



Tube measuring software for
MicroScribe Arms



IMPORT MODELS

Import solid model data from STEP or IGES files generated by CAD packages to create MASTER data.

MEASURE

Measure tube shapes using touch probe technology for comparison against master data or to reverse-engineer from existing parts.

QUALIFY

Fully-qualify tube shapes with inspection reports that contain tangent, midpoint, end angle deviations all compared to tolerance. Quickly verify a part shape by viewing the inspection result with shades of green (pass) or red (no pass).

DISPLAY MODELS

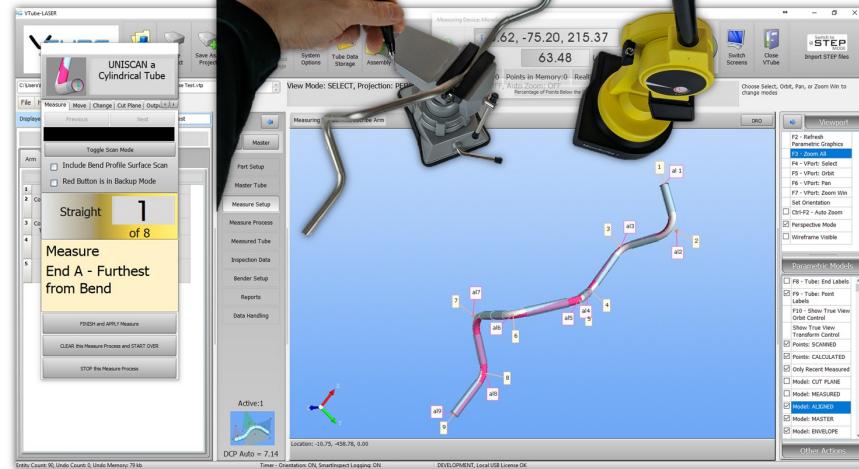
Display rendered image of measured tube, best-fit tube, and master tubes on the screen at the same time.

CORRECT BENDERS

Connect to and correct CNC benders.



Phone: 248 674-2059
www.advancedtubular.com



This is the software tool designed exclusively for
tube measuring, tube-shape qualification, tube bender correction, and tube-shape reverse engineering
using touch probe technology.

- VTube-LASER connects directly to **MicroScribe** Arms with to measure tube shapes.
- Qualify tube shapes.
- Setup and correct a bender in just a few minutes. Transfer of correction data takes a few seconds.
- Build SolidWorks models of reverse-engineered tubes in seconds.



Revware
MicroScribe®



Tube measuring software for
MicroScribe Arms



ALL MICROSCRIBE ARMS

VTube-LASER connects to all models of MicroScribe Arms.

IMPORT SOLID MODELS

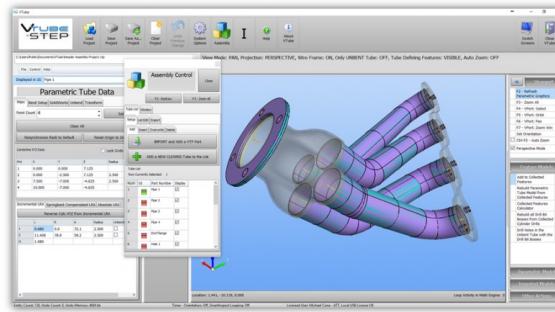
Import from any solid model CAD package using the universal STEP or even IGES format.

EXTRACT CENTERLINE DATA

Extract centerline data to build MASTER data for inspection. View the results of the extraction in the viewport using transparency.



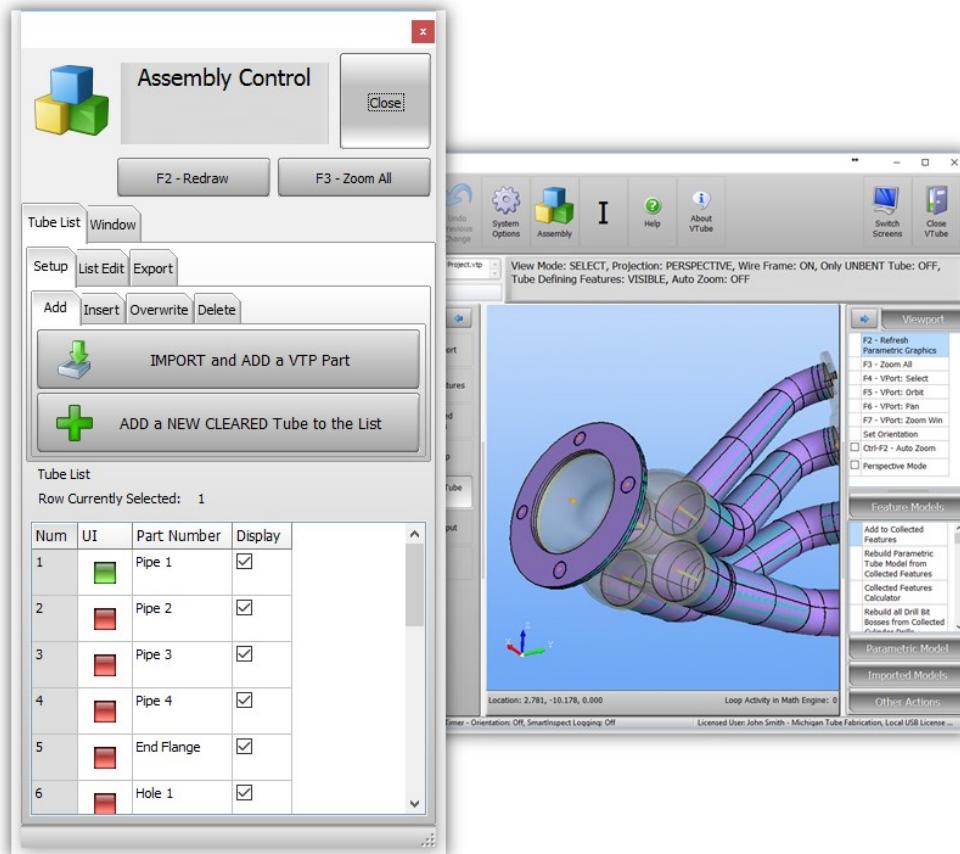
SOLID Model IMPORT



The product design world is switching to **“Model-Based Definition” (MBD)**, where solid models are used to create and control the nominal MASTER data.

VTube enables MBD by allowing you to import master tube shape data from the universal STEP or IGES files – which means you can import from any solid model package.

Import one tube or entire assemblies into on VTube-LASER project file.



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INSPECTION

VISUALIZE DEVIATIONS

The measured tube is fit on the master tube using sophisticated fit technology, then displayed on the screen for visualization.

INSPECTION GRID COLOR CODES

Solid Green: The deviation is less than $\frac{1}{2}$ the tolerance.

Light Green: The deviation is ok, but is greater than $\frac{1}{2}$ the tolerance.

Light Red: The deviation is out of tolerance by less than 2 times the tolerance.

Solid Red: The deviation is out of tolerance by greater than 2 times the tolerance.



Part Qualification

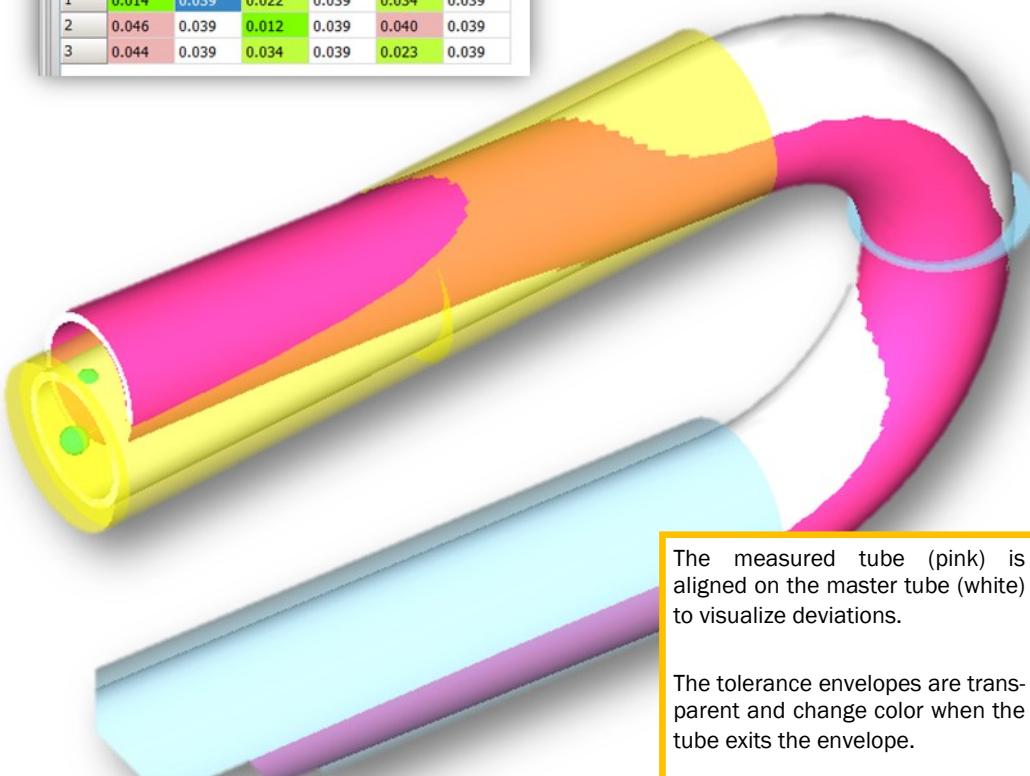
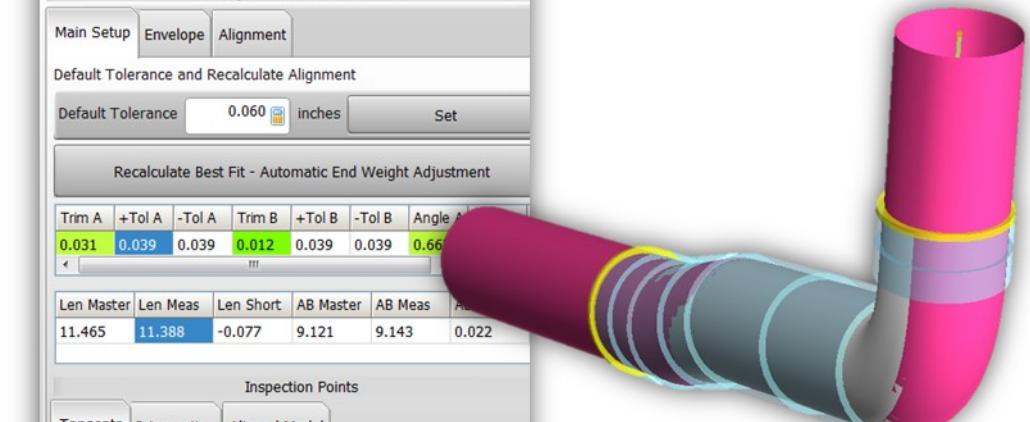
Fully qualify the part using the Inspection Results grid. Color codes give a quick indication of pass/fail for part qualification. Print customizable inspection reports to document the qualification.

Inspection Data

Default Tolerance and Recalculate Alignment						
Default Tolerance	0.060	inches	Set			
Recalculate Best Fit - Automatic End Weight Adjustment						
Trim A	+Tol A	-Tol A	Trim B	+Tol B	-Tol B	Angle A
0.031	0.039	0.039	0.012	0.039	0.039	0.66
!!!						
Len Master	Len Meas	Len Short	AB Master	AB Meas	AB Short	Avg
11.465	11.388	-0.077	9.121	9.143	0.022	

Inspection Points

Tangents						
Intersection		Aligned Model				
Change Grid Setup		Expanded Window				
	T1 dev	T1 tol	MP dev	MP tol	T2 dev	T2 tol
1	0.014	0.039	0.022	0.039	0.034	0.039
2	0.046	0.039	0.012	0.039	0.040	0.039
3	0.044	0.039	0.034	0.039	0.023	0.039



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BENDERLINK

BENDERLINK

We can help you integrate VTube-LASER to benders.
We're known as Benderlink specialists.

LEAPFROG

For tubes that are longer than the arm reach, VTube-LASER uses the LEAPFROG feature using magnetic conical seats we call "targets".

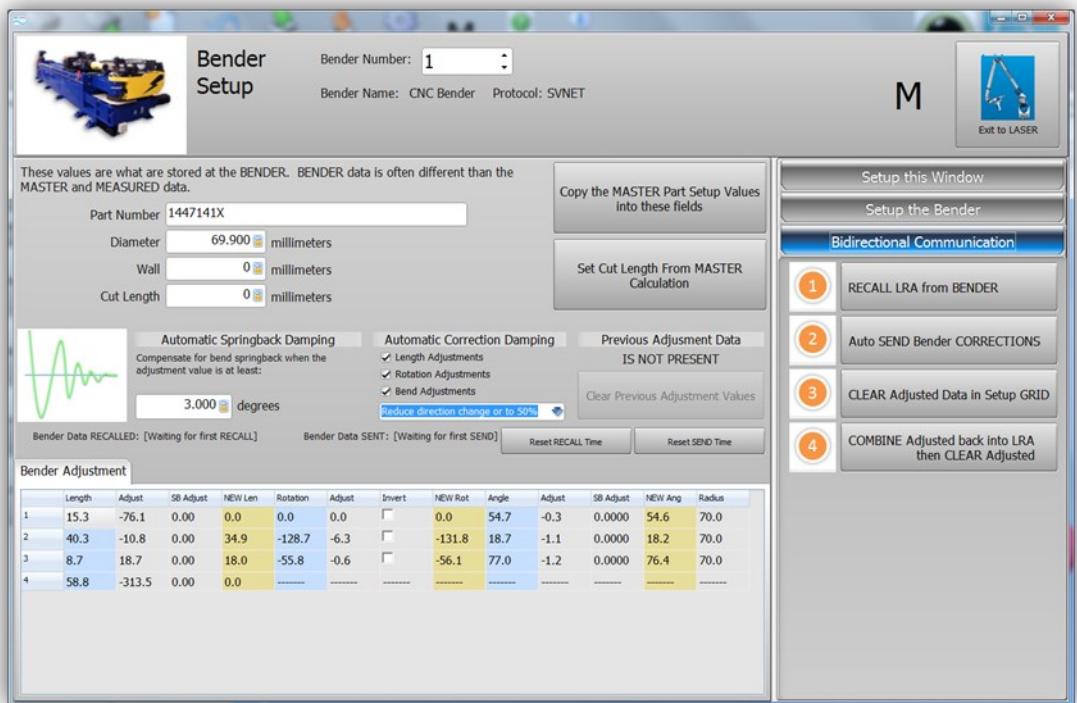
KNOWLEDGEBASE

We have a comprehensive web-based knowledgebase that is available to all customers for details about our products – including revision details, technical documents, tutorials, and videos.



Bender Communication

Connect up to 100 benders using the VTube-LASER Benderlink system. Network benders on your shop floor to correct the part shape in a seconds.



VTube-LASER COMMUNICATES with CNC Tube BENDERS

AddisonMcKee

SMI

Alpine

SMT industries

AMOB

SOCO

BLM

STAR Benders

Chiyoda

Techno

COMCO / KEINS

Transfluid

Crippa

Unison Limited

CSM

Winton

EL Premier

YLM

EL Lightspeed

Herber

Horn Machine Tools

PINES Technology



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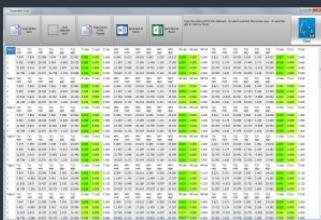


TUBE DATA STORAGE

VTube can permanently store every measure in each tube's project file. Tube Data Storage records a permanent date-time stamped image of the data after every measure.

DATA for GAGE STUDIES

The Tube Data Storage feature is perfect for collecting data for GR&R studies – because all the data can be transferred to a Microsoft Excel spreadsheet with a button press.



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Flexible Reporting

Design reports with HTML report templates using our sample reports. Add any number of custom report templates to the list for use in different situations.

VTube Report

Automatic Image Refresh

Refresh Image Print Preview Close

MERCURY PRODUCTS
ENGINEERED FABRICATIONS & ASSEMBLIES

Date: 4/4/2011 9:46:13 AM
Part Number: 24858
Comment 1: Measure short end
Comment 2: first
Unit: Inches
Diameter: 0.425
Wall: 0.030
Default Radius: 3.750
XYZ Points: 3
Cut Length: 18.434
Calculated Master Length: 18.434
Calculated Measured Length: 18.435
Calculated Master-Measured Delta: 0.000
A-End Offset: 0.000
B-End Offset: 0.000
Tube Elongation Percentage: 6.5
Fixed Springback: 0.0
Proportional Springback: 0.0

MASTER XYZ DATA

Point	X	Y	Z	Radius
1	-19.446	0.942	20.765	2.000
2	-16.071	1.354	22.385	2.000
3	-13.250	-0.908	23.293	2.000
4	-8.893	-0.354	25.340	2.000
5	-11.231	-1.311	30.765	2.000
6	-8.107	1.298	32.668	2.000
7	-4.859	1.715	34.147	2.000

VTube Report

Automatic Image Refresh Refresh Image Print Preview Close

MERCURY PRODUCTS
ENGINEERED FABRICATIONS & ASSEMBLIES

Date: 4/4/2011 9:46:13 AM
Part: VTube-LASER Test Part - Dense
Number: Laser Scan
Unit: Inches
Diameter: 0.425
XYZ Points: 7
Cut Length: 23.893

Point	X	Y	Z	Radius
1	2.945	0.942	20.765	2.000
2	2.099	1.354	22.385	2.000
3	2.056	-0.908	23.293	2.000
4	2.049	-0.354	25.340	2.000
5	-11.231	-1.311	30.765	2.000
6	-8.107	1.298	32.668	2.000
7	-4.859	1.715	34.147	2.000

Bend	Length	Rotation	Angle	Radius
1	2.945	179.6	44.2	2.000
2	2.099	91.0	89.2	2.000
3	2.056	-150.5	88.9	2.000
4	2.049	-88.2	29.5	2.000
5	2.004	-----	-----	2.000
6	3.068	-----	-----	2.000

VTube Inspection Report

Advanced Tubular | Log In | Create Account | Help | Desktop

MERCURY PRODUCTS
ENGINEERED FABRICATIONS & ASSEMBLIES

Date: 4/4/2011 8:21:32 AM
Part Number: Can
Comment 1: Rev 001
Comment 2: from FABTCH
Unit: Inches
Diameter: 0.820
Wall: 0.030
Default Radius: 3.500
XYZ Points: 6
Cut Length: 28.907
Calculated Master Length: 28.907
Calculated Measured Length: 28.915
Calculated Master-Measured Delta: 0.008
A-End Offset: 0.000
B-End Offset: 0.000
Tube Elongation Percentage: 6.5
Fixed Springback: 0.0
Proportional Springback: 0.0

MASTER XYZ DATA

Point	X	Y	Z	Radius
1	-6.000	0.000	0.000	-----
2	7.000	0.000	0.000	1.782
3	4.761	-6.964	0.000	2.000
4	4.374	-11.468	0.005	2.000
5	1.463	-15.090	0.008	2.000
6	1.677	-19.877	0.039	-----

```
C:\Users\Michael\AppData\Roaming\VTube\report\report_template.html - Notepad++
```

File Edit Search View Encoding Language Settings Macro Run TextFX Plugins Window ? X

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length:2495 lines:132 Ln:23 Col:1 Sel:0 Dos/Windows ANSI INS



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BUILD to SOLIDWORKS

VTube can even build a fully constrained 3DSketch centerline tube with sweep and shell in a few seconds. You can measure a tube, then let VTube draw it for you in SolidWorks.



COPY MEASURED to MASTER

Reverse-engineering is simple:
Copy MEASURED to MASTER
data with the single press of a
button in the Data Handling menu.



"Since we are a SolidWorks-based company, it is very beneficial that, with one button click, I can have a fully-defined 3D cad model of the tube that was just measured. This decreases the amount of time it takes to get a hard prototype reverse engineered into CAD for fixture creation. I am very excited to welcome VTube-LASER into our facility and look forward to working with Advanced Tubular in the future."

Greg Whittle
Senior Design Engineer



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