

The right system that fits your logistics

Comau, world leader in the design of advanced automation solutions, brings its innovative vision, propensity towards easy to use technologies, and ability to create reliable solutions to the development of this new product.

The goal is to improve manufacturing workplace scenarios using collaborative technologies, capable of enhancing the social and environmental sustainability of the factory of the future, through **human-machine collaboration** or **flexible and efficient production and logistics**.

To satisfy the industry's current and evolving needs, Comau has developed an intelligent module able to manage and optimize the flow of materials in a lean and WCM compliant way, from kitting management to direct line feeds.

M.I.O. is Comau's solution for responsive, scalable, efficient and increasingly ergonomic logistics needs.

Logistic flow WCM compliant M.I.O. is ergonomically designed to deliver Buffer area Warehouse/ Intralogistic parts into the golden Preparation area zone with the right angle for the best visual reach Developed together with leading logistics experts Line feeding

Why M.I.O.?

In a logistics environment experiencing a fast evolution aimed at complete integration of production processes, Comau's M.I.O. system is a tailored solution able to face high variable demand and sequenced part numbers.

Thanks to its features, M.I.O. is able to present the right container to the worker at the right time while following the instructions given by a central system manager or directly by the line operator.

The system is ready to work either in a stand-alone configuration or fully integrated in a manual assembly station, reaching the ideal optimization for each customer's application need.



APPLICATIONS

- Manual assembly lines
- From low to medium production volumes
- Highly customized products assembly
- Prototyping lines
- Back-up and repairing stations
- Intermediate buffer

INDUSTRIAL SECTORS

- Automotive and truck
- E- Mobility
- · Logistics and warehousing
- General industry
- Aerospace
- White goods

M.I.O. System Components





The automatic rotation system to position the shelves is powered by a motor located inside M.I.O. automatically connected (plug and play) to the frame.

Sequence Options

Automatic



- Shelf positioning by PLC or centralized system
- Manual mode available in case of back-up or set-up

Manual



 Shelf positioning on operator demand (touch panel)



Mode Identification

Based on LED Color



• M.I.O. ready Machine state OK The operator can act on M.I.O. when a green LED is on.



Emergency stop

Shelf backloading

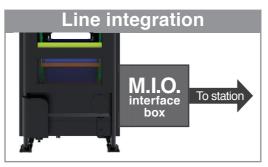
Back loading or anomalies are identified with a red light and the front access of M.I.O. is not permitted

Controls Architecture



M.I.O. system with control unit

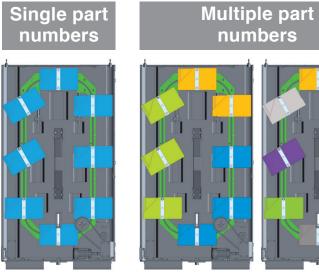
- Fully integrated M.I.O. management
- Ready for installation



M.I.O. interface box

- No functional duplication
- Integration harmonized with the line PLC
- Controls optimization

Multipurpose Concept



- Dynamic feeder
- Just-in-time sequencing
- Different variants sequencing according to production mix
- No double handling
- Direct KIT management

M.I.O. is a very flexible container able to be filled in different ways. Shelf can be tracked by using barcode or magnetic tags.

Parts Loading Methods



- Stationary M.I.O.Low automation level
- Back manual sideline feeding

- Manual sideline feeding with electric transpallet or forklift
- Medium automation level
- Refill in logistics area
- Easy to buffer

Benefits		
		High vertical space usage
+25%		
Higher volume exploitation respect to traditional gravity feeding systems		Low horizontal footprint
gravity localing bysterilo	- and the second second	Ergonomic line feeding
-60%		Fast re-balancing and re-layout
Sideline lower footprint respect to traditional gravity feeding systems		Extreme flexibility for types and volumes
Up to -80%		Real time re-sequencing
Supermarket area reduction	 	Plug-in system
-30%	and the second	Easy programming
Intralogistics cost reduction	· · · · · · · · · · · · · · · · · · ·	
050/	Construction of the second sec	Logistics WCM score improvement
-25%	144.	In line kitting (double bandling elimination)
Non value added activities reduction	^{the} state of the	In line kitting (double handling elimination)

* Percentages are calculated upon several case studies related to automotive (final assembly, eV, PWT assembly) and logistic sectors and could vary depending on the actual application

Features

- Brick Dimensions: L1200 x W800 x H2000 mm
- Bay Dimensions: L1300 x W945 x H200 mm
- Stock Positions: 8
- Weight (Empty): 300 kg
- Max Dimensions KLT Boxes: L400 x W600 x H147 mm
- Max Payload per Shelf: 20 kg (box included)

- Rotation Time: 7 sec (1 step)
- · Controls: PLC embedded in the solution
- · Actuator: AC 400V motor
- Vision System: encoder + data matrix reader to identify shelves
- Optical barrier for safety

