

FastSeal Assembly Instructions & Troubleshooting

FastSeal assembly consists of the following steps:

1. Prep - cutting, deburring and cleaning of the tube
2. Pre-setting of the bite ring
3. Pre-set inspection
4. Final installation

1. Prep

To start, please select tubing material, OD, wall thickness and pressure using Table 1.

Part Number	Tube O.D.	Low Carbon Steel Tube Walls (in) ¹								
		0.028	0.035	0.049	0.058	0.065	0.083	0.095	0.109	0.120
4 TLFA-S	1/4	2,750	3,350	5,150	6,200	7,000	-	-	-	-
6 TLFA-S	3/8	-	2,250	3,300	3,950	4,500	5,900	6,800	7,850	-
8 TLFA-S	1/2	-	-	2,400	2,900	3,250	4,300	4,950	7,750	-
12 TLFA-S	3/4	-	-	-	-	2,100	2,750	3,150	3,700	4,100

Part Number	Tube O.D.	304/316 Stainless Steel Tube Walls (in) ¹								
		0.028	0.035	0.049	0.058	0.065	0.083	0.095	0.109	0.120
4 TLFA-SS	1/4	4,650	5,900	8,600	10,350	11,700	-	-	-	-
6 TLFA-SS	3/8	-	3,800	5,500	6,500	7,500	9,850	11,400	11,400	-
8 TLFA-SS	1/2	-	-	4,000	4,800	5,450	7,150	7,400	7,400	7,400

Table 1 - 1) Tube walls shown are recommended for Fastseal. Pressure rating shown MAY be de-rated, verify application pressure with listed tube wall pressure in table before use.

For proper tube end preparation see the [Assembly and Installation Section Parker's Catalog 4300](#) or watch our [techConnect Tube End Prep Video](#).

2. Pre-set

FastSeal connections require pre-setting the bite ring that can be accomplished by hand with a wrench and is best done with the assistance of a fixed vice and assembly mandrel.



CRITICAL STEP:

A heavy deburr, per Figure 1 of at least 1 mm on the tube is recommended to prevent damage to the internal O-ring. Ensure tube is clean and all chips and debris have been removed from the tube. The deburr dimension can be checked visually (roughly the thickness of a coin) or with the depth gauge on the back end of the marking tool.

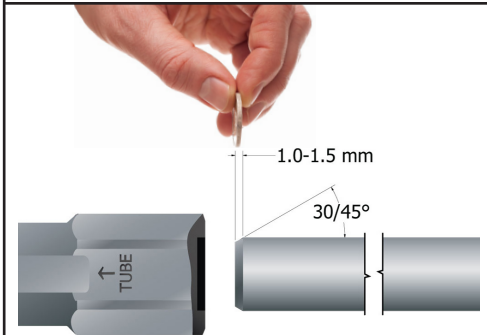


Figure 1: Recommended deburr



Step 1 – Place marking tool on tube until it bottoms out. Mark around OD as shown. If marking tool is not available, use insertion depths shown in Table 2.



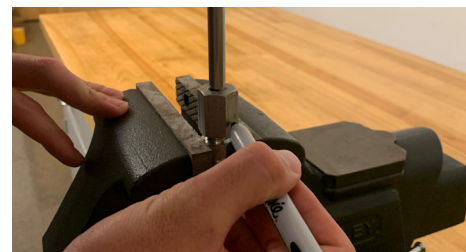
Step 2 – Lightly thread FastSeal nut onto fitting body or mandrel hand tight. This is best completed with the assistance of a fixed vice if available.



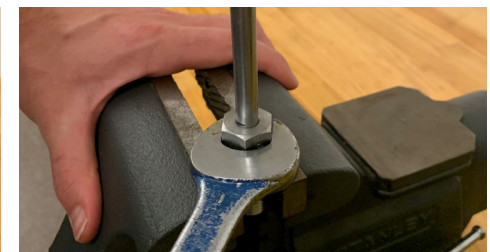
Step 3 – Lubricate the end of the tube with hydraulic oil to help with insertion in the next step.



Step 4 – Insert the tube into the **FastSeal** nut to the tube depth mark. Twist and push tube to aid the insertion. You will feel the tube pop past the O-ring and bottom out.



Step 5 – Now tighten the nut finger tight and then mark the nut and body as shown to assist with the FFFT preset.



Step 6 – Tighten the nut to specified FFFT of 7-8 flats. You should feel a perceptible torque rise around 7 flats.

For SS nuts, if torque rise is too high before reaching 7 flats, loosen the nut, lubricate threads with anti-seize and retighten until reaching the 7-8 FFFT.

Tube OD	Depth - in (mm)
1/4"	0.62 (16)
3/8"	0.66 (17)
1/2"	0.71 (18)
3/4"	0.79 (20)

Table 2: Tube insertion depths when not using the marking tool

3. Pre-set Inspection

The gap closure is an important visual inspection to make after presetting the **FastSeal** nut. A “closed gap” can vary from 0-0.01” (0-0.25mm). This small gap may appear due to spring back of the material and will close when the parts are tightened at final assembly.



Loosen and back off nut to inspect the sleeve gap to ensure it has closed (see Figure 2).

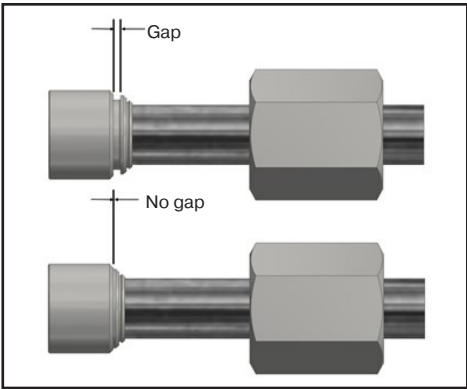


Figure 2: Gap closure inspection reference

4. Installation

Once the gap is confirmed closed, assemble tube to fitting body and torque to the values shown in Table 3.

Tube OD	Final Assembly Torque in-lb (Nm) + 10%
1/4"	220 (25)
3/8"	360 (40)
1/2"	480 (55)
3/4"	1020 (115)

Table 3: Final Assembly Torque

Troubleshooting

Unsure if tube is bottomed	Use tube marking tool or insertion depths in Table 2 to mark tube prior to insertion and to identify if you have met appropriate depth when tube is inserted into nut.
Unable or difficult to push tube into nut	Tube may be oversized or oval. Use tube making gauge to check for correct size and ovality. If tube does not fit in gauge do not use, select another tube and use gauge to verify the size and ovality before using. OR Ensure nut was not tightened more than finger tight onto fitting or mandrel body before inserting tube. Do not wrench tighten nut before tube is fully inserted this may cause bite ring to begin to preset, interfering with tube insertion.
Tube will not push to marked depth on tube	Avoid O-ring damage, DO NOT FORCE TUBE . Remove tube and ensure tube is properly deburred to at least 0.040in (1.0 mm) and is cleaned thoroughly. Inspect the tube to ensure it is round, within dimensional specs (should easily fit in tube marking gauge) and has no burrs. Ensure a small amount of oil is applied to end of tube before inserting, use slight twist when inserting. DO NOT FORCE, DO NOT USE A HAMMER.
Gap not closed after presetting	If gap of more than 0.01in (0.25mm) is detected, reassemble to last marked position, tighten nut ½ additional flat, inspect gap for closure.
Leaks at low pressure	Internal O-ring may be damaged. To replace seal, please contact division for assistance.
Leaks at high pressure	Inspect the ferrule and sleeve to confirm there was no gap after presetting, tighten until gap is 0-01". Internal O-ring may be damaged, to replace contact Division for assistance. Ensure connection was tightened to proper Seal-Lok assembly torque per table 3. Confirm ORFS seal is not damaged or missing.
Tube moves in nut after presetting or final assembly	Preset was not done correctly. DO NOT USE CONNECTION . Remake tube assembly.
Tube pulls out of nut after preset	Preset was not done correctly, tube too hard. DO NOT USE CONNECTION . Check tube material, wall thickness and size. FastSeal Carbon Steel nuts are intended for use only with low carbon steel seamless or DOM tube intended for hydraulic applications (reference SAE J524/J525). FastSeal Stainless Steel nuts are intended for use only with 304 or 316 stainless steel seamless or DOM tube (reference SAE J524/J525).
Unsure what tubes to use	FastSeal Carbon Steel nuts are intended for use only with low carbon steel seamless or DOM tube intended for hydraulic applications (reference SAE J524/J525). FastSeal Stainless Steel nuts are intended for use only with 304 or 316 stainless steel seamless or DOM tube (reference SAE J524/J525). Use of the correct tube wall is critical to meet performance criteria. Recommended tube walls and pressure can be found in Table 1. Never mix carbon and stainless steel components and tubing.

WARNING

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