

# **FITOK**



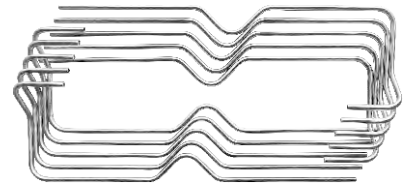
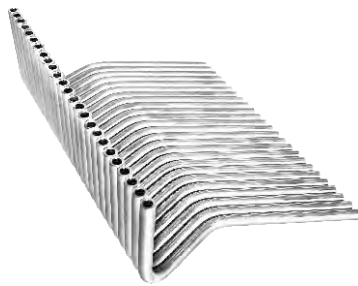
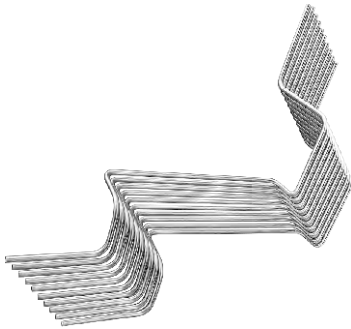
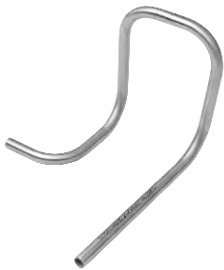
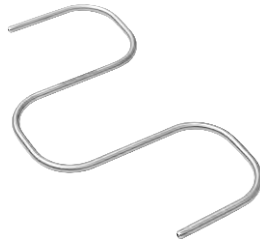
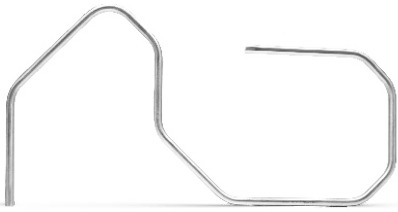
## **Custom Tube Bending Services**



**Specialized Products and Services  
Meeting Your Diverse Custom Needs**

[www.fitok.com](http://www.fitok.com)

## Products



## Supply Range and Parameters

### Instrumentation and High Purity Tube Bending

Fractional								
Material	Straight Tubing Series	O.D. (in.)	Wall Thickness (in.)	Standard Bend Radius (in.)	Minimal Bend Radius (in.)	Maximum Bend Angle	Maximum Straight Tubing Length (Prior to Bending) (ft)	Packaging and Cleaning Standard
316/316L SS, Enhanced 316/316L SS, Super Duplex SS, and Alloys	TMP, TBA	1/8	0.028, 0.035	0.38	1.5×O.D.	180°	9.1	FITOK Standard Cleaning and Packaging Process (FC-01), Special Cleaning and Packaging Process (FC-02) options
		3/16	0.028, 0.035, 0.049	0.56				
		1/4	0.035, 0.049, 0.065	0.56				
		3/8	0.049, 0.065, 0.083	0.81				
		1/2	0.049, 0.065, 0.083	1.00				
		5/8	0.065, 0.083, 0.095	1.25				
		3/4	0.065, 0.083, 0.095, 0.109	1.50				
		1	0.083, 0.095, 0.109, 0.12	2.00				
Metric								
Material	Straight Tubing Series	O.D. (mm)	Wall Thickness (mm)	Standard Bend Radius (mm)	Minimal Bend Radius (mm)	Maximum Bend Angle	Maximum Straight Tubing Length (Prior to Bending) (m)	Packaging and Cleaning Standard
316/316L SS, Enhanced 316/316L SS, Super Duplex SS, and Alloys	TMP, TBA	3	0.8, 1	10	1.5×O.D.	180°	2.8	FITOK Standard Cleaning and Packaging Process (FC-01), Special Cleaning and Packaging Process (FC-02) options
		6	1, 1.2, 1.5	15				
		8	1, 1.2, 1.5	20				
		10	1.2, 1.5, 2	20				
		12	1.5, 2, 2.5	25				
		14	1.5, 2, 2.5, 3	30				
		16	1.5, 2, 2.5, 3	30				
		18	1.5, 2, 2.5, 3	35				
		20	2, 2.5, 3	40				
		22	2, 2.5, 3, 4	45				
		25	2, 2.5, 3, 4	50				

### Medium and High Pressure Tube Bending

Fractional								
Material	Straight Tubing Series	O.D. (in.)	I.D. (in.)	Standard Bend Radius (in.)	Max Working Pressure psig (bar)	Maximum Bend Angle	Maximum Straight Tubing Length (Prior to Bending) (ft)	Packaging and Cleaning Standard
316/316L SS, Enhanced 316/316L SS	T20D	1/4	0.120	1.25	19100 (1317)	180°	9.1	FITOK Standard Cleaning and Packaging Process (FC-01), Special Cleaning and Packaging Process (FC-02) options
		3/8	0.209	1.75	18750 (1293)			
		1/2	0.282	2.63	18750 (1293)			
		3/4	0.420	3.50	18750 (1293)			
		1	0.656	4.63	18700 (1290)			
	T20M	1/4	0.109	1.25	19100 (1317)			
		3/8	0.203	1.75	18750 (1293)			
		9/16	0.312	2.63	18750 (1293)			
		3/4	0.438	3.50	18750 (1293)			
		1	0.562	4.63	18700 (1290)			
	T60H	1/4	0.083	1.25	58400 (4028)			
		3/8	0.125	1.75	57750 (3983)			
		9/16	0.188	2.63	57750 (3983)			

#### Bend Radius

Standard Bend Radius is recommended. For products with other bend radii, please consult FITOK.

#### Working Pressure

For Instrumentation and High Purity tube bending products with bend radii greater than 1.5 times the tube O.D., the working pressure is the same as for straight tubing.

For Medium and High Pressure tube bending products with standard bend radii, find the working pressure from above table. Working pressure of the tube bending products with other bend radii, please consult FITOK.





FITOK

FITOK International

Material Certificate of Compliance

In conformity with ISO 2004: 2004-3:150 10474: 2013-1:8

Customer		Contract No.		Customer PO No.		Rev.		Revision		Fit No.		Page
Contract No.		Rev.	Customer PO No.	Rev.	Revision	Fit No.	Page	QW00200001				
Item	Product Name	FITOK Part No.	Steel Grade	Standard	Label	Part No.	Heat No.	Size	Qty	Condition		
1	Purl Supply Line	DH19M-150M-1.5 AL30M-4-10T1120	3015A	ASTM A304	DocQty	E130A	Y12017-1815	10-1.5mm	1 pin			
2												
3												
Compositional Inspection, %												
Test Item	C	Mn	P	As	S	Si	Cr	Ni	Fe	N	W	Co
1	0.009	0.150	0.200	0.0040	0.0030	0.0030	12.000	19.000	2.000			
2	0.009	0.150	0.200	0.0040	0.0030	0.0030	12.000	19.000	2.000			
3	0.020	0.200	0.020	0.003	0.003	0.003	12.000	19.000	2.000			
4												
5												
6												
7												
8												
9												
Mechanical Properties and Other Tests												
Test Item	Hardness (HBW)	Tensile Strength (MPa)	Yield Strength (MPa)	Elongation (%)	Reduction of Area (%)	Impact Test	Flaring Test	Flange Test	Hydro Test	Edley Crack Test	Grain Size	Heat Treatment
1	190	755	420	45								
2	190	755	420	45								
3	190	755	420	45								
4	190	755	420	45								
5	190	755	420	45								
6	190	755	420	45								
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97	190	755	420	45								
98	190	755	420	45								
99	190	755	420	45								
100	190	755	420	45								

Condition	A. Aromatized	Remarks	1. Here we certify that the above mentioned products conform to the specifications of all the color and the standards.
	B. Polishing		2. The material is conforming to PED 2014/68/EU Aromatized Para 4.3.
	C. Solution Treat		3. Non-inspection item is marked with 'N'.
	D. Pickled		
	E. Cold Drawn		
	F. Single Aromatized		
	G. Electroplated		

Inspected by : J.W

Date: 2020

EN 10204: 2004-3.1  
Material Certificate

# FITOK 3D Inspection Report

Date: xxx

Report No.: xxx

Product Name	Fuel Supply Line	Product No.	TMP-12MM 1.5-3.27MM	Yst No.	HAT-217-1615	Batch Qty.	1 PCS.
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## 105 Dimensions

Name	Coordinate axis	Default Value	Measured Value	Tolerance	Unit	Pass/Fail
Return Cylinder A	Dimension		0.000	0.000	0.000	Pass
Return Cylinder C	<b>0.000</b>		0.000	0.000	0.000	Pass
Point 1	X	0.000	-0.004	±0.001	-0.004	Pass
	Y	-0.000	-0.001	±0.001	-0.001	Pass
	Z	0.000	-0.156	±0.001	-0.156	Pass
	W	0.000	-0.243	±0.001	-0.243	Pass
Point 2	X	0.000	0.000	±0.001	0.000	Pass
	Y	-0.000	-0.002	±0.001	-0.002	Pass
	Z	0.000	-0.000	±0.001	-0.000	Pass
	W	0.000	-0.000	±0.001	-0.000	Pass
Point 3	X	0.000	-0.000	±0.001	-0.000	Pass
	Y	-0.000	-0.000	±0.001	-0.000	Pass
	Z	0.000	-0.000	±0.001	-0.000	Pass
	W	0.000	-0.000	±0.001	-0.000	Pass
Point 4	X	0.000	-0.000	±0.001	-0.000	Pass
	Y	-0.000	-0.000	±0.001	-0.000	Pass
	Z	0.000	-0.000	±0.001	-0.000	Pass
	W	0.000	-0.000	±0.001	-0.000	Pass
Dimension 1	X Distance	0.000	0.000	±0.001	0.000	Pass
	Y Distance	0.000	0.000	±0.001	0.000	Pass
	Z Distance	0.000	0.000	±0.001	0.000	Pass
	W Distance	0.000	0.000	±0.001	0.000	Pass
Angle 1	V/2 Angle	0.000	0.000	±0.001	0.000	Pass
	W/2 Angle	0.000	0.000	±0.001	0.000	Pass
	X/Y Angle	0.000	0.000	±0.001	0.000	Pass
	Y/Z Angle	0.000	0.000	±0.001	0.000	Pass
Return Flange B	X Distance	0.000	0.000	±0.001	0.000	Pass
	Y Distance	0.000	0.000	±0.001	0.000	Pass
	Z Distance	0.000	0.000	±0.001	0.000	Pass
	W Distance	0.000	0.000	±0.001	0.000	Pass

Final Judgment:	PASS
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Checked by: **H.W**

Reviewed by: **FITOK**

## 3D Dimensional Inspection Report



- ## 1. High quality, comprehensive range and fast delivery.
- Extensive experience of tubing manufacturing guarantees the best quality.
  - Offering tubing in a variety of materials and sizes for diverse industries and applications.
  - Maintaining more than 500,000 meters of tubing in stock for fast delivery.

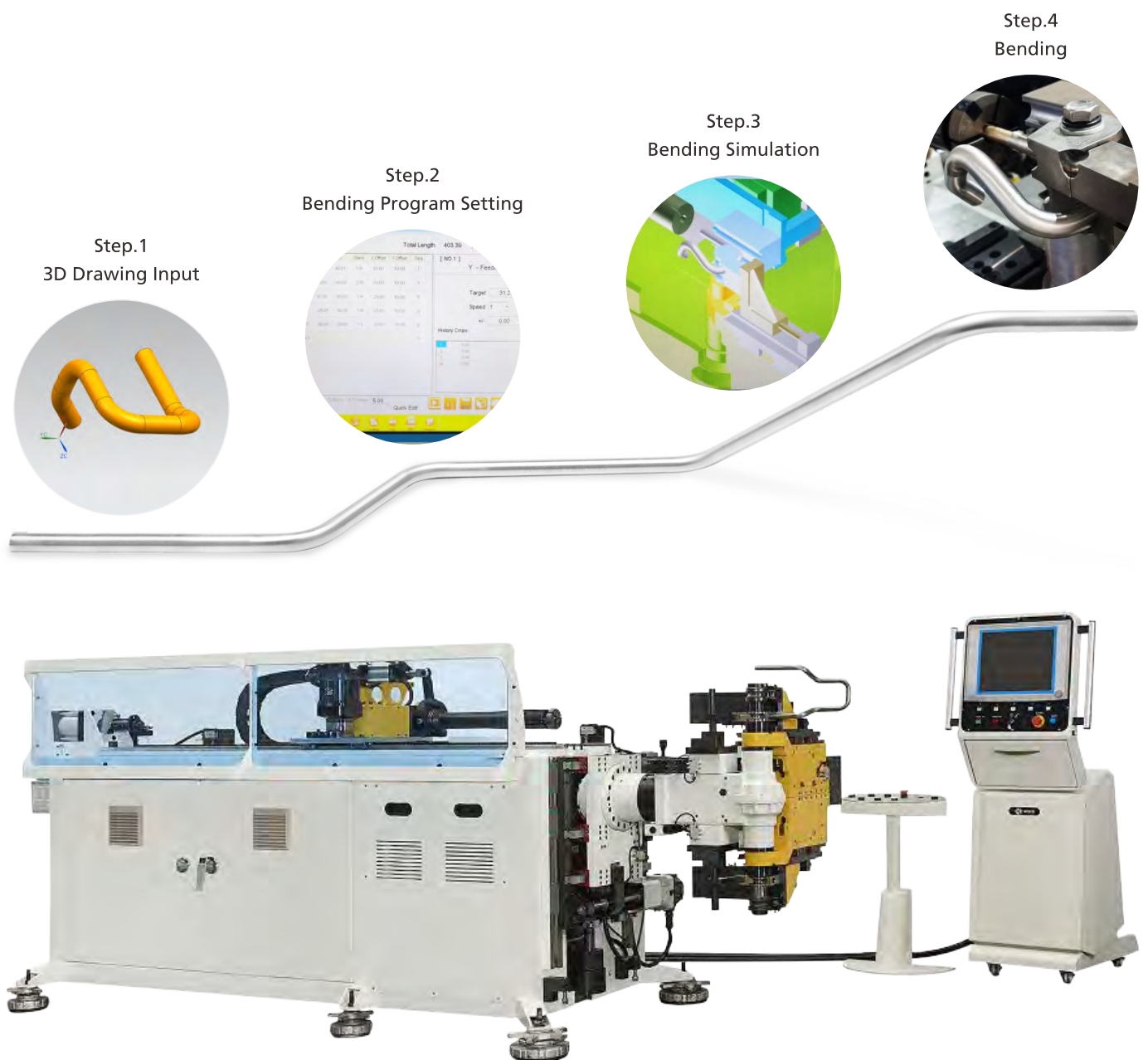


## 2. Efficient communication and enhanced customer experience.

- ⦿ Expert team with extensive product and business knowledge can accurately understand customer needs and concerns, providing efficient communication and effective solutions.

## 3. Automated bending machines ensure efficient production and excellent consistency.

- ⦿ Bidirectional bending and continuous bending are available, ensuring high-quality production.
- ⦿ 3D simulation identifies potential interference between tubing and machines, helping optimize production efficiency.
- ⦿ One tubing supports six different bend radii and 50 bends in total.





#### 4. High accuracy measuring machines ensure product quality.

- ◎ Parameters such as profile, position, angle, roundness, cylindricity, verticality, length and bend radius can be measured.
- ◎ Measurement accuracy reaches 0.02 mm, with certified metrological-grade accuracy.
- ◎ Measurement speed reaches 2.1 million measurements per second, report can be generated automatically.



Step 1. Scanning of the Product



Step 2. 3D Model Generating



Step 3. Measuring Result Output



## 5. Economic and reliable packaging and shipping.

- ⦿ Delivering over 1 million meters of tubing annually has provided us with extensive packaging experience.
- ⦿ Standard short-length tubing helps reduce costs significantly by lowering both packaging and transportation expenses.
- ⦿ Optimized packaging methods ensure product quality during transit while minimizing costs.



## 6. FITOK fittings and valves available for quick one-stop procurement.

- ⦿ 20+ years of experience in valve and fitting manufacturing, with products used globally and widely in diverse industries.
- ⦿ Stringent validation testing ensures reliable connections among FITOK tubing, fittings and valves, eliminating mismatches or leaks when using components from different manufacturers.

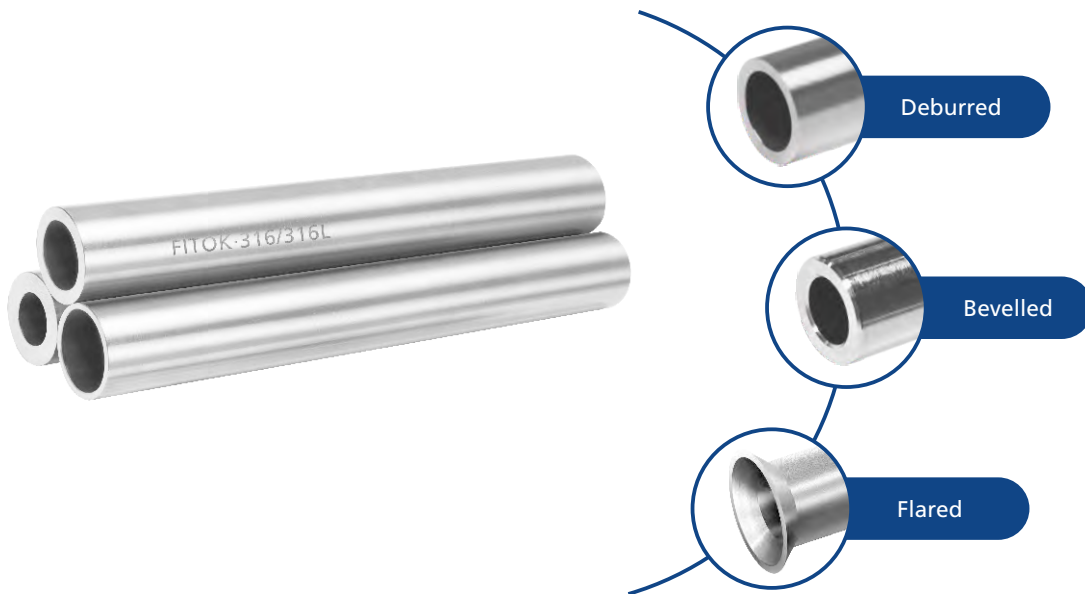




## Other Services

Custom length straight tubing with well treated ends (including deburring, beveling, and flaring), as well as cone and thread processing and ferrule presetting, are available.

### Custom-Length Straight Tubing with Well Treated Ends



### Cone and Thread Processing



### Ferrule Presetting



### Welded Assemblies

