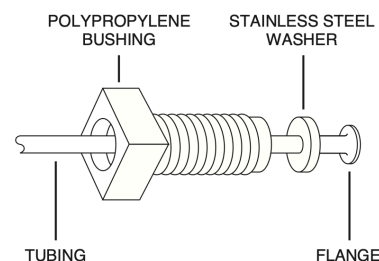


CHEMINERT® CONNECTING ACCESSORIES

Technical Note 502

The basic component of the Cheminert® system is the tube end fitting, consisting of a threaded polypropylene bushing and one stainless steel washer. Tubing is inserted through the bushing; the end of the tubing is then flanged at right angles with the flanging tool described in the section titled Operation of the Flanging Tool on the next page.



FITTINGS

NOTE: Finger-tightness is all that is necessary to make a leak-free seal, even at 500 psi. However, for long term reliability it is recommended that fittings be given an additional 1/8 turn with a wrench.

To connect a tube to an adapter, the tube end fitting and the adapter are screwed into a coupling. The flange seals against the flat surface of the adapter.

To connect a tube to a connector, such as a tee or cross, the tube end fitting is screwed directly into the port of the connector. The flange seals against the flat bottom of the port. These joints can be disassembled and reassembled hundreds of times.

The maximum recommended operating temperature is 50°C. The fittings may be autoclaved, after which they require tightening. For optimum performance, it is recommended that all tubing and fittings be periodically dismantled and thoroughly cleaned.

FLANGING TOOL

The Cheminert flanging tool forms the end of the tube into a right-angle flange when a basic Cheminert fitting is assembled. The tube, with threaded polypropylene bushing and stainless steel washer on it, is pressed against the heated flanging tip, spreading into a right-angle flange which makes the seal when the fitting is screwed finger-tight.

Figure 1 on the next page illustrates the various parts of the flanging tool. The two gauge holes are used to establish the exact tube length needed to provide the required mass for the flange. The flanging tip is heated by an 11 watt electrical resistance element inside the housing. The tube holder, which has two jaws with threaded grooves, holds the tubing securely during the flanging operation.

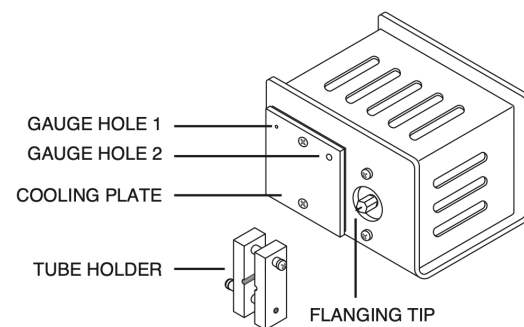
Caution: The flanging tip gets very hot. Use extreme care to avoid touching the tip. Severe burns could result.

OPERATION OF THE FLANGING TOOL

Using 1/16" or 1/8" OD tubing

ID OF TUBE	TIP DIAMETER	PRODUCT NUMBER	GAUGE HOLE
0.006" TO 0.011"	0.012"	CFT-TXC	1
0.012" TO 0.030"	0.028"	CFT-TC	1
0.031" TO 0.040"	0.040"	CFT-TM	1
0.041" TO 0.064"	0.060"	CFT-TL	2
0.065" TO 0.085"	0.080"	CFT-TXL	2

FIGURE 1: Flanging tool



1. Use the chart above to select the proper flanging tip and gauge hole for the size of the tube being flanged. The flanging tips unscrew from the front.
2. With the proper tip installed, connect the flanging tool power cord to the proper AC supply. Allow five minutes warm-up time.
NOTE: The flanging tool is not equipped with an ON/OFF switch. When the unit is plugged in, it will begin to heat immediately.
3. Using the razor blade supplied, squarely cut the end of the PTFE tubing, being careful not to crush it.
4. Slip the threaded polypropylene bushing onto the tube head first, checking for correct size and color. The bushing must be oriented so that the threaded end is closest to the end of the tube. Slide the bushing away from the tube end.
5. Insert the tube between the jaws of the tube holder. Allow the tube to protrude from the tube holder about 1/2".
6. Slip the correct size stainless steel washer onto the end of the tube which projects from the tube holder.
7. Insert the end of the tube into the proper gauge hole.
8. With light pressure on the tube holder, slide it along the tubing until the washer is pushed flush against the cooling plate surface.
9. Grasp the tube holder firmly and withdraw the tubing from the gauge hole.
10. While holding the flanging tool housing with your free hand, position the end of the tube close to the heated flanging tip. Keep the tube coaxial with the projection of the flanging tip and perpendicular to the front face of the flanging tool housing.
11. Touch the tube end to the tip so that its projection enters the bore of the tube. As soon as the tube is positioned on the projection, gently push the tube axially toward the tip so that it flares out and flattens against the tip. Do not wait too long between positioning and pressing the tube, since it will quickly overheat and ruin the flange.
12. Hold the tube against the tip for 2 - 4 seconds.
13. Withdraw the tube end from the tip and push the flanged end squarely against the cooling plate. Hold it there for at least two seconds.

NOTE: Actual times for steps 12 and 13 must be determined by the user, since the flange is a product of pressure + mass + heat + time. Pressure varies with each user and the mass of the flange varies with different tube sizes, so heat is the only controlled factor. By establishing standard pressures and times which the operator can vary with the tube size, flanges can be made easily and consistently.

14. The flange has now been made. Examine it to see that it is approximately 1/8" diameter and approximately concentric with the tubing bore.