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Sub InsertInletIntoAssembly()
' This code places the inlet nozzle into our assembly
' The inlet nozzle consists of a pipe and an end connection (i.e. flange, capped flange, or valve)
' The user has the option to place the inlet nozzle on the top of the tank, or the front dish head plate
' If they place it on the dish head plate, it must be located near the top of the tank, and not the bottom half
Dim strInletTubeName, strFlangeFile As String

' No new geometry is created for inlets - they only use existing parts from the library
' This let's us find the right name of the tube (or pipe) based on the inlet size
strInletTubeName = LIBRARY_PATH & "Flanges\ANSI B36.10 XS - " & INLET_SIZE & ".ipt"

' This code uses our "GetFlangeFilename" function to find the name of the end connection based on
' flange type, flange end connection, and inlet size
strFlangeFile = GetFlangeFilename(INLET_FL_TYPE, INLET_FL_END, INLET_SIZE)

' Define the matrices that will be needed to place the inlet nozzle, including the pipe and flange
Dim matrixM, matrixN As DocumentUnitsMatrix
Dim strInletPipeBrowserName, strInletFlangeBrowserName As String
' If the user wants to place the inlet nozzle on the top, use these locating matrices
If INLET_LOC = "Top" Then
' These strings will be used to set the occurrence names in the browser to indicate they are installed on top of the tank
strInletPipeBrowserName = "Top Inlet Pipe - " & INLET_SIZE & " Inch:1"
strInletFlangeBrowserName = "Top Inlet Flange - " & INLET_SIZE & " Inch:1"
' This matrix represents the orientation required for the pipe on top of the tank
matrixM = ThisDoc.Geometry.Matrix(1, 0, 0, 0, 0, 0, -1, TANK_OD / 2 + 6, 0, 1, 0, TANK_L / 2 - INLET_OFF, 0, 0, 0, 1)
' The locating matrix will be different for open, capped and valve end connection choices
If INLET_FL_END = "Open" Then
' If the user chooses a welding neck flange, a different offset matrix value will be required for the Y (up) direction
If INLET_FL_TYPE = "Welding Neck" Then
matrixN = ThisDoc.Geometry.Matrix(0, 1, 0, 0, -1, 0, 0, TANK_OD / 2 + dblFlangeOffsetDistance + 9 in, 0, 0, 1, TANK_L / 2 - INLET_OFF, 0, 0, 0, 1)
Else
matrixN = ThisDoc.Geometry.Matrix(0, 1, 0, 0, -1, 0, 0, TANK_OD / 2 + dblFlangeOffsetDistance + 6 in, 0, 0, 1, TANK_L / 2 - INLET_OFF, 0, 0, 0, 1)
End If
ElseIf INLET_FL_END = "Capped" Then
matrixN = ThisDoc.Geometry.Matrix(1, 0, 0, 0, 0, 0, 1, TANK_OD / 2 + 6, 0, -1, 0, TANK_L / 2 - INLET_OFF, 0, 0, 0, 1)
Else
matrixN = ThisDoc.Geometry.Matrix(1, 0, 0, 0, 0, 0, 1, TANK_OD / 2 + dblFlangeOffsetDistance + 7 in, 0, -1, 0, TANK_L / 2 - INLET_OFF, 0, 0, 0, 1)
End If
' If the user wants to place the inlet nozzle on the front, this is the code that will be used to create the location matrices
Else
' These strings will be used to set the occurrence names in the browser to indicate they are installed on top of the tank
strInletPipeBrowserName = "Front Inlet Pipe - " & INLET_SIZE & " Inch:1"
strInletFlangeBrowserName = "Front Inlet Flange" & INLET_SIZE & " Inch:1"
Dim dblDishOffset As Double = TANK_L / 2 + (INLET_OFF / (TANK_OD / 2)) * DISH_DEPTH + 6
matrixM = ThisDoc.Geometry.Matrix(-1, 0, 0, 0, 0, 1, 0, TANK_OD / 2 - INLET_OFF, 0, 0, -1, dblDishOffset + 4, 0, 0, 0, 1)
' Since we created a function (GetFrontOrRearMatrix) that figures out location matrices on the front and rear dish plates,
' we can take advantage of that and don't need to figure them out separately, like we had to for the top
matrixN = GetFrontOrRearMatrix(INLET_FL_TYPE, INLET_FL_END, INLET_OFF, 10, INLET_SIZE, "Front", "Top")
End If
' These are the iLogic commands to add the pipe and flange components to the assembly, and place them properly based on the matrices
Dim componentM = Components.Add(strInletPipeBrowserName, strInletTubeName, position := matrixM, grounded := True, visible := True, appearance := Nothing)
Dim componentN = Components.Add(strInletFlangeBrowserName, strFlangeFile, position := matrixN, grounded := True, visible := True, appearance := Nothing)
End Sub

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