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# Future Engineering



## .STL File to Solid

Newsletter #72

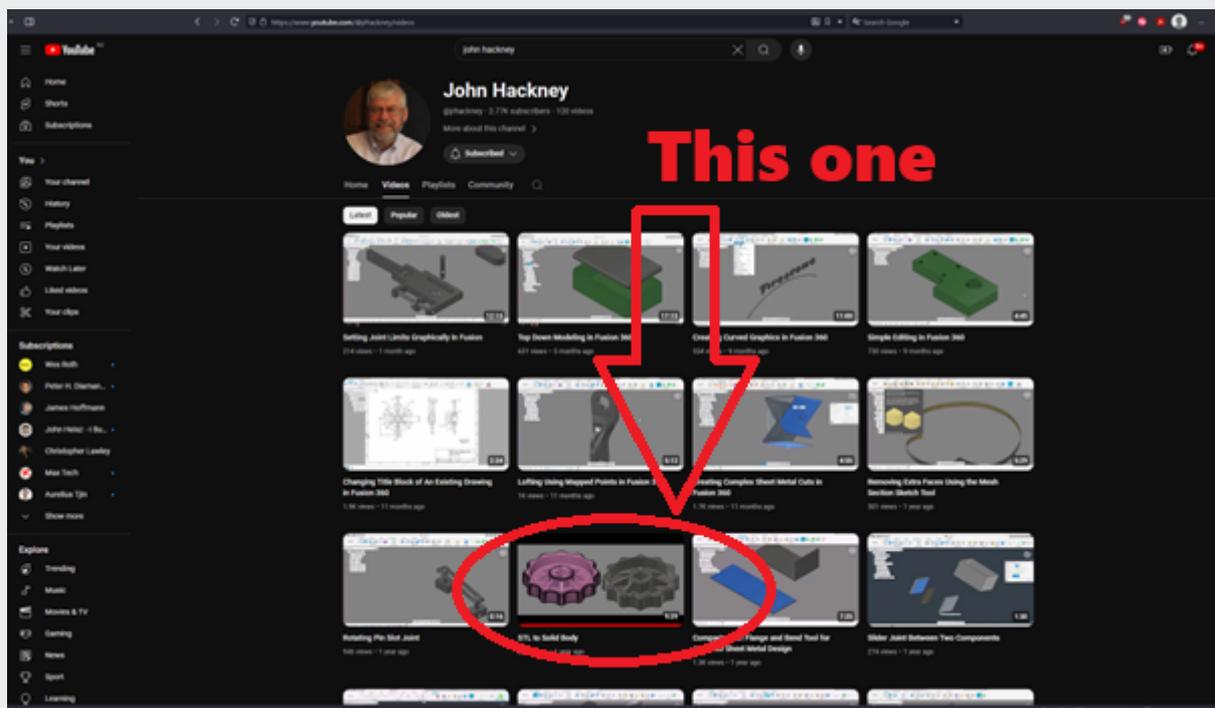
STOP PRESS!! I'm starting a **new section** in the Newsletter from this week: a weekly freebie via the purple button down below, at the end.

**Now for this week's newsletter:-**

It's a frequently asked question by owners of home 3D printers:-

Do you find 3D models on Thingiverse, Grabcad and similar sites?

Do you ever want to modify a downloaded .STL file in Fusion?



Sometimes you don't get the options to download a STEP file, which is the ideal, and you're stuck with an STL which has a few limitations if you want to modify and change it but [John Hackney is your friend here](#).

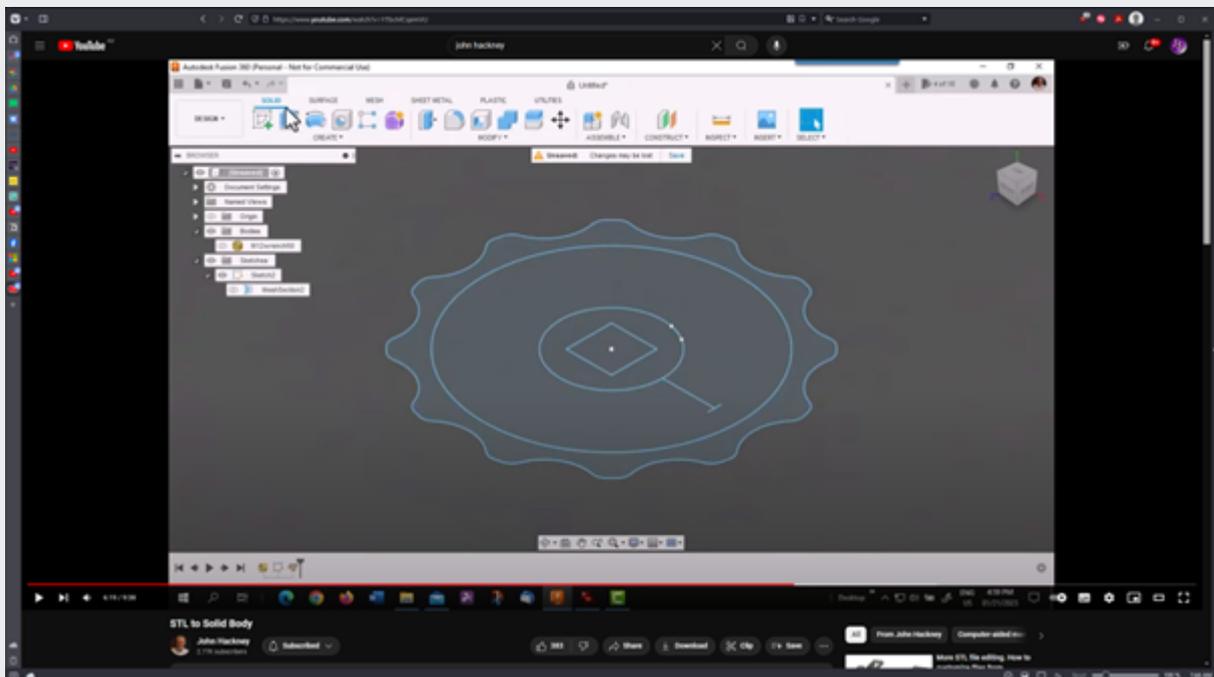
I've featured John Hackney in the newsletter once in the past, he's not so much building a YouTube business, he just uses his channel to support his contributions to the discussions on the Fusion Forums and so all the videos on his channel are valuable insights on common or interesting questions.

**The reason downloaded STLs are tricky** is that they are bodies made up of a triangulated mesh and the precision of the geometry is dependant on the

resolution of that mesh. You can only really measure from the vertices of the triangles which can be a bit hit and miss, unlike a STEP file which you can at least measure accurately even though the feature creation history isn't there in the Fusion time-line.

So what John is [demonstrating in this video](#) is how to generate a simplified sketch which allows you to make the features in a quick and efficient way, ending up with a solid body and a time line.

One thing you're likely to notice is that John makes good use of the Rib command in this video which is often a point of frustration for people working through my 16 Basic Tutorials. **The Rib Tool dialog has a range of options** which get confusing and it's evident that John has a good grasp of these options because of his extensive experience. So for you who are still beginners, let me assure you that rib features in general are rarely a critical part of any design, they are there usually used to give strength or support to one of the critical features and so you can afford to be a bit more approximate in the way you use the tool while you're gaining that experience.



I think the most valuable lesson in John's workflow is his use of projected entities to bring in the key elements of the geometry.

**This weeks FREE goodies:-**

This is a 19 page illustrated PDF, a click by click tutorial on sketching Arcs in Fusion. Click the Purple button to go there.

FREE! How-To Guide: Sketching Arcs

## Helpful links

[Future Engineering YouTube Channel](#)

[Future Engineering Website - this link currently inactive](#)

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