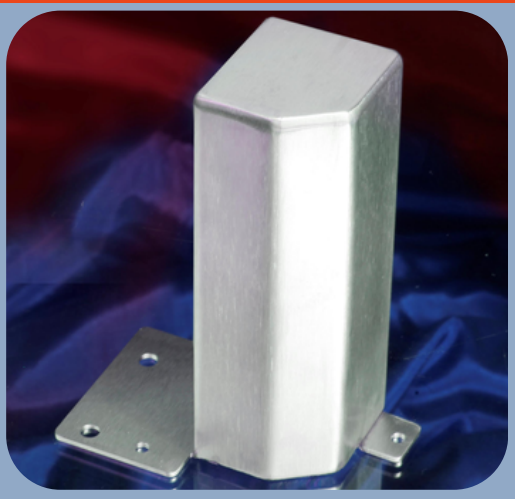


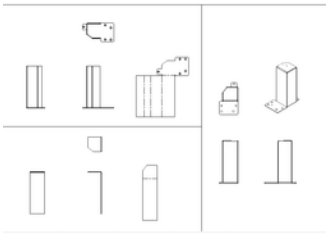
STAINLESS STEEL DOOR DEFLECTORS

This case study highlights the key details of an engineering project completed at JB Engineering (Hatton) Ltd. The stainless door deflectors project was for a longstanding customer in the wholesale trading sector. The project entailed retro-fitting refrigerator doors in supermarkets to reduce energy consumption, therefore saving on electricity bills and contributing to net zero. The project was delivered on time and within the quoted price.

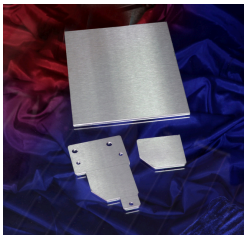
Scope

JB Engineering was contracted to supply various stainless steel components to support this customer project. The stainless steel door deflectors are designed to protect refrigerator door components from the damage caused by milk trolleys when they are rolled into a refrigerator. This improvement prevents refrigerator doors from wear and tear, increasing its application time and reducing long-term energy and maintenance cost. The customer's scope was established with the support and guidance from our JB engineering fabrication team, which has the required skill and experience in fabrication and installation. At JB Engineering, we have a multidisciplinary team covering AutoCAD, laser operators, welders, fabricators, mechanical engineers, project management, and support teams, i.e accounts. The stainless door deflectors project was delivered by the engineering team.

Process

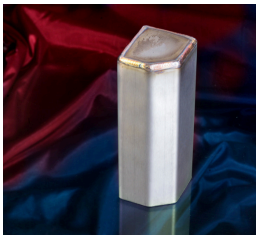


1. CAD Drawing

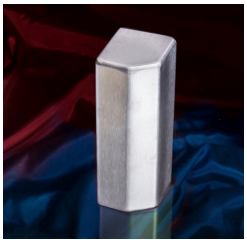


2. Laser Profiling

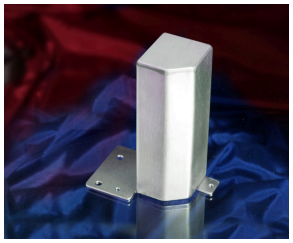
3. Forming



4. Tig Welding



5. Polishing



6. Plate Attachment

7. Deflector Insitu

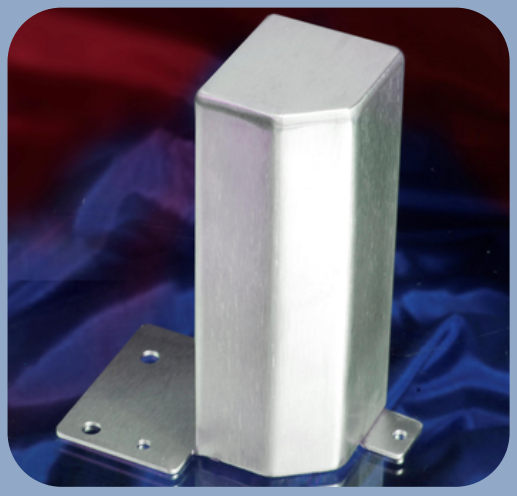
REGISTERED ISOQAR UKAS MANAGEMENT SYSTEMS 0026

Certificate Number 16517

BS EN 1090 EXC2
BS EN ISO 9001: 2015

SafeContractor APPROVED

MEMBER OF East Midlands Chamber Derbyshire Nottinghamshire Leicestershire



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Challenge & Solution

Challenge 1: The Customer's original design intended to make the stainless door deflector in a single piece which would have been harder to produce.

Solution 1: The fabrication team designed the door deflector to have 3 parts, making it easier to bend and produce the final product.

Challenge 2: The Customer's original design was to have 4 sides with the base of the door deflector bent in one, making it harder to produce and assemble.

Solution 2: The fabication team designed the door deflector to have 5 sides on the main body, turning the product into a box section that required less welding, thus making it easier to assemble.

Challenge 3: The Customer's original design was to have 2 edges with the top of the door deflector welded, making it require more welding than was needed.

Solution 3: The fabrication team designed the door deflector to have one corner of the main box section body welded, cutting down on production time.

Challenge 4: The prototype door deflector did not match the final specifications as seen on the CAD Drawing.

Solution 4: A tool was developed to achieve the required bending for 5 sides of the main box section of the door deflector.

Challenge 5: With the base and sides being joined together on the door deflector, this affected the ease of polishing and manufacturing the part.

Solution 5: An assemble sequence was developed to bring all the individual parts together which enable us to conveniently polish and assemble all parts.

01283 812 348

Scropton Rd, Hatton, Derby DE65 5DS

www.jbengineeringhatton.com