

Flanging Tool Kit Instruction Sheet

Congratulations! You have purchased the Flanging Tool Kit (P/N 88821) from Hamilton. We combine the highest quality materials with skilled craftsmanship, ensuring the highest possible performance level of every precision fluid device we manufacture. With proper care and handling, the Flanging Tool Kit will provide years of use.

The Hamilton Flanging Tool Kit was designed to make precise flanges on 12, 18, and 22 AWG FEP (Fluorinated Ethylene-Propylene) tubing. The Flanging Tool Kit may not be suitable for other types of tubing or tubing with different outer or inner diameters. For best results, use only Hamilton premium quality CTFE (chlorotrifluoroethylene) fittings, FEP tubing, and washers.

Tools Needed

In addition to the Flanging Tool Kit, you will need a clean working surface, 120 VAC power source, a sharp razor blade, a suitable container of cool tap water approximately 1" deep and an adequate supply of tubing, fittings and washers of the sizes required.

Installation of the Flanging Tip

To install a flanging tip onto the flanging tool, follow these steps:

1. Prior to heating, unscrew the metal cap on the end of the flanging tool (Figure 1).
2. Select the flanging tip for the size tubing you have selected (12, 18, or 22 gauge) and insert it into the flanging tool.
3. Replace the metal cap over the flanging tip and screw firmly into place.

Heating the Flanging Tool

To heat the flanging tool, simply plug it into a grounded 120 VAC wall outlet and allow the unit to heat for about 15 minutes.

CAUTION: The flanging tool will reach a temperature of about 750°F at the tip. Do not touch the tip or allow it to come into contact with other materials that may be on the bench top.

To Flange FEP Tubing

1. Select the length of tubing you intend to flange. With a sharp razor blade cut the end to produce a clean right angle cut.
2. Place the cut end of the tubing into the tubing holder, allowing for a length of approximately 1.5 times the outside diameter to protrude (Figure 2).
3. Firmly pinch the tubing holder between the fingers with one hand and with the other, engage the heating iron tip with a slight orbital movement at first, and then squarely into the tubing (Figure 3).

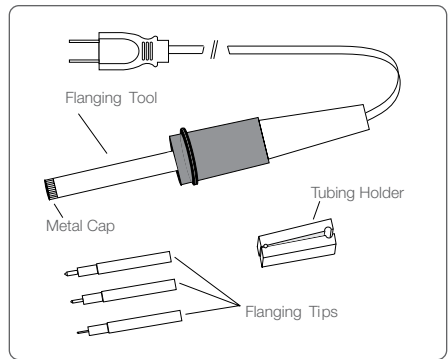


Figure 1. Installation of the flanging tip.

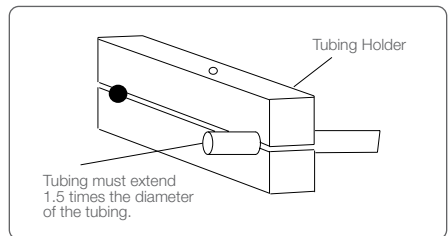


Figure 2. Placement of tubing using cut end.

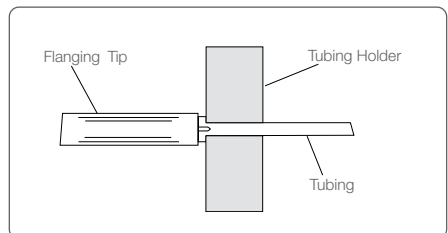


Figure 3. Pinching method to engage flanging tip.

4. Remove the heating iron and tip from the tubing. As the flange cools, it will form the shape of a funnel (Figure 4).
5. Again holding the tube holder firmly, push the heating iron tip into the tubing and firmly butt into the tube holder. Immediately quench, with the heated tip still in place, into a container of cool water.
6. While the parts are still in the water, remove the heating iron tip from the tubing. Then remove the tubing.
7. Your finished flange should look like Figure 5.

For single flanged tube assemblies, install a back-up washer and fitting onto the freshly formed flange (Figure 6). Cut the free tubing end to the desired length.

For double flanged tubing assemblies, first install the back-up washer and fitting to the freshly formed flange. Cut the tubing to the finished length allowing for the flange. Next, install the fitting and back-up washer for the second end of tubing. Proceed to flange the tube as previously instructed. Your finished product should look like Figure 7.

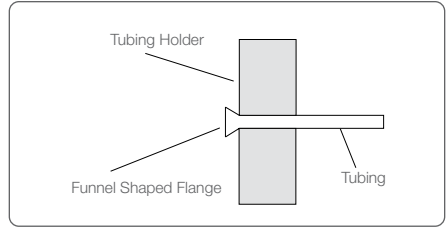


Figure 4. Funnel shape formation.

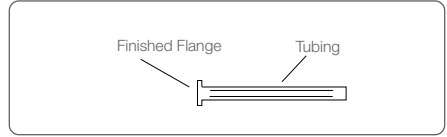


Figure 5. Finished flange.

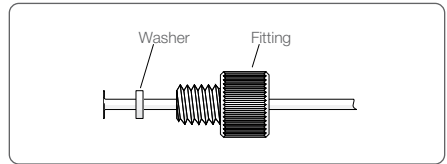


Figure 6. Single flanged tubing example.

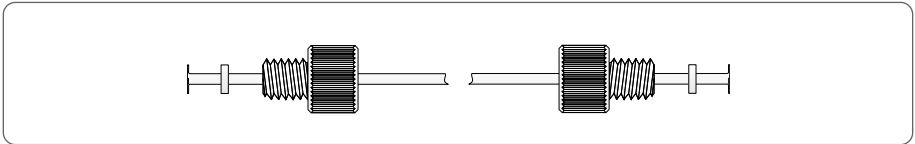


Figure 7. Double flanged tubing example.

Parts and Accessories for the Flanging Tool

Two types of fittings are listed below: Hamilton Valve (HV) and Industry Standard (IS). The HV is used specifically when direct thread engagement into a Hamilton Valve is required. The IS is used in applications for general laboratory use and is not compatible with Hamilton Valves.

FEB Tubing

Description	P/N
22 AWG FEP Tubing, pkg./10"	88906
18 AWG FEP Tubing, pkg./10"	88907
12 AWG FEP Tubing, pkg./10"	88908
*22 AWG FEP Tubing, over 10"	20939
*18 AWG FEP Tubing, over 10"	20937
*12 AWG FEP Tubing, over 10"	20938

**Specify length when ordering.*

CTFE Tube Fittings and Washers HV

Description	P/N
Fittings and Washers for 22 or 18 AWG FEP Tubing. Five/pack.	88842
Fittings and Washers for 12 AWG FEP Tubing. Five/pack.	88843
Washer for 22 or 18 AWG FEP Tubing. Ten/pack.	88882
Washer for 12 AWG FEP Tubing. Ten/pack.	88883

CTFE Tube Fittings and Washers IS

Description	P/N
Fittings and Washers for 22 or 18 AWG FEP Tubing. Ten/pack.	88806
Fittings and Washers for 12 AWG FEP Tubing. Ten/pack.	88807
Washer for 22 or 18 AWG FEP Tubing. Ten/pack.	88882
Washer for 12 AWG FEP Tubing. Ten/pack.	88883

Flanging Tool Kit

Description	P/N
Flanging Tool Kit complete with heating iron, tubing holder, and three flanging tips (12, 18, and 22 gauge)	88821
Flanging Tip for 22 AWG FEP Tubing	32905
Flanging Tip for 18 AWG FEP Tubing	32906
Flanging Tip for 12 AWG FEP Tubing	32907
Flanging Tube Holder	32903



WARRANTY STATEMENT

Hamilton Company unconditionally guarantees its products to be free of defects in materials and workmanship. Any product that fails due to such a defect will be repaired or replaced at our discretion without cost, provided the device is returned on a Return Materials Authorization (RMA). It is the responsibility of the purchaser to determine the suitability of application and material compatibility of the product based on the published specifications of the product.

RETURN OF GOODS

Hamilton Company's return and repair policy is written to protect its employees from potentially hazardous materials (e.g., serum, radioactive materials, carcinogenic chemicals, etc.) or any substance that may cause them partial or permanent disability during the inspection or repair process. In returning a product, the customer acknowledges that the product is free from any hazardous materials. Furthermore, the customer assumes responsibility should the returned product prove to be hazardous.

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