



•DFMExpress •DFMPro •DFM Enterprise



machining | intelligence





DFM pulls proprietary manufacturing knowledge upstream leaving designers free to innovate, secure in the knowledge that they won't pass costly mistakes in the manufacturing process

Design & Manufacturing Overview

The design stage is considered the most crucial component in the product lifecycle process - the platform for the conception and development of new products. Manufacturing companies continually fight the battle of lacking communication and coordination between the design and manufacturing departments. Approximately 80 percent or more of the life cycle costs of a product are determined during the design stage. Finding errors and fixing defects during the design stage is the optimal scenario to achieving both high quality and cost effective products.

Iterative Design Process

The iterative approach to the design process involves the designer approaching the manufacturing department at an early stage to receive feedback to address any manufacturability concerns before they occur. This methodology is ideal and the desired process, however it is generally only feasible in an environment where the manufacturing & design departments are co-located. It is unusable with the "Design anywhere - Make anywhere" philosophy common throughout the world today. In addition, because it's traditionally a manual process it is quite likely that some errors in a fairly complex part model may escape correction during a review.

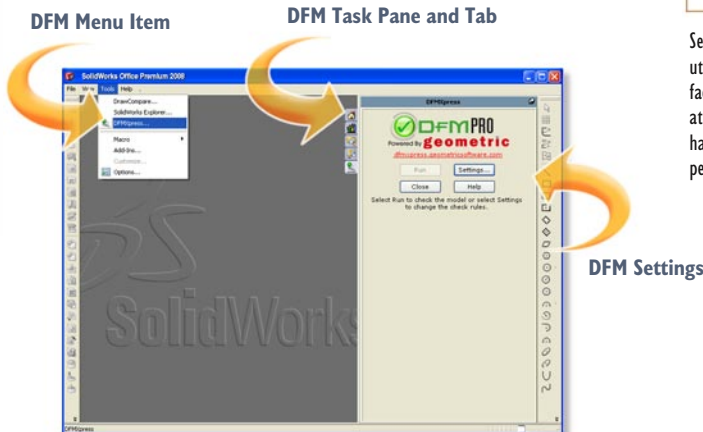
What is Design for Manufacturing (DFM)?

DFM, developed by Geometric, is a revolutionary technology for designers that facilitates upstream manufacturability validation and identification of areas of a design that are difficult, expensive, or impossible to machine. Incorporating years of functional expertise, DFM is engineered to help the designer predict manufacturing problems early in the upstream design stage so they can preemptively corrected.

DFM Benefits:

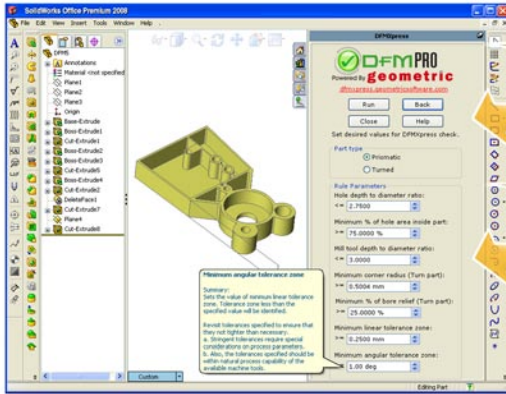
- Performs early prediction & prevention of production problems or manufacturing inefficiencies
- Assists evolution of the optimum design and product quality
- Facilitates concurrent design of product & process
- Decreases lead-time by reducing backtracking and design iterations
- Aids capacity planning & cost estimation

DFM



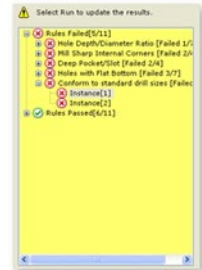
Seamless gold integration and utilization of SolidWorks geometry facilitates easy-to-use DFM commands at the click of a button - you never have to leave a SolidWorks session to perform automated design checks.

Settings



DFM Settings

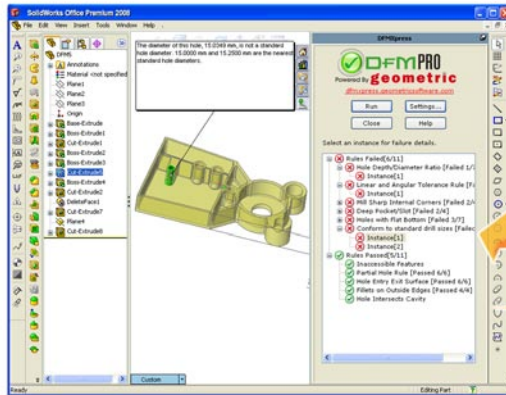
Set Part Type and Parameters



Complete Design Associativity

DFM automatically prompts if the part is modified adding a message above the result tree and making the background yellow to indicate that the design checks are not up-to-date.

Results



Pass/Fail rules and their instances are displayed in tree format.

Problematic areas highlighted in model with callouts. Model becomes semi-transparent to show clear visibility of area in question.

Summary

Design flaws are often "easy to detect" yet "difficult to fix" during downstream stages like Manufacturing. Via simple rules based checks, DFM allows designers to optimize the entire design through manufacturing process by predicting manufacturing problems early in the upstream design stage. In addition to saving countless back-and-forth design review procedures, DFM assists in facilitating product design that is fully compatible with the desired manufacturing processes and ensures it is both manufactured economically and in accordance with desired quality standards.



DFMxpress

DFMxpress combines a high level of functionality and accuracy with ease-of-use. Fully embedded inside of SolidWorks 2008, it is perfect for the designer who needs process analysis, but is not necessarily a manufacturing expert. DFMxpress allows you to easily gain insight into the manufacturability of your design under real world conditions.

Features

- Tool with manufacturing knowledge base, for use by designers
- Automate repetitive DFM checks
- Early identification of areas that are difficult to machine
- Recommend alternatives that will help manufacturing feasibility / cost savings
- Basic sets of rules for drilling, milling & turning
- Rules parameters can be configured
- Simple Graphical User Interface
- Seamlessly integrated into SolidWorks
- Feature Based (works with Automatic Feature Recognition engine)
- Leverages SolidWorks' SWIFT technology

DFM Pro

DFM Pro provides simple, accurate and robust design analysis that leads to better products by giving designers the confidence for building superior models. Designers are free to innovate, secure in the knowledge that they won't pass costly mistakes in the manufacturing process.

Complete integration with SolidWorks means that DFM Pro users can perform complete design checks and analysis directly from their SolidWorks user interface. Complete user flexibility in configuring the design rules allows a customizable experience to the individual DFM environment.

DFM Pro enables faster, less costly, and more optimized product development, as well as more in-depth examination of product manufacturability than would ever be possible using even the most intensive iterative design process.

Features:

In addition to all the features of DFMxpress, DFM Pro allow features:

- Sophisticated framework for user programmable design checks
- Advanced design rule checks for milling & turning applications
- Further flexibility in configurations and user interaction
- Add-on module available for fabrication
- Available on multiple kernels (in addition to SolidWorks)

DFM Enterprise

DFM technology can assist organizations in locking down commonly followed best practices into their overall standard operating procedure. However, it is quite common for businesses to pursue a solution that engages their established best practices based on their own proprietary experience and history. The developmental power and clout of Geometric can facilitate the automation of these best practices into custom upfront design checks that are fully and seamlessly integrated into the enterprise's working environment.

Features:

- Comprehensive processes and rules evaluation by Geometric manufacturing experts to devise optimal scope and design plan
- Custom design checks based upon established manufacturing practices and standard operating procedures
- Facilitates locking down rules related to other downstream stages (i.e. assembly)
- Seamless design automation within the organization's current working environment

