

Use Advanced Robot CAD Models with CAD Assemblies

Introduction

Robot CAD models on Yaskawapartners.com are a step up from standard CAD models. Each model offers 9 or more formats to download, three of which are native CAD (Solidworks, Inventor, Solid Edge) and fully articulated. This document will describe how to best use these formats.

Choosing the Correct Format

Below is a sample Robot CAD model page.

Each Robot Page has:

AutoCAD 2D: for basic 2D layouts

CATIA: Native CATIA (not articulated)

Inventor: Native Inventor (fully Articulated)

Solid Edge: Native Solid Edge (fully Articulated)

Solidworks: Native Solidworks (fully Articulated)

3D PDF: for viewing only (requires Acrobat reader)

Parasolid: Neutral CAD best with Solidworks or Edge

STEP: Neutral CAD best with all other CAD

PNG Image: Rendered Image

Formats with years (2020) require that version software or newer.

PL190 / PL320

BY NELSON BARKSDALE · JANUARY 25, 2022

Search File... (Total Files: 9)	
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Last Updated

January 27, 2022

Package Download:

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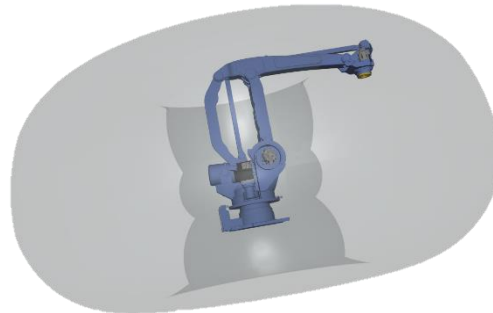
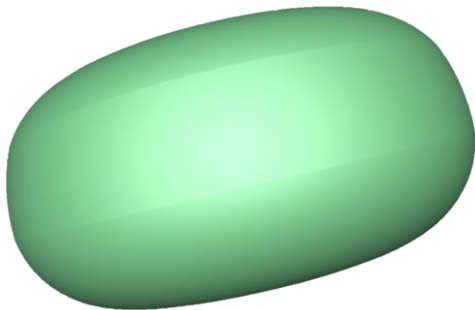
How to Use the Parasolid or STEP files:

STEP and Parasolid formats are neutral CAD files. These formats translate data from one CAD system to another. However, the feature history, material/mass data, and constraints are removed.

These formats should only be used if the user does not have Solidworks, Inventor, or Solid Edge or they have an older version of the software than specified in the robot zip file (EX: PL190 PL320 (Solidworks **2020**).zip)

If the user wants to articulate one of these formats, they will need to manually add the constraints in the preferred CAD software.

NOTE: When opening a STEP or Parasolid, the only thing visible may be what is seen on the image below left (green bubble). That is the robot's reach envelope. The robot is visible once the envelope is made transparent.



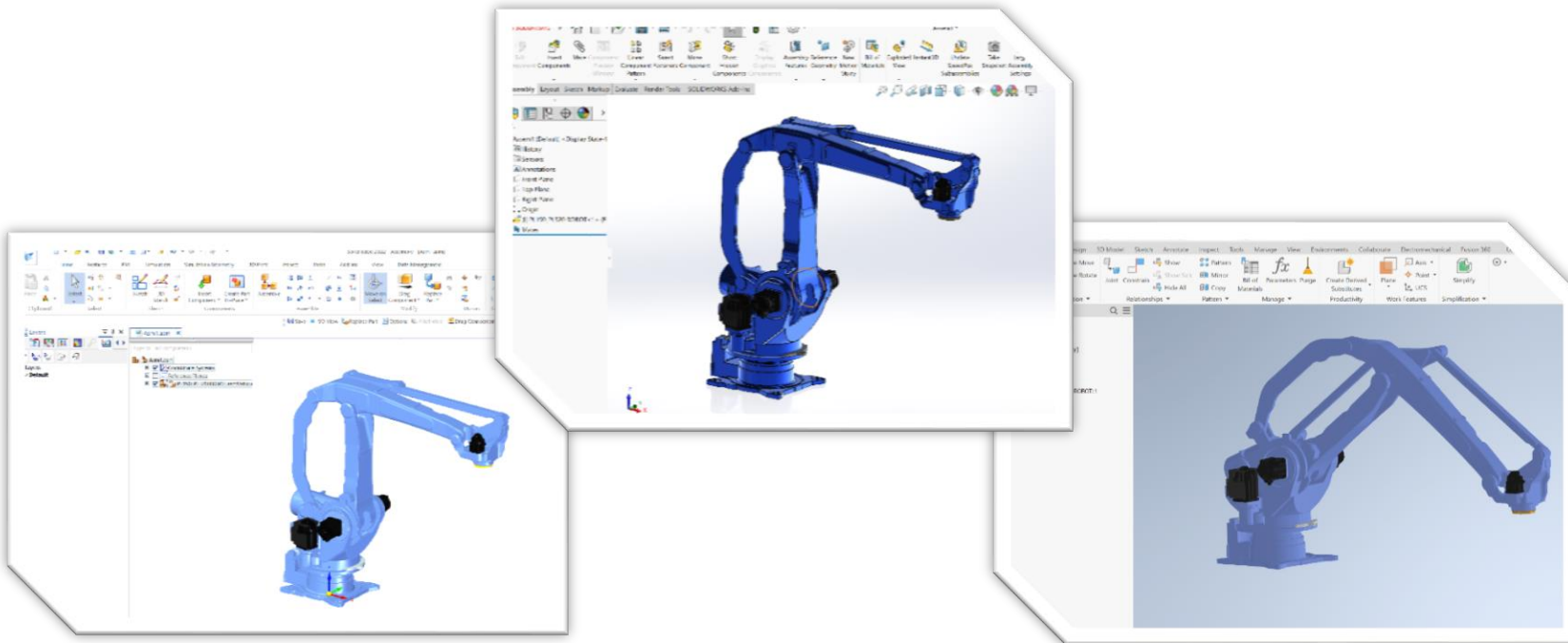
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How to Use the Native Solidworks, Inventor, or Solid Edge files:

Starting with the YRC1000 and Micro controllers, all robot models in Solidworks, Solid Edge, and Inventor have full planer, axial, and angular constraints included.

This allows one of the above CAD systems to manipulate the model with the same limits as the actual robot.

Here are instructions to use the robot, as a flexible subassembly, for each of the three CAD systems.

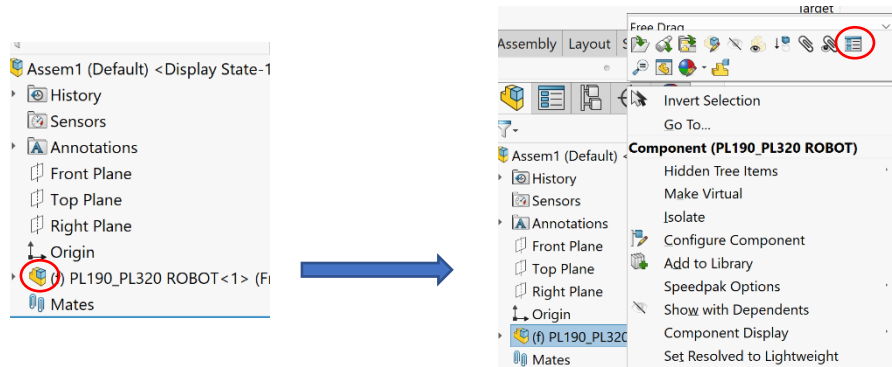


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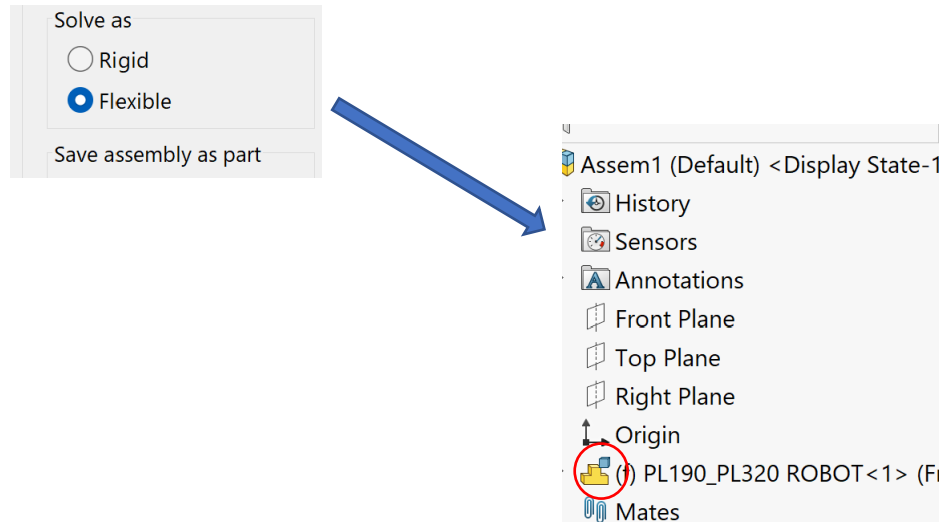
Solidworks

In Solidworks, the user needs to right-click on the robot subassembly.

Then select the properties icon.



Change the **Solve as** from Rigid to Flexible

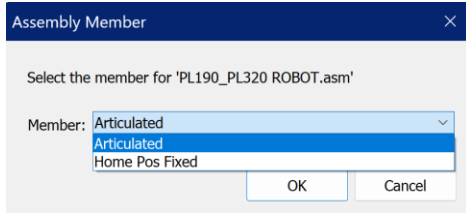


The subassembly icon shows the robot can be manipulated directly in the top-level assembly.

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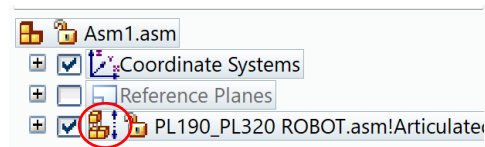
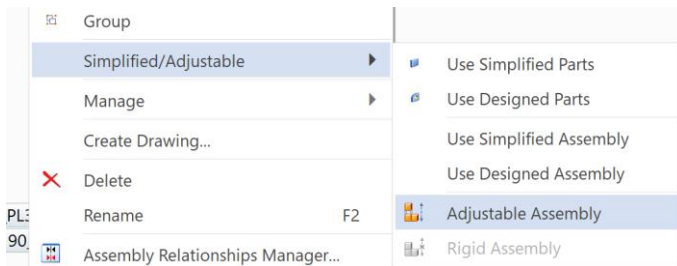
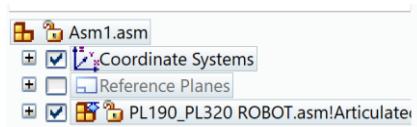
Solid Edge

In Solid Edge, when adding in the robot as a subassembly, choose the Articulated Member.



Right-click on the robot subassembly

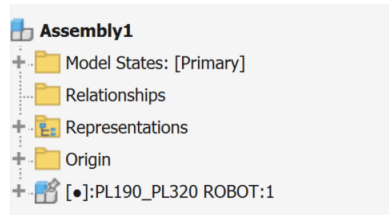
Hover over Simplified/Adjustable...then select Adjustable Assembly



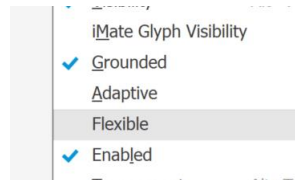
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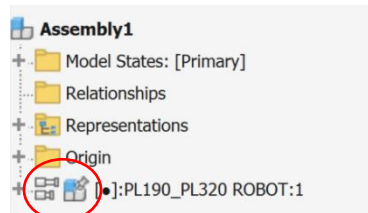
Inventor



First make sure the Robot subassembly is either constrained or set to “grounded.”



Right-click on the subassembly and select “flexible.”



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