



# MASTERING THE NEW SKETCH & ASSEMBLIES TOOLS IN NX

Understanding the Capabilities and Philosophy with the new NX Sketch Task Environment and Assemblies Commands.



NX & Teamcenter User Group Event 2024  
Portland, OR – Sherpa Design



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# AGENDA

- Mixed Sketch Solvers in a Single File
- Philosophy of NX Sketch
- Overview of the Task Environment & Sketch Navigator
- NX Sketch Workflow & Defining a Sketch
- Quick Looks at Specific Sketch Commands
  
- Assembly Load Options & the Assemblies Environment
- Assemble & Add Component: A Comparison
- What's New with Constraining and Moving Components
- Reference Sets & Arrangements: Displaying Information
- WAVE & Synchronous Assemblies



# THE OLD AND THE NEW

- **Mixed Sketch Solvers in the Same File**

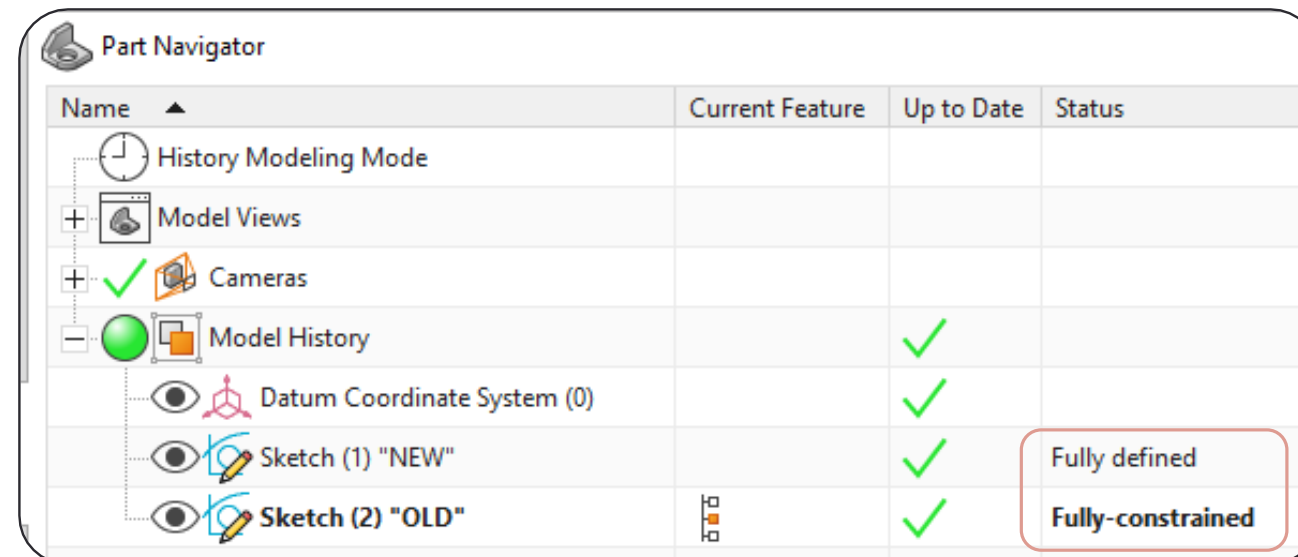
- NX now allows for the editing of Sketch features using the old solver and the creation and editing of Sketch features using the new solver to exist at the same time in a single file.



### Renew Feature

Recomputes a feature with the latest version of feature code.

- Do not need to 'Renew Sketch'

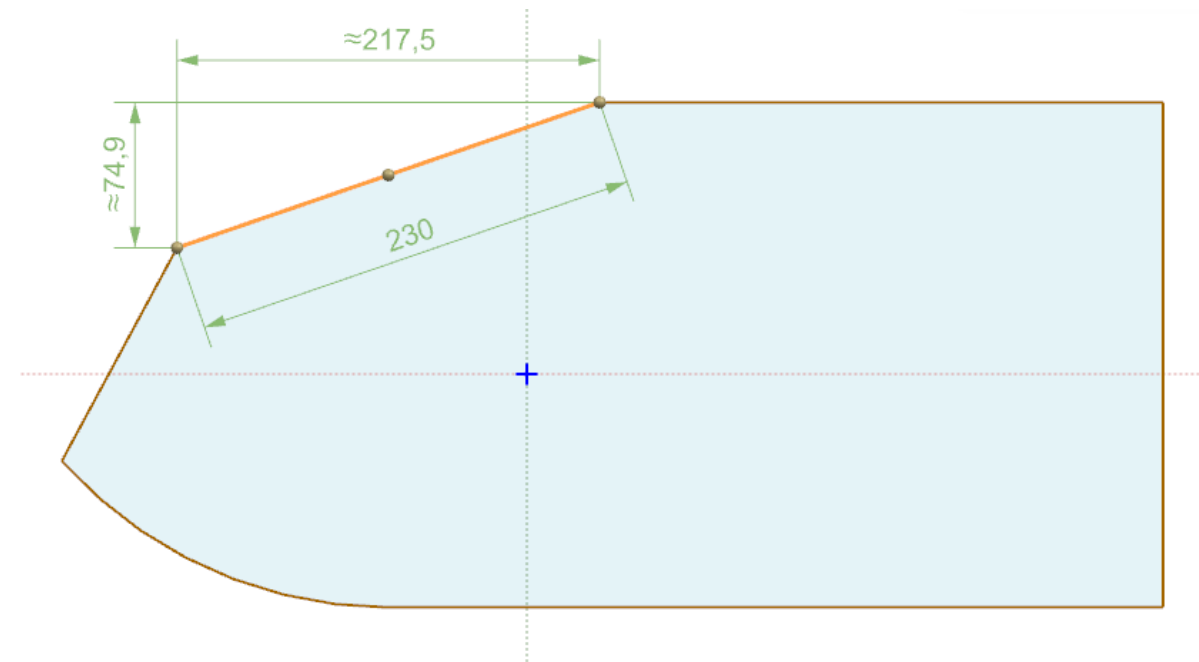


Name	Current Feature	Up to Date	Status
History Modeling Mode			
Model Views			
Cameras			
Model History		✓	
Datum Coordinate System (0)		✓	
Sketch (1) "NEW"		✓	Fully defined
Sketch (2) "OLD"		✓	Fully-constrained

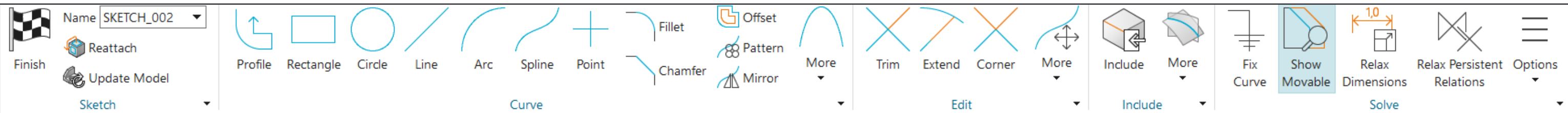
# NX SKETCH PHILOSOPHY

- **Important Aspects of the New Sketch Philosophy in NX**

- Speeding up the process of creating a sketch
- Object then Action, not Action then Object
- Sketch does not have to be fully defined to work
- Relations, not Constraints
- Relax! – NX will take of it

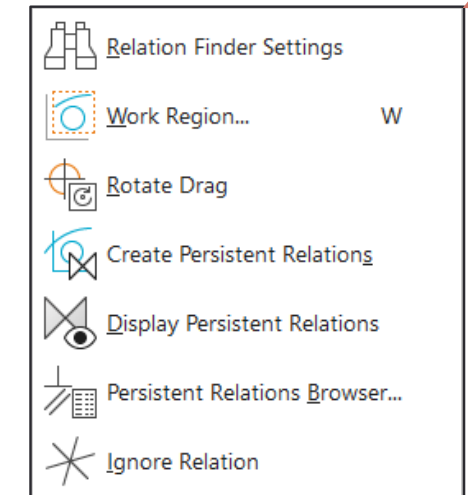


# NX SKETCH TASK ENVIRONMENT



- **The Right Tools to Sketch Quickly**

- Preferences and Settings
- Manual Create Sketch (Customer Default Setting)
- Snap to Axis
- New Solve group with Options drop-down
- Including outside geometry
- Show Moveable

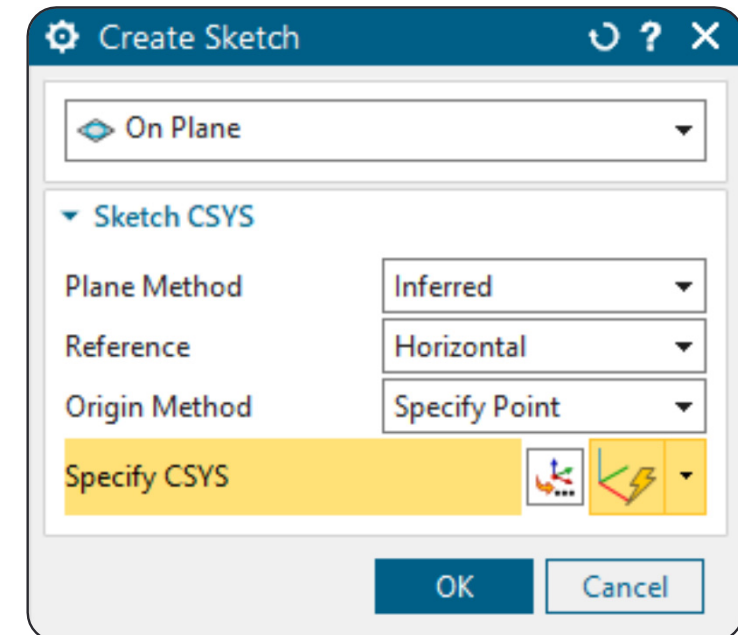
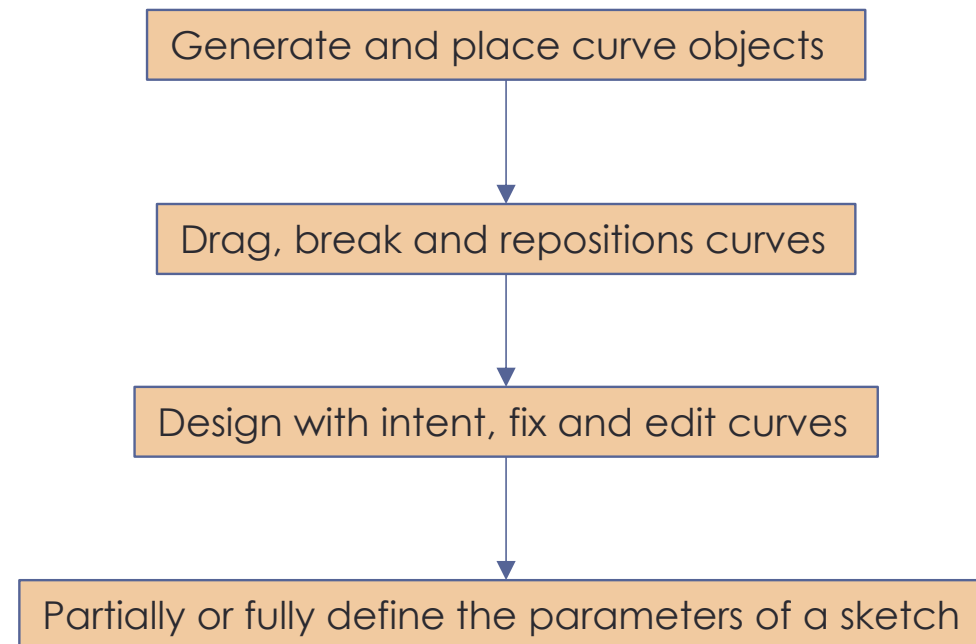


# NX SKETCH WORKFLOW

- **General Workflow of Sketch Creation**

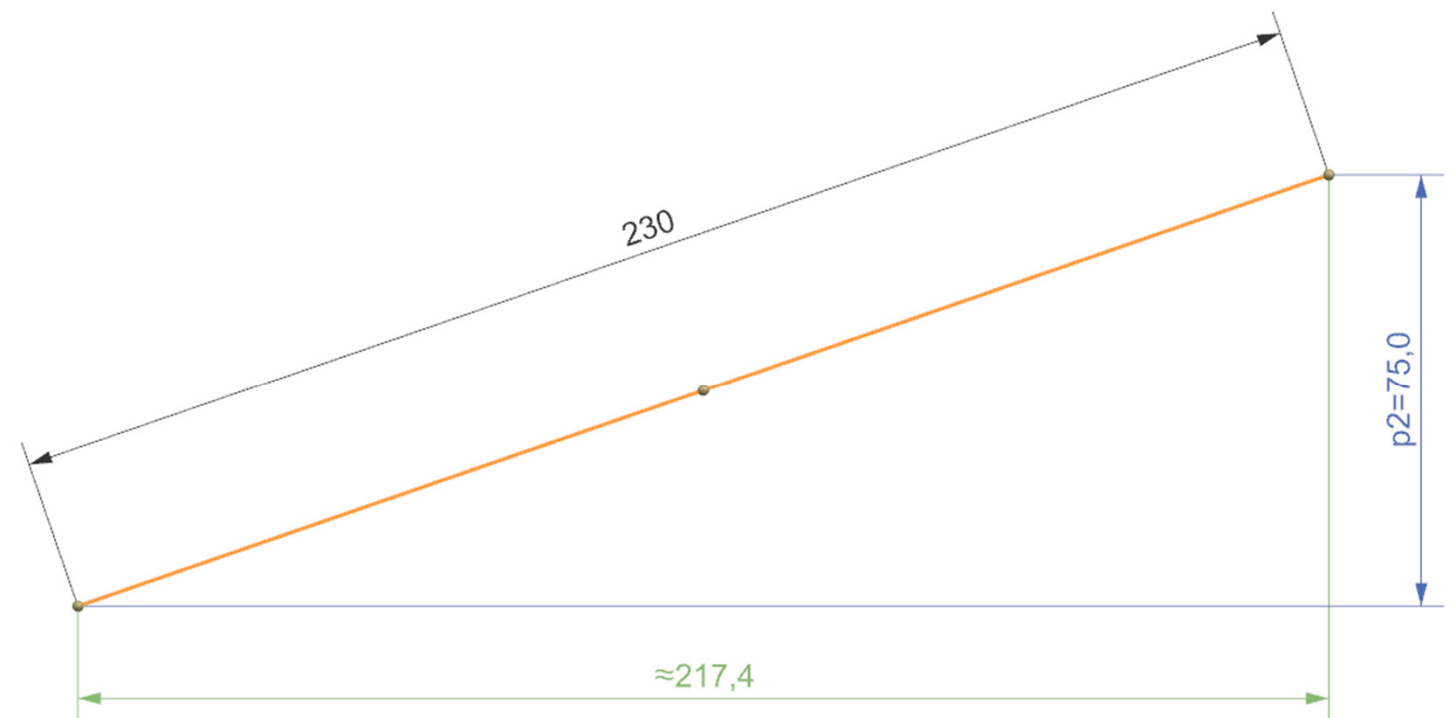


- Create
- Move
- Design
- Define



# DEFINING A SKETCH

- **Partially or Fully Define the Parameters**
  - Dimensions over Relations
  - 3 Types of Dimensions
  - 'Make' and 'Persistent' Relations
  - Relax Dimensions and Relations
  - Sketch Navigator

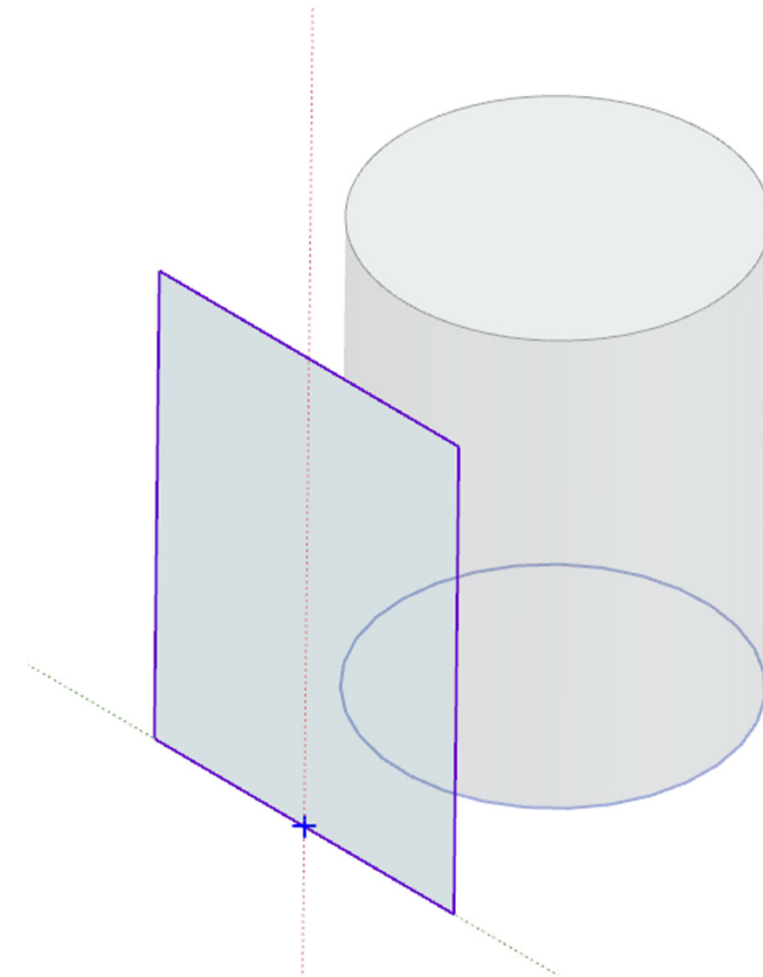
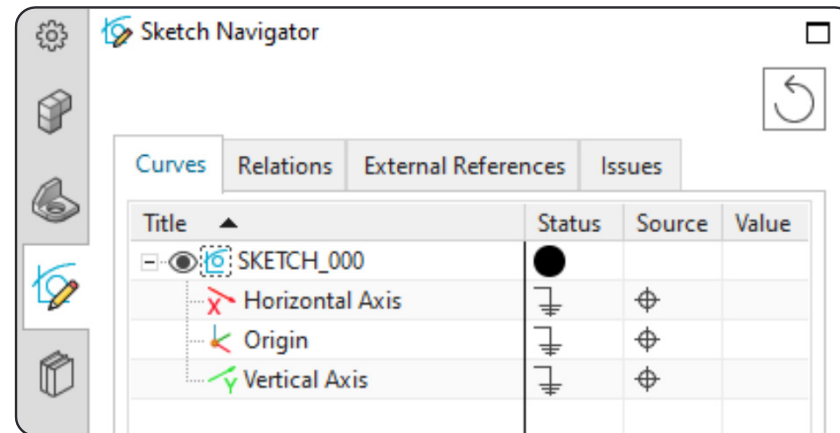




# IN THE KNOW - SKETCH COMMANDS

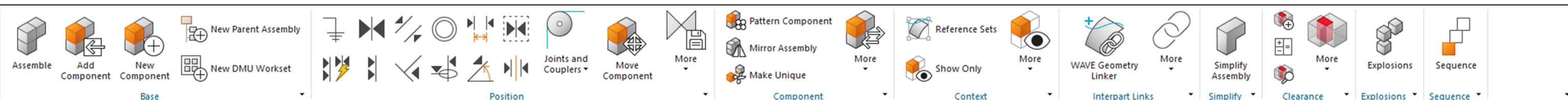
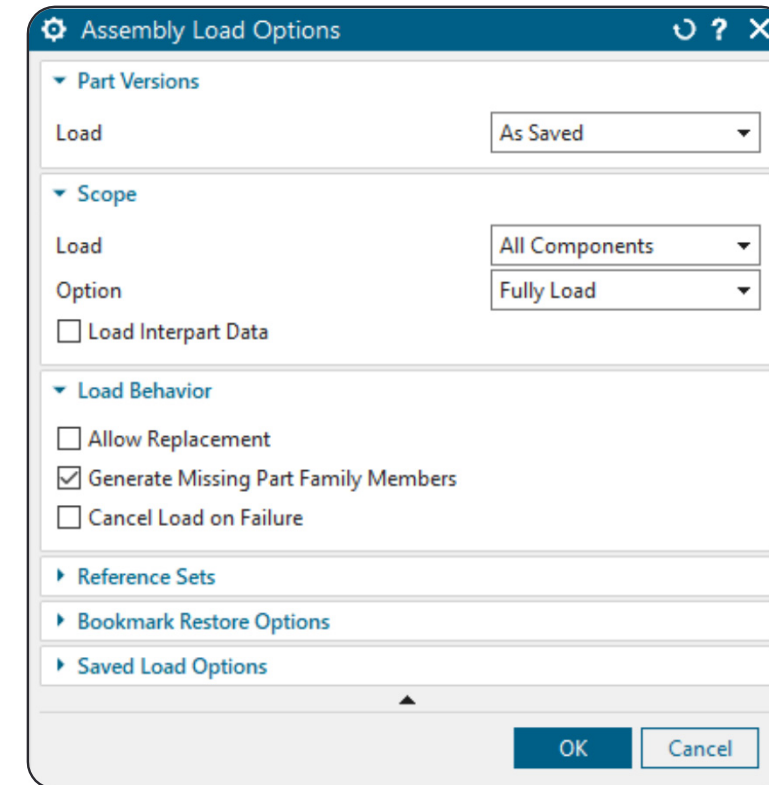
- **Additional Sketch Tools and Options**

- Exit Sketch
- Reattach
- Slot
- Silhouette Curve
- 2D Synchronous



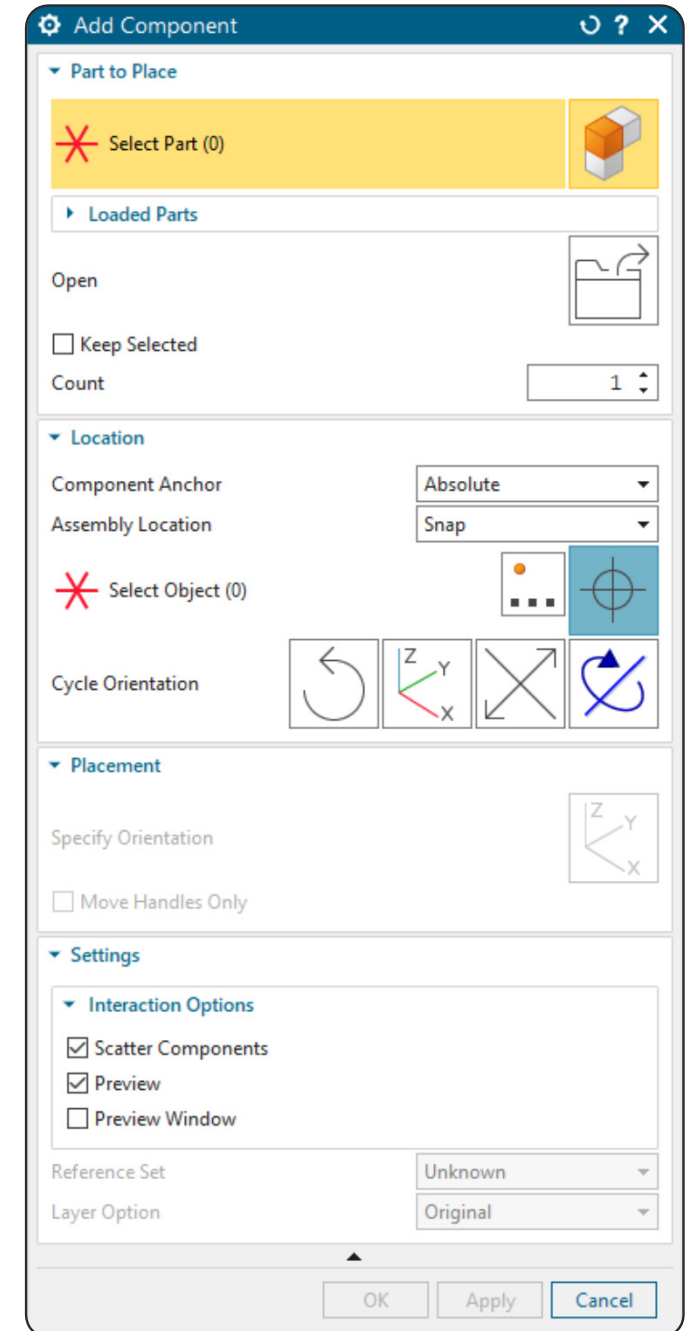
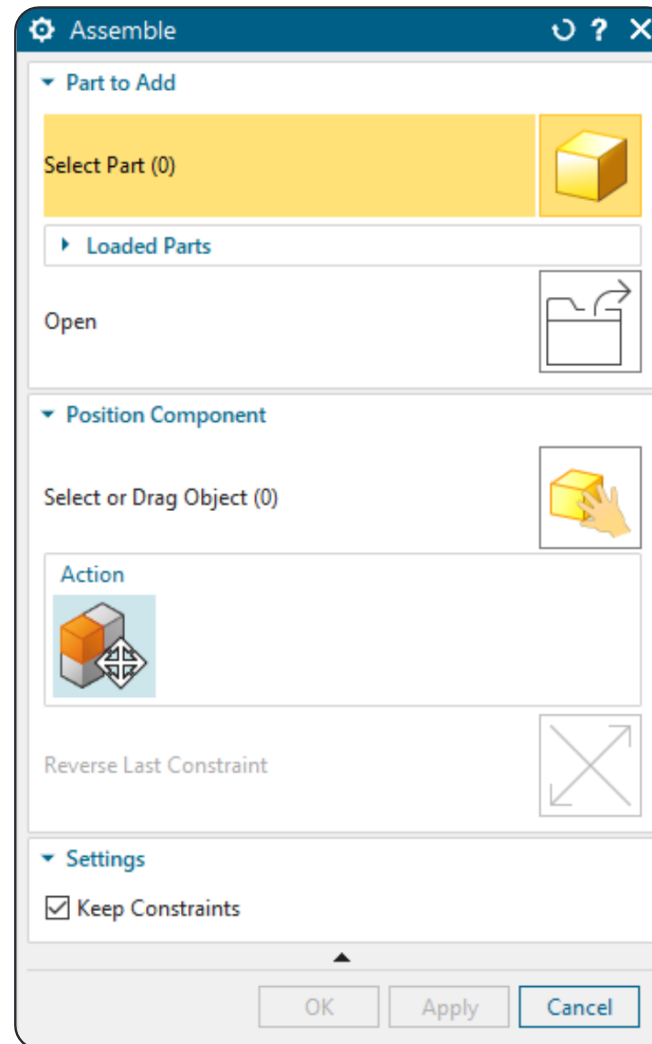
# ASSEMBLY LOAD OPTIONS & ASSEMBLIES TAB

- **Use Load Options in NX to Deal With Any Assembly**
  - One of the most important aspects of NX
  - As an assembly file is being loaded, we are telling NX:
    - Where to look for components
    - What components to load
    - How to load the components

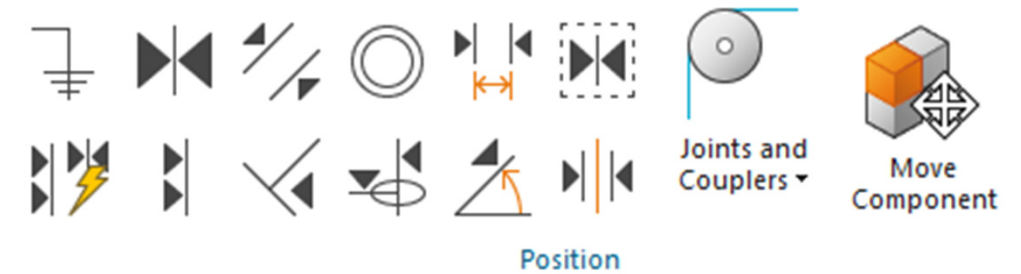


# ASSEMBLE & ADD COMPONENT

- **Flexibility in Adding Components to an Assembly**
  - Assemble allows for quickly dropping in and positioning components in an Object-then-Action workflow
  - Add Component includes additional details and options such as changing reference sets

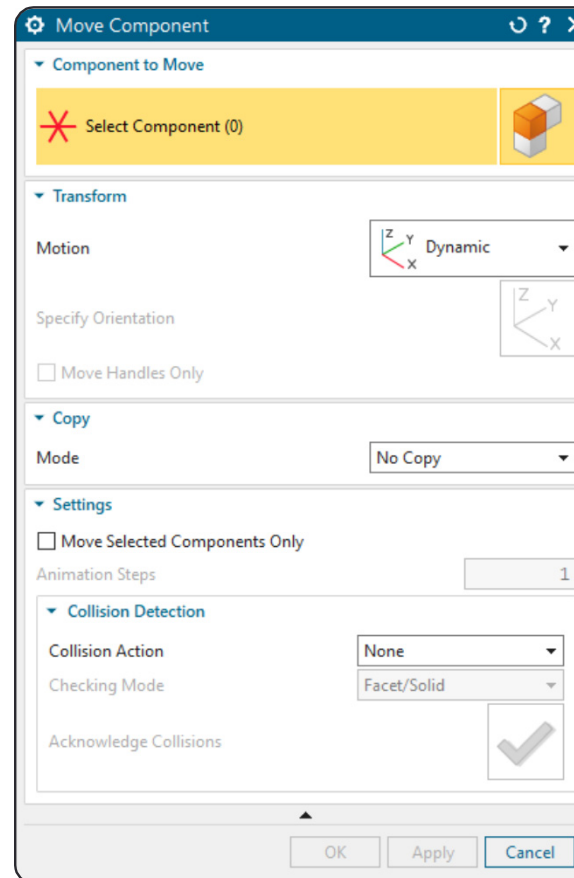


# CONSTRAINING & MOVING

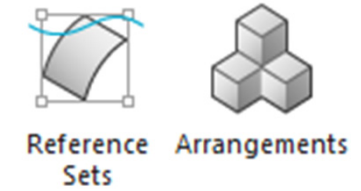


- **Assemble More Quickly**

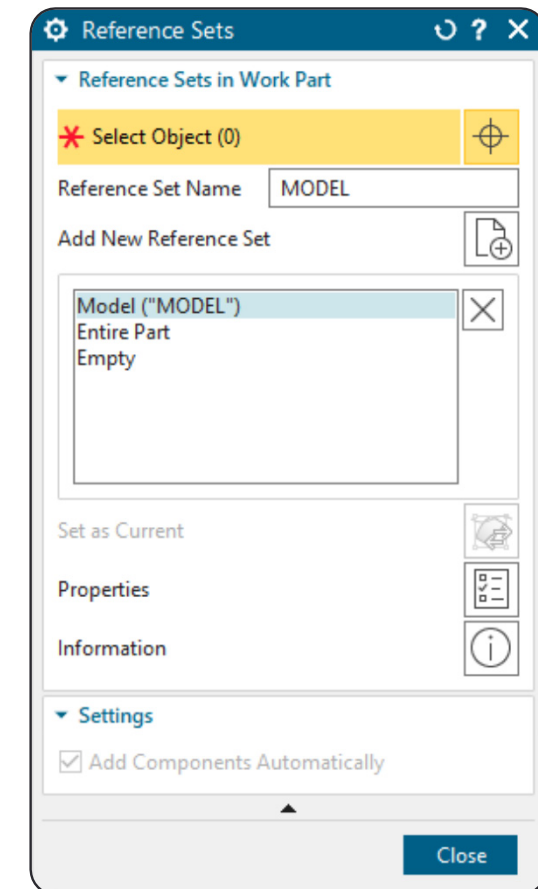
- No single Constraints tool; quick access to constraints in the Ribbon Toolbar
- Copy & Paste Constraints!
- Using Persistent Constraints and positioning components for target Arrangements



# REFERENCE SETS & ARRANGEMENTS



- **Component Display vs. Component Position**
  - Reference Sets control the display of information in the part
  - Arrangements control the position of the part within the assembly



# WAVE & SYNCHRONOUS ASSEMBLIES

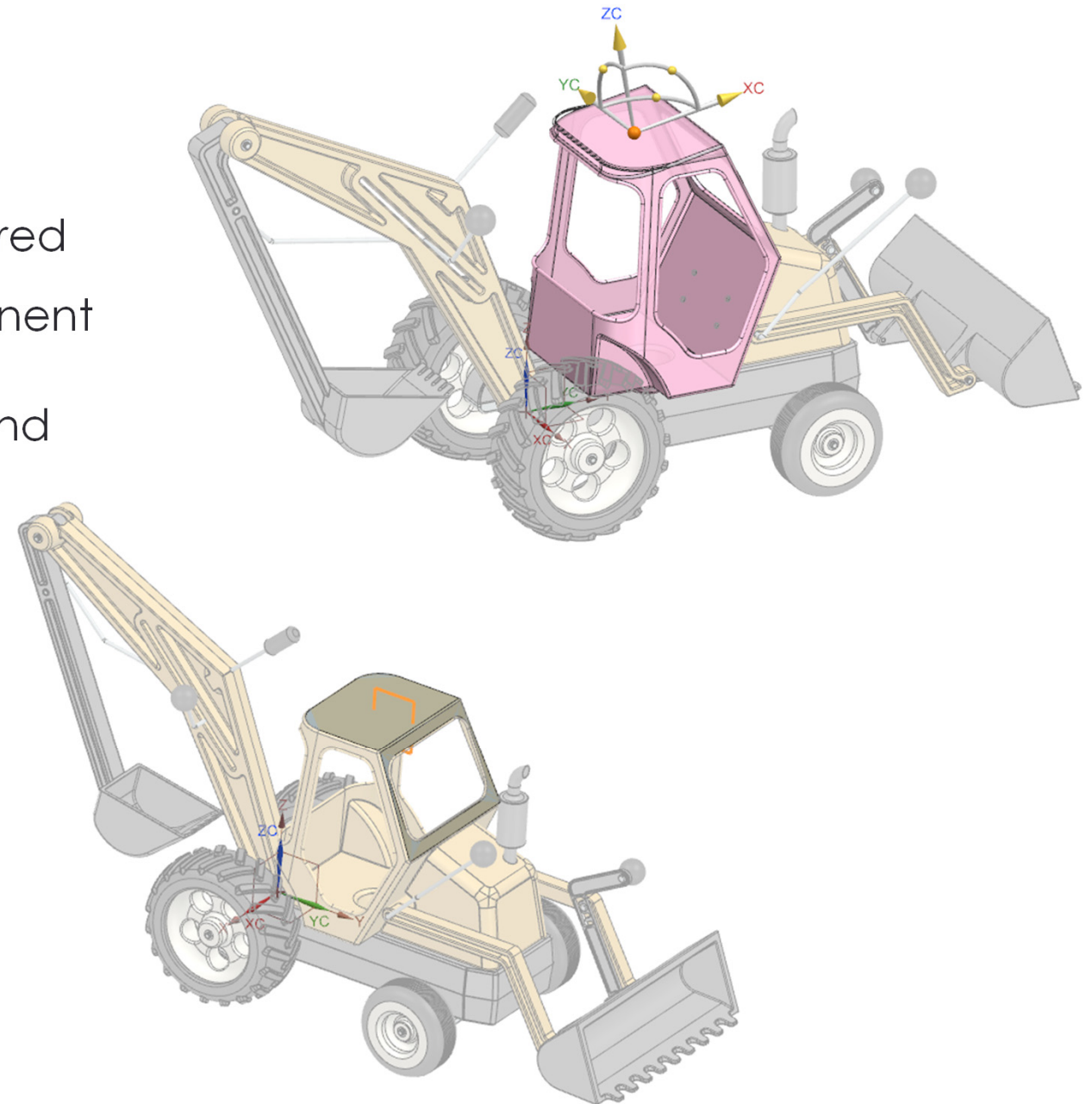
- **Design Quickly in the Context of the Assembly**
  - The WAVE Geometry Linker allows for linked and shared objects and information from component to component
  - With the Synchronous Assemblies capability, faces and entire components can be moved around quickly
  - Design and Edit at the assembly level



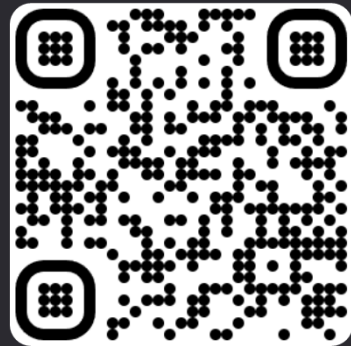
Move



Label as Modeling  
Component







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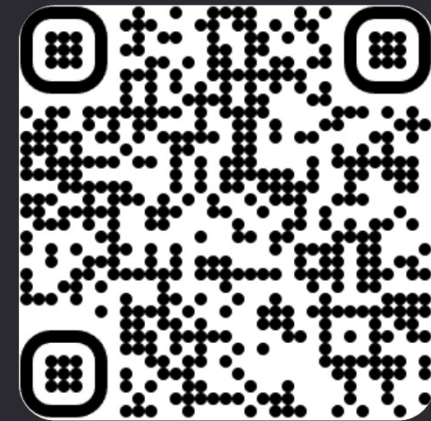
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**THANK YOU!**

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