



•DFMxpress •DFMPro •DFM Enterprise





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. Approximately 80 percent or more of the lifecycle costs of a product are determined during the design stage. Companies constantly fight the battle and pay the price of inadequate communication and coordination between the design and manufacturing departments. Finding errors and fixing defects during the design stage is the optimal way to achieve high quality and cost effective products.

Iterative Design Process

In the iterative approach to the design process, the designer needs to receive early feedback from the manufacturing department to address any manufacturability concerns before the design is frozen. This methodology is ideal, however it is generally only feasible in an environment where the manufacturing & design departments are co-located. With the "Design anywhere - Make anywhere" practice common throughout the world today, implementing iterative design is even more of a challenge. In addition, because the iterative process involves manual reviews and can be very time consuming, it is very difficult to catch and fix every concern in complex part models.

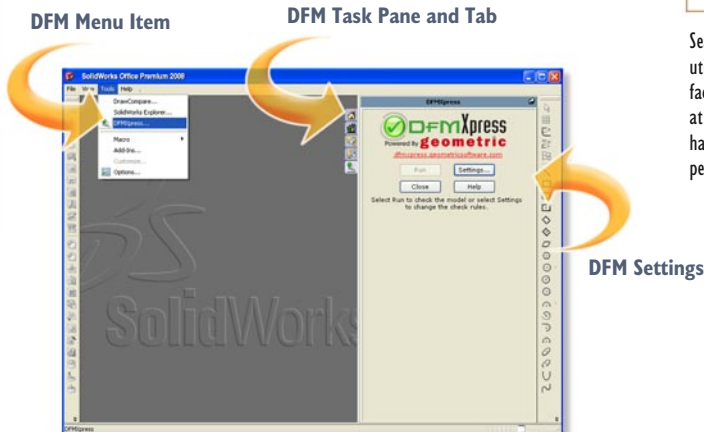
What is Design for Manufacturing (DFM)?

DFM, developed by Geometric, is a revolutionary suite of tools 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 and preemptively correct manufacturing problems early in the design stage. Automating the iterative design process via a series of rules based checks, DFM accelerates and enriches the entire design through manufacturing process.

DFM Benefits:

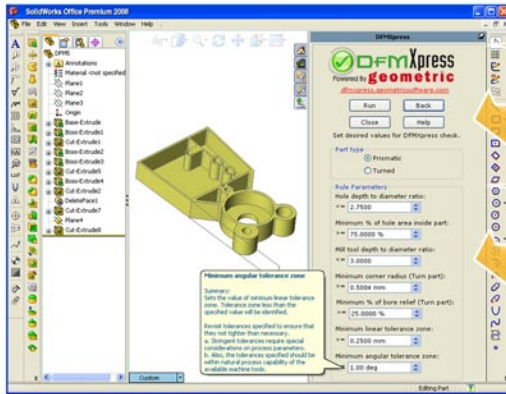
- Allows early prediction and prevention of production problems or manufacturing inefficiencies
- Assists evolution of optimal design and product quality
- Facilitates concurrent design of product and process
- Decreases lead-time by reducing backtracking and design iterations
- Helps capacity planning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

DFM



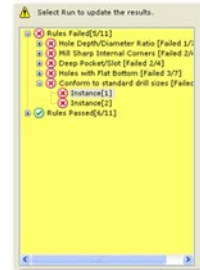
Seamless gold integration and utilization of SolidWorks geometry facilitates easy-to-use DFM commands at the click of a button - you never have to leave a SolidWorks session to perform automated design checks.

Settings



DFM Settings

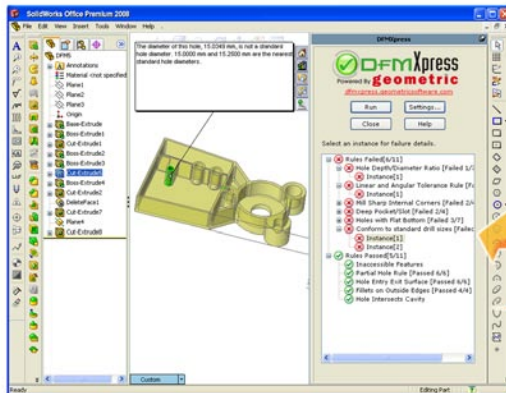
Set Part Type and Parameters



Complete Design Associativity

DFM automatically prompts if the part is modified adding a message above the 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 design stage. In addition to saving countless back-and-forth design review steps, DFM assists in creating a product design that is compatible with the desired manufacturing processes, in accordance with desired quality standards, and cost-effective to manufacture.



DFMXpress

DFMXpress combines practical iterative functionality with accuracy and ease-of-use. Fully embedded inside of SolidWorks 2008, it is perfect for the designer who needs manufacturability analysis, but is not necessarily a manufacturing expert. DFMXpress permits designers to easily gain insight into the cost-effective manufacturability of their designs.

Features

- Explanations and recommendations that will help designers identify manufacturing feasibility
- 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 a sophisticated environment for designers to custom configure their manufacturing rules and knowledge capture. Providing simple, accurate and robust design analysis, DFM Pro ultimately leads to better products by giving designers the confidence and capabilities to build 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 allows designers to perform complete design checks and analysis directly from their SolidWorks session. 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 greater 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 offers:

- 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

Successful manufacturers incorporate their own proprietary manufacturing processes and experience into established best practices. On extensive model libraries of complex parts, this can create an iterative design process that is both extremely cumbersome and time-consuming. Geometric's DFM engine can be customized and enhanced to assist organizations in automating and locking down commonly followed best practices into their overall standard operating procedure.

Leveraging extensive PLM and manufacturing experience, Geometric can create series of customized design checks with DFM that are seamlessly integrated into the company's working environment to enable fully optimized workflows and optimal cost-effective product design processes.

Features:

- Comprehensive processes and rules evaluation by Geometric experts to devise optimal scope and design plan
- Implementation of custom design checks based upon established manufacturing practices and standard operating procedures
- Seamless design automation within the organization's current working environment