Mechanical Design

CATIA - Sheetmetal Design 2 (SMD)

CATIA V5R20
Mechanical Design

CATIA - Sheetmetal Design

Designs sheet metal parts in a very intuitive and productive environment

Product overview

CATIA - Sheetmetal Design 2 is a new generation CATIA product dedicated to the design of SheetMetal parts. Its feature-based approach offers a highly productive and intuitive design environment. It allows concurrent engineering between the folded or unfolded representation of the part.

CATIA - Sheetmetal Design 2 can be cooperatively used with other current or future applications of CATIA Version 5 like part design, assembly design and drawing generation. As sheetmetal design may start from scratch or from an existing solid, communication between suppliers and contractors is empowered. It includes many standard design features, for stamped, bended or rolled parts and compliant with E&E and F&A industries requirements.

CATIA - Sheetmetal Design 2 offers the same ease of use and user interface consistency as all CATIA V5 applications to drastically reduce training cycle time and unleash designer creativity. It also provides multiple interoperability functions with CATIA V4 sheetmetal products. ...

Product Highlights

- Dedicated tools for sheet metal feature-based modeling
- Simultaneously work with folded and unfolded representation of the part
- Enables concurrent engineering between the functional part representation and part representation to be manufactured
- Delivers dedicated drawing generation capability
- Ensures compliance with industry standards
- Includes an intuitive, task-optimized, user interface
- Provides native integration with other CATIA Version 5 applications (knowledgeware, part design, machining, drafting...)

Product Key Customer Benefits

Tools Dedicated to Sheetmetal

CATIA Sheetmetal Design 2 product is dedicated to the design of sheet metal parts. Its features-based approach offers a highly productive and intuitive design environment.

Folding/unfolding capabilities
The CATIA Sheetmetal Design 2 product gives users the ability to carry out the folding/unfolding of a sheetmetal part.

**Feature-based Modeling**

CATIA Sheetmetal Design 2 provides sheetmetal-specific features most commonly used in the industry. SMD provides general features such as cut out stamps, holes and flanges for complex parts; dedicated features for bended part such as wall, wall on edge, bend, extrude, and for rolled parts, rolled wall and hopper features. Rather than having to deal with plain geometry, sheet metal designers can work in the language they already know.

CATIA Sheetmetal Design 2 permits creation of associative features on both folded and unfolded representations of the part. A cutout performed, for example, on the unfolded representation of the part will automatically and simultaneously be reflected on the folded representation. This can be done at any time during design creation and without any prerequisite operation. With the folding/unfolding features we can work on partial unfolded state of the part. The global design into manufacturing process can be optimized thanks to standardization features such as user defined stamps.

**Concurrent Engineering**

CATIA Sheetmetal Design 2 enables concurrent engineering between the functional shape of the part (as defined through the initial requirements) and the definitive shape including manufacturing constraints. The user can start a design from an existing solid (for example provided by his contractor) and identify walls, bends and cutouts from the geometry. This capability is enabled by the auto recognition and auto-bend features. If a change is performed in the conceptual design, the detailed design will be automatically updated. Using CATIA Sheetmetal Design 2, the communication between suppliers and contractors is thus empowered.

**Dedicated Drawing Capability**

In the context of the Sheetmetal part, a drafting view of the part can be automatically generated using the CATIA Generative Drafting. CATIA Generative Drafting is automatically enhanced with some new features when used with CATIA Sheetmetal Design 2. The generated unfolded view for example includes the representation of bend axes, value and radius, line for upward/downward bends and stamps, and annotation in the drawing as well. The folded view can be also added in the same sheet. The generated drawings are completely associative with the original design.

**Compliant with Industry Standards**

Deformation of the material during folding and unfolding process can be managed through the access to company defined bending tables that includes the definition of bend radius, allowance and sheet thickness and stamping tools tables. This allows the user to verify the design compliance with the company-defined standards and to ensure the design quality. Using the CATIA Generative Drafting product, designers can also extract documents in DXF format (the AutoCAD ASCII format) for such downstream applications as nesting and cutting.

**Intuitive User Interface**

Thanks to the unique CATIA Sheetmetal Design 2 multi-body capabilities, designers can decompose parts following a logical representation, thus simplifying part bodies exchange and enabling a better understanding of the design. CATIA Sheetmetal Design 2 provides the user with a sketcher that allows rapid definition and edition of sheet metal part profiles. It also offers an intuitive Sheetmetal Structure Editor that considerably eases design understanding and design changes. These capabilities perform in exactly the same way than in CATIA Part Design, which ensures a rapid learning curve.

**Integrated With Other CATIA Version 5 Applications**

CATIA Sheetmetal Design 2 is natively integrated with other CATIA Version 5
applications 5, such as knowledgeware, part design, machining and drafting. On top of CATIA Part Design or CATIA Generative Drafting, CATIA Sheetmetal Design 2 can also benefit from the power of the CATIA Knowledgeware product family. All sheet metal specifications can be captured to build, manage and reuse the corporate knowledge of the company and thus increase the quality of the design while at the same time reducing the time to market.

Compatible with CATIA Version 4 Data And Applications

Parts created in V5 can be used in CATIA V4 (Release 2.0 Refresh 1 or later) for downstream applications such as analysis and manufacturing. V4 designs can be migrated in V5. For example, V5 sheet metal feature recognition can be applied to a V4 solid design.
ABOUT CATIA V5R20

CATIA is Dassault Systemes’ PLM solution for digital product definition and simulation.

www.3ds.com/products/catia