

OUR WORK

ATM CASE STUDY 2



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PDL CASE STUDIES

PDL ENGINEERS WERE TASKED WITH IMPROVING THE PERFORMANCE OF THE SHUTTER MECHANISM

PDL is a global provider of exemplary engineering design and analysis consultancy services. Our engineering capabilities mitigate risk, shorten development timescales and reduce development costs.

PDL engineers supported a world leader in consumer transaction technologies and specifically in the supply of automated teller machines (ATM).

PDL engineers carried out a design and analysis project to improve the performance of a shutter mechanism through increased reliability and availability within cost and development time constraints.

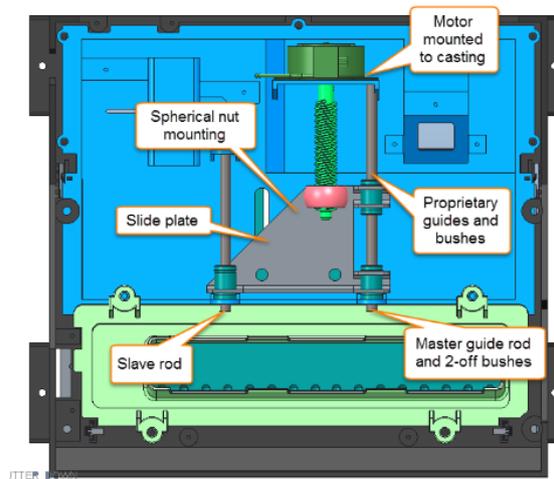


Figure 1: Concept shutter layout

THE FINAL SHUTTER DESIGN INCORPORATED A NUMBER OF STANDARD, BUT LOW COST, GUIDE COMPONENTS

The main objectives of the design project were:

- 1) Evaluate the existing shutter design and identify areas for improvement or alternative mechanism options.
- 2) Develop a number of mechanism concepts; present their merits and de-merits and ultimately agree with the client team which way to proceed.
- 3) Develop calculations for system performance in order to understand frictional losses, open and closing speeds and ultimately drive torque requirements.
- 4) Specify components of the mechanism in accordance with kinematic principals, such that guidance functions are clearly defined and over-constraint removed.
- 5) Work with suppliers such as IGUS to identify appropriate bearing materials to allow the extended life of the shutter to be achievable.
- 6) Develop 3D models and 2D detail drawings of moulded, sheet metal and die cast components using PTC Creo 2 and capture the final specifications in a detailed bill of materials.

