



Leaders in high density parking systems

1. Product Name

Valet Parking Systems

- Double Parking System
- Triple Parking System
- Quadruple Parking System

Self-Parking Systems

- Lift-Sliding Semi-Automatic Parking System
- Auto Park Fully Automatic Parking System

2. Manufacturer

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3. Product Description

BASIC USE

Park Plus, Inc., manufactures parking systems to meet high-density parking requirements. Park Plus systems provide efficient space utilization in multiple applications and offer a variety of vehicle storage and retrieval options, from attended systems (valet) to fully automatic systems that require no human intervention. These systems are freestanding and can be installed indoors or outdoors, retrofitted into existing buildings, or designed specifically for new building projects and enclosed to client specifications.

BENEFITS

- Designed or retrofitted in accordance with client specifications
- Cost-effective and can be installed with little to no site preparation; standard garage doors, facade siding and roofs can be used to enclose all systems
- Construction periods and costs are minimized with Park Plus systems and require no ramps or drive aisles
- Beneficial floor area ratio (FAR) - Systems regarded as one level in many cities
- Systems are MEA approved for New York City

TYPES & SIZES

Valet Parking Systems

This system is designed for attended parking applications and consists of simple devices that stack 2, 3 or 4 vehicles atop a single parking space. A trained operator raises a vehicle on a platform from a control device, which creates an additional space for another vehicle to be stored below. This process is repeated until the system reaches capacity. To retrieve a vehicle, the operator removes the vehicle below (at grade position) in order to lower the platform and return the stacked vehicle requested.

Double Parking System - Designed to double parking capacities, this system is available as a hydraulic or electric 2-post cantilevered unit that requires no foundation anchorage. It is also offered in a suspended electric postless design. Low profile equipment is available for minimal height clearances.

Triple Parking System - This system is designed to vertically stack vehicles up to 3 high. It is available as a 4-post hydraulic or electric machine or a 2-post electric machine. Both types require a reinforced concrete base.

Quadruple Parking System - This system is designed to vertically stack vehicles up to 4 high. It is available as a 4-post electric machine and requires a reinforced concrete base.

Self-Parking Systems

The Lift Sliding Parking System maneuvers stacked vehicles on platforms in horizontal and vertical motions in order to lower vehicles to grade position through a Programmable Logic Control (PLC) system. This process allows efficient direct access to vehicles.

The system can be designed with a pit depth for up to 3 vehicles below grade and up to 5 vehicles above grade, giving a total vertical stacking capacity of 8 vehicles in the space usually occupied by a single vehicle. There are no horizontal limitations to the system. This system can be customized for indoor and outdoor applications, complete with external cladding/siding, garage doors and roof, per client specifications.

The Auto Park System is designed for maximum efficiency and space utilization for high-density parking. It features an unlimited stacking capability and a fully integrated storage and retrieval functionality.

Vehicles are placed in a Park and Drive (P & D) station. Once secure of all persons, the Mole transfers the vehicle onto the VTC (Vehicle Transfer Carrier), which moves the vehicle to a



Car Stackers® for high density parking requirements

designated parking stall. The Mole then stores the vehicle and awaits the next instruction.

The system may also include a turntable for entry and exit purposes, and a vehicle lifting device may be necessary for multi-level applications.

Note - See Tables 1 and 2 for more information.

ELECTRICAL SUPPLY REQUIREMENTS

- 3-phase - 208 to 480 Volts
- Single Phase - 110 to 220 Volts

Power Packs supplied with hydraulic-operated systems (specifications available)

COMPOSITION & MATERIALS

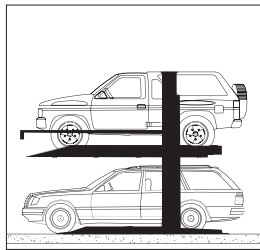
Valet Parking Systems

- Structure - Prefabricated steel frame
- Platforms - Galvanized/diamond-plate steel beds
- Operation - Hydraulic (cylinders driven by a Power Pack) or electric motor—see supply requirements
- Manual override for emergency lowering
- Full safety features

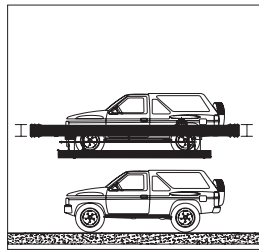
Self-Parking Systems

Lift Sliding Semi-Automatic Parking System

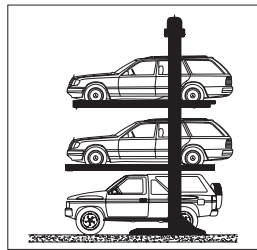
- Structure - Standard steel members
- Platforms - Galvanized steel beds
- Operation - Electric motors with cable
- Control - Programmable Logic Control (PLC) system
- Manual override for emergency retrieval
- Full safety features



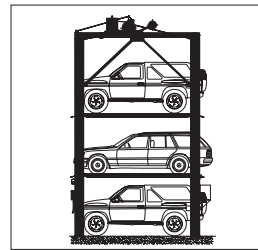
Double Parking System - DP



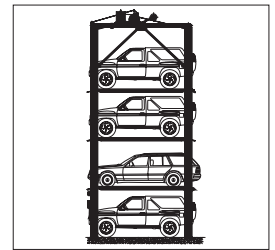
Double Parking System - NP



Triple Parking System - TP



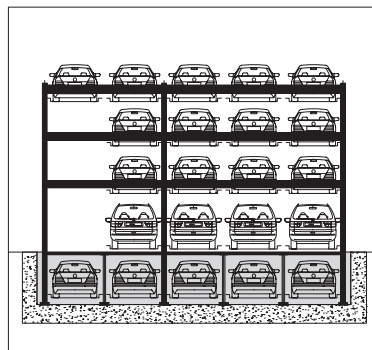
Triple Parking System - GT



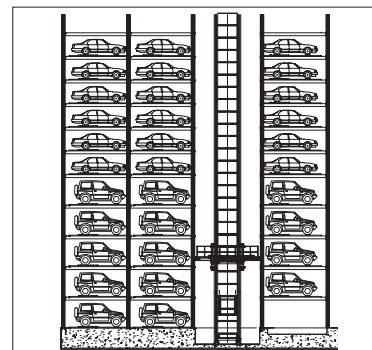
Quadruple Parking System

TABLE 1 VALET PARKING SYSTEMS - MECHANICAL VEHICLE STACKING EQUIPMENT

Type	Double Parking System		Triple Parking System		Quadruple Parking System
	DP Standard	NP No-Post suspended platforms	TP Electric	GT Hydraulic	QP Electric
Maximum levels	2	2	3	3	4
Length, ft-in (m)	14, 3 (4.3)	14 - 20 (4.3 - 6.1)	13 - 17 (4 - 5.2)	20, 6 (6.2)	13 - 17 (4 - 5.2)
Width, ft-in (m)	7, 11 - 8, 3 (2.4 - 2.5)	7, 10 (2.4)	8, 3 - 8, 6 (2.5 - 2.6)	8, 1 (2.5)	8, 3 - 8, 6 (2.5 - 2.6)
Clearance requirement (height), ft-in (m)	10, 6 (3.2)	10, 6 (3.2)	24, 6 (7.5)	20 (6.1)	31, 5 (9.6)
Lifting capacity per platform, lb (kg)	6000 (2722)	6000 (2722)	6000 (2722)	6000 (2722)	6000 (2722)
Operation	Electric motor or hydraulic cylinders		Electric motor	Hydraulic cylinders	Electric motor



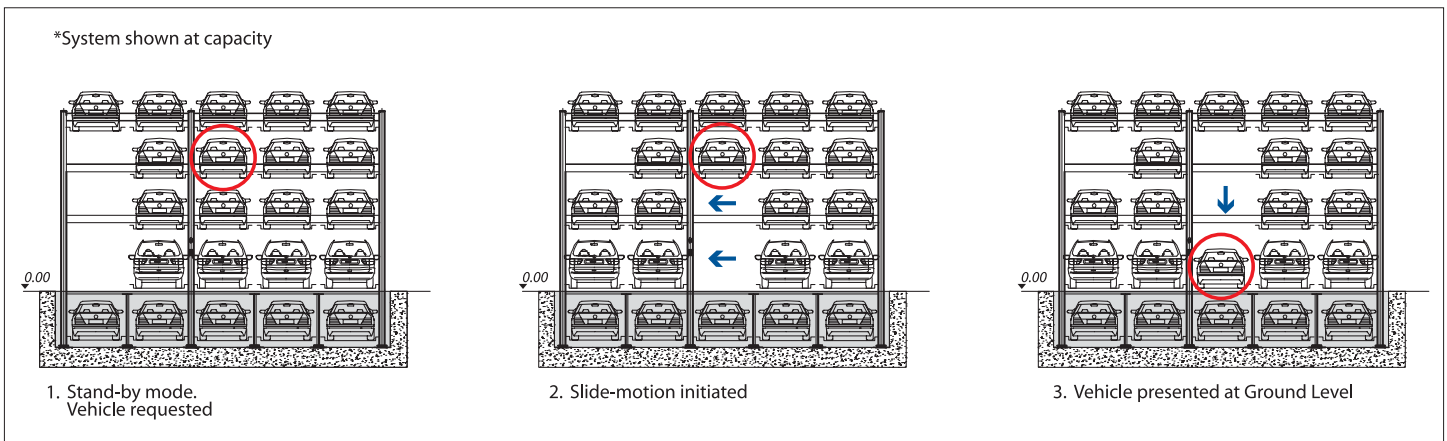
Lift Sliding (LS)



Auto Park (AP)

TABLE 2 SELF-PARKING SYSTEMS - AUTOMATIC VEHICLE STORAGE

Type	Lift Sliding (LS) Semi-automatic parking system	Auto Park (AP) Fully automatic parking system
Maximum levels	8	25
Stall length, ft-in (m)	19, 8 (6)	19, 8 (6)
Stall width, ft-in (m)	8, 3 (2.5)	7, 3 - 8, 3 (2.2 - 2.5)
Clearance requirement/stall (height), ft-in (m)	6, 4 - 8, 1 (1.9 - 2.5)	4, 6 - 6, 9 (1.4 - 2.1)
Certified lifting capacity, lb (kg)	5200 (2359)	6000 (2722)
Operation	Automatic with manual override	Automatic with manual override



This self-park Lift Sliding System gives patrons the opportunity to lock vehicles and retain the keys.

Auto Park Fully Automatic Parking System

- Structure - Standard steel members or reinforced concrete construction
- Park and Drive station (P&D) - Loading and unloading bay
- Turntable - All vehicles are stored in same direction and presented to client face-out
- Vehicle Transfer Carrier (VTC) - Automated storage and retrieval system
- Mole - Robotic trolley for vehicle transfer to VTC (patented design)
- Vehicle Lifting Device (VLD)
- Parking Stalls - Various structural components for storage of vehicle
- Operation - Electric motors
- Control - Integrated software program
- Manual override for emergency retrieval
- Full safety features

4. Technical Data

APPLICABLE STANDARDS

- American National Standards Institute (ANSI)
- ANSI/ALI ALCTV American National Standard for Automotive Lifts - Safety Requirements for Construction, Testing and Validation
- ANSI/ASME B30.13 Storage/Retrieval (S/R) Machines and Associated Equipment

Deutsches Institut für Normung (DIN) - DIN EN 14010 Safety of Machinery - Equipment for Power Driven Parking of Motor Vehicles - Safety and EMC Requirements for Design, Manufacturing, Erection and Commissioning Stages

GB 17907 Mechanical Parking Systems - General Safety Requirement

National Fire Protection Association (NFPA) - NFPA 88A Standard for Parking Structures

APPROVALS

MEA certified for City of New York.

ENVIRONMENTAL CONSIDERATIONS

Valet Parking Systems

Hydraulic-operated systems require routine maintenance and service inspections to prevent leaking of hydraulic fluid to immediate environment. Biodegradable hydraulic fluid is also available.

Electric-operated systems have the benefit of being environmentally sustainable, using standard brake motors instead of hydraulic cylinders for operation.

Self-Parking Systems

Automated and semi-automated parking systems are environmentally sustainable. These systems are electrically operated, require considerably less construction materials than conventional parking garages, require significantly less useable space and have little or no need for additional lighting, heating, ventilation and cooling.

5. Installation

PREPARATORY WORK

Handle and store product according to manufacturer's recommendations.

Verify that site conditions are acceptable for installation. Do not proceed with installation until unacceptable conditions are corrected.

All components are prefabricated offsite and assembled onsite to minimize installation time. Surface conditions for the installation of the mechanical parking systems must be of suitable structural quality and finished in either blacktop or reinforced concrete slabs, depending on the weight of system.

Double Parking Systems can be erected on unprepared surfaces with a grade of up to 5%, whereas all other systems must be on grade of no more than 2%.

Surface conditions for the installation of the Automated Parking Systems and Semi-Automated Parking Systems must be of suitable structural quality, finished in either blacktop or reinforced concrete slabs and designed specifically for the weight of system. These systems require even grades.

Installation instructions and guidelines are available. Park Plus, Inc., must provide experienced and qualified technicians to carry out all necessary installation work. Uninterrupted access to the work area is necessary at all times for equipment, labor, transport and services as required. Installation periods vary according to project specific conditions and will be determined accordingly.

6. Availability & Cost

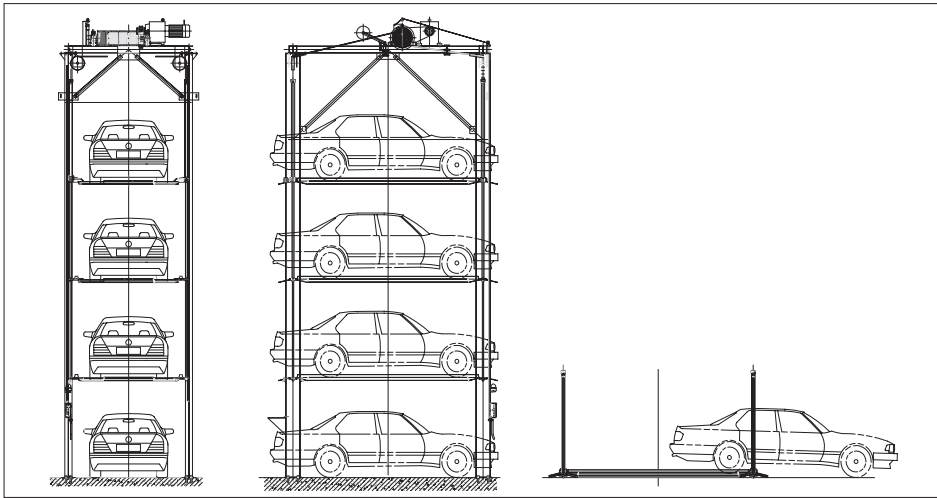
AVAILABILITY

Park Plus, Inc., provides detailed customized quotations, complete with layout drawings to maximize the number of parking/storage spaces and efficient separation. Standard stock items are available as new or refurbished equipment, and deliveries on customized systems can be expected within 8 - 24 weeks depending on the size and sophistication of the system.

COST

Cost per space is calculated according to the number of stalls required, speed of operation and design functionality.

Park Plus, Inc.



Valet systems allow 2, 3, or 4 vehicles to be stacked atop a single parking space.

10. Filing Systems

- Reed First Source
- MANU-SPEC®
- Additional product information is available from the manufacturer.

Car Stackers® and SpaceMaker® are registered trademarks of Park Plus, Inc.

7. Warranty

Equipment is warranted for a specified period following date of delivery to Owner, according to individual contracts. Warranties cover all equipment and components, including labor. The warranty is invalidated by any defects resulting from faulty or negligent operation, lack of maintenance, overloading, abuse or force majeure (acts of God).

8. Maintenance

Park Plus, Inc., equipment is certified, and the Service and Maintenance Department operates on a 24/7 basis. All service and repair work must be carried out by authorized Park Plus, Inc., technicians. Work performed by unauthorized technicians may invalidate the warranty.

Park Plus, Inc., will provide a technician to visit installation sites to fully inspect and service each unit under the service agreement at regular intervals. At the end of the warranty period, a service and maintenance contract is available upon request. Contracts can include labor and/or parts.

9. Technical Services

Park Plus, Inc., provides design, manufacturing, installation and support services for all their products. Other services include in-house engineering and architectural support, as well as financial services and lease options on all products.



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