



IHI Transport Machinery Co., Ltd. ●● IHI Fuso Engineering Co., Ltd.

● IHI ASIA PACIFIC (Thailand) Co., Ltd.

● IHI Transport Engineering Malaysia Sdn. Bhd.

IHI Realize your dreams

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IUK 201602-1000 MINDS

IHI
Realize your dreams



IHI Parking General Catalog



IHI Transport Machinery Co., Ltd.
IHI Fuso Engineering Co., Ltd.

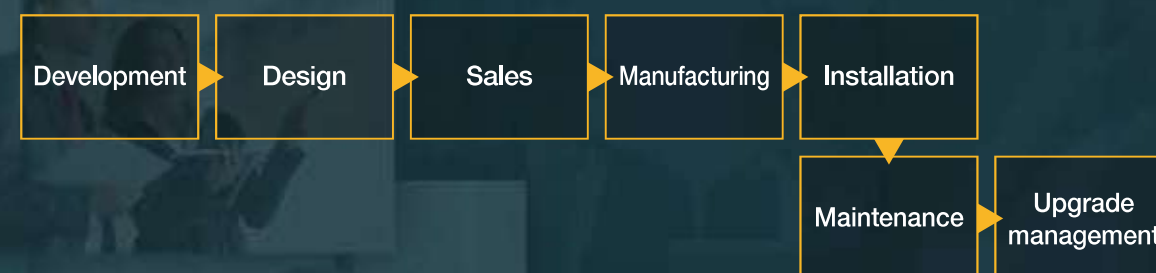


Providing Perfect Parking Solution Since 1962

Since 1962, IHI has been the front-runner of Automated Parking System in Japan. Behind the success lies eagerness to adapt cutting-edge technology and dedication to the product. With constant evolvement, IHI strives to develop systems that guarantee customer satisfaction.

IHI is not a company that merely manufactures machines; an all-round Parking System professional providing back-to-back services including maintenance and management services.

The full package

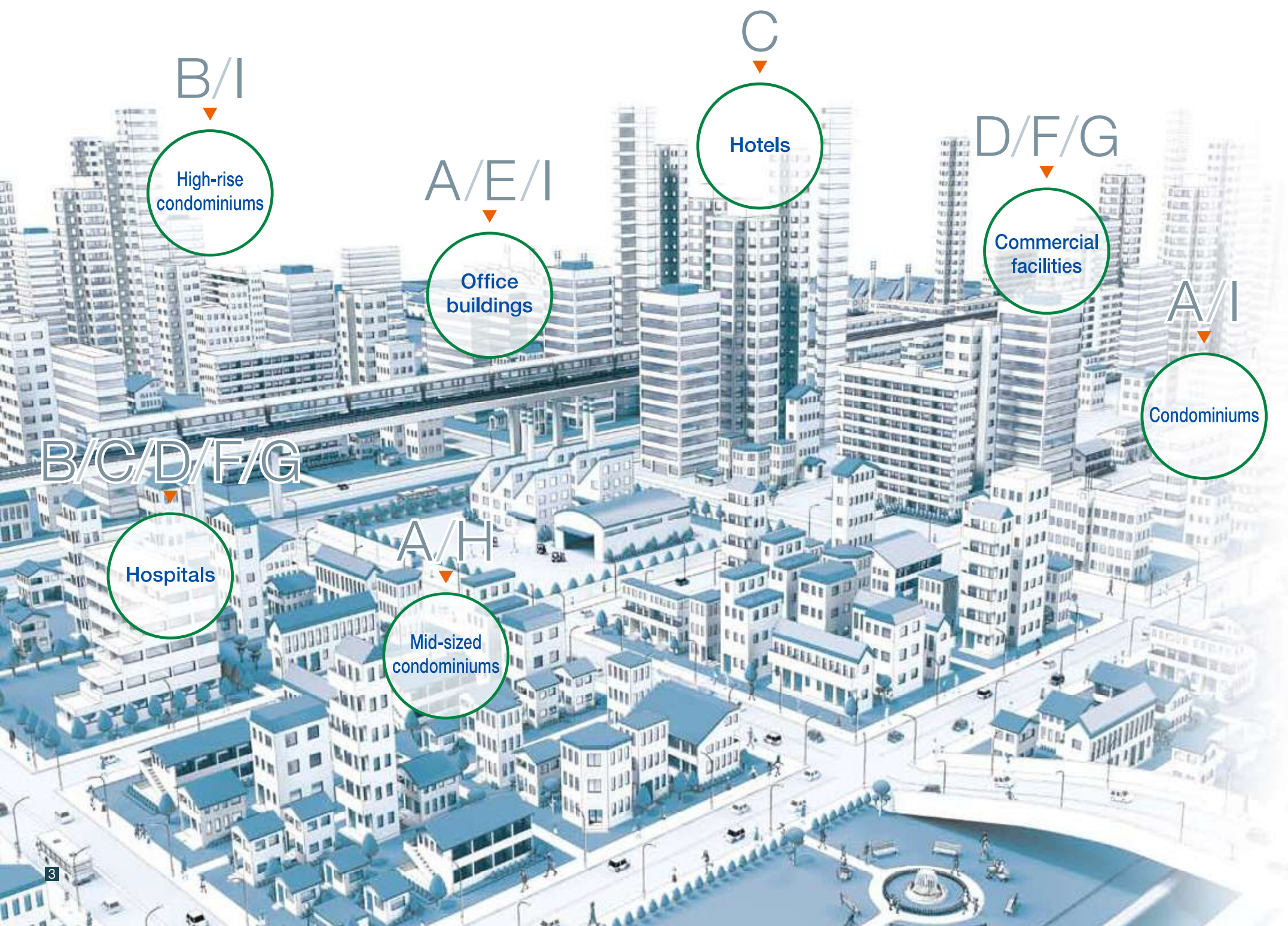


Innovator and Leader in Parking System Technology

- IHI's parking system history began in the early 1960s with the rise of full-fledged motorization.
- In 1962 IHI delivered Japan's first merry-go-round Tower Parking System to Takashimaya (Nihombashi, Tokyo). In the same year IHI launched three types of parking systems which employed unique technologies; merry-go-round Tower Parking System, Conveyor Parking System, and Square Parking System.
- IHI, a pioneer to focus on environmental issues, developing parking systems such as pallet tower parking and hydraulic multi-storey parking, which save energy and produce little noise and vibration.
- IHI has developed a wide range of product variations to meet customer needs, such as Shuttle Parking System, Pallet-less Tower Parking System, and Super Square Parking System.
- IHI has developed EV charging-ready parking systems and the industry's first energy saving drive system which uses reclaimed energy from mechanical parking equipment.
- IHI is currently developing parking systems which store solar power for use in lighting, EV charging, and more.

Working with People and Cities

We want to create cities which bring people together,
where they share their happiness and joy.
IHI parking systems are essential elements
in the development of comfortable automotive society.



IHI PARKING SYSTEMS

A	Tower Parking System (Pallet Type)	P 7 ▶
B	Ultra-high Tower Parking System (Pallet Type)	P 8 ▶
C	Tower Parking System (Pallet-less Type)	P 9 ▶
D	Tower Parking System (Rotary Type)	P 10 ▶
E	Super Square Parking System	P 11 ▶
F	Shuttle Parking System	P 12 ▶
G	Ramp Parking	P 13 ▶
H	Multi-Storey Parking System	P 15 ▶
I	EV Charging System for IHI Parking System	P 17 ▶


Noise and Vibration Countermeasures P 18 Safety Measures P 19 Exterior Design P 20

Vehicle Route Management System P 21 Parking Operation Management P 22

Tower Parking System


Vertical above ground design

We offer three key types of above-ground parking systems with advanced functionality.
We tailor them to customer needs after analyzing various conditions such as location, initial investment, storage capacity, and storage efficiency.


 Place your smartphone over this icon to view a 3D CG video of loading and unloading.


Download the free COCOAR2 app using the procedure below and then hold your smartphone or tablet computer over the above icon.

- 1


 **COCOAR2**
Download and install the free COCOAR2 app


Android OS






iOS




- 2

When the device language is set to a language other than Japanese, after installing COCOAR2 you must use "Setting" "Database" and change the setting from "Taiwan" to "Japan".


- 3

Launch the free COCOAR2 app
- 4

Place your smartphone over the icon
- 5

Watch the 3D CG video

*Please be aware that COCOAR2 operation is not guaranteed when using international communications, nor is COCOAR2 guaranteed to work with overseas devices. It may not be possible to download the app or to use the service with certain Japanese mobile devices and under certain transmission conditions.



Saves energy for maximum environmental friendliness!

Pallet Type

Elevator design

Structure	Cages are used to place vehicles on individual pallets.
Installation Location	Outside buildings (free-standing) Inside buildings (internal free-standing)
Storage Method	Pallet
Capacity (per system)	Approx.14 to 50 vehicles (free-standing) Approx.14 to 100 vehicles (internal free-standing)
Approx. Number of Vehicles	30
Average Unloading Wait Time	Approx. 2 minutes 15 seconds
Loading/Unloading Method	Forward drive-in, forward drive-out, internal turntable



Speedy loading and unloading!

Pallet-less Type

Comb-type elevator design

Structure	Uses a comb-type transport system
Installation Location	Outside buildings (free-standing) Inside buildings (internal free-standing)
Storage Method	Comb
Capacity (per system)	Approx. 14 to 50 vehicles
Approx. Number of Vehicles	30
Average Unloading Wait Time	Approx. 1 minute 5 seconds
Loading/Unloading Method	Forward drive-in, forward drive-out, internal turntable



Vertical parking system that effectively utilizes land!

Rotary Type

Vertical circulation design

Structure	Vertical merry-go-round circulation method using cages (Maximum height approx. 31m)
Installation Location	Outside buildings (free-standing) Inside buildings (internal free-standing)
Storage Method	Pallet
Capacity (per system)	Approx. 12 to 40 vehicles
Approx. Number of Vehicles	30
Average Unloading Wait Time	Approx. 1 minute 35 seconds
Loading/Unloading Method	Forward drive-in, forward drive-out, internal turntable

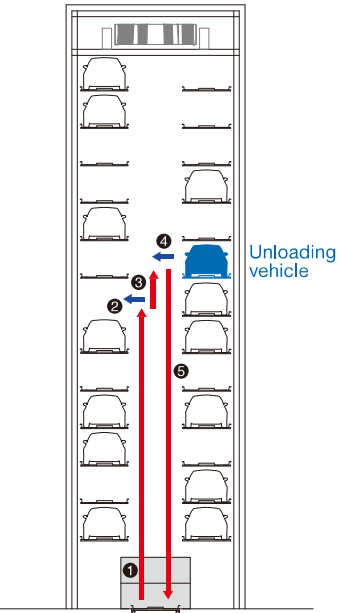
Tower Parking System (Pallet Type)

Elevator design

An efficient parking system with environmentally friendly design.



System mechanism
(Unloading vehicles)



- ①Lifting
- ②Horizontal pallet movement
- ③Lifting
- ④Horizontal pallet movement
- ⑤Lowering



Key Features

- **Energy saving** —————
Low power consumption.
- **Low noise, low vibration** —————
- **Fast operation time** —————
Speedy loading and unloading: Lifting speed up to 120m per minute.
- **Internal turntable** —————
Forward-in & Forward-out design. Not require to reverse during parking or retrieving vehicle.
- **Accommodate Large Size & High Roof vehicle** —————
Can handle popular high roofed and medium roofed cars.
- **Easy application** —————
Highly flexible design to cater for various layouts.

Variation

- Direct drive-in vertical tandem model (free standing)



Ultra-High Tower Parking System (Pallet Type)

Elevator design

These parking systems effectively use space in high-rise buildings, offering exceptional storage efficiency.



Key Features

- **Speedy loading and unloading even during high usage periods** —————
Lift speed of up to 180m per minute. Inter level standby system reduces vehicle waiting time times and increases customer satisfaction.
- **Optional: Flat pallet** —————
Barrier-free* and berthed* designs are also available for safe use by the elderly and people with physical disabilities.
*Disabile friendly design.
- **Internal turntable** —————
Forward-in & Forward-out design. No need to reverse during parking or retrieving vehicle.
- **Accommodate Large Size & High Roof vehicle** —————
Can handle popular high roofed and medium roofed cars.

Tower Parking System (Pallet-less Type)

Fork/ Comb elevator design

High-tech transport system design
takes operation speed to the next level.



Key Features

- **Speedy loading and unloading even during high usage periods** —————
Fastest Tower Parking system to date.
- **Low noise, low vibration** —————
First to introduce wire rope to Fork/ Comb system.
- **Internal turntable** —————
Forward-in & Forward-out design. No need to reverse during parking or retrieving vehicle.
- **Accommodate Large Size & High Roof vehicle** —
Can handle popular high roofed and medium roofed cars.

Variation

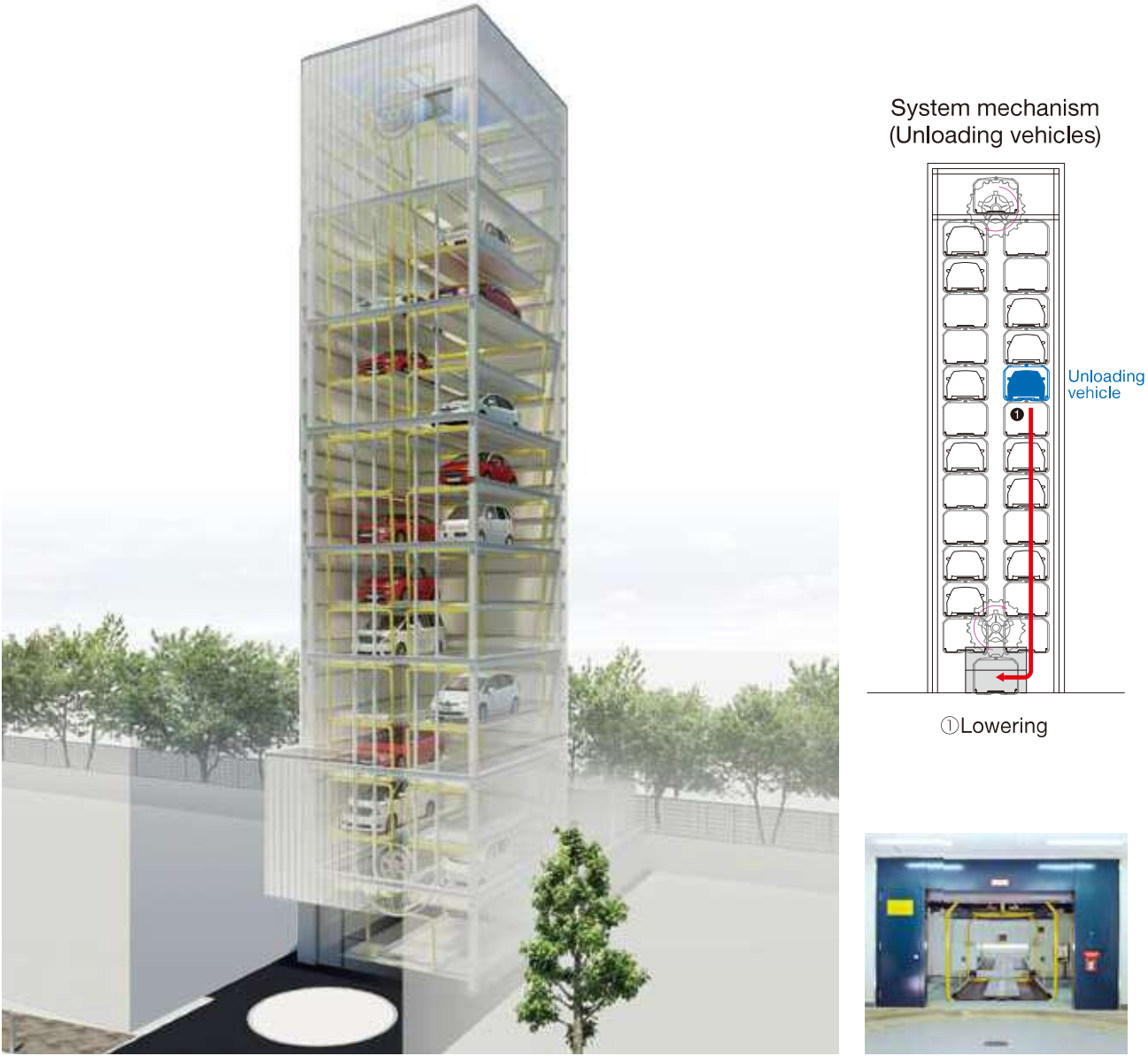
- Freestanding direct drive-in vertical tandem model



Tower Parking System (Rotary Type)

Vertical circulation design

High quality combining reliability with a proven track record.
Simple and direct mechanism with effective space utilization.



Key Features

- **Best space efficiency** —————
First model was constructed in Japan at 1962. Best solution for maximizing storage capacity.
- **Solid quality and reliability** —————
Matured design with proven track record.
- **Speedy continuous loading/ unloading** —
Continuous loading/unloading ability by applying the endless chain reduces waiting time.

Variation

- Freestanding internal turntable model

Super Square Parking System

Horizontal circulation design

The largest capacities and optimal layouts to use the functions and spaces available for buildings.
The most advanced horizontal mechanical car park system in Japan to date.



Shuttle Parking System

Flat reciprocating design

High efficiency and speedy loading/unloading
Perfect for large-scale parking structures.



Key Features

- **Underground horizontal design**
The most space and performance efficient underground mechanical parking system to date.
- **Smart routing computation**
Sophisticated computer algorithm determines the shortest route for the system to operate. Cutting edge mechatronic technology.
- **High capacity**
Highly adaptive design utilized various layout conditions.
- **Flat pallet**
Flat pallets are the standard specification for this system. Elegant and practical design.

Variations

- Internal turntable model
- Separate entrance and exit
- Mixed



Key Features

- **High space efficiency**
Underground space is used efficiently, making it possible to store the same amount of cars in 1/3 the space of conventional underground car parking system.
- **Speedy loading/unloading**
Capable to operate up to 300m per minute with simultaneous dolly and lift operation.
- **Accommodate Large Size & High Roof vehicle**
Can handle popular high roofed and medium roofed cars.
- **User-friendly and convenient**
This system uses user-friendly forward drive-in loading and drive-out unloading. It has spacious berths, allowing customers to feel at ease when loading and unloading vehicles. There is no need to drive around parking lots looking for parking spaces.

Variations

- Original/twin pallet
- Top drive-in design/bottom drive-in design

Ramp Parking System

Multi-level Steel Structure Parking

Smarter alternative for
Conventional Multi-level Concrete Parking structure.



Variations

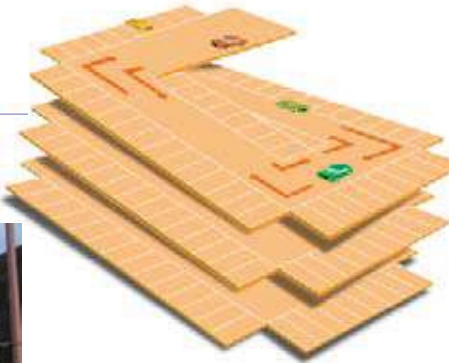
Flat

This design is well-suited for shopping centers or condominiums.



Continuous slope

In this design, the parking levels are slightly tilted. Virtually “no ramp” design with ultimate efficiency.



Skip

Split levels design with flat parking levels. Suitable for uneven terrain.



Key Features

Extensive track record

We delivered collectively more than 95,000 car bays Ramp Parking System. Each of the projects is designed specifically to optimize space based on the land shape and size.

Support for a wide range of uses

These parking systems can be used for a wide range of uses, such as time-metered parking, monthly parking, and parking for hospitals and commercial facilities.

Mechanical Multi-Storey Parking System

Multi-storey design

Easy to install machine that multiply storage capacity.



*Mechanical Multi-Storey Parking System Range are the product from IHI Fuso Engineering.

Key Features

* Specifications are current as of February 2016. Specifications are subject to change in response to certification standard changes, etc.

Wide range of variations

Extensive safety features

Equipped with various safety function, such as pallet drop prevention mechanisms and emergency stop buttons.

Plated finish

The frame is plated with molten zinc to prevent rusting and corrosion. Pallets are made from molten zinc plated steel plates and ZAM highly corrosion resistant molten zing steel plates*.

* "ZAM" is a registered trademark of Nisshin Steel Co., Ltd. "ZAM" is the product name of steel plates made with molten zinc (Zn), aluminum (Al), and magnesium (Mg) alloy, developed by Nisshin Steel Co., Ltd.

User friendly

Straight forward operation method enable easy hands-on even for first-time users. Touch panel display with on-screen step-by-step instruction.

Low noise

Inverter controller system enables silky smooth movement.

Variations

- Two-storey (hydraulic/chain)
- Three-storey (hydraulic/wire rope, chain)
- Four-storey (wire rope, chain)
- Five-storey (wire rope, chain)
- Six-storey (wire rope, chain)

Lexel Parking Systems

* Specifications are current as of February 2016. Specifications are subject to change in response to certification standard changes, etc.

Multilevel parking has become essential to providing parking spaces in limited spaces. We provide a wide lineup of multilevel parking systems to meet various customer needs.

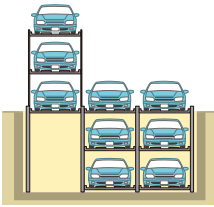
3 level hydraulic lift pit parking system (1 above-ground level, 2 underground levels)

Parkit
P3FC



Functions and Features

Front gate	Intrusion detection sensor	Low noise drop prevention device
Length Sensor	Touch-panel	Adjacent pallet interlock
Low noise hydraulic unit	Electronic lock key	Molten zinc plating
Accommodate High Roof Car	Tilted pallet walkway	



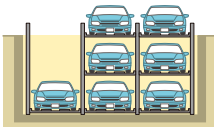
3 level horizontal lift pit parking system (1 above-ground level, 2 underground levels)

Lexel Puzzle T12B
T12B



Functions and Features

Front gate	Intrusion detection sensor	Low noise drop prevention device
Length Sensor	Low noise motor	Inverter control
Low noise rollers	Touch-panel	Electronic lock key
Molten zinc plating	Accommodate High Roof Car	



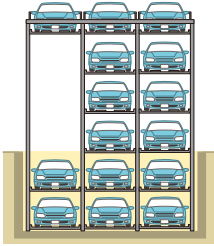
6 level horizontal lift pit parking system (4 above-ground levels, 2 underground levels)

Lexel Puzzle 42
LZ42



Functions and Features

Front gate	Intrusion detection sensor	Low noise drop prevention device
Length Sensor	Low noise motor	Inverter control
Low noise rollers	Touch-panel	Electronic lock key
Molten zinc plating	Accommodate High Roof Car	Tilted pallet walkway



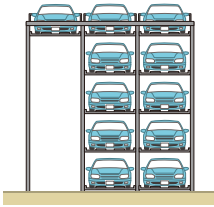
5 level horizontal lift above-ground parking system (5 above-ground levels)

Lexel Puzzle 50
LZ50



Functions and Features

Front gate	Intrusion detection sensor	Low noise drop prevention device
Length Sensor	Low noise motor	Inverter control
Low noise rollers	Touch-panel	Electronic lock key
Molten zinc plating	Accommodate High Roof Car	Tilted pallet walkway



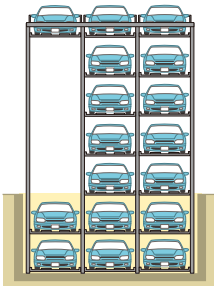
7 level horizontal lift pit parking system (5 above-ground levels, 2 underground levels)

Lexel Puzzle 52
LZ52



Functions and Features

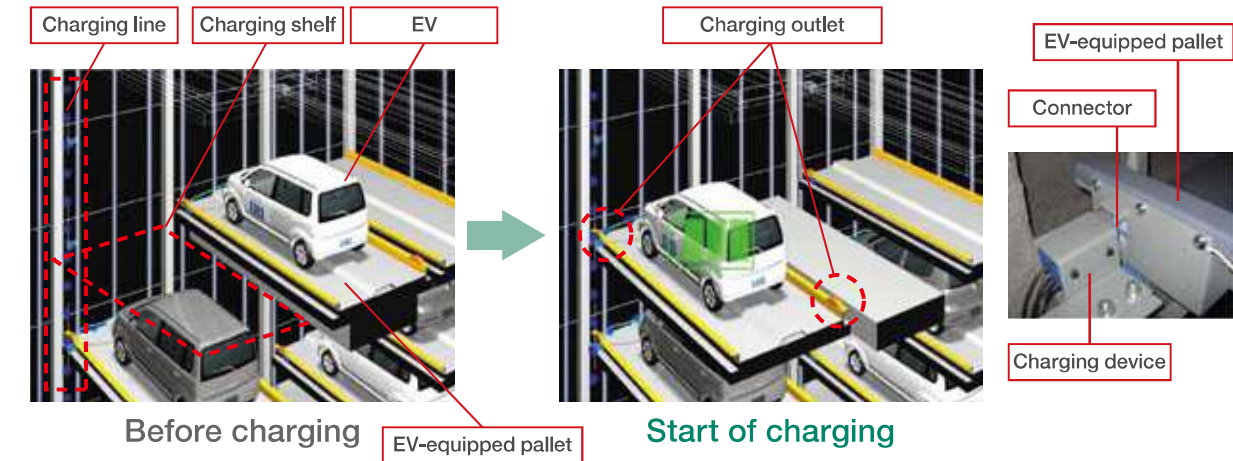
Front gate	Intrusion detection sensor	Low noise drop prevention device
Length Sensor	Low noise motor	Inverter control
Low noise rollers	Touch-panel	Electronic lock key
Molten zinc plating	Accommodate High Roof Car	Tilted pallet walkway



EV Charging System

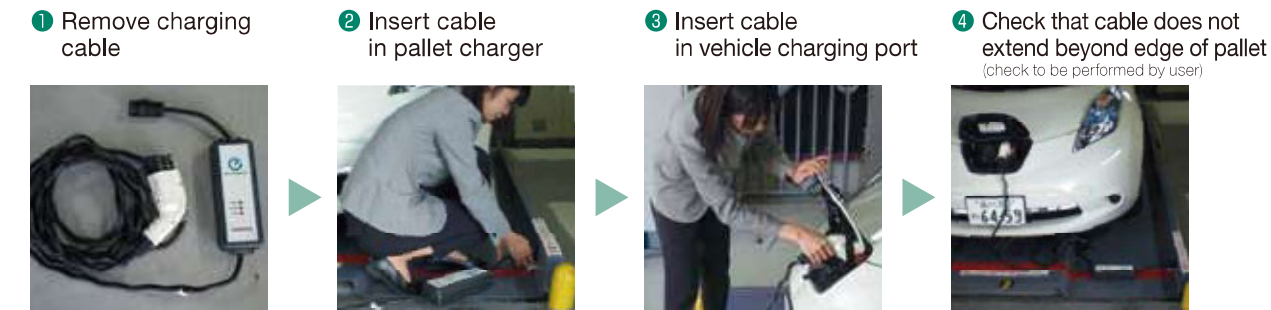
EV charging facilities can be installed in all parking systems, both new and existing systems, other than tower parking systems.(Rotary Type)

Power supply equipment can be installed in elevator parking without changing mechanical dimensions.

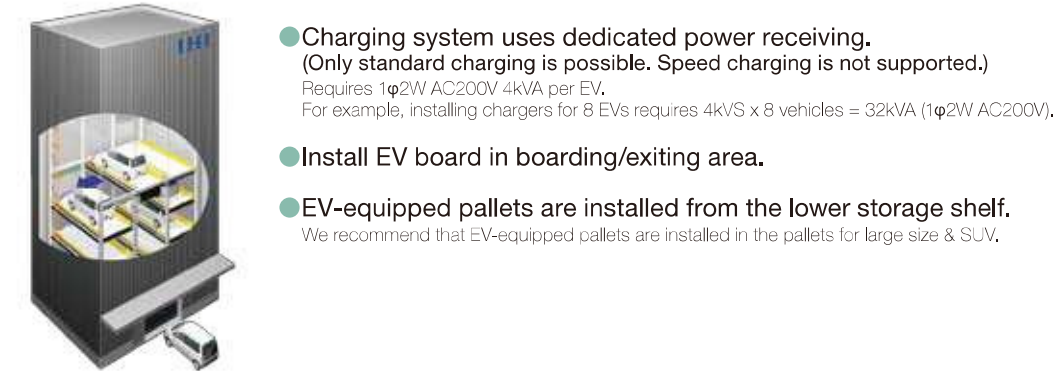


- EV-equipped pallets are stored on charging shelves, automatically charging EVs via charging lines.
- Supports 200V
- Requires one breaker per charging shelf (EV charger).
 - * Requires the installation of dedicated EV board.
 - * EV board sizes and the number of EV boards required vary depending on the number of charging shelves.
- Pallets have two charging outlets (on opposite corners) to charge a wide range of EVs and PHVs.
 - * Outlet shapes and positions are subject to change.

Mechanical parking facility – Procedure for charging after loading vehicle



Charging system overview

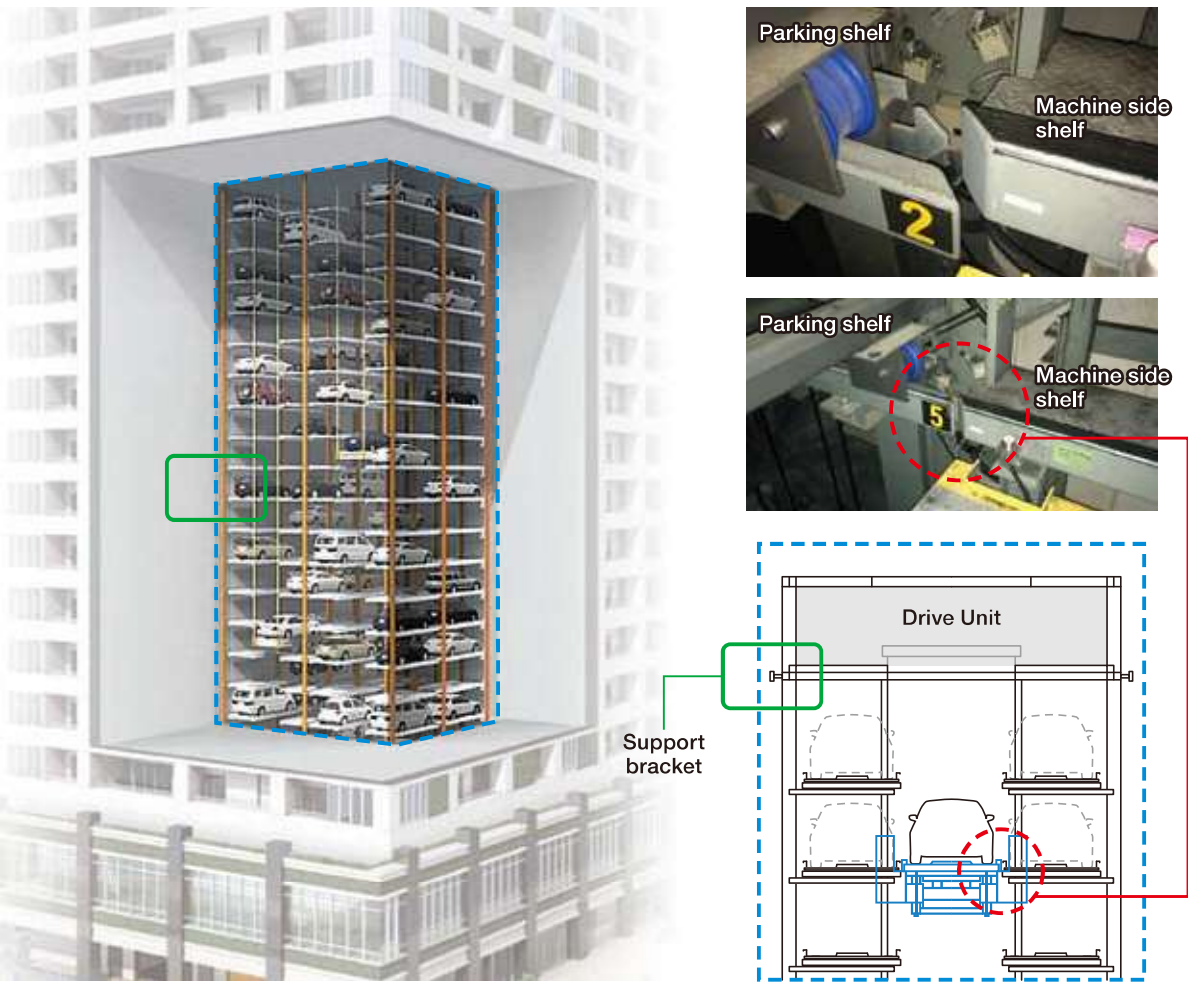


- Charging system uses dedicated power receiving.
(Only standard charging is possible. Speed charging is not supported.)
Requires 1φ2W AC200V 4kVA per EV.
For example, installing chargers for 8 EVs requires 4kVS x 8 vehicles = 32kVA (1φ2W AC200V).
- Install EV board in boarding/exiting area.
- EV-equipped pallets are installed from the lower storage shelf.
We recommend that EV-equipped pallets are installed in the pallets for large size & SUV.

Noise and Vibration Countermeasures

(standard design specifications)

IHI parking systems adapt various noise and vibration suppression countermeasures developed over decades of experience.



Chain → Wire Rope

(Old Design) (New Design)

Wire rope significantly reduces vibration and noise during lifting operation.

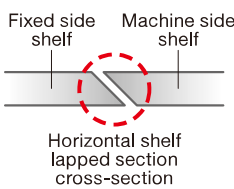
Pallet horizontal rollers

MC nylon is used in rollers to reduce noise and vibration during sliding operation.



Horizontal shelf lap design

Horizontal movement noise and vibration have been reduced by eliminating the height difference between horizontal rails between transport devices and parking shelves, lapping the edges of each by cutting them at 45 degree angles.



Smart Storing system

A computerized control system stores vehicles in the nearest empty position. Reducing mechanical operation time and also in the same time reducing noise and vibration.

Support bracket (contact type)

Rubber is used as a support brackets to reduce vibration transfer from machine to building.



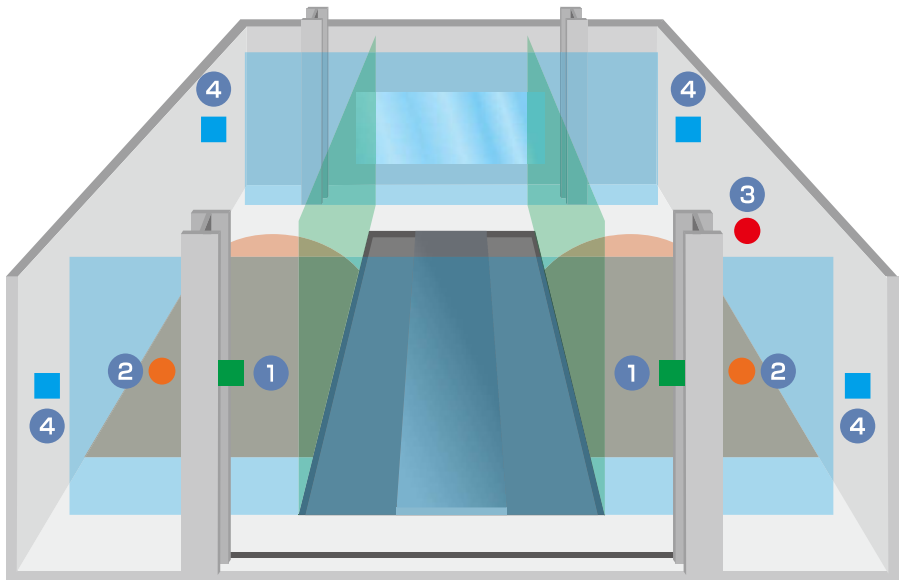
■ Noise absorption panels and noise absorption sheets are available as optional specifications for drive units.

Safety Features

It is our company policy to deliver products with uncompromising safety features. Our commitment to safety sets our company apart from our competitor.

Capable of withstanding 9.0 magnitude earthquakes

During the devastating East Japan Earthquake, not a single car was damaged in any IHI Parking Systems. The flawless record was made possible with safety devices such as pallet drop prevention system. We strive to maintain our standards and constantly improve our system through relentless R&D.



We offer a variety of safety and security functions

① Curtain sensor



Curtain sensors detect if any part of the vehicle extends outside of the specified area. If any protrusions are detected: alarm will notify the user and the parking system will be in “lock position” so that no one can operate the machine until the issue is rectified. This feature prevents any damage to the vehicle.

② Passive sensor



Infrared is used to check if there are any people in the parking space (people inside vehicles are not detected). The parking system cannot be operated until there are no more people in the parking space.

③ Earthquake detector (optional)



If earthquake occurs during mechanical parking operation, the detector determines whether if the parking system should ceased operation immediately. The detector is capable to determine the severity of the earthquake; making decisions to continue or stop operation.

④ Vehicle position and Vehicle oversize sensor



Photoelectric sensors are equipped in the parking system to perform 3D (three dimensional) detection. The sensors will determine whether if the vehicle is properly parked in the appropriate position. On top of that, the sensors will be able to determine if the vehicle parked is within acceptable size specification.

Applicable Exterior Cladding Design

Exterior cladding provide aesthetic enhancement to our parking system. Harmonizing parking machine with the surrounding area.



Parking Management and Vehicle Routing System

Parking Management and Vehicle Routing system ensures smooth operation.
User will be guided step-by-step, providing ease-of-mind experience.

Retrieving Operation panel (waiting room)

User can rest in the waiting room while waiting to retrieve their vehicles.



Guide signal

LED display guides user to their designated car parks.



Remote control

Parking system can be remotely operated when users in his/her vehicle. Synchronizing the machines makes parking convenient and comfortable.



Information display

Parking system operation information can be easily obtained by LED screen display. LED screen display information such as Bays numbers or safety information for users.



Parking Operation panel



Linkage with parking system enables users to operate parking system when entering the car park. In multiple entrance setting, smart control system will assign user to the appropriate entrance to facilitate efficient operation.

Pedestrian crossing light



These lights can be used to warn nearby pedestrians that vehicles are leaving the parking system.



Parking Management

Leveraging our extensive track record and expertise in mechanical car park system, we embarked our exploration into parking management business. Extending our value added service to our customer.

IHI operation management

Various types of car park

Mechanical parking system



Ramp parking system



Time Metered parking system



Management methods

Manned parking



Unmanned monthly reserved parking



Unmanned hourly parking



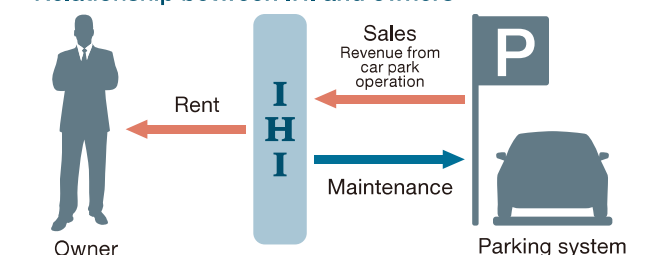
Our service package

- 1 Lease and operate (manned / unmanned)**
We lease the car park from the owner and operate the car park.
- 2 Lease and Operate (open air car park)**
We lease the open air car park from owner and operate the car park.
- 3 Operation and Management**
We operate and manage the car park for the owner.
- 4 Car park operation consultation**
We provide professional consultation.
- 5 New car park construction and consultation**
Comprehensive services which cover from planning, construction, maintenance, operation management and financing.

Operation Management + Maintenance service for Mechanical Parking system

We provide maintenance 24 hours a day, 365 days a year via our network of approximately 140 sites in Japan.

Relationship between IHI and owners



Please consult with us requiring any parking needs or issues.