

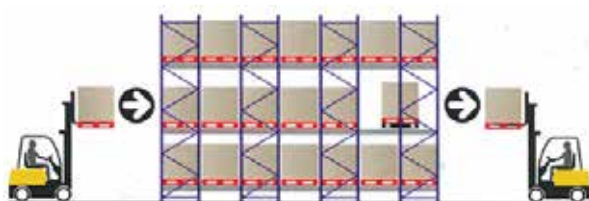
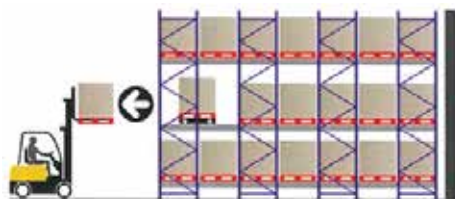
Shutter Racking



Shutter Racking is a new innovation of Semi-Auto Warehouse Management that can store up to 90% of the total area. With the usage of Shutter Car that can be controlled by the remote unit. This process of taking cargoes in and out from the rack can be speedy and accurately with the position control system.

Advantage of Using

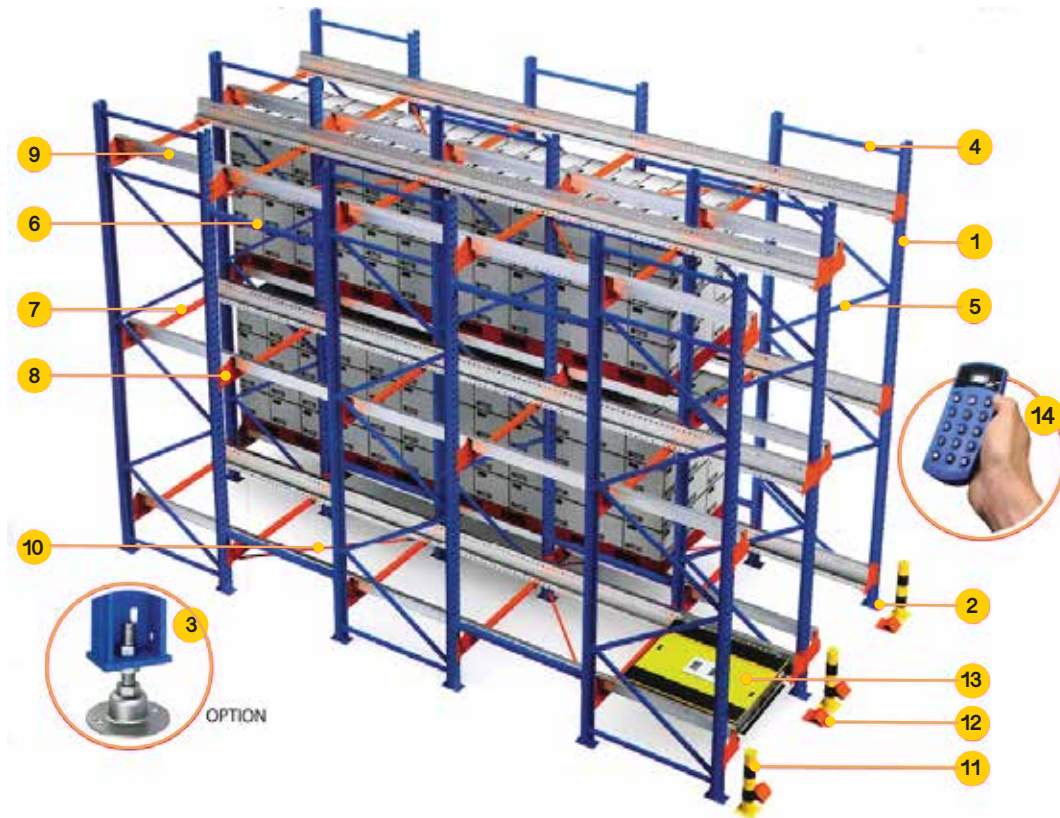
- Can store up to 90% of the storage space
- Can store with both First-in, First-out (FIFO) and Last-in, First-out (LIFO) system
- Can reduce craches between forklift and rack



High-Density Storage Comparision

	Drive-in	Push Back	Pallet Flow	Shutter Rack
Low Investment	✓			
High Floor Utilization	✓	✓	✓	✓
High Volumn Utilization	✓	✓	✓	✓
Skill Labor			✓	✓
Good at individual pallet access		✓	✓	✓
FIFO can be obtained			✓	✓
Good at handling mixed articles		✓		✓

✓ Best Option
 ✓ A Good Option



Racking Components

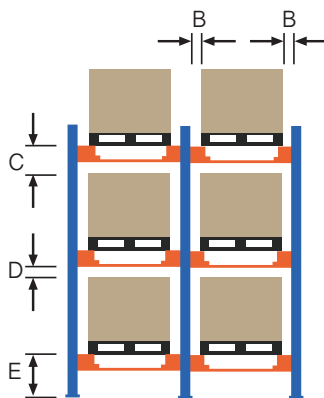
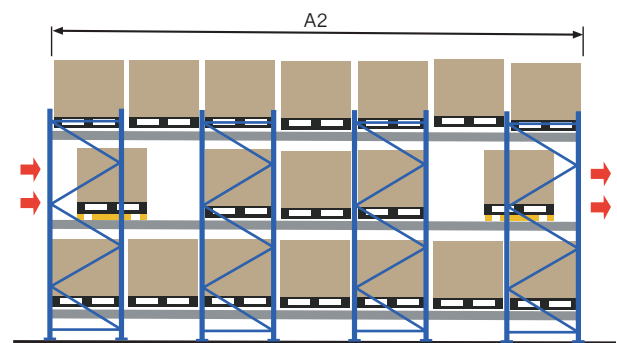
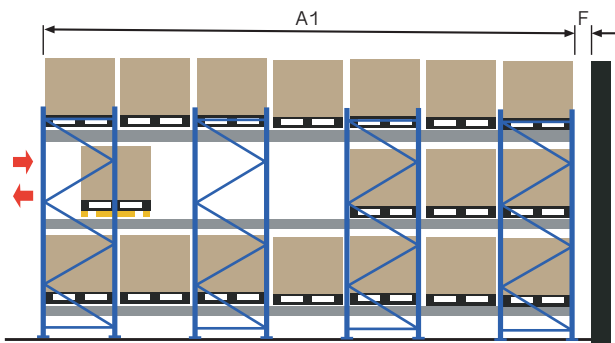
- 1 Column
- 2 Floor Plate
- 3 Adjustable Foot Stand
- 4 Horizontal Bracing
- 5 Diagonal Bracing
- 6 Row Spacer
- 7 Supported Beam
- 8 Rail Bracket
- 9 Rail
- 10 Lateral Bracing
- 11 Post Guard
- 12 Forklift Stopper Plate
- 13 Shutter Car
- 14 Remote Control



Able to modify the traditional Drive-in Rack to work with the Shutter Cars

Shutter Car Specification

Category	Value	Category	Value
Rated Load Capacity	≤ 1500kg	Battery Capacity	26V / 60A
Speed without Load	1.0 m/s	Battery Duration	≥ 8 hours
Speed with Full Load	0.8 m/s	Charge Time	≤ 7 hours
Battery Type	LiFePO4	Remote Distance	100m



Shutter Racking Parameters

Depth of LIFO

$$A1 = 300 + (n \times (\text{Pallet Depth} + 20)) \text{ mm}$$

Depth of FIFO

$$A2 = 300 + (\text{Pallet Depth} + 20) + 300$$

$$B = 75\text{mm (min clearance)}$$

$$C = 335\text{mm (min clearance)}$$

$$D = 60\text{mm (min clearance)}$$

$$E = 400\text{mm (lowest level)}$$

$$F \geq 150\text{mm}$$

