Case Study

ROVENMA ELECTRONIC CASE

LOOP 3D

CHALLENGES

> Large Build Volume

> Outdoor compatible material

SOLUTIONS

> 500x350x500 mm build volume

> DYNAMIDE® Materials

> Possibility to try different material types

> “At Rovenma, we produce electronic covers that are highly resistant to outdoor conditions. Our use of DYNAMIDE® GF material enables us to achieve excellent quality. These covers are a crucial component in our manufacturing process.”

Akın Köse
(Senior Industrial Design Specialist at Rovenma)

Rovenma achieves a 95% in-house production goal by utilizing LOOP PRO X for creating prototypes, mass production, and machine fixtures.

Rovenma was founded in 2016 with the goal of creating state-of-the-art smart cargo lockers. They specialize in producing prototypes and mass-producing locks and doors for cabinets that consist of over 1300 assembly units, using LOOP PRO X.

The company utilizes various materials, like PETG, for their mass production needs. This results in cost savings by printing components that do not require strength.

They have set up an electronic card production line for in-house production. As part of this, they develop and manufacture fixtures that help with typesetting and processing.

rovenma
Smart Technology

In 2016, Rovenma created Smart Parcel Lockers with a team of experts and now manufactures them at their facility.

Rovenma is a company that utilizes advanced technology and has a consistent pattern of growth in all areas. This includes research and development, administration, production, and after-sales support.

Rovenma is a technology and manufacturing company that strives to offer products with high value-added technologies. Their focus is on continuously keeping up with technological advancements and customer demands to position their products in markets worldwide.

Challenge

This electronic case is made of DYNAMIDE® GF material, which was specifically chosen for its ability to withstand outdoor conditions. With over 1300 items inside, it was important to ensure that the cabinet would continue to function properly even in harsh weather. Extensive testing was done on various materials to find the right combination of sealing, temperature resistance, and strength.

Rovenma tried to use 3D printing to produce the prototypes several times, but models melted, stretched, and deformed a few hours after putting on cabinets. Also, they had to divide and slice the electronic covers into several parts due to the printing volume of the 3D printers they used. The printed parts' layered and uneven surface structure made it difficult to predict the final product.

Before committing to the injection mold costs, they needed to examine a model that closely resembled the final product.

Electronic Case Material:
DYNAMIDE® GF

Rovenma Parcel Lockers

Rovlocker is specifically designed to offer optimal parcel delivery solutions for both end-users and e-commerce/logistic companies.

Rovlocker uses top-notch electronics, mechanics, and software to ensure seamless parcel delivery around the clock. Cutting-edge design technologies, including electronic locks, software systems, and mechanical structures, are geared towards providing their customers with the best possible experience.

Frontal maintenance is a specialized mechanical structure that helps to minimize both the time and cost required for maintenance.

- Bluetooth Connection
- Remote Management
- Modular Design
- Unique Lock Technology
- Functional Software

Rovenma Parcel Lockers

Application 1

Rovenma conducted prototype trials using DYNAMIDE® GF material for electronic cases that are resistant to external conditions, specifically with the LOOP PRO X product.

In the cabinet, there are seven cover pieces that will be produced using injection molding due to the production numbers being suitable for mass production. The material strength and surface quality provided by LOOP PRO X have resulted in acceptable outdoor test results, allowing the company to confidently proceed with mass production.

Rovenma creates personalized products for businesses using high-quality materials on LOOP PRO X such as DYNAMIDE® GF. By utilizing these materials, companies are able to showcase their cabinets to customers with a quality that closely resembles the final product. By conducting tests before receiving customer orders, Rovenma has been able to decrease production costs by 80%.

Connector cover
Material:PETG

With the help of LOOP PRO X, Rovenma is capable of manufacturing 200 units of 2 x 2 x 2 cm connector covers daily. Each cabinet requires 7 parts, enabling them to finish almost 30 cabinets within a single day.

Application 2

The electronic case and connector cover are two different parts with different requirements. The electronic case needs specific materials to function properly, while the connector cover works without being exposed to heat. Because of this, PETG can be used for mass production instead of GF or CF material due to the machine's open material system feature.

With the use of additive manufacturing technology, they can produce this part in multiple units without the financial burden of periodic revisions that come with plastic injection production.

“We were proud to work with Rovenma, an innovative and leading company, and contribute to their production. Moving forward, we strive to achieve even greater success by increasing our cooperation.”

Mehmet Erkan USTAOĞLU
(Founder of LOOP 3D)