Swiss-Park GmbH · Bergerstrasse 4, D-88212 Ravensburg
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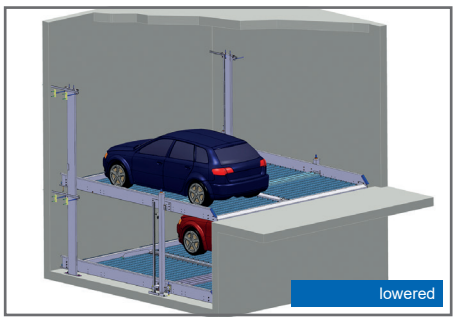
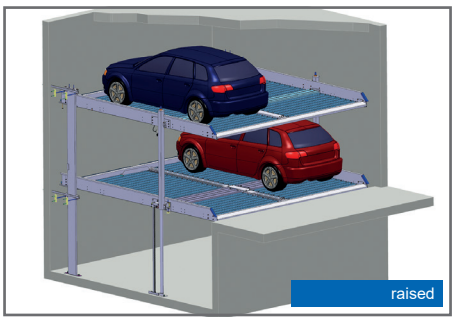
swiss-park
The Future of Parking

S2.2 (S2.2P)
▶ Stack Parker





Dimensions
All space requirements are minimum finished dimensions. Tolerances for space requirements $^{+3}_{0}$.

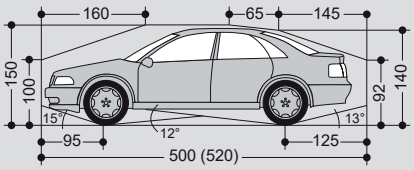
Dimensions in cm

TYPE	H	D1	D2
S2.2-170	325	170	175
S2.2-185	340	185	190
S2.2-195	350	195	200
S2.2-205	360	205	210
S2.2-215	370	215	220
S2.2-220	375	220	225

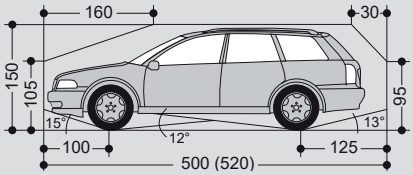
Suitable for
Standard passenger car and station wagon. Height and length according to contour.

Dimensions in cm		Car Height	
TYPE	H	upper (2)	lower
S2.2-170	325	150	150
S2.2-185	340	150	165
S2.2-195	350	150	175
S2.2-205	360	150	185
S2.2-215	370	150	195
S2.2-220	375	150	200

Standard passenger car



Standard station wagon



Standard passenger cars are vehicles without any sports options such as spoilers, low-profile tires, etc.

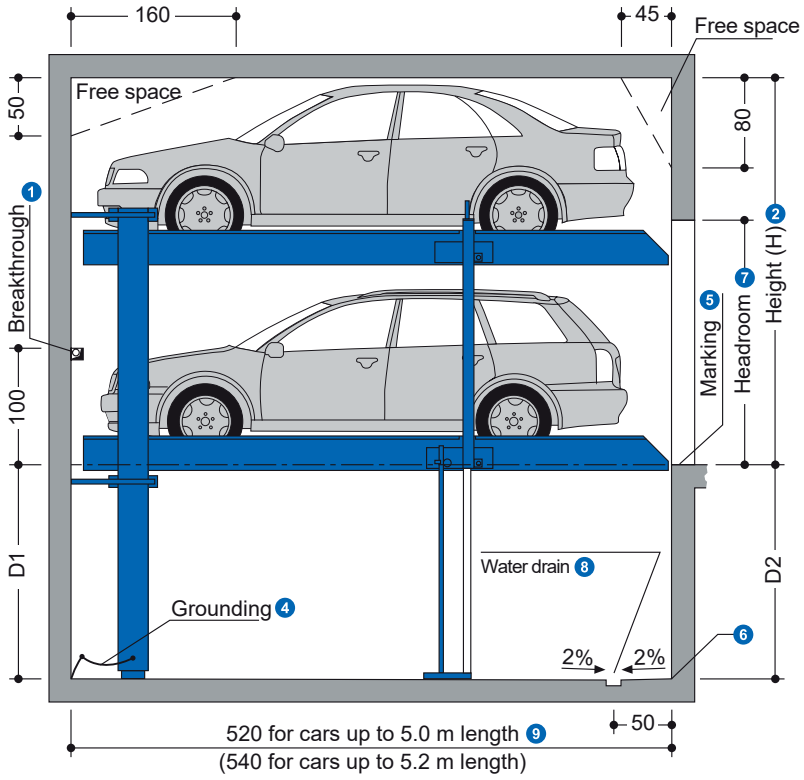
Parking possibilities

	Standard **S2.2**	Special **S2.2P**
Width in cm	190 (3)	190 (3)
Weight in kg	max. 2000	max. 2600
Wheel load in kg	max. 500	max. 650

▶ Specification

- EB (single platform) = 2 vehicles
- DB (double platform) = 4 vehicles
- Independent parking
- Horizontal access to both levels
- Car heights 150 cm - 210 cm
- Car length 500 cm - 520 cm
- Usable platform width up to 270 cm for EB and up to 530 cm for DB (up to 540 cm for S2.2P DB - 2.6 to.)
- **Standard loading capacity 2000 kg per parking place, optional max. 2600 kg EB/DB (S22P)**

▶ Garage without door



▶ Notes

1. For diving walls: cutting trough 10 x 10 cm (for pipes).
2. If the total height is greater, the max. vehicle height for the upper parking space increases accordingly.
3. Car width for platform width 230 cm. For the greatest possible ease-of-use, we recommend platform widths of 250 to 270 cm (EB) or 500 cm (DB) - S22/2to.
   For S22P/2.6 to. We recommend platform widths of 260 to 270 cm (EB) or of 510 to 540 cm (DB).
4. Potential equalization from foundation grounding connection system.
5. In compliance with DIN EN 14 010, 10 cm wide yellow-black markings compliant to ISO 3864 must be applied by the customer to the edge of the pit in the entry area to mark the danger zone (see »load plan«).
6. At the transition section between pit floor and walls no hollow spoondrains/coves are possible. If hollow spoondrains/coves are required, the systems must be designed smaller or the pits accordingly wider.
7. Must be at least as high as the greatest car height +5 cm.
8. Slope with drainage channel and sump.
9. For cars up to a length of 5.20 m please note: Pit length 5.40 m (with tow bar 5.50 m).

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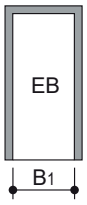
▶ Width dimensions for garage without door

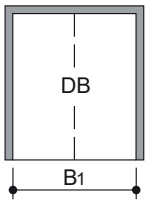
Dividing walls

Single platform (EB)



usable platform width	B1
230	260
240	270
250	280
260	290
270	300

Double platform (DB)



usable platform width	B1
460	490
470	500
480	510
490	520
500	530
510*	540
520*	550
530*	560
540*	570

*only S2.2P/2.6 to.

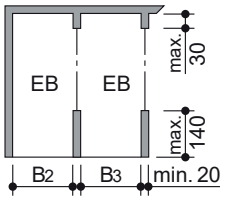
Single and double platform (EB + DB) – Example

usable platform width	B1
230+460	750
240+470	770
250+480	790
250+500	810
270+500	830
270+510*	840
270+520*	850
270+530*	860
270+540*	870

*only S2.2P/2.6 to.

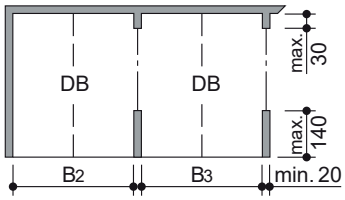
Columns in pit

Single platform (EB)



usable platform width	B2	B3
230	255	250
240	265	260
250	275	270
260	285	280
270	295	290

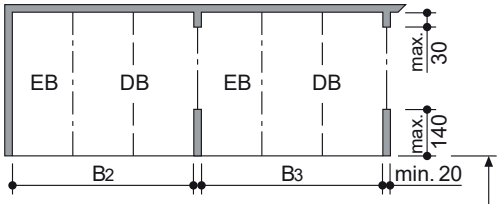
Double platform (DB)



usable platform width	B2	B3
460	485	475
470	495	485
480	505	495
490	515	505
500	525	515
510*	535	525
520*	545	535
530*	555	545
540*	565	555

*only S2.2P/2.6 to.

Single and double platform (EB + DB) – Example

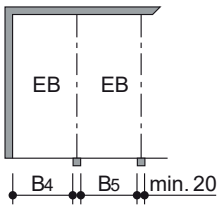


usable platform width	B2	B3
230+460	745	735
240+470	765	755
250+480	785	775
250+500	805	795
270+500	825	815
270+510*	835	825
270+520*	845	835
270+530*	855	845
270+540*	865	855

*only S2.2P/2.6 to.

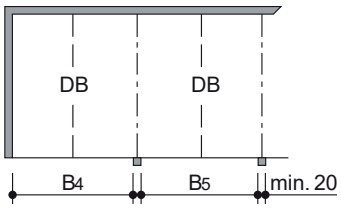
Columns outside pit

Single platform (EB)



usable platform width	B4	B5
230	250	240
240	260	250
250	270	260
260	280	270
270	290	280

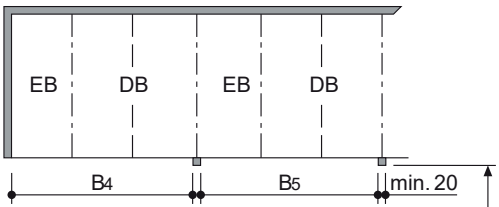
Double platform (DB)



usable platform width	B4	B5
460	480	470
470	490	480
480	500	490
490	510	500
500	520	510
510*	530	520
520*	540	530
530*	550	540
540*	560	550

*only S2.2P/2.6 to.

Single and double platform (EB + DB) – Example



usable platform width	B4	B5
230+460	740	730
240+470	760	750
250+480	780	770
250+500	800	790
270+500	820	810
270+510*	830	820
270+520*	840	830
270+530*	850	840
270+540*	860	850

*only S2.2P/2.6 to.

HINT: End parking spaces are generally more difficult to drive into. Therefore, we recommend for end parking spaces our wider platforms. Parking on standard width platforms with larger vehicles is difficult. This depends on type of vehicle, approach and above all on the individual driver´s skill. For maximum comfort, we recommend platform from 250 up to 270 (EB)-S22 and S22P, or 500 (DB)-S22 and from 510 up to 540 (DB)-S22P.

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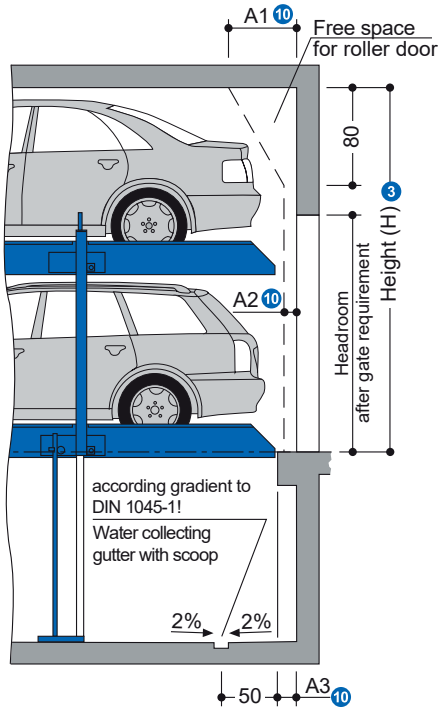
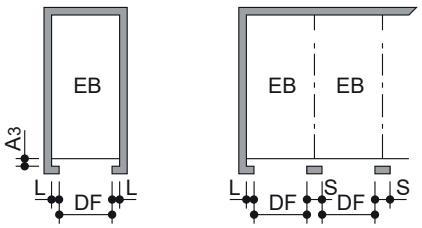
▶ Garage with door in front of the parking system



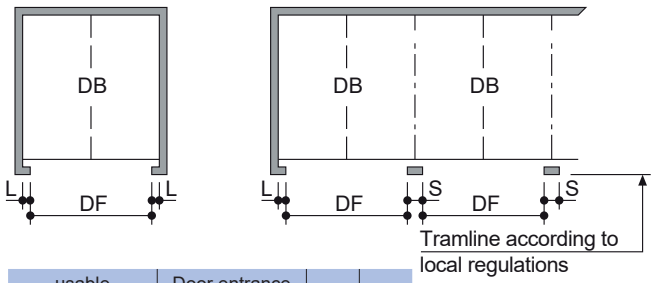
▶ Widths for garage with door in front of car parking system

Single platform (EB)



usable platform width	Door entrance width DF	L	S
230	**230**	15	30
240	**240**	15	30
250	**250**	15	30
260	**260**	15	30
270	**270**	15	30

Double platform (DB)



usable platform width	Door entrance width DF	L	S
460	**460**	15	30
470	**470**	15	30
480	**480**	15	30
490	**490**	15	30
500	**500**	15	30
510	**510**	15	30
520	**520**	15	30
530	**530**	15	30
540	**540**	15	30

10 Dimensions A1, A2 and A3 must be coordinated with the door supplier.
All-round door dimensions require coordination between door supplier and company **swiss-park**.

HINT: End parking spaces are generally more difficult to drive into. Therefore, we recommend for end parking spaces our wider platforms. Parking on standard width platforms with larger vehicles is difficult. This depends on type of vehicle, approach and above all on the individual driver´s skill. For maximum comfort, we recommend platform from 250 up to 270 (EB)-S22 and S22P, or 500 (DB)-S22 and from 510 up to 540 (DB)-S22P.

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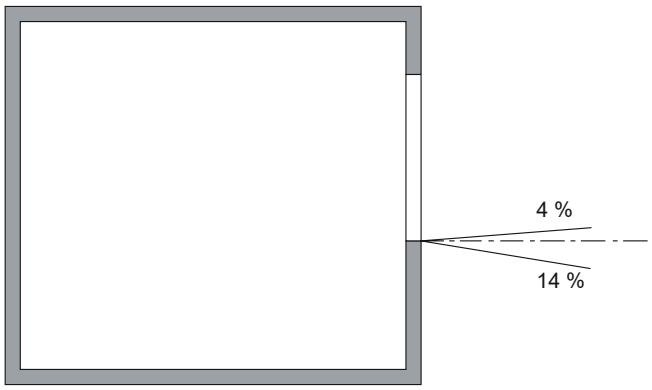
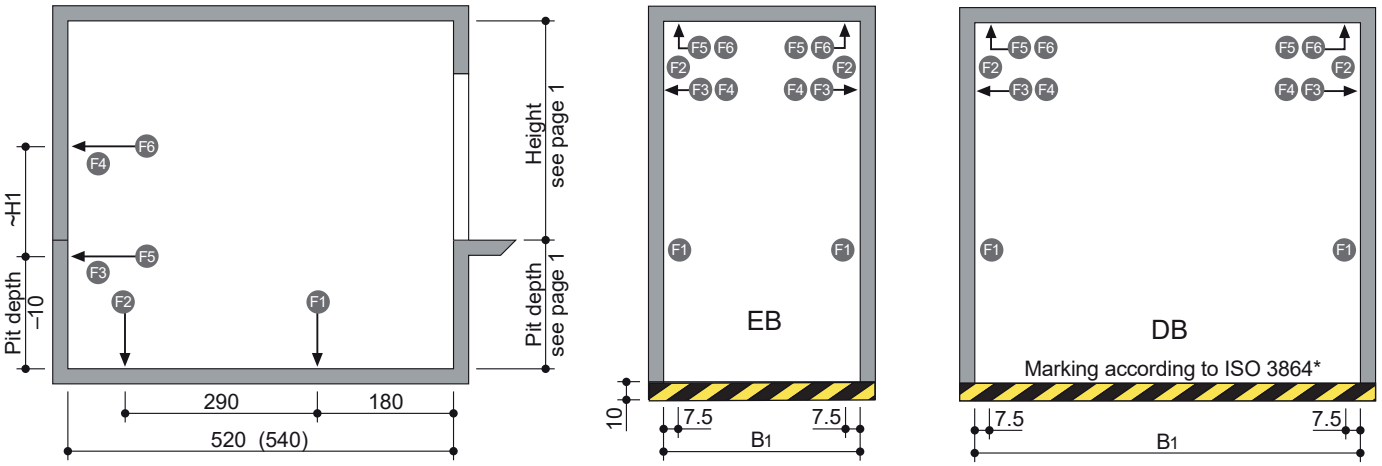
▶ Approach



The illustrated maximum approach angles must not be exceeded. Incorrect approach angles will cause serious maneuvering and positioning problems on the parking system for which the company **swiss-park** accepts no responsibility.

▶ Load plan

Forces in kN



Platform load	F1	F2	F3	F4	F5	F6
EB 2000 kg	+28 -1.5	+12	±1	±0.8	±1.1	±1
EB 2600 kg	+36 -1.9	+15	±1.3	±1	±1.4	±1.4
EB 3000 kg	+42 -2.1	+17	±1.5	±1.2	±1.6	±1.6
DB 2000 kg	+51 -5.8	+20	±1.6	±2.6	±2	±2
DB 2600 kg	+67 -7.4	+26	±2.1	±3.4	±2.6	±2.6

Type	H1
S2.2P-170	200
S2.2P-185	215
S2.2P-195	225
S2.2P-205	235
S2.2P-215	245
S2.2P-220	250

HINT: Units are dowelled to the floor. Drilling depth: approx. 15 cm.
Floor plates and walls below the drive-in level must be made of concrete (concrete quality at least C20/25)!

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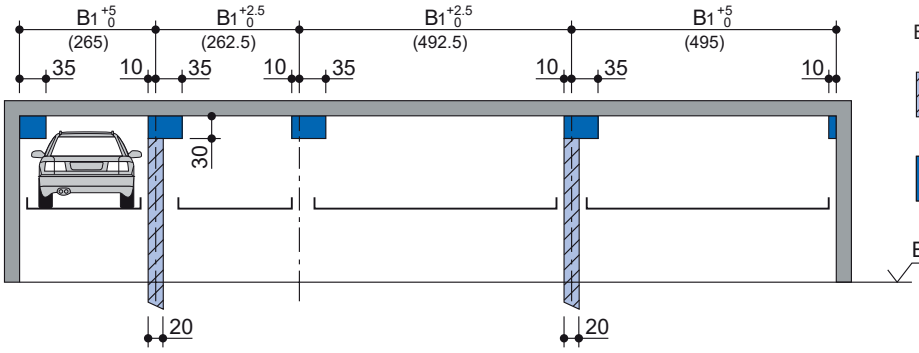
▶ Installation data

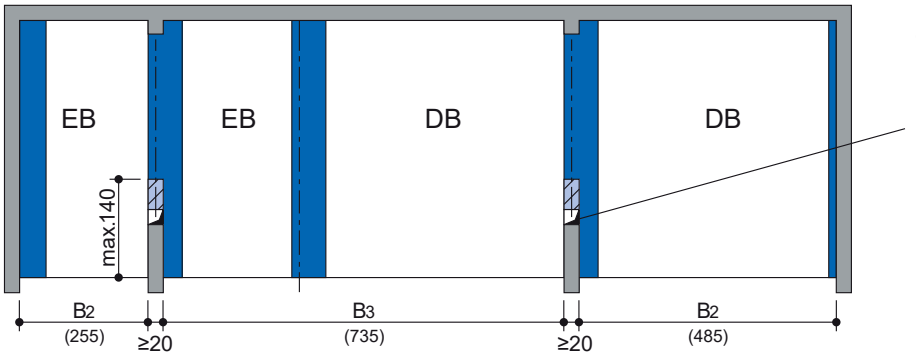


B1, B2, B3 = (see table page 2)

Free space for vertical pipelines, ventilation ducts

Clearances for longitudinal guidance

Entrance level

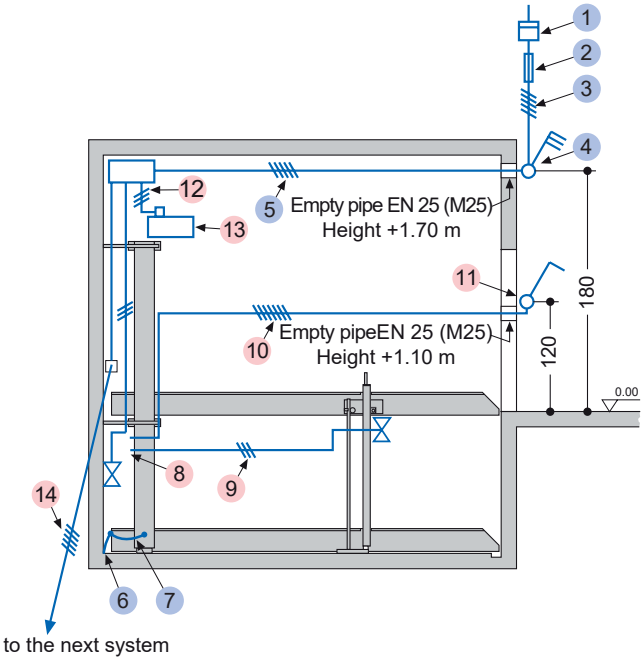


( ) = Measurements in brackets show an example of usable platform width 240/460 cm

Example of ducting or vertical pipelines

HINT: Free space only available if vehicle is parked forwards = FRONT FIRST and driver´s door on the left side.

▶ Electrical installation



to the next system

Electrical data

to be performed by the customer

Nr.	Qty.	Description	Postion	Frequency
1	1	Electricity meter	in the supply line	
2	1	Main fuse: 3 x fuse 16 A (slow) or circuit breaker 3 x 16 A (trigger characteristic K, G or C)	in the supply line	1 per 3 kW unit
		Main fuse: 3 x fuse 20 A (slow) or circuit breaker 3 x 20 A (trigger characteristic K, G or C)		1 per 5.2 kW unit
3	1	Supply line 5 x 2.5 mm² (3 PH + N + PE) with marked wire and protective conductor	to main switch	1 per unit
4	1	Lockable main switch	defined at the plan check	1 per unit
5	1	Supply line 5 x 2.5 mm² (3 PH + N + PE) with marked wire and protective conductor	from main switch to unit	1 per unit
6	every 10 m	Foundation earth connector	Corner pit floor	
7	1	Potential equalization from foundation grounding connection system according to DIN EN 60204		1 per system

Electrical data

included in delivery of **swiss-park**

Nr.	Designation
8	Sub-distribution
9	Control line 3 x 1 mm² (PH + N + PE)
10	Control line 4 x 1 mm² with marked wire and protective conductor
11	Operating device
12	Control line 5 x 1.5 mm² with marked wire and protective conductor
13	Hydraulic unit 3.0 kW, three-phase current, 400 V / 50 Hz
14	Control line 5 x 1.5 mm² with marked wire and protective conductor

HINT:
5.2 kW-unit only for S22P DB 2.6 to (on request)!

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▶ Technical hint

Application area
By default, the system is not suitable for short-term parkers (changing users). If necessary, please contact **swiss-park**.

Power pack
Installed on vibration metal mounted, low-noise hydraulic power units. Nevertheless, we recommend separating the garage from the house.

Available documents
- Wall recess plans
- Maintenance offer/contract
- Declaration of conformity

Corrosion protection
According to the supplementary sheet of corrosion protection.

Balustrade / Barriers
When the allowable fall is exceeded, balustrades are attached to the equipment. If the traffic lanes are directly next to or behind the installations, barriers according to DIN EN 294 (DIN EN ISO 13857) are required on site. This also applies during the construction phase.

Environmental conditions
Ambient conditions for the range of **swiss-park** systems: Temperature range -10 to +40° C. Relative humidity 50% with a maximum outside temperature of +40° C. If lifting or lowering durations are mentioned, these refer to an ambient temperature of +10° C and an arrangement of the system immediately next to the hydraulic unit. At lower temperatures or longer hydraulic lines, these durations increase.

Soundproofing
According to DIN 4109 (sound insulation in building construction), para. 4, note 4, **swiss-park** systems fall into the field of technical installations (garage systems).

Normal sound insulation (Special agreement)
DIN 4109, Supplement 4, Note for planning and execution, proposals for increased sound insulation. In paragraph 4.1, Table 4, the values for the permissible sound pressure levels in rooms requiring protection are specified for noise from building services. According to line 2, the maximum sound pressure level in living rooms and bedrooms must not exceed 30 dB (A). Noise from the user is not subject to the requirements (see Table 4, DIN 4109).

The following measures are required to maintain this value:
- Soundproofing package according to offer/order
- Sound insulation of the building in min. R'w = 57 dB (performance on site)

Increased sound insulation
DIN 4109, paragraph 4, noise protection of technical equipment and installations.
Agreement: Maximum sound pressure level in living rooms and bedrooms 25 dB (A). User noises are not subject to the requirements (see Table 4, DIN 4109).

The following measures are required to maintain this value:
- Soundproofing package according to offer/order
- Sound insulation of the building in min. R'w = 62 dB (performance on site)

HINT: The user's noises are essentially noises that can be individually influenced by the user of our **swiss-park** systems. These include for example driving on the platform, slamming vehicle doors, engine noise and brake.

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▶ On-site-services

Balustrade / Barriers
Possibly required barriers according to DIN 294 for securing the parking pits in traffic lanes directly in front of, beside or behind the facilities. This also applies during the construction phase. Railings on the systems, if required, are included optional!

Numbering of parking spaces
Continuous numbering of parking spaces.

Building services
Lighting, ventilation, fire extinguishing and fire alarm systems.

Drainage
In the front of the pit, we recommend to plan a water collecting gutter and to connect it to a ground drain or a pit (50 x 50 x 20 cm). In the canal, a lateral slope is possible, but not in the remaining area of the pit (the gradient in the longitudinal direction is due to the dimensions). In the interest of environmental protection, a painting of the bottom of the pit should be made. Oil or gas separators are recommended for connection to the sewer system.

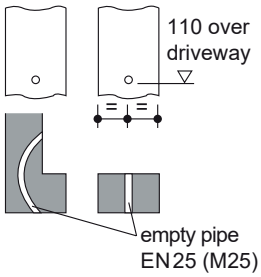
Marking
In accordance with DIN EN 14 010, a warning mark must be affixed to the access zone to identify this danger zone in accordance with ISO 3864. The design shall be in accordance with EN 92/58/EEC for installations with a pit (platforms inside the pit) 10 cm from the edge of the pit.

Wall openings
Possibly required wall openings according to sectional drawings on page 1.

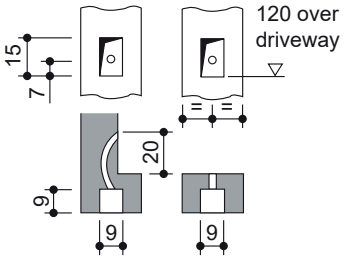
Supply line to the main switch
The supply line to the main switch and the control line to the unit must be made by the customer during installation. The functionality can be checked by our technicians on site together with the electrician. If this is not possible during assembly for reasons attributable to the customer, an electrician must be commissioned by the customer.
The steel construction is to be provided on site with foundation earthing connection (grounding distance max 10 m) and potential equalization according to DIN EN 60204.

Control panel
Empty conduits and cut-outs for the control element (with hinged doors, a prior consultation with **swiss-park** is necessary.

Control panel on plaster



Control panel under plaster



The following costs must be supported by the customer, if they are not included in the offer:
- Complete wiring of the individual components according to the wiring diagram
- Cost of final technical approval by an authorized expert
- Main switch
- Control line from the main switch to the control cabinet
- Railing
- Floor marking

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▶ Description single platform (EB) and double platform (DB)

General description

- **swiss-park** system for independent parking of 2 cars (EB), 2x2 cars (DB) on top of each other.
- Dimensions according to the underlying pit, width and height dimensions
- The pitches are driven horizontally and have a gradient of ±1° for proper drainage of the platforms.
- By special arrangement of the lifting and supporting structure, the opening of the doors is not restricted.
- Passenger car positioning on each parking space by means of a positioning aid mounted on the right-hand side (to be set in accordance with the operating instructions).
- Operation via a control element with automatic reset by means of a key that closes the same way.
- Fixing the control element usually in front of the support or on the way revealing the outside.
- Operating instructions at every operating point.
- For garages with an entrance door, special dimensions must be respected.

swiss-park system consisting of:

- 2 Pillars with foundation rails (fixed to the floor)
- 2 Sliding pieces (with sliding guides attached to the pillars)
- 2 Platforms
- 1 mechanical synchronization system (for the synchronous operation of the hydraulic cylinders during lifting and lowering)
- 2 Hydraulic cylinders
- 2 rigid supports (connection of the platforms)
- 1 automatic hydraulic breakage protection (prevents involuntary lowering when driving on)
- Dowels, screws, fasteners, bolts etc.

Platform consisting of:

- Platform profiles
- Adjustable positioning aids
- Beveled bumpers
- Lateral beams
- Bearing center [DB only]
- Brackets
- Screws, nuts, spacer tubes, etc.

Hydraulics consisting of:

- Hydraulic cylinder
- Magnetic valve
- Line break security
- Hydraulic lines
- Fittings
- High pressure hoses
- Mounting material

Electrics consisting of:

- Control element (EMERGENCY STOP, lock, 1 key with the same key per parking space)
- Sub-distribution
- Control cabinet

Hydraulic unit consisting of:

- Hydraulic unit (low noise, mounted on bracket)
- Hydraulic oil tank
- Oil filling
- Internal gear pump
- Pump support
- Coupling
- Three-phase motor (3.0 kW/5.2 kW/400 V, 50 Hz)
- Pressure gauge
- Pressure relief valve
- Hydraulic hoses (to dampen noise transmission on hydraulic pipes)

We reserve the right to change these specifications without notice!

swiss-park reserves the right, in the course of technical progress, to use newer or different technologies, systems, processes, procedures or standards than those originally offered. If the customer does not incur any disadvantage.