

### SOLIDWORKS 3D CAD TOP ENHANCEMENTS IN 2024

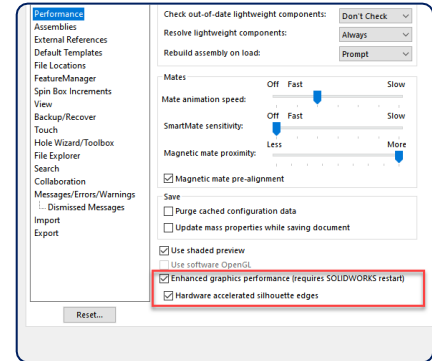
SOLIDWORKS 2024 brings a wide range of enhancements and new additions of convenient tools to improve the user experience. This blog illustrates some of the major upgrades in User Interface, Part modelling and Assembly creation.

#### USER INTERFACE:

##### Hardware Acceleration

Massive performance gains in 2024 generating edges

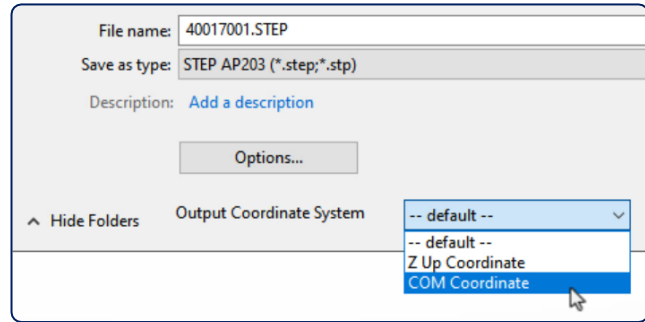
- Users can enable/disable performance improvements using GPU silhouette edges in HLR/HLG and wireframe



##### Output Coordinate System

Choose which coordinate system becomes the origin when using Save As

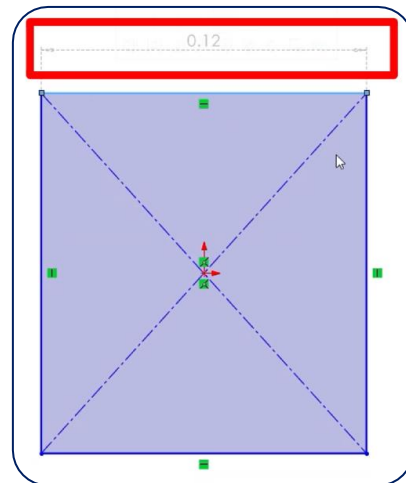
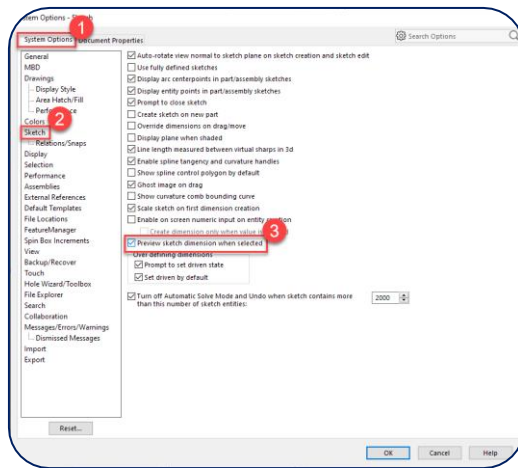
- Supported File Types: \*.3mf, \*.sat, \*.amf, \*.ifc, \*.igs, \*.x\_t, \*.x\_b, \*.step, \*.stl, \*.vda, \*.wrl, \*.sldprt from \*.sldasm



##### Sketch Dimension Previews

You can preview sketch dimensions when you select a sketch entity.

- You can select the dimension to edit it. When you click anywhere else in the graphics area, the preview dimension disappears.
- Turn on sketch dimension previews, click System Options > Sketch and select Preview sketch dimension.

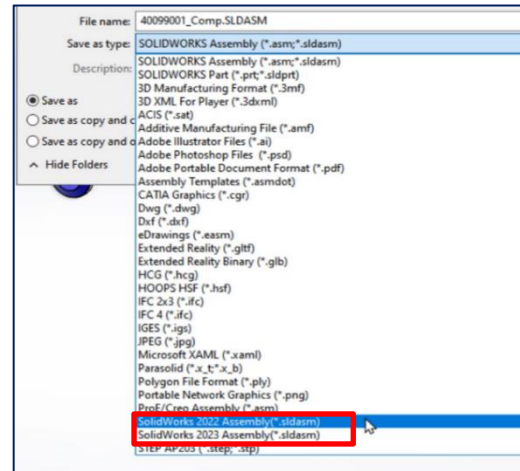


### PARTS AND FEATURES:

#### Save as Previous Release

- Save your parts, assemblies, & drawings as a previous annual release
- Supports 2 years back (2024 → 2023, 2022)

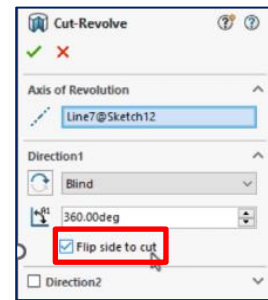
Now you have the ability to preserve the full functionality of SOLIDWORKS parts, assemblies, and drawings that were generated in the most recent version of SOLIDWORKS by saving them with an older version of SOLIDWORKS



#### Flip Side to Cut for Cut Revolves

More flexibility when sketching profiles

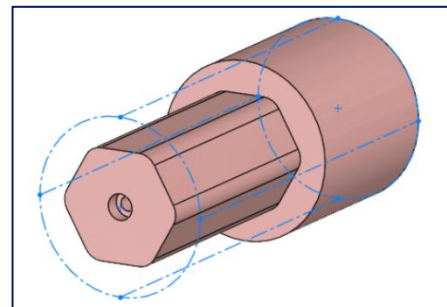
- You can flip the side to cut for cut-revolve features, similar to cut-extrude features. This retains the inner portion of a sketch and discards the region outside the sketch.



#### Cylindrical Bounding Boxes

Easily identify minimum stock sizes for turned parts

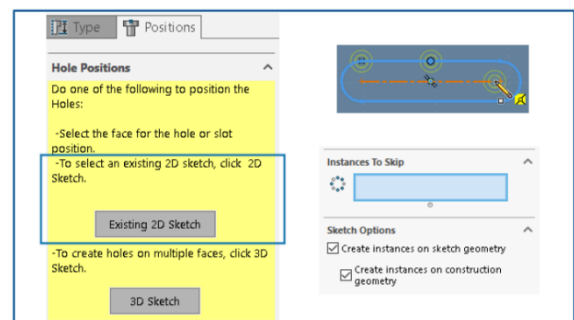
You can create cylindrical bounding boxes that are useful for bodies with cylindrical geometry such as rotational, circular, or turned parts. SOLIDWORKS captures the bounding box parameters and records them in the Custom Properties dialog box.



#### Hole Wizard

Use endpoints of sketch entities rather than the point tool  
Ability to skip instances

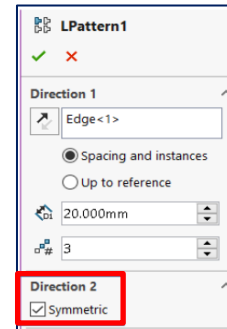
- Under Hole Positions, you can click Existing 2D Sketch and select an existing 2D sketch of points to position and automatically create the holes.
- You can also use geometric 19 sketch entities like lines, squares, slots, and splines as guides to position the holes.



### Symmetrical Linear Patterns

Pattern in the opposite direction with one click

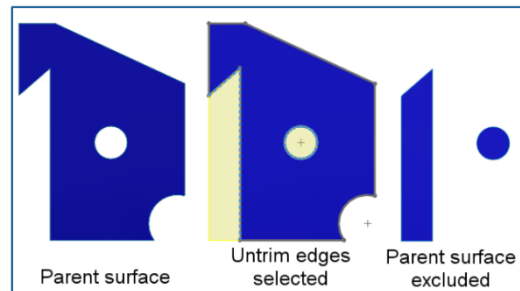
- You can create symmetrical linear patterns from a seed feature.
- The linear pattern uses the parameters from Direction 1 to create a symmetrical linear pattern in Direction 2



### Excluding Parent Surfaces in Untrim Features

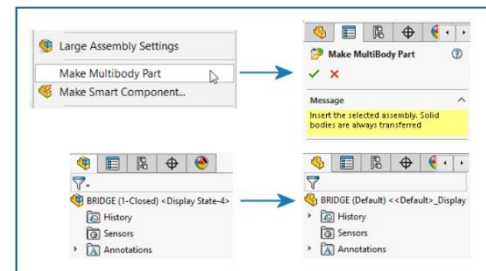
Generate physical geometry for cut-off surfaces

- You can exclude the parent surface from the results of Surface-Untrim features.
- In the Untrim Surface PropertyManager, under Options, select Exclude parent surface to exclude the parent surface from the Surface-Untrim feature results.



### Make Multibody Part

- The Make Multibody Part tool converts an entire assembly into a separate, single multibody part that is linked to the parent assembly.
- Assembly changes propagate to the part

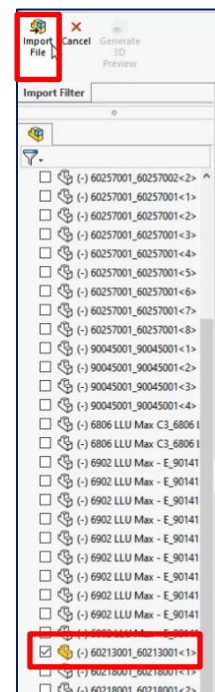


## ASSEMBLIES:

### Preview STEP Import

Enable filters prior to opening STEP files

- When importing an assembly, users are given the opportunity to **Enable Filter**.
- Using this option will provide the user with a complete assembly component tree prior to importing all STEP geometry.
- Users can then choose desired components from the list and a geometry preview can be generated and import only relevant parts of our choosing

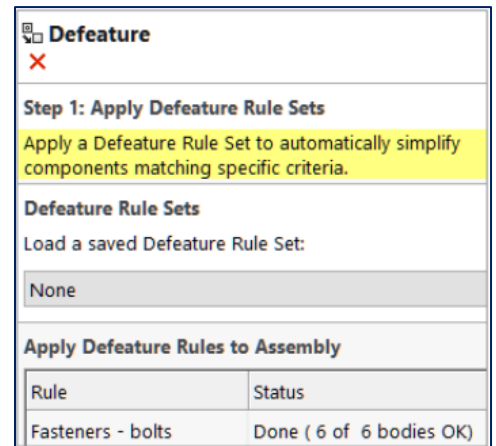


### Defeature Rule Sets

Automate assembly defeature through a rules-based approach

- Create a set of rules to simplify the components in a model. You can specify criteria for component selection, defeature method, and a defeature orientation. You can enclose the components in one body and propagate visual properties.

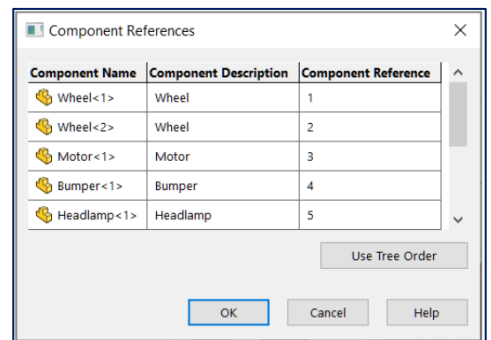
For example, you can create a rule to simplify fasteners as cylinders when the filename for a fastener contains bolt, nut, or washer.



### Component References to Top-Level Components

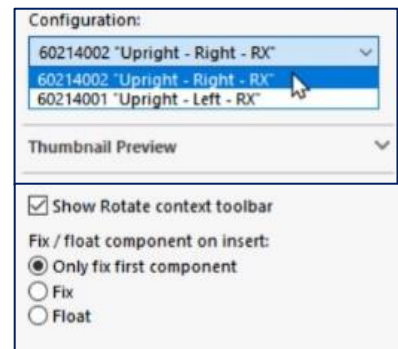
Component references can now be edited/modified in a bulk operation from the top-level assembly

- Enter component references for all top-level components. You can use the tree order from the FeatureManager design tree as the component reference.



### Insert Component

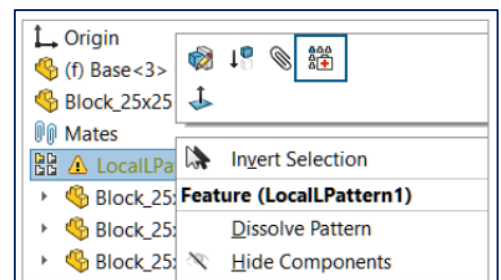
- Select Configuration description visible in drop down list
- Fix/Float/Fix First options when inserting components



### Repairing Missing References in Linear or Circular Component Patterns

You can repair missing direction references in linear component patterns and circular component patterns.

- Linear component patterns, SOLIDWORKS repairs the missing direction reference by selecting a reference on the component that is the same type and orientation.
- Circular component patterns, SOLIDWORKS repairs the missing direction reference by selecting a reference on the component that is the same entity and is coaxial with the missing axis.



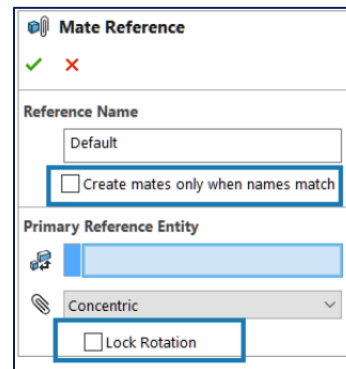
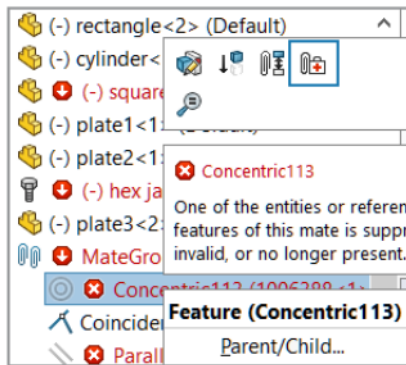


Evolution thro' Knowledge

### Mate References

When creating mate references, you can select Create mates only when names match to create mate references only when the mate reference names are the same. The name match applies to primary, secondary, and tertiary reference entities.

And also, you can select Lock Rotation for Concentric mates and Auto-Repair for Missing Mate References



### XR Exporter Integration

You can export SOLIDWORKS CAD files to .glb or .gltf file formats. The files contain information such as geometry, appearances, textures, animations, motion studies, configurations, display states, exploded views, lights, and metadata. For large files, exporting supports Draco, the standard file compression mechanism.

