



Developing PCB manufacturing automation solutions since 1990

ACCESSORIES CATALOGUE



AUTOMATION SYSTEM FOR PCB

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# Accessories for PCB Manufacturing Automation

TechnoSystem's accessory range is engineered for complete mechanical and functional compatibility with its automated handling systems.

Every component—whether a trolley, L-rack, slotted rack, box, or transport unit—is designed to ensure precise panel movement, minimize physical contact, and maintain consistent throughput across PCB production lines.

All accessories are dimensionally optimized for seamless integration with TechnoSystem automation. Depending on the type of PCB, material, or production line, boards can be stored or transported in L-racks, L-racks with slip sheets, slotted racks, or horizontal boxes. TechnoSystem offers solutions for every type of PCB line.

Each transport system is adaptable to various PCB sizes and weights, helping to reduce handling damage and improve process reliability.

## Jirafó Trolley

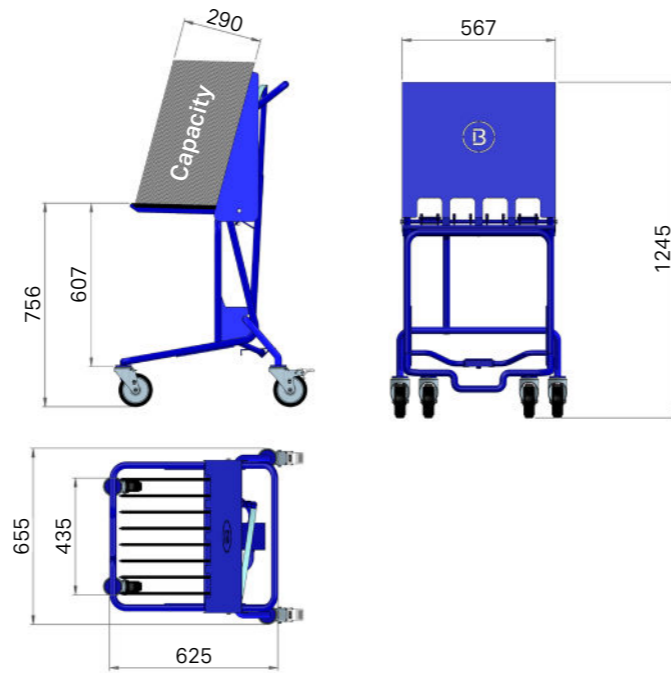
The JIRAFO Trolley is purpose-built to work in tandem with the JIRAFO Loader & Unloader system, ensuring smooth and efficient handling of PCBs stored in a semi-vertical position.

Its fixed-height design aligns perfectly with the JIRAFO's tilted conveyor, allowing panels to be transferred directly between machine and trolley without manual lifting or repositioning. This configuration significantly reduces operator intervention and minimizes the risk of panel damage during transport.

All JIRAFO Trolleys are standardized to match the loader's adjustable conveyor height, simplifying logistics and ensuring consistent performance across multiple lines. Durable and easy to maneuver, the JIRAFO Trolley is an essential accessory for any operation prioritizing safe, hands-free PCB handling.

**Product reference**  
0524640 TROLLEY  
JIRAFO

**Maximum Load Capacity**  
120kg



**Compatibility**  
JIRAFO Loader & Unloader



JIRAFO Loader & Unloader



## Millenium ECO L-RACK Trolley

The ECO L-RACK Trolley has been designed to be compact, highly durable, and economical, making it suitable for use across all PCB production areas.

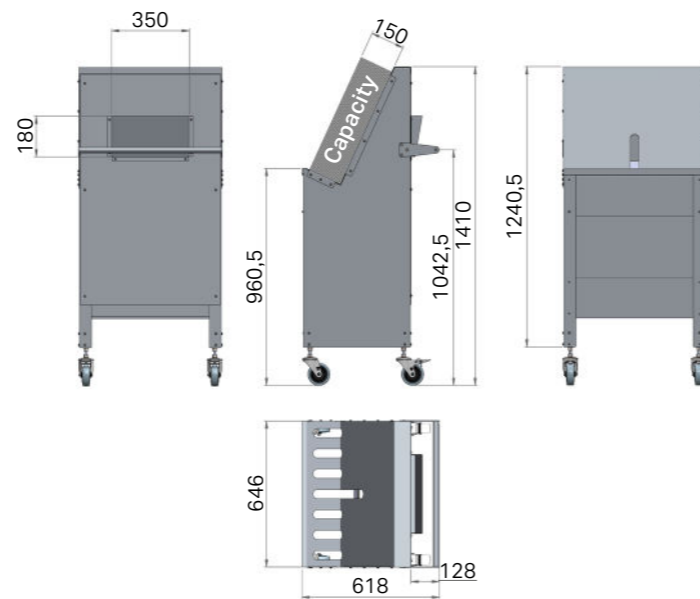
Equipped with height-adjustable wheels, it can easily adapt to the height of production lines for smooth integration. Constructed from stainless steel or painted chasis, the trolley is resistant to acidic and alkaline environments typically found in PCB plants.

For added convenience, it includes a guiding handle and a tray for storing PCB traceability documentation. The ECO L Rack Trolley is fully compatible exclusively with the Millenium ECO and ECO BOX systems.



**Product reference**  
0528788 LRACK TROLLEY FOR MILLENNIUM ECO & ECO BOX

**Maximum Load Capacity**  
200kg



**Compatibility**  
Millenium ECO  
Millenium ECO BOX



## Millenium ECO BOX Trolley

Specifically designed for use with the Millennium ECO BOX, ensures safe, efficient handling of panels throughout the automated production process.

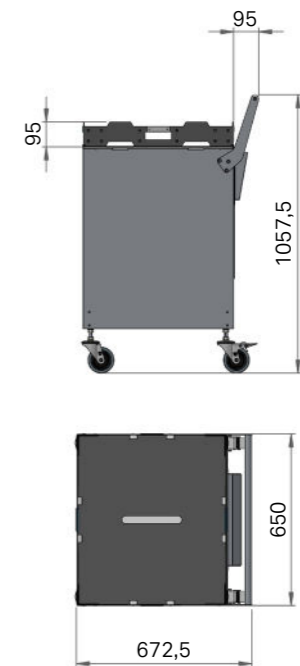
In addition, an ECO BOX Trolley version is available. This model is designed to hold a robust aluminum box, specially developed for transporting flexible circuits or very thin inner layers that cannot be placed in an L Rack.

It is made of stainless steel and is fully compatible with the Millenium ECO BOX.

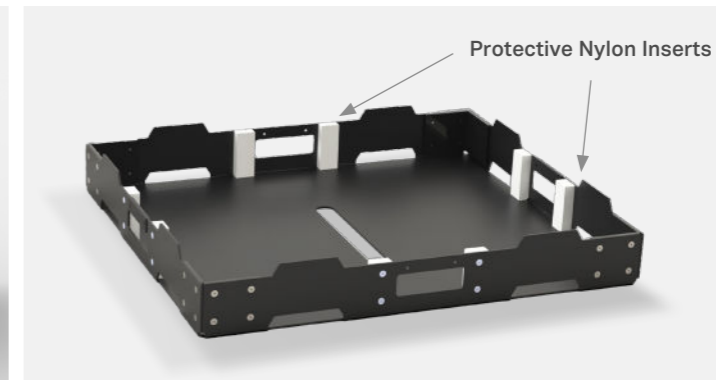


**Product reference**  
0528886 TROLLEY FOR MILLENNIUM ECO BOX

**Maximum Load Capacity**  
100kg



**Compatibility**  
Millenium ECO BOX



## V3 Side Exit and V4 Back Exit Trolleys

The V3 and V4 Trolleys are versatile and robust accessories designed to operate across Millennium and V3 LDI & AOI automation Series.

The trolleys can transport various accessories—such as L-RACKS, Slotted RACKS, and Horizontal Boxes—to fully adapt to your production line's needs.

Built to handle a wide range of panel sizes and thicknesses, this trolley supports high-speed robotic operations while ensuring secure, scratch-free transport and storage of PCBs.

Its smart design allows for smooth integration across lines, simplifying logistics and reducing the need for multiple trolley types.

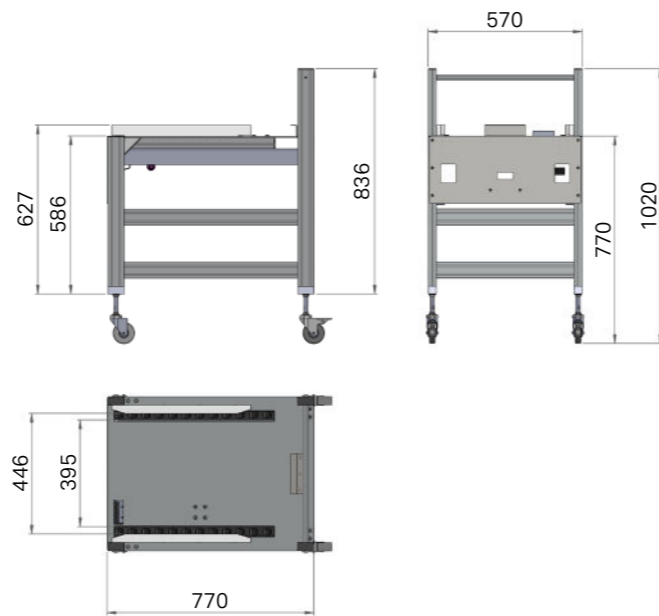
With its strong frame, stable mobility, and precision alignment, the V3 and V4 Trolleys are the go-to solution for maintaining throughput and reliability in PCB production environments.

### V3 Side Exit Trolley



**Product reference**  
0528682 TROLLEY FOR MILLENNIUM V3 LATERAL ACCESS

**Maximum Load Capacity**  
250kg



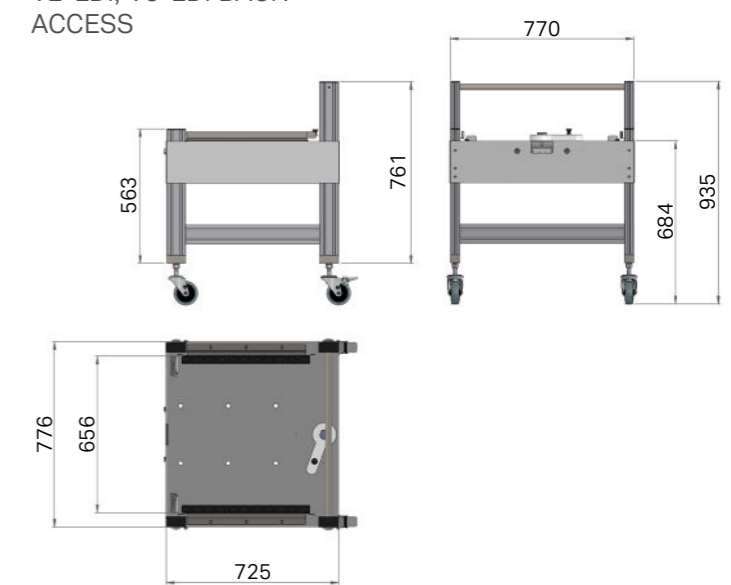
**Compatibility**  
Millennium V3 Series (Side Exit)

### V4 Back Exit Trolley



**Product reference**  
0530075 TROLLEY FOR MILLENNIUM V3, V4, V2-LDI, V3-LDI BACK ACCESS

**Maximum Load Capacity**  
500kg



**Compatibility**  
Millennium V3 Series (Back Exit) V3-LDI Series  
Millennium V4 Series V3-AOI Series  
V2-LDI Series V3-AOI DUO Series



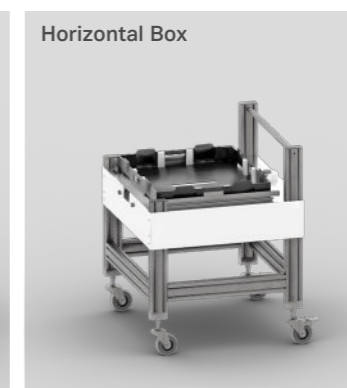
L-RACK

The trolley can handle L-RACKS adapted to your production lines.

The same trolley can handle L-RACKS, Slotted RACKS, and Boxes depending on your production needs.



L-RACK



Horizontal Box



Slotted RACK

## L-RACK 25°

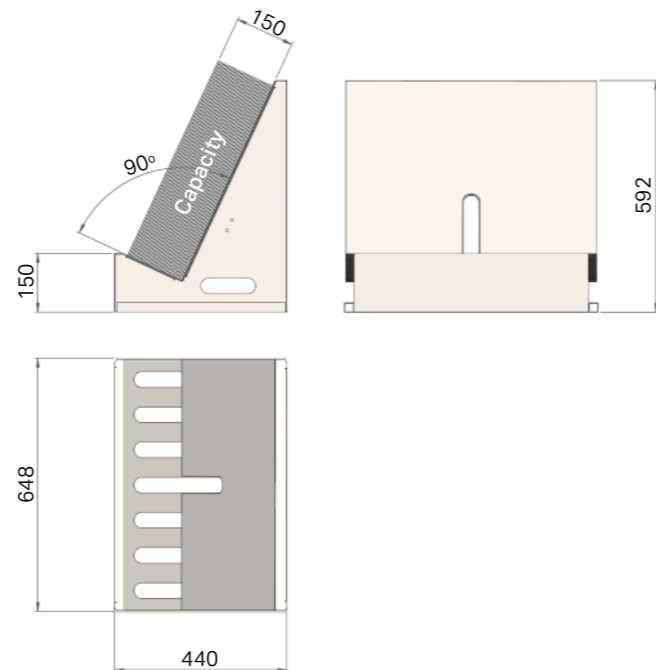
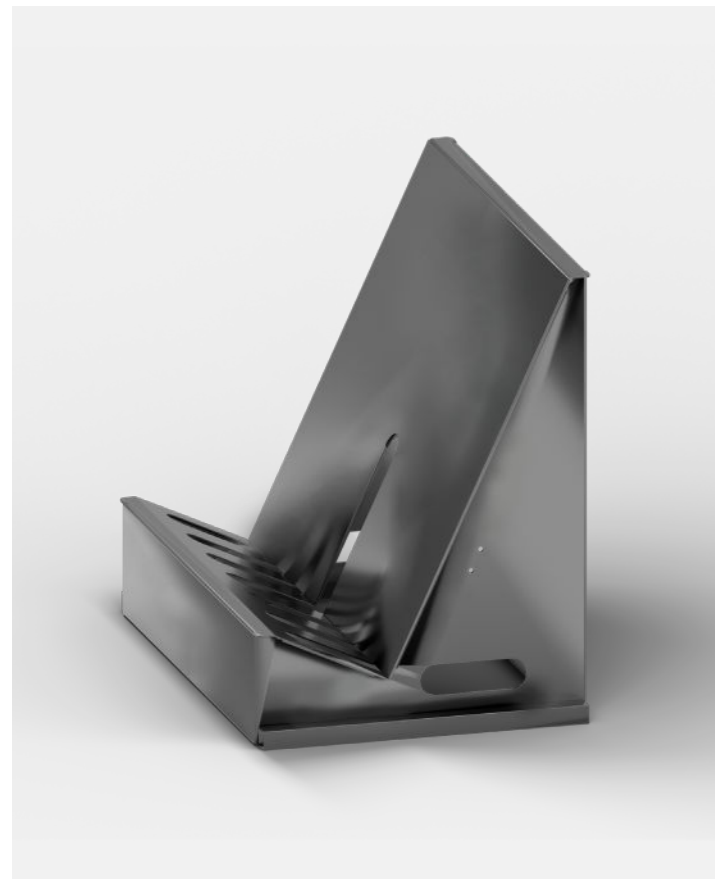
The L-RACK is a standard accessory across multiple TechnoSystem automation platforms, including Millennium V3, V4, V3 LDI & AOI systems.

It is designed for secure stacking of PCBs, ensuring safe handling throughout the loading, unloading, and buffering stages. Built for high stability and easy maneuverability, the L-RACK allows robotic arms to pick and place panels with precision.

Its open-frame design provides quick visual access to panel stacks and facilitates efficient job separation with optional plastic interleaves. Whether used in single- or dual-rack configurations, the L-RACK supports continuous operation, hot-swap functionality, and smooth integration with automated lines requiring consistent, high-speed performance.

### Product reference

0528632 L RACK STAINLESS STEEL 25°



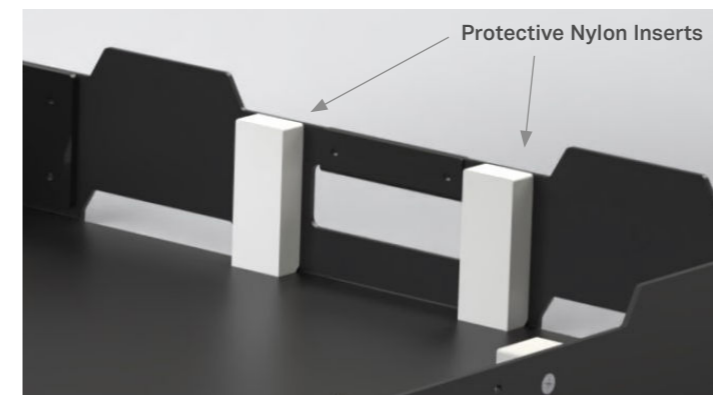
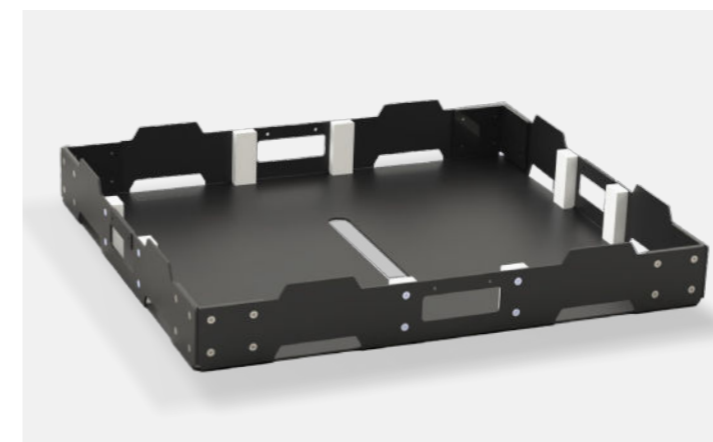
**Compatibility**  
 Millennium V3 Side and Back Exit  
 Millennium V4 Back Exit  
 V3-LDI Series  
 V3-AOI Series  
 V3-AOI DUO Series

## Horizontal BOX for 12"x18", 18"x24" and 21"x24"

The Horizontal Box is a high-capacity, stackable trolley accessory engineered to hold PCBs in a flat, horizontal position during automated loading and unloading cycles.

Its reinforced frame and smooth interior surfaces ensure stable panel support, preventing warping, misalignment, or scratching—especially critical for high-end or finished PCBs. The system automatically detects the box type, adjusting robotic operations without operator input.

Ideal for environments that demand uninterrupted, high-throughput production, the Horizontal Box is also fully compatible with hot-swap workflows, allowing quick changeovers with zero downtime.



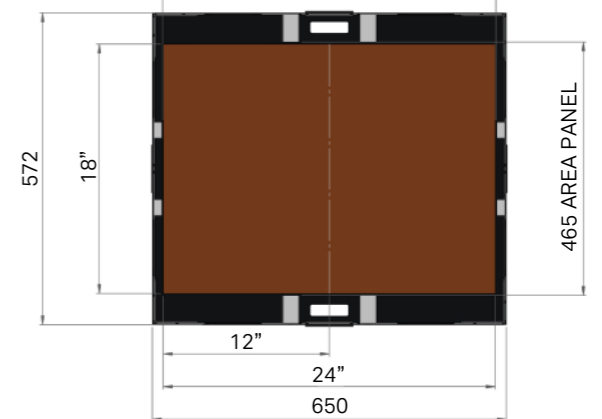
**Compatibility**  
 Millennium V4 Back Exit  
 Millennium ECO BOX  
 V3-LDI Series  
 V3-AOI Series  
 V3-AOI DUO Series

### Product reference

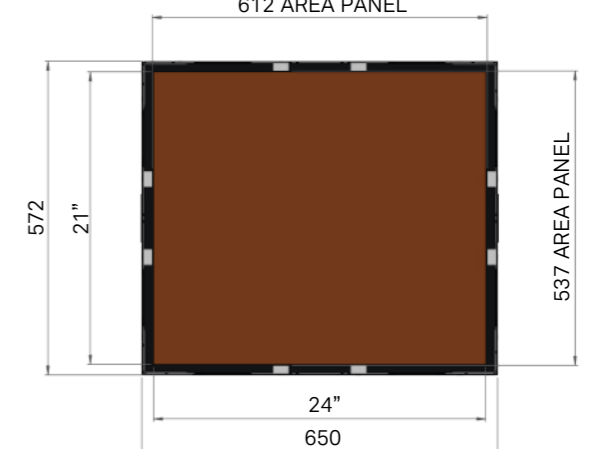
0528615 HORIZONTAL BOX FOR PANELS 18x24 or 12x18  
 0528662 HORIZONTAL BOX FOR PANELS 21x24



Horizontal BOX 18"x24"  
 612 AREA PANEL



Horizontal BOX 21"x24"  
 612 AREA PANEL



# Slotted RACK 25 & 50

The Slotted RACK is a precision accessory designed for safe, organized storage and transport of PCBs during automated handling.

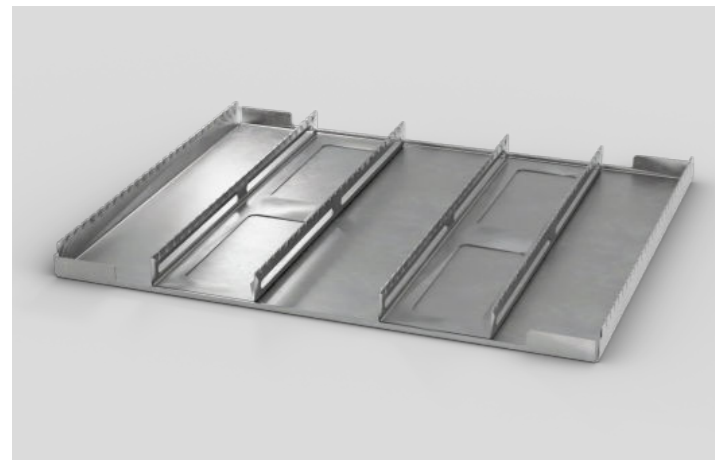
Available in 25-unit and 50-unit configurations, it is compatible with automation setups that require vertical or semi-vertical panel positioning.

Each slot holds a single panel securely, preventing surface contact and minimizing the risk of scratches or warping.

Used typically in Solder Mask Lines or in Out Layer Developing lines where panels don't contact to each other.

The racks are built with reinforced sidewalls and smooth guides to support different panel thickness.

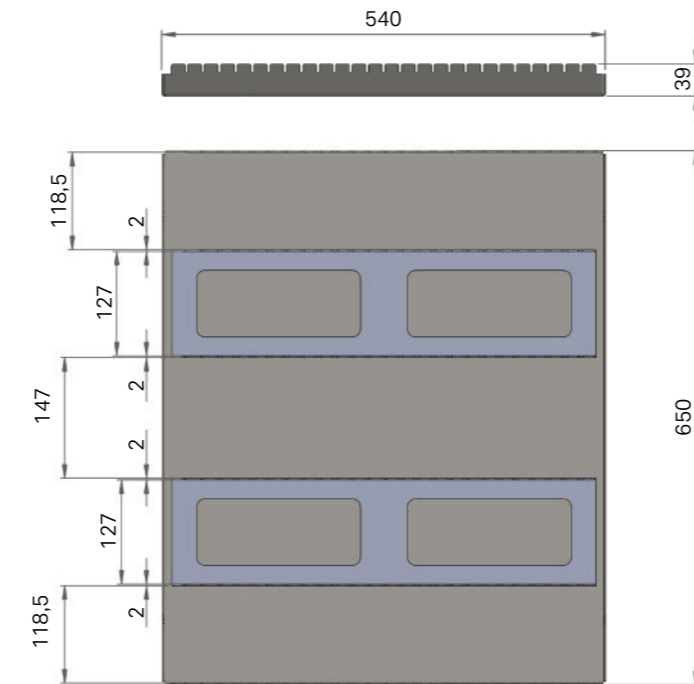
Easy to load and unload, and engineered for maximum stability, the Slotted Rack is ideal for workflows that demand both protection and speed when handling sensitive PCB materials.



### Product reference

- A527274 SLOTTED RACK 25 PANELS THICKENSS FROM 0,7 TO 1,0mm
- A533136 SLOTTED RACK 25 PANELS THICKENSS FROM 0,9 TO 1,5mm
- A531494 SLOTTED RACK 25 PANELS THICKENSS FROM 1,3 TO 2,0mm
- A132311 SLOTTED RACK 25 PANELS THICKENSS FROM 1,6 TO 2,4mm
- A533137 SLOTTED RACK 25 PANELS THICKENSS FROM 2,4 TO 3,2mm
- A526639 SLOTTED RACK 25 PANELS THICKENSS FROM 3,0 TO 4,0mm

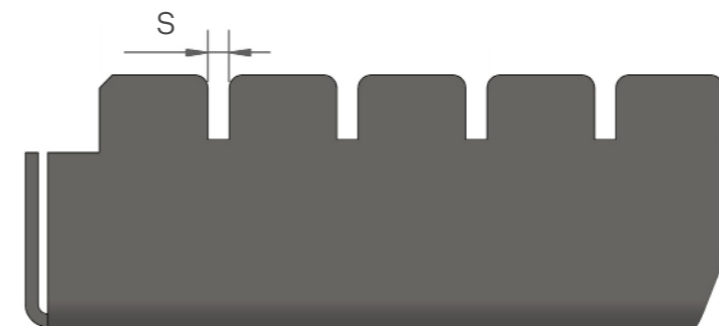
- A527275 SLOTTED RACK 50 PANELS THICKENSS FROM 0,7 TO 1,0mm
- A526645 SLOTTED RACK 50 PANELS THICKENSS FROM 0,9 TO 1,5mm
- A526646 SLOTTED RACK 50 PANELS THICKENSS FROM 1,3 TO 2,0mm
- A532527 SLOTTED RACK 50 PANELS THICKENSS FROM 1,6 TO 2,4mm
- A526648 SLOTTED RACK 50 PANELS THICKENSS FROM 2,4 TO 3,2mm
- A526649 SLOTTED RACK 50 PANELS THICKENSS FROM 3,0 TO 4,0mm



**Compatibility**  
Millennium V4  
V3 LDI

### Racks guides

Slotted Racks with 25 or 50 Slots.



Ref.	Slots	Panel Thickness	S Slot Size
A527274	25	0,7mm to 1,0mm	1,2mm
A533136	25	0,9mm to 1,5mm	1,7mm
A531494	25	1,3mm to 2,0mm	2,5mm
A132311	25	1,6mm to 2,4mm	3,3mm
A533137	25	2,4mm to 3,2mm	4,1mm
A526639	25	3,0mm to 4,0mm	4,9mm

A527275	50	0,7mm to 1,0mm	1,2mm
A526645	50	0,9mm to 1,5mm	1,7mm
A526646	50	1,3mm to 2,0mm	2,5mm
A532527	50	1,6mm to 2,4mm	3,3mm
A526648	50	2,4mm to 3,2mm	4,1mm
A526649	50	3,0mm to 4,0mm	4,9mm



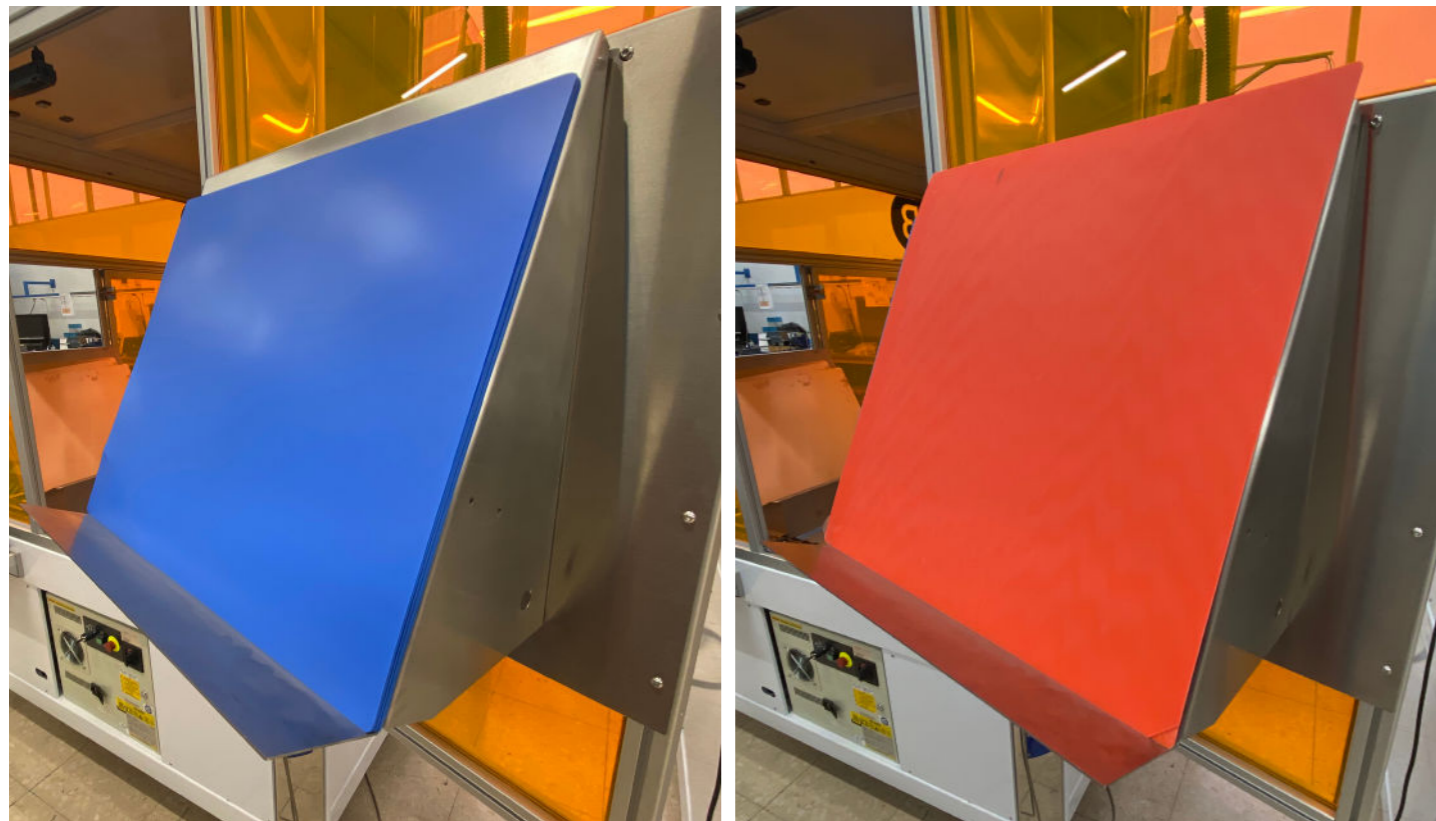
## Plastic Interleaves (Anti-Static & Standard)

Enhanced scratch protection for sensitive PCB surfaces during production, storage, and handling.

Available in both anti-static and standard versions, they come in various colors to support easy workflow identification and process control.

Plastic interleaves are placed between PCB panels during manufacturing to prevent scratches and surface damage—especially after copper etching on inner or outer layers.

These interleaves act as a protective barrier, preserving the integrity of copper designs throughout production, storage, and handling.



### Composition

90–93% polypropylene, with 7–10% combined additives including antistatic agents, impact modifiers, dyes, and plastic coating agents. Specific Density= 0.00091 g/mm<sup>3</sup>.

### Temperature Resistance

Formulated with heat-resistant additives, the material has a thermal deformation temperature of 110 °C and a melting point of 160 °C.

### Shelf Life

18 months under normal conditions. After this period, the antistatic agent degrades, and surface impedance will begin to increase.

### Anti-Static Plastic Interleaves

#### Product reference

TS-PLASTICSHEET-AS (COLOR 1,2,3...)

Impedance value is 10<sup>8-9</sup>, It needs to contact with air to gradually achieve the impedance value.

### Available Colors

Standard color in blue (COLOR 5), other colors available on request.



### Standard Plastic Interleaves

#### Product reference

ITS-PLASTICSHEET-AS (COLOR 1,2,3...)

Impedance value is 10<sup>13-15</sup>

### Sizes and Thickness

Our interleaves are available in 0.5 mm thickness, with standard sizes as follows:

- 610 × 610 mm (24 × 24")
- 610 × 533 mm (24 × 21")
- 610 × 460 mm (24 × 18")
- 460 × 305 mm (18 × 12")
- Custom sizes are available upon request, up to a maximum of 1500 × 1000 mm.

### Shapes

Available with rounded corners, ranging from R3 mm to R20 mm for safer handling and reduced edge wear.



HEADQUARTER

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