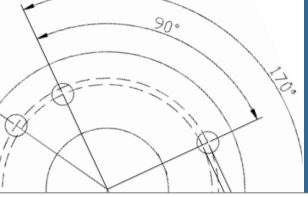

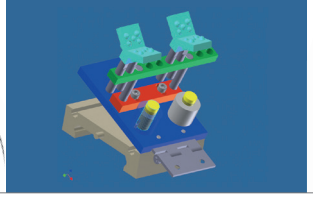
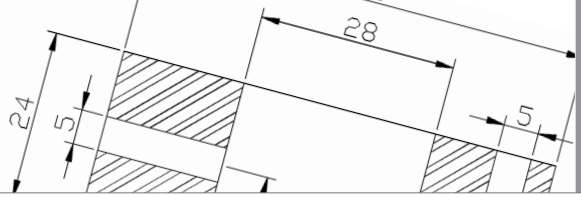

DATA TRANSFER

contact person
Dittmar Klein

The following description should help to enable a fluently data transfer as well as an automated generation of machine programs by post-processor systems.

Currently following programs are deployed:
Autodesk Inventor 2013; Autodesk AutoCAD2013; Draft - Sight; CoralDraw14 and other machine specific programs to generate NC- and labeling programs.

LASER FINE CUTTING AND LASER FINE WELDING:

Requirements on DXF/DWG-data for 2D contours (vector format):
- The contours must not have splines or consequent extremely short line elements (µm range) and shall consist of elements like circles, lines or arcs.
- The contours must be closed.
- No presence of double contours is allowed.
- Contours must be existent in 2D space exclusively; other drawing levels have to be deleted.
- The contour must be shifted in the zero point.
- Contours must be drawn in the center of tolerance.
- If possible, a true scaled drawing has to be created.
- On the drawing further in the title block exclusively relevant but complete working information for the LCP Laser-Cut-Processing GmbH shall be exist.
- Function relevant dimensions have to be distinguished.
- Changes in drawing and data have to be documented in the title block with ongoing index / revision status.

Requirements on DXF/DWG-data for 3D contours (vector format):
- At least the requirements for the 2D contours are valid (see above).
- The direction of rolling has to be named for bending parts.
- For bending parts the theoretical unbend lenght or development data have to be provided. The creation of own development data are suitable at extra costs.

Requirements on Gerber, Extended Gerber, IGES, STEP, STL-data:
- All relevant contour data have to lie in only one and the same layer.
- 3D-volume models (STL) must be execute as flat plates.

LASER MARKING AND LASER ABLATION:

For contours which should holohedral marked / engraved or foamed specific details e.g. structural depth or height, surface roughness or position tolerances must provided. A cut-view could often be helpful.
The marking contours have to be drawn by the outline.
As only the outline contour should be marked, this has to be distinguished on the drawing. The outline must not have double vectors and must be completely closed. Nested areas (inner and outer contours) have to be clearly separated.

Requirements on DXF/DWG-data (vector format):
- see above

Requirements on EPS, AI, CDR, CMX-data (vector format):
- Contours have to be drawn just with one line, closed and fonts as arcs.

Fully automated laser marking of serial or lot numbers, variables, bar-/ data matrix or QR-codes based on customer provided data formats e.g. Excel®-files are possible.

If the customer provided data entirely differ of the above listed requirements and the correction expense exceed more than 5 minutes, we reserve therefore the right to charge extra costs additionally to the quotation prices.

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