

### Adhesives in Action

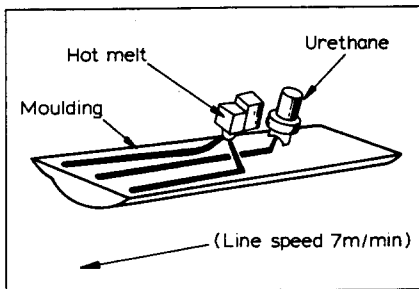


Fig. 2 Method of automated adhesive application to the under side of the moulding

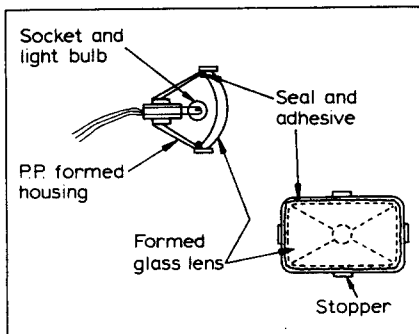


Fig. 3 Car headlight assembly

of automotive components is shown in Fig. 3. Here, a H-20A gun is used to apply a synthetic rubber based hot-melt adhesive from a Model XIIA unit to a headlight lens for bonding into its housing. The hot melt, which has been formulated to resist heat radiated from the light bulb, forms an immediate bond and also provides a weather-tight seal. This method of application can be fully automated — leading to increased productivity — but may easily be adapted to changes in headlight design.

Other applications of hot-melt adhesives are found in attaching weather-stripping around windows, doors, and boots, further water-proofing on windscreens, and in attaching sound-deadening material.

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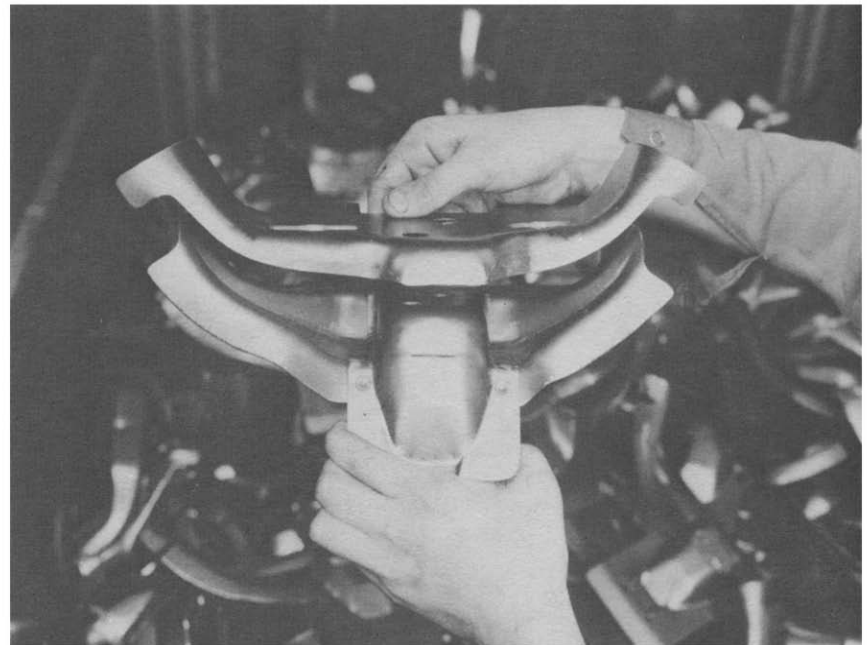


Fig. 1 Assembly of the Triumph Acclaim engine stiffener brackets

### Engine stiffener brackets bonded using single component epoxy

Operating in Birmingham, UK, Grunderling Limited have been manufacturing components for the Triumph Acclaim, under contract to Austin Rover, since November 1982. During this time, it has been found that the use of an adhesive to bond the sheet steel engine mouting stiffener brackets (shown in Fig. 1) has resulted in several advantages over spot-welding or riveting. Using Bostik E5147, it is possible to produce a joint with high structural strength and good vibration resistance which, it is claimed, will withstand higher levels of stress than a welded or riveted joint. The adhesive is applied manually by means of a cartridge gun onto oily surfaces which have received no special pretreatment; thus resulting in savings in time and cost. The E5147 not only forms a strong bond but also acts as a gap-filler.

Curing of the adhesive takes place when the assembled bracket

is in place in the vehicle body at the Austin Rover plant in the paint stoving oven (20 min at 160°C). After curing, the component is then joined to the engine bulkhead.

Specially developed at Bostik's research and development laboratories, for metal-to-metal structural bonding, E5147 is a single component epoxy. It has improved shelf life and may be stored at room temperature for up to twelve months.

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*Adhesives in Action highlights the successful uses of adhesive materials in industrial applications. Contributions, in the form of case histories, will be welcomed and should be submitted to the Editorial Office of International Journal of Adhesion and Adhesives.*