M.H. Material Handling

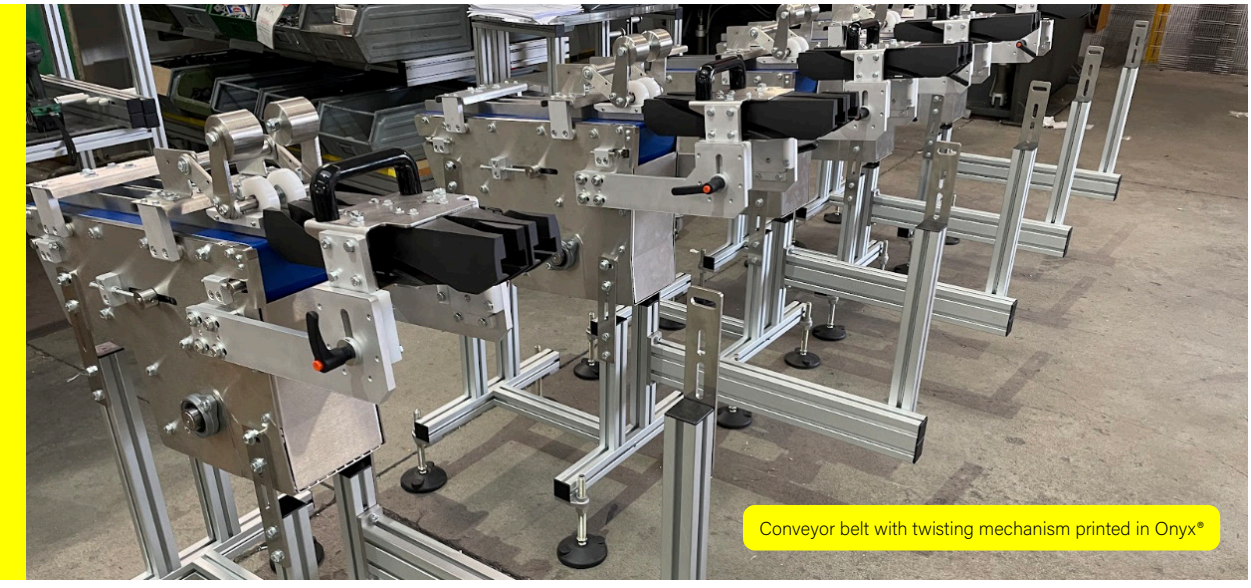
Industry	Packaging Machinery
Applications	Conveyor Belt Rotation Device, Air Blower
Printers	X7™ and Mark Two™
Material	Onyx®

M.H. Material Handling S.p.A. is an Italian company with 30 years of experience in handling and logistics within manufacturing plants across various industries, including food, pharmaceuticals, and electromechanics. The company offers conveyor belts, merging and sorting systems, rotation and product handling units, elevators, tray destackers, and other accessories essential for the production and packaging of products. Thanks to their modular design, M.H. Material Handling products are interchangeable and can be easily integrated into existing production lines.

Innovation & Implementation

The owners of M.H. Material Handling have consistently focused on innovation, both in production technologies and in tools designed to enhance productivity. In this regard, additive manufacturing has combined the best of both worlds. After conducting some trials with external suppliers, the decision was made to acquire a Mark Two™ printer to support testing to help the engineering department explore new production opportunities. Positive results were realized quickly and were focused on the ability to manufacture parts with complex geometries that would have been unfeasible to produce using traditional methods. Another benefit was the ability to produce parts in less time, allowing the tool to be put into service quicker.

Among the many applications developed, two are especially noteworthy: facilitating product twisting along the axis of motion and the fabrication of air blower nozzles.



Conveyor belt with twisting mechanism printed in Onyx®

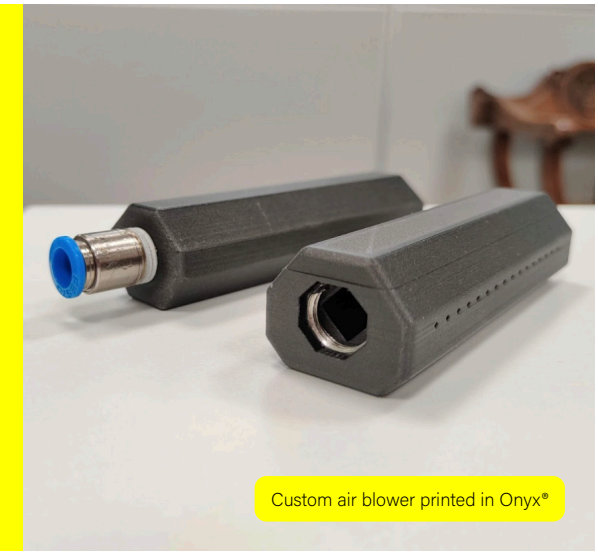
The Applications

Twisting is a system in which wrapped products are conveyed by belts into specially designed channels, where they emerge rotated by 90° or 180°. Prior to 3D printing, these applications were made by machining solid plastic materials with 5-axis mills, or by bending and shaping steel rods, mounted on custom frames. With a Markforged X7™ printer, M.H. Material Handling can print the twisting mechanism in two pieces, so designers can modify the internal chute design to fit features for each customer at very low modification costs. Using their X7, M.H. Material Handling saves up to 80% in both time and material cost, compared to traditional fabrication methods.

"With their continuous fiber reinforcement and excellent surface finish, Markforged® 3D printers allow us to manufacture ready-to-use products with exceptional design flexibility and customization options. The industrial challenges our customers present to us daily can now be solved more effectively," stated Francesco Gastroni, Operations Manager of M.H. Material Handling.

Considering air blower nozzles, these are typically sourced from a catalog. "It's often difficult to find the exact size for the application required by customers with specific flow and pressure requirements," explained Francesco Gastroni. "So, we use the Digital Forge to optimize the design, achieving greater adaptability of the component, which can be perfectly configured to meet the specific needs of the plant. In this case, the savings come primarily from time and ease of design, since there is no need to create custom pieces to fit commercial components for the application."

> "Markforged® 3D printers allow us to manufacture ready-to-use products with exceptional design flexibility and customization options."
>
> — Francesco Gastroni,
> Operations Manager of M.H. Material Handling



Custom air blower printed in Onyx®