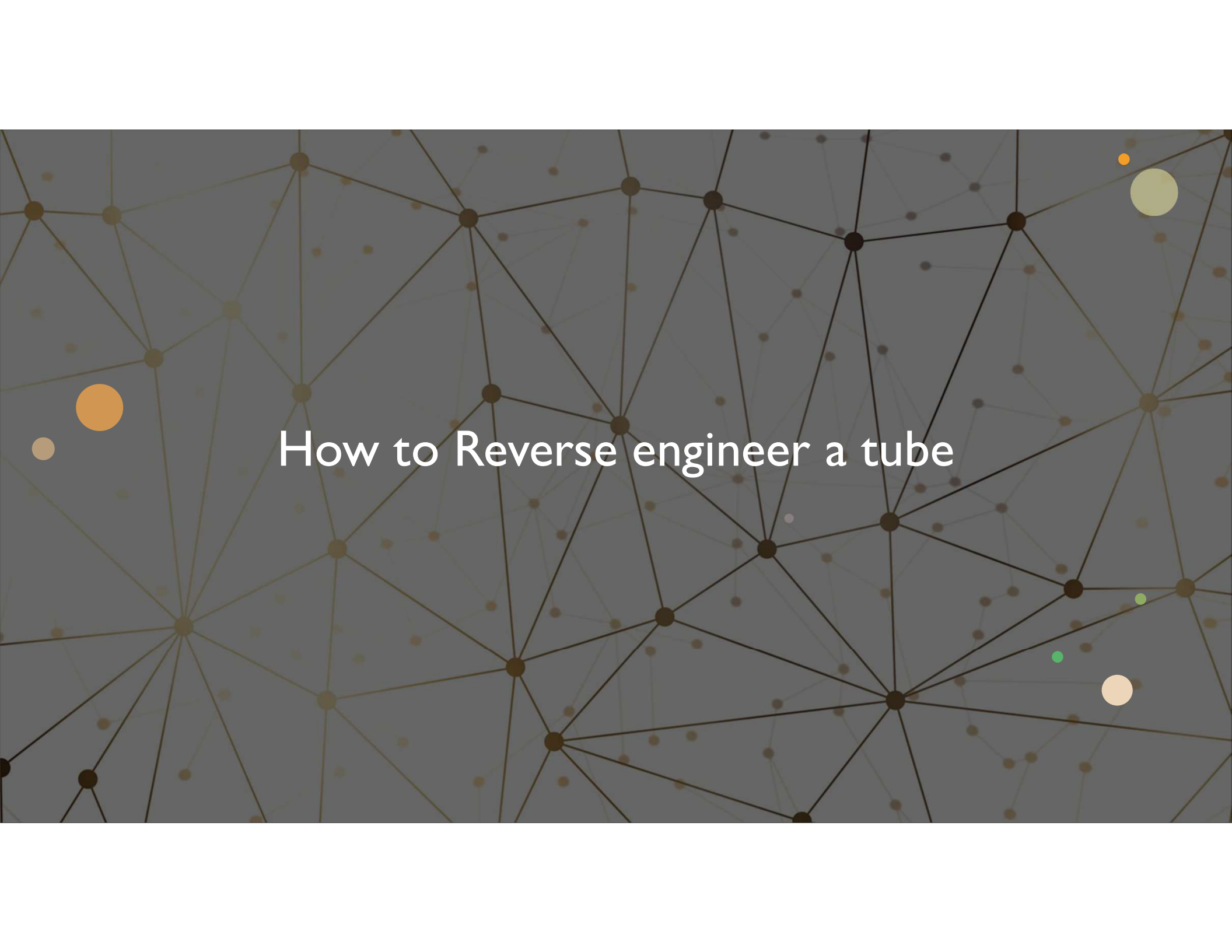
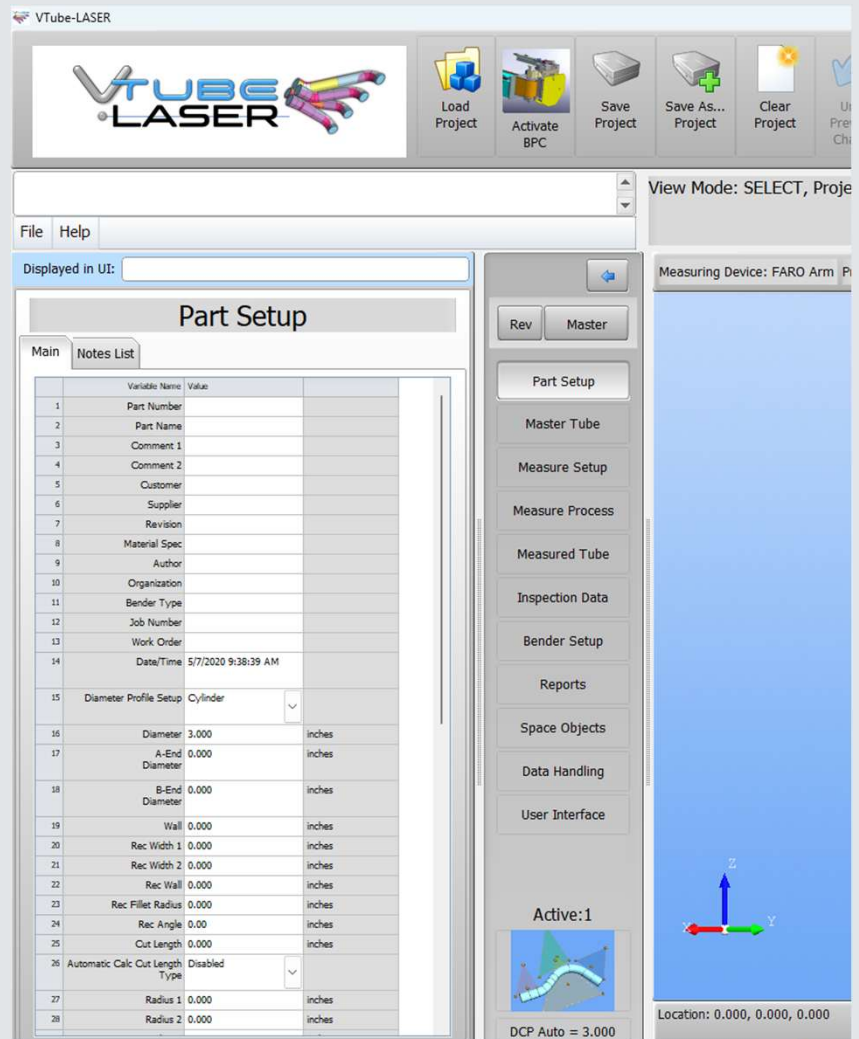




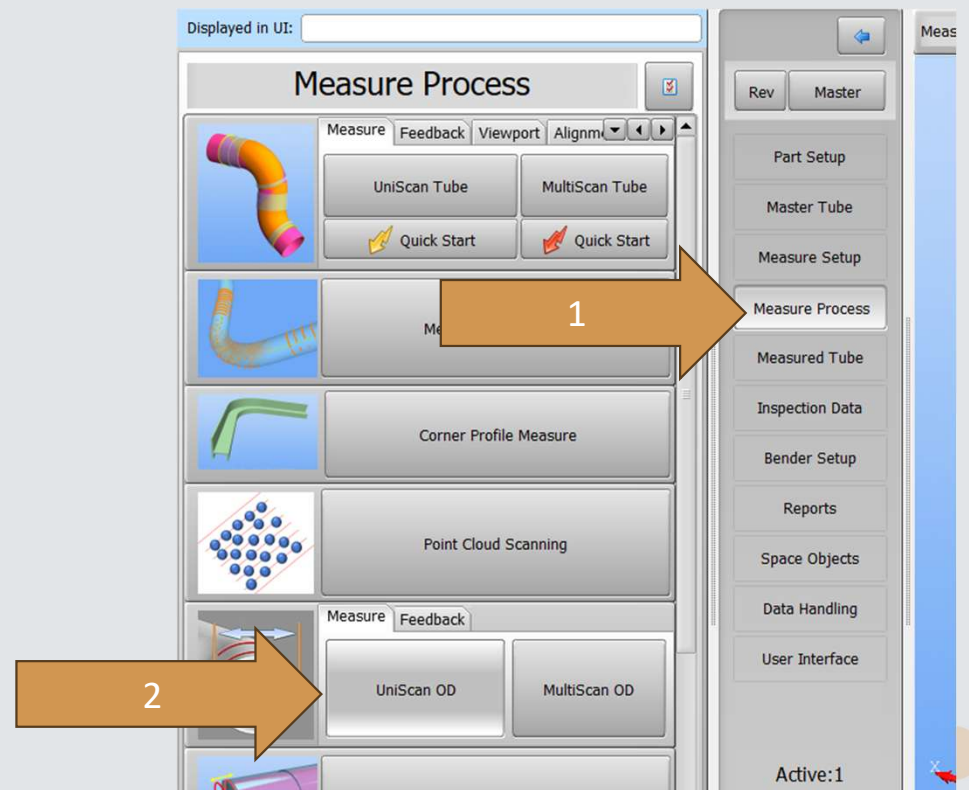
How to Reverse engineer a tube

- 1- Clear project
- 2- Go to Part Setup
- 3- Enter (if known):
 - Part Number
 - Diameter
 - Radius

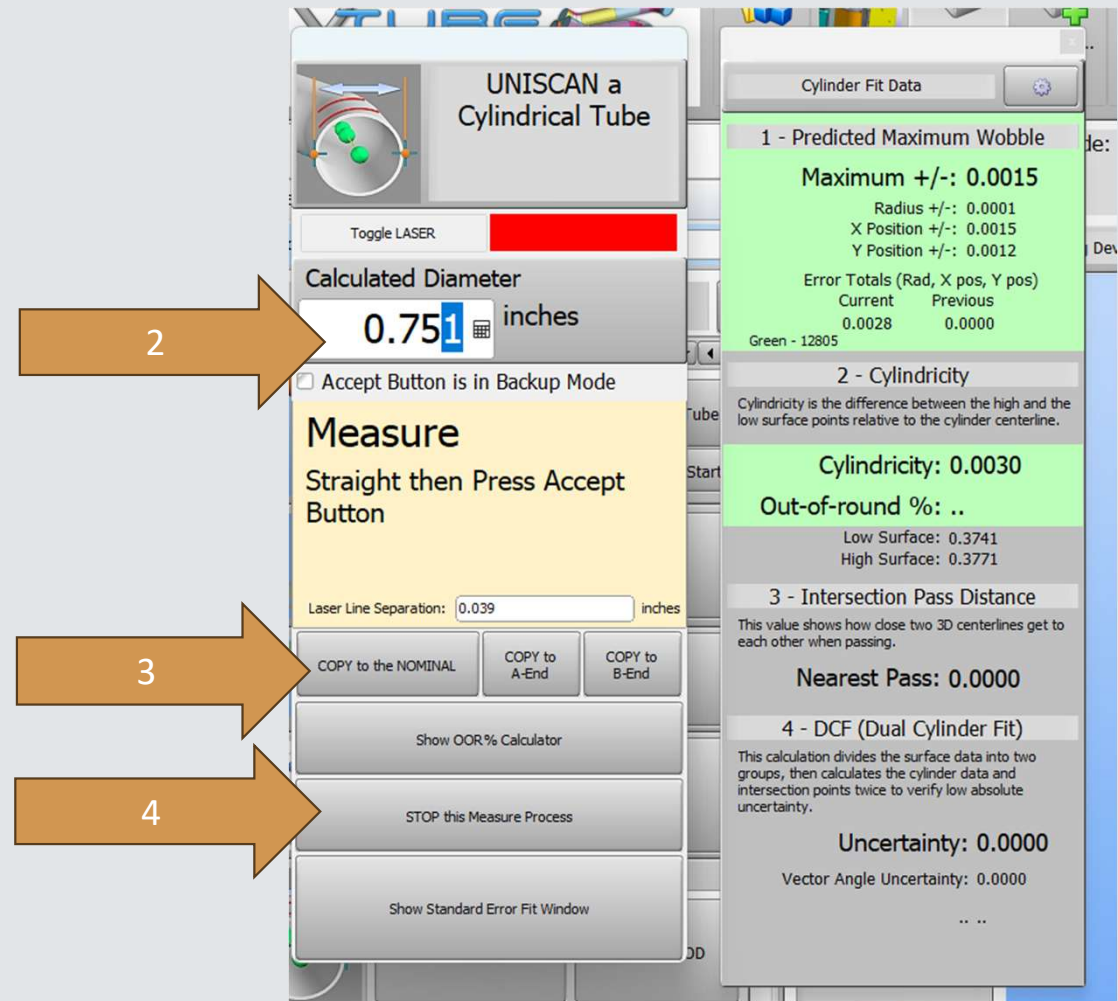


To measure the diameter

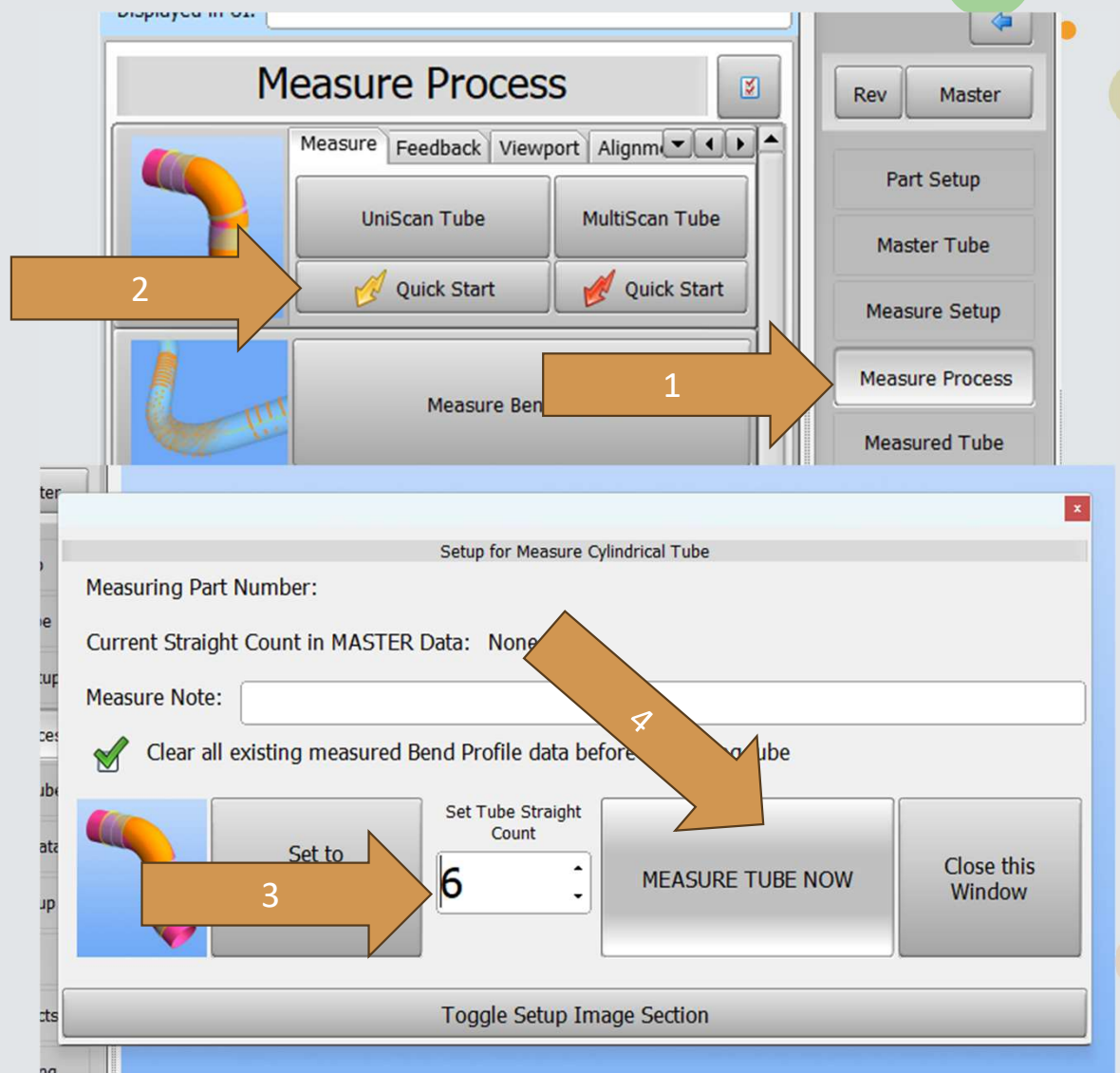
- 1- Go to Measure Process
- 2- UniScan OD
- 3- Measure any straight in any direction. The arm is being used as calipers to get the diameter of the tube



- 1- Measure the diameter
- 2- Nominalize the information if desired
- 3- COPY to the NOMINAL
- 4- STOP this Measure Process



- 1- Go to Measure Process
- 2- Press Quick Start
- 3- Enter the number of **STRAIGHTS**
- 4- Measure Tube Now



- 1- Measure the tube
- 2- Finish and Build Measured Tube
- 3- Press OK when this screen shows up >
- 4- You now created MASTER tube data from your scan

Master Tube Data

Points Export Radius Translate Reverse Spl  

Point Count Set Clear All

Master Centerline XYZ Data ☐ Lock Grids

Intersections Tangents

Pnt	X	Y	Z	Radius	DofBend
1	8.791	-10.981	5.022		
2	8.426	-12.883	2.799	1.000	1.33
3	4.642	-13.128	3.646	1.000	1.33
4	2.953	-15.510	2.977	1.000	1.33
5	3.801	-18.408	3.628	1.000	1.33
6	2.112	-20.784	2.968	1.000	1.33
7	-0.065	-20.812	3.496		



Rev Master

Part Setup

Master Tube

Measure Setup

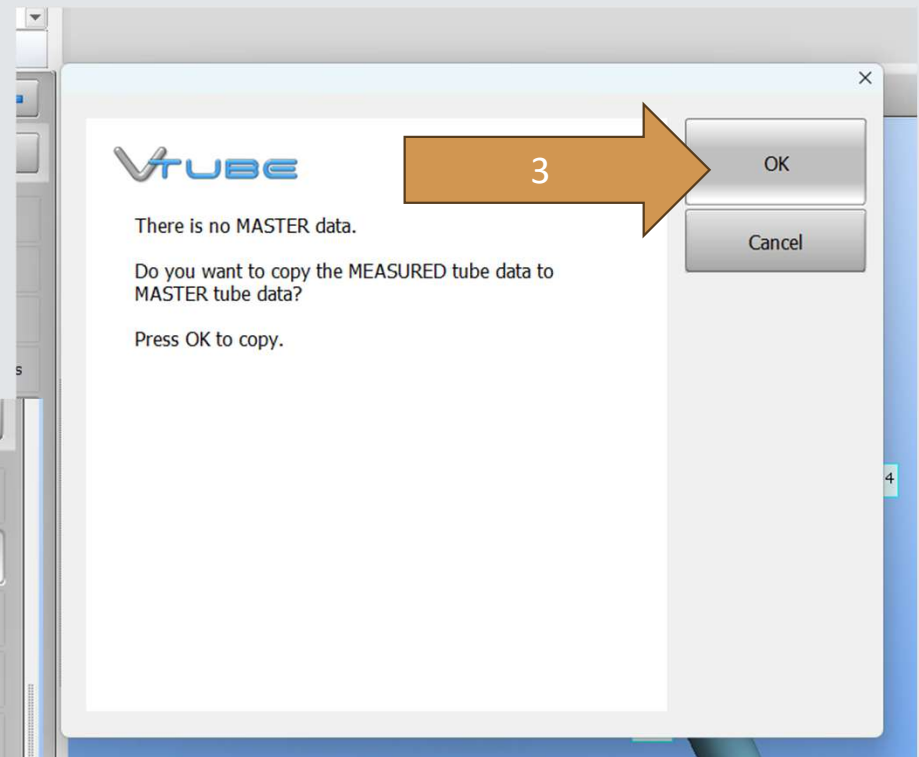
Measure Process

Measured Tube

Inspection Data

Bender Setup

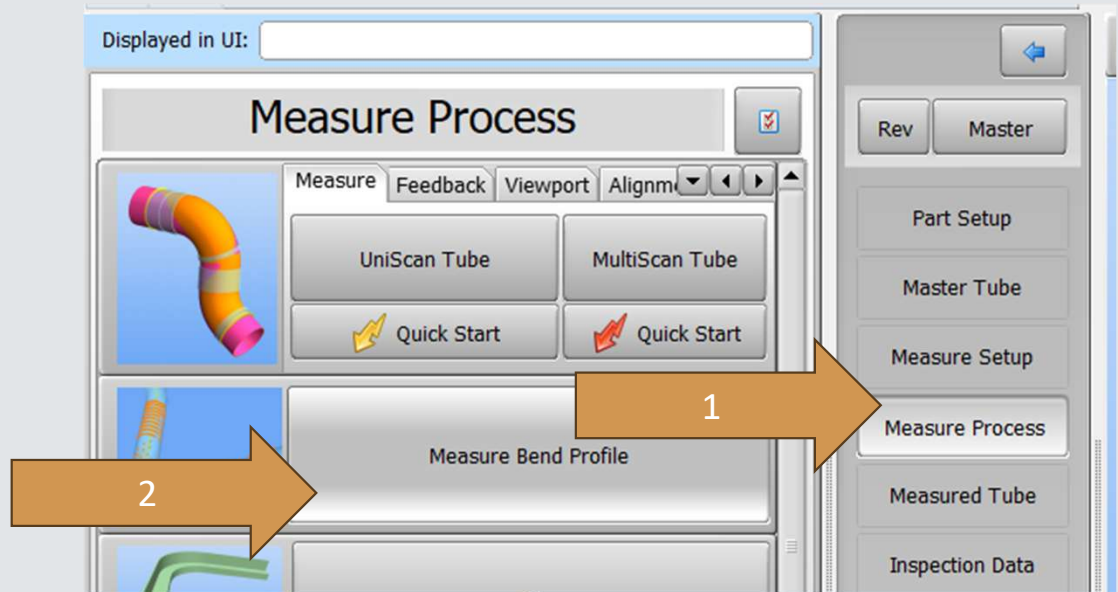
Reports



To measure the bend radius

To measure the bend radius, the tube CANNOT move between the first scan and the radius scan.

- 1- Go to Measure Process
- 2- Measure Bend Profile



- 1- Choose which bend you want to measure
- 2- Measure the inside of the bend to determine the radius
- 3- The Calculated Centerline Radius is what it measure, but we recommend nominalizing this.
- 4- COPY this radius to the DEFAULT radius
- 5- COPY this radius to ALL MASTER Data Rows
- 6- COPY this radius to ALL MEASURED Data Rows

Bend Profile Method

Scan Bend Profile

Toggle LASER

1

The current OD for this bend is: 0.750 inches

Measure Type - Inside Only

☐ Accept Button is in Backup Mode

Measure Points for Radius Calculation

Number of scanned stripes currently in memory: 0

Number of scanned points currently in memory: 0

Laser Line Separation: 0.015 inches

Calculated Inside Radius: 0.711

Calculated Centerline Radius 1.086 inches

COPY this radius to MEASURED XYZ BEND: 1

COPY this radius to the DEFAULT radius

COPY this radius to ALL MASTER Data Rows

COPY this radius to ALL MEASURE Data Rows

Start Stop Measure

1ma 1me 1dev ARma ARme ARde Tol+ Tol- OOT

Finished!

- You have now measured:
 - The tube diameter
 - The tube shape (straights)
 - The tube radius

	Variable Name	Value	
1	Part Number	VTube-LASER Demo 6	
2	Diameter	0.750	inches
3	Radius 1	1.000	inches

Incremental SB Compensated Absolute 360CW 360CCW					
Incremental LRA					
	L	R	A	Radius	Rad Level
1	1.945	0.0	90.2	1.000	1
2	2.344	-154.4	56.6	1.000	1
3	1.915	48.7	57.0	1.000	1
4	2.002	179.8	57.1	1.000	1
5	1.874	-48.3	59.5	1.000	1
LL	1.668				