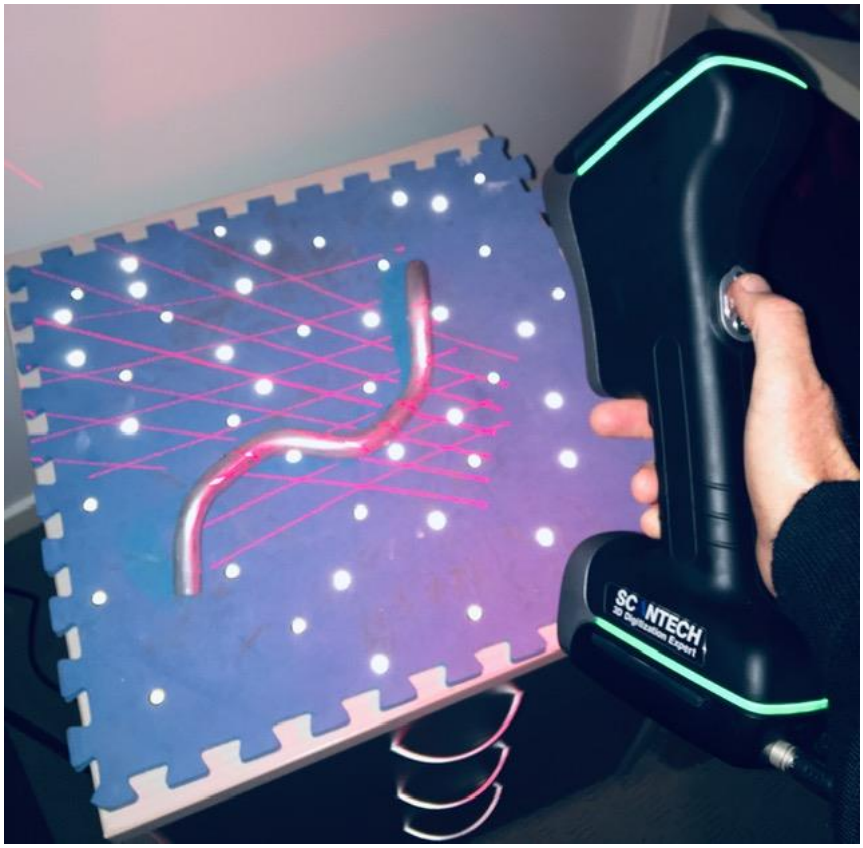
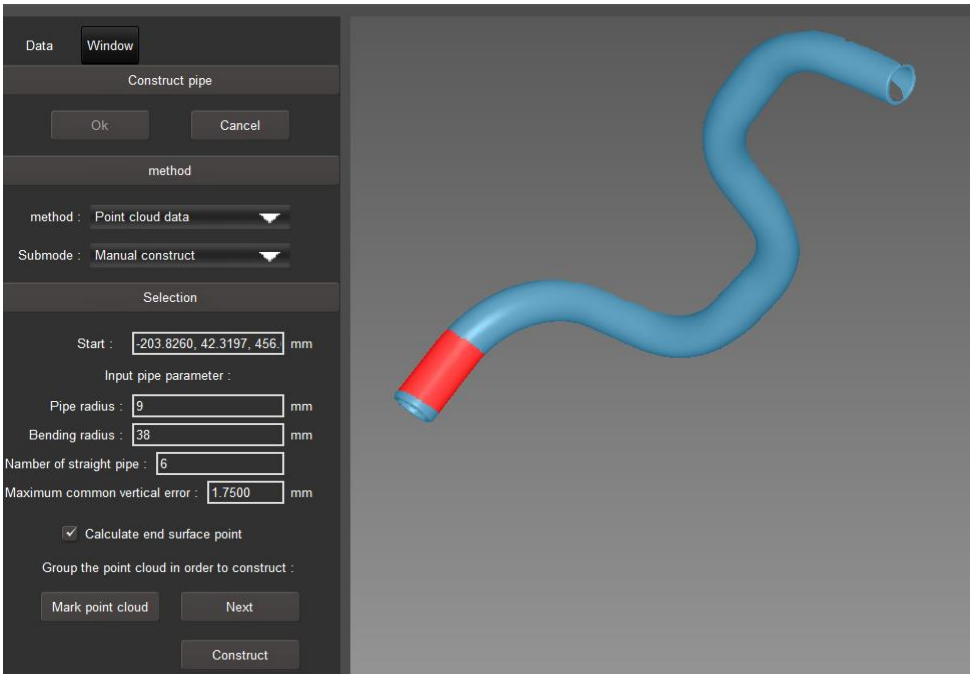
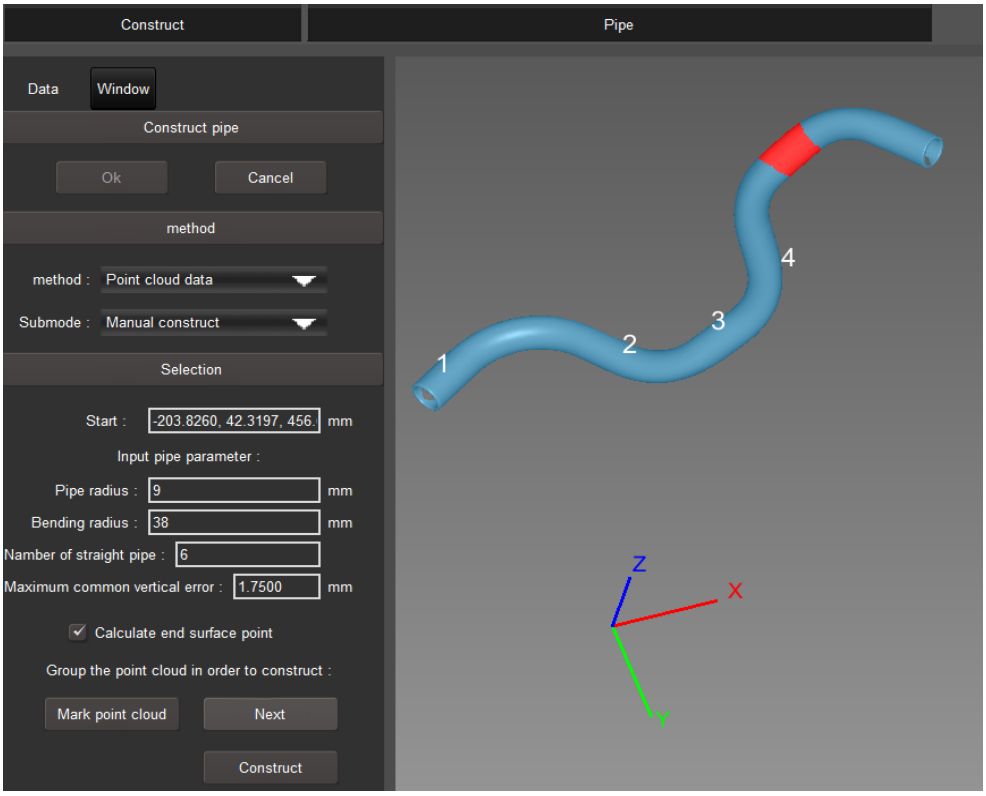
# ScanViewer – Tube Module

## STEP 1: Scan unknown tube or import file (CAD or Mesh)



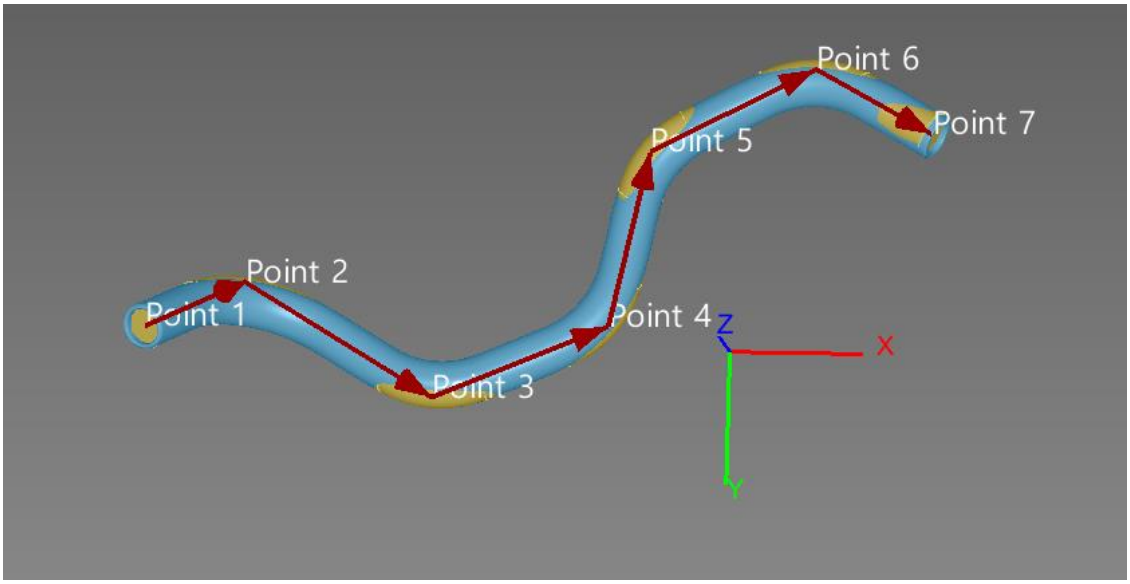

**STEP 2:** for unknown tube, start to select each straight (cylinder) section in order of the bend process. In this tube sample there are 6 straights. Continue along until all straights are marked.



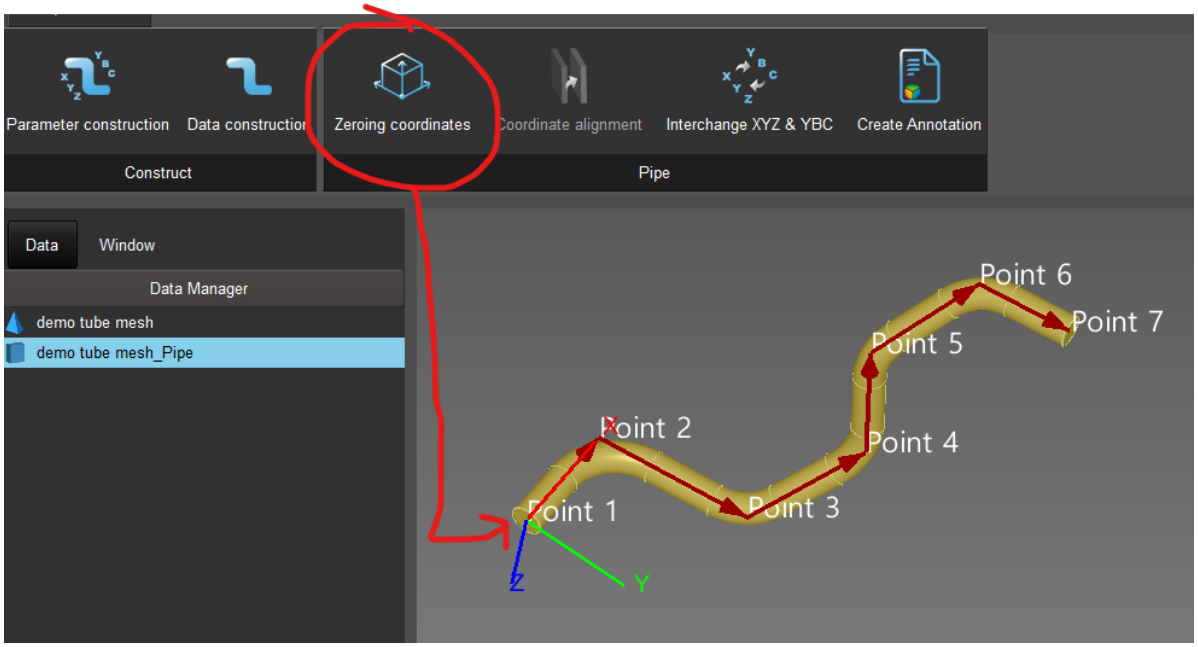



**STEP 3:** **SV will construct a TUBE entity from the cylinder data, create a centerline with XYZ intersection points.**

***The created tube entity can be saved and exported as CAD model (STEP file).**

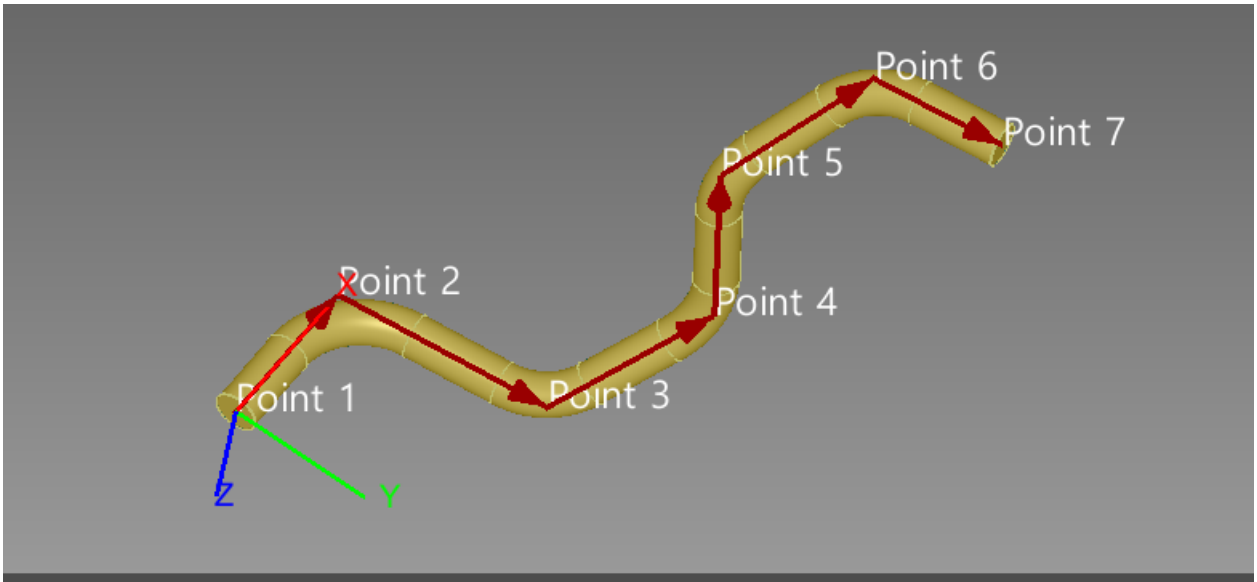



**STEP 4:** **Use the Zero Co-ordinate function to align the XYZ0 position to the center and end face of the tube start end.**



**STEP 5:** **SV can now convert the XYZ data to LRA (YBC) values suitable for CNC tube benders.**

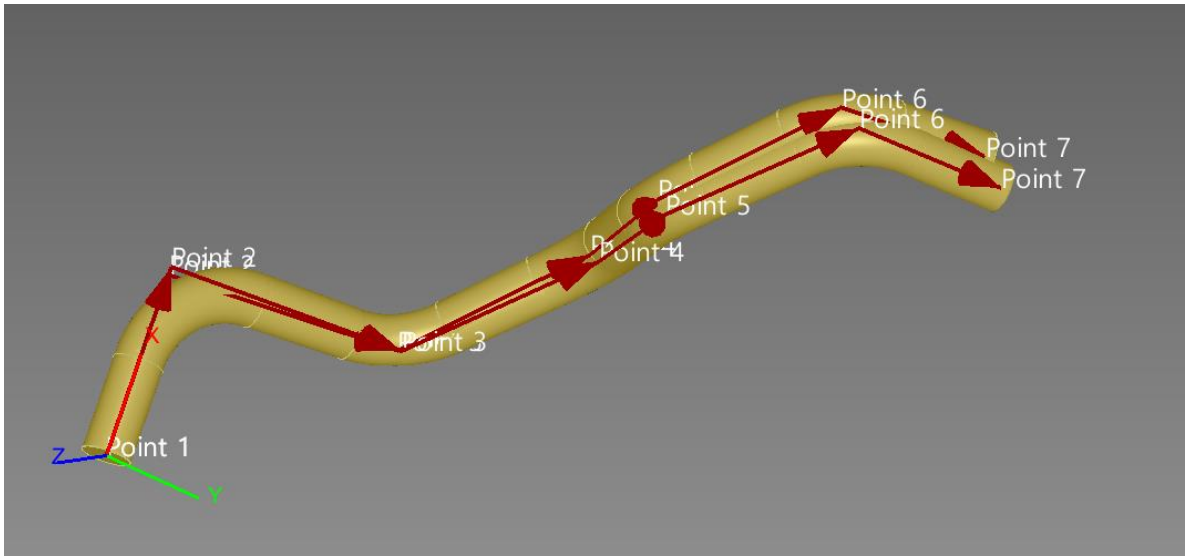
***LRA Data can be saved and exported as text file.**
****Full report of tube length, data, graphic can be exported as PDF document.**

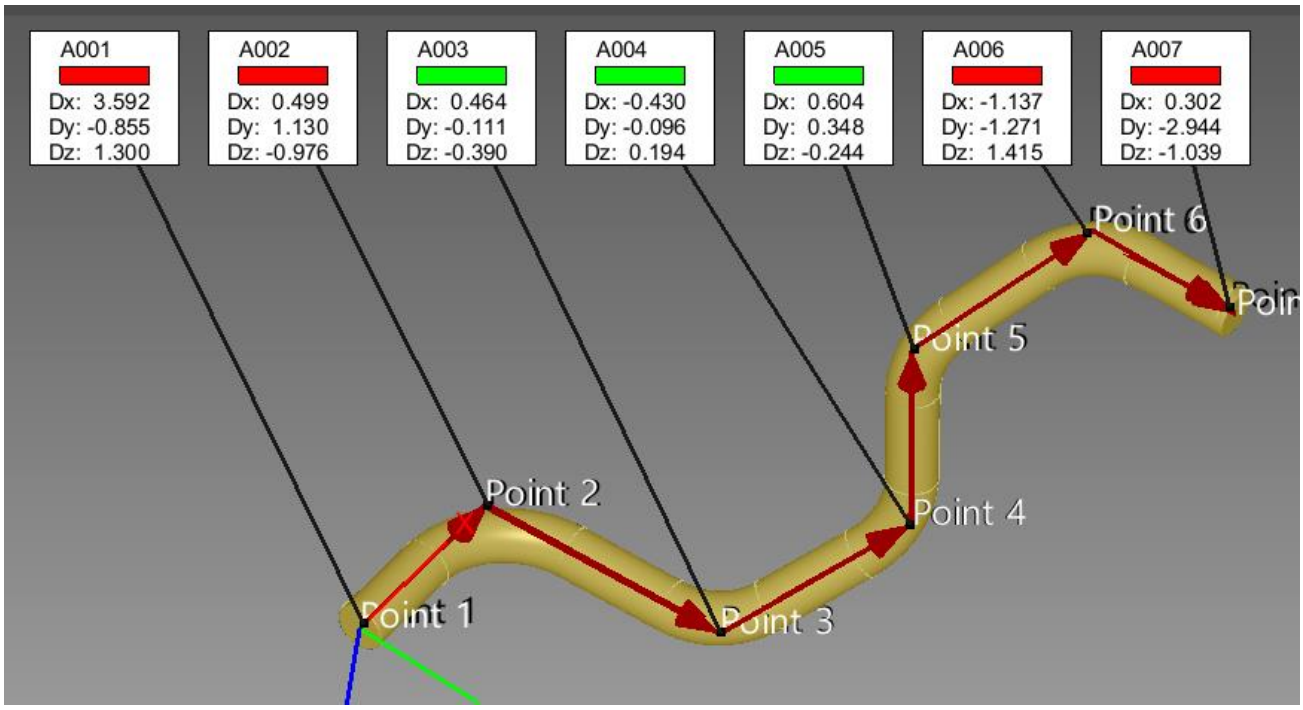


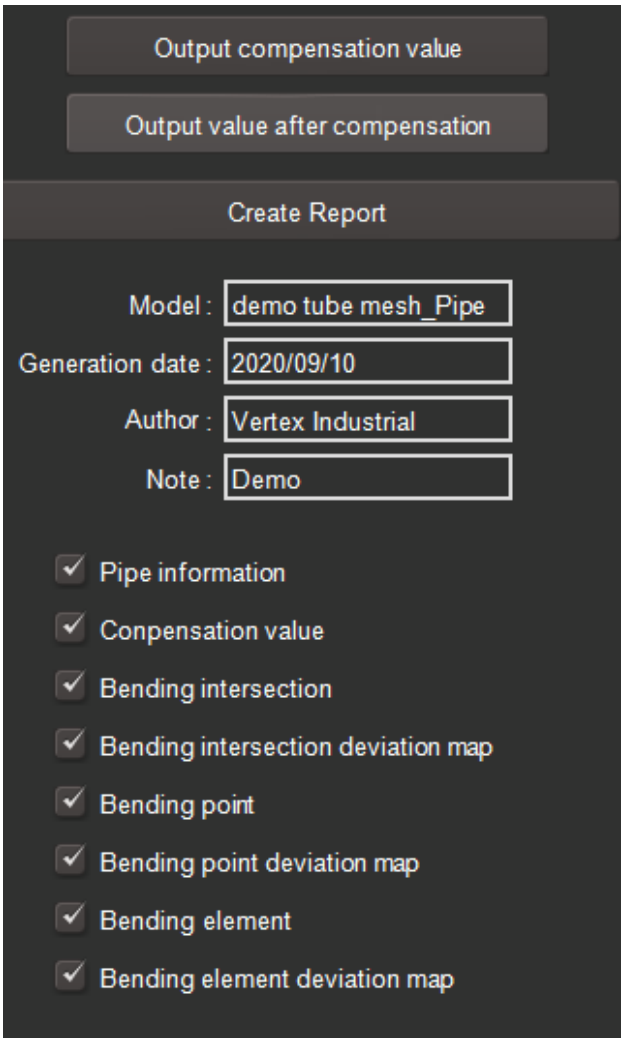

| Bend | Y/L | B/R | C/A | CLR |
|---|---|---|---|---|
| 1 | 34.971 | 0.000 | 83.901 | 38.000 |
| 2 | 39.042 | -135.172 | 55.743 | 38.000 |
| 3 | 36.298 | 44.599 | 56.699 | 38.000 |
| 4 | 37.721 | 179.471 | 51.519 | 38.000 |
| 5 | 35.704 | -45.465 | 57.427 | 38.000 |
| - | 36.568 | - | - | - |

**STEP 6:** **Check for bending error, spring back after first bend.**

**Scan the first bent tube and load into SV Tube module and align to original model of correct tube bends. You can see some spring back has occurred along the bending process.**
**Use SV to true align and display the deviations + report the error amounts needed to compensate the bender program… Create custom reports.**






| Deviation Y | Deviation B | Deviation C |
|---|---|---|
| -2.013 | 0.000 | -1.669 |
| -0.154 | -1.528 | -0.164 |
| -0.543 | -1.074 | -0.639 |
| 1.150 | 0.493 | -1.064 |
| -1.294 | -0.088 | -2.620 |
| -0.389 | 0.000 | 0.000 |

Pipe length

| Actual value(mm) | Reference value(mm) | Actual - Reference value(mm) |
|---|---|---|
| 615.359 | 613.892 | 1.467 |