Sub Main()

' This rule will assemble flanges on the front and the rear of the Gunline, based on user selection

Dim dblOffsetFront, dblOffsetRear As Double

' We will first find the initial offset values for the front and rear offsets, based on the flange type,

' flange end connection, and gunline size (for each end connection independently

dblOffsetFront = FindOffsetValue(GUNLINE\_F\_FL\_TYPE, GUNLINE\_F\_FL\_END, GUNLINE\_SIZE)

dblOffsetRear = FindOffsetValue(GUNLINE\_R\_FL\_TYPE, GUNLINE\_R\_FL\_END, GUNLINE\_SIZE)

Dim strSize As String

If GUNLINE\_SIZE = 4 in Then

strSize = "4"

Else

strSize = "6"

End If

' The "Open" flanges will have different location matrices that the "Valve" and "Capped" options

' That's because the model has a different orientation than the "Capped" and "Valve" assemblies

Dim MatrixA, MatrixB As DocumentUnitsMatrix

' We first calculate the location matrix for the end connections in the rear

If GUNLINE\_R\_FL\_END = "Open" Then

MatrixA = ThisAssembly.Geometry.Matrix(0, 0, 1, 0,

0, 1, 0, 0,

-1, 0, 0, GUNLINE\_L + dblOffset,

0, 0, 0, 1)

Else

MatrixA = ThisAssembly.Geometry.Matrix(1, 0, 0, 0,

0, 1, 0, 0,

0, 0, 1, GUNLINE\_L + dblOffset,

0, 0, 0, 1)

End If

' We next calculate the location matrix for the end connection in the front

If GUNLINE\_F\_FL\_END = "Open" Then

MatrixB = ThisAssembly.Geometry.Matrix(0, 0, 1, 0,

0, -1, 0, 0,

1, 0, 0, -dblOffset,

0, 0, 0, 1)

Else

MatrixB = ThisAssembly.Geometry.Matrix(-1, 0, 0, 0,

0, 1, 0, 0,

0, 0, -1, -dblOffset,

0, 0, 0, 1)

End If

Dim strBrowserNameFront, strBrowserNameRear, strFileNameFront, strFileNameRear As String

' These lines of code set the browser name we want for the front end connection, and find the filepath based on the

' flange type and gunline size

If GUNLINE\_F\_FL\_END = "Open" Then

strBrowserNameFront = "ASME B16.5 Flange " & GUNLINE\_F\_FL\_TYPE & " - Class 150 " & strSize

strFileNameFront = LIBRARY\_PATH & "Flanges\ASME B16.5 Flange " & GUNLINE\_F\_FL\_TYPE & " - Class 150 " & strSize & ".ipt"

ElseIf GUNLINE\_F\_FL\_END = "Capped" Then

strBrowserNameFront = GUNLINE\_F\_FL\_TYPE & " to Blind - " & strSize

strFileNameFront = LIBRARY\_PATH & "Flanges\" & GUNLINE\_F\_FL\_TYPE & " to Blind - " & strSize & ".iam"

Else

strBrowserNameFront = GUNLINE\_F\_FL\_TYPE & " to Threaded Valve - " & strSize

strFileNameFront = LIBRARY\_PATH & "Valves\Butterfly\" & strSize & " Inch\" & GUNLINE\_F\_FL\_TYPE & " to Threaded Valve - " & strSize & ".iam"

End If

' These lines of code set the browser name we want for the rear end connection, and find the filepath based on the

' flange type and gunline size

If GUNLINE\_R\_FL\_END = "Open" Then

strBrowserNameRear = "ASME B16.5 Flange " & GUNLINE\_R\_FL\_TYPE & " - Class 150 " & strSize

strFileNameRear = LIBRARY\_PATH & "Flanges\ASME B16.5 Flange " & GUNLINE\_R\_FL\_TYPE & " - Class 150 " & strSize & ".ipt"

ElseIf GUNLINE\_R\_FL\_END = "Capped" Then

strBrowserNameRear = GUNLINE\_R\_FL\_TYPE & " to Blind - " & strSize

strFileNameRear = LIBRARY\_PATH & "Flanges\" & GUNLINE\_R\_FL\_TYPE & " to Blind - " & strSize & ".iam"

Else

strBrowserNameRear = GUNLINE\_R\_FL\_TYPE & " to Threaded Valve - " & strSize

strFileNameRear = LIBRARY\_PATH & "Valves\Butterfly\" & strSize & " Inch\" & GUNLINE\_R\_FL\_TYPE & " to Threaded Valve - " & strSize & ".iam"

End If

' This code adds the end connections to the assembly, and places them based on the matrices determined above

Dim Flange1 = Components.Add(strBrowserNameFront & ":1", strFileNameFront, MatrixB, True)

Dim Flange2 = Components.Add(strBrowserNameRear & ":2", strFileNameRear, MatrixA, True)

End Sub

Function FindOffsetValue(strFlangeType As String, strFlangeEndType As String, intSize As Integer) As Double

' This function determines what the offset value should be for creating the location matrices of different

' combinations of flange types and end connections

Dim dblOffsetValue As Double

Select Case strFlangeEndType

Case "Capped"

dblOffsetValue = 0

Case "Open"

If strFlangeType = "Welding Neck" Then

If intSize = 4 in Then

dblOffsetValue = 3

Else

dblOffsetValue = 3.5

End If

Else

dblOffsetValue = .56

End If

Case "Valve"

If strFlangeType = "Welding Neck" Then

If intSize = 4 in Then

dblOffsetValue = 4.5

Else

dblOffsetValue = 5

End If

Else

dblOffsetValue = 2.06

End If

End Select

Return dblOffsetValue

End Function