

# Promass Assembly Systems B.V.

- Boardhandling
- Final Assembly Systems
- Logistic Projects

[www.promass.nl](http://www.promass.nl)

## Promass:

- Was founded in 1989 as a project management and engineering bureau, mainly involved in logistic projects
- Took over the boardhandling productline from the Philips subsidiary NMA in 1997

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## In 2005

- Promass' core business is:
  - To assist customers with logistic project management
  - To design and manufacture customised Final Assembly Lines and conveyor systems
  - To manufacture high quality boardhandling products represented through an European agency network

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## Boardhandling

- Promass offers dedicated Configurations for :
  - Conventional Boardhandling modules
  - Coating Systems
  - Wavesoldering Assembly systems
  - Inspection systems
  - Marking Systems for Line Control & Traceability
  - Special Systems

The Promass boardhandling Productline exceeds 250 systems

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# Conventional Boardhandling



Destacker



Loader



Workstations



Lift Gate



FIFO

## Conventional Boardhandling

Coating Systems  
Wavesoldering systems  
Inspection systems  
Marking Systems  
Specials

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# Conventional Boardhandling



Auto Loader 2+2



Conveyor



Buffer 355



Telescopic Gate



Unloader

## Conventional Boardhandling

Coating Systems  
Wavesoldering systems  
Inspection systems  
Marking Systems  
Specials

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# Conventional Boardhandling



Chain Conveyor



Turn Unit



Split / Collect Unit

Unloader

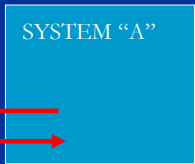


Unloader 355



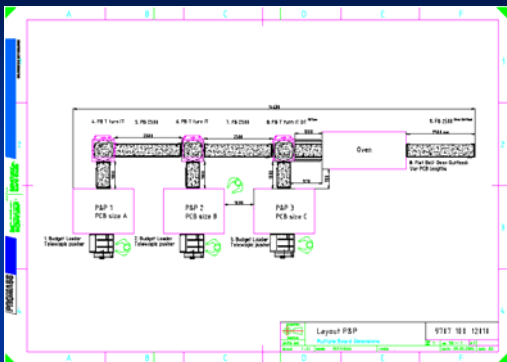
Loader Unloader Combination for batch processing

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- Conventional Boardhandling
- Coating Systems
- Wavesoldering systems
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- Marking Systems
- Specials

# Special P&P configuration



ESD Flat Belt Configuration  
 Transport 3 x P&P Products → 1 Oven  
**NO WIDTH ADJUSTMENT NECESSARY !!**



- Conventional Boardhandling
- Coating Systems
- Wavesoldering systems
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# Coating Systems



Bi Directional Flip Over for Carriers or PCB's

Coating Outfeed with UV inspection



Conventional Boardhandling  
**Coating Systems**  
Wavesoldering systems  
Inspection systems  
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Specials

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# Coating Systems



Coating Outfeed heating conveyor

4 kW heating element  
Forced air (at selective points)  
Temperature analogue controllable  
OMRON PLC controlled  
PID controller inside

Conventional Boardhandling  
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# Coating Systems



Coating Loop System



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Coating inspection conveyor



- Conventional Boardhandling
- Coating Systems**
- Wavesoldering systems
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# Wavesoldering Systems



Basic Wavesolder Loop

Carrier Return System

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PCB Assembly Line



- Conventional Boardhandling
- Coating Systems
- Wavesoldering systems**
- Inspection systems
- Marking Systems

# Wavesoldering Systems



- Automatic width adjustment of the complete line.
- Coded Carrier Transport System
- Cooling fans on Outfeed Section

Conventional Boardhandling  
Coating Systems  
**Wavesoldering systems**  
Inspection systems  
Marking Systems

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# Wavesoldering Systems



Manual  
Insertable  
Codeblock

Infeed  
Speedcontrol



- Carrier coding with codeblocks.
- Extra wide Belts
- Release buttons
- Infeed guiding noses

Conventional Boardhandling  
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Marking Systems

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# Wavesoldering Systems



- Automatic Width Adjustable Pneumatic Elevator
- Several Carriersizes
- Finished with sheetmetal covers

Conventional Boardhandling  
Coating Systems  
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Inspection systems  
Marking Systems

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# Wavesoldering Systems



Code readers for  
For 6 Work Stations

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Coating Systems  
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Marking Systems

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# Wavesoldering Systems



Wavesolder Outfeed



Wavesolder Infeed Elevator  
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Carousel Wavesolder Outfeed

Wavesolder Outfeed



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# Wavesoldering Systems



Complete Line is width adjustable !!!

## Assembly Stations (2 Conveyor Layers):

- Carrier to Wavesolder layer
- Empty carrier back to start layer

Wavesoldering systems

# Wavesoldering Systems



**Wavesolder Infeed:**  
From ergonomic level to  
infeed level



**Triple layered conveyor:**  
- Soldered PCB on Top track  
- Empty carrier back to start  
- Return conveyor

Product is separated  
from the carrier  
manually

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Wavesoldering systems

# Wavesoldering Systems



**Forced Air cooled Wavesolder Outfeed, incl  
Factory exhaust connection  
Programmable Cooling time**

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**Auto Carrier opener after  
cooling system**

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# Inspection Systems



PCB ID



Good Bad 2 Way Unloader

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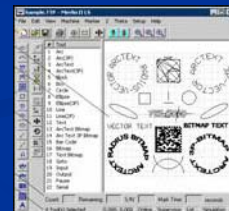
Double layered Conveyor

Good Bad Separation by elevating section

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# Marking Systems



Lasermarking systems are often very specific in their function.

Promass is able to produce the ideal fit for customer system.

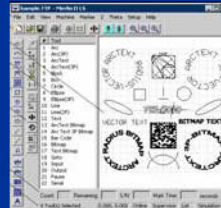
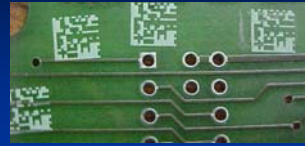
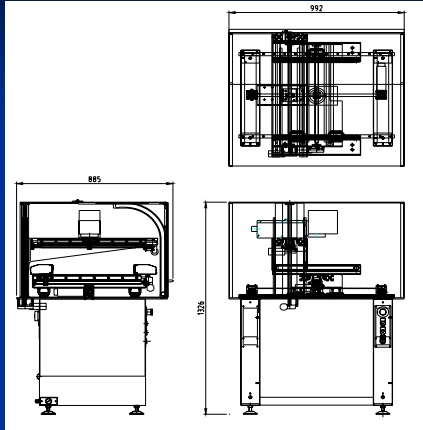
CO<sub>2</sub> and Nd:YAG Lasermarking

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# Marking Systems



**X-Y-Z Lasermarking Conveyor**  
**Integration with PCB Conveyor**  
**Suitable for any type of laserhead**  
**Auto Width Adjustment**

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# Marking Systems



**Pick and Place Labeler**

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- Industrial Printer integrated
- Pick and placement of label (Min7x7)
- Thermotransfer marking (300 Dpi)
- X-Y track for label positioning
- Bareboard positioned on ESD flat belt
- Machine can be used in both offline as in inline.

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# Marking Systems



## Hot Foil Marking System

- Programmable Marks are pre printed on foil
- Thermotransfer marking
- Mark thickness <math><0.05\text{ mm}</math>
- Several marking colours possible (images, barcodes, text)
- Bareboard destacker mounted on infeed-track
- Bareboard positioned on ESD flat belt
- The labelled PCB is stacked at the outfeed track.
- Machine can be used in both offline as in inline situation



Conventional Boardhandling  
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# Specials



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**Specials**

# Final Assembly Systems

Promass Final Assembly Systems is divided in:

- Final Assembly Systems for products 0 to 5 Kg
  - Promass 5 Assembly Systems

Final Assembly Systems for products up to 50 Kg

- Promass 50 Assembly Systems

- Final Assembly Systems for products over 100 Kg
  - Promass 100 Assembly Systems

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## Promass 5 Assembly Systems

- Segmented micro chain conveyor on uppertrack
- Promass 5 accumulating chain on returntrack
- Pallet based System
- Encoded pallet System  
(pallets always return to same operator)
- Soldering process at line end
- Input Carrier Guidings
- Carrier input request by push buttons
- Workingtables incl toolshelves etcetera optional



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# Promass 50 Assembly Systems

- Carousel Pallet based system
- Promass 50 accumulating chais
- Pallet based System
- Toolshelves etcetera optional

➤ Integration of processes possible:



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# Promass 50 Assembly Systems



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# Promass 100 Assembly Systems



- Pallet based segmented Assembly Line
- Accumulating chain Return track

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# Promass 100 Assembly Systems



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# Promass 100 Assembly Systems



- Reject side Tracks
- Burn in Area
- In line powered segments

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# Promass 100 Assembly Systems



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# Promass 100 Assembly Systems



➤ Promass provides the design, the line's segments, the custom made pallets, the elevators, the rollertracks to warehouse, the manipulators, the in line power system, the engineering, the software and on site modular assembly

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# Promass 100 Assembly Systems



➤ Secured Protected Soak Area

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# Promass 100 Assembly Systems



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# Promass Conveyor Systems



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# Promass Conveyor Systems



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## References Europe

- GE Procond (Italy)
- SEW Eurodrive (Bruchsal)  
Jungheinrich A.G.(Hamburg)  
RWE Schott Solar (Alzenau)  
Türck (Beierfeld)  
Toshiba, (Plymouth,UK)  
International Rectifier (UK)  
Baxall(UK)  
Philips Oss(NL)  
Remco(Spain)  
Celestica(Spain)  
Fagor(Spain)
- Remco(Spain)

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