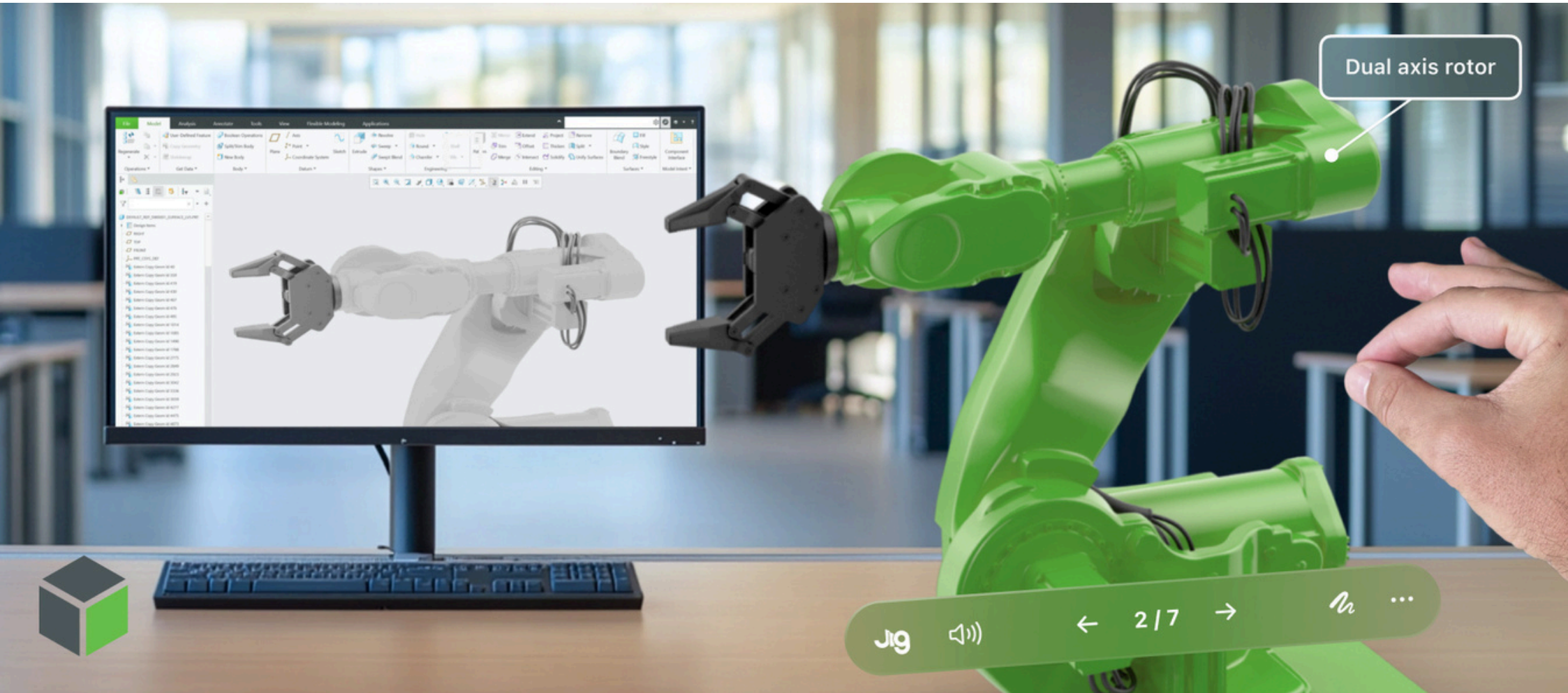
Guide to exporting Creo Parametric files to JigSpace

Current version: 2/4/2025



Contents

1 Introduction

Who is it for?

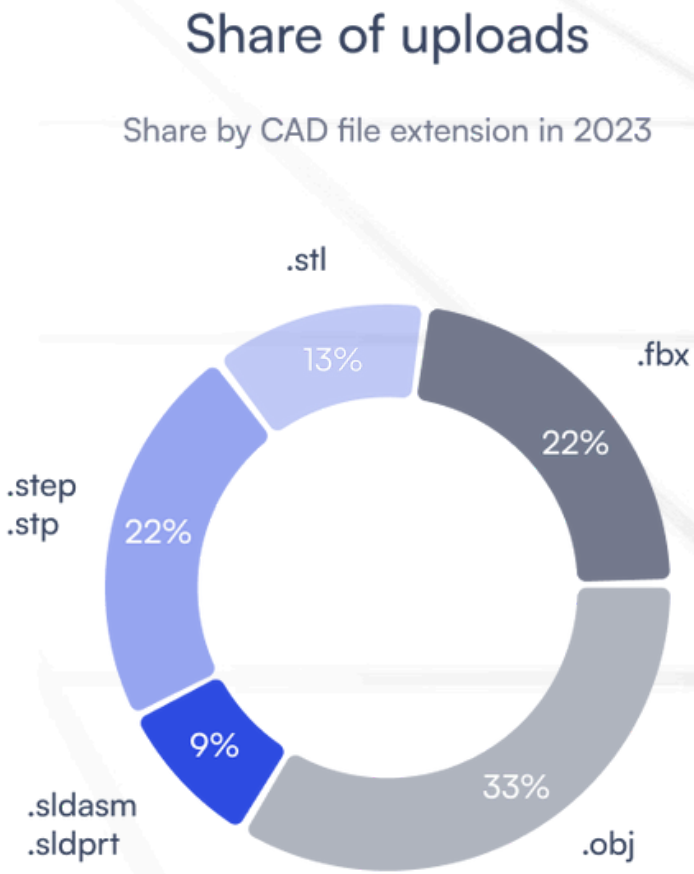
Creo Parametric is a versatile CAD software offering advanced tools for 3D modeling and design produced by PTC.

This guide will show you how to structure 3D models into well-organized assemblies and optimize complex CAD models, minimizing file sizes to ensure smooth performance on the JigSpace platform across all devices.

2 CAD data imported

File formats accepted by JigSpace

CAD file	3D mesh	Scale	Color	Labels
.fbx	✓	✓	✓	✓
.gltf / .glb	✓	✓	✓	✓
.obj	✓	✓		✓
Recommended for PTC Creo and JigSpace				
.step / .stp	✓	✓	✓	✓
.stl	✓	✓		
.sldasm / .sldprt	✓	✓	✓	✓
.usdz	✓	✓	✓	✓



3 Simplify using Shrinkwrap

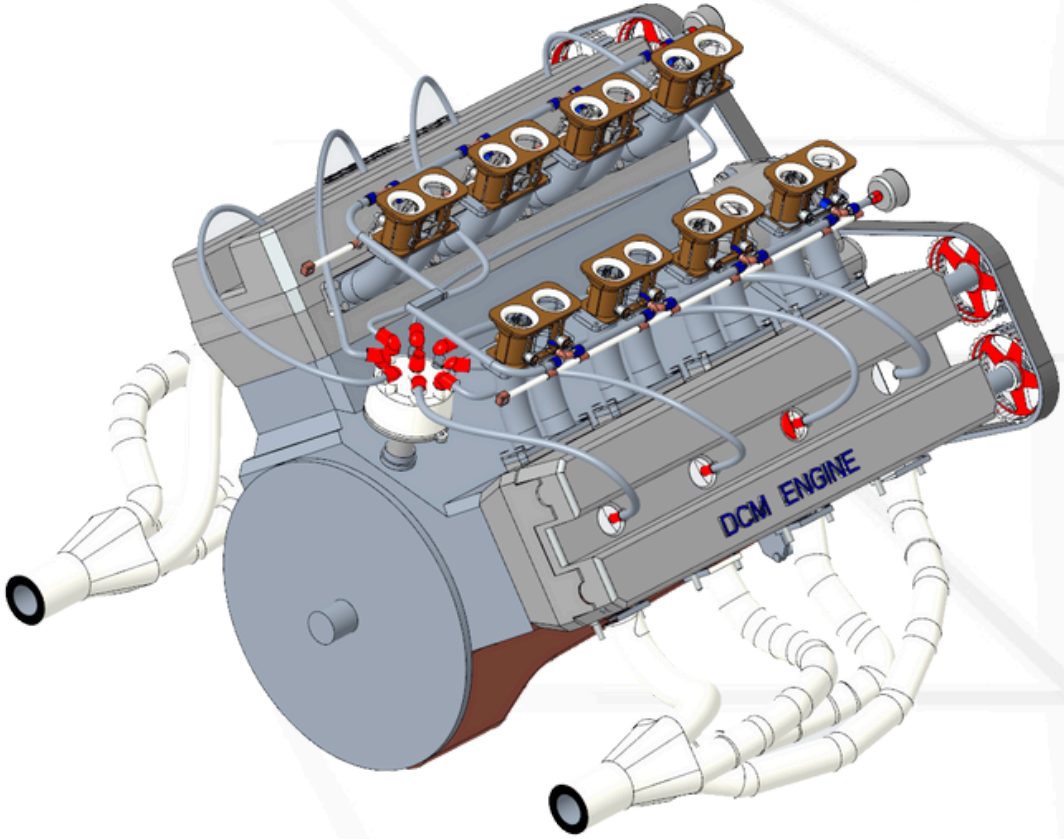
Create a simplified representation

The following process works for both parts and assemblies in Creo.

Due to the nature of file conversion, this approach is recommended to retain as much geometry and metadata as possible while giving you greater control over the output.

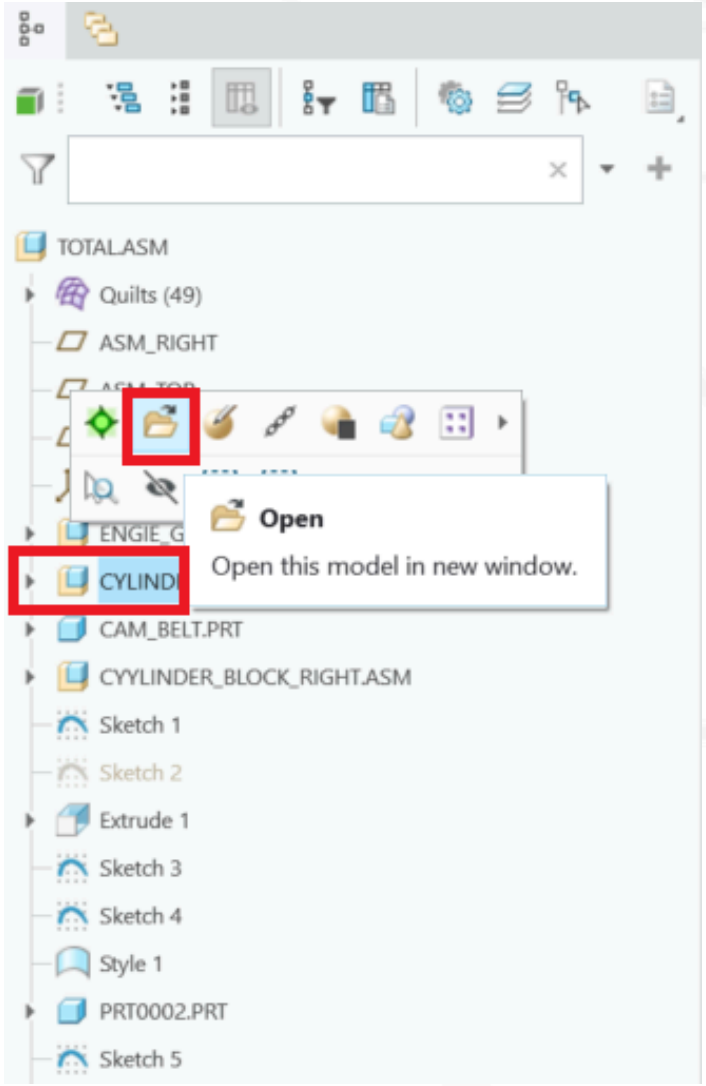
Before you begin, consider which components, sub-assemblies, or features will need independent movement in JigSpace, as these should be simplified or shrinkwrapped separately.

For example if you want to create an animated exploded view of some parts, they will need to be seperate parts when exported.



3 Simplify using Shrinkwrap

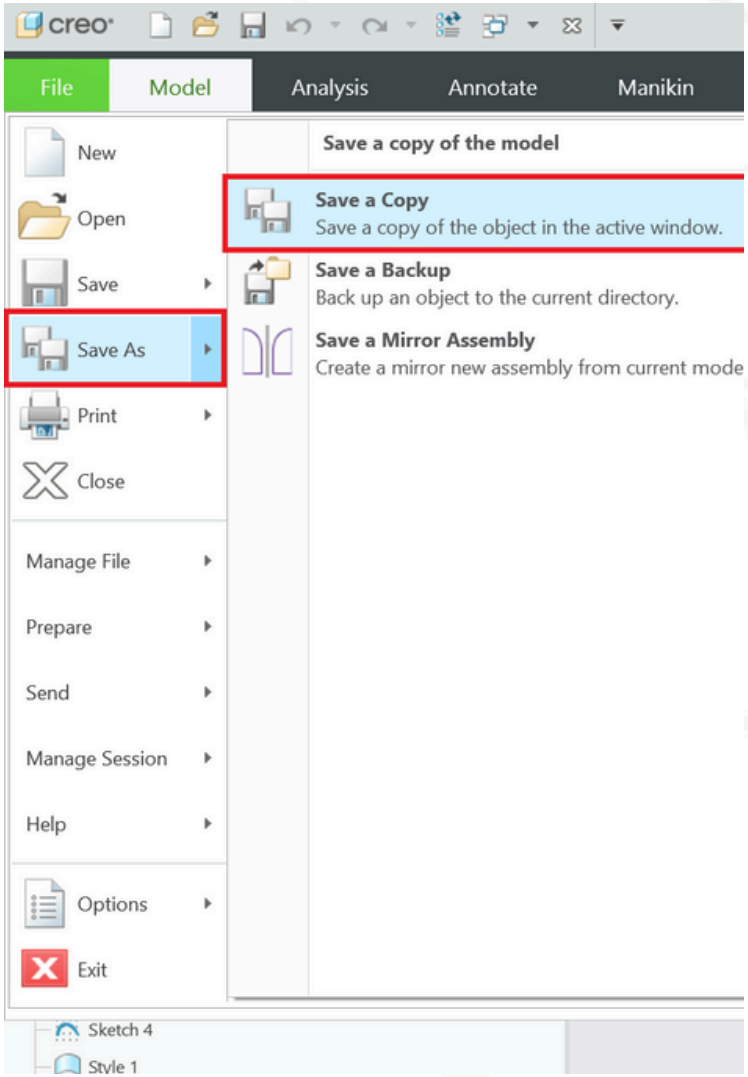
1. In the **model tree**, right-click each sub-assembly or component you want to simplify and select **Open**



3 Simplify using Shrinkwrap

1. In the model tree, right-click each sub-assembly or component you want to simplify and select Open

2. Go to **File** > **Save As** > **Save a Copy**

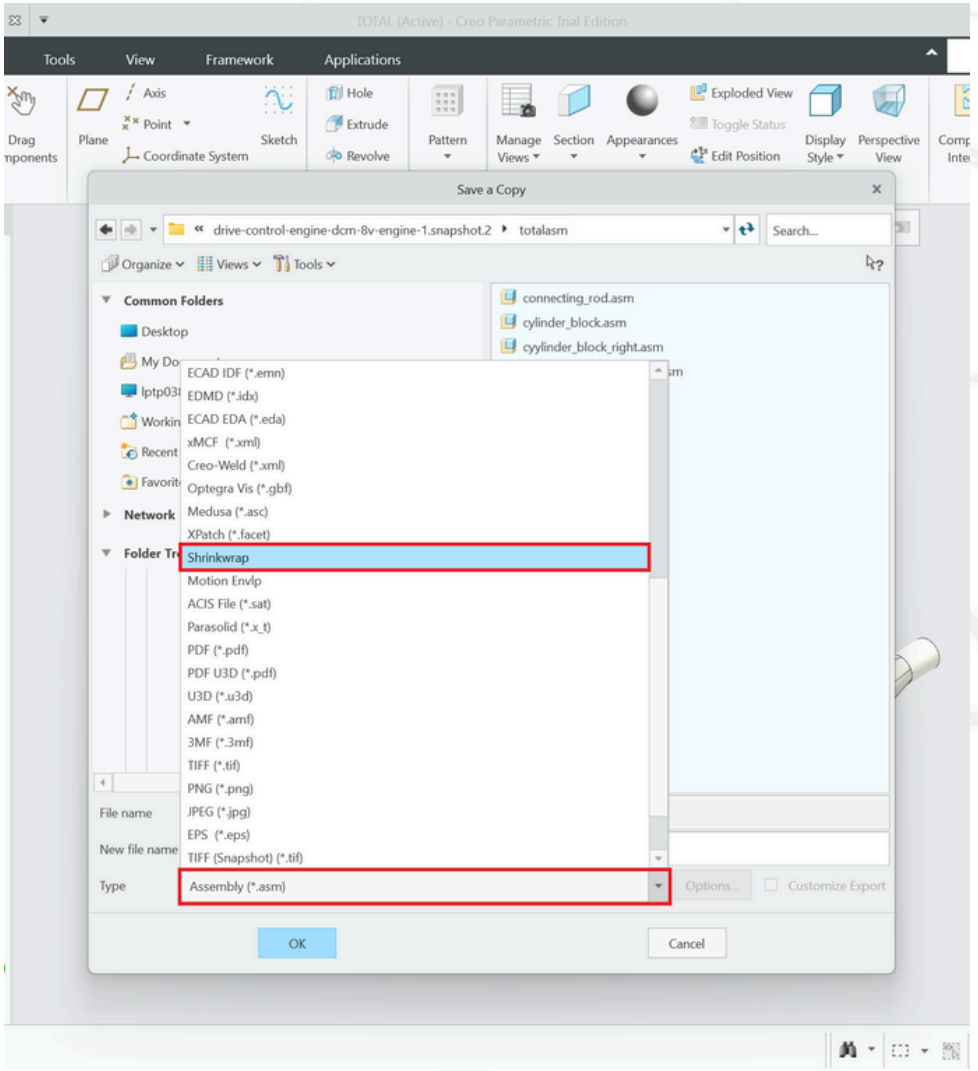


3 Simplify using Shrinkwrap

1. In the Model Tree, right-click each sub-assembly or component you want to simplify and select Open

2. Go to File > Save As > Save a Copy

3. Set the **Type** to **Shrinkwrap**, enter a new file name, and click **OK**

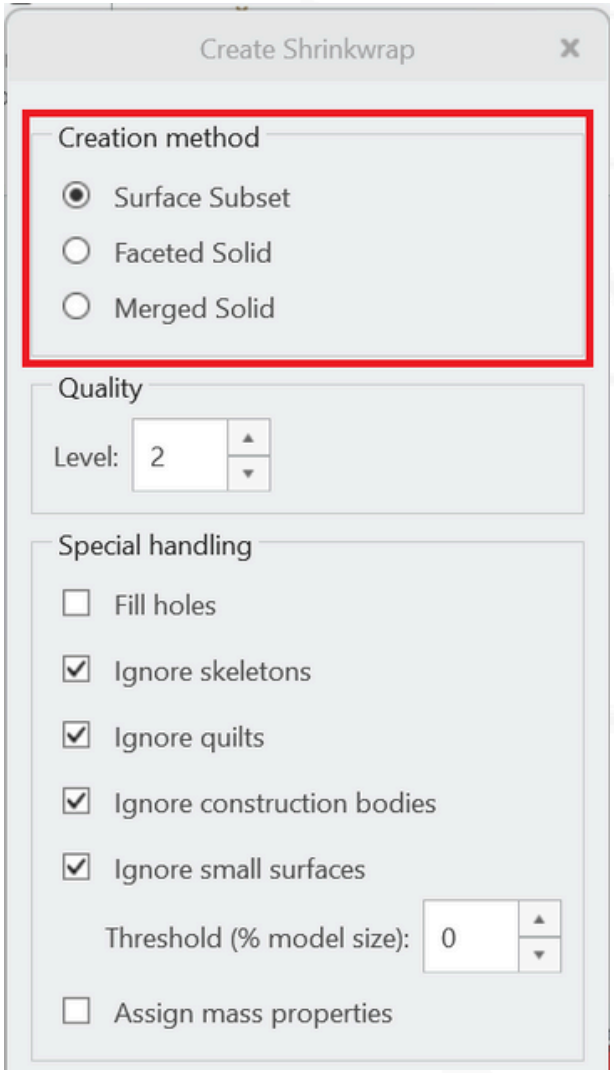


3 Simplify using Shrinkwrap

Select shrinkwrap method

4. Choose from one of the three Shrinkwrap creation methods.

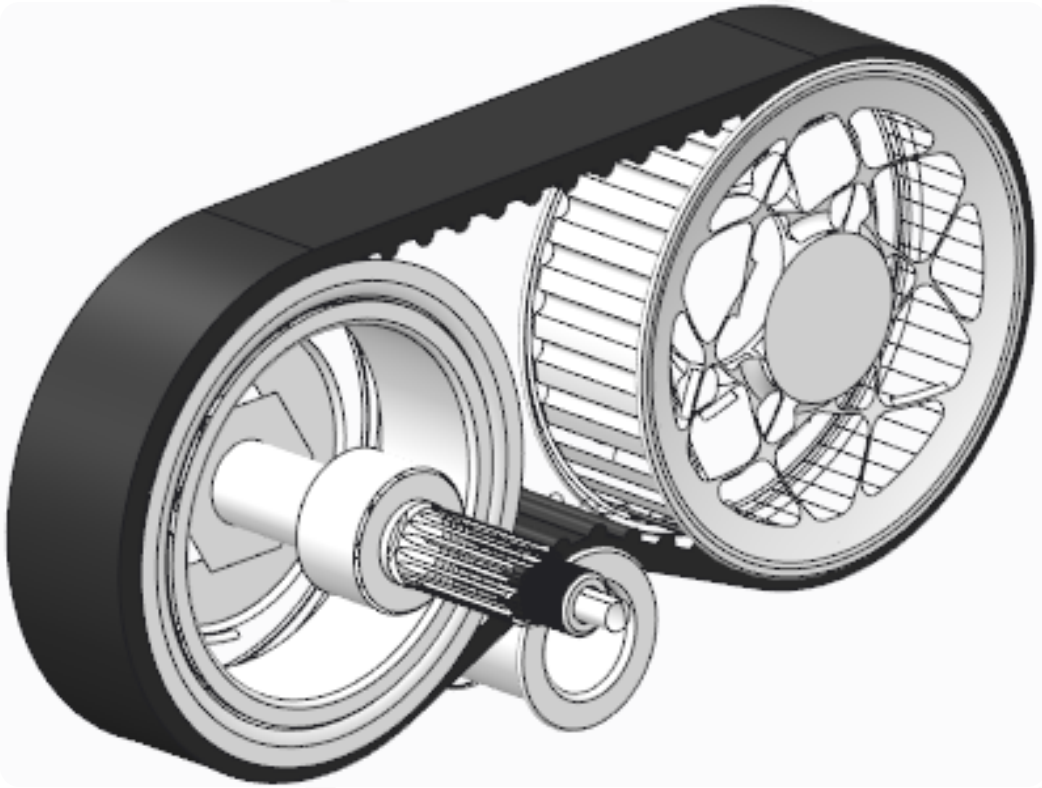
   We recommend using **Surface Subset** for visualization purposes, however there are uses for Faceted Solid and Merged Solid.



3 Simplify using Shrinkwrap

4. Choose the creation method > it is recommended to use surface subset

    a. Surface subset: composed of a collection of surfaces and datum features that represent the external surfaces of the reference model



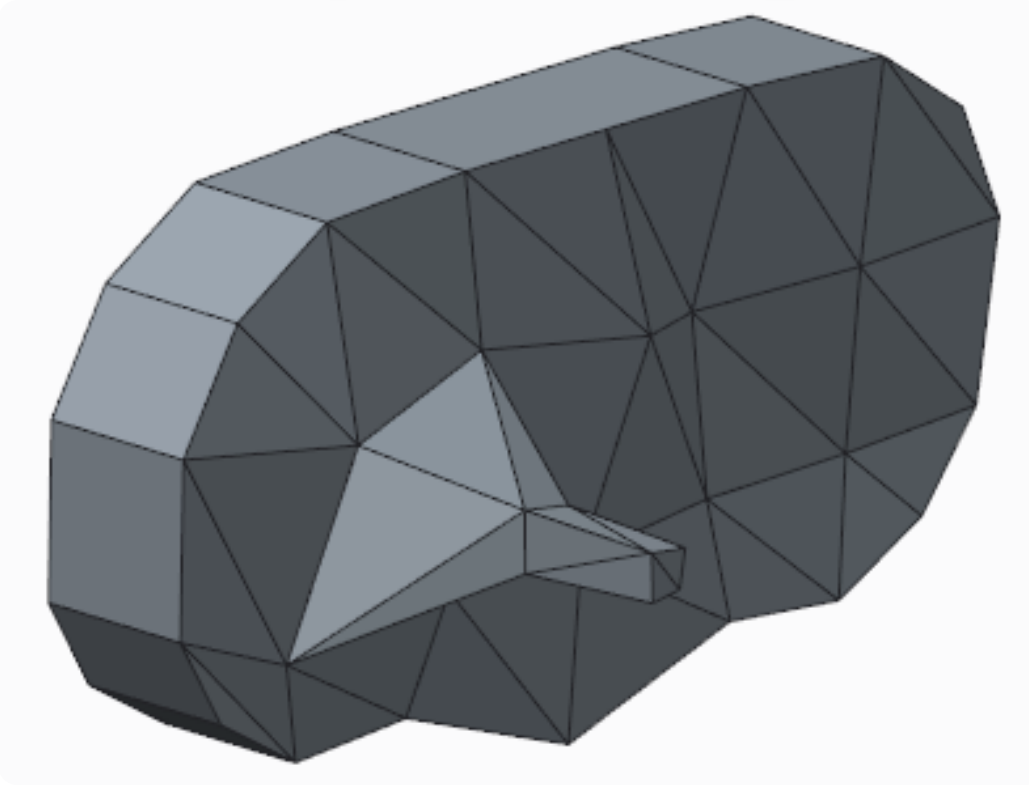
Surface subset represents the external surfaces of your model

3 Simplify using Shrinkwrap

4. Choose from one of the three Shrinkwrap creation methods. We recommend using Surface Subset for visualization purposes,

    a. Surface Subset: Creates a lightweight collection of external surfaces and datum features that visually represent the outer shell of the model.

    b. Faceted Solid: Generates a polygonal approximation of the model geometry.
    → Not recommended for accurate visualization or downstream use.



Faceted solid generates a polygonal approximation of the model geometry

3 Simplify using Shrinkwrap

4. Choose from one of the three Shrinkwrap creation methods. We recommend using **Surface Subset** for visualization purposes,

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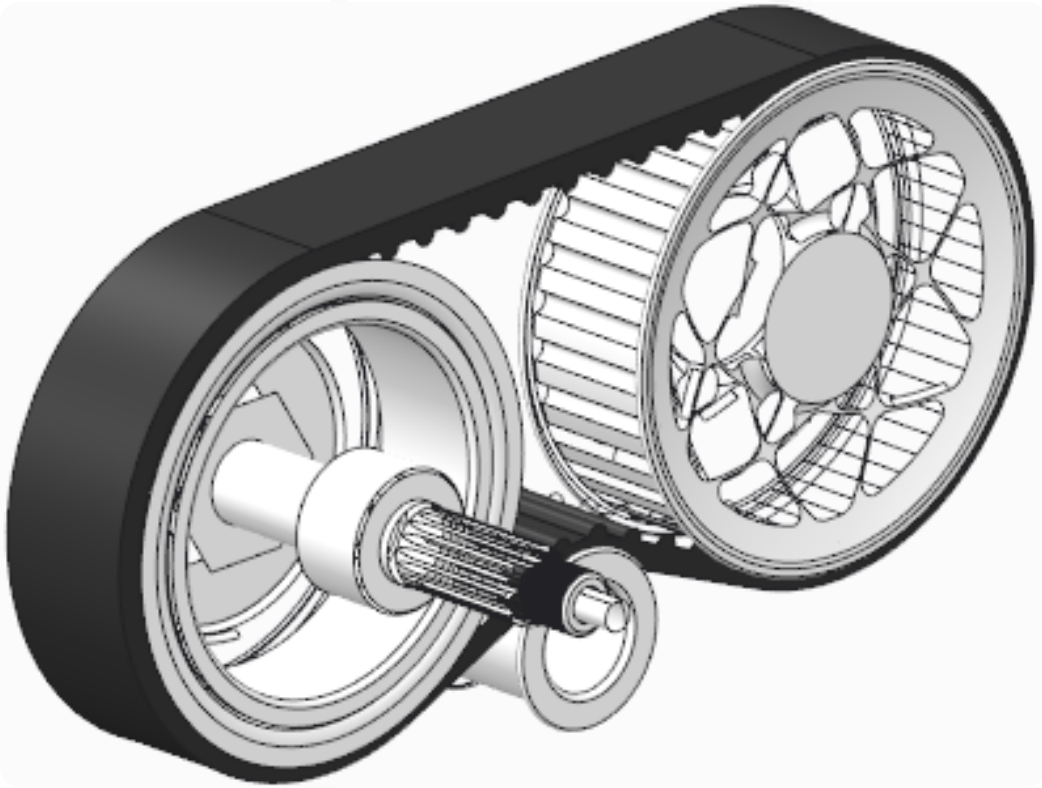
    b. Faceted Solid: Generates a polygonal approximation of the model geometry.
    → Not recommended for accurate visualization or downstream use.

    c. **Merged Solid:** Produces a solid body with accurate geometry. If the original model contains internal cavities, Creo will automatically fill them with solid geometry.



Merged solid body with accurate geometry and filled cavities

3 Simplify using Shrinkwrap

Surface subset quality

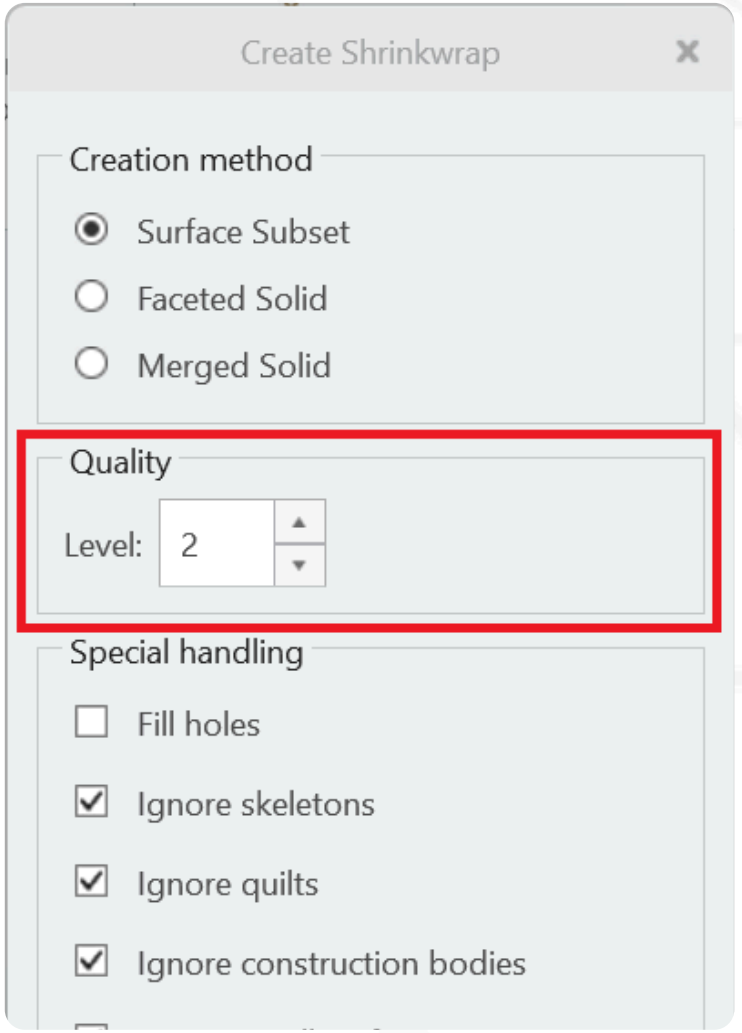
5. **Set the Quality Level** (1–10, where 1 is lowest and 10 is highest).

   A good starting point is 5, which you can adjust up or down depending on the level of detail needed in the Shrinkwrap output.

   General guide:

   Lower Quality (1–4): Generates a simplified model with less geometric detail and fewer polygons. Ideal for reducing file size and improving performance in real-time spatial visualization like JigSpace.

   Higher Quality (7–10): Produces a more detailed and accurate model with a higher polygon count. Useful when visual fidelity is important, but may result in larger files and slower performance if used too much.



3 Simplify using Shrinkwrap

Special handling options

6. Check recommended special handling settings

Fill Holes: Fills in surface openings to create a watertight exterior, useful for simplifying geometry or reduce visual clutter. Recommended if holes are not required to be visible in your Jig.

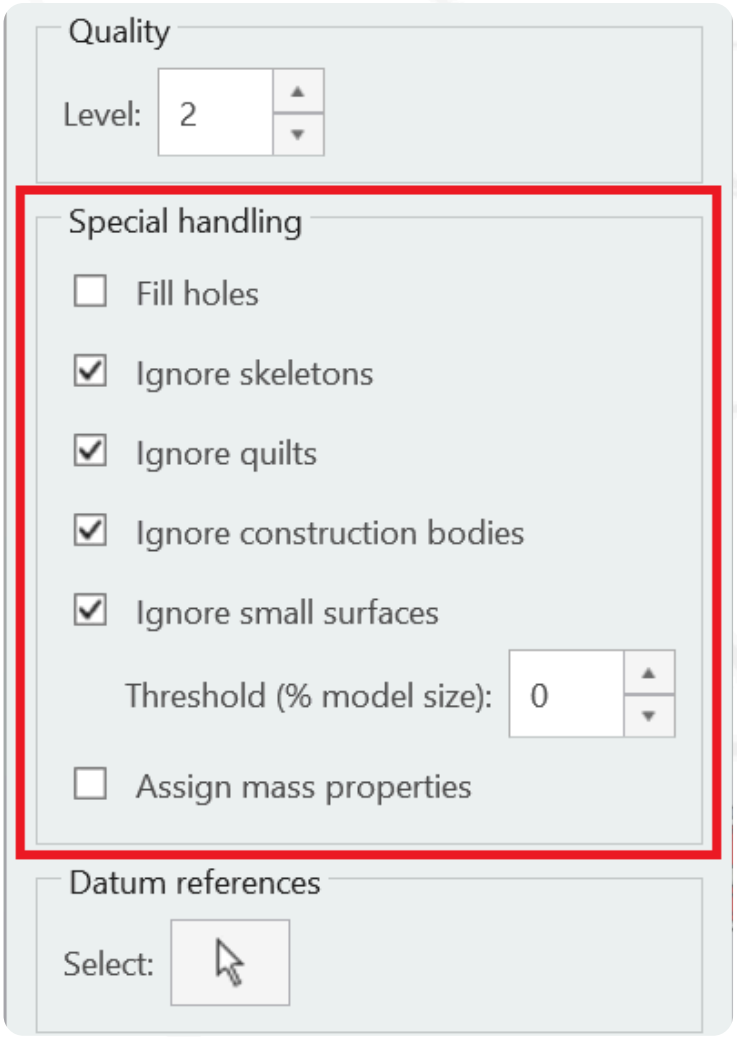
Ignore Skeletons: removing internal references that aren't needed for visual representation.

Ignore quilts: Skips non-solid surface geometry (quilts), which often represent construction or reference geometry not needed in Jig.

Ignore construction bodies: focusing the Shrinkwrap on actual manufactured geometry.

Ignore small surfaces: eliminates small patches or sliver faces to reduce file complexity and improve rendering performance.

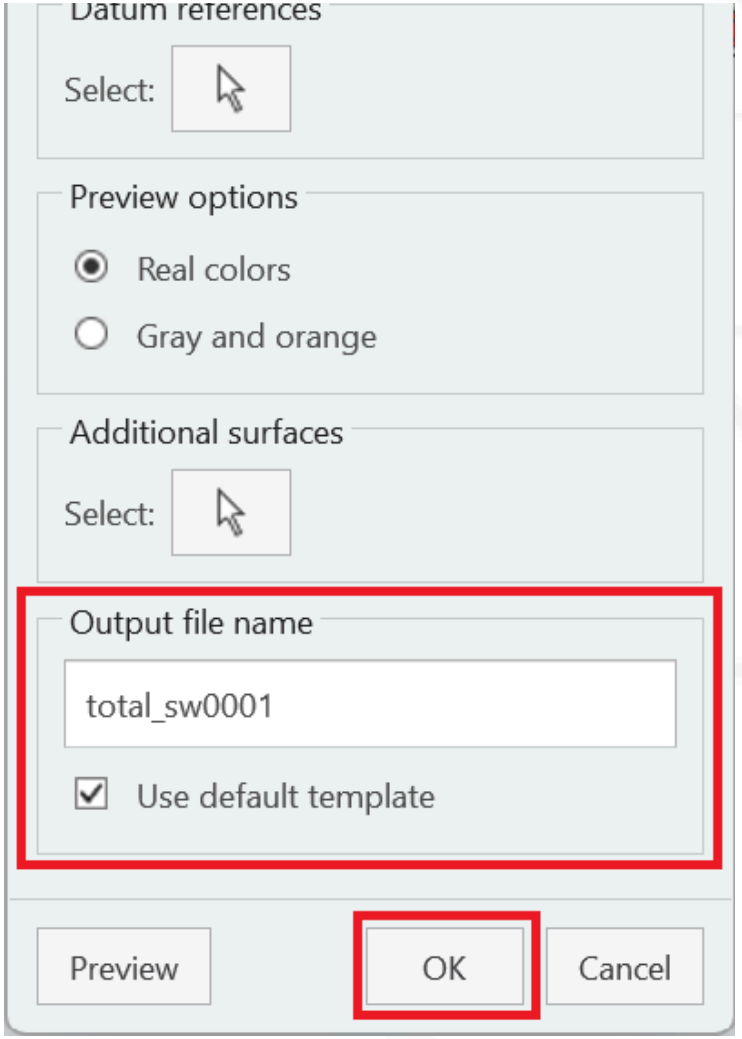
Assign mass properties: assigns estimated mass properties to the Shrinkwrap model based on the source. Not required in Jigs.



3 Simplify using Shrinkwrap

Finalising shrinkwrap

7. Double check that the output file name is updated and matches your > click ok

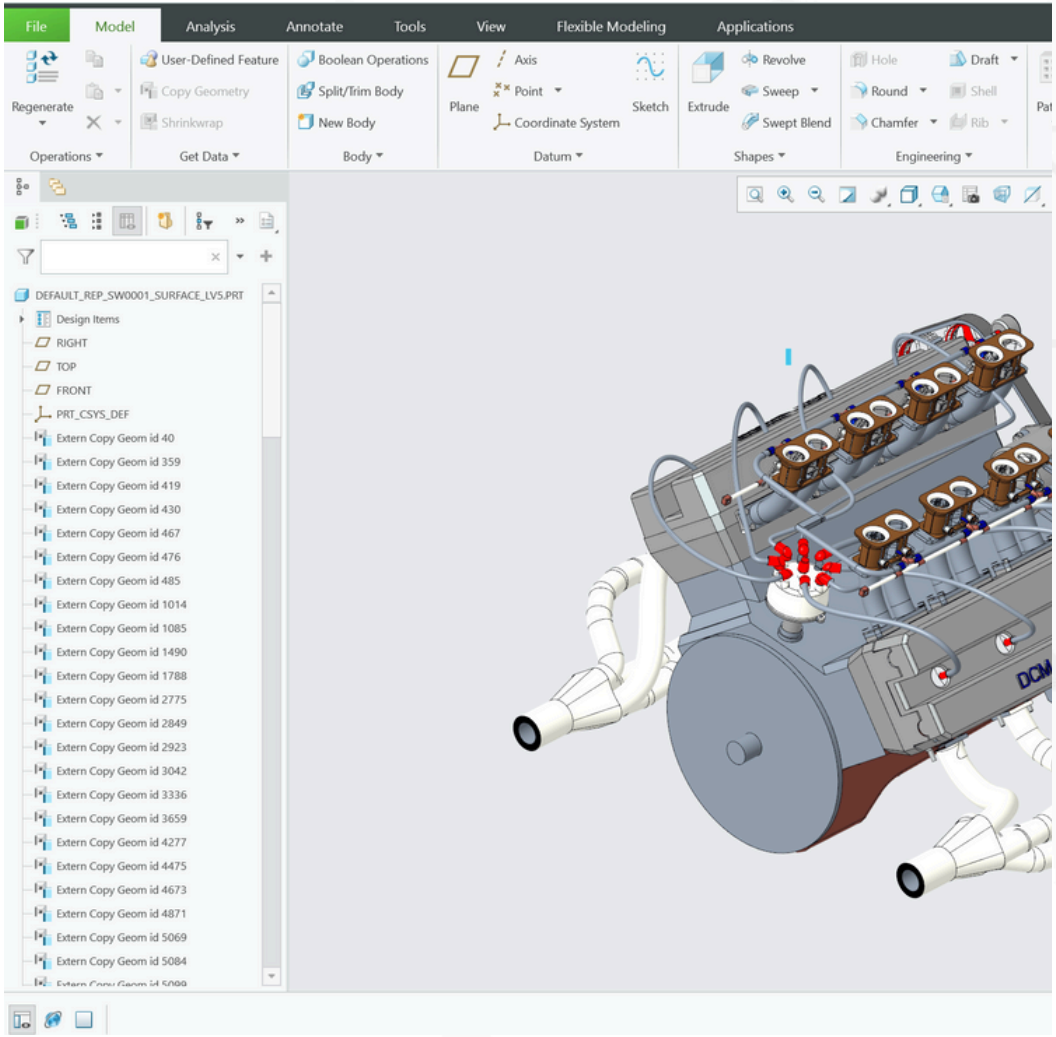


3 Simplify using Shrinkwrap

7. Double check that the output file name is updated > click ok

8. Once it has finished shrinkwrapping, open the output Creo file.

   Go to **File** > **Open**



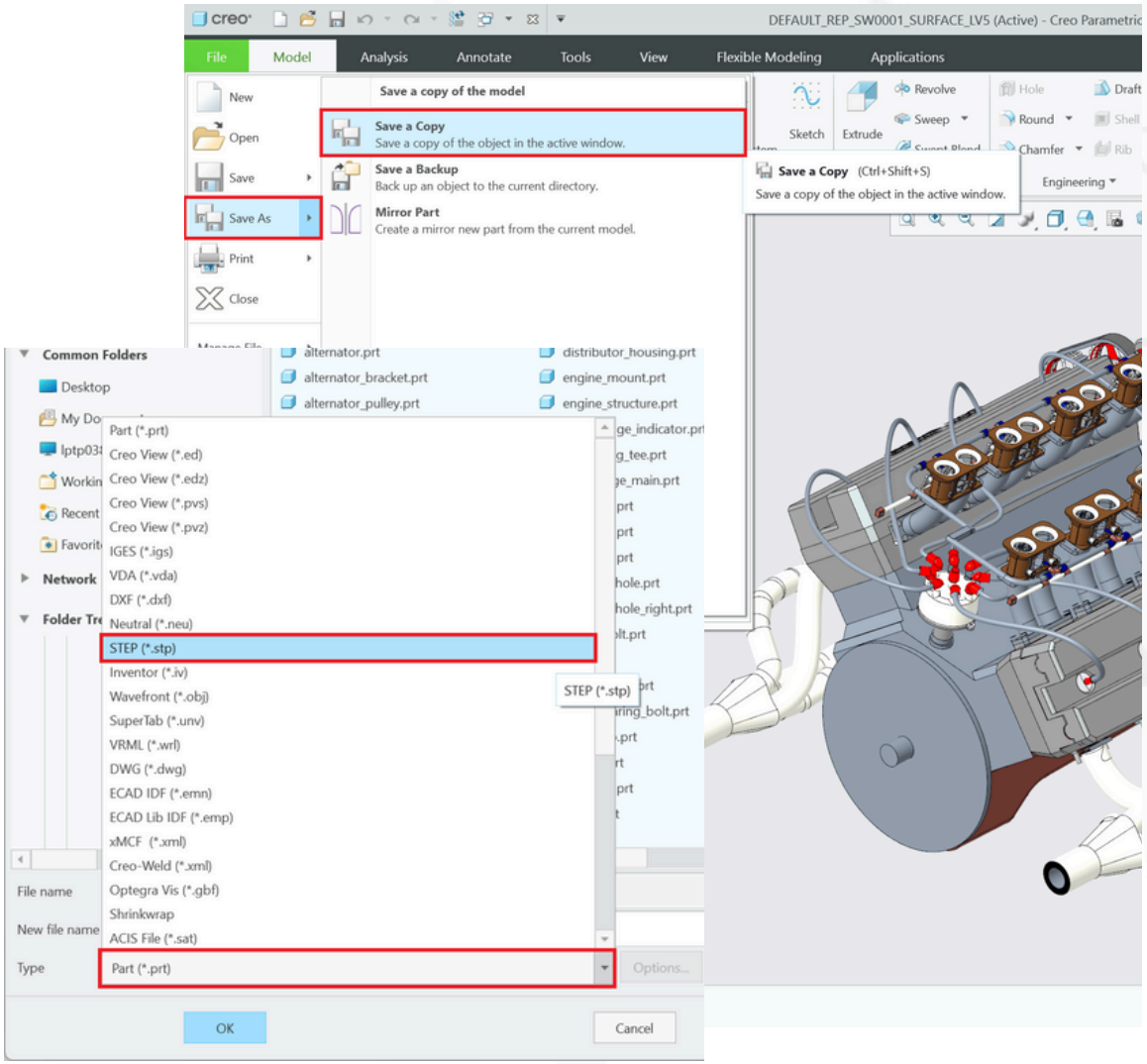
3 Simplify using Shrinkwrap

7. Double check that the output file name is updated > click ok

8. Once it has finished shrinkwrapping, open the output Creo file.

   Go to **File** > **Open**

9. Export the file by going to **File** > **Save As** > **Save a Copy**, set the **Type** to **STEP**.



3 Simplify using Shrinkwrap

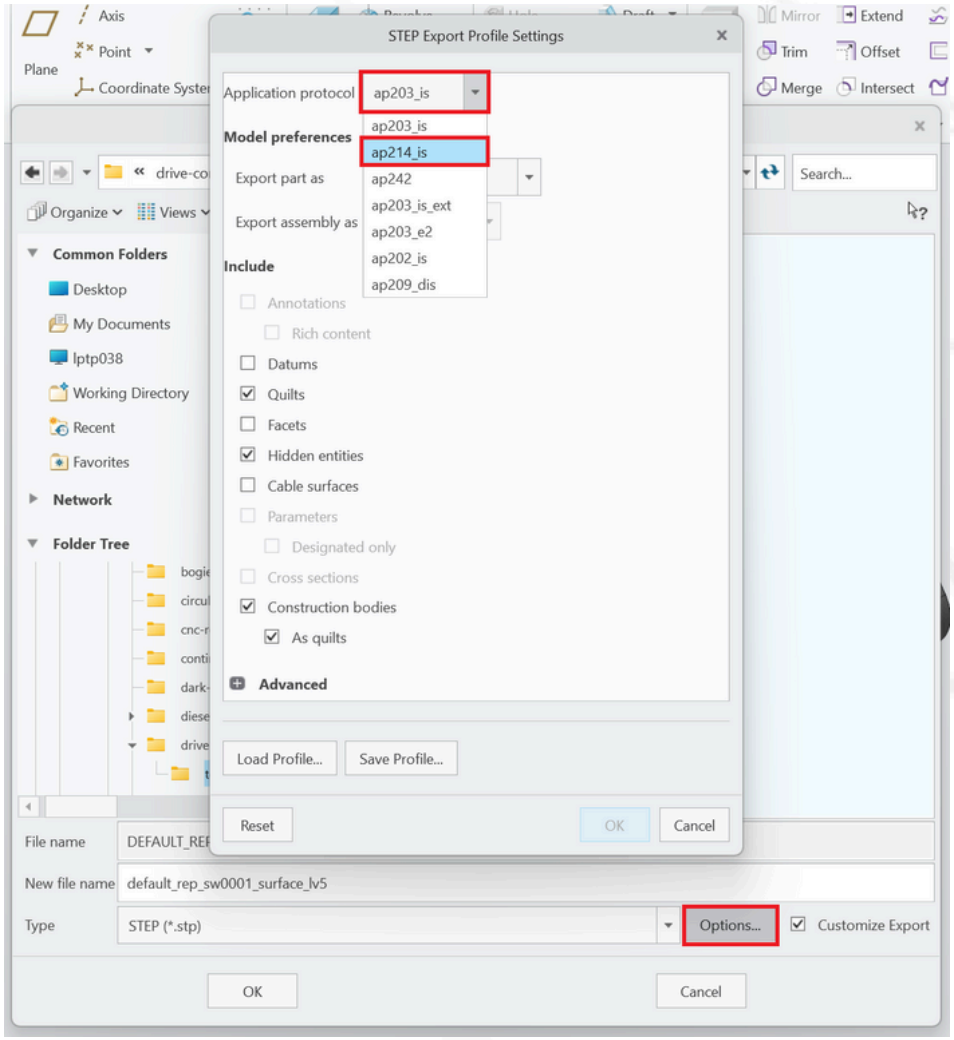
7. Double check that the output file name is updated > click ok

8. Once it has finished shrinkwrapping, open the output Creo file.

   Go to **File** > **Open**

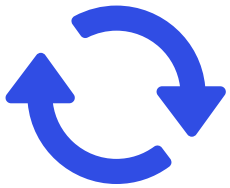
9. Export the file by going to File > Save As > Save a Copy, set the Type to STEP.

   When saving, click **Options** and choose **AP214** as the application protocol before clicking OK.

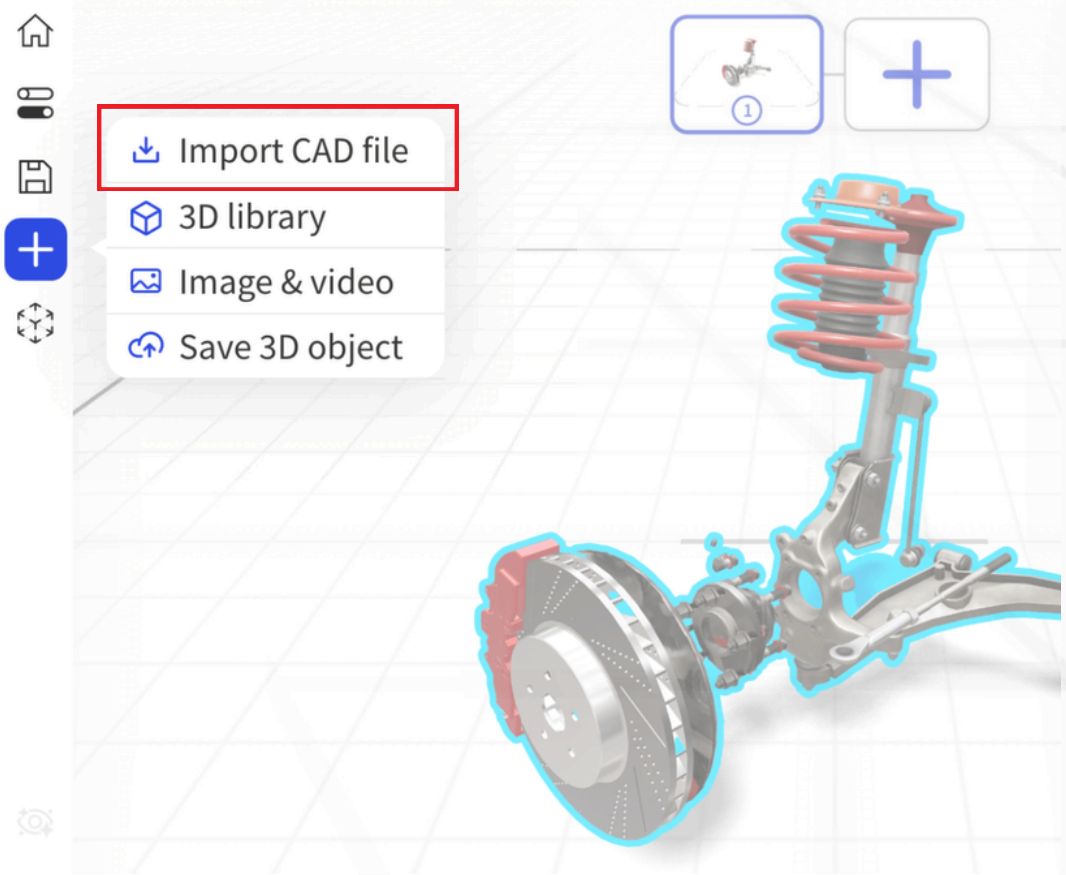


3 Simplify using Shrinkwrap

10. **Repeat this process** for each sub-assembly or component that needs to move independently in JigSpace



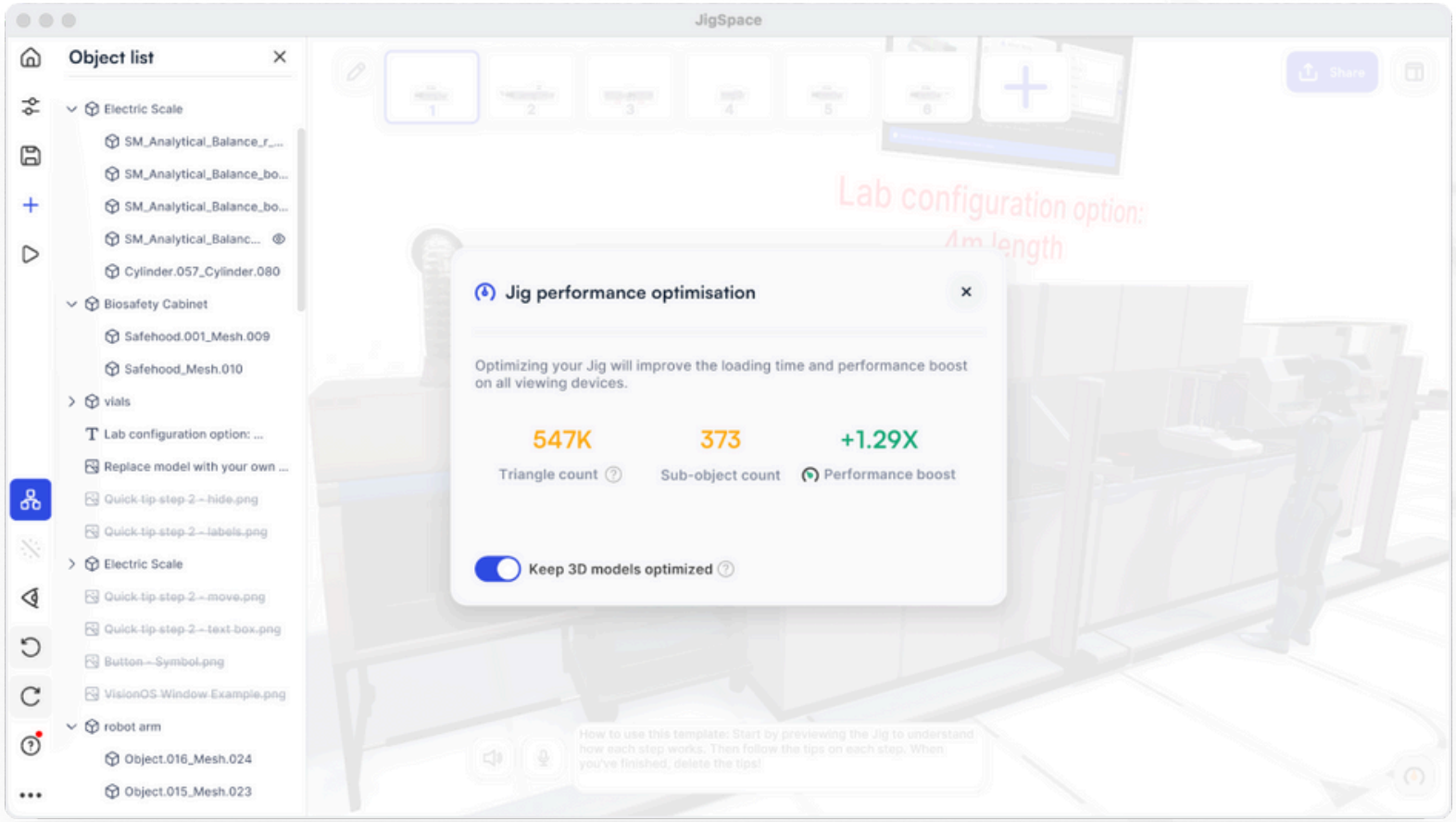
11. Once exported, import all STEP files created via Shrinkwrap into JigSpace and reassemble the model layout.



4 Using the performance indicator

When uploading 3D models to your Jigs, the performance indicator displays a read out of your current triangle count and number of meshes (or sub-objects). This helps 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.



5 Jig Certification Program

Take your 3D optimization to the next level with our training Certification Program.

How to earn certification

1. Contact us: Contact us about upgrading to an Enterprise license
2. Schedule Training: Complete the required training modules with your customer success manager
3. Submit a Jig: Submit a Jig for evaluation (required for editor and creator certifications).

Issuing your certificate

After successfully completing your certification, you will be issued with:

- a certification badge to add to your LinkedIn profile or CV to show to your peers and current employer
- a certificate of achievement is available upon request, confirming your skills have passed assessment.

If you are being certified as part of a team-wide program, we will also notify your team manager and admins.

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