

# RADAN 3D

## 3D Sheet Metal Design & Automatic Unfolding

RADAN 3D is a high performance and versatile 3D modelling package designed to make sheet metal design and engineering assembly modelling simple.

### Features at a glance:

- ◆ User-defined bend allowances
- ◆ Flexible design changes including material thickness
- ◆ Automatic, associative drawing elevations
- ◆ Associative 2D dimensioning on drawing elevations and flat blanks
- ◆ An integrated component of Radan

The software is specifically focused on the rapid creation and modification of 3D sheet metal parts and assemblies. The system understands the attributes of sheet metal and utilises user-definable parameters for precise automatic unfolding.

Based on the ACIS solid modelling kernel and employing modern parametric techniques, it provides design flexibility, and a unique 2D-to-3D method of creating 3D objects.

In addition, Radan 3D allows the import of a range of file formats, including Inventor, Solidworks, Catia V4 & V5, SAT, IGES, STEP and Parasolid, as well as the creation of assemblies in the 3D environment.

The Radan 3D model can be updated with manufacturing information such as expected radius and setback values, from Radbend, Radan's offline programming solution

### Automatic Unfolding

Parts can be unfolded directly into the sheet metal part editor, ready for onward processing. This enables a smooth and efficient workflow from design to manufacture.

Unfolding parameters, such as bend allowances, can be controlled independently of the geometry, enabling an accurate development that is based on actual bending machines and tooling to be used in production. This leads to more accurate flat blanks, more accurate folding and ultimately, a higher quality product.

Benefits include :

- ◆ Specialised sheet metal assembly design
- ◆ Design errors eliminated
- ◆ Accurate automatic unfolding, even with imported models
- ◆ Increased production flexibility
- ◆ High quality data import with optional geometry healing
- ◆ High productivity

## **Sheet Metal Unfolding**

The unfolder can flatten models, such as intersecting cylinders, producing complex profiles in the developed shape. In order to manufacture such shapes efficiently on CNC machinery where the cutting entities available are typically lines and arcs, the software can automatically translate these complex profiles into a series of lines and arc elements. The process is designed to create the minimum number of geometries necessary to make the part to the required accuracy. The benefit is shorter programs and better quality parts.

## **Full assembly modelling**

Radan3D is ideal for modelling simple or complex assemblies. Parts can be grouped together in assemblies or sub-assemblies within the model or can be saved and used across multiple models and assemblies. Radan3D supports both the Bottom Up and Top Down approach to 3D modelling.

## **Bottom up**

Radan3D can be used in the Bottom Up approach. This means the user can design each part in isolation and then bring them all together to form large assemblies.

## **Top down**

Alternately Radan3D can be used in a Top Down approach. This means that the user can work within the assembly designing parts in context ensuring correct function and fit.

## **Fold up from flat**

Radan3D has a powerful utility that allows users to take existing 2D blanks and fold them up into 3D sheet metal models. Working from your bend allowances the Fold Up from Flat utility will scan any 2D blank drawing looking for external profiles and bend lines. It will then create an accurate 3D sheet metal model from this 2D drawing.

Once created this model can be edited in the normal way. This really is the most productive way to re-engineer existing blank data.

## **Integrated CAD/CAM**

Radan3D will stand alone as a powerful and productive modelling tool. However Radan3D can be fully integrated into Radan's suite of manufacturing products offering truly integrated CAD/CAM.

## **Tool detailing**

The unique multi view feature in Radan3D offers the user the ability to turn 2D orthographic views into a 3D model.

Simply extract profiles from an existing 2D drawing or draw 2 or more 2D views of an object, press the button and Radan3D will convert these views into a 3D model. It really is the quickest and simplest way to go from 2D to 3D.

## **Accurate design**

To ensure accurate and flexible 3D design, Radan has the following key features:

- ◆ Parameter driven design
- ◆ Automatic addition of bends

- ✦ Advanced corner treatment with sheet overlaps or “airtight” corners
- ✦ Merge face function to join complex corners
- ✦ User defined blend allowances

**Radan3D is a simple to use 3D design tool. It is ideal for the design of sheet metal parts and assemblies. However it doesn't have to stop there, Radan3D is an all round 3D modelling tool that can handle all of your 3D design and modelling requirements.**