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How to insert Standard and Custom iParts

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Applies to:

Autodesk Inventor® 9
Autodesk Inventor® 8
Autodesk Inventor® 7
Autodesk Inventor® 6

Issue

How to insert Standard and Custom iParts in assembly using VB/VBA API

Solution

There are two types of iParts, standard and custom. "Gear Factory.ipt" under \Samples\Models\iParts\Gears\ is custom iPart and we have one sample standard iPart "StandardFactory.ipt" under \SDK\Samples\Data_Files. The method AddiPartMember() is used for inserting standard iParts and method AddCustomiPartMember() is used for inserting custom iParts. Also make sure that directory where iParts are located are part of your project.(Local Search Paths) . The sample code shown below demonstrates different ways to insert standard and custom iParts. Change the path of iParts in code accordingly.

```
Sub TestiParts()
```

```
    Dim oApp As Inventor.Application  
    Set oApp = GetObject(  
"Inventor.Application")
```

```
    'Open the standard iPart file  
    Dim oDoc As PartDocument  
    Set oDoc = oApp.Documents.Open  
("C:\Program Files\Autodesk\Inventor 9
```

```
\SDK\Samples\Data_Files\StandardFactory.ipt",  
True)
```

```
Dim oPartDef As PartComponentDefinition  
Set oPartDef = oDoc.ComponentDefinition  
Dim oTblRow As iPartTableRow  
Set oTblRow =  
oPartDef.iPartFactory.TableRows.Item(2)  
oDoc.Close True
```

```
'Open the custom iPart file  
Set oDoc = oApp.Documents.Open  
("C:\Program Files\Autodesk\Inventor 9  
\Samples\Models\iParts\Gears\Gear  
Factory.ipt", True)  
Set oPartDef = oDoc.ComponentDefinition  
If oPartDef.iPartFactory.CustomFactory =  
True Then  
MsgBox "Gear is Custom iPart Factory"  
End If
```

```
Dim oTblRowCust As iPartTableRow  
Set oTblRowCust =  
oPartDef.iPartFactory.TableRows.Item(2)  
oDoc.Close True
```

```
Dim oTG As TransientGeometry  
Dim oMatrix As Matrix  
Dim oOcc As ComponentOccurrence
```

```
Dim oAsmCompDef As  
AssemblyComponentDefinition  
Set oAsmCompDef =  
oApp.ActiveDocument.ComponentDefinition
```

```
Set oTG = oApp.TransientGeometry  
' Create a matrix. A new matrix is initialized  
with an identity matrix.  
Set oMatrix = oTG.CreateMatrix
```

```
'Three ways to insert Standard iPart  
' 1. By Row
```

```
Set oOcc =
oAsmCompDef.Occurrences.AddiPartMember
("C:\Program Files\Autodesk\Inventor 9
\SDK\Samples\Data_Files\StandardFactory.ipt",
oMatrix, 1) ' 1st row
' 2. By iPart Table Row
Call oMatrix.SetTranslation(oTG.CreateVector
(100, 0, 0))
Set oOcc =
oAsmCompDef.Occurrences.AddiPartMember
("C:\Program Files\Autodesk\Inventor 9
\SDK\Samples\Data_Files\StandardFactory.ipt",
oMatrix, oTblRow)
' 3. By string identifier
Call oMatrix.SetTranslation(oTG.CreateVector
(200, 0, 0))
Set oOcc =
oAsmCompDef.Occurrences.AddiPartMember
("C:\Program Files\Autodesk\Inventor 9
\SDK\Samples\Data_Files\StandardFactory.ipt",
oMatrix, "StandardFactory [d0=2.2][d1=6.837]
[d2=2.551]")

'Now insert custom ipart (Gear Factory.ipt)
Call oMatrix.SetTranslation(oTG.CreateVector
(300, 0, 0))
Set oOcc =
oAsmCompDef.Occurrences.AddCustomiPartMember
("C:\Program Files\Autodesk\Inventor 9
\Samples\Models\iParts\Gears\Gear
Factory.ipt", oMatrix, "C:\temp\gear1.ipt", 1) '
1st Row
Call oMatrix.SetTranslation(oTG.CreateVector
(400, 0, 0))
Set oOcc =
oAsmCompDef.Occurrences.AddCustomiPartMember
("C:\Program Files\Autodesk\Inventor 9
\Samples\Models\iParts\Gears\Gear
Factory.ipt", oMatrix, "C:\temp\gear2.ipt",
oTblRowCust) ' 2nd Row
Call oMatrix.SetTranslation(oTG.CreateVector
(500, 0, 0))
```

```
Set oOcc =  
oAsmCompDef.Occurrences.AddCustomiPartMember  
("C:\Program Files\Autodesk\Inventor 9  
\Samples\Models\iParts\Gears\Gear  
Factory.ipt", oMatrix, "C:\temp\gear3.ipt",  
"Gear Factory [Teeth=16 ul][Pangle=14.5  
deg]")
```

```
Set oApp = Nothing  
End Sub
```

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