

Standard Operating Procedure PFA Flaretek Tube Fitting Assembly	SOP No. 5.036
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- 1 Purpose
 - 1.1 To establish a standard procedure for flaring tube ends using PFA materials.
- 2 Scope
 - 2.1 This procedure applies to high purity piping installations when minimum dead volumes are required, for ultrapure fluid applications.
- 3 Responsibility
 - 3.1 The Therma general foreman (GF) manages the fitters and verifies compliance with this procedure.
 - 3.2 No certification necessary.
- 4 Procedures
 - 4.1 Cut tube end evenly using the appropriate size tube cutter.
 - 4.2 Insert the cut end of the tube through the non-threaded side of the nut.
 - 4.3 Use one of the following procedures to heat the end of the tube.
 - 4.3.1 Using a hot air gun on high setting, hold the PFA tube approximately ¼" to ¾" above the heater. Rotate the tube slowly until a fine whitish line appears around the tube or for the time specified in Table 1 page 3.
 - 4.3.2 Using the appropriate size infrared heating tool, rotate the PFA tube slowly, approximately ½ to 1 revolution per minute while moving the tube slowly (in and out) through the heating ring. Heat the tube until just soft enough to fit over the flaring tool. If it is overheated, cut out affected area and start over.
 - 4.4 Remove the PFA tube from the heat and immediately push the tube end over the appropriate size flaring tool, until the end of the tube reaches the tube stop.
 - 4.5 Hold the tube and flaring tool together for the times specified in Table 1.

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- 4.6 Allow the tube to continue cooling on the tool for an additional 2 to 3 minutes.
- 4.7 Remove the flaring tool from the tube end.
- 4.8 Push the flared tube end over the fitting body until the end of the fitting contacts the smaller tube diameter.
- 4.9 Tighten the nut onto the fitting body until hand-tight.
- 5 Review and Approval
 - 5.1 N/A

Table 1

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Fitting size	1/4"	3/8"	1/2"	3/4"	1"
Heating time for PFA (Sec.)					
Air Gun	15	25	25	25	25
Infrared Heater	40	50	50	50	60
Hold tube on flare tool (Sec.)	20	20	20	20	25
Total cooling time (Min.)	2	2	3	3	3

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Document Approval

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3/06/12
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3-6-12
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Quality Assurance Manager

3-06-12
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