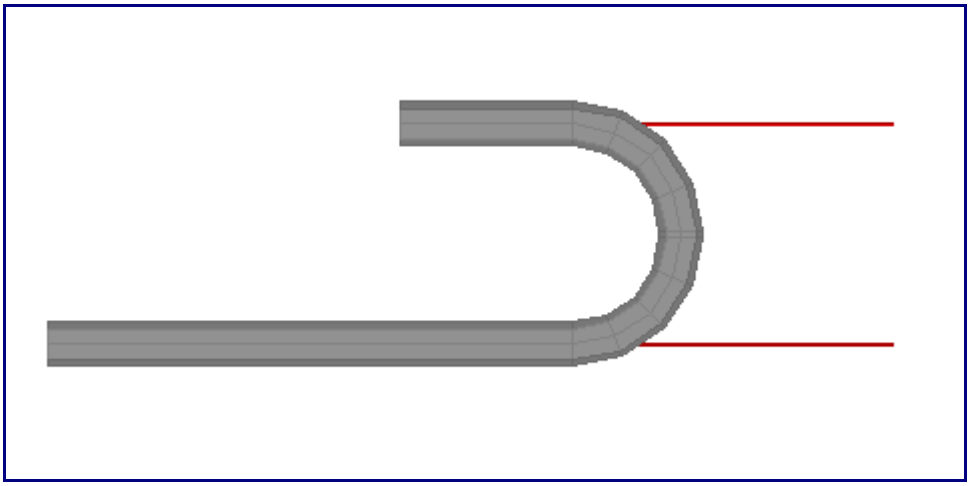
Making a 180 Degree Bend in Custom 3D

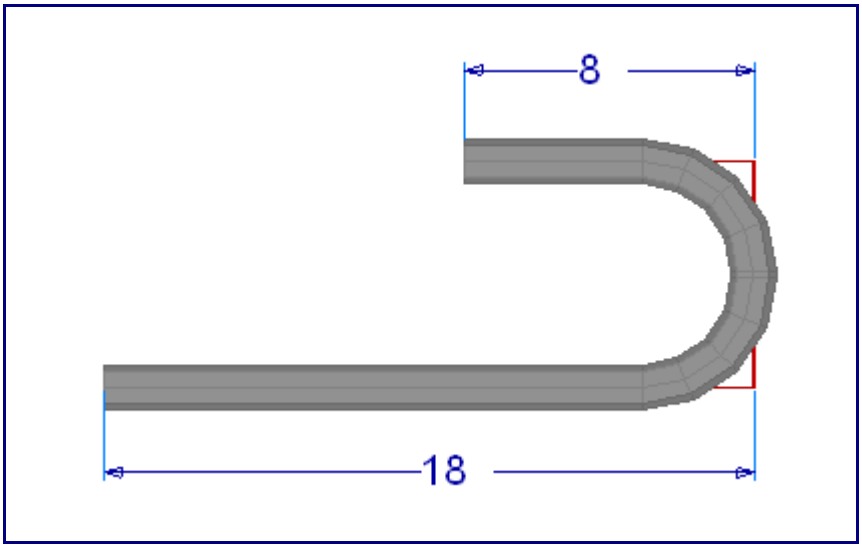
The Custom 3D part interface uses "Apex" as the primary way to enter in locations for bends. What do we do in the case of a 180 degree bend which doesn't have an apex **because the 2 edges are parallel**?



There are 2 ways to resolve this problem, use 2 90 degree bends or use the "tangent" bend location type. For many the first way (using 2 90 degree bends) will be the simplest.

Using Two 90 Degree Bends:

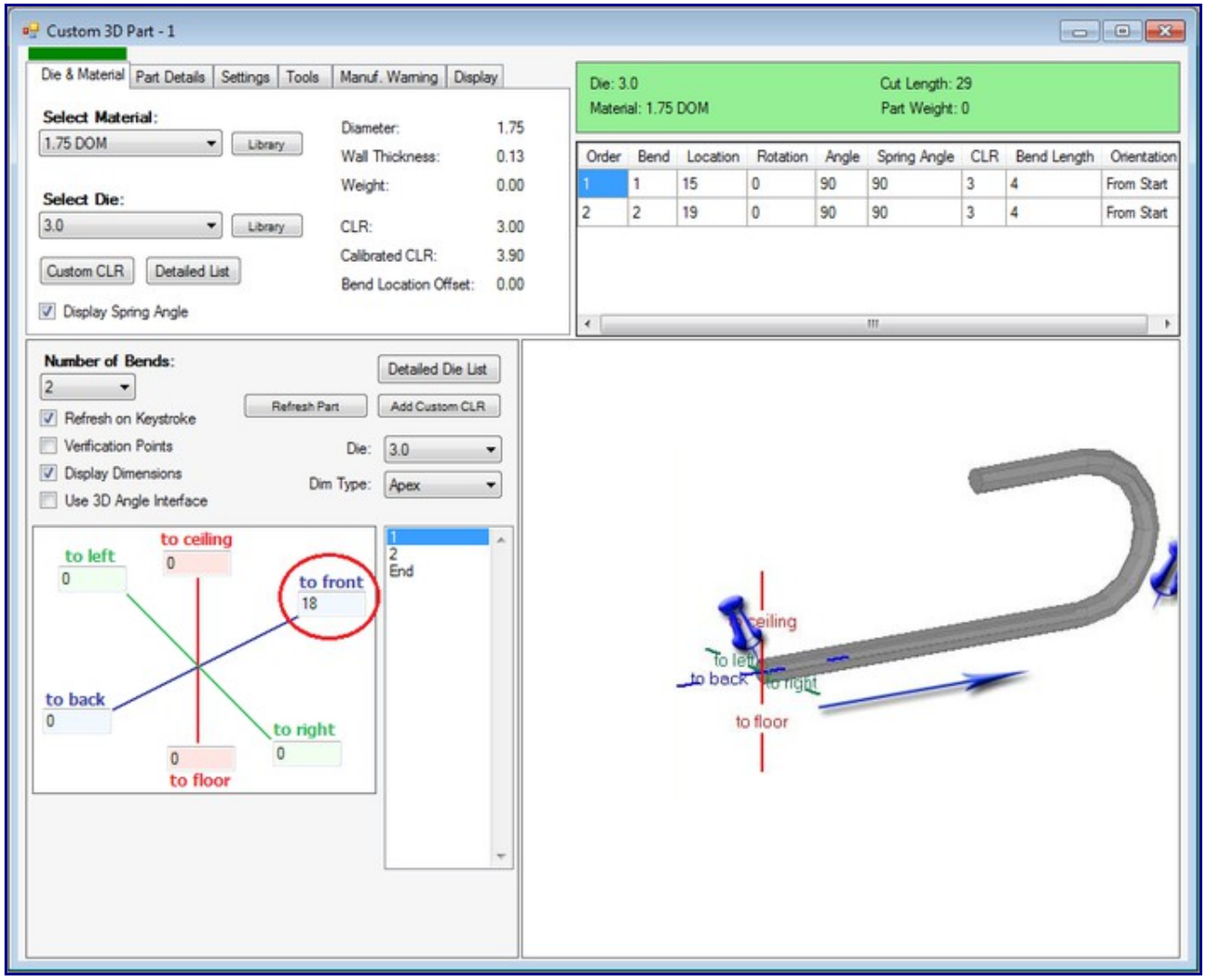
The following will be the part we will make.



1) Select **2** bends for this part.

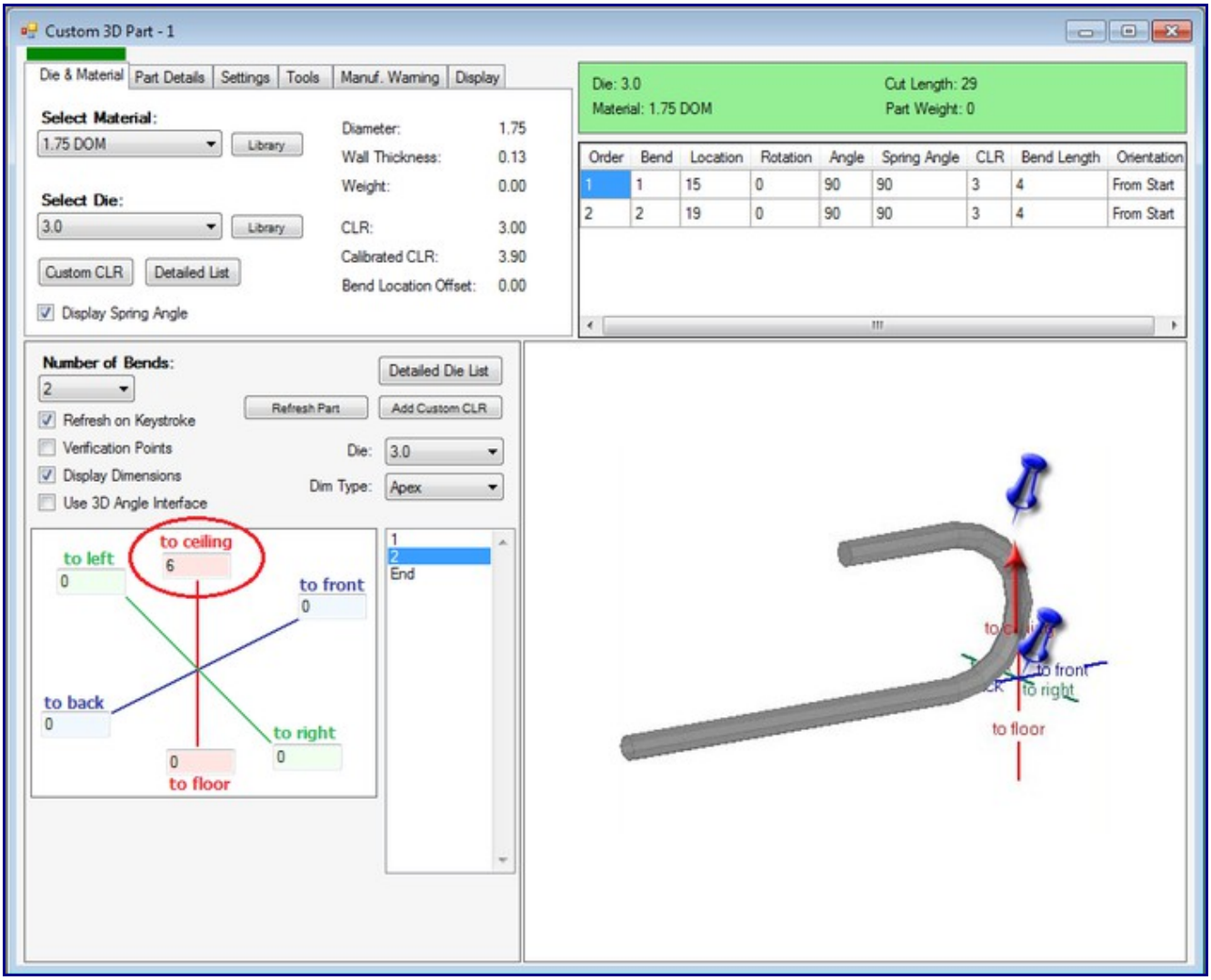
2) Select "**1**" from the bend list.

3) Enter **18** to the **front**.



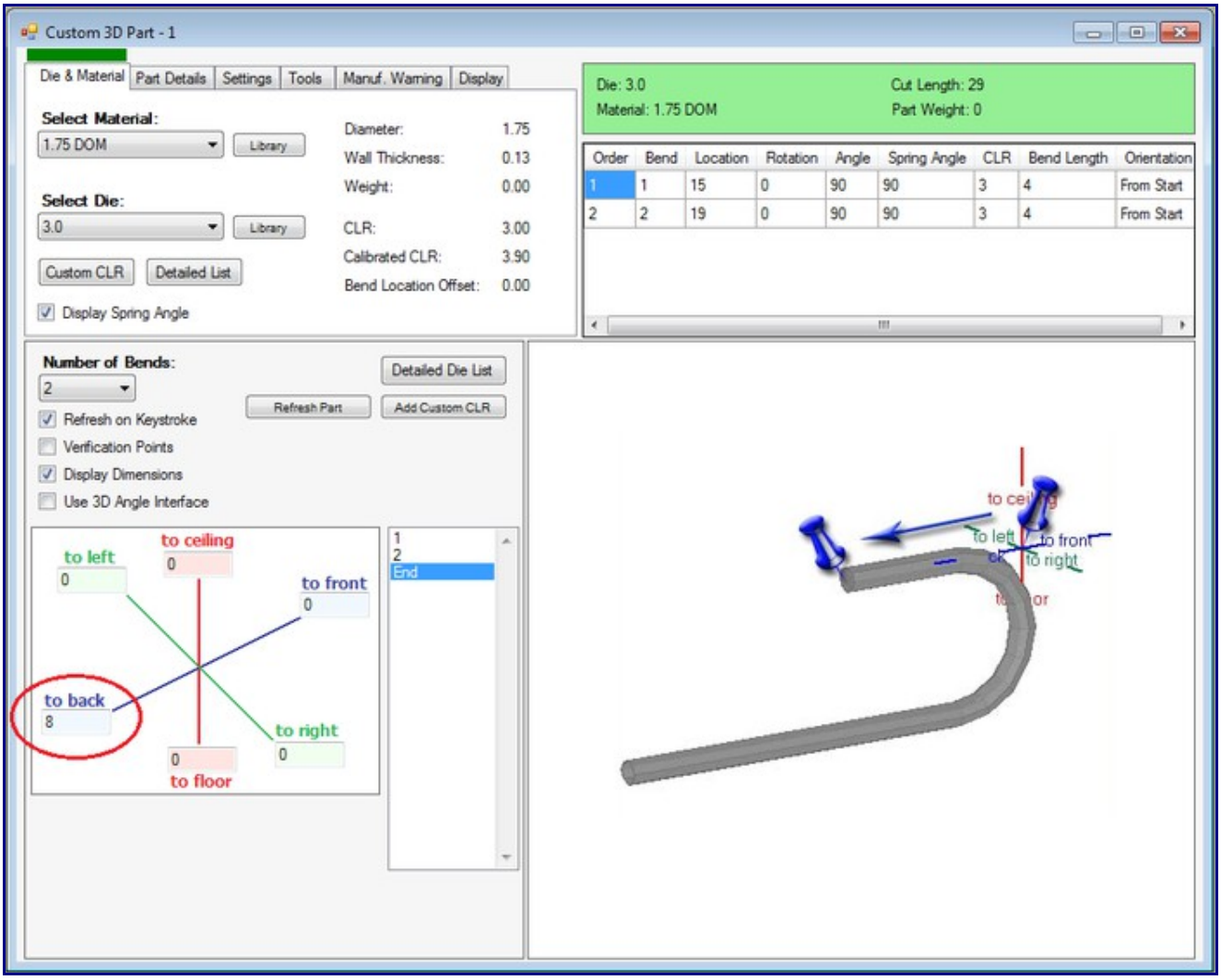
4) Select "**2**" from the bend list.

5) Enter **2 times your CLR** (in our case that value becomes 6.0) to the **ceiling**.



6) Select "**E**" from the bend list.

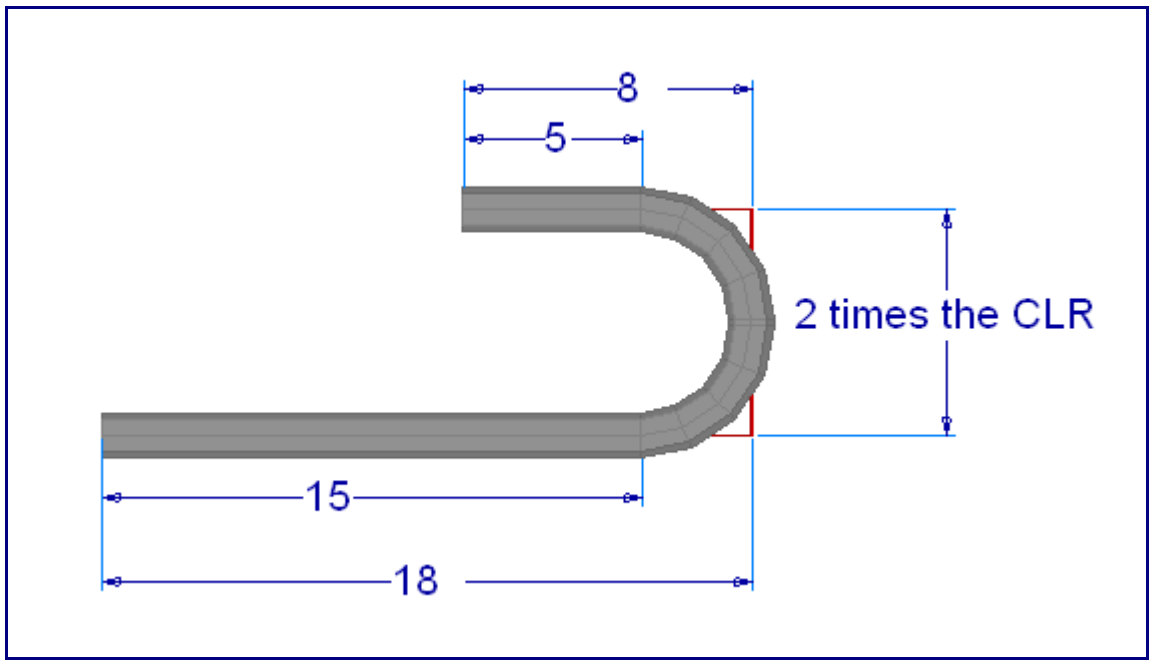
7) Enter **8** to the back.



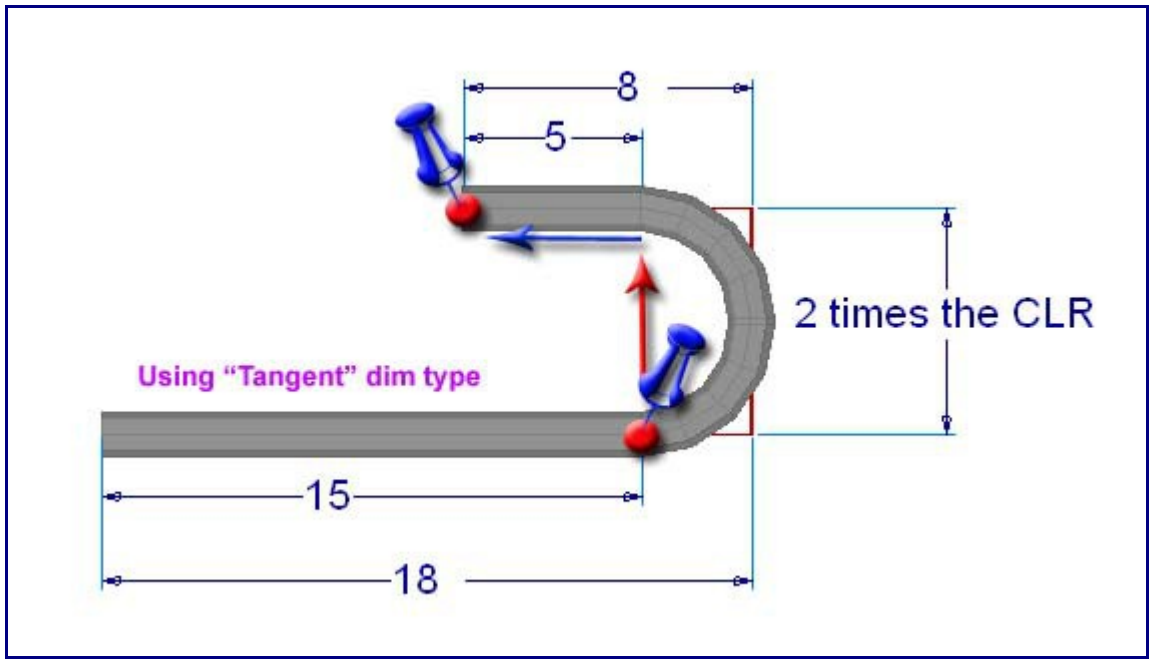
NOTE: You will need to remember to run the bend 180 degrees and ignore the 2nd bend line from the results window.

Using the Tangent Method

This method allows from one bend, as the part is. In the method you will go to the tangent or start of the bend. You will need to subtract a CLR from your values. So in our case 18 becomes 15. [please note we have rounded the actual CLR of 3.063 for customers to follow easier.]



The next feature location is in reference to the start of the bend as shown in the following picture.



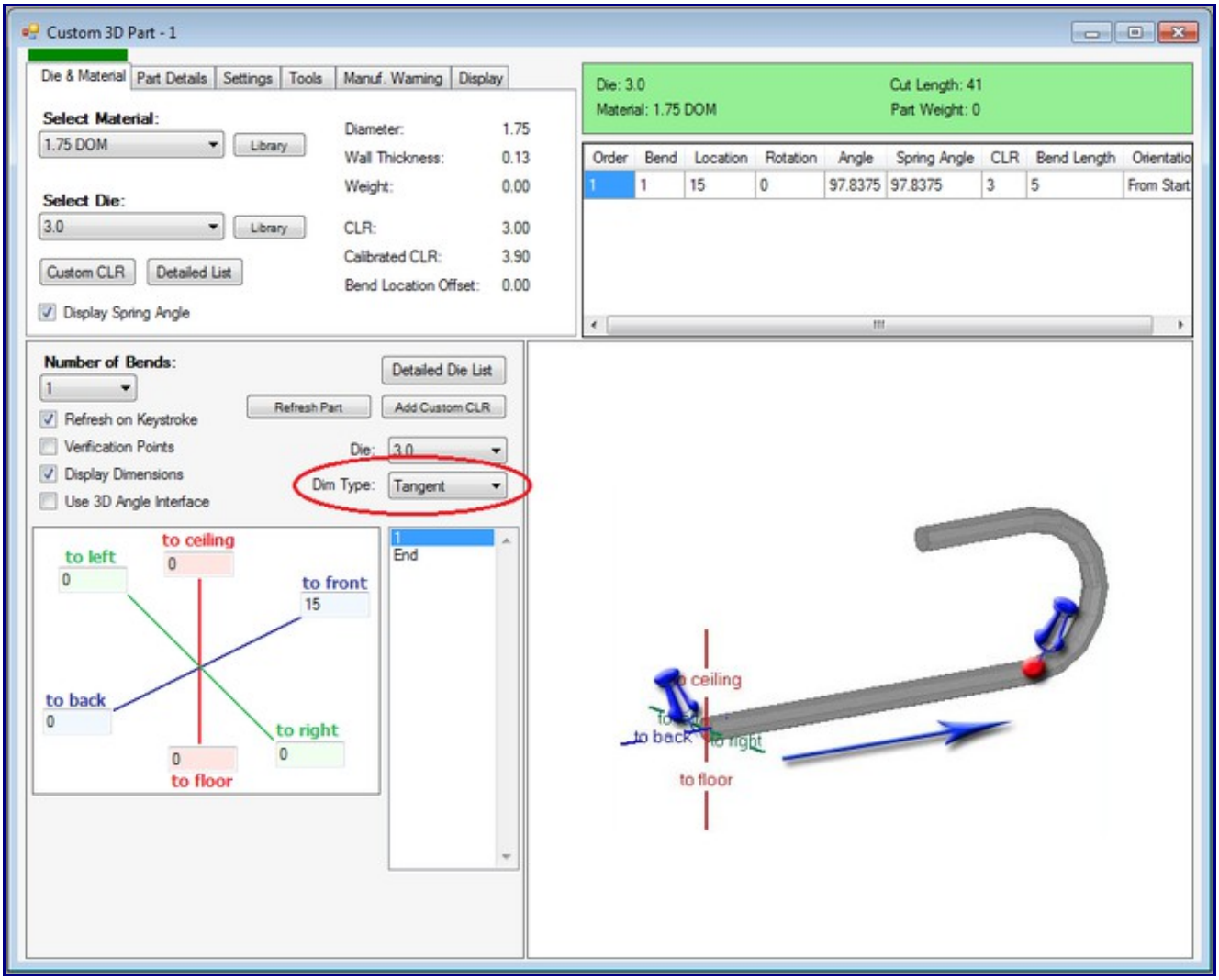
Lets make our part:

1) Select **1** bend from the "**Number of Bends**" pull-down.

2) Select "**1**" from the bend list.

3) Change your **Dimension Type** to **Tangent**.

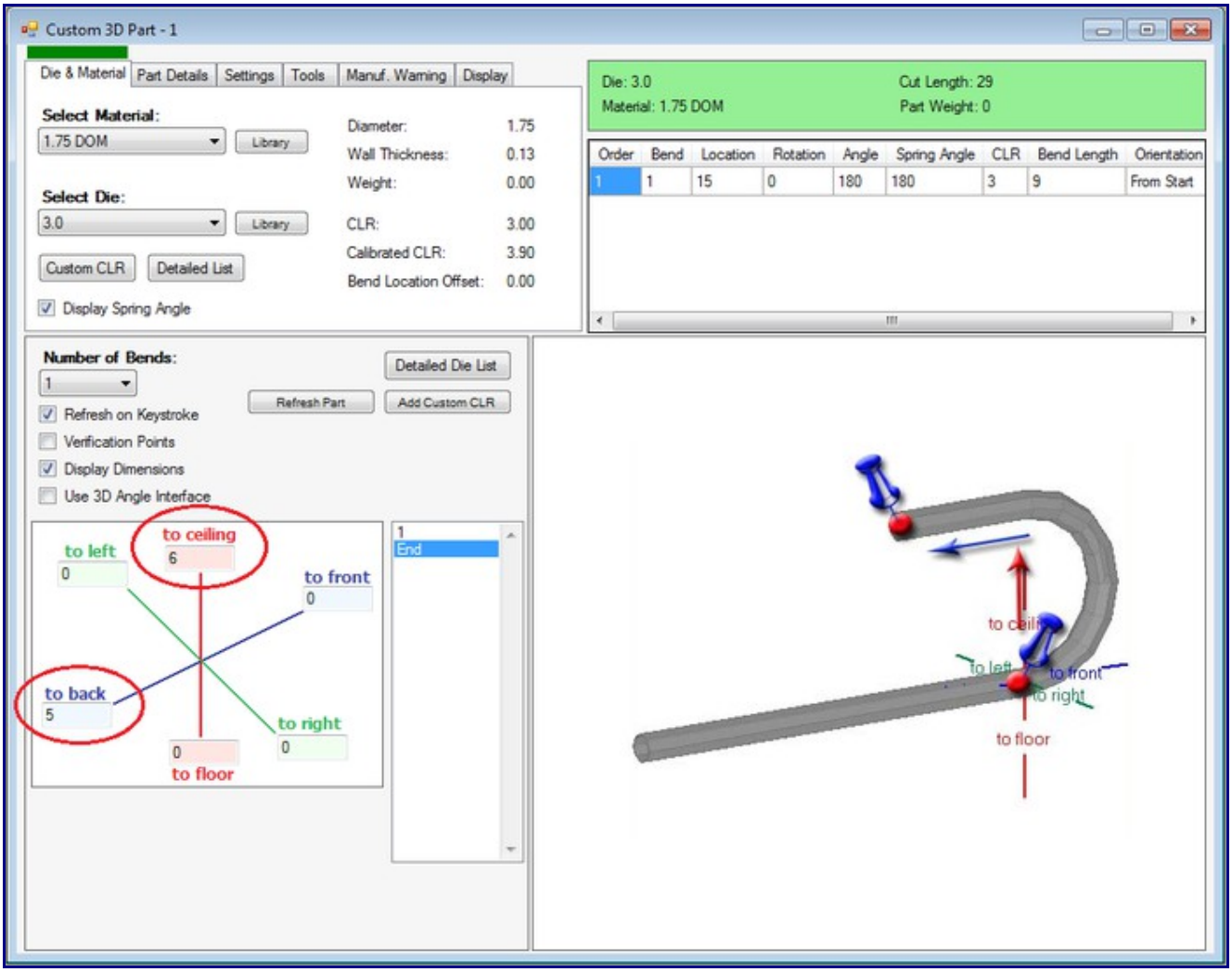
4) Enter **15** to **front**.



5) Select "**E**" from the bend list.

6) Enter **2 times your CLR** (6.0) to the **ceiling**.

7) Enter **5** to the **back**.


Custom 3D Part - 1
Die & Material
Part Details
Settings
Tools
Manuf. Warning
Display
Select Material:
1.75 DOM
Library
Select Die:
3.0
Library
Custom CLR
Detailed List
Display Spring Angle
Diameter: 1.75
Wall Thickness: 0.13
Weight: 0.00
CLR: 3.00
Calibrated CLR: 3.90
Bend Location Offset: 0.00
Die: 3.0
Material: 1.75 DOM
Cut Length: 29
Part Weight: 0
Order Bend Location Rotation Angle Spring Angle CLR Bend Length Orientation
1 1 15 0 180 180 3 9 From Start
Number of Bends:
1
Refresh on Keystroke
Verification Points
Display Dimensions
Use 3D Angle Interface
Detailed Die List
Refresh Part
Add Custom CLR
to ceiling
6
to left
0
to front
0
to back
5
to right
0
0
to floor
1
End
to floor