

AutoGrid[®] Accessories

Marking Equipment

Full-field strain analysis after the forming process is based on the precise measurement of initially squared grid patterns. This means that the sheet metal has to be marked before forming. Marking has to fulfil the following requirements:

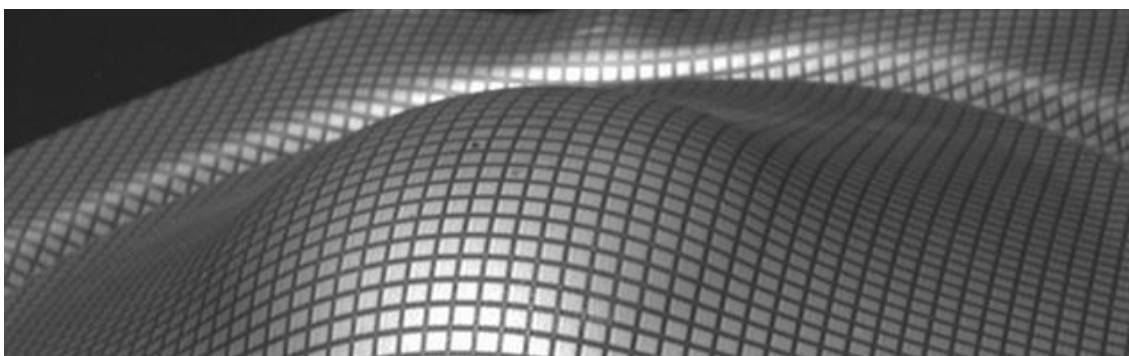
- perfect transfer of sheet metal strain to the grid,
- high visibility and contrast of the grids after intense tool contact,
- low impact on the tribological behaviour of the sheet metal,
- high precision grids.

These objectives are met by the optimized grid marking equipment that ViALUX offers for AutoGrid[®] customers.

The grid stencils are fixed in a special stretching frame made of aluminium to obtain highest precision in marking (< 0.01 mm tolerance of grid points). There are standard grid stencils with 1.0, 1.5, 2.0, and 2.5 mm spacing, respectively. The customer can choose the best suited spacing for the forming process under investigation. Other spacings are available on request. The grids are well optimized and enable fully automated evaluation of the forming state in many applications.



left: 1.0 mm Grid / right: 2.5 mm Grid



sheet material gridded and formed

E1 Electrolyte is suited for the electro-chemical marking of a number of ferrous and non-ferrous materials. N2 Neutralyte, R3 Stencil-cleaner, and the coating of the stencil grids are harmonized to the E1 Electrolyte. In addition, ViALUX also supplies the electrical equipment that is necessary for marking.



Grid marking equipment: E1 Electrolyte, N2 Neutralyte, R3 Stencil-cleaner

Specifications

Stencil grids	320 x 240 [mm] marking area 600 x 400 [mm] frame size 1.0, 1.5, 2.0, and 2.5 mm standard grid spacing, others upon request < 0.01 mm tolerance of grid points
Chemicals	E1 Electrolyte, N2 Neutralyte, R3 Stencil-cleaner applicable for ferrous and non-ferrous metals (Note: for non-ferrous metals: grids may appear bright) Liquids come in 5l cans, the minimum volume of liquids is 10l per order; different liquids can be included in one order special felt as electrolyte carrier

