AutoGrid® Accessories

Marking stencils

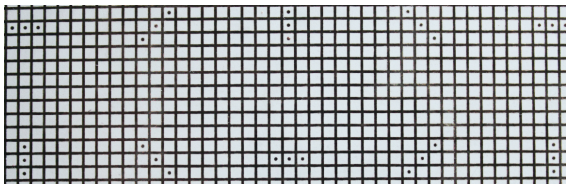
Full-field strain analysis after the forming process is based on the precise measurement of initially squared grid patterns. This means that the sheet metal has to be marked before forming. Marking has to fulfill the following requirements:

- 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

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. 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.

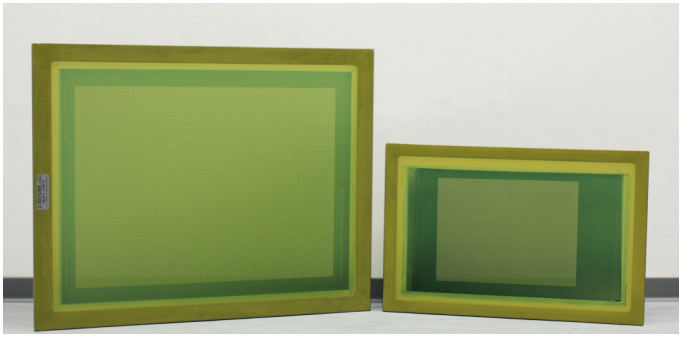
The 2.0 mm grid contains additional reference points in variable order. This 3-point coding simplifies the identification of the grid stitches in each 3D image set and therefore helps to reduce the time for evaluation and linking single measurements.

1.0 mm/2.5 mm grid with 1-point coding



2.0 mm grid with 3-point coding

The XL format marking stencils cover a triple larger marking area compared to the standard stencil. Thus, they enable large-scale marking in one step. By means of digital printing techniques, these DigiGrid XL marking grids are flexible and can be adjusted to the customer's wishes.



DigiGrid XL / standard stencil

Marking equipment

ViALUX offers additionally an optimized grid marking equipment for AutoGrid® customers for electro-chemical gridding. Chemicals are available from a packaging unit of 5l.

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.

Specifications	
Standard grids	Marking area: 320 x 240 mm Frame size: 600 x 400 mm Grid spacing: 1.0 mm, 1.5 mm , 2.0 mm and 2.5 mm; others upon request < 0,01 mm tolerance of grid points
DigiGrid XL	Marking area: 580 x 440 mm Frame size: 760 x 620 mm Grid spacing: 2.0 mm, 2.5 mm < 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

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

Additionally available are accessories for printing on organic coated sheets or similar non-conductive materials. Special printing inks are used here, which guarantee stable rasters even at higher forming temperatures.

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