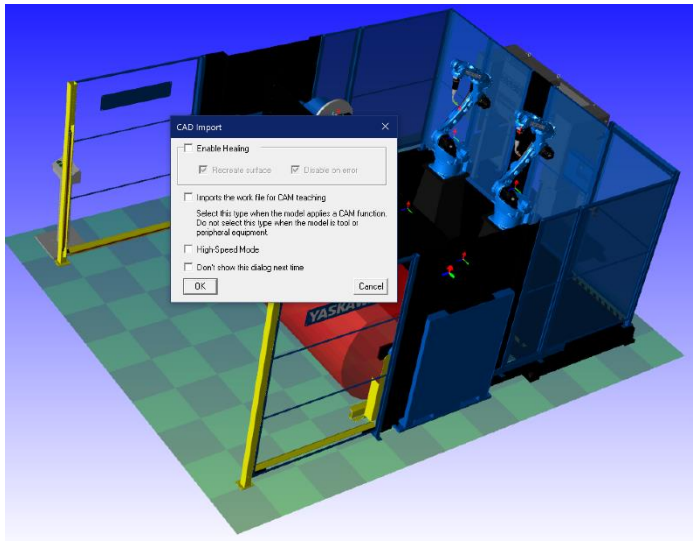
YASKAWA
PARTNER SUPPORT
Shared Integration Experience

This document captures ideas, experiences, and informal recommendations from the Yaskawa Partner Support team. It is meant to augment – not supersede manuals or documentation from motoman.com. Please contact the Partner Support team at partnersupport@motoman.com for updates or clarification.

MotoSim Model Import Tips



Introduction

Importing CAD models to MotoSim can be a straightforward and simple process. These curated tips will assist with improving the workflow of converting 3D CAD models to MotoSim simulation models.

How Imported Models Work in MotoSim

It is important to know whatever is imported (at one time) into MotoSim, will come in as one part. This is true no matter how detailed the assembly is. The CAD assembly will not be replicated as a part-for-part model. It will be combined into one static part. If it is necessary to have an articulated assembly or adjustable assembly, follow these tips.

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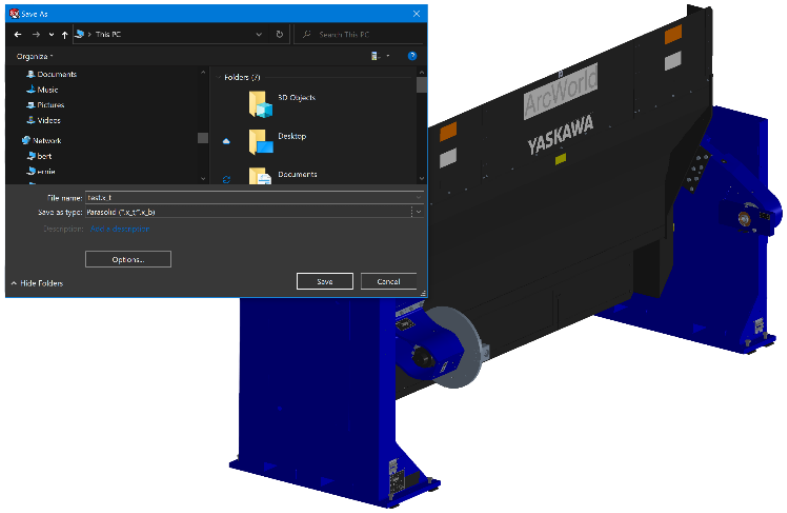
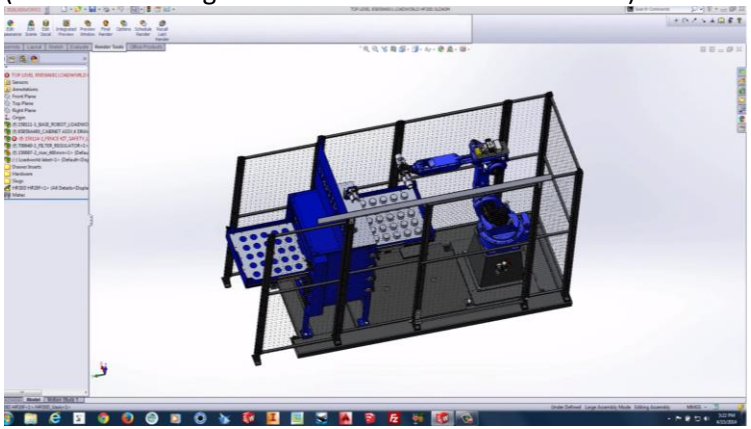
Tips for Exporting Models from CAD

The following tips will help streamline the data needed for a successful MotoSim Simulation:

1. Try to simplify the complexity of the models prior to exporting them from CAD.
    a. Remove all fastener hardware (nuts, washers, springs, screws.)
    b. Remove all internal or hidden components.
    c. The CAD model of the robot is not needed unless it is being used as a location reference.
2. Only keep what the robot interacts with and what it could collide with.
3. Export all models, except robot tooling, from the top-level cad assembly.
    a. Exporting from the Top-Level assembly maintains the same model origin position.
    b. Basing everything off the same origin guarantees that the MotoSim assembly will exactly match the CAD assembly.
4. The exception is the robot tooling.
    a. It is best to export the robot tooling from its own subassembly, so its origin is closer to or directly located at the robot flange location.



Video: Prepare a 3D Assembly before Importing to MotoSim
(Click on the image to view the video from YouTube.)



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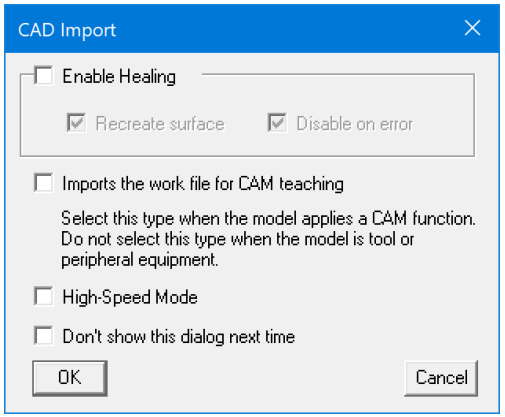
Tips for Importing Models to MotoSim

The following tips will help recreate the cell assembly exactly as it is in the CAD software.



1. When importing most models, do not check any items in the CAD import dialog window.
    a. The MotoSim .hsf file format models are simplified models that should be used in most applications - to save space and improve performance.
2. When importing a model for CAM function, make sure to check the box “Imports the work file for CAM teaching”.
3. The “CAM teaching” check box should ONLY be used for the part to be worked on:
    a. Not the fixture
    b. Not the support structure
    c. Not the robot tooling or other accessories
4. After the imported model (.stp, .x_t, .igs, etc.) is converted it is safe to delete.
5. After importing the first model of a cell assembly use the position panel to rotate the part 90° about the X axis.
    a. Import all remaining cell components as children of the first part, so they do not need to be rotated.

Video: MotoSim Import 3D CAD Models

(Click on the image to view the video from YouTube.)