

# AGCO Deploys HP Multi Jet Fusion technology to Streamline Industrial Manufacturing



Replacement part produced by AGCO using HP Multi Jet Fusion technology

HP Multi Jet Fusion technology accelerates product development, streamlines fabrication and eliminates waste and errors, while improving the functionality of key components in high performance agricultural equipment.

Industry	Sector
Manufacturing	Agricultural equipment
Objective	Approach
Utilize 3D printing to develop prototypes, manufacturing aids, replacement parts and upgrades for line equipment and end-use parts for production of industrial farm implements	Leverage digital workflow, HP's Multi Jet Fusion, and comprehensive finishing solutions to deliver high quality parts, quickly and economically
Technology	Material
HP Multi Jet Fusion 5200 3D Printer	HP High Reusability PA 12, enabled by Evonik

## Introduction

*“AGCO is a global manufacturer of agricultural equipment,” says Ben Thul, Manufacturing Engineer at AGCO Corporation.*

AGCO Corporation, headquartered in Duluth, Georgia, USA, is a global leader in the design, manufacture and distribution of agricultural machinery and precision ag technology. Founded in 1990, AGCO has grown through strategic acquisitions and a focus on innovation, and offers a full range of tractors, combines, grain storage, forage, seedage, and tillage equipment and much more. AGCO delivers value to farmers and OEM customers through their five leading brands, including Fendt®, Grain & Protein, Massey Ferguson®, PTx and Valtra®.

*“We operate mixed model assembly lines with a lot of configuration options,” says Mr. Thul. “There are many instances, for example, where an assembly might only go on one sprayer.”*

AGCO’s Jackson, MN campus manufactures six unique products including two different models of two-track tractors, three different types of sprayers, and the track system for its IDEAL combine. Approximately 900 workers are employed at the location and they focus primarily on fabrication, welding, paint, and assembly, in addition to product development, design and engineering. All of the facility’s products are manufactured in low volumes and are highly customizable.



Prototype designs manufactured by AGCO

## Problem

*“We do the majority of fabrication, welding, painting and assembly within our Jackson, MN location,” says Thul.*

AGCO integrates automation, robotic welding, and painting to ensure efficiency and quality. Supply chain management and sustainability are key focuses, as AGCO seeks to reduce waste and incorporate recycled materials.

However, AGCO faces significant challenges:

- **Fluctuating demand:** market conditions impact production consistency.
- **Supply chain disruption:** global events increase costs and delays.

- **Skilled labor shortages:** manufacturing struggles to attract talent.
- **Sustainability pressures:** regulatory and environmental concerns drive new practices.

*“AGCO spends approximately 4% of their net sales on R&D,” says Thul.*

The company continuously seeks emerging technologies to streamline production. One such breakthrough has been additive manufacturing, which started with small handheld tools and evolved into a critical component of AGCO's manufacturing strategy. Initially, AGCO outsourced prototypes but later installed desktop 3D printers. While useful for jigs, fixtures, and prototypes, early attempts faced limitations in design complexity and material constraints. As demand grew, AGCO invested in a production-grade FDM solution, reducing print failures and expanding material options.

The financial impact was substantial. A prototype once quoted at \$120,000 was 3D printed for just \$3,200. Seeing these advantages, AGCO sought broader applications but found limitations in filament-based printing. To address these challenges, AGCO explored powder bed fusion for greater design freedom and robust part production.



Hydraulic cylinder cover and paint gun strain relief parts manufactured with HP Multi Jet Fusion technology

## Solution

*“When COVID happened, supply chain issues led to planners asking if we could 3D print parts,” says Thul.*

The AGCO team researched solutions that could provide end-use quality and found HP Multi Jet Fusion (MJF) technology to be the best fit due to its high productivity, material efficiency, and cost-effectiveness.

In early 2023, AGCO installed an HP Jet Fusion 5200 Series 3D Printer, along with part cleaning, vapor smoothing, and dyeing equipment. *“Quality and durability were vital,” says Thul. “Vapor smoothing improves weatherability, and almost all end-use parts are dyed because customers will see them.”*

Workflow integration was key. AGCO implemented business processes in SAP, calculated labour times, and developed engineering guidelines. They also created a SharePoint system to archive projects and trained engineers and shop staff on 3D printing capabilities.

## Result

Since installation, AGCO has produced over 19,000 parts across various applications:

- **Product Development:** 3D printing accelerates prototyping, helping engineers meet tight timelines. *“One small part can create big delays,” says Thul, highlighting how printed components speed up testing and product release.*
- **Manufacturing Aids:** Custom jigs, fixtures, and robotic automation improve efficiency. *“We identify waste and find ways to eliminate it,” says Thul, emphasizing lean manufacturing principles.*
- **Paint Masking Tools:** Traditional masking methods caused frequent rework. Custom 3D-printed masks reduced errors and labour. *“We no longer need two full-time employees just reworking parts,” says Thul.*
- **Replacement Parts:** HP MJF technology enables on-demand production of durable spare parts, minimizing downtime and reducing supplier reliance.
- **End-Use Production Parts:** AGCO now produces small batch, customer-specific components in-house, reducing lead times and inventory risks. *“We commonly produce parts for other AGCO facilities in the North America region,” says Thul.*

AGCO achieved numerous advantages with HP’s MJF technology, among which were design freedom, to enable complex geometries and consolidate several parts into one, part strength for the most demanding applications, plus cost and lead-time savings. Their on-demand manufacturing accelerated product development timelines and the durable components they obtained contribute to enhancing equipment longevity, which is good for the environment too.

*“There’s still a lot of opportunity,” says Thul.* AGCO is exploring several aspects of leveraging all additive manufacturing benefits, such as the production of spare parts for a rapid and cost-effective aftermarket service improvement, more customization options among personalized equipment, unique branding and tailored features, and finally retrofits, as farmers require adaptable machinery, 3D Printing allows upgrades and modifications that extend equipment life.

By exploring all of HP’s MJF technology’s possibilities, AGCO continues to innovate and drive efficiency, sustainability, and customer satisfaction in modern agricultural manufacturing.

Want to learn more about AGCO and their comprehensive solutions for the agriculture market? Visit: <https://www.agcocorp.com/us/en/home.html>

To learn more about HP Multi Jet Fusion 3D printing technology, and how it helps manufacturing companies deliver state-of-the-art industrial equipment, visit us at <https://www.hp.com/go/3DPrint>