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The effect of gauge misalignment on the measurement of lateral stress GARETH APPLEBY-THOMAS, PAUL HAZELL, ANDREW ROBERTS, Cranfield University — The evolution of the lateral component of stress during shock loading may be directly interrogated via embedded wire-element lateral manganin pressure gauges. However, these gauges are an inherently invasive diagnostic, requiring target materials to be sectioned before insertion. Further, they inevitably possess a significant finite size; with typical active element widths of c.15 mm. Consequently, gauge insertion, typically within an encapsulating epoxy interlayer, can lead to some degree of misalignment. In order to quantify any effects of such experimental errors, the response of Vishay Micro-Measurements T-gauges of type J2M-SS-580SF-025 was monitored in PMMA targets machined such that embedded gauges were deliberately misaligned to a known extent. Attempts were made to link the extent of misalignment to gauge response for misalignments introduced both in the plane of, and orthogonally to, the impact axis.

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