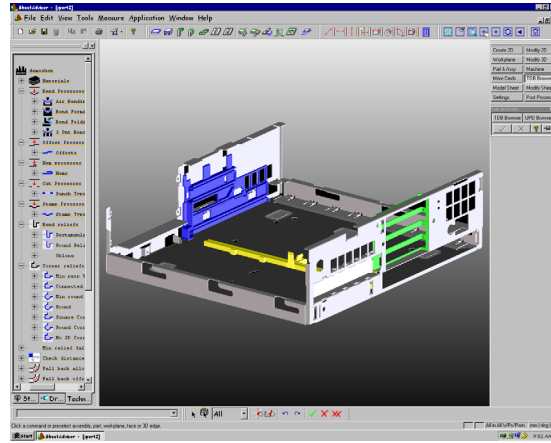


OneSpace Designer Modeling

Sheet Metal

The Sheet Metal module helps companies optimize their sheet metal design and manufacturing process. It helps increase collaboration across the teams by using sheet metal manufacturing knowledge during the design process. This introduces dramatic productivity gains and cost savings in the design and manufacture of sheet metal parts.



Accessing Knowledge

Building on the benefits of the OneSpace Solution Suite, Sheet Metal brings clear productivity and quality gains to both design and manufacturing environments for any companies developing sheet metal parts. This is achieved through a unique combination of specialized sheet metal design capabilities and CoCreate's advisor technology.

Key Benefits

CoCreate's advisor technology provides built-in Design for Manufacturability knowledge, which ensures that fundamental design flaws are avoided. Designers can quickly and accurately design sheet metal parts ready for manufacturing, receiving on-line guidance during the initial design stage, and warnings about manufacturing violations in the design. Therefore costly special tooling and procedures are avoided in manufacturing. In addition, technology databases of preferred materials and tools ensure that designers are guided to create only parts that can be made by a specific shop's machinery. This results in a significant increase in ready-to-manufacture products without design correction cycles, costly special tools and materials, and helps potentially remove the physical prototyping stage for sheet metal design.

Module Highlights

To improve design productivity, this module provides an extended, powerful and intuitive design environment tuned for sheet metal design, for example:

- Offset.
- Hem.
- Lip.
- Punch.
- Stamp.
- Bend.
- Fold and Unfold.
- Animation.

The automatic creation of bend and corner reliefs further reduces the team's workload. The initial selection of a manufacturing shop ensures that only the preferred materials, tools, and processes available at that shop are recommended to the design team.

Design for Manufacturability

In addition to improving manufacturability through recommending preferred materials, tools, and processes, advisor technology ensures that fundamental design flaws are avoided. This module proactively checks each design step and provides the designer with immediate guidance.

Checks include:

- Minimum distance from tool to an existing bend, feature or edge of material.
- Conformance of bend angles and radii to material and tool limits.
- Topological checks, ensuring for example adequate size of corner reliefs.

The designer receives clear warnings and guidance about potential manufacturing problems.

Fast and Accurate Manufacturing Data

Automatic flat generation provides fast, accurate flattening of sheet metal parts to create the complete 2D flat information needed by the NC preparation package, including:

- Recalculated dimensions according to material bend allowance values.
- Tool identification codes for all punch and stamp operations, plus position direction and angle.
- Bend identification with tool and process information.
- Bend and corner relief suppression/replacement capabilities.
- Addition of design attribute information for documentation.

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The flat is fully associative so that when changes are made to the 3D sheet metal part, the flat can be automatically updated in the 2D drawing.

Progressive Die

This module's powerful 3D fold and unfold design capabilities supports fast design of Progressive Die type sheet metal parts. By simulating the sequential design processes of punching, stamping and bending operations associated with the Progressive Die process, designers can design the tooling directly from the 3D model.

Technology Database

All the application-specific knowledge about the manufacturing process is stored in a technology database, this includes:

- Sample manufacturing shop
- Preferred materials.
- Available punching and stamping tools
- Costing information.

Companies can tailor this database to reflect their preferred materials, tools, processes, and multiple manufacturing shops. In addition, custom tools can be designed and added interactively by the designer to the existing databases simply and easily. Companies can

add new tools, materials, and manufacturing shops to the database "On-the-Fly".

Cost Estimation

The cost estimation capability allows the company to compare the approximate production costs of design alternatives based on parameters such as:

- Material type and amount.
- Number of operations (bending, punch, stamp).
- Number of tools used.
- Perimeter length and enclosing box size.
- Surface finishes.
- Fixings, such as rivets.
- Lot size.
- Set-up, run, and handling times.

These parameters can also be tailored for different manufacturing shops.

System Requirements

OneSpace 2002 and later.

Runs on the same platforms as OneSpace Designer Modeling:

- HP-UX® 11.0/11i (ACE 1199)
- Windows NT™ 4.0
- Windows 2000™
- Windows XP™ professional

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Ordering Information

Sheet Metal	C320
Sheet Metal Support	C320A

Prerequisites

Modeling	C200
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Electronic manuals are available on the OneSpace media.

CoCreate

For more information, please contact the following CoCreate offices or visit

www.cocreate.com
www.cocreate.com/eSupport

Germany
Phone: +49 (7031) 951-0

**United Kingdom
and other European countries**
Phone: +44 (1789) 778549

USA
Phone: +1 (970) 267-8000
Toll free: +1 (888) CoCreate

France and Spain
Phone: +33 (1) 69189-113

Italy
Phone: +39 (02) 924425-21

Singapore
Phone: +65 (550) 9665

Japan
Phone: +81 (42) 352-5654

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