SolidWorks vs Solid Edge – which is best?

- SolidWorks has a wide reach in industry and has vast amounts of online resources.
- The Solid Edge price is less expensive than SolidWorks by a large margin, making it ideal for those with a constrained budget.
- Solid Edge has generative design which is an extremely powerful product design and optimisation tool.
- Solid Edge can use both parametric and direct modelling making it a very flexible and fast CAD package.

The amount of CAD packages available is overwhelming and it is often a painful exercise to decide which is best. This article will compare two of the most popular CAD packages; Solid Edge software by Siemens, and SolidWorks software by Dassualt Systemes. Both are very capable at 3d modelling and simulation. However, they have unique advantages that make each one better suited to a specific application.

Kernel Technology

The kernel is the heart of any CAD program. Instead of manually inputting all the code required to create a shape, the kernel handles all the mathematical heavy lifting, making CAD much easier to use. Both SolidWorks and Solid Edge use the Parasolid kernel. However, Parasolid is owned by Siemens. It must also be noted that despite sharing a kernel, the modelling techniques used by each software is completely different.

Modelling Technology

The type of modelling techniques used by each of these CAD packages is what sets them apart most, the differences of which are described below.

Solid Edge Software – Synchronous Modelling

This technique allows the user to switch between direct and parametric modelling without missing a step. This creates a lot of freedom in the modelling process. This also means that models and assemblies can be modified on the fly without worrying about breaking features and assemblies. This method has the following advantages;

- Flexible Design
- Ease of late stage design changes
- Simultaneous editing of multiple parts

Solidworks Software – Parametric Modelling

This is a more traditional modelling technique that allows the user to change the dimensions (Parameters) of a component, thereafter the part is updated. Components in an assembly with that part also need to be updated making this a more time-consuming modelling technique. Complex components and assemblies also make it easier to break a model if the wrong parameter is changed. However, some of the key advantages of this technique are as follows:

- A model can be archived and used as a basis for further designs
- Parameters can be embedded with equations making smart designs
- Constraints can be added to eliminate unwanted design changes

Both CAD packages have extensive engineering tools. SolidWorks is slightly stronger when it comes to engineering support, however Solid Edge includes generative design which is the next big thing in manufacturing and is far more capable than topology optimisation.

Cost & Packages

Both the SolidWorks and Solid Edge price have multiple licenses at different levels allowing the user to choose the product that best fits their budget and functionality requirement. Solid Edge has 4 licenses and SolidWorks has 3 licences. It must be noted that depending on where you are situated, the cost of the software is determined by your local resellers. However, a general cost comparison is shown below. It is clear that Solid Edge is the cheaper of the two. A detailed feature breakdown for Solid Edge 2019 can be found here and SolidWorks here.

Solid Edge

The Solid Edge cost breakdown is indicated below:

1. Design and draughting – $1390 (£ 1092)
2. Foundation – $2220 (£ 1744)
3. Classic – $3988 (£ 3133)
4. Premium – $5493 (£ 4315)

SolidWorks

The SolidWorks cost breakdown is indicated below:

1. Standard – $ 3995 (£ 3128)
2. Professional – $5490 (£ 4313)
3. Premium – $7995 (£ 6280)

For full SolidWords pricing click here

Student Version

If you are still a student and want to check out each of the CAD packages, then the easiest way is through a student version. To use the Solid Edge free student version, you must be an active student and must not use the software for commercial purposes. The SolidWorks student version is not free, and so it is not as accessible to students. However, your school or university may have a free version so you should check with them first.

In Conclusion

When choosing a CAD package, it is extremely important to understand what your specific requirements are. In general, most CAD packages have the basic functionality required to do any CAD work and create 2D manufacturing drawings. If you require specific engineering related features such as FEA or generative design, then each of the packages has its strengths and weaknesses. The Solid Edge cost is definitely the better of the two and has some interesting features, whereas SolidWorks is a powerhouse in the industry with wide reach.