AutoCAD Electrical 2023 – Defining The Mating Surfaces For An Electrical Inventor 3D Part

AutoCAD Electrical/Inventor

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How to correctly define the mating faces of an electrical 3D Inventor part:

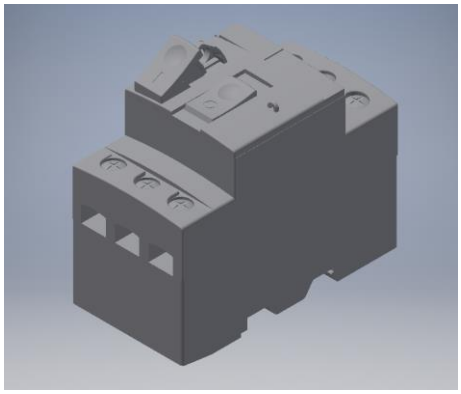
You can download the example 3D model directly from the Cadline Community website

Search for the part *GV2ME20.ipt*

The part should be placed in the one of your IPJ library paths e.g.

C:\Users\Public\Documents\Autodesk\Inventor Electrical Library 2023\{category}\{manufacturer}

Open the file *GV2ME20.ipt*

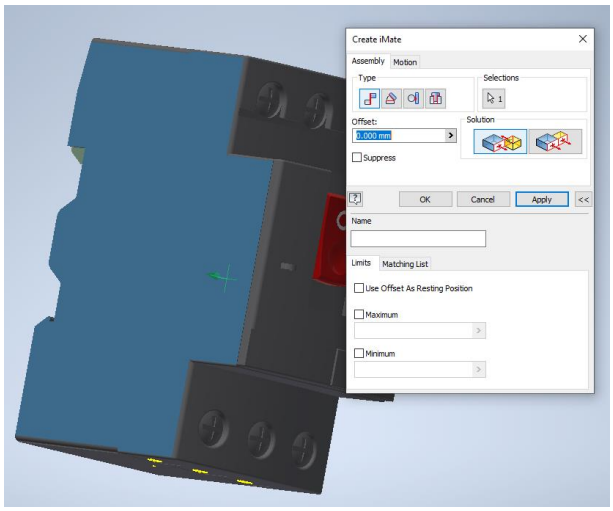


There are no iMates pre-defined for constraining electrical components within Inventor, so it is best to create specific names for the iMates and stick with them for all components created/modified.

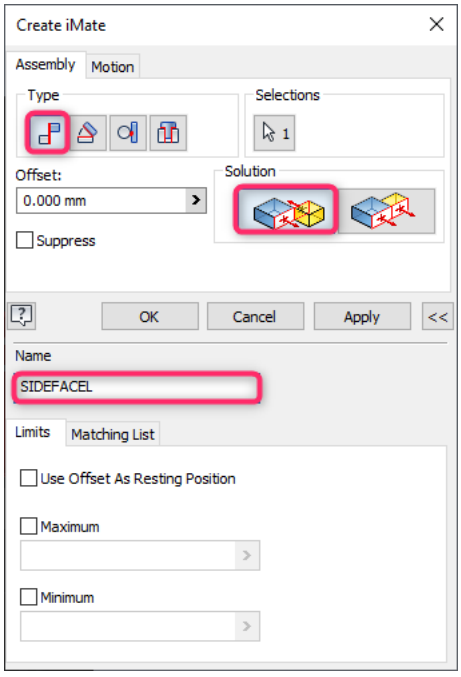
As an example, we would define:

TOPFACE	DOORFACE
BOTTOMFACE	BACKPLATE
SIDEFACER	DINRAILFACE
SIDEFACEL	DINRAILTOP
DOOR	COMPDINEDGE

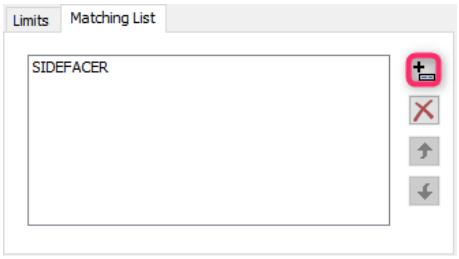
Highlight the left face and press “Q” on the keyboard:



Select the options as shown:



Select 

Select 

Select  *Add name to list*

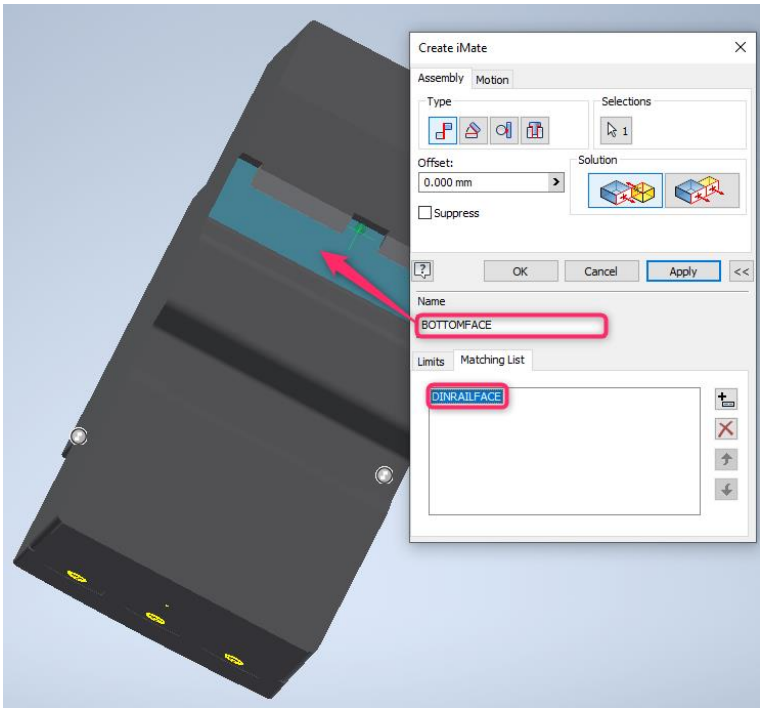
Enter SIDEFACER as the value as shown

Select 

Repeat the process for the right face of the component using the SIDEFACER with a Matching List value of SIDEFACEL i.e. the opposite

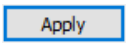
For the DIN rail, we must define two iMates.

Define the face:

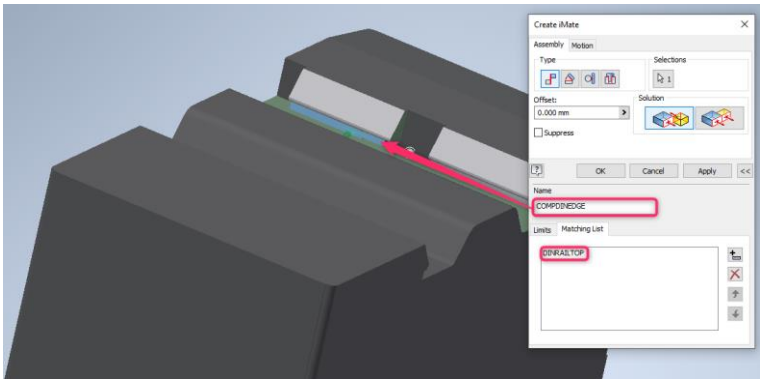


Name: BOTTOMFACE

Matching List: DINRAILFACE

Select 

Define the edge:

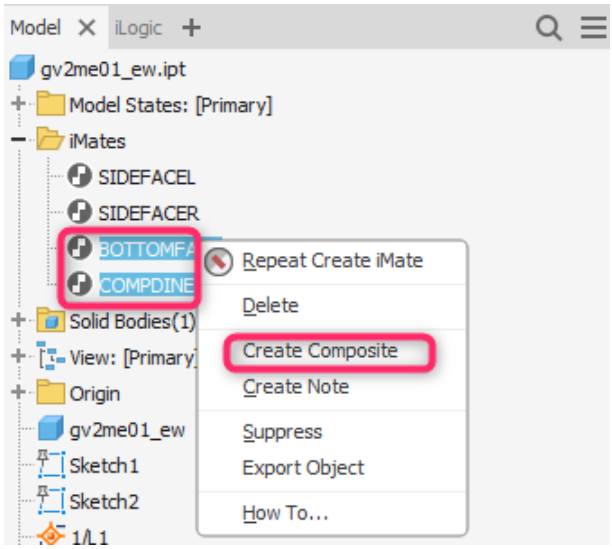


Name: COMPDINEDGE

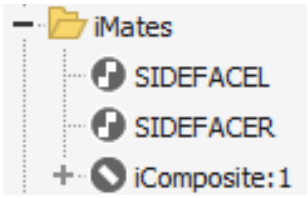
Matching List: DINRAILTOP

Select Apply

Highlight both the DIN rail face & edge iMates, right click and *Create Composite*



N.B. A composite groups multiple iMates conditions. When matched with another composite iMate with the same name and number of members, all iMates in the group are solved at once



You can rename the composite iMate e.g. DINrail:1 but you should keep the same naming convention for all components and the DIN rail *.IPT itself if you decide to do this.

If a component mounts directly onto the back plate, then it doesn't need the DINRAIL* iMates but would have a BOTTOMFACE. Alternatively, it can be constrained on the fly.

If a component mounts on the door, we would suggest that you choose the outer skin of the door as the DOORFACE so it would be the equivalent face of a lamp as an example that would mate to the outer skin of the door.

You can change the order of the iMates by  and 

The order of the face and edge iMates defined in the component MUST match the order of the iMates defined in the DIN rail.

N.B. You must use the same iMates names in all other components for this to work