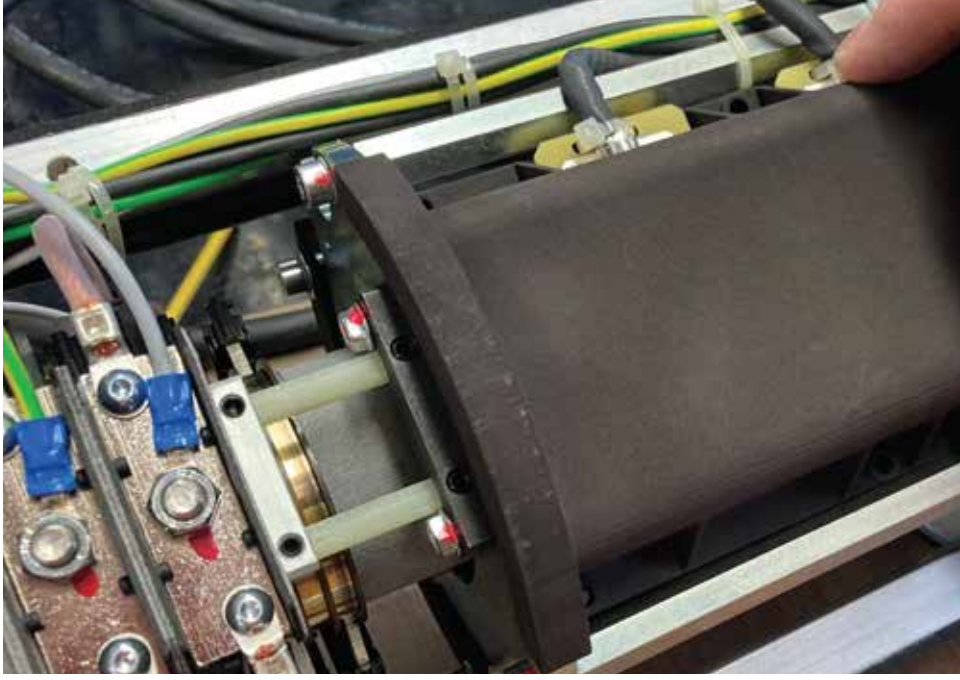




Personalization  
& 3D Printing



# CASE STUDY

## CONDUCTIX WAMPFLER





**Conductix** improves time to market and simplifies product design with HP Multi Jet Fusion.

By moving from traditional production to 3D printing, the company, which is a leader in the production of electromechanical components for the transmission of energy and data between moving equipment, has managed to significantly reduce response times to customer requests, simplify component design, and cut production costs and inventory.

## Introduction

Conductix Wampfler is a business unit of the multinational Delachaux Group, founded in 1902 and active today with almost 4,000 employees in over 40 countries, with around 30 commercial offices and 12 factories and centers of excellence. The Group operates successfully in the markets for material handling, automation, mass transport, and machinery for the production of electrical and fiber-optic cables.

Conductix Wampfler employs approximately 1,400 people and is a world leader in the production of equipment for the transfer of energy and data between translational and rotary moving components.



“In Agrate Brianza”, says Fabio Breviaro, Head of Research and Development, “the plant produces several components including the rotating manifolds for the whole Group. Rotating manifolds are electromechanical devices that perform the task of transferring electrical energy between systems with rotating parts, such as rides in amusement parks.”

Thanks to an R&D department always alive to new technologies, Conductix constantly experiments with new processes and solutions to make the molds of the plastic components that are then used in the manifolds.



• **Industry**  
Manufacturing

• **Sector**  
Electromechanical components



• **Objective**  
Speed up and economize on low-volume production of components

• **Approach**  
Thanks to HP's Multi Jet Fusion technology, Conductix has significantly accelerated the time to market, simplifying product structure and reducing production times. The company now has the goal of operating as a 3D printing service for the entire Group, further enhancing the value of the investment made thanks to Industry 4.0.



• **Technology|Solution**  
HP Multi Jet Fusion technology  
HP Jet Fusion 4200 3D Printing Solution

• **Material**  
HP 3D PA 12



## Challenge

To maintain leadership in the market of data and energy transmission between moving components, constant innovation is necessary; this is one of the guiding principles of Conductix.

“At a certain point in our journey,” says Breviario, “we realized that we were starting to lose commercial opportunities due to a volume/cost ratio that was no longer sustainable. We have therefore chosen 3D printing to make small production runs more flexible and cheaper.”

By creating an accurate business case, Conductix experiences the advantages of powder bed technology, using 3D printing to create not only prototypes but also the components that were previously produced by third parties with mechanical processing (milling, turning, and CNC).



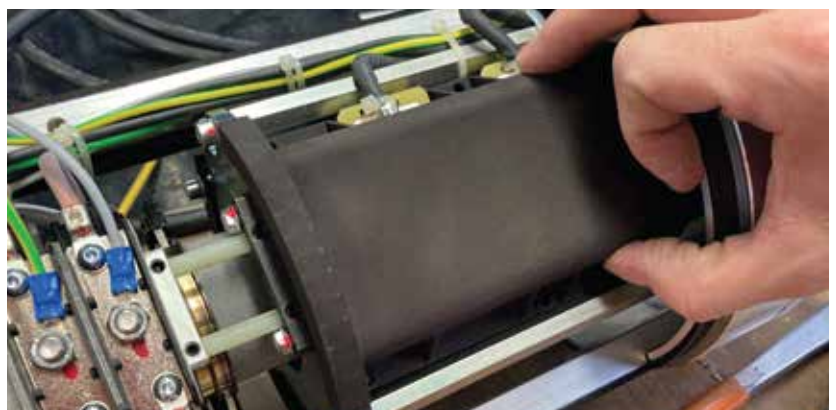
## Solution

“Among the solutions we analyzed,” says Breviario, “those from HP immediately seemed to us the most innovative and effective. First of all, for the anisotropy of the components produced, due to the absence of the typical layers of wire printing. The cost/capacity ratio proved to be excellent, and after a thorough test carried out at the Italian headquarters of Conductix Wampfler we adopted the machine, with the idea of extending this technology to the entire Group.”

Taking advantage of the Industry 4.0 program, Conductix purchased an HP Jet Fusion 4200 printer, which was immediately installed in the Agrate Brianza plant. After a short test period, the printer immediately entered the company’s production cycle.

Conductix uses the PA12 polymer, which can in some cases replace both aluminum and steel in components not subject to particular stress. “To make the most of the printer and adapt it to our needs,” says Breviario, “we had to experiment a lot, and in this phase, the HP technicians did a great job together with ours. Thanks to the mathematical models provided by the HP experts, we can create, with the powder bed technology, components with the same IP degree and with the UL certification that we had with injection processes.”

The company uses the HP Jet Fusion 4200 printer to produce about 150,000 components a year, with 3,000 different product codes (which means a production of hundreds or even thousands of units with a single code).



## Result

The results obtained by Conductix are many and varied. First of all, the goal has been achieved of creating not only prototypes but also small production runs of components of electromechanical devices, with a great saving in cost.

“We estimate”, says Breviario, “to have reduced by 50% the use of molds for the production of components and to have cut the time to market by 12–16 weeks. Today we use old technologies only for production runs exceeding 10,000 units.”

The second great result was the possibility of simplifying very complex structures, such as terminal blocks and manifolds, previously consisting of dozens of parts and today often formed by a single component, thanks to HP’s 3D printing technology. The reduction in the number of parts is obviously an important factor in improving the time to market and the speed of response to customer needs.

“In many cases”, says Breviario, “we have been able to simplify the design of the components, for example, by eliminating plates, screws, and angular elements, also managing to make more linear the paths of the cable passages. We can design shapes that were not possible with traditional technology, bypassing the typical constraints of turning and milling, thus improving the performance of the finished products we offer to the market.”

Thanks to HP’s 3D printers, Conductix also has greater flexibility in making changes to parts at customer request. Previously, it was necessary to change the molds at a high cost, but today new technologies permit changes to be made quickly and at a much lower cost.

“Since appetite grows with eating,” concludes Breviario, “having paid off the investment in the new machine very quickly, we are expanding its use internally, and we are also thinking of operating as a service for our entire Group.”



Connect with an HP 3D Printing expert or sign up for the latest news about HP Jet Fusion 3D Printing at [hp.com/go/3Dcontactus](https://hp.com/go/3Dcontactus)

Learn more about HP Multi Jet Fusion technology at [hp.com/go/3DPrint](https://hp.com/go/3DPrint)

Learn more about Raleri at <https://www.conductix.com>