



Siwar Karam Trading Co  
شركة سوار كرم التجارية



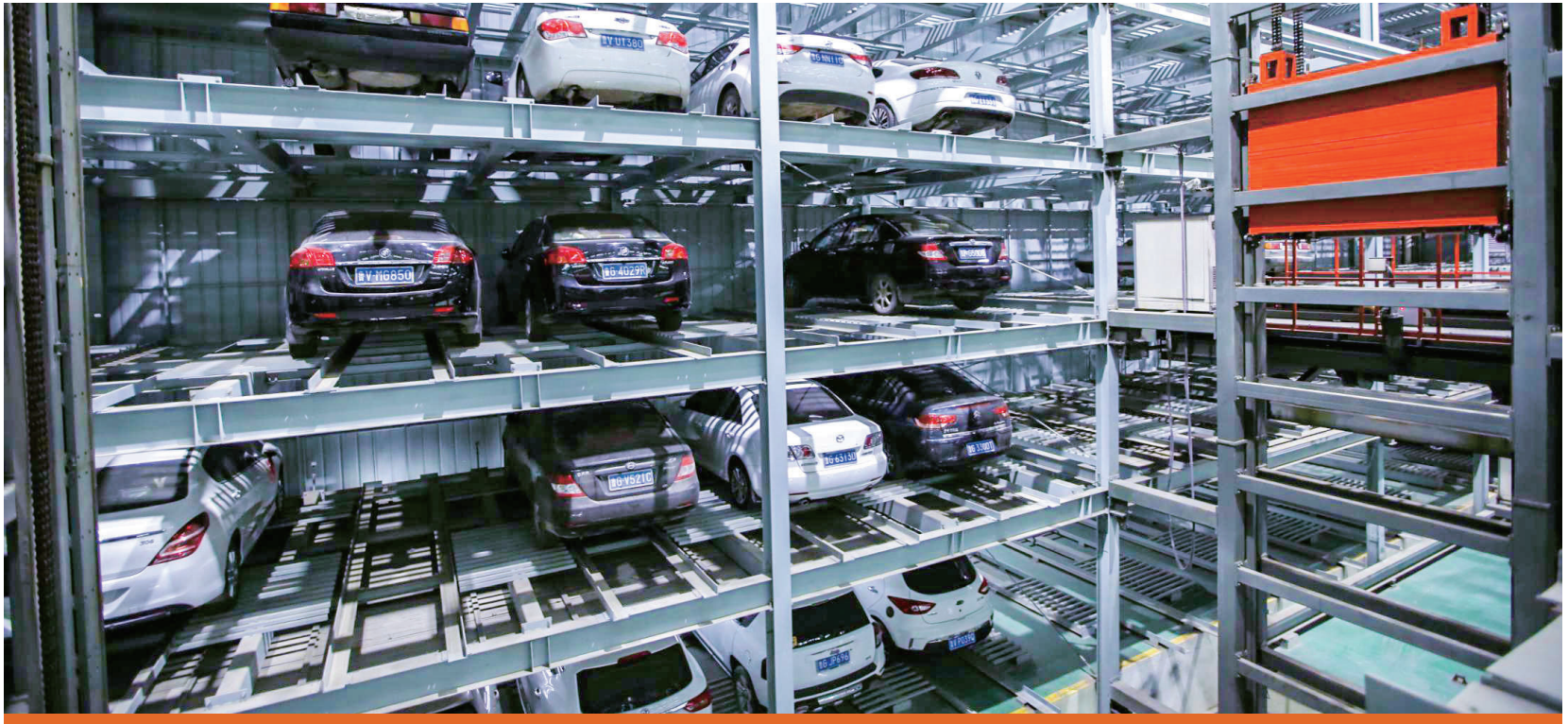
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Easy parking, easy life

Fully Automatic **PLATFORM** Parking Systems

## Fully Automatic Parking Systems



### > Make your city smart & comfortable

Fully automatic parking systems are the future of parking. Our continuous pursuit of functional, efficient and modern-looking equipment has led to the creation of automated parking systems with a speedy & safe design that bring you great benefits. They add values to your property by providing comfort parking experience, and reduce the time required for the whole parking process including searching, driving in & driving out.

### > Comprehensive support from the very beginning

Perfect parking solution is never possible without a thorough consultation from the very beginning, and that is where our expertise is. What we offer are complete solutions start from scratch, helping customers to find the most suitable solution out of the 5 systems and their variants. Ever since 2009, we have specialized in providing professional car parking solutions.

### > **Space saving**

Praised as the future of parking, fully automatic parking systems maximize the parking capacity within the smallest area as possible. It is especially beneficial for projects with a limited construction area as they require much less footprint by eliminating safe circulation in both directions, and narrow ramps and dark stairways for drivers.

### > **Cost saving**

They reduce lighting and ventilation requirements, eliminate the manpower costs for valet parking services, and decrease the investment in property management. Moreover, it generates the possibility to increase projects ROI by using the extra real estate for more profitable purposes, like retail stores or additional apartments.

### > **Additional safety**

Fully automatic parking systems bring safer and more secured parking experience. All the parking and retrieving activities are performed at entrance level with an ID card owned by driver him/herself only. Theft, vandalism or worse would never take place, and the potential damages of scrapes and dents are fixed once for all.

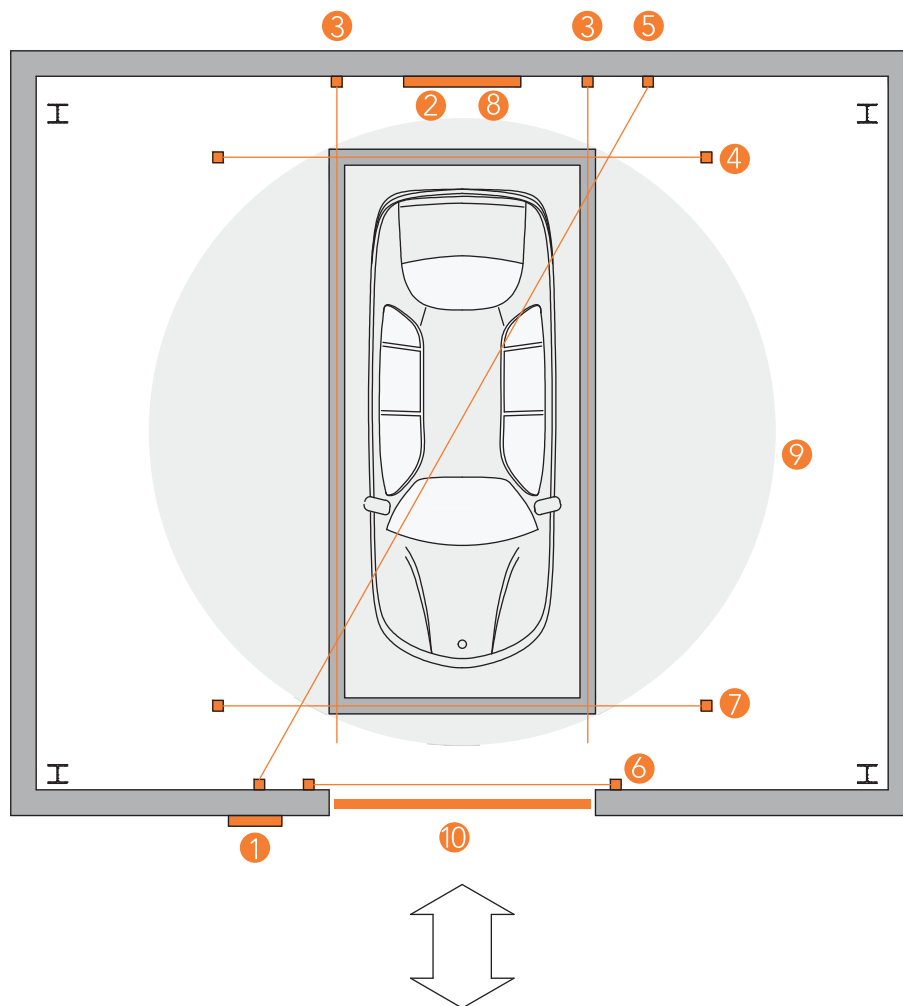
### > **Comfort parking**

Instead of searching for a parking spot and trying to find out where your car parked, automated parking system provides much comfort parking experience than traditional parking. It is combination of a great many advanced technologies that work together seamlessly and uninterrupted that can deliver your car directly & safely to your face.

### > **Green parking**

Vehicles are turned off before entering the system, so engines are not running during parking and retrieval, reducing the amount of pollution and emission by 60 to 80 percent.

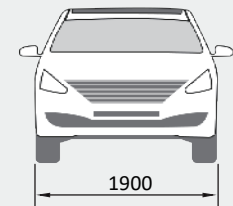
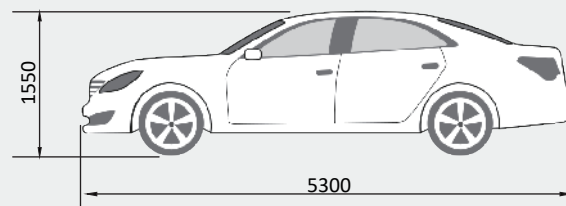
## Safety devices at parking bay area



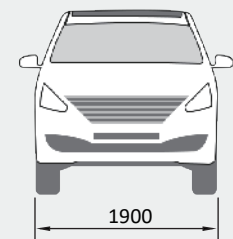
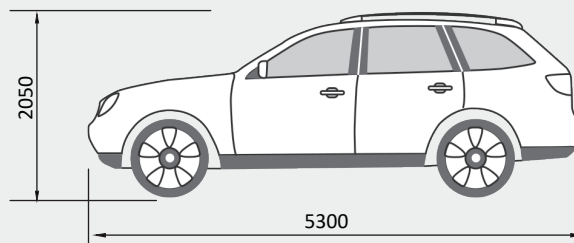
- 1 Card reader
- 2 LED display
- 3 Width sensor
- 4 Length sensor
- 5 Motion sensor (optional)
- 6 Entrance sensor
- 7 Height sensor
- 8 Parking mirror
- 9 Turntable (optional)
- 10 Auto door

## Vehicle dimensions

### Allowed sedan dimensions



### Allowed SUV dimensions



All of our systems are capable of accommodating both sedans and/or SUVs.

**Vehicle weight:** 2,350kg

**Wheel load:** max 587kg

Various vehicle heights on different levels are possible on request.



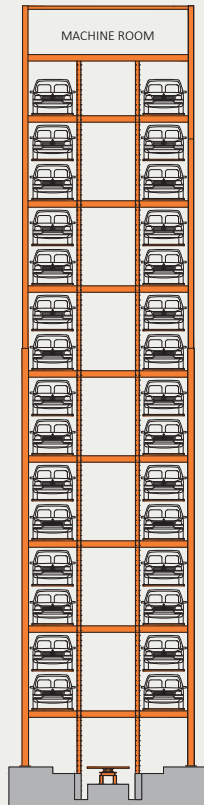
## Tower system



ATP series are tower type parking system that extremely maximize the usage of limited land in small ground space and simplify the experience of car parking. By tapping IC card on card reader, the desired platform will be delivered by speedy lifting mechanism to the entrance level of the parking tower automatically and quickly.

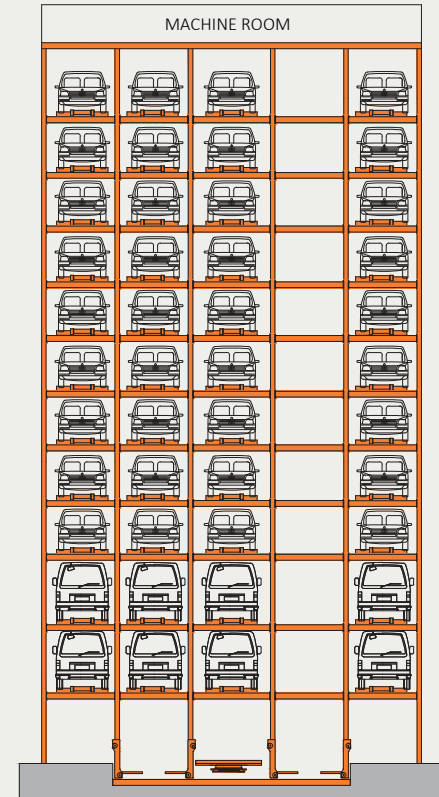


## Application



### High tower

With 2 parking spaces per floor, max 35 floors high. Access can be from bottom, middle or top floor, or lateral side. It can also be built-in type with reinforced concrete housing.



### Wide tower

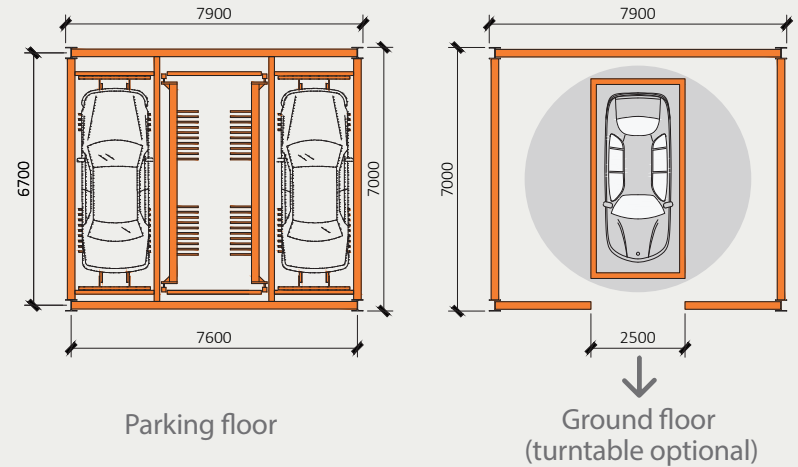
Up to 6 parking spaces per floor, max 15 floors high. Turntable is optional on ground floor to provide superior convenience.

## Features & Layout

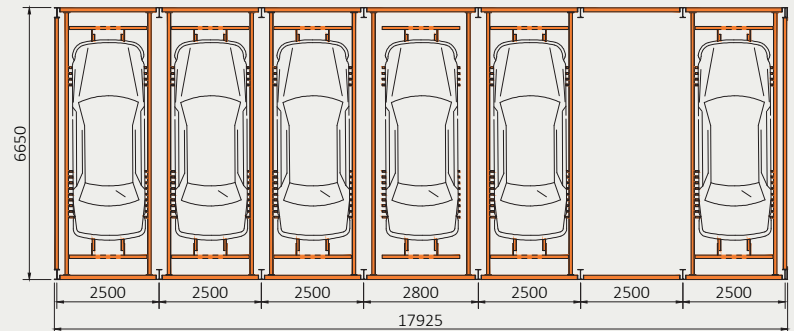
Tower parking system accommodates more cars within limited area. Unlike going horizontal, ATP system is either tall or deep. Max 35 parking levels within the area of 56sqm only, with 2-to-6 parking spaces per level. One tower system can accept up to 90 vehicles at the same time, whether it's a standard sedan or SUV. And high-speed lifting system extremely shortens the waiting time to be 120s on average, much faster than complete platform type.

- Cover area:** Small, from 56m<sup>2</sup> to 120m<sup>2</sup>
- Vertical levels:** Max 35 parking levels
- Horizontal layout:** Max 6 parking spaces in one row
- Vehicle type:** Two height options are possible, sedan and /or SUV, vehicle length <5300mm, tyre width <1900mm
- Lifting speed:** Up to 120m/min. Detailed figure is subject to the design as required
- Operation:** IC card, touch screen, or manual
- Turntable:** Optionally available at parking bay
- Application:** Places with small ground spaces but has large demand for parking

### High tower



### Wide tower



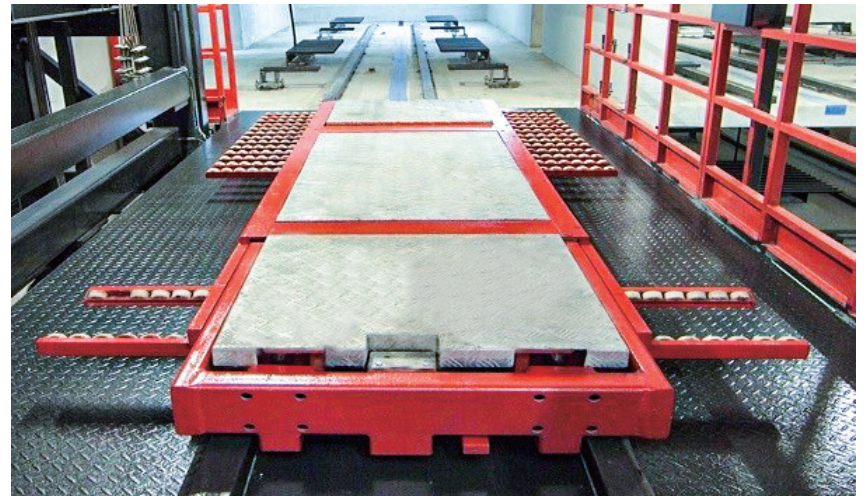


## Shuttle system

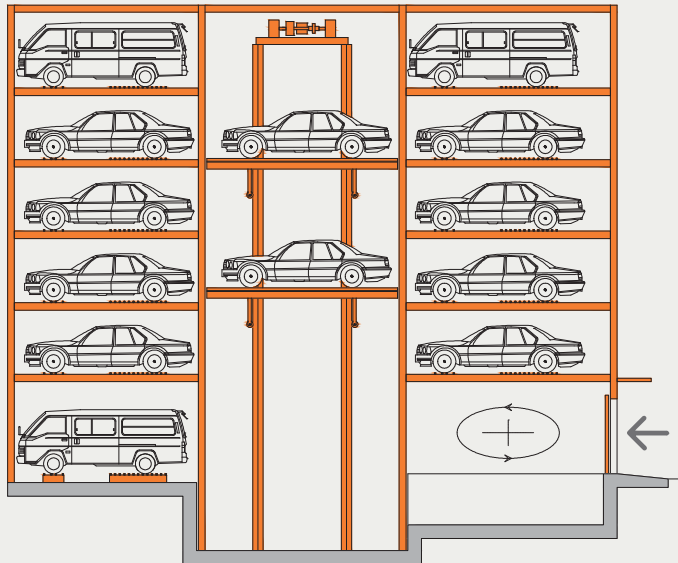


MLP series are shuttle type robotic parking system that adopts similar principle of stereoscopic mechanical parking lot. Different parking levels are connected to the entrance by elevator(s), and each level has a slider that's responsible for moving the vehicles left to right.

It's one of the most highly efficient system that manipulate vertical & horizontal movement concurrently. To store a car, the driver just needs to park the car at the parking bay and the whole rest process will be done by parking robot automatically.

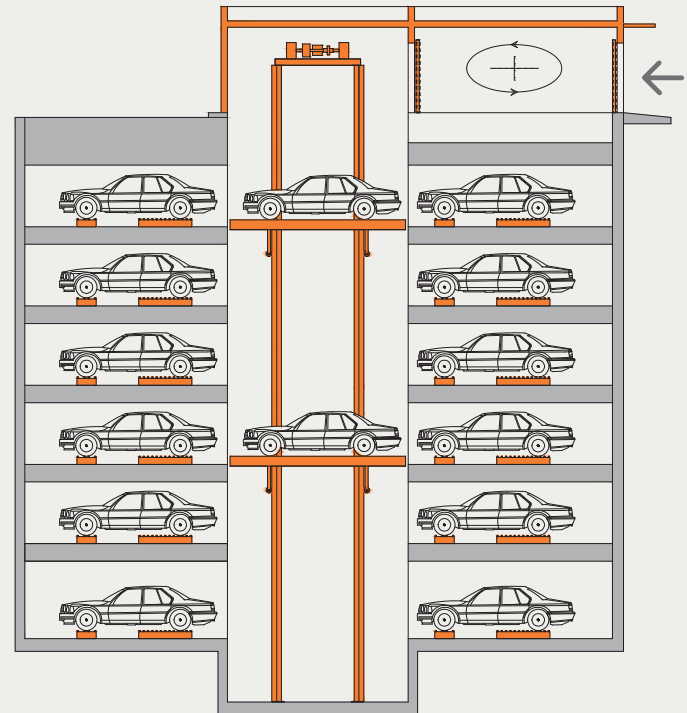


## Application



### Above ground plan

Above ground system, max 6 floors high, recommended parking spaces per elevator is approx. 60.



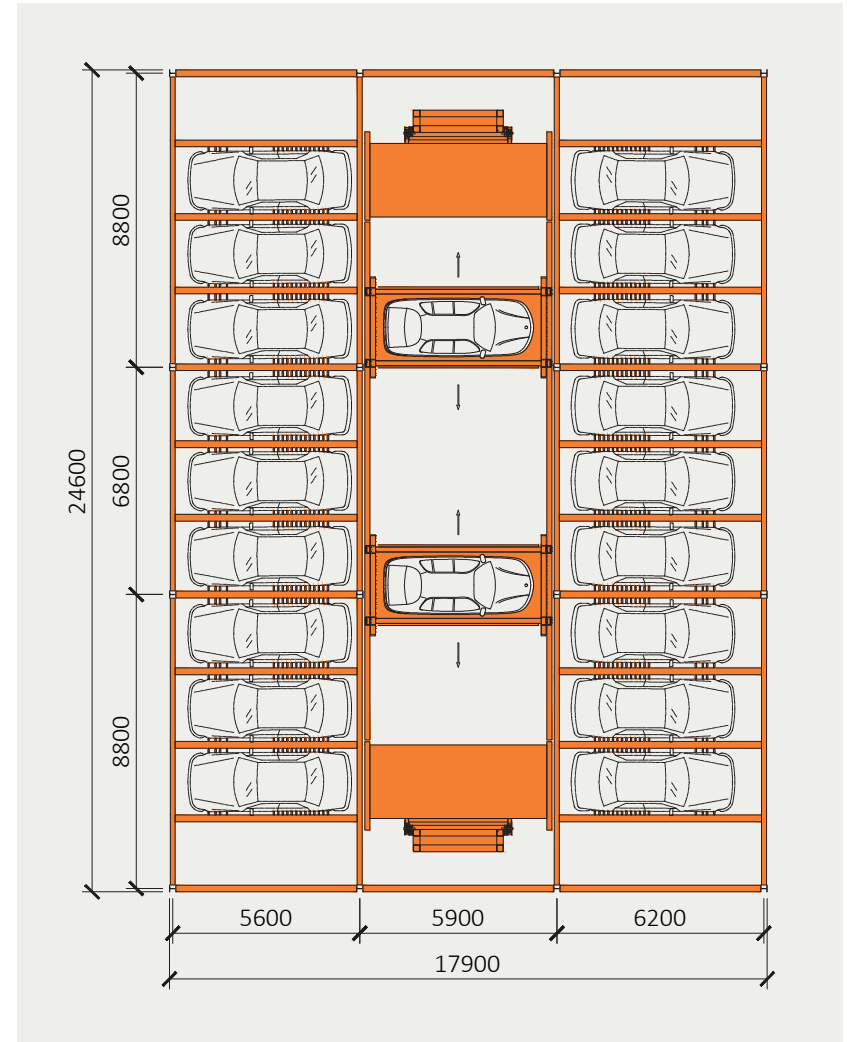
### Underground plan

Underground system, entrance on top, up to 6 sub floors. It can also be half-underground, with access at middle. Recommended parking spaces per elevator is approx. 60, or max 80.

## Features & Layout

In shuttle system, vehicles are lifted to the target level by elevator(s), and then transported to parking spots by the specific slider on each floor. Then a parking robot carries the vehicle back and forth between slider and its parking spot to accomplish the delivery. Magic of the system is that the elevator & slider can work in parallel to greatly increase the access efficiency. Suitable for middle or large-scale buildings or public facilities.

- Cover area:** Medium-large, in rectangle shape
- Vertical levels:** Max 6 parking levels
- Horizontal layout:** Unlimited & extendable by adding elevators
- Vehicle type:** Two height options are possible, sedan and /or SUV, vehicle length <5300mm, tyre width <1900mm
- Lifting speed:** Up to 75m/min. Detailed figure is subject to the design as required
- Operation:** IC card, touch screen, or manual
- Turntable:** Optionally available at parking bay
- Application:** Residential, office building and public parking that has large demand for parking





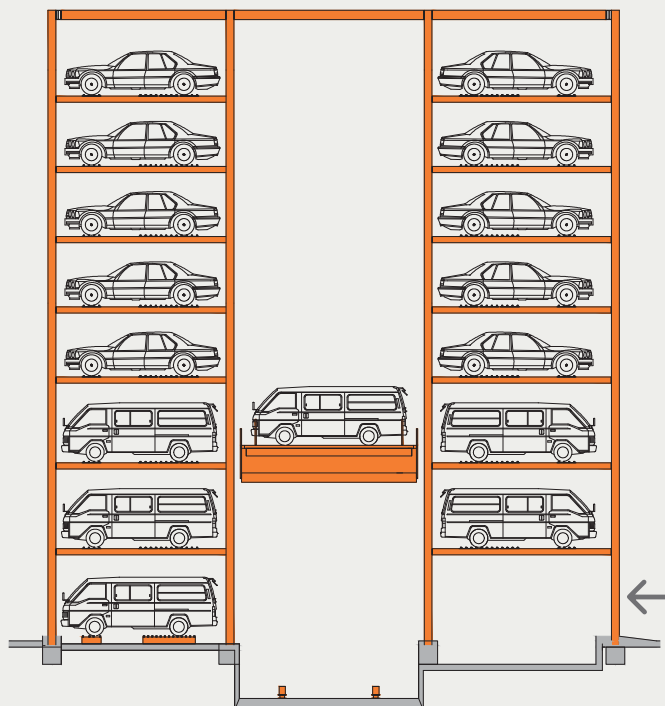
## Cabinet system



The revolutionary cabinet parking system (MSSP series) is the result of continued commitment to developing and providing innovative parking solutions. This system is a highly intelligent, designed to accommodate and store vehicles on multiple levels in more efficient way, using the principle of lifting, sliding & rotating of the car to a parking space on individual comb pallets.

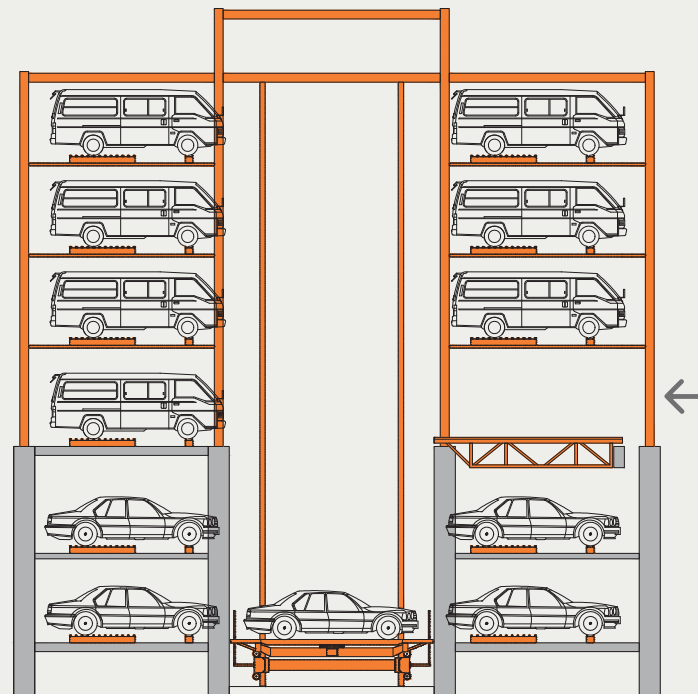


## Application



### Above ground plan

Above ground system with multiple accesses from bottom.



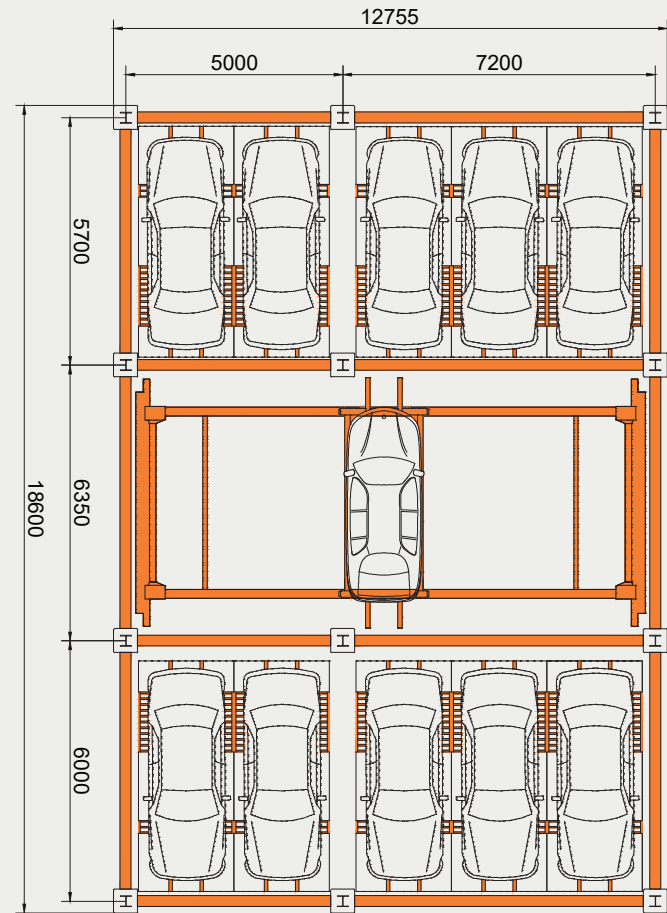
### Half-underground plan

Either fully underground, or with combined parking floors.

## Features & Layout

Similar as circular system, Cabinet type parking system integrates elevator, turning mechanism & parking robot onto one large lifting platform. It's an ideal & efficient solution for places with medium ground area, yet high density of parking demand. Cabinet system can accommodate up to 12 vehicles on each parking level, and max 16 levels high. Max 4 entrances/exits can be arranged on ground floor. And inground system is also possible by accessing from top.

- Cover area:** Medium, in square shape.
- Vertical levels:** Max 16 parking levels
- Horizontal layout:** 6 to 12 parking spaces per level.
- Vehicle type:** Two height options are possible, sedan and /or SUV, vehicle length <5300mm, tyre width <1900mm
- Lifting speed:** Up to 95m/min. Detailed figure is subject to the design as required
- Operation:** IC card, touch screen, or manual
- Turntable:** Integrated on lifting platform
- Application:** Residential, office building and public parking that has large demand for parking





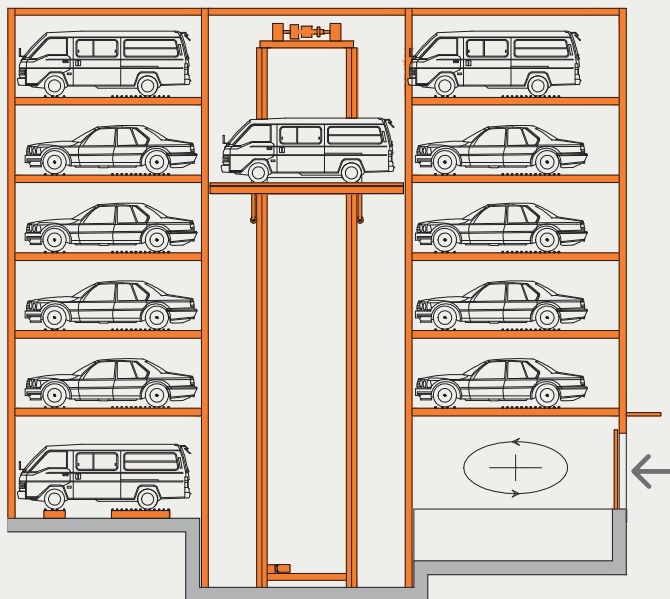
## Aisle system



Aisle type (HSP series) fully automatic parking system adopts similar principle of storage racks in warehouse. Two rows of vehicles are parked aside the stacking channel, up to 80 vehicles can be stored at the same time. To park a vehicle, the driver just needs to stop the car at the parking bay and the whole rest process will be done by the system automatically.

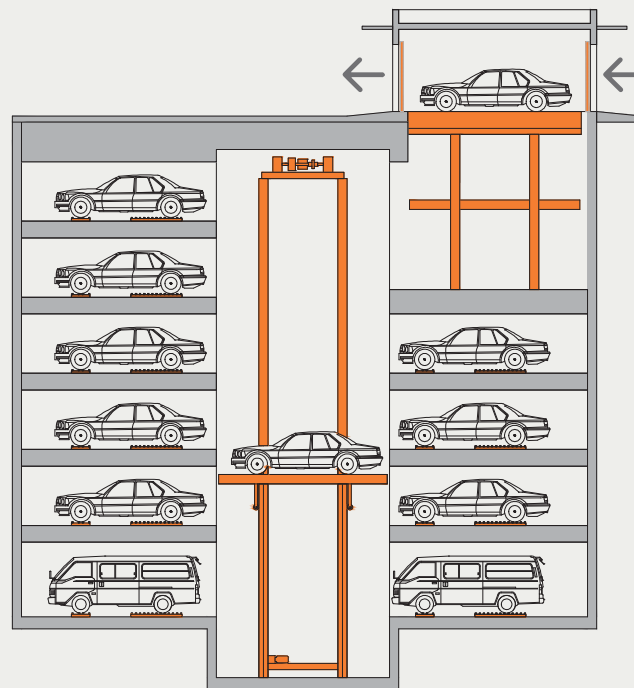


## Application



### Above ground plan

Above ground system with access from bottom.



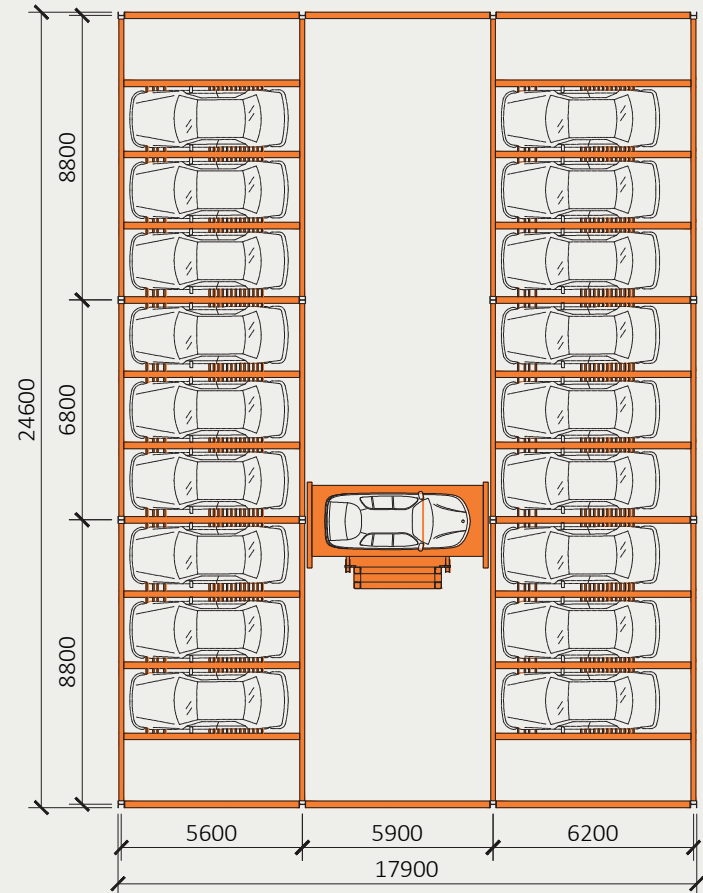
### Underground plan

Underground system with access on top.

## Features & Layout

Aisle type parking system adopts a stacking mechanism that moves along the aisle horizontally and carries vehicle vertically in the meantime. Then a parking robot carries the vehicle back and forth between stacking machine and the parking space. One set of stacking system can accept up to 60 vehicles, suitable for middle or large-scale buildings or public facilities.

- Cover area:** Medium-large, in rectangle shape
- Vertical levels:** Max 6 parking levels
- Horizontal layout:** Unlimited & extendable by adding stacking machines
- Vehicle type:** Two height options are possible, sedan and /or SUV, vehicle length <5300mm, tyre width <1900mm.
- Lifting speed:** Up to 50m/min. Detailed figure is subject to the design as required
- Operation:** IC card, touch screen, or manual
- Turntable:** Optionally available at parking bay
- Application:** Residential, office building and public parking that has large demand for parking



## Smart control



Either parking or retrieving, all that a driver needs to do is tapping his/her preassigned IC card at the reading area of built-in control panel, then the whole process is initiated automatically and the parking robot shall take care of everything left behind. For emergencies, simply press the Emergency Stop button to deactivate the system immediately.



## Auxiliary systems

### > Monitoring system

CCTV system (monitor screen included) available at control room to monitor & record the entire parking process and system operation.

### > Auto door

Available in all fully automatic parking systems. Open or shut automatically when detecting vehicle approach or operation accomplishment.

### > Touch screen control

Available inside cabinet and shall only be accessed by technicians or trained staff.

### > Diagnoses system

Basic but greatly beneficial system integrated in PLC software that indicates the running conditions of parking system in real time, and provides essential guidance for inspection and maintenance.

### > Oil & dust tray

Often negligible yet with huge significance when cars parked vertically in mechanical parking systems, protecting vehicles from dripping fluids (water, oil, melting snow) from the cars above.

### > E-Charger

Fully functional with charging system. Optional on each individual parking pallet, a requisite auxiliary for cases/projects with electric vehicles.

### > Façade & roof

Strongly recommended and optionally available for outdoor cases, protecting the vehicles from harsh weathers, and greatly extend the service life of parking systems.

### > Supervision service

Considering the high construction complexity & large project scale, supervision of engineers is a guarantee for correct installation, shortened project period and faster ROI.

### Scope of application

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Suitable for residential complexes, office buildings, hospitals, and other commercial facilities that has high density parking demand and vehicles enter & exit frequently.

### Parking

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Users must read & follow the parking guidance information before using the system, park on the center of parking bay area, and put break on always.

### Protection against corrosion

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Regular cleanup and maintenance shall be carried out by customer to remove dirt, road salt, melting snows, etc.

### Vehicle weight

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It's highly forbidden to exceed the allowed vehicle weight.

### Lighting

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Lighting to be carried out by the customer according to DIN 67528 for parking areas and indoor car parks.

### Fire fighting system.

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Fire protection shall be carried out by customer complying with the codes and regulations of local fire department.

### Warranty

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Please consider the information on Warranty Policy



### Liability

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Alpha Steel reserves the right in the course of technical changes or progress to use newer or other technologies, systems, processes, procedures or standards.



## References

