

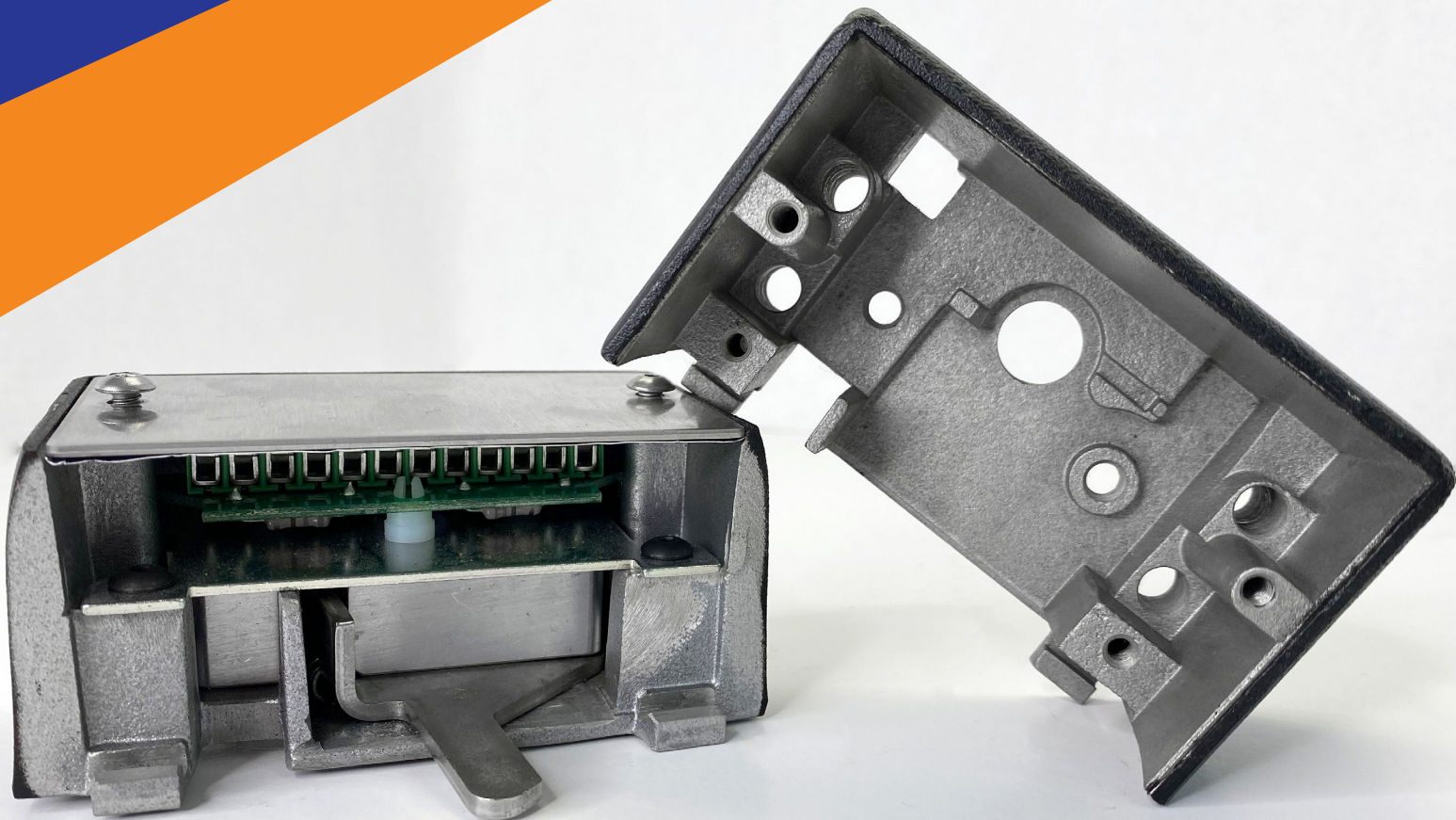
4" x 2" Security Lock: Permanent Mold Casting & Assembly



A CASE STUDY

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The Customer

This government customer requires secure products, such as this high security lock.

The Challenge

This project is a small, intricate lock.

The customer **struggled finding a supplier**; the volume was not high enough for die casting, and sheet metal stamping and sand casting could not create the detail required.

They needed a manufacturer who could produce the part and supply it fully assembled.

The Solution

While this product is relatively small to be considered for the permanent mold process, we found that permanent mold casting and in-house machining and assembly was the best solution for our customer.

Casting

The design of this casting includes varying thick sections, which often lead to shrink issues, causing imperfections on the outside of the part. To overcome this challenge, we **adapted the feeding system** and **controlled the solidification process** so that the part cooled evenly, eliminating shrinkage issues.

Machining

The part went through a **CNC machining** process that completed all the lock's details necessary for functionality and assembly.

Polishing & Coating

As a lock, this part has **cosmetic** and **protective** requirements. Therefore, in addition to polishing, we masked, powder coated and supplied it with a chemically conductive film.



Assembly

We typically do not perform assembly for our customers. However, we **accommodated the customer's unique needs** by casting the casing and completely assembling the part with circuit boards, servos, and other electronics.

The Outcome

While die casting and sand casting foundries would not touch the project, we stepped up to the plate with nearly 75 years of **permanent mold** experience.

The customer was appreciative of our **flexibility** and **accommodation** to special requests, such as fully assembling the product in-house.

We developed **300-500** of these government locks **a month for several years**.