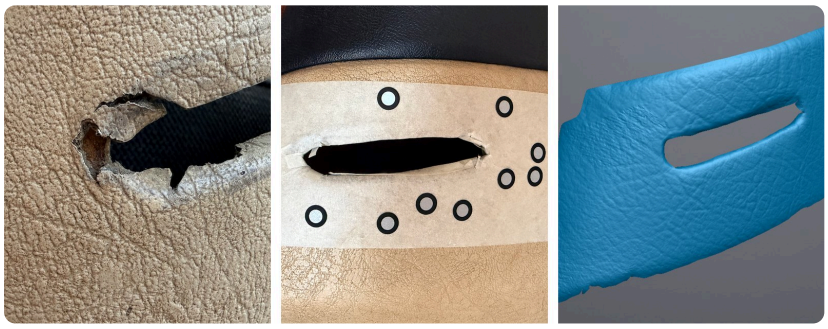
CASE STUDY

A clean finish for the seatbelts in a 1970s Lotus Elan +2

> An Elan +2 owner was tired of bare, fraying seatbelt slots in the rear panels. We scanned his panels and made a pair of outlets in the style of the originals, now available to every Elan +2 owner.

In a Lotus Elan +2, the seatbelts pass through slots in the vinyl-covered rear quarter panels. A trim outlet around each slot gives a neat finish and stops the belt rubbing on the edge. This customer owns two 1970s Elan +2s and was frustrated by the bare slots: the outlets are no longer made, and without them the vinyl tears and frays where the belt runs. He asked if we could make something in the style of the original, and kindly lent us a pair of rear panels to scan for the best possible fit.



Left: a bare belt slot, with the vinyl torn where the belt runs. Centre: the panel prepared for scanning, with tracking markers around the slot. Right: the same area captured with a 3D scanner.

The challenge

An outlet like this looks simple, but the panel it sits on is anything but flat. The new outlets had to:

- follow the curve of each panel, so the flange sits down all the way round with no gaps;
- come as a handed pair, because the left and right panels curve in opposite directions;
- fit into the existing slots and stay put, with no drilling, screws or glue;
- look like they belong in a 1970s Lotus interior.

Our approach

01 **Scan the panels.** We 3D-scanned both of the borrowed rear panels, using tracking markers around the slots to capture the shape and the curve of the surface precisely.

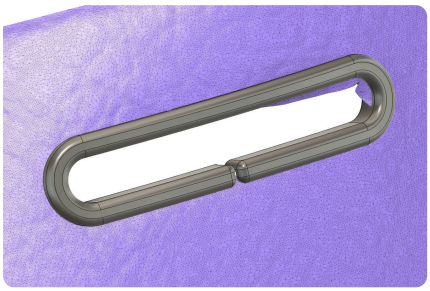
02 **Design to the curve.** In professional CAD, we shaped the flange of each outlet to the scanned surface of its own panel, giving a mirrored left- and right-hand pair. Clips on the back hold each outlet in its slot.

03 **Fine-tune the fit.** The scan gave us the curve right first time. We printed test outlets and tried them on the real panels, fine-tuning the depth of the clips and the size of the gap until each one pressed home and sat flush.

We use AI alongside our own engineering judgement to align the scans, measure the panels and refine the design. It handles the slow number-crunching, so each round of changes takes minutes, not days and you get your part sooner.

Shaped by the scan

Laid over the scanned panel, the new model follows its surface all the way round the slot, so the flange sits flush against the vinyl. A narrow split in the frame gives it the flex to clip into the slot, and lets the belt slide in through the gap, so the seatbelt fixings never need to come off. Test prints on the real panels confirmed the curve straight from the scan, so the only changes needed were to the clip depth and the gap.



The new model (grey) on the scanned panel (purple), following its curve around the slot.



The finished handed pair, marked LHS and RHS, printed in black ASA.



Both outlets fitted to the borrowed panels before they went back.



Fitted in the customer's Elan +2: a clean, finished edge where the belt leaves the panel.

The result

A handed pair of seatbelt outlets, printed in tough, UV-resistant black ASA, that follow the curve of the Elan +2's rear panels and give the belt slots the finish they were missing.

> **"They fit perfectly, have the curve and are handed to fit each side. They are better than new!"**
>
> An Elan +2 owner, on an owners' forum

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