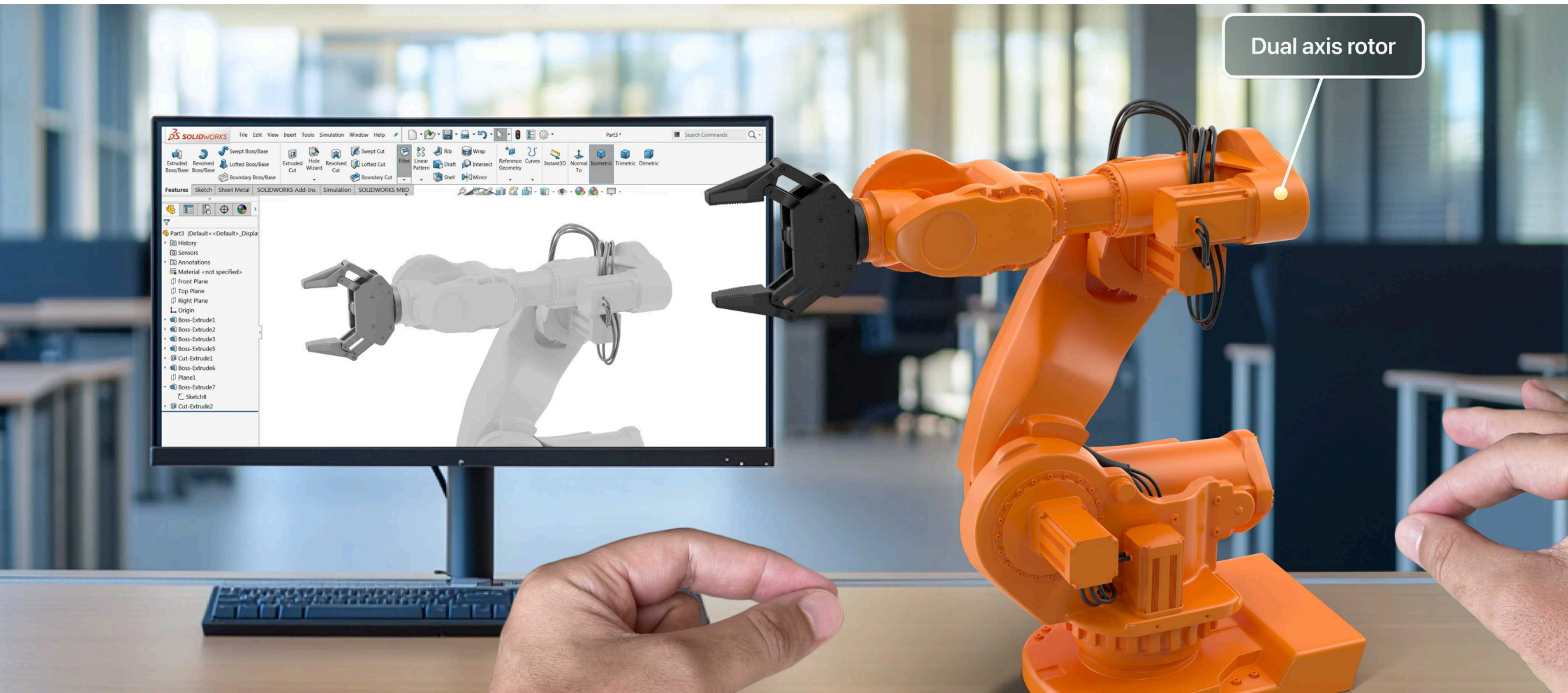




Guide to exporting SolidWorks files to JigSpace

Current version: 11/11/2024



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1 Introduction

3D presentations are a powerful way to communicate complex designs and ideas, especially in industries like manufacturing, architecture, and engineering. We call them “Jigs”. For SolidWorks users, creating optimized models for platforms like JigSpace ensures that these presentations run smoothly and look their best.

This guide is designed to help you prepare and optimize your CAD models for importing to JigSpace, covering detailed steps on simplifying models and exporting them efficiently. By following these steps, you'll reduce the complexity of your models without sacrificing quality, leading to better performance and ease of use in JigSpace.

2 Who should use this

This guide is aimed at SolidWorks users who frequently work with complex assemblies and want to streamline their workflow for creating Jigs, or preparing assets for a team using JigSpace. This guide will help you utilize your existing CAD assets to generate more efficient, optimized 3D models with smaller number of meshes and less polygons after they are imported to JigSpace.

The methods described here are particularly useful for those working with large assemblies or parts that need to maintain performance without compromising visual integrity.

“

“We’ve seen significant improvements in the performance of our Jigs by using the simplify tool within SolidWorks.

It has allowed us to export optimised 3D data while maintaining the integrity and structure of the engineering data.”

Craig Hooper
Mechanical Engineer and General
Manager
DTCo



Export formats

For best results, we recommend you export all SolidWorks assemblies or parts as STEP files for importing into Jig. However, a range of CAD file formats, including native .sldasm and .sldprt files are also supported for upload to your Jigs.

Settings for exporting large assemblies

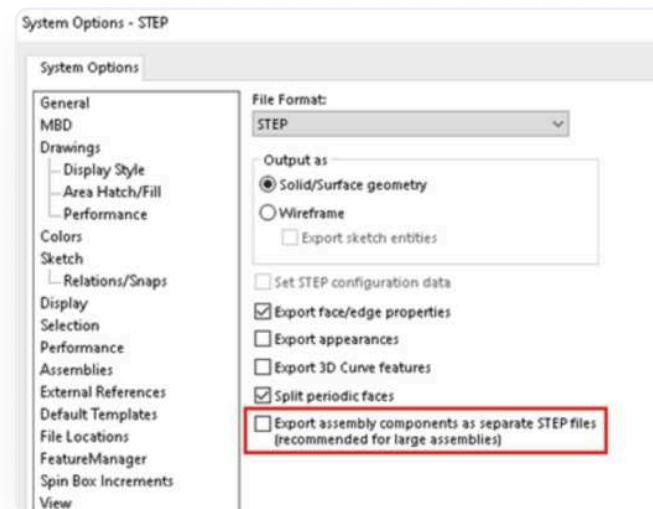
One way to improve performance of large assemblies - typically made up of several sub-assemblies and potentially hundreds of parts - is to ensure that one STEP file is exported for each assembly or sub-assembly, instead of one very large file.

You can enable this setting for all future STEP exports by following these steps :

- Tools > Options > System Options > Export > STEP,
- Select Export assembly components as separate STEP files (recommended for large assemblies).

This option exports assemblies as atomic STEP files. Separate STEP files get created for each component in the assembly.

STEP files have a 3 main configurations. We recommend exporting to type **STEP AP203** which generally creates the smallest number of objects in your Jig (and thus your performance). If you wish to export colors as part of your assembly files then we recommend **STEP AP214**.

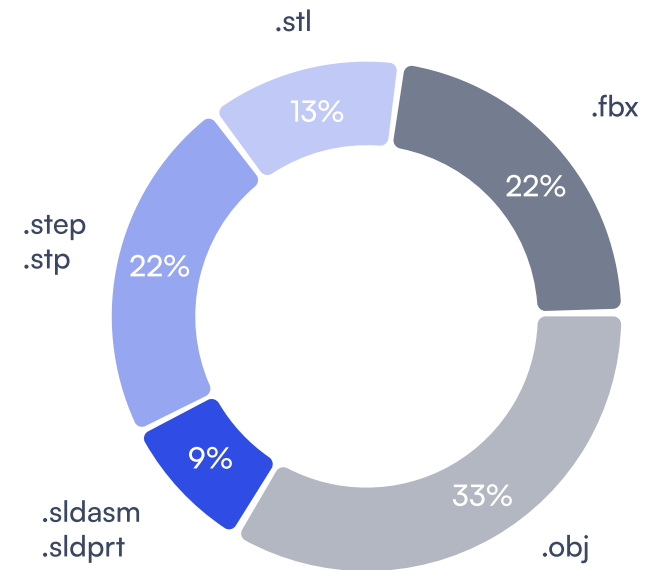


4 CAD data imported

CAD file	3D mesh	Scale	Color	Labels
.fbx	✓	✓	✓	✓
.gltf / .glb	✓	✓	✓	✓
.obj	✓	✓		✓
.step	✓	✓	✓	✓
.stl	✓	✓		
.sldasm / .sldprt	✓	✓	✓	✓

Share of uploads

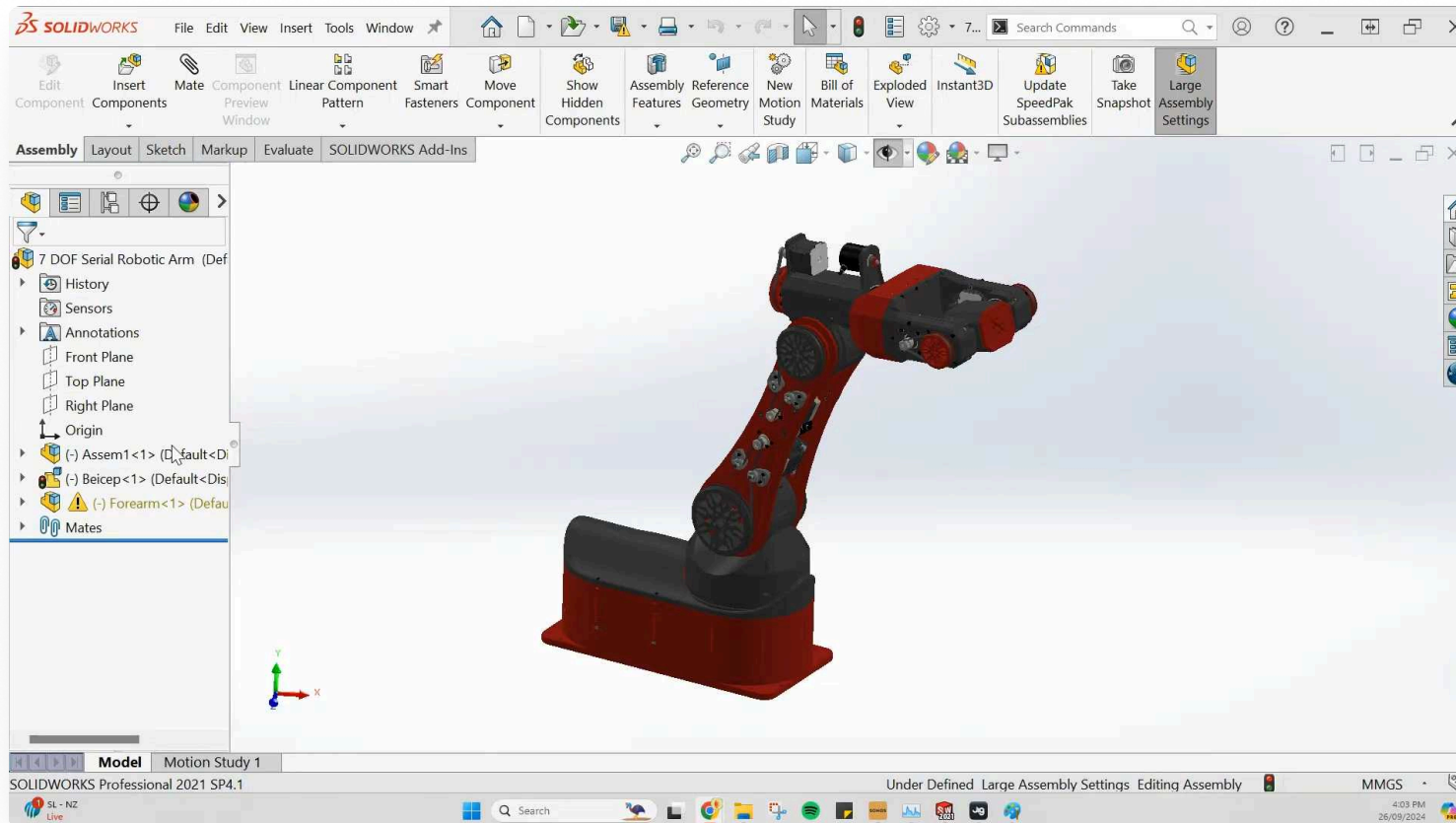
Share by CAD file extension in 2023



5 Simplify tool

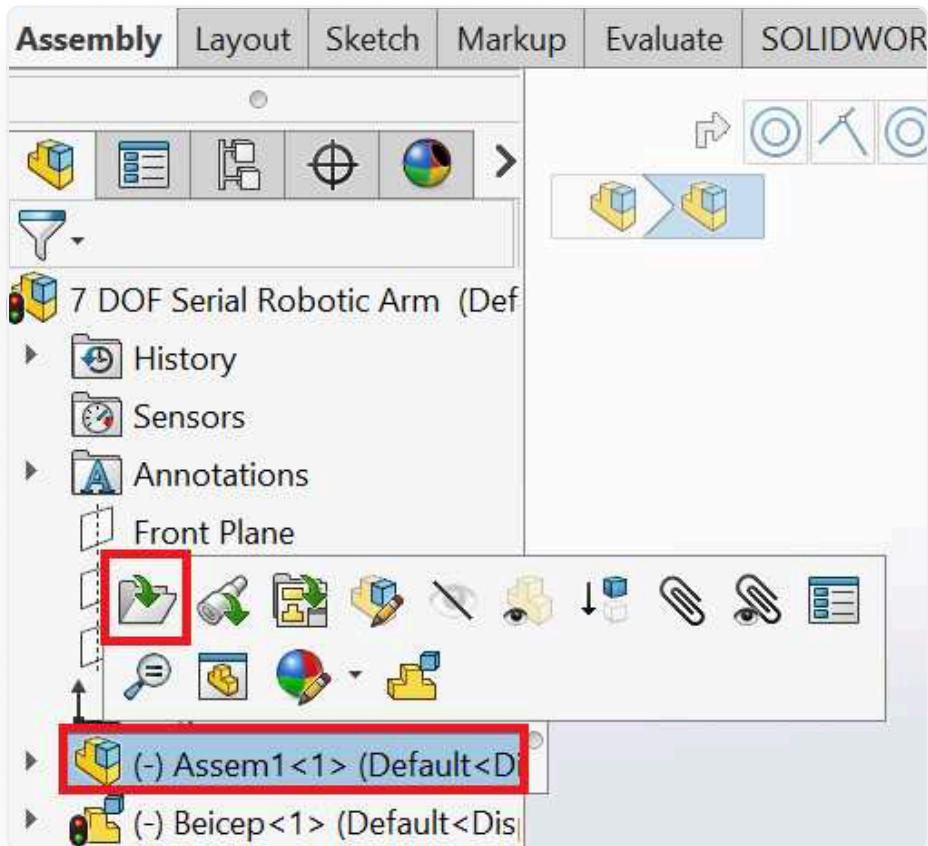
Step by step instructions to simplify your assembly

We recommend using the SolidWorks Simplify tool to reduce the amount of geometry to only what is needed before importing into JigSpace.



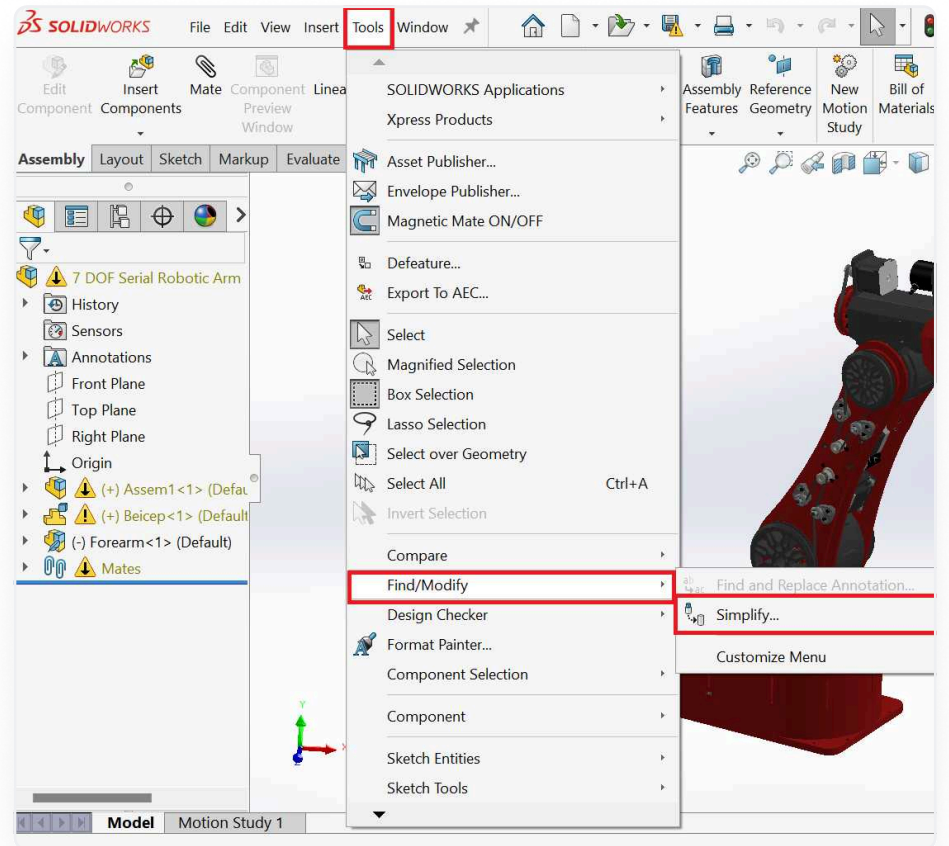
1. In the Solidworks GA (general assembly):

- open each sub-assembly or group of parts that move together by right clicking
- open sub-assembly



2. Click in the top menu:

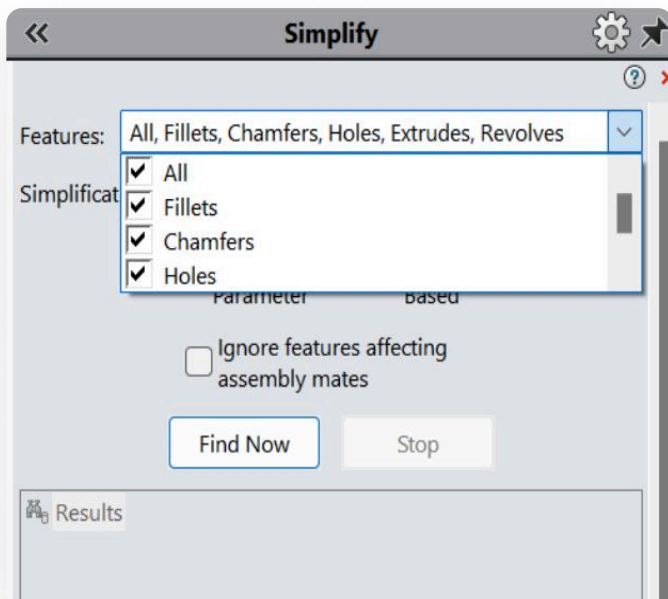
- Tools > Find/Modify > Simplify



3. Simplify the sub-assembly

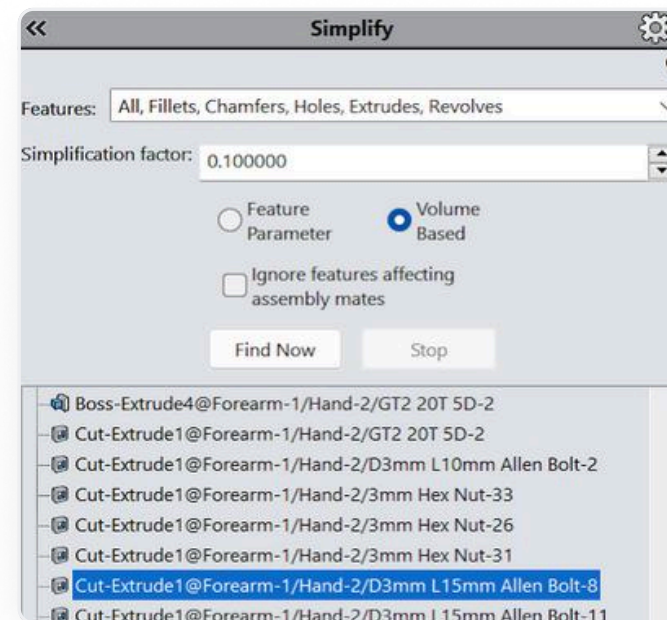
a. Choose certain features to simplify,

- Or alternatively the entire sub-assembly (recommended), and specify the simplification factor (from 0-1)
- It is good to start with 0.1, and then increase/decrease the value depending on the results



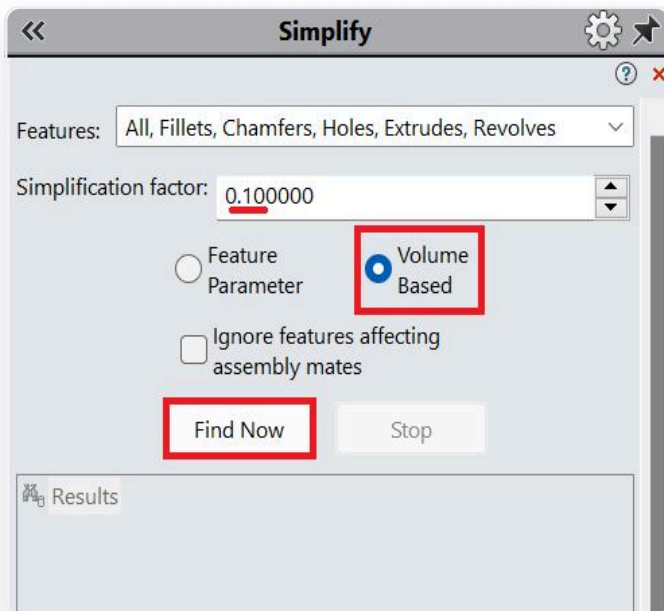
b. Feature parameter vs volume based

- Volume based is recommended as it will identify small parts without compromising the main features of the model. Generally it will also decimate the model more than feature based
- Depending on your model it is good to try both methods to see which one works better for your use case

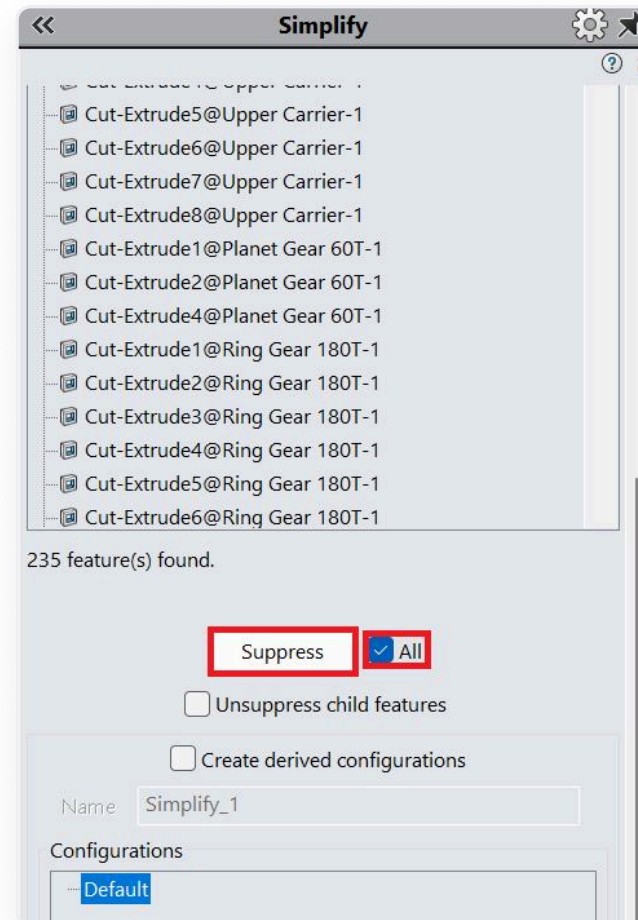


c. Ignore features affecting assembly mates tickbox

- Ticking this box will simplify the model more, however as it states - assembly mates will be broken
- To be safe, it is best to leave this box unticked

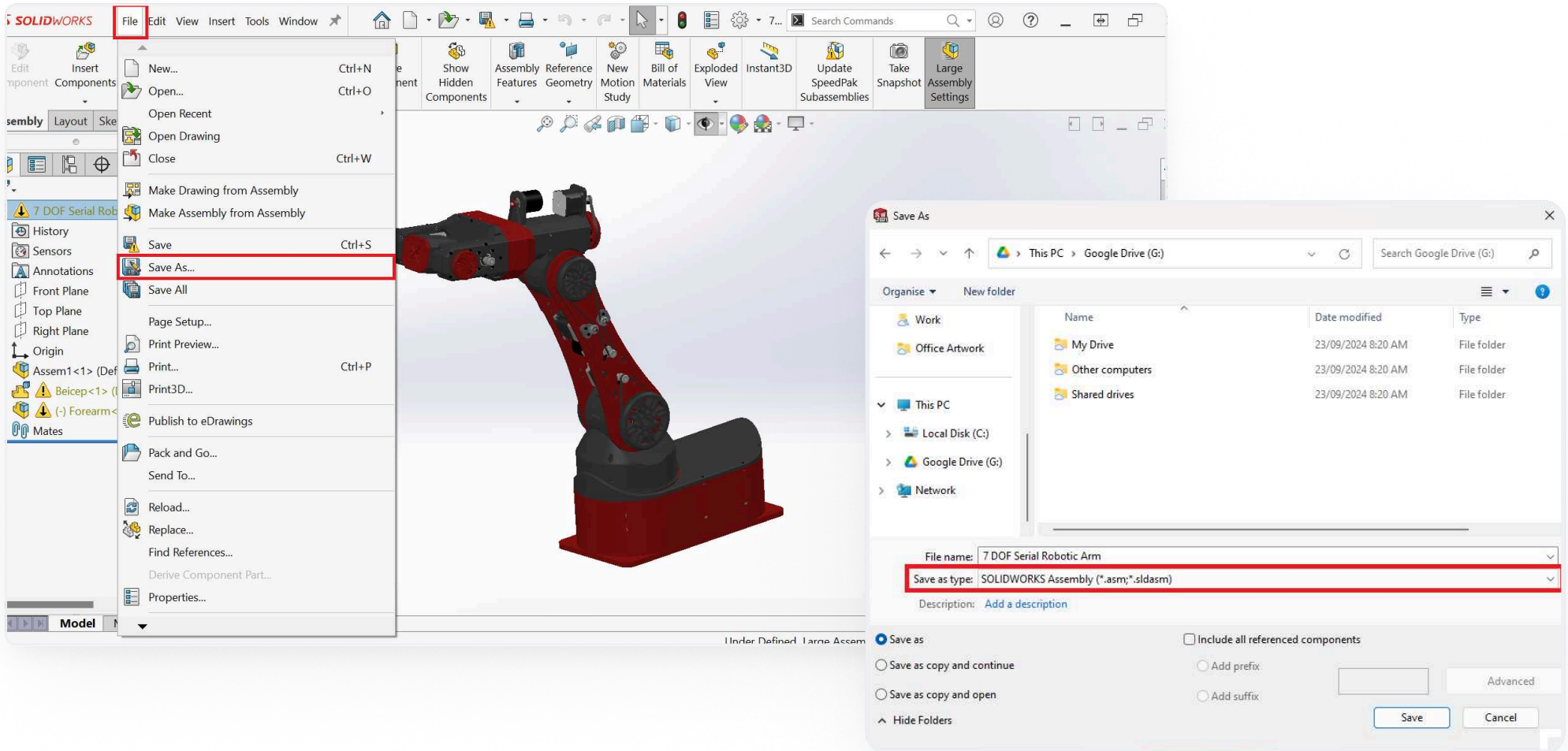


d. Once the features have been identified scroll down > tick 'all' > click 'suppress'



4. File > Save as > Save as type > SolidWorks Part

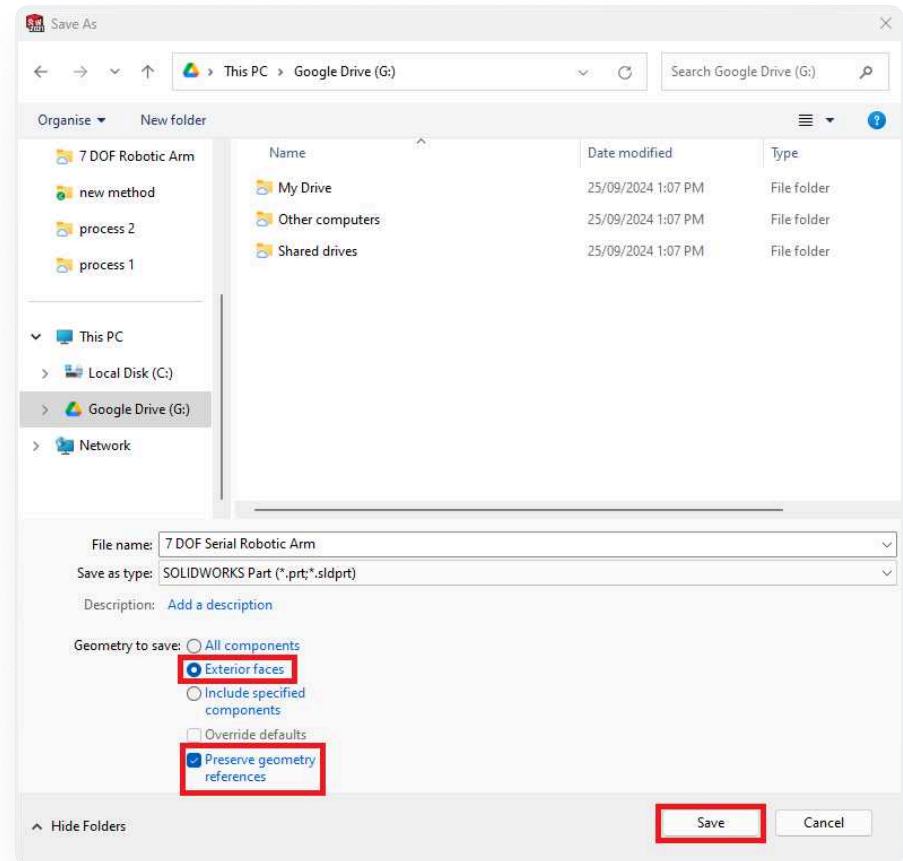
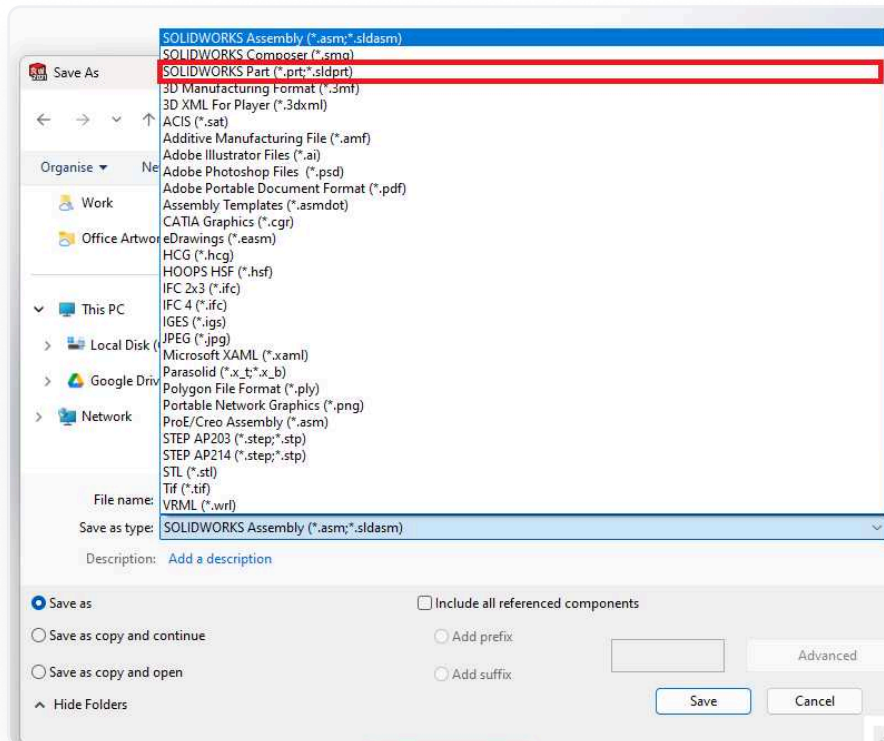
a. Save your first simplified sub-assembly to a new folder. You will need to repeat this for other parts of your assembly.



4. File > Save as > Save as type > SolidWorks Part

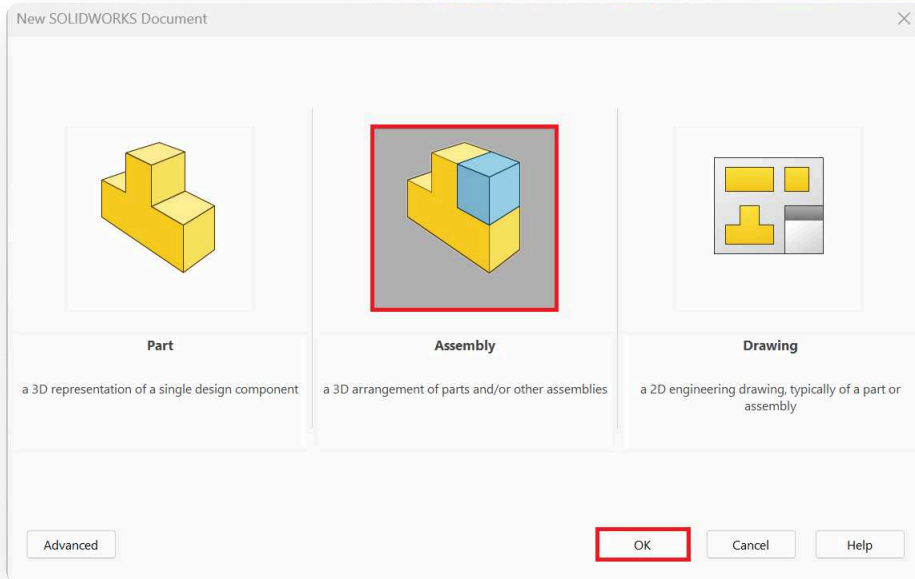
b. Ensure you have selected SolidWorks Part (.sldprt)

c. Geometry to save > Exterior faces > Preserve geometry references > Save



5. Repeat steps 1-4 on the remaining sub-assemblies

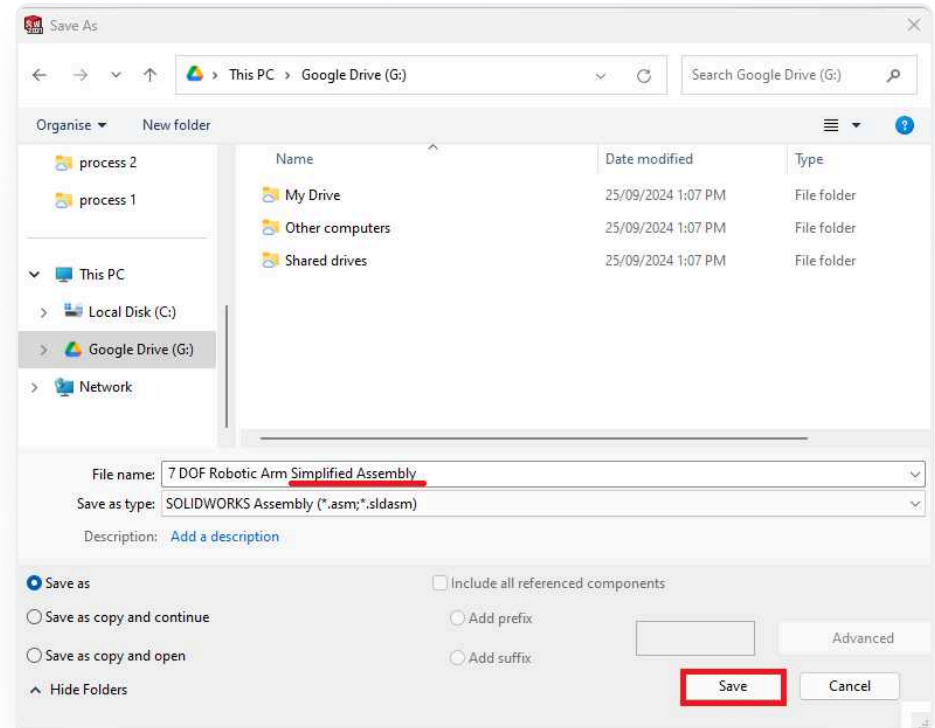
6. Create a new Solidworks assembly file



7. Import all simplified sub-assembly parts from steps 1-4

8. Reconstruct the General Assembly (GA) model

9. Save the general assembly file as a SolidWorks assembly or a STEP AP214 format, make sure to rename it as the simplified model to avoid confusion.



10. Import the simplified .sldasm assembly file or STEP file into JigSpace to begin making your 3D presentation or augmented reality experience.

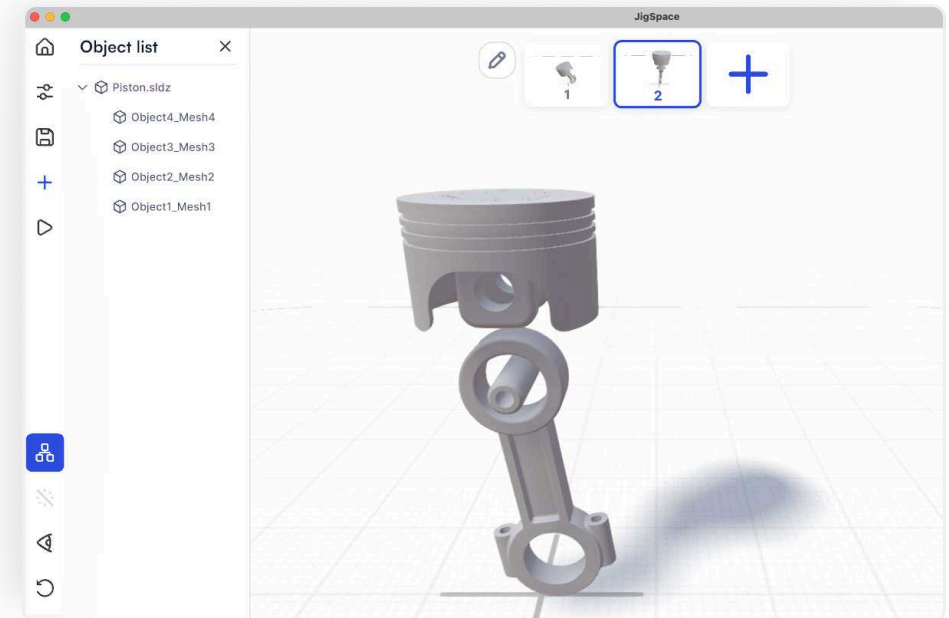
6 Quick simplify alternative

This method is recommended for simple assemblies.

It is the quickest and easiest in terms of steps to export the model from SolidWorks, however it will not be as flexible to work with once imported in JigSpace.

1. In the SolidWorks GA, Tools > Find/Modify > Simplify
2. Simplify the GA using the settings above as a guide
3. File > Save as > Save as type > SolidWorks Part
 - a. Geometry to save > Exterior faces > Preserve geometry references > Save
4. Import the file into JigSpace.

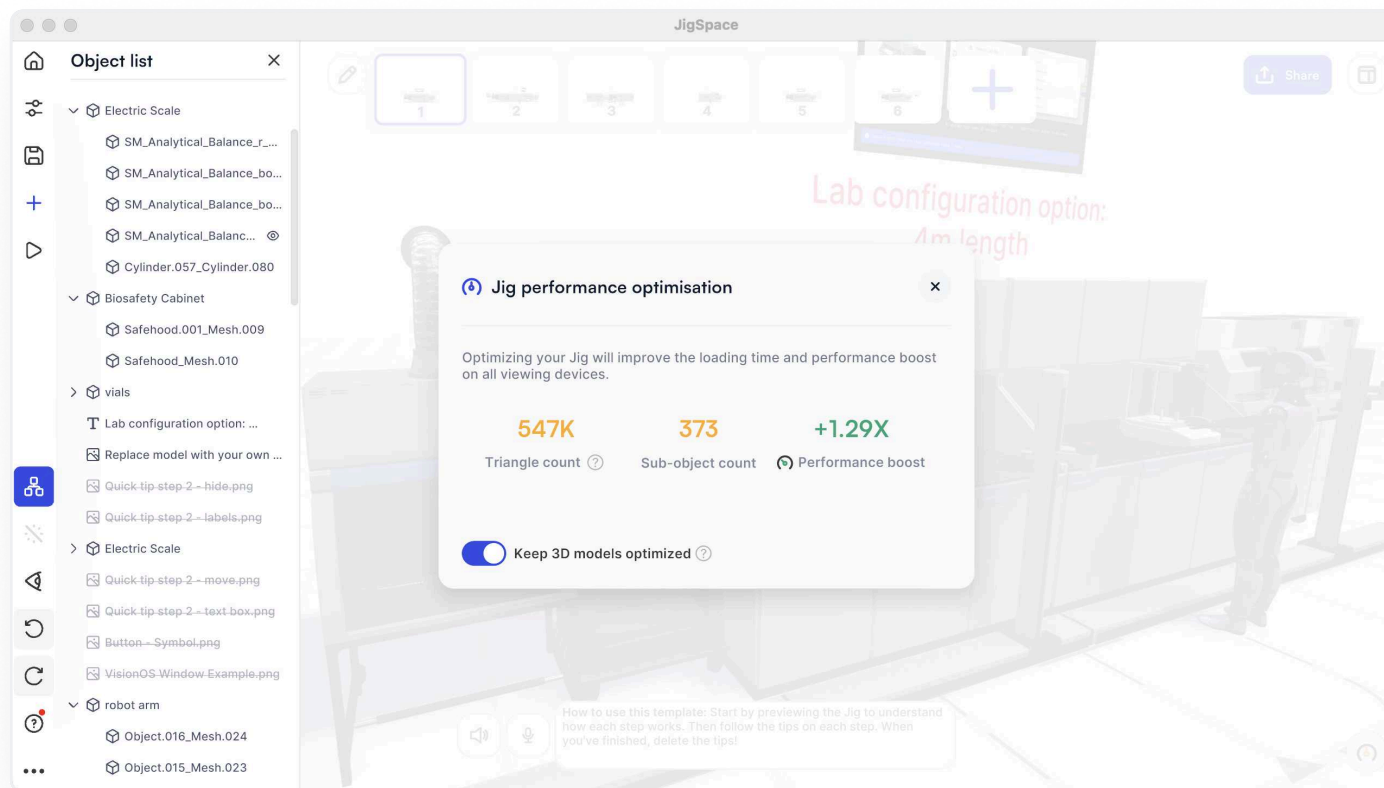
Example of simple assembly after importing into JigSpace



7 Using the performance indicator

When creating a Jig, the performance indicator in the editor displays a read out of your current triangle count and number of meshes (or sub-objects). Understanding this will help you determine when to optimize or simplify the 3D models in your Jig.

For best results we recommend less than 200,000 triangles (or polygons) and less than 50 sub-objects. Jigs also have an option to automatically keep your 3D models optimized, which we recommend keeping toggled on.



JigSpace has given a whole new usage for already available assets - our engineering solid models. These are only available for the technology group within the organization, and the equipment end-users were often relying on 2D drawings to learn about our tools.

The level of detail, views and ability to interact with a Jig, has helped our team to better understand our technologies.

Tarcisio Antunes
Product Champion, Cementing
Halliburton

It's highly valuable in my line of work to be able to quickly and easily visualise - in 1:1 scale - CAD models that I'm working on.

These tools are essential to making that happen.

Kaitlyn Lee
Industrial Designer
DTCo





About DTCO

This guide was prepared in collaboration with Design Technology Company (DTCO).

DTCO provides a low risk, easy to engage, scalability option for mechanical design teams. Our literacy with design technologies makes us an essential part of any engineering project. With over 20 mechanical designers have deep Computer Aided Design experience that is enhanced by a team with a broad understanding of the currently available design technologies. These include laser scanning, photogrammetry, cloud based collaboration for CAD, virtual reality (VR) and augmented reality (AR).

Learn more: www.designtechco.com.au



About JigSpace

JigSpace enables teams with big ideas to create and share stunning 3D presentations and augmented reality experiences - we call them “Jigs” - in seconds They can be viewed on any device, from mobile to web browsers to the Apple Vision Pro.

Create a free account to try for your self.

Showcase what makes your product unique, go deep with step-by-step instructions, and make it engaging training simulations in augmented reality.

Learn more: www.jig.com

