Dynamic Storage
Pallet storage Series

First In First Out (FIFO) Solution
Pallet Roller Flow Storage System ........................................ 02-20
Pallet Wheel Flow Storage System ........................................ 21-24

Last In First Out (LIFO) Solution
Roller Flow push back storage system .................................. 25-26
Wheel Flow Push Back Storage System .................................. 27-28
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Carton storage Series

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Universal Wheel Flow Rack Storage System ......................... 49-50

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**ROLLE PALL LANE**

1. Unloading Module (Standard)
2. Intermediate Module (Standard)
3. Loading Module (Standard)
4. Unloading Module (with triple tracks)
5. Loading Module (with triple tracks)

**Typical Comparison Between Traditional Rack and Pallet Flow Racking**

- Between 50% - 90% saving on storage capacity improvement of work time efficiency by reducing forklift transit time
- FIFO (First In – First Out) management
- Increased storage capacity
- Fast return of investment
- Increased operator safety due to separate loading and unloading bays

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Compared

Gravity Rack
**KEY SPARE PARTS**

**Gravity Roller**

- Using 1300 / 1800 Series of Damon standard roller range
- High loaded performance roller, Max. Load 150kg per roller
- Versatile, maintenance free
- Precision and semi precision bearing are used for: Durability
- Precision fit with dust proof seal
- Long life expectancy

**Brake Roller**

- Braking force automatically adjusted by loaded pallets
- Long life expectancy

**Gravity Roller Performance Comparison Table**

<table>
<thead>
<tr>
<th>Roller Load Capacity (mm)</th>
<th>700</th>
<th>1100</th>
<th>1200</th>
<th>1400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roller Capacity (kg)</td>
<td>60</td>
<td>50</td>
<td>150</td>
<td>120</td>
</tr>
<tr>
<td>75</td>
<td></td>
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**DBR-92**

- 100-1000kg Pallet Load Capacity
- Diameter 92mm
- External brake roller

**DBTB-89**

- Diameter 80mm
- Internal brake roller
- 300-1200kg Pallet Load Capacity
PALLET SEPARATOR

Mechanical Pallet Separator

Working Principle

Prior to Separation

Mechanical Separation Engaged

Capable of up to 12 tons of accumulated line pressure

Manual Released Separator

Working Principle

Prior to Separation

Mechanical Separation Engaged

Capable of up to 12 tons of accumulated line pressure
SUITABLE LOADING AND UNLOADING EQUIPMENT

Forklift Truck:
With or without tilt mast

Forklift Pallet Stacker:
With or without tilt mast

Fork Reach Truck:
With or without tilt mast

Pallet Jack

APPLICATION SUMMARY

Selected Application (Forklift In and Manual Picking)

(Stacker Crane + Stacker Crane)
Automatic Storage (loading unloading from one side to other side, middle picking in the first level)

(Stacker Crane + Stacker Crane + manual picking) Automatic Storage + Order picking (loading unloading from one side to other side, and Kanban picking system closed unloading area)
Confectionery

HOGAN Heyuan
Pallet size: 1200WX1200DX1750H
Loaded weight: 300-600kg/Pallet
Pallet Material: Plastic pallet with three runners on the base
Dimension: 21 depths, four layers, 44 lanes
Pallet Positions: 4400
  21 Deep, 4 Levels, 53 Lanes

value for customer
- Approximately 4000sqm storage space, stock over 4400 pallet positions, the storage capacity increase one time.
- Constant warehouse temperature of approximately 14 degrees, up to 50% saving on energy consumption.
- Door to Door design, forklift transit path reduced for safer working environment and up to 40% saving on forklift efficiency.
- Goods can be easily separated or identified without the need for automation or software.
- Easily and strictly implement First In-First Out manage

UHA Shanghai
Pallet Dimension: 1100WX1100DX1350H
Load Capacity: 500-800kg/Pallet
Pallet Material: Plastic pallet with three runners on the base
Number of Pallet Positions: 297
  9 Deep, 3 Levels, 11 Lanes

Recla Italy Project
( Partner: LOGISS)
Automotive Industry (Spare parts)

CUMMINS (Beijing Wuxi)

Antolin (Automotive interior manufacture)

- **Antolin**
  - Pallet size: 1200WX1200DX1750H
  - Loaded weight: 100-300kg/Pallet
  - Pallet Material: Wooden pallet with three runners on the base
  - Number of Pallet Positions: 640
  - 10 Deep, 1 Level, 64 Lanes
Sensus Precision
Die Casting

Tobacco Industry

Hubei EnShi
Pallet size: 1200WX1200DX1450H
Loaded weight: 500-800kg/Pallet
Pallet Material: Plastic pallet with three runners on the base
Number of Pallet Positions: 582
8, 9 & 12 Deep, 3 Levels, 15 Lanes

Pharmaceutical Industry

Shanghai Sino Pharm DC
Shanghai Sino Pharm DC-for pallet picking application
Pallet size: 1000WX1200DX1500H
Loaded weight: 800-1000kg/Pallet
Pallet Material: Plastic pallet with three runners on the base
Number of Pallet Positions: 1884
2 Deep, 2 Level, 471 Lanes
Furniture Industry

ChaoYa Furniture
Pallet size: 1200WX800DX2150H
Loaded weight: 200-300kg/Pallet
Pallet Material: Wooden pallet with three runners on the bottom side
Number of Pallet Positions: 1280
20 deep, 2 Levels, 32 Lanes

Clothing Industry

Meters-bonwe
Pallet size: 1000WX1200DX1175H
Loaded weight: 600-850kg/Pallet
Pallet Material: Wooden pallet with three runners on the bottom side
Number of Pallet Positions: 2364
2 & 3 Deep, 2 Levels.

Electronics Industry

AUO
Pallet size: 1200WX1200DX1350H
Loaded weight: 300-600kg/Pallet
Pallet material: Plastic pallet with three runners on the bottom side
Number of Pallet Positions: 2160
Dimension: 10 Deep, 2 Level, 108 Lanes

TSMC Shanghai
Pallet size: 1100WX1100DX1200H
Loaded weight: 1100-1350kg/Pallet
Pallet material: plastic pallet with three runners on the bottom side
Number of Pallet Positions: 266
7 Deep, 2 Levels, 19 Lanes
Shuanglu battery
Pallet size: 1200WX1200DX1750H
Loaded weight: 1000-1200kg/Pallet
Pallet material: Plastic pallet with three runners on the bottom side
Number of Pallet Positions: 360
10 Deep, 10 Levels, 12 Lanes

PALLET FLOW STORAGE SYSTEM
PALLET WHEEL TRACK SERIES
PALLET WHEEL FLOW TRI-TRACK

Simplifies Storage and Picking for Crossway Pallets

First in first out (FIFO) pallet storage solution
Suitable for Australian standard pallets, Euro Pallets & Four way Pallets
Increases storage efficiency & capacity
Increases workplace safety & reliability
Environmentally friendly & energy efficient
Fast return on investment (ROI)

PALLET WHEEL TRACK COMPONENTS

Aluminum Wheel
- Cast Aluminum
- High impact resistance
- Max loaded up to 120kg
- ø73mm
- Temperature -30~45°C

Polymer Wheel
- Polycarbonate wheel
- Maximum load up to 75kg
- ø73mm
- Temperature -30~45°C

Tandem BrakeWheel
- Two rubber lagged rollers are fitted above the brake roller which increases the contact between all roller surfaces
- Indirect mounting style prevents impact damage to the geared brake roller.
- Temperature -25~45°C
Application Drawings for Pallet Wheel Track

Solution for Euro Pallet (Crossway entry)

Solution for Australian Pallet (GKN, CHEP Pallet)

Optional solution for customized pallet

ROLLER FLOW PUSH BACK STORAGE SYSTEM
Damon has successfully developed a one-way brake roller. This roller will increase single track storage spaces of Push Back Storage System. The single track storage spaces could be increased up to 6 pallet positions (depending on the forklift's capacity).

- Damon’s one-way brake rollers can be applied to the Push Back track, providing minimal resistance while loading pallets. This will increase brake roller life expectancy. When picking goods, resistance of brake roller will be imposed on the pallet controlling the pallet travel speed, which provides a safer working environment.

- One-way brake rollers can also be applied in the FIFO Gravity track, which is maintenance-free.
To suit the demand of USA, Australia and Euro pallet crossway FILO system for the Australian market, Damon has launched the wheel Flow Push Back Storage System.

**Benefit**
- First-In, Last-Out (FILO) principle
- Gravity free flow system
- Provide a safer working environment
- Fast Return on Investment

**Tandem Brake**

Two rubber rollers increase the contact area and grip with the pallet. Indirect mounting style prevents impact damage to the geared brake roller.

**ROLLER & WHEEL FLOW PUSH BACK STORAGE SYSTEM**

For heavy-load storage rack, Damon has developed an effective solution for Roller & Wheel Flow Push back storage systems. This system will increase safety for storing and picking heavy-loaded pallets.

One-way brake roller combined with rollers and wheels system, will solve the problem of storage space for heavy-loaded pallets.

Rollers and wheels will also decrease the cost of heavy load storage.
PALLE\,CART\,PUSH\,BACK\,STORAGE\,SYSTEM

PRODUCT\,STRUCTURE

Up to 50-90% saving on storage space
Storage density Up to 5 pallets per lane
Maximum 1000kg per pallet position
Improvement of work time efficiency by reducing forklift transit time
Storage principle of Last in First Out (LIFO)
Maintenance free
Simple & safe design
Fast return of investment

Comparison with traditional racking system

Traditional heavy duty Racking
Damon Push Back system

50% Increased storage capacity
Guide rail

- Solid structural design
- Low friction guide wheels
- Each cart consists of four load bearing points
- The carts are identified by colours which are convenient for storage control

Cart
Operational Illustrations

Load the pallet on the top cart and push back

First pallet gets pushed back with second pallet in order to expose second cart for storage

When the front pallet unloaded the rear carts will gravitate automatically

Project Application

DingSheng Tianjin
CARTON FLOW
STORAGE SYSTEM

CARTON LIVE FLOW
TRACK SERIES

DAMON FLOW
TRACK R28E

- Frame: Steel, zinc-plated
- Wheel: ABS
- Load: 12.5kg/m
- Type No: R28E-L

DAMON FLOW
TRACK R28A

- Flow Track
  - Per wheel loading capacity 10kg
  - Temperature -25~45℃
  - The wheel pitch 33mm

- Special Applications:
  Aluminum or Press Metal Zinc Frame Fitted With Anti-Static Wheels (All anti-static wheels colored black)

- Wheel Diameter: 25mm

- Frame: Aluminium/Press Metal
- Wheel: ABS
- Load: 12.5kg/m
- Wheel pitch: A=30/45mm
- Part No.: R28-A-L
Back Beam
Side Member
Middle support beam
Flow Track

Beam
Upright
Picking Tray
Front Beam

Connecting Plates
Indirect Mounting (Connecting Plate)

Direct Mounting

Flow Track CLS bed

CLS Bed with picking Tray

CLS Bed with declined Picking Tray

TYPICAL CARTON LIVE STORAGE APPLICATION

Single Rack
Double Rack
TYPICAL CARTON LIVE STORAGE APPLICATION

Carton Live Storage with single gravity conveyor

Carton Live Storage with single driven conveyor

Carton Live Storage with one driven conveyor and two gravity conveyors

Carton Live Storage with one driven conveyor and one gravity conveyor

DAMON CARTON LIVE STORAGE BENEFITS

- Suitable for cardboard cartons, plastic totes, flat tray etc.
- Increases storage efficiency & capacity
- Increases workplace safety & reliability
- Environmentally friendly & energy efficient
- Fast return on investment (ROI)
- Easy to adapt to existing racking
PROJECT APPLICATION BY INDUSTRY

Tobacco Industry

Warehousing

Automotive Industry

Electronic Industry
CARTON FLOW STORAGE SYSTEM

CARTON ROLLER TRACK STORAGE SERIES

COMPONENTS & STRUCTURE

Aluminum Roller

Mild Steel Side Profile

DAMON Carton Live Storage Benefits

Advantage:
- Suitable for cardboard cartons, plastic totes, flat tray etc.
- Suitable for difference size products
- Increases storage efficiency & capacity
- Increases workplace safety & reliability
- Environmentally friendly & energy efficient
- Fast return on investment (ROI)
- Easy to adapt to existing racking
- Suitable to adapt into special manufactured support rack
PROJECT APPLICATION
BY INDUSTRY

Heavy Vehicle Manufacturing Industry

Manufacturing Production Lines
WAREHOUSING

UNIVERSAL WHEEL FLOW RACK STORAGE SYSTEM

Universal Wheel Flow Rack
Designed with full width mounting brackets, suitable for most support beams therefore it is an economical and ideal option for retrofitting in existing racking systems.
COMPONENTS & STRUCTURE

Roller Wheel
Diameter: 48.5mm
Material: Polycarbonate

Wheel support shaft – Mild steel zinc plated