



Security Lock Design & Development

Description

Working closely with a leading security company, Quadratic were asked to look at various door locking mechanisms, with a view to:

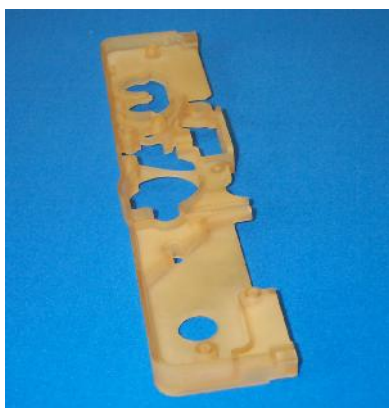
- Improving strength
- Reducing size / cost
- Adding additional features

These door lock systems included both the main lock design as well as the secondary locking mechanisms, typically found in PVC double glazed doors.

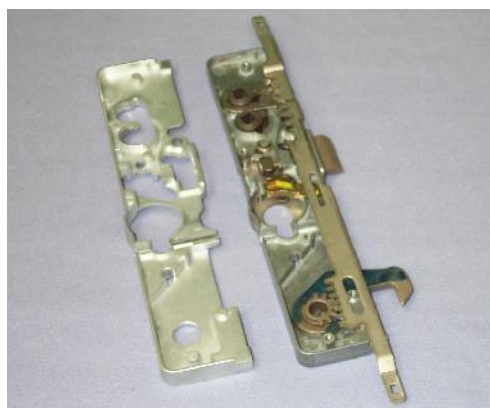
All the necessary prototyping and developing, including the use of rapid prototyping techniques for the main body castings, levers and gears was included within the scope of supply.

Disciplines Used

- Conceptual & mechanical design, rapid prototype manufacture, assembly, test & development.



Prototype SLA Model



Diecast Body and Finish Assembled Lock

Specification Summary

- Current tolerance & process investigations to identify potential areas for improvement
- Stress analysis & FEA of locking mechanisms to ensure acceptable mechanical integrity
- Re-design of secondary locking mechanism and drive linkages to achieve “full lock throw” at worst tolerance conditions
- Designed to incorporate existing high security products (security barrel / two hook / roller lock / deadbolt)
- LH & RH versions with centre & backset distance variants.
- Rapid prototyping used SLA model from .STL file to produce aluminium diecast body.
- Gear / linkages etc modified from existing parts
- Lock testing at clients in house test facilities