

SWAGING

Tubing material—Soft copper, aluminum, brass
Tubing sizes—3/16, 1/4, 5/16, 3/8, 1/2, 5/8, 3/4

1. Before flaring, be sure that the tubing is cut off squarely, and remove the cut-off burrs.
2. Connect the proper size swaging adapter to the feedscrew by snapping on end. Lubricate adapter.
3. Select the proper size jaw set and position on yoke. Rear jaw half relief hole must engage jaw retaining pin on yoke. Insert socket head clamping screws and loosely engage.
4. Insert the tubing into the jaw opening and position end to protrude above top surface approximately the tube diameter plus 1/8 inch (i.e. on 1/2 O.D. tubing (tube protrudes 5/8 inch above jaw top surface)).

NOTE: For 3/4" size, with swaging adapter fully retracted, position end of tubing against adapter.

5. Hand tighten the knurled socket head clamp screws evenly to engage tubing and then wrench tighten until bottomed to secure tubing.
6. Advance feedscrew by hand until adapter contacts tubing. Then wrench down until shoulder of adapter contacts end of tube.
7. Retract feedscrew 1 turn using wrench. Then by hand continue backing out until adapter clears tubing.

NOTE: If adapter sticks in tubing, tap adapter with gripping end of ratchet to loosen—lubricating adapter eliminates sticking.

8. Wrench jaw clamp screws loose 1/2 turn and then by hand continue backing screws out until jaws can be spread enough to remove tubing.



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FlarePro™

Model 2000 FS

FLARING/ SWAGING TOOL OPERATING INSTRUCTIONS

The 2000 FS tool is designed for flaring, double flaring and swaging a variety of tubing materials. Individual size jaw sets are utilized for positive clamping compactness and operating versatility. Socket head screws are provided for clamping the jaws to the yoke and feeding the tube forming components. The screws are hand turned for all free travel movement when advancing or retracting. A hex socket and 3/8 square drive ratchet are furnished for easy operation of the threaded members under load. Tube forming components (flaring cones, double flaring adapters, swaging adapters) are retained on the feedscrew by a ball detent mechanism and can be snapped on and off for quick change as required. The tool is designed to permit hand held or vise mounted operation. Operating procedures for each of the tool functions are as follows:

Note:

For optimum tool performance and service, maintain lubricant on all threads and entire tip of feedscrew and underside of heads on clamp screws.

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FLARING—37° & 45°

Tubing material—soft copper, brass, aluminum, steel, stainless steel
 Tubing Sizes—1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4

1. Before flaring, be sure that the tubing is cut off squarely, and remove the cut-off burrs.
2. Slip the flare nut onto the tubing.
3. Select the proper size jaw set and position on yoke. Rear jaw half relief hole must engage jaw retaining pin on yoke. Insert socket head clamping screws and loosely engage.
4. Insert the tubing into the jaw opening so that it is above the jaw chamfered top surface. Approximately: 1/32 for 45° flares, 1/16 for 37° flares.
 NOTE: For 3/16 and 1/4 jaws, tube end rests down in counterbore.
5. Hand tighten the knurled socket head clamp screws evenly to engage tubing and then wrench tighten until bottomed to secure tubing.
6. Connect proper flaring cone (45° or 37°) to feedscrew by snapping on at tip.

7. Advance the feedscrew by hand until the cone contacts the tubing. Then wrench down until resistance is felt indicating completion of the flare.

NOTE: For hand held operation, to obtain optimum leverage, set yoke handle and ratchet handle approximately 120° apart and ratchet back and forth maintaining handle separation of approximately 60° to 120°. See Figure 1.

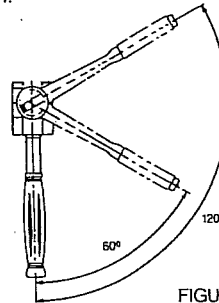


FIGURE 1

8. Retract feedscrew 1/2 turn using wrench and then by hand continue retracting until flaring cone clears tubing.
9. Wrench jaw clamp screws loose 1/2 turn and then by hand continue backing screws out until jaws can be spread enough to remove tubing.

DOUBLE FLARING—45° ONLY

Tubing material—Soft copper, aluminum, steel (Bundy or G.M. to .035 wall)
 Tubing sizes—3/16, 1/4, 5/16, 3/8, 1/2, 5/8, 3/4

1. Before flaring, be sure that the tubing is cut off squarely, and remove the cut-off burrs. Tubing also should be chamfered on the outside edge. This chamfering is very important as it influences the results obtained in the first forming operation. Chamfering can be done very easily with an Imperial No. 208-F inner and outer reamer or with an ordinary file.
2. Slip the flare nut onto the tubing.
3. Select the proper size jaw set and position on yoke. Rear jaw half relief hole must engage jaw retaining pin on yoke. Insert socket head clamping screws and loosely engage.
4. Insert the tubing into the jaw opening with the end of the tubing protruding above the top of jaws by a distance equal to the gage line on the double flaring adapter of the corresponding size. See Figure 2.

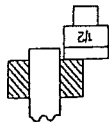


FIGURE 2



FIGURE 3

NOTE: For 3/16 and 1/4 sizes only, tubing should be set flush with top surface of jaws. See Figure 3.

5. Hand tighten the knurled socket head clamp screws evenly to engage tubing and then wrench tighten until bottomed to secure tubing.
6. Connect double flaring adapter to feedscrew by snapping on at tip.
7. Advance the feedscrew by hand until the adapter contacts the tubing. Then wrench down until resistance is felt indicating completion of the beeling operation on the tubing as shown in Figure 4.
8. Back off feedscrew. Remove double flare adapter and then attach 45° flaring cone to tip of feedscrew.
9. Advance feedscrew by hand until the flaring cone contacts the tubing. Then wrench down until resistance is felt indicating completion of the double flare as shown in Figure 5.

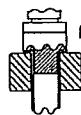


FIGURE 4



FIGURE 5

10. Retract feedscrew 1/2 turn using wrench and then by hand continue retracting until flaring cone clears tubing.
11. Wrench jaw clamp screws loose 1/2 turn and then by hand continue backing screws out until jaws can be spread enough to remove tubing.