Femap Tips and Tricks: Create Elements between Coincident Nodes

The task of creating elements such as springs or gaps between coincident node points can present some challenges. For example, how do you pick the coincident node points individually? Femap offers a couple of solutions to help you create elements like these more easily.

To enable you to choose between coincident nodes, in a model that contains coincident nodes, click the **right mouse button** in the *graphics* area and select **Pick Query**.



So when you pick coincident nodes, the *Select* dialog appears allowing you to choose which one to pick.

Select	— ×
781 455	
ОК	Cancel

Alternatively, you can use a shortcut key to make use of the Pick Query command on the fly. **Right click** in the *graphics* are and select **Pick Normal** to reset the picking method.

Enter the **Control-E** shortcut key to bring up the *Define* element dialog, click on **the Type...** button and select **Spring/Damper** as the element type to define a spring element (like CBUSH). Now pick as set of coincident nodes, and the first node will be populated in the dialog. Now hold down the **Alt** key and clicking on the coincident nodes a second time, the *Select* dialog appear, allowing us to choose the second coincident node.

Define SPRING/DAMPER Element - Enter Nodes or Select with Cursor						
ID 1773 Color 124	lette Layer 1	Property 1CBUSH Propert Type				
	Orientation	Offsets				
<u>N</u> odes 455 781	No <u>d</u> e	Offset Vector No Offsets QK Cancel				

However, you have many elements to create between coincident nodes, so you can use a more automated approach and create them all in one single command.

Select the menu command **Mesh / Connect / Coincident Link**. **Select** all the nodes to be considered, enter a value for the **Coincident Tolerance**, or leave the default value and click **OK**.

Generate Connection Options					
Node and Element Options					
Node ID	478	CSys	3CBUSH CID 🗸	Node Param	
Elem ID	1773	Property	1CBUSH Property Elem Param		
Connection Const Rigid DOF S O Spring Gap E	Type traint Equa Elements Spring Elen g Elements Elements	tions nents	Connection DOF TX TY TZ RX RY RZ Rigid Element Options Reverse Direction Gap Element Options Adjust Gap Length	OK Cancel	

Complete the definition for the connecting element properties in the *Generate Connection Options* dialog, and click **OK** to create all of the connecting elements at once.



You can watch the video of this Femap tip on <u>YouTube</u>.