

THE
VERTICAL
LOADER / UNLOADER



The **Jirafo Loader / Unloader** is a high quality machine with a simple and sturdy design that meets all the requirements to handle boards as large as 730 x 760mm and thickness ranging from 0,1mm to 4mm. The Jirafo reduces handling costs, increases machine productivity and minimizes scrap, while reducing capital investment to a minimum. Our original concept of simple, low-cost, fixed height trolleys pushes the concept of automation beyond the loading / unloading operations. The flow of boards throughtout the plant, between processes, and the possibility of using the trolleys as stocking shelves adds a new dimension to the concept of automation in the PCB industry.

Our Range of Products



Jirafo Loader/Unloader



Standard Trolley



Erizo Loader/Unloader 60/100

Jirafo Millennium Dual Loader/Unloader with interleaving capability



Jirafo Millennium Loader/Unloader



Hipo Diverter



Pato Loader

MACHINE CHARACTERISTICS

- Boards are stacked in a semi-vertical position to minimize the risk of damaging the boards due to their own weight. This stacking position is appropriate for boards of thickness ranging between 0,10mm and 4,00mm (from inner-layers to finished multilayer boards).
- The transport of boards from one manufacturing process to the next is done effortlessly thanks to the use of trolleys. Consequently damage to boards due to manual handling is eliminated.
- The tilting conveyor on the Jirafos adapts to the height of the process line while the stack side of the Jirafos remains at a fixed height. This leads to simple, light and inexpensive trolleys that do not need to be adjusted when used in different Jirafos.
- Unused trolleys fit into each other and helps save precious plant space (10 trolleys can be stored in 1,7m² or 17 sqft).
- Loading of boards is done by means of 8 suction cups for the Jirafos and 12 for the Jirafos Heavy Duty. The upper suction cups are mounted on a spring loaded guiding making height adjustment very simple (see figure).
- The Jirafos Unloader handles circuit boards with great care to avoid scratching or damaging them, to the point that it can be placed at the exit of black-oxide lines, one of the most delicate unloading locations due to the ease with which the boards can be scratched.



Arms up to get a PCB board.



8 suction pads extended and vacuum is activated.



Retraction of the lower suction cups.



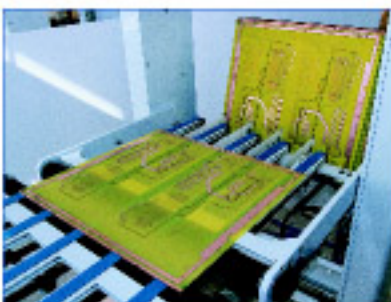
Retraction of the upper suction cups.



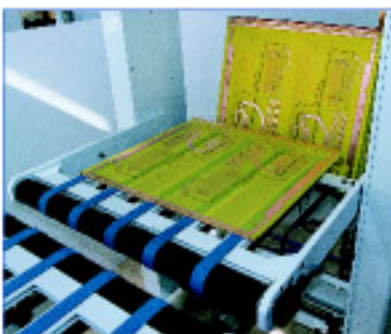
Arms down to place the PCB board on the conveyor.



PCB board exits the Jirafos conveyor.



PCB board entry.



PCB board ready to be unloaded.



PCB board unloading.

- The entire range of Jirafos can be interfaced with the process line they feed or unload. The Jirafo Loader can deliver boards upon request while a problem on the Jirafo Unloader can stop the process line to avoid piling up of boards.

- The Jirafo has a board counter that allows the operator to know at any time the amount of boards that have been loaded or unloaded.

- A three color signal tower informs the operator about the Jirafo's state: running, standing-by, intervention needed in brief, intervention needed immediately, etc.

- The Jirafo is designed and built to withstand the most adverse environment conditions found in PCB manufacturing plants, and at the same time can be placed in a clean room without the risk of contaminating the environment.

- The Jirafo can be controlled remotely by cable or by radio (up to a distance of 100m). Additionally the Jirafo can warn an operator by means of a beeper of its working status. All the remote control options can be installed by the customer after delivery.

The advantages of the remote control become relevant when, for example, an operator is working in a yellow room and the Jirafo is feeding boards from outside. There will be no need to leave and enter the room continuously.

- By means of a luminous signal the Jirafo warns the operator that it will soon run out of boards and a new loaded trolley is needed (loader) or the trolley will soon be full and a new empty one will be needed shortly (unloader).

- The Jirafo can load or unload boards at a rate of up to 16 per minute.

- Optionally the Jirafo can be equipped with the following items:
 - 300mm extended conveyor
 - 600mm extended conveyor
 - Centering device
 - De-centering or staggering device
 - Double-sheet detector

- The Jirafo has been designed to use up very little space. Only 1,3 meters (from tip of conveyor to end of trolley when fully loaded) of valuable plant space are needed.

- The Jirafo Buffer is an all-in-one Loader and Unloader. Used in combination with an Hipo (Diverter) from Techno System it works as a Lifo buffer stock that can be useful to control the flow of boards in lines with sections that run at different speeds or sections that occasionally stop.

A very simple setting for upper suction cups



Placing the PCB board on the trolley



Stacking the PCB board



Pushing device contraction



OPTIONS AND ACCESSORIES

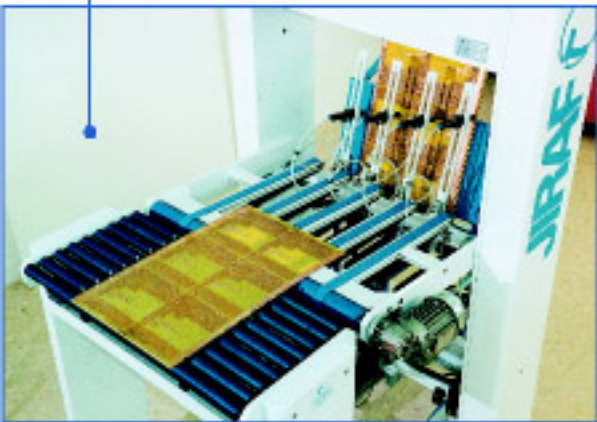


Remote Control as an option.

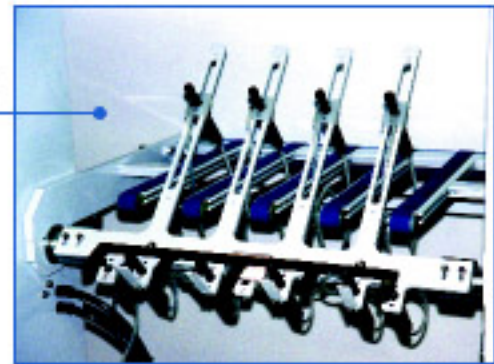
Arms for Jirafo Heavy Duty.



Centering Device and De-centering (Staggering) Device as an option.



Jirafo Buffer
(all-in-one Loader and Unloader).

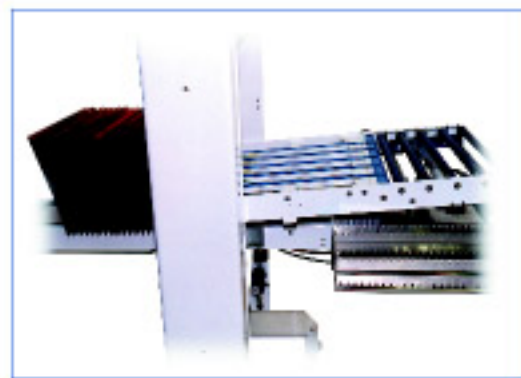


JIRAFO CASSETTE



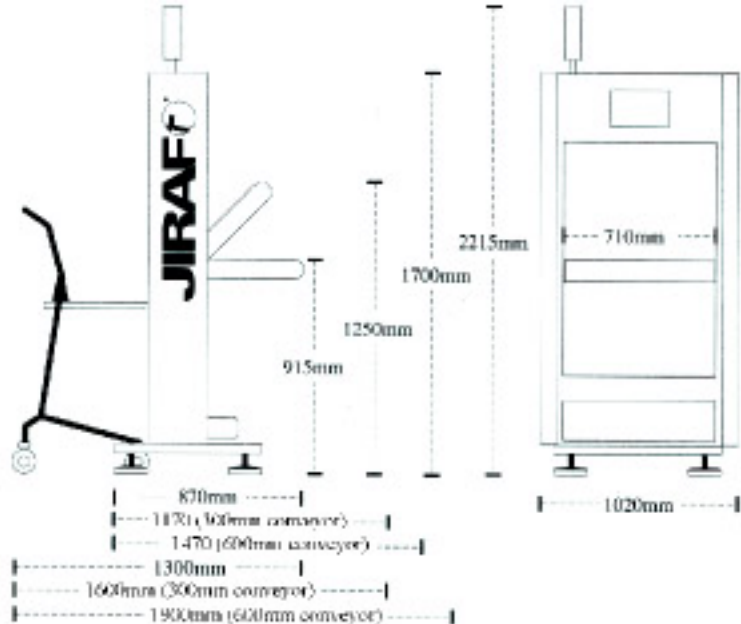
- The Jirafo can work with racks instead of trolleys. Known as the Jirafo Cassette, this machine can load or unload boards to and from a cassette tray. Used for rigid boards only, the panel surfaces do not touch each other during the process.

- A trolley is used to carry the cassette trays from one Jirafo to the next or to the stocking bay (see figures).





TROLLEY



JIRAFO
 Power Supply - 220 V, 50 Hz
 Consumption - 900 W
 Max. Board Width - 730 x 630
 Boards Thickness - 0.1 - 5mm

TROLLEY
 Pack of boards - 300mm
 Loading capacity - 120kg

JIRAFO



**TECHNO
 SYSTEM**

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