Swiss-Park GmbH · Bergerstrasse 4, D-88212 Ravensburg
Tel. +49 (0)751-270 88 559
info@swiss-park.com · **www.swiss-park.com**

swiss-park
The Future of Parking

S1.8
▶ Stack Parker

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

Dimensions in cm

TYPE	H	D1	D2	DH**
S1.8-165	295	165	170	153
S1.8-165	310	165	170	153
S1.8-185*	325	185	190	173
S1.8-195	335	195	200	183

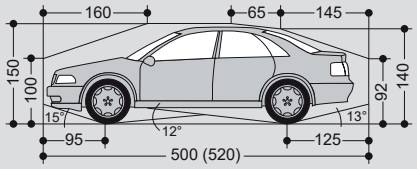
* Standard type
** without car

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

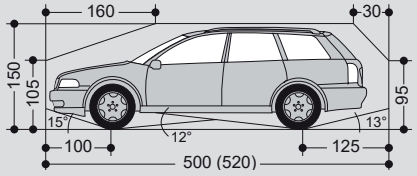
Dimensions in cm

TYPE	H	upper	lower
S1.8-165	295	150	150
S1.8-165	310	150	150
S1.8-185*	325	150	170
S1.8-195	335	150	180

Standard passenger car



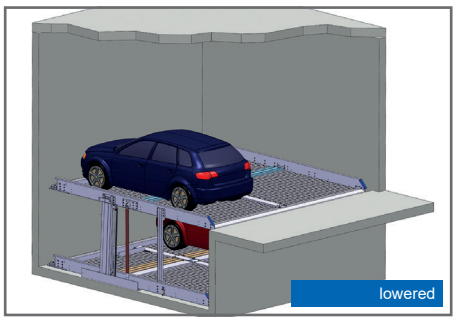
Standard station wagon

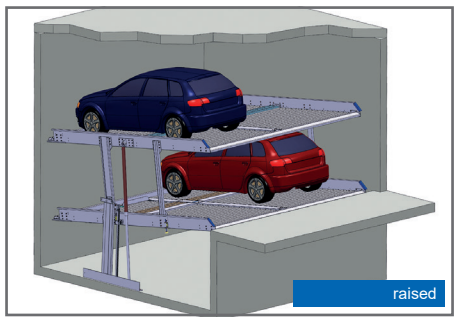


Standard passenger cars are vehicles without any sports options such as spoilers, low-profile tires, etc.

Parking possibilities

	Standard S1.8
Width in cm	190
Weight in kg	max. 2000
Wheel load in kg	max. 500

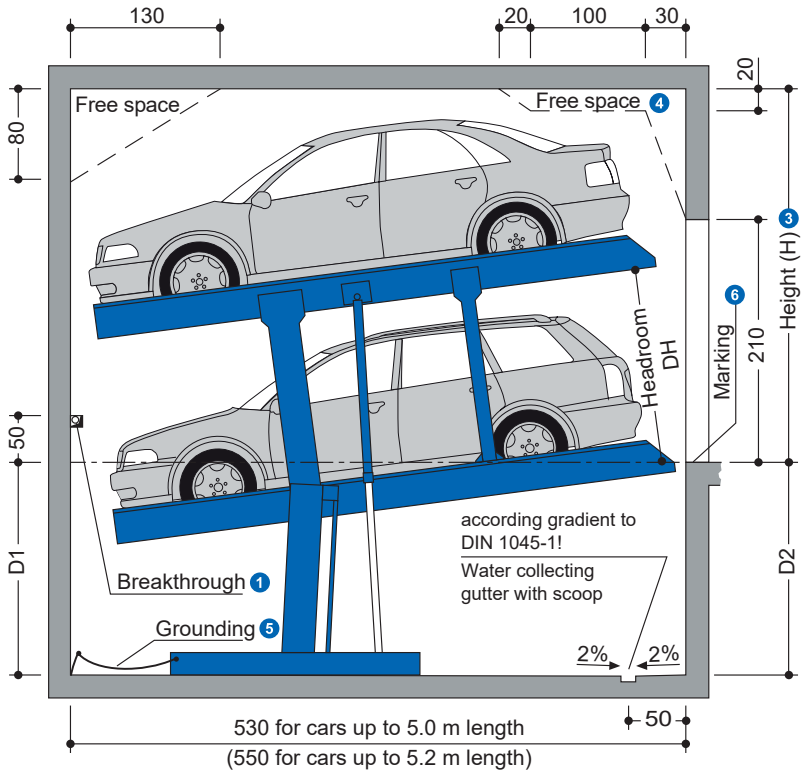


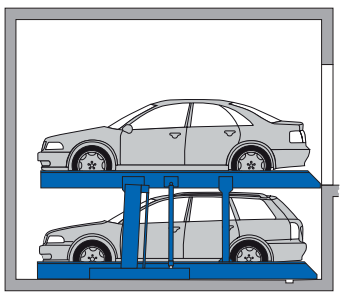


▶ Specification

- EB (single platform) = 2 vehicles
- DB (double platform) = 4 vehicles
- Independent parking
- Both levels easily accessible
- Car heights 150 cm - 180 cm
- Car length 500 cm - 520 cm
- Usable platform width up to 270 cm for EB and up to 500 cm for DB
- **Standard loading capacity 2000 kg per parking place**

▶ Garage without door





▶ Notes

1. For diving walls: cutting through 10 x 10 cm (for pipes).
2. Dimensions A1, A2, A3 must be agreed with the door manufacturer
3. If the total height is greater, the max. vehicle height for the upper parking space increases accordingly.
4. Free space does not apply to station wagons on the upper platform.
5. Potential equalization from foundation grounding connection system.
6. 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«).

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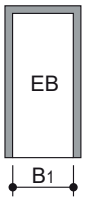
▶ Width dimensions for garage without door

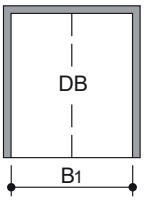
Dividing walls

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

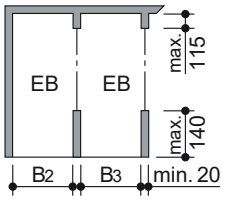
Single and double platform (EB + DB) – Example

usable platform width	B1
230+460*	750
240+470	770
250+480	790
250+490	810
270+500	830

*Standard type

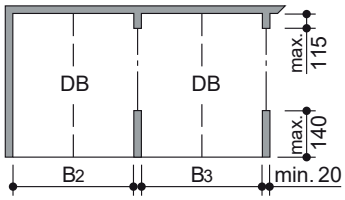
Columns in pit

Single platform (EB)



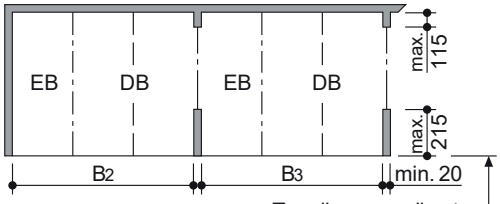
usable platform width	B2	B3
230*	255	250
240	265	260
250	275	270
260	285	280
270	295	290

Double platform (DB)



usable platform width	B2	B3
460*	485	475
470	495	485
480	505	495
490	515	505
500	525	515

Single and double platform (EB + DB) – Example

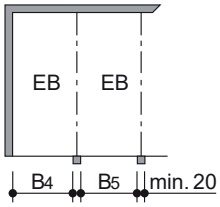


usable platform width	B2	B3
230+460*	745	735
240+470	765	755
250+480	785	775
250+500	805	795
270+500	825	855

*Standard type

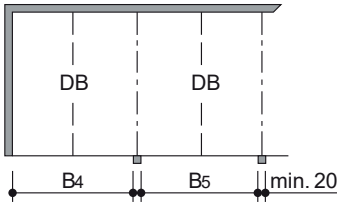
Columns outside pit

Single platform (EB)



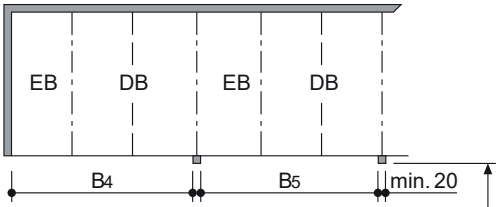
usable platform width	B4	B5
230*	250	240
240	260	250
250	270	260
260	280	270
270	290	280

Double platform (DB)



usable platform width	B4	B5
460*	480	470
470	490	480
480	500	490
490	510	500
500	520	510

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

*Standard type

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.

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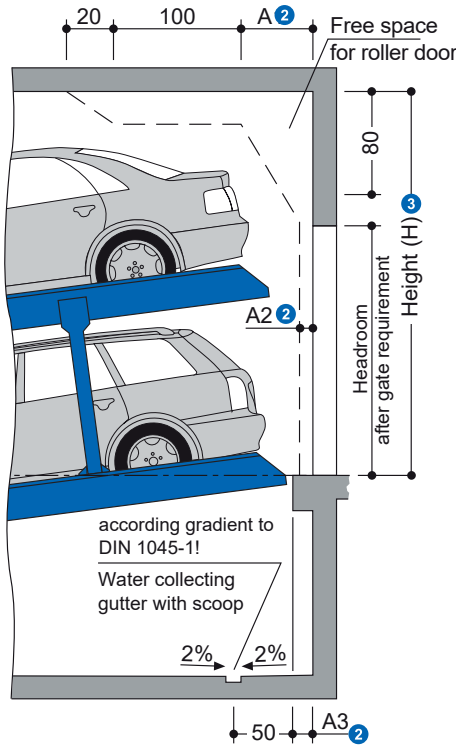
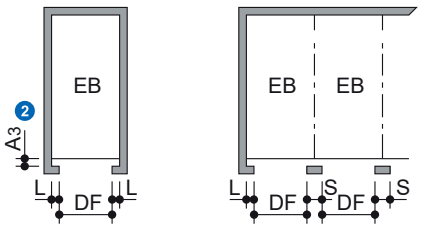
▶ Garage with door in front of the parking system



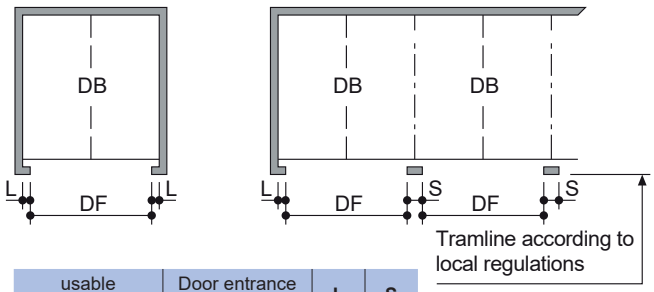
▶ Widths for garage with door in front of car parking system

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

2 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.

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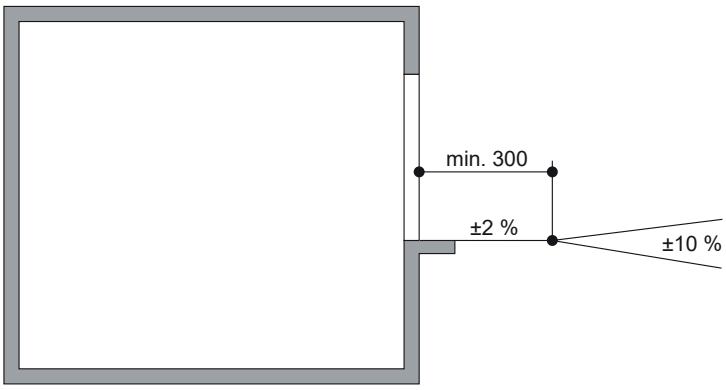
▶ Approach

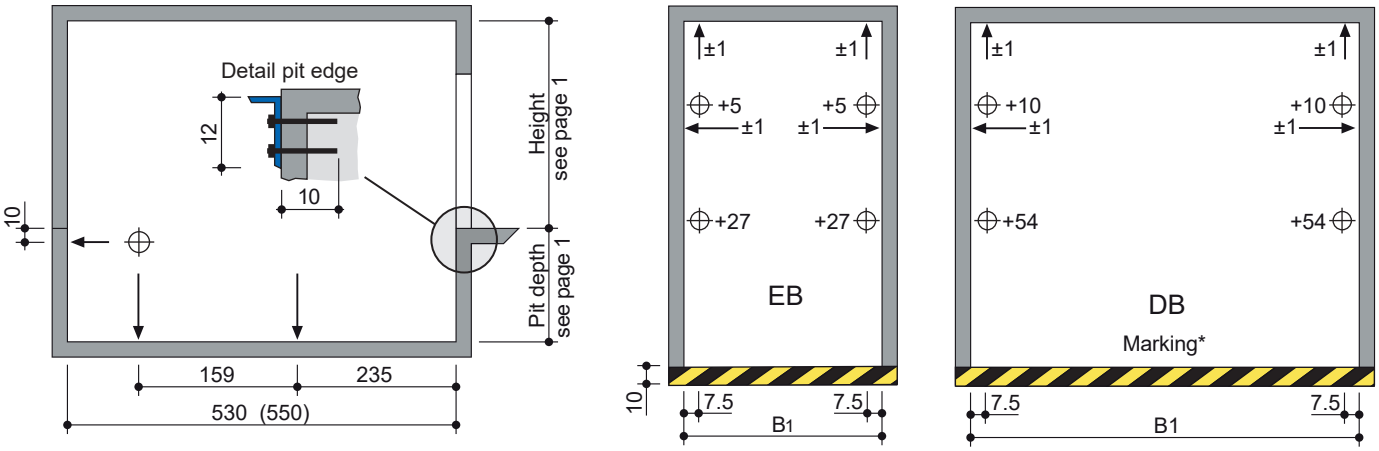


The illustrated maximum approach angles must not be exceeded.

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



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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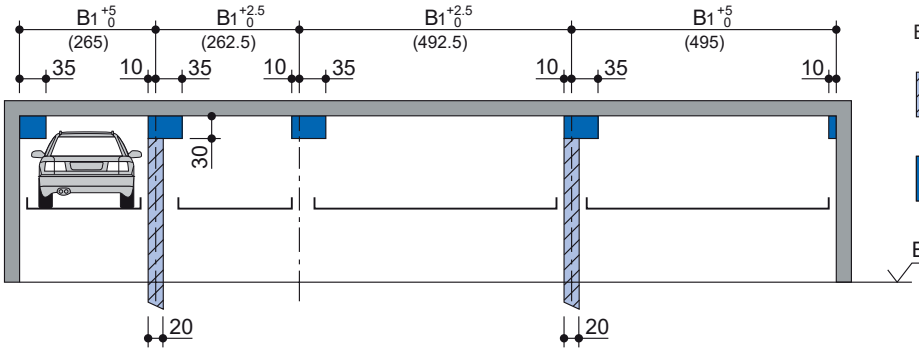
▶ Installation data

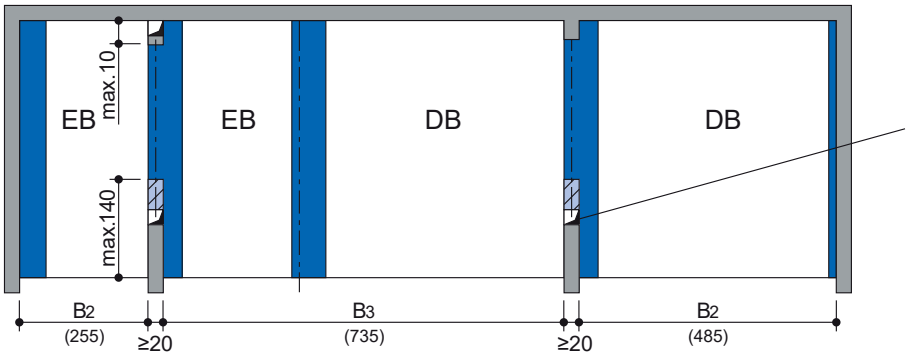


B1, B2, B3 = (see table page 2)

Free space for vertical pipelines, ventilation ducts

Clearances for longitudinal guidance

Entrance level

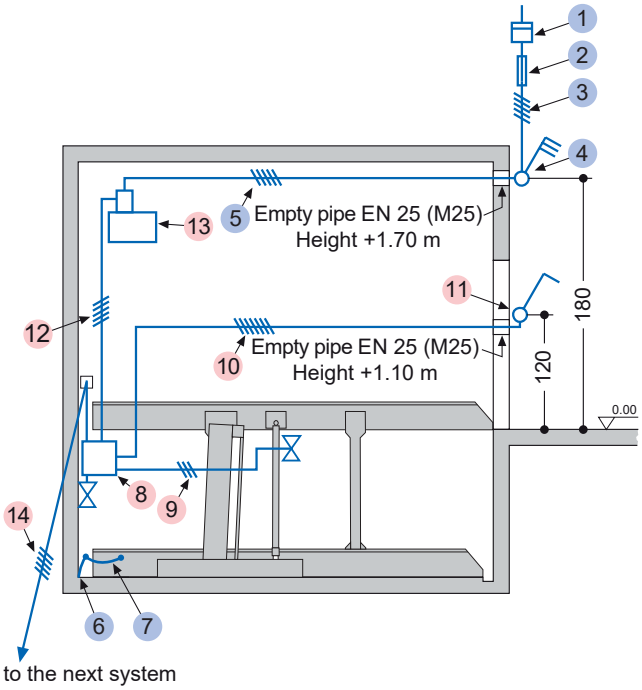


( ) = Measurements in brackets show an example of usable platform width 230/460 cm

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



Electrical data

to be performed by the customer

No.	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 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**

No.	Designation
8	Sub-distribution
9	Control line 3 x 0.75 mm² (PH + N + PE)
10	Control line 7 x 1.5 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

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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.

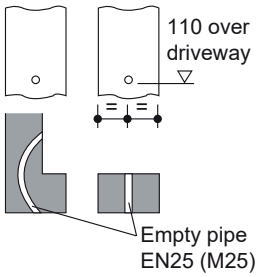
Marking
In accordance with DIN EN 14 010, a warning mark must be affixed to the access zone to identify this danger zone in accordance with ISO 3864. The design shall be in accordance with EN 92/58/EEC for installations with a pit (platforms inside the pit) 10 cm from the edge of the pit.

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

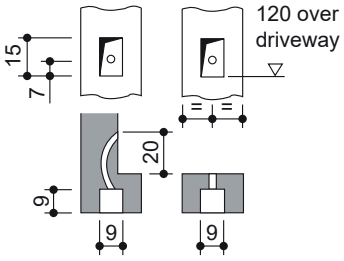
Supply line to the main switch
The supply line to the main switch and the control line to the unit must be made by the customer during installation. The functionality can be checked by our technicians on site together with the electrician. If this is not possible during assembly for reasons attributable 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
- Driving on inclined parking spaces (approx. 7.5 degrees).
- 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.