



Starke 2127/2121  
& 2227/2221

Pit Two Post Parking Lift



## > Introduction

Starke 2127 and 2121 are AAQ pit two post parking lifts, by platforms moving upwards from the pit or downwards to the pit, every vehicle can be parked or retrieved conveniently without moving any car else. Starke 2127/2121 is a kind of independent parking equipment, suitable for both commercial and residential parking purposes.

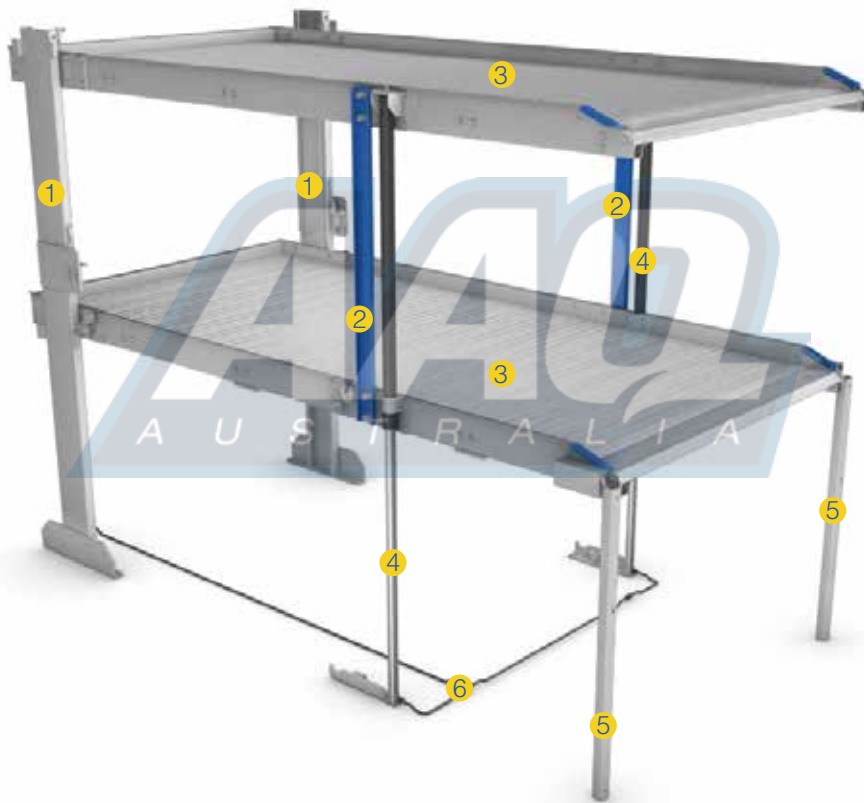
2 cars in a single unit (Starke 2127 and Starke 2121) and 4 cars in a double unit (Starke 2227 and Starke 2221) are both available

Parking space loads: 2100 kg and 2700 kg

Maximum 1700mm high vehicle can be parked in 1900mm deep pit, and 2300mm usable width is provided in only 2550mm overall width for a single unit, to make full use of the limited space. More available dimensions are optional for different project requirements.

The structure should be placed in a pit with certain dimensions and reinforced by fixing posts to walls.

## General Parts



- 1 Post
- 2 Connection rod
- 3 Platform
- 4 Cylinder
- 5 Anti-falling lock
- 6 Oil hose

### **TUV compliant, which is the most authoritative certification in the world**

Certification standard 2006/42/EC and EN14010

### **Low usage cost**

When the platform moves down, it will be driven by gravity, so there is no electricity consumption for pump motor

### **New hydraulic system which owns Ashkenazi structure**

The hydraulic system adopts German top-level product structure design, which is stable and reliable, avoid the maintenance troubles, and its lifetime is twice as long as that of the old one

### **Galvanized pallet**

Far more beautiful and durable than observed, lifetime more than doubled. Anti-slip corrugated deck protect both vehicle and driver from possible slip and damage but still high-heel shoe friendly

### **Zero accident security system**

All-new upgraded security system, really reaches zero accident

### **Dynamic locking device**

Mechanical anti-falling locks in the front of platform as anti-falling device hold the platform in place

### **Multiple chain protection devices**

Chains loosen detection and break protection ensures the safety in case chain is loosen or broken

### **Unique guiding system**

A full directions guiding system is adopted to make the movement stable all the way

### **More stable electric motors**

Newly upgraded commercial power unit system with Siemens motor

StarkE

2127/2121 & 2227/2221



### Electrical auto control

Automatic shut-off if operator releases the key switch

### Further strengthened main structure of the equipment

The thickness of the steel plates and the weld joints have been specially increased

### Gentle metallic touch, excellent surface finishing

After applying AkzoNobel powder, color saturation, weather resistance and its adhesion are significantly enhanced

### Rich color

Great care is taken with the treatment of lacquer face, in order to improve the quality of products on surface looking to the maximum extent

### Strong adhesion

The weather resistance of the spray powder has better performance under special technology, which can stand wear and tear

### Superior chains provided by Korean chain manufacturer

The life span is 20% longer than that of the domestic chains

### Galvanized screw bolts based on the European standard

Longer lifetime, much higher corrosion resistance

### Hydraulic centralized control

Perfect shared power pack unit solution

### Laser cutting + robotic welding

Accurate laser cutting improves the accuracy of the parts, and automated robotic welding makes the weld joints more firm and beautiful

Starcke  
 2127/2121 & 2227/2221

## Specifications

### > General

Model	Starke 2127	Starke 2121	Starke 2227	Starke 2221
Vehicles parked per unit	2	2	4	4
Rated capacity	2700kg	2100kg	2700kg	2100kg
Available car length	5000mm	5000mm	5000mm	5000mm
Available car width	2050mm	2050mm	2050mm	2050mm
Available car height	1700mm	1550mm	1700mm	1550mm
Waving plate	Galvanized steel sheet	Galvanized steel sheet	Galvanized steel sheet	Galvanized steel sheet
Drive mode	Hydraulic cylinder + chains	Hydraulic cylinder + chains	Hydraulic cylinder + chains	Hydraulic cylinder + chains
Operation	Key switch	Key switch	Key switch	Key switch
Lifting speed	30s	30s	30s	30s
Descending speed	25s	25s	25s	25s
Power supply	200-450V, 3P, 50/60Hz	200-450V, 3P, 50/60Hz	200-450V, 3P, 50/60Hz	200-450V, 3P, 50/60Hz
Finishing	Powder coating with Akzo Nobel powder	Powder coating with Akzo Nobel powder	Powder coating with Akzo Nobel powder	Powder coating with Akzo Nobel powder

### > Hydraulic

Model	Starke 2127	Starke 2121	Starke 2227	Starke 2221
Hydraulic pump	Centralized power unit	Centralized power unit	Centralized power unit	Centralized power unit
Pump motor power	5.5Kw	5.5Kw	5.5Kw	5.5Kw
Pump flow	18ML/r	18ML/r	18ML/r	18ML/r
Pump working pressure	14-16MPa	14-16MPa	14-16MPa	14-16MPa
Hydraulic cylinder	Double	Double	Double	Double
Cylinder seal	Italian Aston seals	Italian Aston seals	Italian Aston seals	Italian Aston seals
Hydraulic oil	L-HV 46#	L-HV 46#	L-HV 46#	L-HV 46#
Oil hose	Galvanized seamless tube	Galvanized seamless tube	Galvanized seamless tube	Galvanized seamless tube
Lifting chain	16B	16B	20B	20B
Wire rope	Φ10	Φ10	Φ10	Φ10

## > Electrical

Model	Starke 2127	Starke 2121	Starke 2227	Starke 2221
PLC	Omron	Omron	Omron	Omron
Power switch	Meanwell	Meanwell	Meanwell	Meanwell
Load switch	Schneider	Schneider	Schneider	Schneider
Breaker	Schneider	Schneider	Schneider	Schneider
RCCB	Schneider	Schneider	Schneider	Schneider
Guide rail socket	Schneider	Schneider	Schneider	Schneider
AC contactor	Schneider	Schneider	Schneider	Schneider
Thermal relay	Schneider	Schneider	Schneider	Schneider
Relay	Schneider	Schneider	Schneider	Schneider
Relay base	Schneider	Schneider	Schneider	Schneider
Indicator	Schneider	Schneider	Schneider	Schneider
Key switch	Schneider	Schneider	Schneider	Schneider
Emergency stop button	Schneider	Schneider	Schneider	Schneider
Buzzer	Schneider	Schneider	Schneider	Schneider
Limit switch	Schneider	Schneider	Schneider	Schneider
Normally open contact	Schneider	Schneider	Schneider	Schneider

## Safety devices

Mechanical anti-falling safety lock in the front of platform

Chains loosen detection and break protection

Full directions guiding system

24v electric lock release has no harm for operator

Electric protection for power over load or under voltage

Auto locking system in case electrical failure

Emergency stop button

Pressure relief valve and pressure compensate flow control valve

Limited switch at the top of the post. When the platform goes to the appointed height, it will automatic stopped to avoid the wrong operation

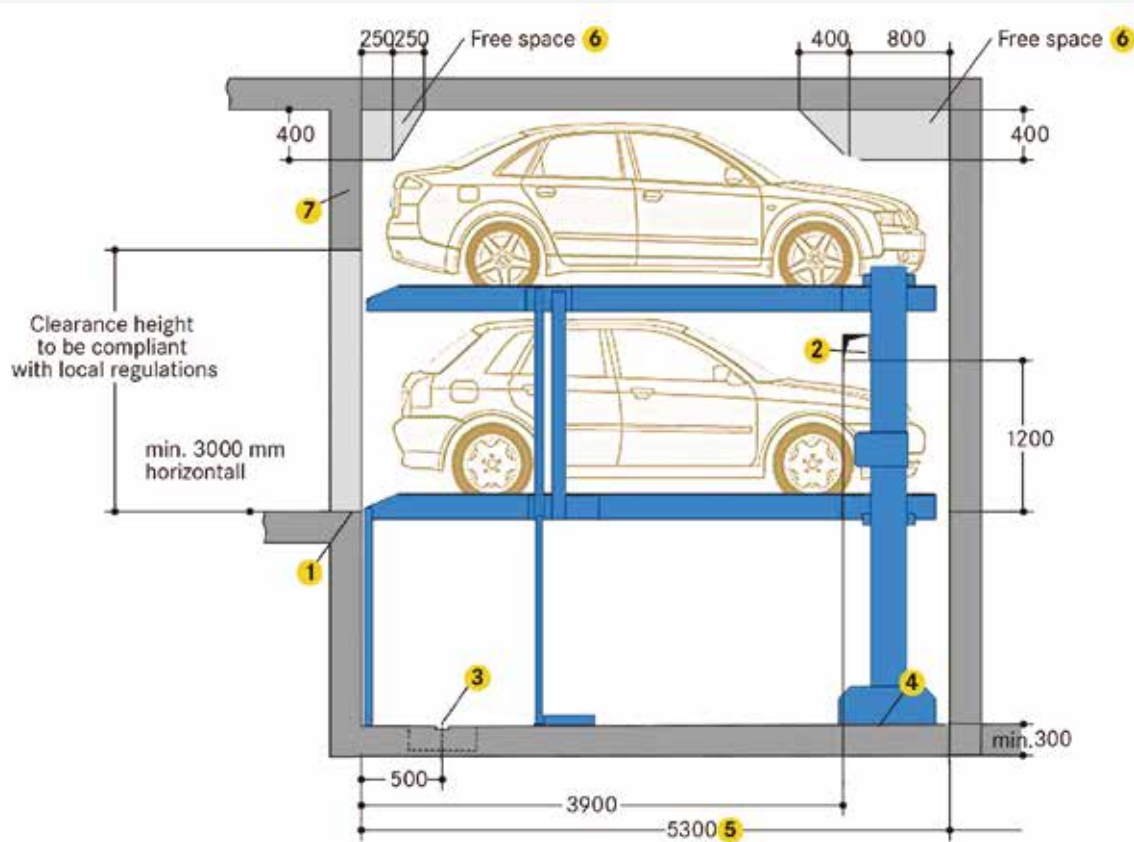
Overload protection device for hydraulic power pack

Synchronization shaft





## Dimensions



### Note:

- All dimensions specified are the minimum, finished dimensions
- Tolerances must be taken into consideration
- All dimensions are given in mm

### 1 Yellow-black safety marking:

- Compliant to ISO 3864, 100 mm wide, along the pit edges (see page 4 > Static calculations and construction works requirements <)

### 2 In case of intermediate walls:

- 150 x 150 mm opening for electric and hydraulic system cables and piping
- After installation, do not close the opening

### 3 Recommended drainage channels:

- 100 x 20 mm, with a 500 x 500 x 200 mm drainage pit
- In case of installation of a sump pump, it is necessary to comply with the drainage pit dimensions specified by the pump manufacturer

### 4 Channels or undercuts / concrete haunches:

- Not allowed along the pit floor-to-wall joints
- Should channels or undercuts be necessary, the system width needs to be reduced or the pit needs to be wider

### 5 5000 mm vehicles length

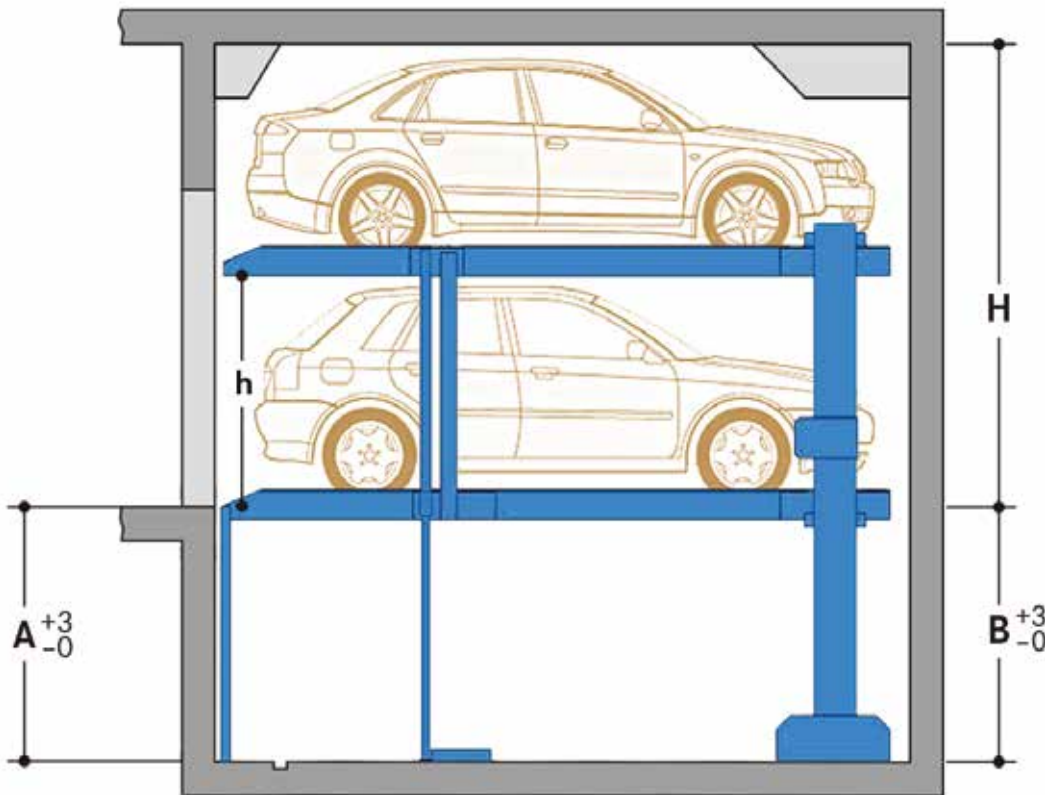
- 5300 mm pit length

### 6 Free spaces for any connections performed by the customer:

- Please ask AAQ for the dimensions sheets

### 7 Lintel

## > Height dimensions



**1** With an increase in headroom available, correspondingly taller cars will be able to park on the upper platform.

**2** UL = upper level / LL = lower level

Height (H)	Pit depth (A)	Vehicle height		Platform distance (h)
		UL	LL	
3180	1700	1500	1500	1566
3230	1750	1500	1550	1616
3280	1750	1550	1550	1616
3280	1800	1500	1600	1666
3380	1800	1600	1600	1666
3330	1850	1500	1650	1716
3480	1850	1650	1650	1716
3380	1900	1500	1700	1766
3580	1900	1700	1700	1766
3430	1950	1500	1750	1816
3680	1950	1750	1750	1816
3480	2000	1500	1800	1866
3780	2000	1800	1800	1866
3530	2050	1500	1850	1916
3880	2050	1850	1850	1916
3580	2100	1500	1900	1966
3980	2100	1900	1900	1966

## > Width dimensions

### Platform widths:

2300 mm (single units), 4600 mm (double units):

- For 2050 mm vehicle width (without outside mirror)

2400 – 2500 mm (single units), 4700 – 5000 mm (double units):

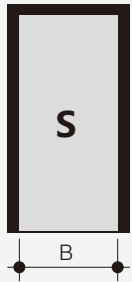
- For vehicles wider than 2050 mm (without outside mirror)

- For units with intermediate walls

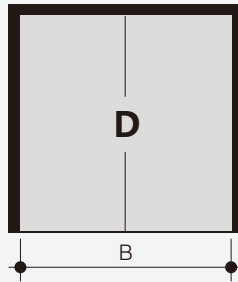
- For units at the end of the driving aisle

For comfortable parking, entry and exit conditions platform widths upon 2300 mm are recommended. Reduced platform width means reduced parking comfort depending on the vehicle width, vehicle type, individual driving style, access situation of the garage.

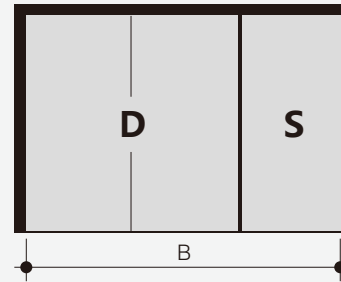
Single unit (2 cars)



Double unit (4 cars)



Combined unit (6 cars)



Space requirements (B)	Clear platform width
2550	2300
2650	2400
2750	2500

Space requirements (B)	Clear platform width
4900	4600
5000	4700
5100	4800
5200	4900
5300	5000

Space requirements (B)	Clear platform width
7450	2300+4600
7750	2400+4800
8050	2500+5000

### The driving aisle width ↑

The driving aisle width must comply with local regulations  
It is possible to combine different widths

## Installation requirements

### > Construction works

#### Fixing of the system frames to the floor slab:

- Using base plates (approx. 15300 mm<sup>2</sup>)
- Using adhesive anchor bolts M20 with 250 mm length
- Hole depth is more than 250 mm
- Concrete thickness of at least 300 mm

#### Concrete quality grade:

- Compliant of the static requirements of the construction
- Min. C30 grade (for dowel fastening)

#### Walls:

- Front drive-in wall and rear wall in concrete
- Perfectly flat wall surfaces
- Without protruding sections such as border edgings, pipes and tubes, etc.

#### Frame bearing points:

- The specified lengths are expressed as mean value

### > Extra space for hydraulic power packs

Dimensions in mm	Each power pack for 1 unit	Each power pack for 4 units
Length	550	750
Width	350	500
Depth	820	1000

#### Hydraulic power pack placement options:

Located behind the parking lift

Where this is not possible, it is necessary to arrange for an extra space above drive-in level (i.e. for a wall recess or a niche)

## > Electrical specifications

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### Cabling preparation to be performed by the customer:

- Up to the main switch to be in place prior to starting the installation operations
- Connection to the main switch during installation
- System functional check testing can be performed by the electrician provided by the customer

### Grounding and potential equalization:

- To be performed by the customer compliant to local regulations

### Connections required every 10 meters

## > To be performed by the customer

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Item	Quantity	Description	Position	Recurrence
1	1 piece	Power meter	In the feed cable	
2	1 piece	Fuse protector: 3 x 16 A for 3.0 KW power pack 3 x 25 A for 5.5 KW power pack	In the feed cable	1 x per power pack
3	Based on site conditions	Compliant to local power supply regulations 5 x 2.5 mm <sup>2</sup> , 3 phases + N + PE * 220 / 380 V, 50 / 60 Hz	Feed cables to main switch	
4	Every 10 m	Grounding and potential equalization lead-out connection	Along pit floor edges / rear wall	1 x power pack
5	1 piece	Grounding and potential equalization compliant to local regulations	From lead-out connection to system	1 x per system

### Note:

For garages with doors the door manufacturer must be consulted before the electrical feed cabling is laid.

### Scope of application

- Suitable for residential buildings, office buildings and business premises, hotels  
Only for long-term users that have been instructed on how to use the system.  
For frequently changing users (e.g. for office, hotel and business premises or similar):
- Only parking on top platform
  - Performance of technical system adjustments in necessary
  - Consultation with AAQ is mandatory

### Noise protection

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

At differing constructional conditions additional sound absorbing measures are to be provided by the customer  
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 AAQ.

### Temperature

- System operating range: -10 to +40C (with unloading platforms lowering speed is reduced if less than +5C)
- Humidity: 50% at +40C
- In the event of changes to system conditions please consult with AAQ

### Drainage

- Water leaks into the pit:**
- In the winter, up to 40 liters of snow water can possibly come with the wheel housings in just one parking process
- Recommended drainage channels:**
- Along the front end sections of the pit
  - Connecting to a floor drain or drainage pit (500 x 500 x 200 mm)
  - With manual emptying out of the drainage pit
  - Alternatively installation of a pump or

drainage channel into the sewerage system, to be performed by the customer

**Environmental safety:**

- Coating of the pit flooring is recommended
- Installation of an oil and / or petrol separator unit between the drainage connection and the main sewerage system is recommended

## Railings

### Railings mandatory:

- When exceeding the permissible, country-specific construction gaps and opening

### Safety fences mandatory:

- When walkways resp. traffic passageways running alongside or behind Parklifts and / or systems positioned along border walls
- Safety fences according to ISO 13857 to be performed by the customer (also during the construction phase)

## Maintenance

- AAQ and all the AAQ partners abroad provide an installation and customer service network
- Regular, annual maintenance is provided subject to the stipulation of a maintenance agreement

## Protection against corrosion

- All operations listed in the AAQ Cleaning and Maintenance Instructions are to be performed regularly (independently of maintenance operation)
- Zinc-plated parts, components and platforms are to be kept clean of dirt, road-salt and any other debris (due to corrosion hazards)
- Always keep the garage well ventilated and deaerated

## Surface protection

- Please consider the information on surface protection!

## Lighting

- Sufficient lighting of the driving aisle and of the parking places must be performed by the customer

## Fire safety

All the safety requirements and all mandatory equipment (fire extinguisher and fire alarm system, etc.) must be performed by the customer

## Construction alternations and /or modifications

- The right to construction or model modifications and/or variations is hereby reserved
- The right to any subsequent part modification and/or variation and amendments in procedures and standards due to technical and engineering progress or due to environmental regulation changes is also hereby reserved