# Working Environment

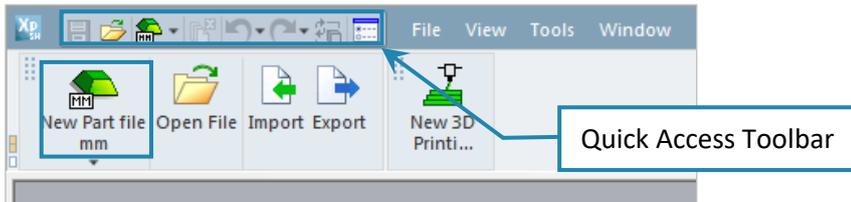## Environment – Part

14,0200,1599,1024(SP2)

In this document, we will learn the **Environment – Part** file.

The part environment is the basic 3D cad environment for design and managing 3D CAD files. In 3DXpert for SOLIDWORKS it is an option to open a **New Part file** for work or to activate **Part file** in 3D Printing Project.
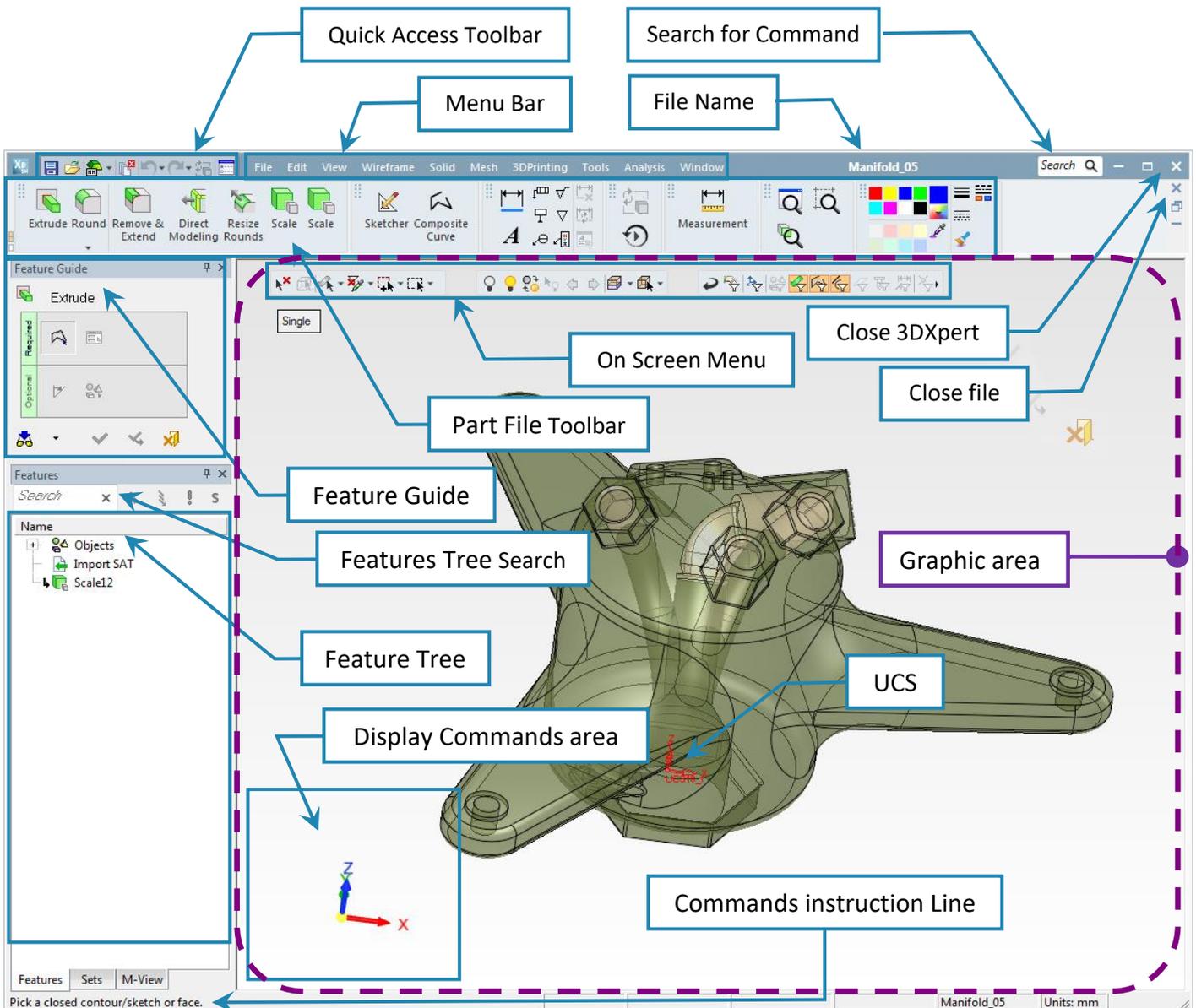
Part file contain different commands and functions to design and change a 3D model. The graphic area may contain different kinds of entities like objects, faces, wireframe and more.

## Open New Part file

*Pick* the **New Part file** command from the toolbar to open, it is also an option to do it while other files are open from the Quick Access Toolbar



Quick Access Toolbar

## New Part file screen:



Quick Access Toolbar

Search for Command

Menu Bar

File Name

Close 3DXpert

On Screen Menu

Close file

Part File Toolbar

Feature Guide

Features Tree Search

Graphic area

Feature Tree

UCS

Display Commands area

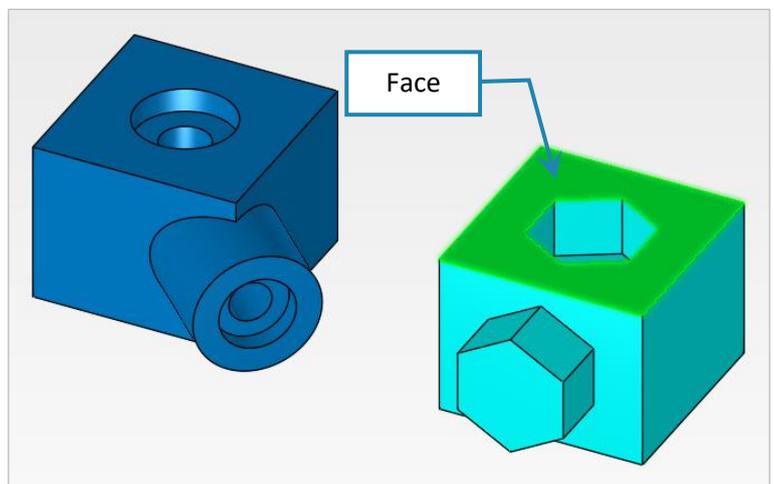Commands instruction Line

3D SYSTEMS

# Entities in part environment

## Object

The object is a 3D body build from faces, usually closed (Solid).
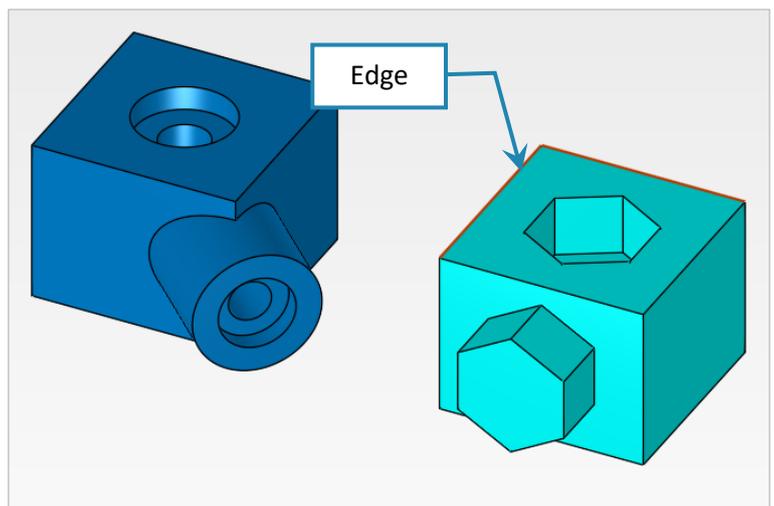A file can contain more than one object (Multi object).
.
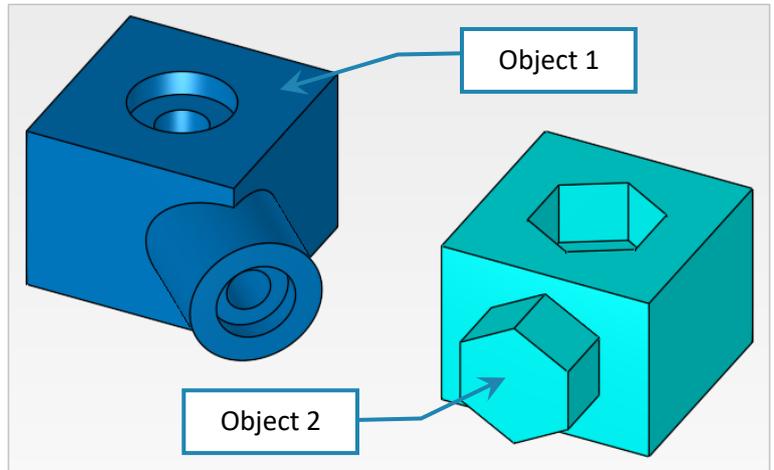
Object 1

Object 2

## Face

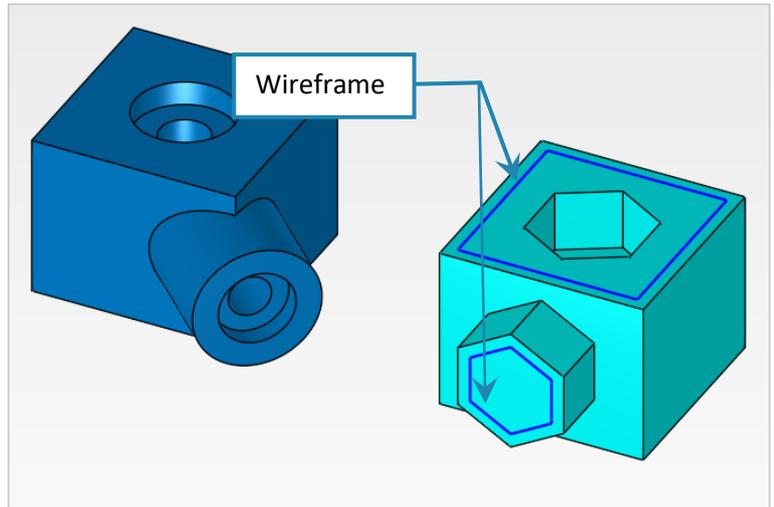A face is a part of the surface that warp the object. A face can be planar, cone, tours, spare or amorphic.

Face

## Edge

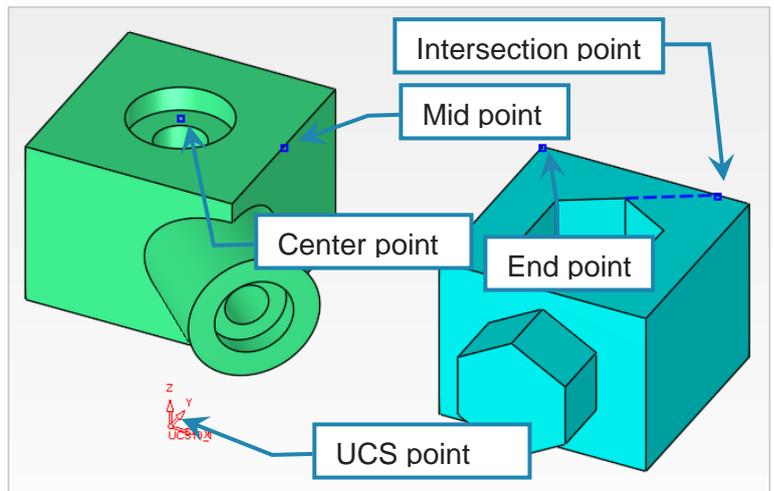Face boundaries called edges.

Edge

3D SYSTEMS

## Wireframe

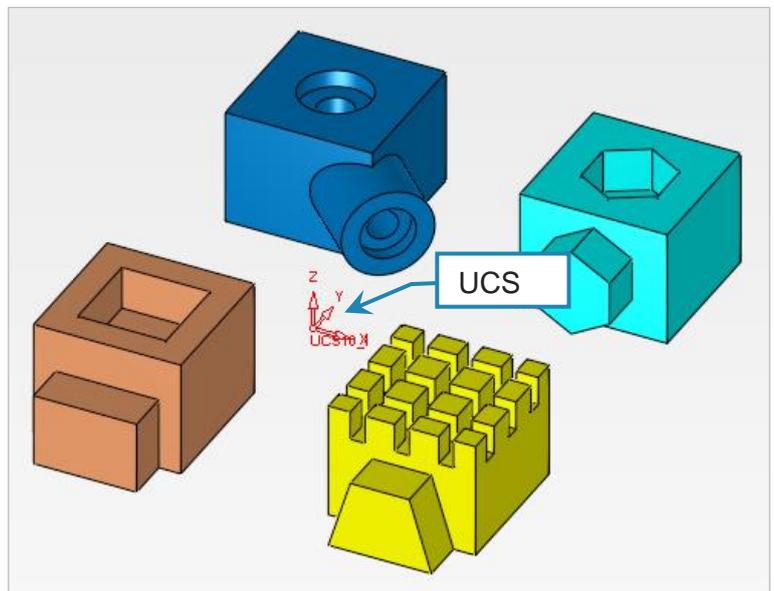Wireframe are curve entities, they can be 2D or 3D, close or open.

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## Point

There are a variety of types of points: End point, Mid point, Center point, Intersection point, UCS point and more.



## UCS

UCS is User Coordinate Systems. UCS10_1 is the "center" of the volume of each part file.

3D SYSTEMS

## Features Tree

On the bottom of the Features Tree there are 3 tabs:

- **Features Tree** – where the used commands are ordered.
- **Sets** – where you can use pre-defined sets or define new ones according to his entity selection.
- **M-View** – where you can define more screen viewpoints in addition to the normal views.

| Feature tree Tab | Sets Tab | M-view Tab |
|---|---|---|
|  |  |  |
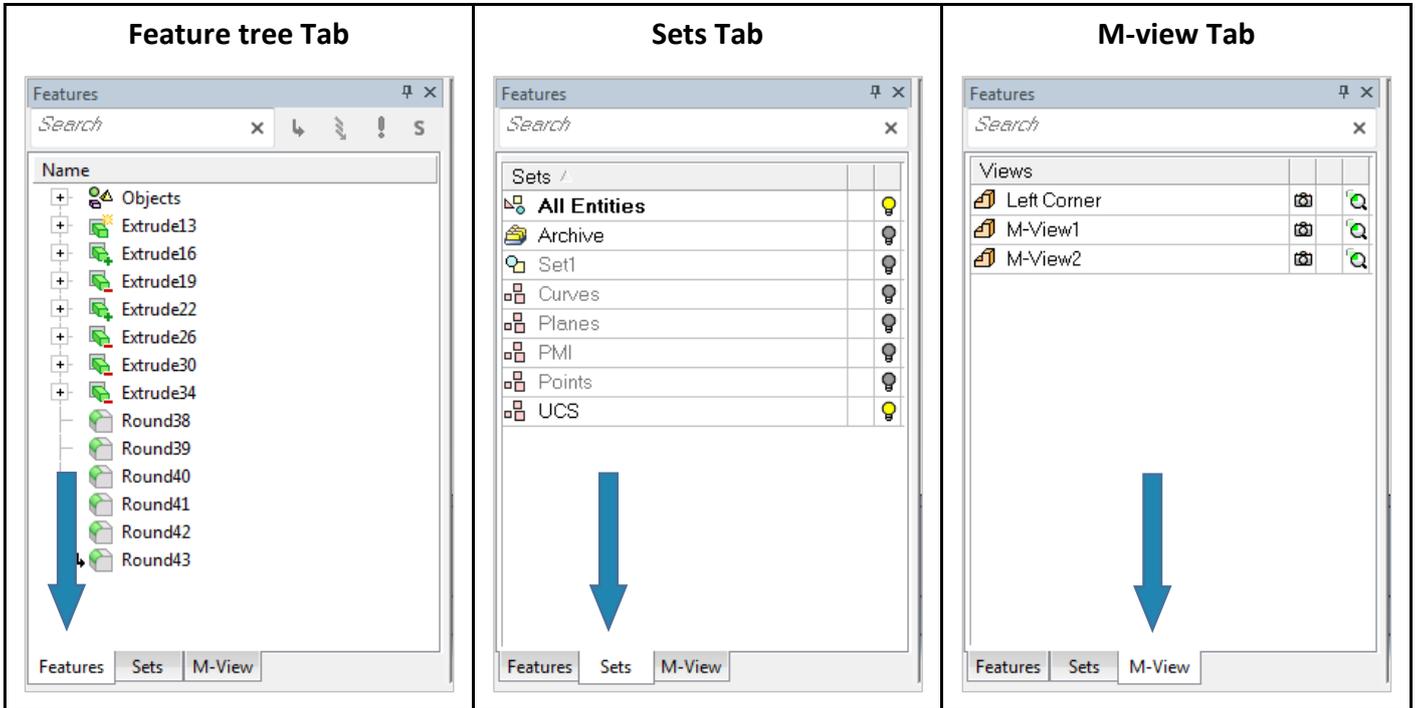
## Toolbars and Keyboard customization

You can organize the toolbars and Keyboard customization to his own needs and perforation, choose what icons are displayed, if they are big or small and if they have a text or not.

*Click* (right mouse button) anywhere on the menus area will open dialog for toolbar customization:
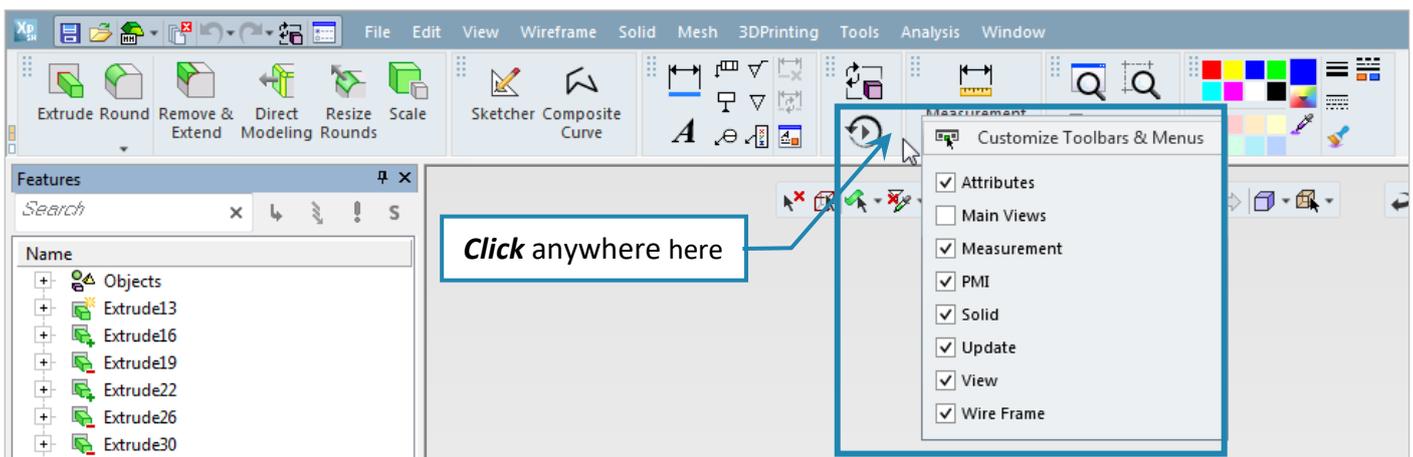
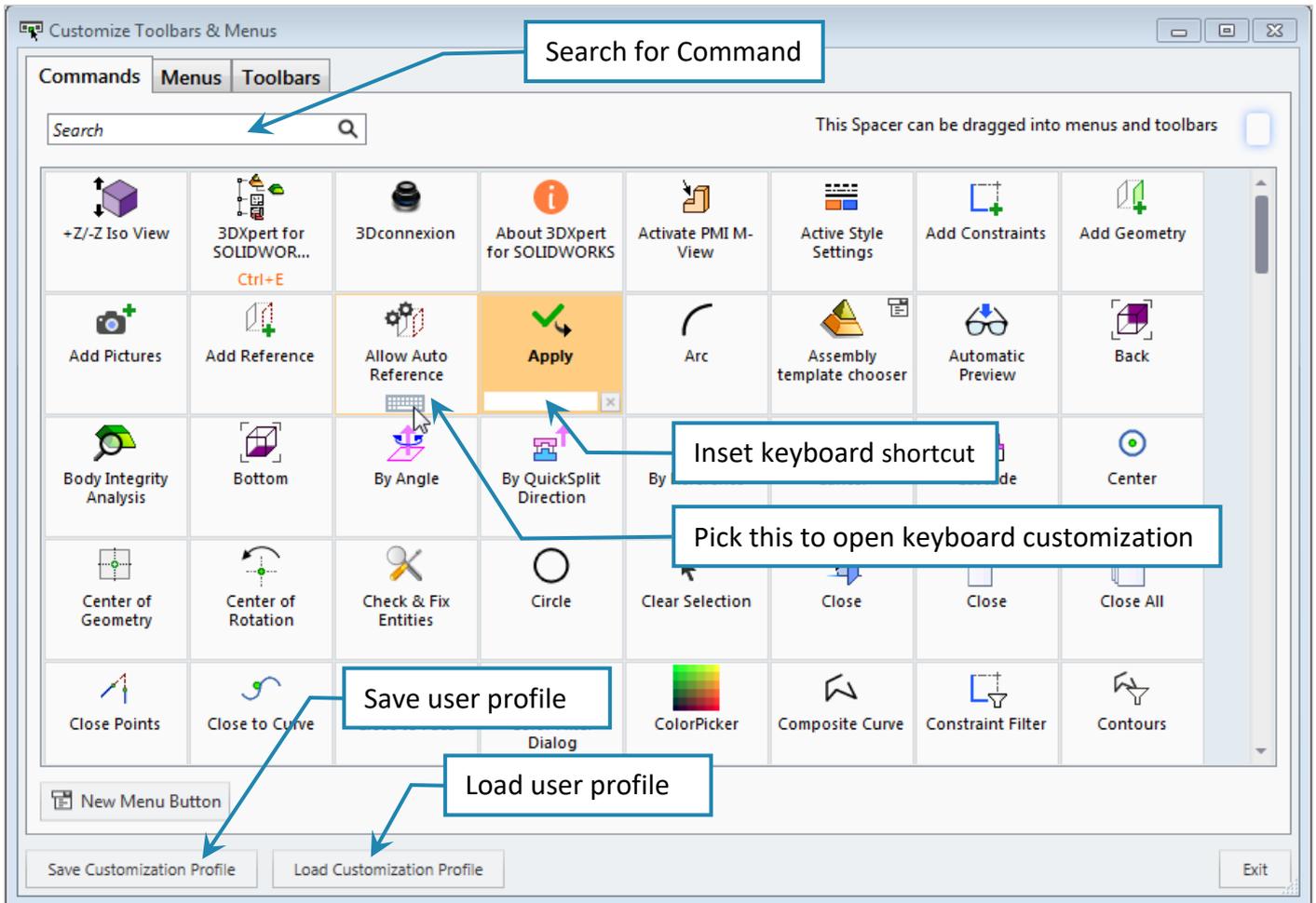*Pick*ing the **Customize Toolbars&Menus** will open the following window:



While this window is open, it is possible to place the mouse over it on any icon in the toolbars and click (right mouse button) to choose large icon (or small) and with text (or not).

At that time, you can drag&drop any icon from the table and to put it where he wants in the toolbar. To remove an icon *click* it and "Remove" or drag&drop it anywhere on the icon table.
.
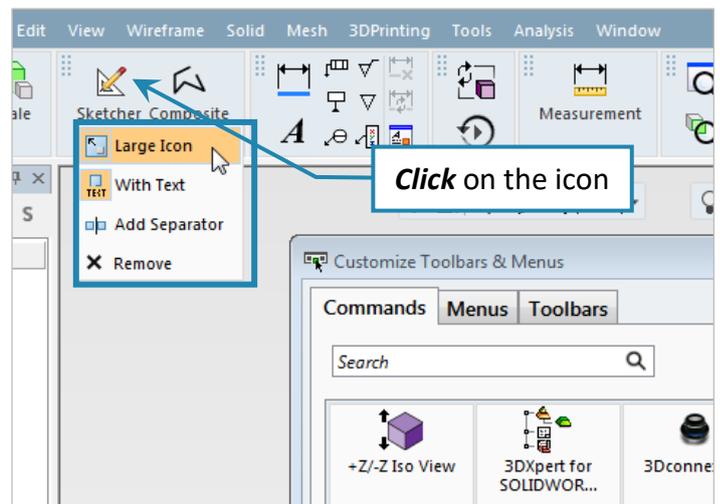


To customize the keyboard for any command needed, press at the bottom of the icon and insert any key or combination wanted.

3D SYSTEMS

## Mouse pointer

While working, the user may notice that the shape of the mouse pointer is changing according to the entity kind highlight or working status.

| | |
|---|---|
| | Pick an **edge** |
| | Pick a **face** |
| | Pick a spline, line, or any other **curve** |
| | Pick a **composite** curve |
| | Pick an **endpoint** of a curve or edge |
| | Pick the **midpoint** of a line, circle, arc, or ellipse |
| | Pick the **center point** of a circle, arc, or ellipse |
| | Pick the **point that is closest to a picked edge or curve** |
| | Pick the **point that is closest to the picked position on a face** |
| | Pick an **intersection point** |
| | Pick a **piercing point** |
| | Pick a Toolpath **point** |
| | Pick a **UCS** |
| | Pick a **pre-defined** point |
| | Pick a **Key In** point |
| | Pick a **sketch** |
| | Pick a **plane** |
| | Pick an open or closed solid **object** |

3D SYSTEMS

# On screen Menu

On screen Menu are the 3 lumps of icons at the top of the graphic area.

The right lump is the **Selection filters,** the central lump is for **Hide** and **Show** and **Rendering** presentation of the model. The left lump is for **Selection methods**.

| Selection methods | Hide/Show and Rendering | Selection filters |
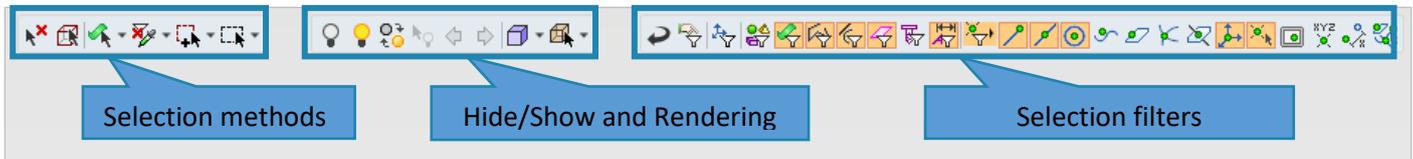
**Selection filters** are a basic "tool" which control the way that we select entities. Each command at each state of this command, the **Selection filters** automatically changed by the system. The filters state are predefined to the most common and useable status of that command. From time to time, according the user needs it is possible to change the filters state and to get more functionality from the command.

| | | |
|---|---|---|
| | Reset | Reset filters to default if needed – Reset will be done on exit command |
| | Keep Filters | Keeps user changes in filter state until release and reset |
| | Filter UCS | Open UCS Manger to control the display of multiple UCSs |
| | Object | Enable/Disable select of Objects |
| | Face | Enable/Disable select of Faces |
| | Sketcher & Composite | Enable/Disable select of Sketcher & Composite |
| | Edges & Curves | Enable/Disable select of Edges & Curves |
| | Datum | Enable/Disable select of Datum's |
| | Threads | Enable/Disable select of Threads attribute |
| | PMI | Enable/Disable select of PMI |
| | Points menu extension | Open the filter point menu extension |
| | End point | Enable/Disable select of End point |
| | Mid point | Enable/Disable select of Mid point |
| | Center point | Enable/Disable select of Center point |
| | Close to curve point | Enable/Disable select of Close to curve point |
| | Close to face point | Enable/Disable select of Close to face point |
| | Intersection point | Enable/Disable select of Intersection point |
| | Pierce point | Enable/Disable select of Pierce point |
| | UCS point | Enable/Disable select of UCS point |
| | Point | Enable/Disable select of Point |
| | Key in point | Enable/Disable select of Key in point |
| | Screen point | Enable/Disable select of point on screen |
| | Delta from point | Enable/Disable adding Delta to any other selected point |
| | Multiple points | Enable/Disable select of multiple kinds of points |

3D SYSTEMS