

# TUBE SOLUTIONS

PATENTED WELD EQUIVALENT<sup>®</sup>  
**Tube Solutions**



***PERMANENT***  
*Cold Weld Alternative*



***ASSEMBLED***  
*Within Minutes*



***ASME B31.1***  
***ASME B31.3***





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## Lokring Stainless Steel Tube Fittings

Lokring stainless steel tube fittings are qualified to the requirements of the ASME B31 pressure piping codes for pressure and fatigue design, and materials of construction. Extensive mechanical and environmental testing has demonstrated the sealing integrity of the Lokring connection in a wide range of applications. Lokring fittings are typically used where fire-safe conditions must be maintained.

## **NO WELDS, NO FLANGES NO THREADS, NO LEAKS!**

By eliminating welding, many overhead costs relating to safety, personnel, equipment and supplies, inspection, rework, and monitoring can be eliminated or substantially reduced.

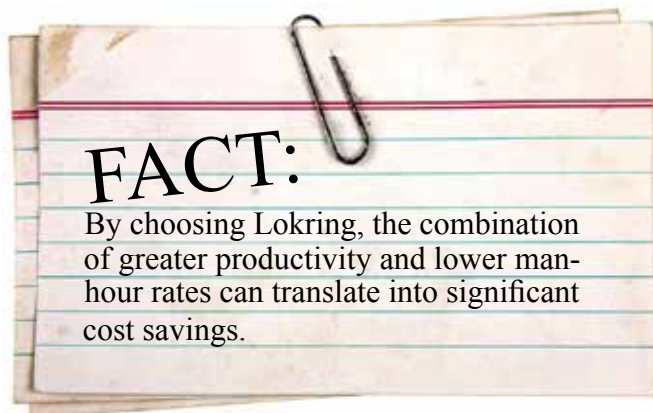
Some examples of reduced costs are:

- Obtain fire permit for hot work
  - Erect scaffolding and provide ventilation
  - "Sniff" area, gas free, and weather protect
  - Blank flanges and nozzles
  - Establish fire watch
  - Build fire box or tarps
  - Drain, flush, and dry lines
  - Cranes, welders, grinders, and small tools
  - Weld consumables (purge gas and filler rod)
  - Workers' compensation, insurance, and benefits
  - Weld X-ray or other NDT
  - Rework of damaged or misaligned spools
  - System soak, flush, or passivation; HAZMAT disposal
  - Maintain and monitor flanges for leakage
- In addition, scarce ASME-certified welders are freed up for large-bore pipe or pressure vessel welding.

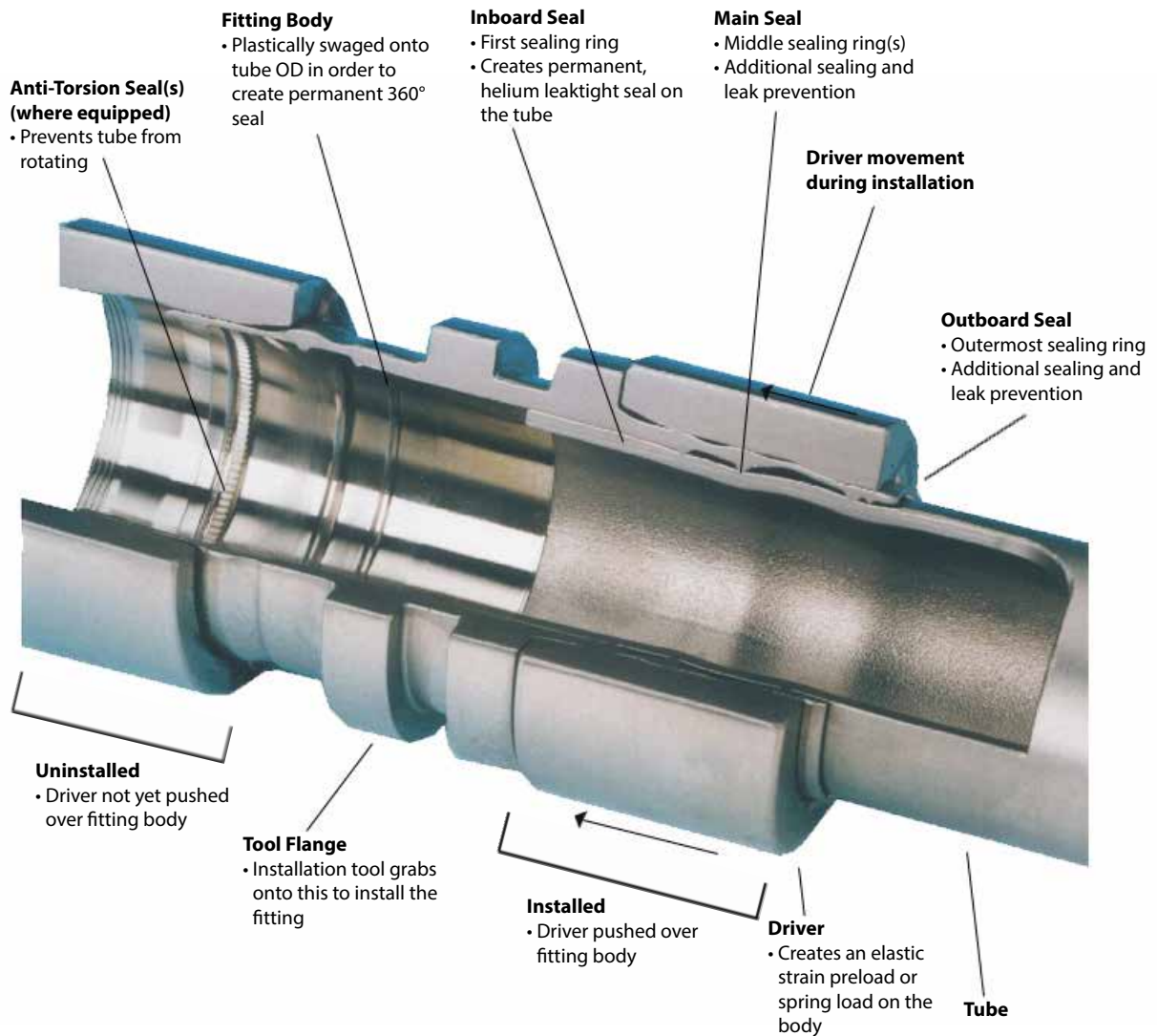


Lokring tube solutions can be found in many applications, including the Astute Class Attack Submarine.

"With a (socket) weld, you have to use gamma radiation to check for cracks on both welds. It takes 6 1/2 hours to NDT on that sleeve, during which time nobody can work in that unit." Using Lokring fittings resulted in a 72 % increase in overall up-time. - Senior Production Engineer



### ELASTIC STRAIN PRELOAD ESP® TECHNOLOGY



The leak-free seal is the result of Lokring ESP installation where the axial movement of the Lokring driver over the body swages the body onto the tube's surface. This compresses the tube wall first elastically and then plastically.

The tube wall resists this swaging action, generating high unit compressive loads at the contact points between narrow sealing lands inside the fitting body and the tube surface.

These contact stresses are sufficiently high to plastically yield the tube surface under the sealing lands, forming a 360° circumferential, permanent, metal-to-metal seal between the tube and fitting body.

The driver, which experiences a small increase in diameter (elastic strain) during installation, exerts an elastic, radial preload on the metallic seals for the life of the connection, which is called Elastic Strain Preload (ESP).





Through its patented elastic strain preload ESP design, the Lokring fitting is spring loaded. This allows the fitting to compensate for the varying system application conditions for the entire life of the connection.

- Permanent
- Weld equivalent
- Tamper Free

## PRESSURE AND TEMPERATURE RATINGS

Lokring Stainless Steel Tube Fitting	Tube OD in.	Lokring Size	Tube Wall Thickness, in.						
			0.035	0.049	0.065	0.083	0.095	0.109	0.120
			Pressure Rating, psi (bar)						
Stainless Steel Tube Product	1/4	T04	5100 (351)	7500 (517)	9050 (623) <sup>B</sup>				
	3/8	T06	3300 (227)	4800 (330)	5650 (389) <sup>B</sup>				
	1/2	T08	2600 (179)	3700 (255)	4270 (294) <sup>B</sup>	A			
	5/8	T10	2100 (144)	2900 (199)	3750 (258) <sup>B</sup>	A			
	3/4	T12	1700 (117)	2400 (165)	4200 (289)	A	A		
	7/8	T14		A	2800 (193)	A	A	A	
	1	T16			2400 (165)	3100 (213)	A	A	
	1 1/4	T20			1900 (131)	2400 (165)	2800 (193)	3300 (227)	A
	1 1/2	T24			1600 (110)	2000 (137)	2300 (158)	2700 (186)	3000 (206)
	2	T32			1100 (75)	1500 (103)	A	A	A
	2 1/2	T40			900 (62)	1200 (82)	A	A	A

A. Consult your authorized Lokring distributor for details regarding applications within these conditions.

B. Lokring de-rates the maximum allowable tube pressure.



Lokring fittings cannot be over- or undermade. Tooling is pre-set, promoting consistent and error-free installations.

### TEMPERATURE RATING:

Systems containing the tubing assemblies listed may establish design pressures up to and including the ambient maximum design pressure given for temperatures from –20 to 100 °F (–28 to 38 °C) for ASME B31.1 and B31.3. For temperatures above 200 °F (93 °C) the maximum design pressure given shall be multiplied by the temperature de-rating factor listed at right.

### NOTES:

1. Fitting material 316L stainless steel in accordance with ASTM A276 or ASTM A479.
2. On indicated wall thicknesses at ambient temperature. See specification FS40-T for details..
3. See “Lokring Fitting Applications Guide” for additional design and service details.

### MATCHING TUBE:

- 316/316L stainless steel tube to ASTM A269 or ASTM A213
- 304/304L stainless steel tube to ASTM A269 or ASTM A213

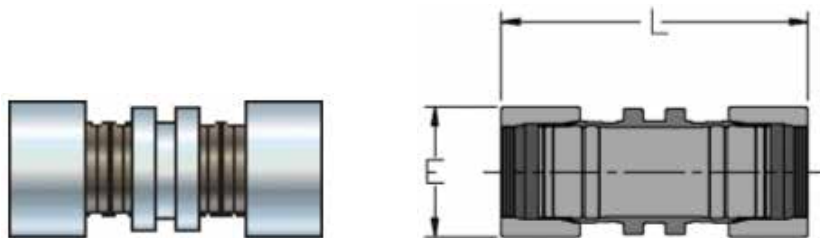
Temperature De-rating Table For Lokring Stainless Steel Tube Fittings	
Temperature °F (°C)	Temperature De-rating Factor
200 (93)	1.00
300 (148)	1.00
400 (204)	0.97
500 (260)	0.90
600 (315)	0.85
650 (343)	0.84
700 (371)	0.82
750 (398)	0.81
800 (426)	0.80





Unlike other mechanically attached fittings, there are no elastomeric or rubber seals, O-rings, or gaskets that can degrade and leak over time from chemical attack, fire, vibration, temperature cycling, cold flow, or loss of elasticity. As a result, fugitive emissions typical of leak-prone screwed or flanged connectors are eliminated.

## Couplings (Without Center Stop<sup>A</sup>)

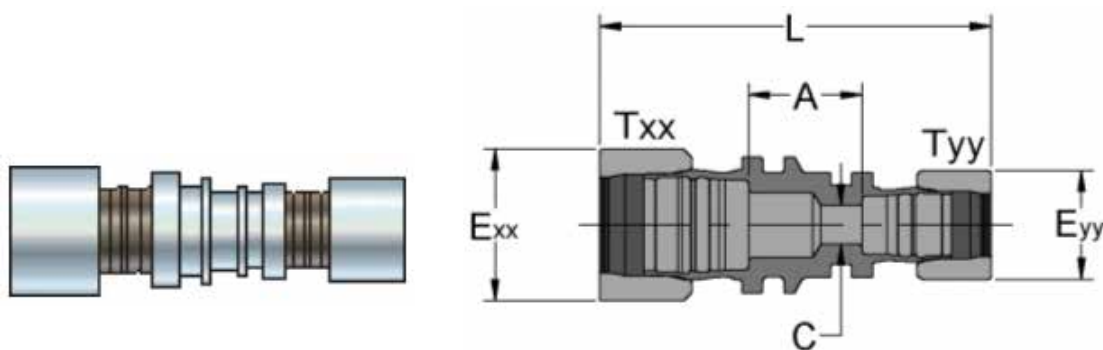


Tube OD in.	Ordering Information			Dimensions, in.			Loktool®
	Fitting Material	Shape	Fitting Size TXX	Part Length (Uninstalled) L	E	Take-Out <sup>A</sup>	Installation Tool Kit
1/4 <sup>A</sup>	SS	-CPL-	T04	1.81	0.54	0.04	IT04 / IT10 / IT20
3/8	SS	-CPL-	T06	2.52	0.72	—	IT10 / IT20
1/2	SS	-CPL-	T08	2.68	0.87	—	IT10 / IT20
5/8	SS	-CPL-	T10	3.06	1.05	—	IT10 / IT20
3/4	SS	-CPL-	T12	3.13	1.17	—	IT20
7/8	SS	-CPL-	T14	2.95	1.19	—	IT20
1	SS	-CPL-	T16	3.17	1.37	—	IT20 / IT45
1 1/4	SS	-CPL-	T20	4.07	1.80	—	IT45
1 1/2	SS	-CPL-	T24	4.24	2.10	—	IT45 / IT50 / IT60
2	SS	-CPL-	T32	5.31	2.55	—	IT50 / IT60
2 1/2	SS	-CPL-	T40	6.54	3.10	—	IT60

All dimensions are for reference only and are subject to change.  
Consult your authorized Lokring distributor for details and other options.

A. 1/4 in. (T04) fitting is manufactured with a travel stop (take-out) to aid with assembly.

## Reducers

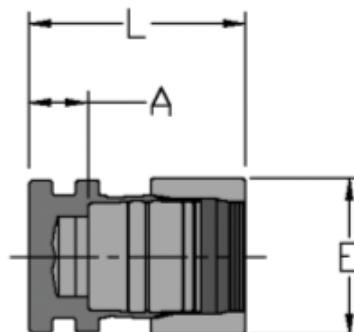
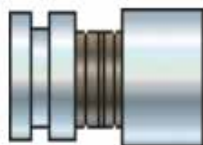


Tube OD in.	Ordering Information			Dimensions, in.					Loktool
	Fitting Material	Shape	Fitting Size TXX- TYY	Part Length (Uninstalled) L	E <sub>xx</sub>	E <sub>yy</sub>	Take- Out A	C	Installation Tool Kit
3/8 to 1/4	SS	-RED-	T06-T04	3.29	0.72	0.54	1.16	0.16	IT10 / IT20
1/2 to 1/4	SS	-RED-	T08-T04	3.18	0.87	0.54	0.97	0.16	IT10 / IT20
1/2 to 3/8	SS	-RED-	T08-T06	3.30	0.87	0.72	0.70	0.30	IT10 / IT20
5/8 to 1/2	SS	-RED-	T10-T08	3.61	1.05	0.87	0.74	0.41	IT10 / IT20
3/4 to 1/2	SS	-RED-	T12-T08	3.55	1.17	0.87	0.64	0.41	IT20
3/4 to 5/8	SS	-RED-	T12-T10	3.83	1.17	1.05	0.74	0.54	IT20
7/8 to 3/4	SS	-RED-	T14-T12	3.75	1.19	1.17	0.71	0.67	IT20
1 to 1/2	SS	-RED-	T16-T08	3.99	1.37	0.87	1.06	0.41	IT20
1 to 3/4	SS	-RED-	T16-T12	3.82	1.37	1.17	1.34	0.67	IT20
1 to 7/8	SS	-RED-	T16-T14	3.90	1.37	1.19	0.84	0.76	IT20
1 1/4 to 1	SS	-RED-	T20-T16	4.52	1.80	1.37	0.90	0.83	IT45
1 1/4 to 3/4	SS	-RED-	T24-T12	4.83	2.10	1.17	1.15	0.66	IT20 and IT45/ IT50/IT60
1 1/2 to 1	SS	-RED-	T24-T16	4.71	2.10	1.37	1.00	0.87	IT20 and IT45/ IT50/IT60
1 1/2 to 1 1/4	SS	-RED-	T24-T20	5.00	2.10	1.80	0.84	1.09	IT45
2 to 1 1/4	SS	-RED-	T32-T20	5.82	2.55	1.80	1.13	1.09	IT45
2 to 1 1/2	SS	-RED-	T32-T24	6.20	2.55	2.10	1.43	1.33	IT50 / IT60

**NOTE:** Lokring also offers tube-to-pipe reducers.  
All dimensions are for reference only and are subject to change.  
Consult your authorized Lokring distributor for details and other options.



## Caps



Tube OD in.	Ordering Information			Dimensions, in.			Loktool
	Fitting Material	Shape	Fitting Size TXX	Part Length (Uninstalled) L	E	Take-Out A	Installation Tool Kit
1	SS	-CAP-	T16	2.00	1.37	0.42	IT20 / IT45
1 1/4	SS	-CAP-	T20	2.46	1.80	0.42	IT45
1 1/2	SS	-CAP-	T24	2.54	2.10	0.42	IT45 / IT50 / IT60
2	SS	-CAP-	T32	3.10	2.55	0.49	IT50 / IT60

All dimensions are for reference only and are subject to change.  
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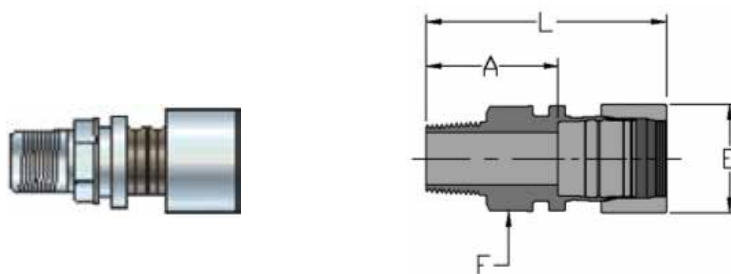


No other connector (flanged or threaded) is capable of passing helium leak testing anywhere close to the level of a Lokring fitting. Lokring fittings were independently tested by the California Air Resources Board (CARB), on  $2 \times 10^{-11}$  atm cm<sup>3</sup>/s helium leak rate. In fact, they stated the fitting meets all the criteria of a welded connection.



Our through-bore design makes repairs simple; just cut the tube and install the fitting.

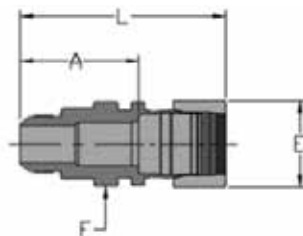
### Male Connectors



Tube OD in.	Ordering Information			Dimensions, in.					Loktool
	Fitting Material	Shape	Fitting Size TXX-YYMPT	Part Length (Uninstalled) L	E	Take- Out A	Across Wrench Flats F	Thread	Installation Tool Kit
1/4	SS	-ADPT-	T04-1/4 MPT	2.34	0.54	1.47	0.56	1/4-18	IT04 / IT10 / IT20
	SS	-ADPT-	T04-1/2 MPT	2.54	0.54	1.67	0.88	1/2-14	IT04 / IT10 / IT20
3/8	SS	-ADPT-	T06-1/4 MPT	2.67	0.72	1.41	0.56	1/4-18	IT10 / IT20
	SS	-ADPT-	T06-1/2 MPT	2.86	0.72	1.60	0.88	1/2-14	IT10 / IT20
1/2	SS	-ADPT-	T08-3/8 MPT	2.41	0.87	1.07	0.69	3/8 - 18	IT10 / IT20
	SS	-ADPT-	T08-1/2 MPT	2.96	0.87	1.62	0.92	1/2 - 14	IT10 / IT20
	SS	-ADPT-	T08-3/4 MPT	3.17	0.87	1.83	1.13	3/4 - 14	IT10 / IT20
3/4	SS	-ADPT-	T12-1/2 MPT	3.20	1.17	1.64	0.88	1/2 - 14	IT20
	SS	-ADPT-	T12-3/4 MPT	3.42	1.17	1.86	1.13	3/4 - 14	IT20
	SS	-ADPT-	T12-1 MPT	3.75	1.17	2.18	1.38	1 - 11-1/2	IT20
1	SS	-ADPT-	T16-1/4 MPT	3.20	1.37	1.61	0.56	1/4-18	IT20 / IT45
	SS	-ADPT-	T16-1/2 MPT	3.86	1.53	1.86	0.94	1/2 - 14	IT20 / IT45
	SS	-ADPT-	T16-3/4 MPT	3.40	1.37	1.81	1.13	3/4 - 14	IT20 / IT45
	SS	-ADPT-	T16-1 MPT	3.72	1.37	2.14	1.38	1 - 11-1/2	IT20 / IT45
1 1/4	SS	-ADPT-	T20-1 1/4 MPT	4.74	1.80	2.50	1.75	1-1/4 - 11-1/2	IT45
1 1/2	SS	-ADPT-	T24- 1 1/2 MPT	4.69	2.10	2.57	2.00	1-1/2 - 11-1/2	IT45 / IT50 / IT60

All dimensions are for reference only and are subject to change.  
Consult your authorized Lokring distributor for details and other options.

## Male Connectors (37° Flare Straight Thread)



Tube OD in.	Ordering Information			Dimensions, in.					Loktool
	Fitting Material	Shape	Fitting Size TXX-37ANY	Part Length (Uninstalled) L	E	Take-Out A	Across Wrench Flats F	Thread	Installation Tool Kit
1/4	SS	-ADPT-	T04-37AN0.25	2.04	0.54	1.17	0.50	7/16 - 20 UNF	IT04 / IT10 / IT20
3/8	SS	-ADPT-	T06- 7AN0.375	2.41	0.72	1.15	0.63	9/16 - 18 UNF	IT10 / IT20
1/2	SS	-ADPT-	T08-37AN0.50	2.60	0.87	1.26	0.81	3/4 - 16 UNF	IT10 / IT20
5/8	SS	-ADPT-	T10-37AN0.625	3.03	1.05	1.49	0.94	7/8 - 14 UNF	IT20
3/4	SS	-ADPT-	T12-37AN0.75	3.34	1.17	1.78	1.13	1 1/16 - 12 UN	IT20
7/8	SS	-ADPT-	T14-37AN0.875	3.36	1.19	1.88	1.25	1 3/16 - 12 UN	IT20
1	SS	-ADPT-	T16-37AN1.00	3.52	1.37	1.93	1.38	1 5/16 - 12 UN	IT20 / IT45
1 1/4	SS	-ADPT-	T20-37AN1.25	4.34	1.80	2.31	1.69	1 5/8 - 12 UN	IT45
1 1/2	SS	-ADPT-	T24-37AN1.50	5.12	2.10	3.00	2.00	1 7/8 - 12 UN	IT45 / IT50 / IT60

Threaded end conforms to SAE J514 (37° flare).

All dimensions are for reference only and are subject to change.

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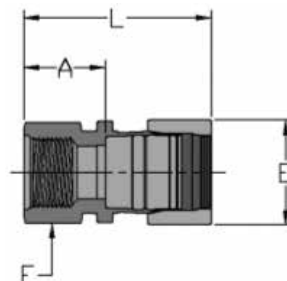
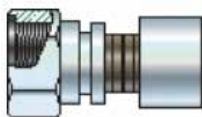


Both stainless and carbon steel Lokring fittings are qualified to the requirements of the ASME B31 pressure piping codes for pressure and fatigue design and materials of construction. Extensive mechanical and environmental testing has demonstrated the mechanical and sealing integrity of the Lokring connection in a wide range of applications and environmental conditions.



Fittings are installed with simple hydraulic tooling and form a leak-tight, metal-to-metal seal without O-rings or other elastomeric seals.

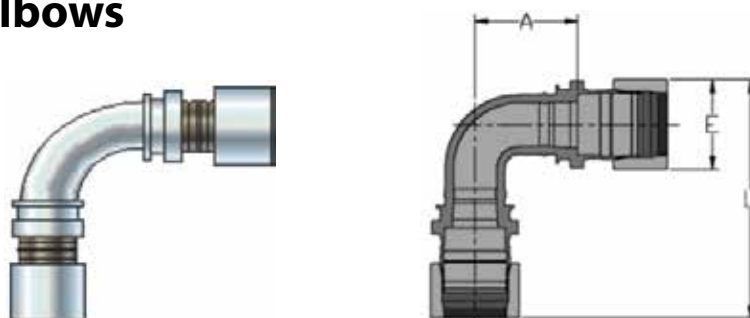
### Female SAE Connectors



Tube OD in.	Ordering Information			Dimensions, in.					Loktool
	Fitting Material	Shape	Fitting Size TXX-SAEFYY	Part Length (Uninstalled) L	E	Take-Out A	Across Wrench Flats F	Thread	Installation Tool Kit
1/4	SS	-ADPT-	T04-SAEF0.25	1.88	0.54	1.01	0.75	7/16 - 20 UNF	IT04 / IT10 / IT20
3/8	SS	-ADPT-	T06-SAEF0.375	2.18	0.72	0.92	0.94	9/16 - 18 UNF	IT10 / IT20
1/2	SS	-ADPT-	T08-SAEF0.50	2.43	0.87	1.09	1.13	3/4 - 16 UNF	IT10 / IT20
5/8	SS	-ADPT-	T10-SAEF0.625	2.78	1.05	1.25	1.25	7/8 - 14 UNF	IT20
3/4	SS	-ADPT-	T12-SAE0.75	2.91	1.17	1.35	1.44	1 1/16 - 12 UN	IT20
7/8	SS	-ADPT-	T14-SAEF0.875	2.76	1.19	1.28	1.44	1 3/16 - 12 UN	IT20
1	SS	-ADPT-	T16-SAEF1.00	3.09	1.37	1.50	1.63	1 5/16 - 12 UN	IT20 / IT45
1 1/4	SS	-ADPT-	T20-SAEF1.25	3.50	1.80	1.46	2.00	1 5/8 - 12UN	IT45
1 1/2	SS	-ADPT-	T24-SAEF1.50	3.78	2.10	1.66	2.25	1 7/8 - 12 UN	IT45 / IT50 / IT60

Threaded end conforms to SAE J1926/1 (O-ring straight thread adapter).  
All dimensions are for reference only and are subject to change.  
Consult your authorized Lokring distributor for details and other options.

## 90° Elbows



Tube OD in.	Ordering Information			Dimensions, in.			Loktool
	Fitting Material	Shape	Fitting Size TXX	Part Length (Uninstalled) L	E	Take-Out A	Installation Tool Kit
1/4	SS	-EL90-	T04	2.03	0.54	3.33	IT04 / IT10 / IT20
3/8	SS	-EL90-	T06	2.82	0.72	1.20	IT10 / IT20
1/2	SS	-EL90-	T08	2.78	0.87	1.01	IT10 / IT20
5/8	SS	-EL90-	T10	3.10	1.05	1.05	IT10 / IT20
3/4	SS	-EL90-	T12	3.56	1.17	1.41	IT20
7/8	SS	-EL90-	T14	3.62	1.19	1.55	IT20
1	SS	-EL90-	T16	4.16	1.37	2.02	IT20
1 1/4	SS	-EL90-	T20	4.69	1.80	1.88	IT45
1 1/2	SS	-EL90-	T24	5.33	2.10	2.29	IT45 / IT50
2	SS	-EL90-	T32	7.64	2.55	3.71	IT50 / IT60
2 1/2	SS	-EL90-	T40	8.62	3.10	3.80	

All dimensions are for reference only and are subject to change.  
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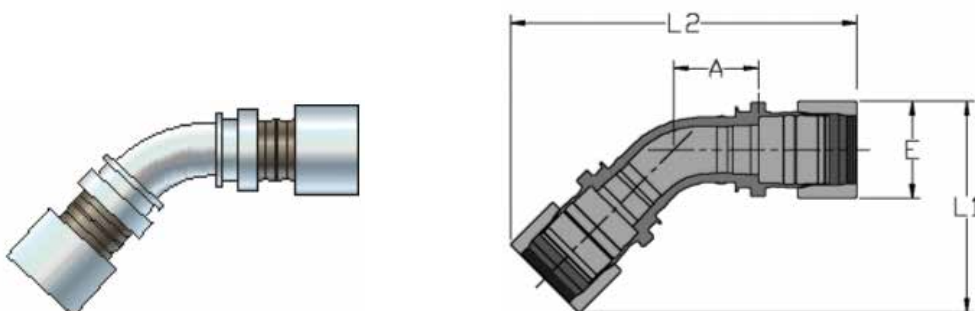
A fitter/helper can routinely field erect, fit-up, and install 50 to 60 Lokring fittings in a single shift. This productivity more than doubles the rate at which welded tubing systems are typically shop fabricated and field erected.





The patented metal-to-metal Lokring seal remains intact when subjected to extreme thermal loads, including fire. Stainless steel Lokring fittings are qualified to the API-607 Rev 4, fire test standards.

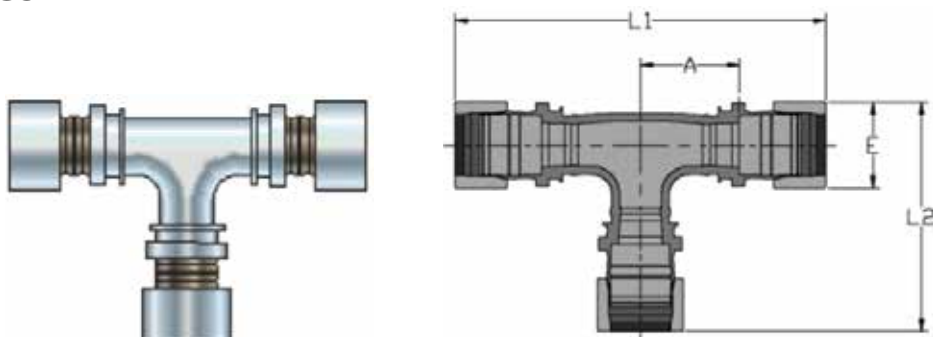
### 45° Elbows



Tube OD in.	Ordering Information			Dimensions, in.				Loktool
	Fitting Material	Shape	Fitting Size TXX	Part Length (Uninstalled) L1	Part Length (Uninstalled) L2	E	Take-Out A	Installation Tool Kit
3/8	SS	-EL45-	T06	2.32	4.40	0.72	1.18	IT10 / IT20
1/2	SS	-EL45-	T08	2.44	4.44	0.87	1.09	IT10 / IT20
5/8	SS	-EL45-	T10	2.60	4.51	1.05	0.90	IT20
3/4	SS	-EL45-	T12	2.82	4.84	1.17	1.04	IT20
7/8	SS	-EL45-	T14	2.88	4.93	1.19	1.17	IT20
1	SS	-EL45-	T16	3.27	5.56	1.37	1.39	IT20 / IT45
1 1/4	SS	-EL45-	T20	3.85	6.24	1.80	1.26	IT45
1 1/2	SS	-EL45-	T24	4.28	6.78	2.10	1.42	IT45 / IT50
2	SS	-EL45-	T32	5.51	8.96	2.55	2.08	IT50 / IT60
2 1/2	SS	-EL45-	T40	6.48	10.38	3.10	2.18	IT60

All dimensions are for reference only and are subject to change.  
Consult your authorized Lokring distributor for details and other options.

## Tees



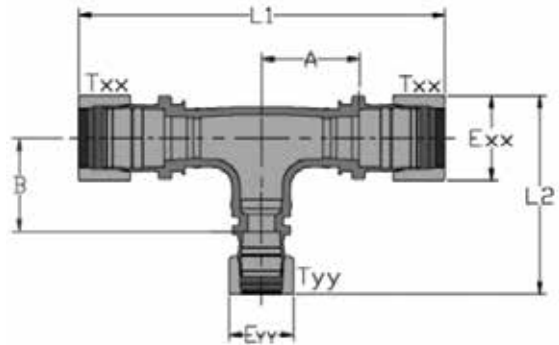
Tube Size OD	Ordering Information			Dimensions, in.				Loktool
	Fitting Material	Shape	Fitting Size TXX	Part Length (Uninstalled) L1	Part Length (Uninstalled) L2	E	Take-Out A	Standard Tool Installation
1/4	SS	-TEE-	T04	—	—	—	*	IT04 / IT10 / IT20
3/8	SS	-TEE-	T06	6.08	3.40	0.72	1.15	IT10 / IT20
1/2	SS	-TEE-	T08	4.60	2.73	0.87	0.96	IT10 / IT20
5/8	SS	-TEE-	T10	5.16	3.10	1.05	1.05	IT10 / IT20
3/4	SS	-TEE-	T12	5.95	3.56	1.17	1.41	IT20
7/8	SS	-TEE-	T14	5.57	3.38	1.19	1.31	IT20
1	SS	-TEE-	T16	5.78	3.57	1.37	1.30	IT20
1 1/4	SS	-TEE-	T20	7.58	4.69	1.80	1.88	IT45
1 1/2	SS	-TEE-	T24	8.58	5.34	2.10	2.29	IT45 / IT50
2	SS	-TEE-	T32	11.72	7.14	2.55	3.21	IT50 / IT60
2 1/2	SS	-TEE-	T40	13.20	8.15	3.10	3.30	IT60

All dimensions are for reference only and are subject to change.  
Consult your authorized Lokring distributor for details and other options.



Used extensively in the building and repair of ships, Lokring tube fittings are used in hydraulic, fire suppression and other instrumentation application.

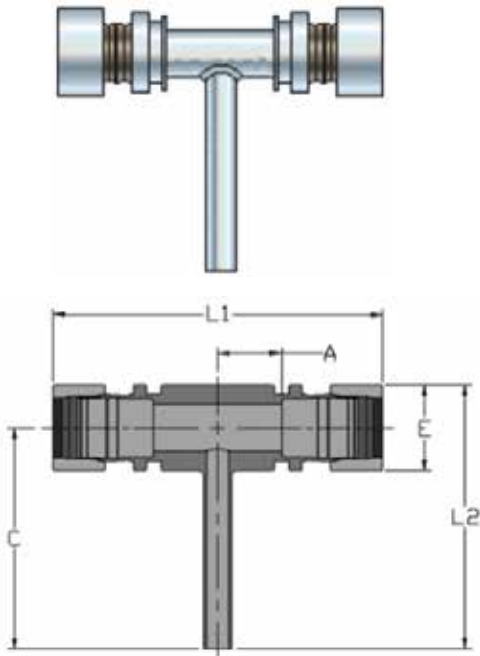
## Reducing Branch Tees



Tube OD in.	Ordering Information			Dimensions, in.						Loktool
	Fitting Material	Shape	Fitting Size Txx- Tyy	Part Length (Uninstalled) L1	Part Length (Uninstalled) L2	Exx	Eyy	Take- Out A	Take- Out B	Installation Tool Kit
3/8 to 1/4	SS	- RTEE -	T06-T04	4.82	2.65	0.72	0.54	1.15	1.42	IT10 / IT20
1/2 to 3/8	SS	- RTEE -	T08-T06	4.60	2.84	0.87	0.72	0.96	1.15	IT10 / IT20
5/8 to 1/2	SS	- RTEE -	T10-T08	5.16	3.10	1.05	0.87	1.05	1.24	IT10 / IT20
3/4 to 3/8	SS	- RTEE -	T12-T06	5.47	3.40	1.17	0.72	1.18	1.50	IT10 / IT20
3/4 to 1/2	SS	- RTEE -	T12-T08	5.95	3.70	1.17	0.87	1.41	1.73	IT10 / IT20
3/4 to 5/8	SS	- RTEE -	T12-T10	5.47	3.45	1.17	1.05	1.17	1.34	IT20
7/8 to 3/4	SS	- RTEE -	T14-T12	5.57	3.33	1.19	1.17	1.31	1.17	IT20
1 to 3/8	SS	- RTEE -	T16-T06	5.78	3.50	1.37	0.72	1.30	1.56	IT20
1 to 1/2	SS	- RTEE -	T16-T08	5.78	3.56	1.37	0.87	1.30	1.53	IT20
1 to 3/4	SS	- RTEE -	T16-T12	5.78	3.42	1.37	1.17	1.30	1.17	IT20
1 to 7/8	SS	- RTEE -	T16-T14	5.78	3.47	1.37	1.19	1.30	1.31	IT20
1 1/4 to 1	SS	- RTEE -	T20-T16	7.83	4.50	1.80	1.37	1.88	2.02	IT45
1 1/2 to 1	SS	- RTEE -	T24-T16	8.83	5.58	2.10	1.37	2.29	2.94	IT45
1 1/2 to 1 1/4	SS	- RTEE -	T24-T20	8.83	5.38	2.10	1.80	2.29	2.29	IT45
2 to 1	SS	- RTEE -	T32-T16	11.72	5.38	2.55	1.37	3.26	2.52	IT45 & IT50
2 to 1 1/2	SS	- RTEE -	T32-T24	11.72	6.62	2.55	2.10	3.21	3.22	IT50 / IT60

All dimensions are for reference only and are subject to change.  
Consult your authorized Lokring distributor for details and other options.

## Drop Tees



Drop Designation	Drop Configuration
001	3/8 × 0.035 in. tube
002	3/8 in. Swagelok® tube fitting
003	1/2 in. × 0.049 tube
005	3/8 in. CPI™ fitting
008	1/2 in. CPI fitting
009	1/2 in. Swagelok tube fitting
011	5/8 in. × 0.065 tube
012	3/4 in. × 0.049 tube
013	1/2 in. female NPT
026	12 mm tube

Tube OD in.	Ordering Information			Dimensions, in.					Loktool
	Fitting Material	Shape	Fitting Size Txx-0yy	Part Length (Uninstalled) L1	Part Length (Uninstalled) L2	E	Take-Out A	Take-Out C	Installation Tool Kit
1/2	SS	-TEE-	T08-001	4.34	3.69	0.87	0.83	3.26	IT10 / IT20
5/8	SS	-TEE-	T10-001	4.84	3.85	1.05	0.89	3.33	IT20
3/4	SS	-TEE-	T12-001	4.91	3.98	1.17	0.89	3.40	IT20
7/8	SS	-TEE-	T14-001	4.66	4.02	1.19	0.85	3.43	IT20
1	SS	-TEE-	T16-001	4.97	4.22	1.37	0.90	3.54	IT20 / IT45
1 1/4	SS	-TEE-	T20-001	5.94	4.60	1.80	0.94	3.70	IT45
1 1/2	SS	-TEE-	T24-001	6.15	4.91	2.10	0.96	3.86	IT45 / IT50 / IT60
2	SS	-TEE-	T32-001	7.26	5.36	2.55	0.98	4.08	IT50 / IT60
2 1/2	SS	-TEE-	T40-001	9.73	5.91	3.10	1.60	4.36	IT60

Drop tees are also available in reducing form.

All dimensions are for reference only and are subject to change.

Consult your authorized Lokring distributor for details and other options.

### OTHER PRODUCTS OFFERED

In addition to the fittings listed in this catalog, Lokring offers, as standard, additional stainless steel (SS) tube fittings including:

- Metric fittings
- SAE fittings
- Double containment couplings
- Tube-to-pipe adapters
- Male and female pipe thread connectors
- Socket weld connectors
- Tube and pipe stub connectors
- Ferrule-type tube fitting connectors
- ASME flange connectors
- CIP connectors
- 45° tees
- Unions, union threads, union tails

Specials may exist and can be created to your specifications. Contact your authorized Lokring distributor for details.



### ADDITIONAL FITTING LINES



- Medical gas brass fittings
- Bulkhead penetrators for pipe and tube
- Carbon steel (MAS-3000) pipe fittings
- Marine 90/10 copper nickel (CN-200) pipe fittings
- Marine 70/30 copper nickel (CN-700) pipe and tube fittings
- Marine 70/30 copper nickel (CN-3300) tube fittings
- Marine stainless steel (SS-3300) pipe fittings
- Marine stainless steel (SS-3300) tube fittings
- Railroad carbon steel (RR) pipe fittings
- Stainless steel (SS40) pipe fittings
- 4130 alloy steel process fittings



## INSTALLATION TOOLS



- Lokring tools come in several sizes to accommodate fittings of different sizes.
- To install a Lokring fitting, a Loktool tool head with inserts, multipurpose gage, hydraulic pump, and hydraulic hose are needed.

Tools, inserts and gages come packaged either as:

- Individual tool kits designed for installing one size of fittings only (ITK Series)

**OR**

- Multiple purpose tool kits designed for installing multiple size fittings with one tool (MTK Series).

**Contact your authorized Lokring distributor for ordering details.**



Lokring Technology is dedicated to the relentless pursuit of perfection in understanding and satisfying the industry's fluid and gas connection requirements. Using state-of-the-art computer aided technology, Lokring designs and produces the most advanced fluid and gas transfer connectors on the market today.

## HYDRAULIC PUMPS

- All Loktool system components (installation tool, hose, pump, hydraulic couplers) are rated at 10 000 psi (689 bar) max operating pressure.
- Any pumps or hose can be used with any Lokring installation tools.

***Fast, Simple, Portable Installation – 1/4 to 2 1/2 in. joints fully made in minutes!!***



- **Manual Pump (PUMP-P-19-QD):**  
Manually operated, designed for low-volume installations (or emergency repairs) where there is limited or no access to electricity or compressed air, or for atmospheres which need to be fire-safe.



- **Manual Hand Pump (Hand Pump):**  
Manually operated, designed for low-volume installations where space is critical. No electricity or compressed air is needed.



- **Pneumatic Pump (PUMP-TURBO-AIR-QD):**  
Foot-operated, lightweight, pneumatic pump operates off shop air (80 psi [5.6 bar] minimum). Fast and suitable for installation of Lokring fittings in atmospheres which need to be fire-safe.



- **Electric Pump (PUMP-OTC-QTRHRSE-ELEC):**  
120 V(ac) foot-operated, high-speed pump, best selection for high volume installations of larger size fittings.



- **Hydraulic Hose Assembly (HH15-QD):**  
15-ft hose for all fitting sizes, pumps, and tool heads. Two or more hoses can be connected together to form longer lengths.

## HOW TO SELECT TOOLING

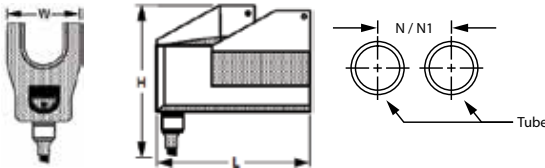
Tool Selection for Stainless Steel (SS40 and SS-3000) Tube Fittings											
Tool	Fitting Size, in.										
	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	2	2 1/2
IT04											
IT10											
IT20											
IT45											
IT50											
IT60											

The shaded cells show which size tool can install which size fitting.

Specify the fitting size and material along with which tool size is desired in order to receive the proper setup for installing Lokring fittings.

Tool rentals available through your authorized Lokring distributor.

## TOOLING DIMENSIONS



Stainless Steel Tube Fittings							
Dimensions, in.							
Tube OD (Fitting Size)	Tube OD	Loktool Size	W Tool Width	L Tool Length	H Tool Height	Minimum Spacing Center to Center N	Minimum Spacing Center to Center, with fittings adjacent to each other N1
1/4 (T04)	0.25	IT04	1.21	2.98	1.75	0.85	1.00
1/4 (T04)	0.25	IT10	1.67	5.01	3.21	1.09	1.23
3/8 (T06)	0.375	IT10	1.67	5.01	3.21	1.15	1.32
3/8 (T06)	0.375	IT20	2.36	5.00	4.95	1.49	1.67
1/2 (T08)	0.50	IT10	1.67	5.01	3.21	1.21	1.40
1/2 (T08)	0.50	IT20	2.36	5.00	4.95	1.56	1.74
5/8 (T10)	0.625	IT10	1.67	5.01	3.21	1.27	1.49
5/8 (T10)	0.625	IT20	2.36	5.00	4.95	1.62	1.83
3/4 (T12)	0.75	IT20	2.36	5.00	4.95	1.68	1.89
7/8 (T14)	0.875	IT20	2.36	5.00	4.95	1.74	1.91
1 (T16)	1.00	IT20	2.36	5.00	4.95	1.81	1.99
1 1/4 (T20)	1.25	IT45	3.91	6.38	6.66	2.71	2.99
1 1/2 (T24)	1.50	IT45	3.91	6.38	6.66	2.83	3.14
1 1/2 (T24)	1.50	IT50	4.21	7.29	7.08	2.98	3.29
2 (T32)	2.00	IT50	4.21	7.29	7.08	3.23	3.51
2 (T32)	2.00	IT60	5.01	8.59	7.59	3.63	3.91
2 1/2 (T40)	2.50	IT60	5.01	8.59	7.59	3.88	4.21

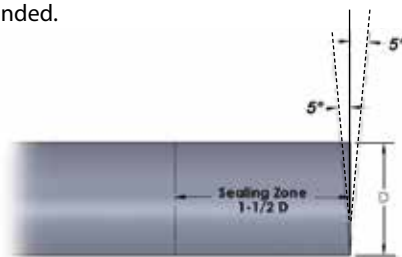
L and H dimensions include quick-connect.

### INSTALLATION INSTRUCTIONS

#### INSTALLATION PROCEDURE

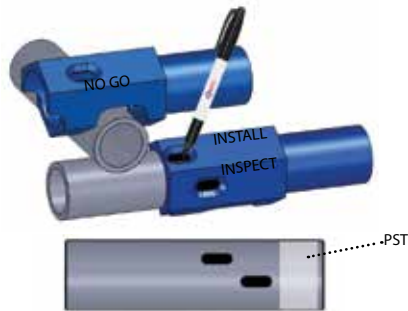
Note: Refer to Lokring procedure LP-105 for detailed installation instructions.

**STEP 1:** Cut tube to within 5° of square. Sand the Sealing Zone with 120 grit aluminum oxide abrasive cloth in circumferential direction to clean surface and remove longitudinal scratches, flat spots, paint, lacquer or other mill finishes, corrosion, grease, sand, and grit. If deep scratches, pits or other surface incongruities persist; use of 60 grit aluminum oxide abrasive cloth followed by 120 grit cloth is recommended.



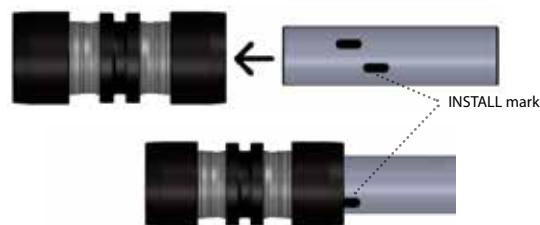
**STEP 2:** Using Multipurpose Gage, verify that tube OD is correctly sized, and mark tube ends as shown.

**Special Note:** A thin coat of Loctite® 567™ PST thread sealant with PTFE may be applied as an aid to seal where tube surface is poor and is suggested in applications where the tube wall thickness to OD ratio is less than 0.07. The sealant should be applied from the end of the tube up to the first inspection mark.



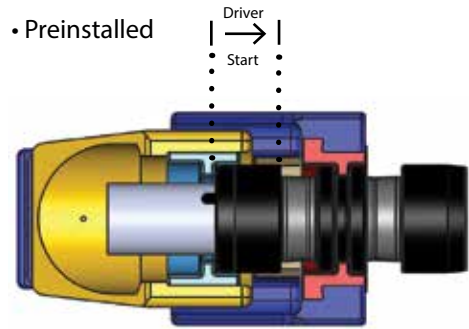
**STEP 3:** Select and assemble required Loktool system components. Inspect and cycle tool to assure proper function.

**STEP 4:** Position fitting on "INSTALL" mark; fully engage and actuate tool.

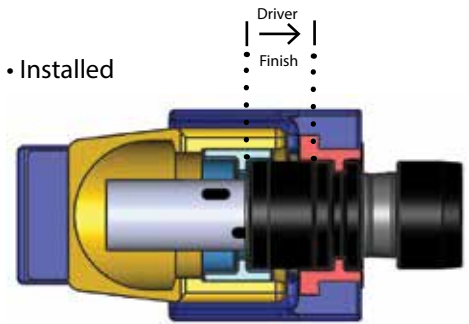


#### Forward Install

• Preinstalled

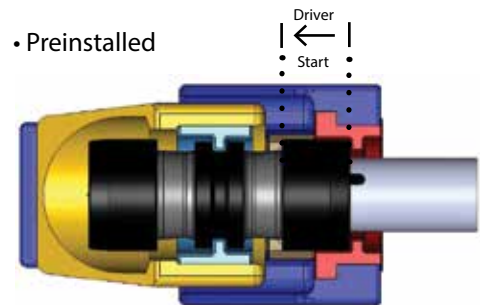


• Installed

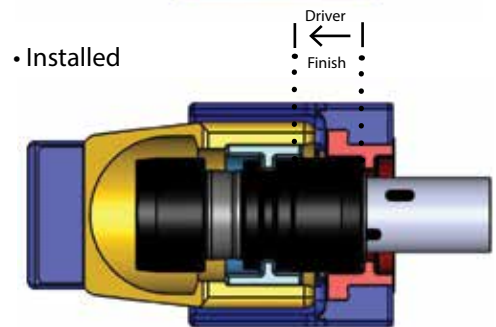


#### Reverse Install

• Preinstalled



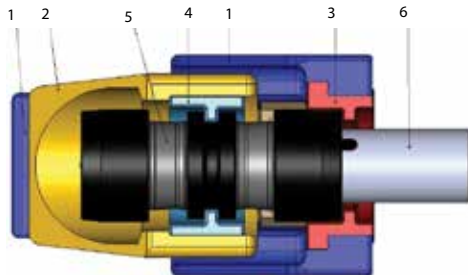
• Installed



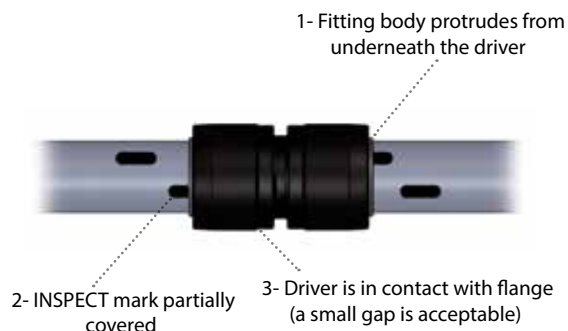
Tool colors used for illustration purposes only.

Item	Part	Description <sup>A</sup>	Part Number
1	Loktool body	IT45-BDY-MACH	3080035
2	Loktool jaw	IT45-JAW-CST-MACH	3080036
3	Body insert	BI45-MAS/SS4-P16-FR	7080146
4	Jaw insert	JI45-MAS/SS4-P16-FR	7080147
5	Coupling	MAS-3000-CPL-P16	9040069
6	Tube	1 in. tube	—

A. Descriptions listed are specific to IT45 tool only. Contact your authorized distributor for information on other tools.



**STEP 5:** Carry out visual checks below to verify successful installation.



Other parts not listed in this catalog may be available. As well, some parts listed here may be subject to availability at time of order. Consult your authorized Lokring distributor for details.

## To Order

Contact your Lokring distributor for more information. See [www.lokring.com](http://www.lokring.com) for a complete listing of distributors

## Dimensions

All dimensions are reference only and subject to change.

## CAD Templates

CAD files AutoCAD-DWG, AutoCAD-DXF and Intergraph PDS are available in 2D and 3D for most configurations. Contact your authorized Lokring distributor for details or see [www.lokring.com](http://www.lokring.com).

## Warranty Information

Lokring and its authorized distributors warrant to the purchaser of Lokring components from them that these components shall be free from defects in material and workmanship under normal use and service for the life of the product.

The purchaser's remedies shall be limited to replacement of any Lokring components that fail through a defect in material or workmanship.

**IN NO EVENT SHALL LOKRING, OR ITS AUTHORIZED DISTRIBUTORS, BE LIABLE FOR ANY OTHER DAMAGES (WHETHER DIRECT, INDIRECT, FORSEEABLE, CONSEQUENTIAL, OR INCIDENTAL) SUFFERED BY THE PURCHASER OR ANYONE ELSE ARISING OUT OF THE USE OF LOKRING PRODUCTS. THIS EXPRESS WARRANTY DISCLAIMS ALL OTHER WARRANTIES, GUARANTEES, AND REPRESENTATIONS, EXPRESS OR IMPLIED.**

## Safe Selection

System design and system safety are the ultimate responsibilities of the end-user. Consideration to system function, compatibility, product ratings, as well as other factors, must be given to ensure proper product selection and function. All information in this catalog has been compiled with regard to accuracy; however, the most up-to-date information should be verified before use of the product. Lokring reserves the right to change product dimensions, ratings, or other information.



# WHEN YOU NEED A BETTER CONNECTION



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March 2015, Rev 6  
9070061