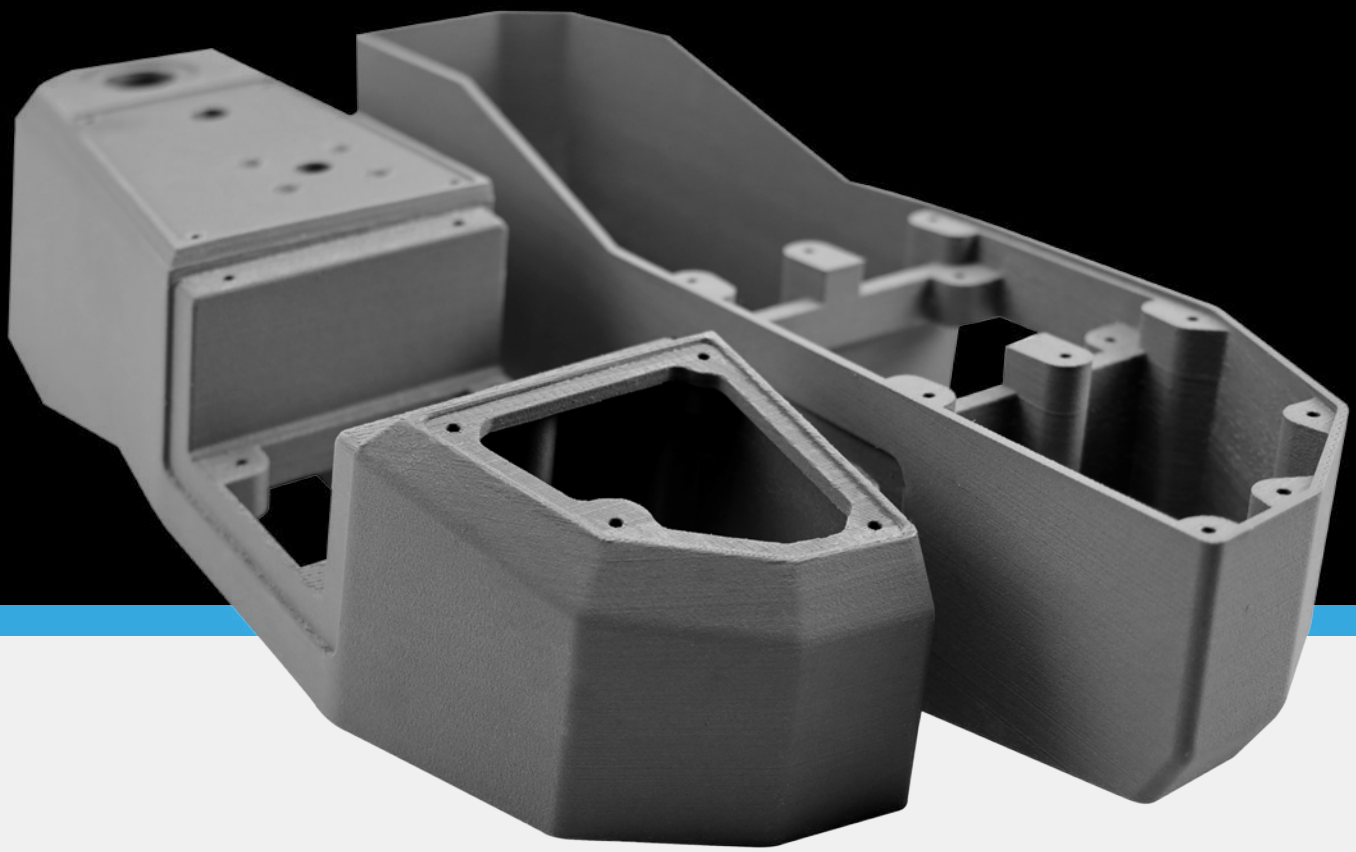
Case Study

HIDROMEK®

HMK 130 CS Compact Roller

CONTROLLING UNIT



LOOP 3D

CHALLENGES

> High labor time

> High cost

SOLUTIONS

> 80% cost reduction per part

> DYNAMIDE® Materials



Cost

*per piece

LOOP PRO X	54 $
Savings	80 %

> “The surface quality is excellent. Parts are very rigid and functional; they are usable with or without minor post-processing.”

Hakan TELIŞIK
(Hidromek Design Studio Manager)

Hidromek reduces costs of machinery end-use parts with LOOP PRO X 3D Printer

HİDROMEK, a manufacturer of construction machinery based in Turkey, is using the LOOP PRO X 3D printer to produce end-use parts for its agricultural vehicles.

Seeking to reduce its downtimes and avoid the associated costs that can occur, HİDROMEK opted to leverage 3D printing in its vehicle manufacturing processes to help reduce the time and costs of traditional production methods.

Using the FFF 3D printer LOOP PRO X, HİDROMEK was able to fabricate fully functional parts without the need for substantial post-processing. The decrease in time spent on post-processing reduced the costs of implementing each end-use part into the vehicles.



HMK 130 CS
Compact Roller

Customer

HİDROMEK started their journey manufacturing attachments for agricultural tractors. In the following years, the company started to manufacture heavy construction machinery, and since then, its product range in this field has expanded.

Their machines now include backhoe loaders, hydraulic excavators, wheel loaders, motor graders, and soil compactors. Employing around 2000 employees, these machines are manufactured in six production facilities including 4 factories in Ankara, 1 factory in İzmir, and a facility in Thailand.

Challenge

HİDROMEK sought to **reduce the manufacturing times** in order to meet rigid time schedules involving large investments.

An example of an end-use component that HİDROMEK has 3D printed is the housing of the controlling unit on one of its HMK 130 CS Compact Rollers. The controlling unit houses the operator controls for the vehicle, with internal mounted electronics. In order to ensure the functionality of this critical component, the housing must meet strict tolerance and durability requirements.

The standard process for developing the housing unit is a labor and capital intensive undertaking. One stage of the design process requires the production of a master model and silicone molds.





Solution

HİDROMEK used LOOP PRO X 3D Printer to help produce a number of end-use parts.

Using the LOOP PRO X 3D printer, HİDROMEK is 3D printing the controlling unit housing at an **80% cost reduction per part.**

In total, the model, measuring **390x100x95mm,** takes 48 hours to 3D print, and **costs $54**.

The parts, made from LOOP 3D's DYNAMIDE® Carbon Fiber and Glass Fiber filaments, passed HİDROMEK's certification tests for direct use in the company's heavy-duty vehicles.

> **"We are proud to cooperate with heavy-duty automotive industry and Hidromek which is a challenging test for our DYNAMIDE® CF and GF materials. It was another test we passed with success thanks to the combination of hardware and software of LOOP 3D."**

Mehmet Erkan USTAOĞLU
(Founder of LOOP 3D)



Mounting the Controlling Unit