

ADD-ON

MEDUSA

SHEET METAL DESIGN

Sheet Metal Design

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MEDUSA4 SMD™

Integrated Sheet Metal Design

MEDUSA4 SMD is a very simple to use – yet extremely powerful – Sheet Metal Design system, fully integrated within the MEDUSA4 design automation solution.

Product Overview

Used by customers all over the world, from specialist truck manufacturers to architectural designers, SMD gives users maximum flexibility in the design of sheet metal parts.

The screenshot shows a software interface with several input fields and checkboxes. On the left, there are fields for Thickness (1.00), Internal radius (1.00), and a dropdown for Default Neutral Radius with the formula $DEF R0 = \sqrt{(2*RI+RE)^2}$. Below these are checkboxes for Exploded objects and Bend Extents. In the center, there are fields for Name (DrgNo), Surface (0), Detail (1), Density (0.0078500), and Partial fold (1.00). On the right, there are checkboxes for NC Lay (33) and Centered NC text. At the bottom, there are fields for Angle (90.00), Chotol (2.00), Bend Fac. (4), Tear Angle (15.00), Point Tol. (0.10), and checkboxes for Auto fillet, Edge Straighten, and Vertex NC text.

The powerful Bend Allowance tool offers flexibility and control

As an add-on for users of MEDUSA4 3D (part of the MEDUSA4 Premium package), SMD draws on MEDUSA4's 2D drafting and 3D modelling capabilities. Starting in 2D or 3D, users can modify a flat pattern using the powerful tools provided, and then refold the model to ensure that the final solution is exactly what is required.

Sheet metal features, such as flanges, tabs, corner tears and punching, can all be added in 2D, either explicitly, or as defaults.

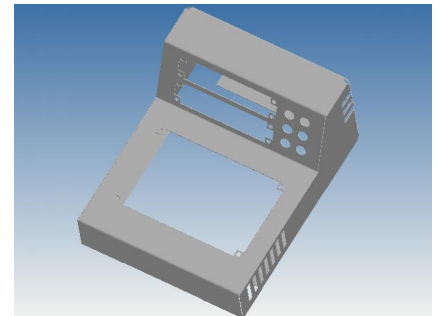
Features and Workflow

- Use 3D to create an ideal shell or surface model
- Unfold, in a controlled manner, a 3D model to a flat pattern
- Large radius curves, which cannot be bent as one, may be faceted under user control to produce a series of smaller angle bends
- Add further flat pattern geometry and features using 2D:
 - Specify individual edge joints as *cut*, *butt* or *flush*
 - Edges may also be *extended* or *trimmed*
 - Edges may be internally, externally or flush flanged
 - At internal corners where material intersects allowance can be made for:
 - tearing
 - punching
- Use the bend allowance system to correct the geometry
- Specify your own algorithm for bend allowance
- Automatically refold the 2D profile to make a final 3D model and views
- Partial folding also possible for progression tooling
- Bend about inside, outside or neutral axis

Benefits

- Speed and accuracy: Development of flat pattern from ideal model shape
- Greater freedom in design: Use inside, outside or neutral axis of material (fixed in most other systems)
- Full control: Powerful Bend Allowance tool
- Flexibility:
 - Edit the 2D flat pattern shape in any way needed
 - Use any steps of the process, no need to use all

- Time savings: No modelling of artificial geometry to make sheet metal work
- Visual clarity: Fold modified flat pattern back into 3D model to see final result
- Efficiency: 2D flat pattern is ready for Numerical Control (NC) software for manufacturing



The MEDUSA4 Sheet Metal Design process uses both 3D and 2D for maximum speed and productivity

Software Requirements

- MEDUSA4 Premium Package



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