



From critical wear to sustainable production GMH extended equipment life, cut costs, and accelerated delivery with Tritone's MoldJet® technology.

## KEY HIGHLIGHTS

### THE CHALLENGE

GMH faced recurring failures in a key component – the gripper jaws of its steel-rod strapping machines. These parts suffered extreme wear, short lifespans, and costly downtime.

### THE SOLUTION

GMH transitioned from conventional CNC machining to on-demand production of 17-4PH grippers using MoldJet. The new material and process enabled superior mechanical strength, reduced wear, and higher repeatability.

### THE RESULT

Service life increased by over 300%, lead times fell from four months to one, and cost down X5.



## ABOUT GMH

GMH Gruppe is a major European industrial group headquartered in Germany, active across more than 50 countries with over 6,000 employees. The Georgsmarienhütte site is a hub for sustainable steel production and advanced manufacturing processes and they continually explore innovative technologies to improve efficiency

## ABOUT PRO MATERIA

A machine customer and partner of Tritone. Metal powder production from Green Steel, industrial additive manufacturing with MoldJet.



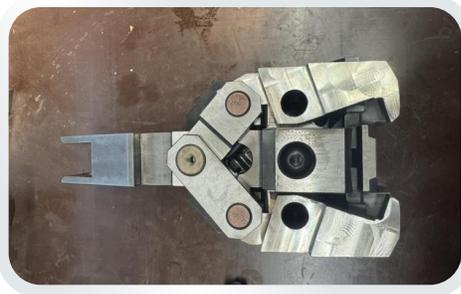
## THE CHALLENGE

The steel-rod strapping machine at GMH's facility packages rods into heavy bundles using welded steel sheet bands. A gripping jaw assembly clamps both band ends under intense pressure, making it prone to wear and repeated failure. Each replacement caused downtime, maintenance effort, and production loss.

### Challenges included:

- 1 Short lifespan and frequent failures under mechanical stress.
- 2 Long lead times and high CNC machining costs for replacements.
- 3 Supply bottlenecks, limiting maintenance flexibility.

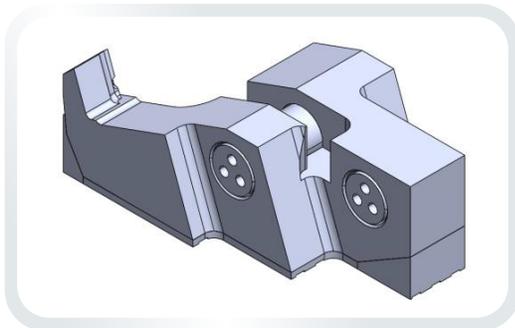
GMH needed a faster, more durable, and cost-effective way to produce spare jaws.



## THE SOLUTION – SINTER-BASED ADDITIVE MANUFACTURING

GMH adopted Tritone's MoldJet® technology, leveraging its:

- ▶ **Material-open system** for heat-treated 17-4PH stainless steel, replacing the older 1.2990 X100CrMoV8-2 alloy.
- ▶ **Support-free production**, enabling accurate geometries with no post-machining fixtures.
- ▶ **AI-driven quality control** and multi-plate production for repeatability.
- ▶ **On-demand batch manufacturing**, minimizing inventory and waste.





## THE IMPACT

- ▶ **>300% longer lifespan of the gripper jaws.**
- ▶ **Lead time reduced** from 4 months to 1 month.
- ▶ **Production cost reduced 5x**, including labor and tooling.
- ▶ **New design opportunities** to improve the assembly and expand additive use to other spare parts.



## CUSTOMER FEEDBACK

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With the speed of delivery for the grippers, we were really impressed. These ones are much better than the old ones – no question. It's a real improvement, even considering cost, maintenance, and downtime.

Now these things, they just run – proper solid, like it should be.

**Timm Hehemann, Operator, GMH Gruppe**

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## ABOUT TRITONE TECHNOLOGIES

Tritone Technologies developed MoldJet® additive manufacturing systems designed for scalable industrial production of high-quality metal and ceramic parts.

By combining design freedom, cost-efficiency, and material flexibility,

Tritone empowers companies like EXALTA to accelerate innovation in demanding sectors such as medical technology, automotive, and aerospace.