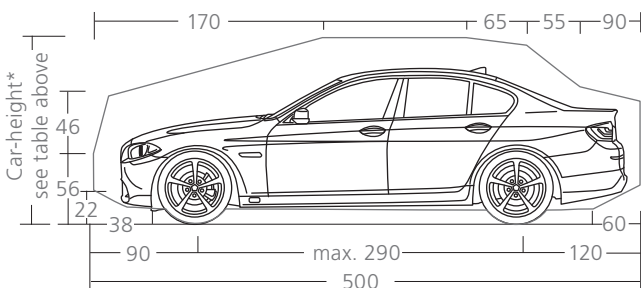
Concrete: min. 18, C25, floor evenness acc. to DIN 18202 Tab. 3, line 3.

Load per parking space: max. 2.000 kg, wheel load: max. 500kg. Optional up to 2.300 kg or max. 2.600kg, wheel load max. 650kg.

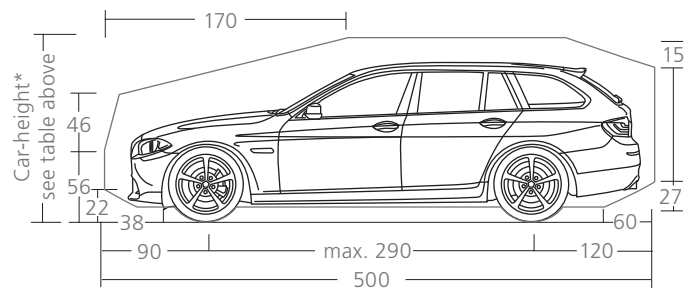
CLEAR HEIGHT (CH)**	COLUMN HEIGHT (CoH)	CAR-HEIGHT BELOW	CAR-HEIGHT MIDDLE	CAR-HEIGHT ABOVE*
540	440	150	150	150
600	500	170	170	170
630	530	200	170	170
660	560	190	190	190

\* The car height above depends on the clear height. It is possible to park higher cars, if the clear height is correspondingly higher.

### VEHICLE DATA: STANDARD CAR



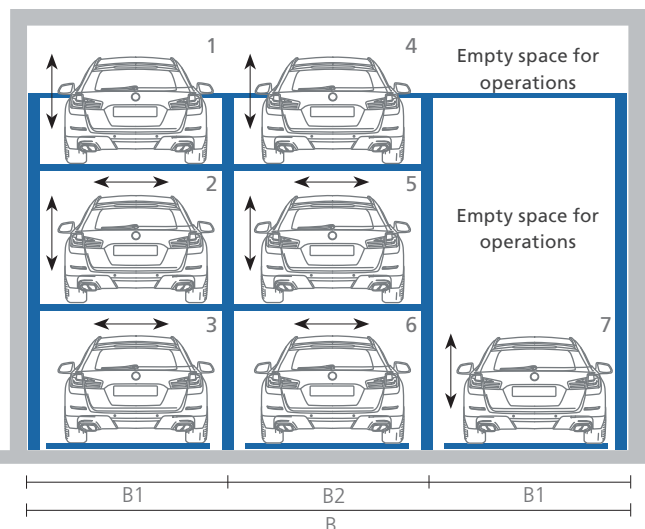
### VEHICLE DATA: STANDARD ESTATE CAR



## WIDTH DIMENSIONS AND EXAMPLES

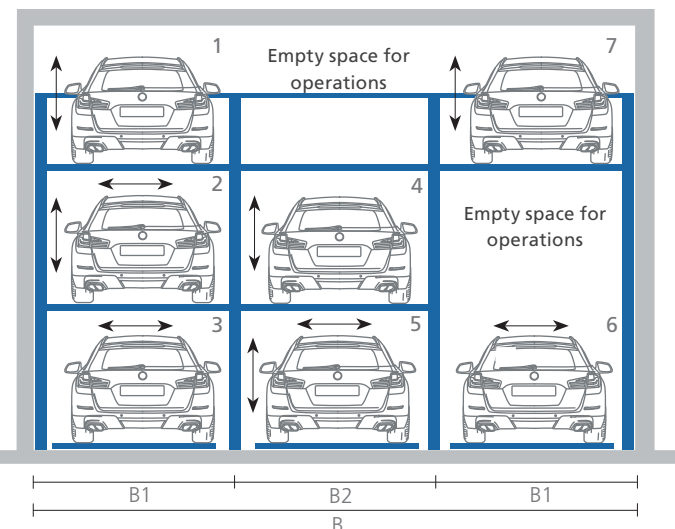
### EXAMPLES WITH 3 SEGMENTS FOR 7 PARKING SPACES

All dimensions in cm. All dimensions are minimum dimensions. Advice for planning and tendering: Generally masonry and concrete works are to be conducted according to the German norm VOB/C (DIN 18330 and DIN 18331). In the mentioned norm are pointed the tolerances that are to be fulfilled according to DIN 18202. In this norm are defined the maximum permissible dimension variations as exceedance and shortfall of the nominal size. The nominal size should be planned in order to meet the minimum dimensions necessary for the parking system.



Example 1 - Basis position

The picture shows the basis position: on the entrance level are the sliding platforms 3 and 6 and the lifting platform 7. In this position cars 3, 6 as well as 7 can drive out of the system. In the basis position the empty spaces are placed on the right. Optionally it is possible to place the empty spaces on the left side of the system too.



Example 2

In the picture above the lifting platform 7 has been lifted and the sliding platform 6 has been slid to the empty space. The lifting platform 4 has been eventually lowered together with the lifting/sliding platform 5. Now it is possible to drive out cars on the sliding platform 3 and on the lifting/sliding platform 5. As long as no gates are installed, it is possible to retrieve car 6 too.

### OUR N5803 AT A GLANCE

On the entrance level are sliding platforms with one empty space. Above, the system is provided with lifting platforms and in the middle level with lifting/sliding platforms. On this level is a further empty space. The platforms in the middle level are alternatively coupled on the upper lifting platform (by C- profiles) or on the lower sliding platform (by bolts).

The smallest unit is composed by 2 segments, for 4 cars. The system can be extended at will by adding segments. Anyway we suggest to combine no more than 10 segments for 28 cars with a common power unit, to keep a quick access time.

CLEAR PLATFORM WIDTH			FRAME WIDTH		TOTAL MEASUREMENTS FOR x SEGMENTS									
SLIDERS	LIFTERS/SLIDERS	LIFTERS	OUTER (B1)	INNER (B2)	2	3	4	5	6	7	8	9	10	
230	230	235	260	250	520	770	1020	1270	1520	1770	2020	2270	2520	
240	240	245	270	260	540	800	1060	1320	1580	1840	2100	2360	2620	
250	240	255	280	270	560	830	1100	1370	1640	1910	2180	2450	2720	

Note: The power unit will be installed at the back wall between 2 system columns, alternatively outside the system. Power unit's measurements: (LxWxH) 110 x 37 x 65 cm. Mind the measurements of the switch cabinet (positioned outside the system) during planning! Space needed: 100 x 100 x 100 cm, including cabinet doors' opening.

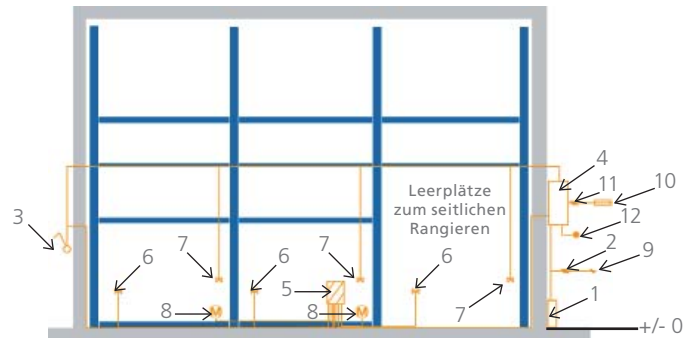
## ELECTRICAL INSTALLATION AND FOUNDATION LOADS

Please observe during the planning phase

Services covered by the NUSSBAUM Company

POS.	QTY.	DESCRIPTION
1	1x	Hydraulic power unit with three-phase motor 400V, 50Hz, 6,0kW
2	1x	Bus cable 1x2x0,2
	1x	Control line 1x12G1
3	1x	Control unit with Emergency-off
4	1x	Switch cabinet
5	1x	Segment box (for 2 segments)
6	1x	Segment valve (for 1 segment)
7	1x	Hydraulic valve (for 1 segment)
8	1x	Electrical motor for sliding (for 1 seg.)
9	1x	Supply line 5x 4,0mm <sup>2</sup> (3 PH + N + PE) with marked leads + protective earth conductor

Installation diagram



Die Positionen 1 bis 9 sind im Leistungsumfang der Firma NUSSBAUM enthalten, soweit im Angebot oder Auftrag keine anderen Vereinbarungen getroffen wurden.

Services to be provided by the customer

POS.	QTY.	DESCRIPTION	POSITION	FREQUENCY
10	1x	Blade fuse or circuit breaker 3x 25A, slow acc. to DIN VDE 0100 part 430	in the supply line	1x power unit
11	1x	Supply line 5x 4,0mm <sup>2</sup> (3 PH + N + PE) with marked leads + protective earth conductor	to the mains switch	1x je power unit
12	1x	Equipotential bonding according to DIN EN 60204 from the connector of the foundation earth electrodes to the system		1x je system
13	1x	Empty conduit DN 40 with taut wire to the power unit and control element	project based	1x je power unit

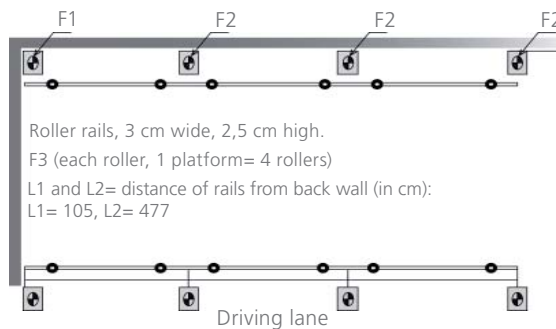
## FOUNDATION LOADS AND CONSTRUCTION

Description

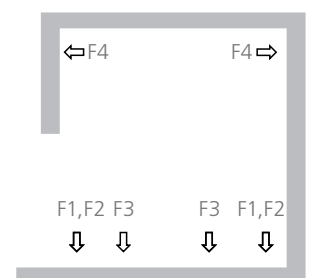
Foundation and pit walls must be planned so that they can absorb the loads of the parking system according to the schematic diagram shown on the right. If necessary, in case of heightened foundation requirements, the chemical anchors must be provided by the client (deliverable by Nussbaum as option as well). The borehole for the footplates of the parking system must be 18 cm deep.

Foundation, walls and ceilings shall be realized by the customer and completed prior to assembly start and must be true to size, clean and dry. Floor and walls shall be made of armoured concrete. Concrete quality shall be at least: C25/30.

Ground view



Side view



Load details

LOAD PER PARKING SPACE	VERTICAL LOADS			HORIZONTAL LOAD
	F1 (START AND END COLUMN)	F2 (MIDDLE COLUMN)	F3 (RAIL)	F4
2000 Kg	16 kN	32 kN	16 kN	10 kN
2300 Kg	18 kN	36 kN	18 kN	12 kN
2600 Kg	20 kN	40 kN	20 kN	14 kN

## STANDARD FEATURES

Included in the scope of delivery

### COMPONENT PARTS

Sliding platforms and empty space on the entrance level, lifting/sliding platforms and one further empty space in the middle levels, lifting platforms in the upper level. Complete with electrical and hydraulic motion elements and electrical steering.

Without gates, in dead man's control.

### DRIVING SHEETS



Platform with side carriers and driving sheets made of trapezoidal sheet.

### MEASUREMENTS OF THE SYSTEM

Designed for:

Parking space length: 500 cm

Parking space width: 230 cm

Parking space height: from 150 cm

Load per parking space up to 2.000 kg.

### CONTROL ELEMENT



Control by touch screen, to be activated by key switch. Incl. emergency-off button, brief operating instructions fastened on the wall and cabling to the power unit.

### HYDRAULIC POWER UNIT

Power unit „Silencio“



With hydraulic piping and cabling to the system. (The under oil unit is not noisy thanks to the motor-pumps-combination that absorbs sound and insulates form noise).

To shorten access time, we suggest to use one power unit for max. 10 segments.

**Measurements in cm (LxWxH):**

Power unit: 110 x 37 x 65 cm.

Switch cabinet: 100 x 100 x 100 cm (plus place for the cabinet doors).

**Positioning of the power unit:**

Depending on the local conditions - preferably directly close to the back system columns or cylinders on the back.

### ELECTRICAL INSTALLATION

For a list of services and interfaces please see the respective table in this brochure.

Distance measurement by wire actuated encoder.

### DOCUMENTATION

Brief operating instructions (fastened to the control unit), documentation (test book and operating instructions).

### NOTE

We suggest periodical maintenance, care and cleaning. Take advantage of NUSSBAUM maintenance agreements.

### CORROSION PROTECTION

**C3-Line**

For Regions with average snowfall and humidity levels (the standard in Germany).

**C2-Line**

Recommended only for regions with small or no snowfall and low humidity levels.

### SAFETY DEVICES



Wedge to help position the vehicle.

Safety device to avoid lowering in case of pipeline rupture.

Fastening of the parking system and hydraulic power unit with stud-bolts, electrical cabling fastened with impact dowels.

Safety fences on the sides against shear and crushing points, as long as the side walls are missing and they are offered by us as extra position.

Light barriers at the entrance (with operator protection).

Several software-driven sensors to control the horizontal and vertical movements.

Mechanical catches to maintain the platform in the upper position safely.

## OPTIONS AND EXTRA EQUIPMENT

Available upon request - here are illustrated only some examples...

### NOTE

We suggest periodical maintenance, care and cleaning. Take advantage of NUSSBAUM maintenance agreements.

### MEASUREMENTS OF THE SYSTEM

Designed for:

Parking space length: from 510 to 540 cm

Parking space width: from 240 to 250 cm

Parking space height: from 170 to 200 cm

Max. weight per parking space: 2.300 or 2.600 kg.

### UPPER AND LOWER PLATFORMS WITH HORIZONTAL ACCESS

Optionally deliverable but this requires a recess by client to allow lowering of the position of the platforms.

### ALUMINIUM: PREMIUM-COVERING



Upper platforms with Aluminium-bulb plate driving sheets. (Photo: N5102)

### MORE WALKING COMFORT: CATWALKS



Catwalk on trapez. sheet for more walking comfort

Positioning on the left side. 1,5 mm zincd sheets, embossed surface. The catwalk will be screwed to the driving sheet.

### CORROSION PROTECTION

C3-Line or C4-Line

for higher corrosion protection.

### EXTRA SOUND INSULATION



Sound insulation hood for the power unit

#### Airborne noise package - hood

For the power unit to reduce the airborne noise at the installation site.

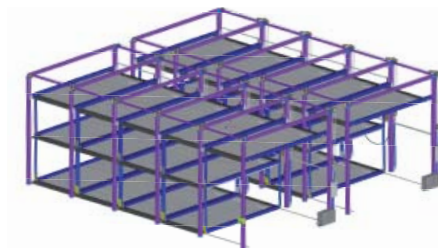
#### Structure/borne noise package

Measures to reduce the sound propagation from the parking system to the building.

#### Note

- In order to comply with the norm DIN 4109/4.1 Table 4, the perimetral parts of the garage building shall be built with a sound reduction index  $R_w'$  of at least 57 dB.

### DRIVE-THROUGH SYSTEMS



Drive-through system to allow parking in the system placed at the back.

### HYDRAULIC

HVLP 32-330 oil for extreme temperature variations.

Heated hydraulic power unit.

### FASTENING OF THE COLUMNS

Fastening of the parking system with chemical anchors in case of heightened foundation requirements.

### MODEM FOR TELESERVICE

With our CAN-BUS control we can conduct remote service and maintenance via telephone. Delivery incl. modem. Within a few minutes our technicians can connect to the system and analyze the cause of the failure. Most of the times it is possible to fix the problem immediately, often without the need of personnel on site.

By client: Modem DSL, DSL connection with fixed IP address and at least 1 MBit/s upstream.

### PARKING SPACE MANAGEMENT

#### Parking space numbers

Additional parking space numeration at the operating panel, which does not begin with #1 (one).

#### Second control unit

Depending on the segments' number and the on site conditions, a second system's control unit can be optionally delivered.

#### Empty space outside of the system

Empty space placed outside the left or right segment.

## NOTE

The sliding gates need to be fastened to the available building structure, otherwise additional expenses may occur.

## OPTIONAL EXTRA EQUIPMENT - GATES

Metal gates for your system: safety and comfort



Metal gates can be delivered as option for your semi-automatic system.

The sliding gates make the system safer and avoid trespassing the system area, especially when the system is freely accessible. With our gates your cars will be protected against theft.

For maximum comfort when driving in and out of the system you can even choose electrical gates, which can be opened and closed by remote control. This way you can comfortably sit in your car while parking your car.

The right solution for every situation. Contact us for all the optional solutions.

## PLACEMENT OF THE OPTIONAL SLIDING GATES

There are three possibilities to install the optional sliding gates:

## Layout A:

Sliding gates between the building pillars. The pillars (by client) must be positioned at least each 2 system segments.

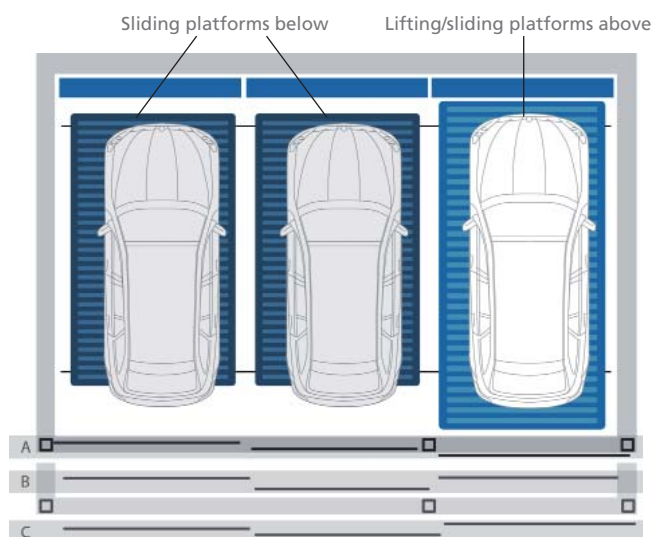
## Layout B:

Sliding gates behind the building pillars.

(However, behind the gates the necessary system length of 545 cm must still be available).

## Layout C:

Sliding gates in front of the building pillars.



## REMOTE CONTROL FOR THE OPTIONAL ELECTRICAL SLIDING GATES



The remote control can be delivered as option in combination with the optional electrical gates. The remote control is available in 3 configurations, with 1, 2 or 3 buttons.

Each button is for a specific function, depending on the Parking space length:

1. (above): request a parking space (radio).
2. (right): close parking system gate (infrared).
3. (below): open/close external barrier or garage gate (radio).

## SERVICES TO BE PROVIDED BY THE CUSTOMER AND PLANNING INDICATIONS

During the planning phase please observe and comply with the following notes!

### SERVICES TO BE PROVIDED BY THE CUSTOMER

#### Safety fences

Safety fences acc. to DIN EN ISO 13857 must be provided by the customer.

#### Parking spaces' numeration

For the allocation of the parking spaces we suggest our customers to numerate the parking spaces.

#### Noise abatement measures

The compliance with these measures must be carried out by the customer acc. to norm DIN 4109: „Sound insulation in building construction“.

#### Lighting

To be carried out by the customer acc. to DIN 67528: „Lighting for parking areas and indoor car parks“.

#### Foundation

To be carried out by the customer acc. to the specifications in this brochure.

#### Electrical installation

Prior to starting the assembly the customer must provide a lockable main control switch out of the system/pit close to the power unit. Electrical services to be provided by the customer acc. to this brochure's specification.

#### Installation requirements

The compliance with installation requirements acc. to quotation.

#### Drainage

Drainage channel 10 cm x 10 cm with collecting pit 50 cm x 50 cm x 20 cm acc. to this brochure's spec to be carried out by the customer.

#### Fire protection

The customer must agree upon the fire protection requirements and the required measures with the local fire department and realise them.

#### Wall openings

In case of partition walls the customer must realise a 10 cm x 10 cm wall opening for hosting hydraulic and electrical cables.

#### Building permit

The customer must apply for and get the required permits in order to allow the installation of the parking system.

#### Control unit

The customer must make sure that a plain surface of (L x W) 50 cm x 20 cm for the installation of the control unit is directly close to the power unit and out of the platforms' moving area.

### PLANNING INDICATIONS

#### Parking space width and driving lanes

While planning the parking space and driving lane dimensions please observe and comply with the local/national prescriptions for the Garages' construction. For more parking comfort we suggest you to plan parking spaces of at least 250 cm width.

#### Group of users

Our parking systems are conceived for a permanent and instructed group of users.

#### Maintenance and care

We suggest a timely conclusion of a maintenance agreement.

We suggest also to perform maintenance, care and cleaning at regular time intervals.

#### EG-Machinery directive

Our parking systems comply with the EG-Machinery directive and are CE certified according to the norm DIN EN 14010.

#### Ramps' inclination

Ramps leading to garages shall not have more than 15% inclination.

#### Modifications

The company Otto Nußbaum GmbH & Co. KG reserves the right to make dimensional, design and technical modifications.