

2. Solid Edge

Solid Edge is a 3D CAD program easy to use. This is a powerful program to create models, assemblies and 2D engineering drawings with parametric and directional characteristics. It was first available in the market in 1995, and nowadays it's commercialized by Siemens PLM Software.

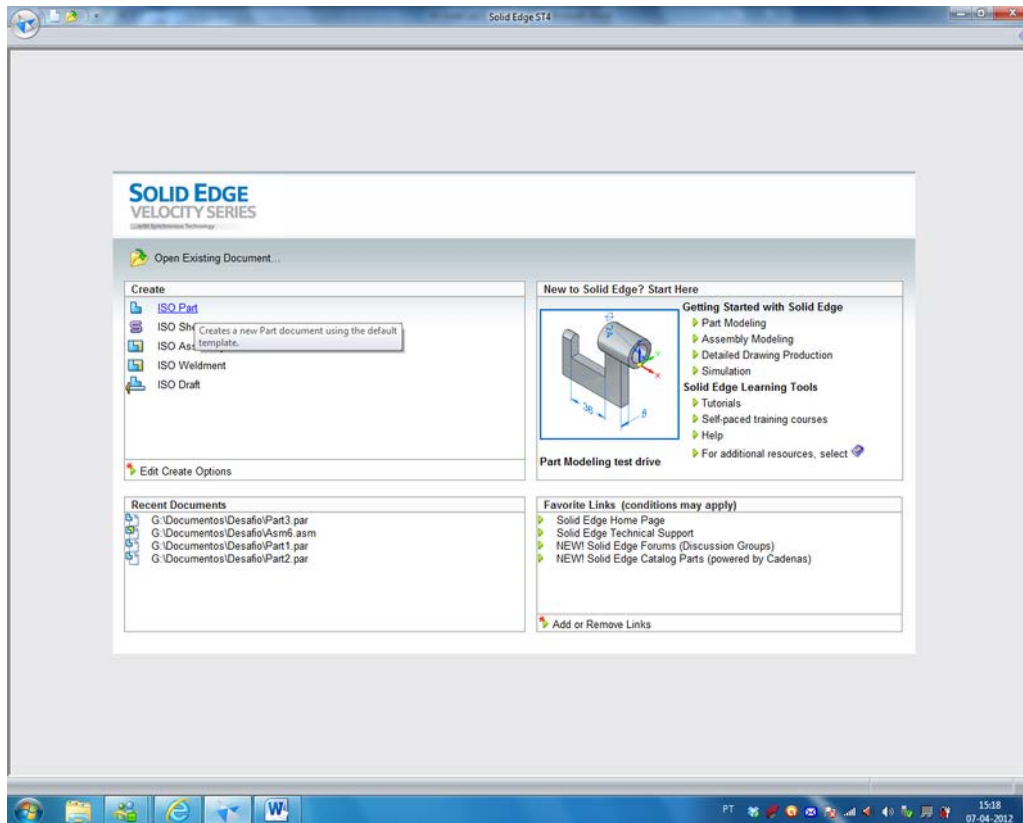
It is called parametric because the totality of operations, with dimensions and relationships remains in the feature tree. The user has the possibility to modify parameters by editing the operations in the tree, and the related geometry of the model is actualized automatically.

It is called directional, because Solid Edge is composed by several environments: part, weldment, assembly, draft, etc., each one with specific functions that can be combined between them. For example, if an operation is modified in the part environment, the modification will be integrated in the Assembly environment.

Its simplicity makes this software very useful in the academic domain. Dialog boxes based on stream technology pop up to help the user. Also, the program includes highly interactive menus. Moreover, it offers help sheets that can be consulted at any moment, and tutorials with self-learning promoting exercises.

2.1. Solid Edge environment

Solid Edge offers several environments that permit to work with specific parts of the design.



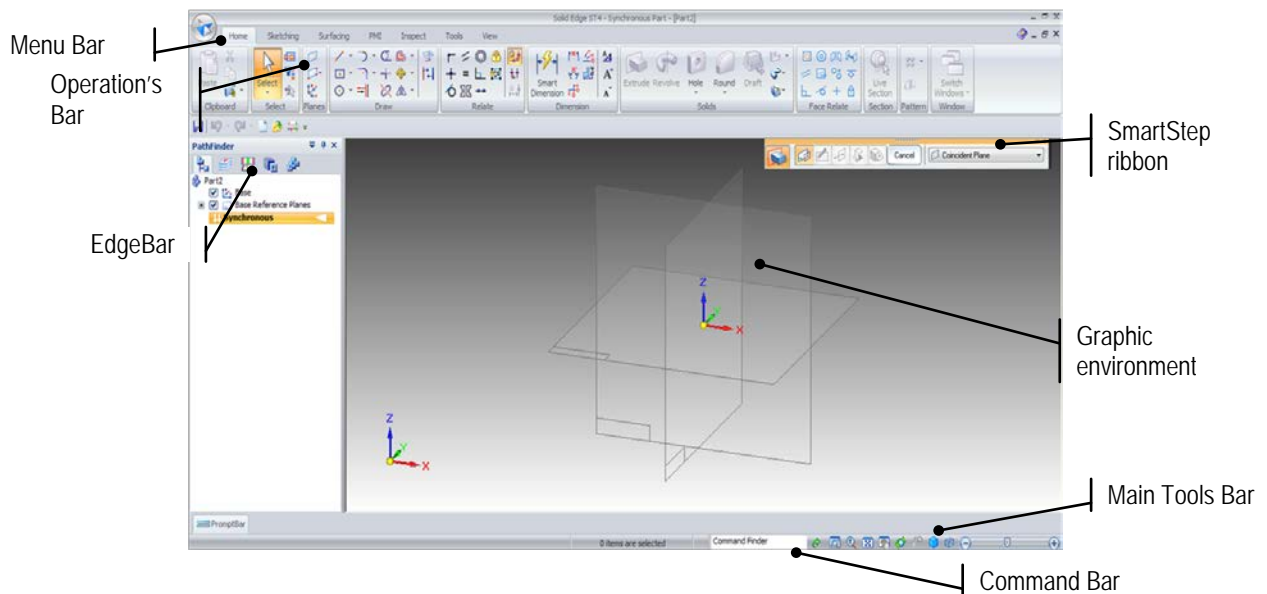
2.1. Image: Home page of Solid Edge (Image of Solid Edge)

The different environments have the following characteristics:

- Part: it's the environment for solid modelling and representation of surfaces. Files created in the environment have “.par” extension.
- Weldment: environment to model and develop metal sheets. Files have “.psm” extension.
- Assembly: assembly are created from pieces or smaller assemblies. It permits dynamic analysis, calculi of interference and animation in the Motion environment. Files have “.asm” extension.
- Weldment: the environment for welding of different pieces, and analysis of their behaviour after being welded. Files have “.pwd” extension.
- Draft: to construct engineering drawing based on pieces or assemblies. It has dimension and design commands. Files have “.dft” extension.

2.2. User interface

2.2. Image corresponds to Part environment.



2.2. Image. Interface of Part environment (Image of Solid Edge)

You can see the following domains in the screen:

Menu bar

It contains pull/down menus. The options in this bar are also included in the different Tools Bars. Those menus bar can be activated and located at any point of the screen.

Main tools bar

It manages file use options and Solid Edge visualization options. Buttons with a small black triangle show more options in a pull-down menu.

SmartStep ribbon

SmartStep is a dynamic ribbon, linked with the activated command. This ribbon explains the required steps in order to execute the operation. In Image 2.2. the ribbon related with the Extrusion operation is shown. The aim of the ribbon is to guide the user in the execution of the operation.

Command line

It's the way Solid Edge has to communicate with the user. It shows prompts, messages and suggestions.

For example, when the pointer is over a command button, a short message will be shown explaining the function of the command. In the same way, when clicking a command button, several prompts show up in the different steps.

Tools bar

It contains operations to create parts, assemblies and drafts. To show them you must click *Show > Menu Bar*, and pick up the tool that you want.

Tools Bars depend on the working environment (part, assembly, draft, etc.). Buttons with a small black triangle show more options in a pull-down menu.

EdgeBar

Edge Bar is a window present in all environments but with different appearance. It can be activated and deactivated in the Menu Bar. Edge Bar shows different options in different parts of the upper side of the window (tabs). The main options are PathFinder and Library of Operations.

PathFinder (shown in Image 2.2) show the all the operations that comprise the model, and permits to select, modify, delete, etc. each one of them. With assemblies, it shows the list of the added pieces, as well as the relations between them.

The Library of Operations is the directory that includes the models and assemblies (tab next to PathFinder in Image 2.2).

Graphic environment

It occupies the biggest space in the screen, and it shows the results of the work. In Image 2.2 the reference planes are shown.

2.3. Solid Edge help

It is aimed to the new users of Solid Edge, and offers different resources: tutorials, learning mode, help menu, command helper, command suggestions, etc.

Tutorials

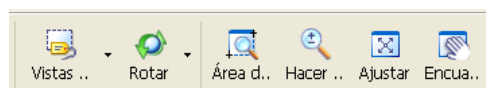
That's the most interesting help when starting with Solid Edge.

Tutorials help to learn by means of examples. There is a long list of different examples for each environment. In every tutorial, you can find step-by-step explanations that help to construct the model in the example.

Help is shown by clicking *Menu Bars > Help > Tutorials*. Also, it's possible to reach it from the home screen, as shown in Image2.1.

Learning mode

When using learning mode, the name of the command is shown with the corresponding icon, as shown in Image 2.3.



2.3. Image. Learning mode buttons (Image of Solid Edge)

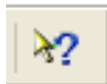
This learning mode is also activated in the home screen as shown in Image 2.1.

Help menu

Located in the Menu Bar, is the way to access the helping information of the program.

Another way to reach it is using [F1] key. Searches can be done by topics or using key words.

Open the Help Menu from the Main Tools Bar or use [shift+F1], to see different buttons and options.



2.4. Image. Moment help button (Image of Solid Edge)

Command tips

It offers help about the command active at the time.

This is the sequence in order to show the help: *Menu Bar > Help > Asistants > Activate Show Command Assistant*.

Suggestions in commands

As soon as you start working with Solid Edge short texts are shown with short explanations.

The sequence to reach this kind of help is *Menu Bar > Help > Assistants > Activate Shown Command Assistants*.

Each suggestion pop up only once, unless you select "Restart suggestions".

2.4. Bibliography on Solid Edge

GUEREDIAGA OLALLA, L. *Manual práctico Solid Edge ST2*. Servicios Informáticos DAT. Múgica, Vizcaya, 2009. Pp. 553. I.S.B.N.: 978-84-613-6767-2

MENESES ALONSO, J.; ÁLVAREZ CALDAS, C.; RODRÍGUEZ FERNÁNDEZ, S. *Introducción al Solid Edge*. Editorial Thomson-Paraninfo, Madrid, 2006. Pp. 295. I.S.B.N.: 84-9732-420-X.

SIEMENS PLM SOFTWARE. *Solid Edge*. 2009. http://www.plm.automation.siemens.com/es_sa/products/velocity/solidedge/index.shtml. (Consultado: 15/04/2013).