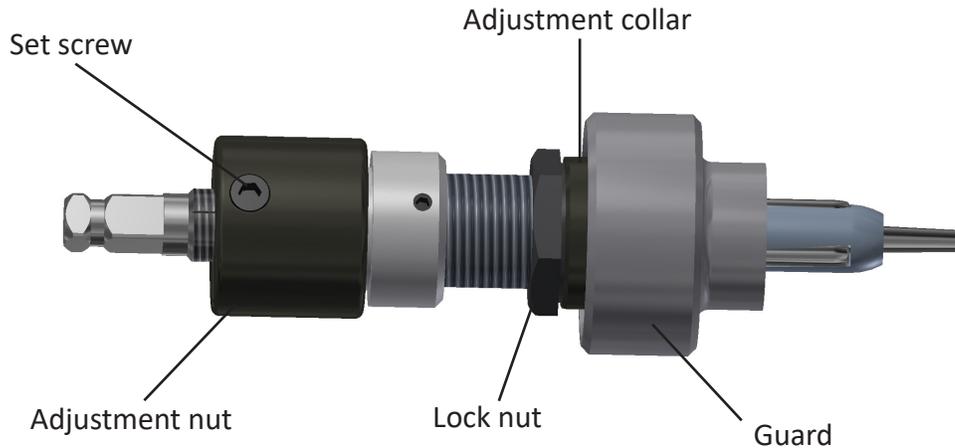


# ELLIOTT MECHANICAL JOINING TOOL

## SET UP AND OPERATING INSTRUCTIONS\*



\*These instructions are to be used when rolling to a size/controlling the size of the expansion. For other applications, please contact us.

### **Guard Position:**

1. Loosen the lock nut.
2. Rotate the adjustment collar to adjust the depth. the rolls will go into the part.
3. Re-tighten the lock nut.

### **Diameter adjustment:**

1. Loosen the set screw in the adjustment nut.
2. Rotate the adjustment nut to adjust the stroke of the mandrel (this will determine the size).
3. Re-tighten the set screw.
4. Add proper lubricant to the tool and inside tube. Please contact us for details on lubrication requirements.
5. Expand a part and check the size. Adjust as required.
6. Use caution, as the mechanical joining tool may become extremely hot after use.
7. After joining several parts, the tool should be cleaned of any debris and allowed to cool off.

### **Motor Requirements:**

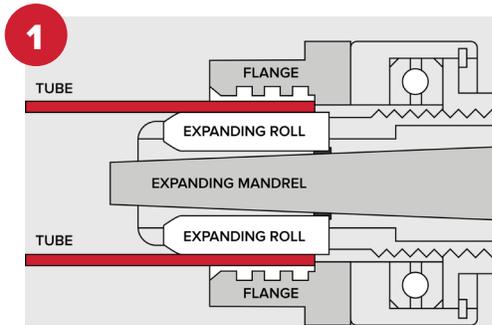
Tube OD Range*	RPM Range	Torque Range
1/4" to 3/4"	1500 to 2000	2 to 85 in. lbs.
5/8" to 1"	700 to 1300	30 to 160 in. lbs.
3/4" to 1.50"	200 to 900	12 to 33 ft. lbs.
1.50" to 3"	70 to 250	30 to 150 ft. lbs

\*Tube size range may vary due to tube wall thickness, material, effective roll length, lubrication, operating condition, and/or operator technique.

The amount of compression required for an optimal joint varies with the tube material.

Tubes with 0.015" to 0.500" (0.38 to 13mm) wall thickness and 0.500" to 12.000" (13mm to 305mm) diameter have been cold rolled successfully with mechanical joining tools.

## Typical mechanical joining process

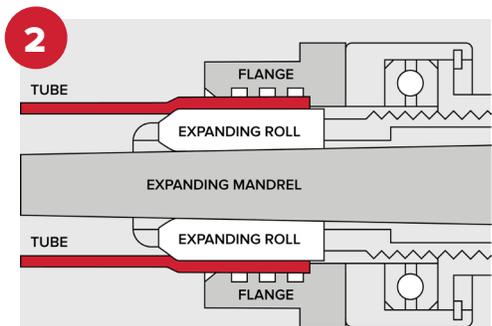


### 0% EXPANSION

Tube is inserted into flange and mechanical joining tool is then inserted into tube. A generous radius or chamfer should be provided at back side of flange.

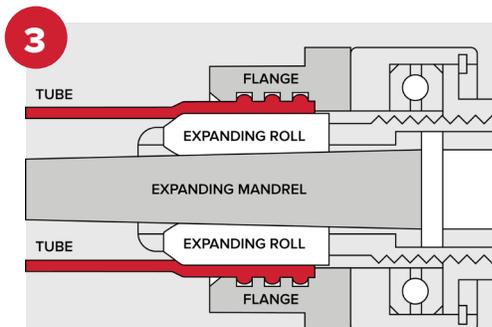
At the opposite end, there should be a shoulder against which the tube can butt. Grooves should always have sharp corners at the top edge and the bottom of the groove.

Width of the groove can be 0.062" to 0.375" (1.6 to 9.5mm); depth can be from 0.005" to .0320" (0.13 to 0.81mm) - both dimensions are dependent on flange width, thickness and hardness of tube.



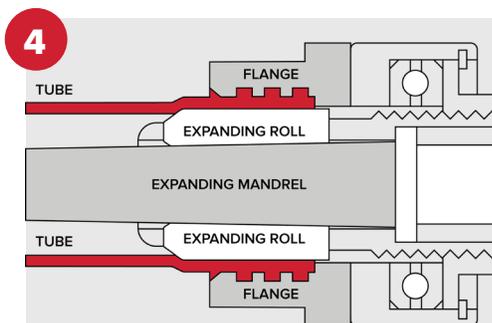
### 25% EXPANSION

When the tube has been rolled to about 25% of total expansion required, it makes metal-to-metal contact with flange.



### 50% EXPANSION

Now the tube metal has begun to flow into the grooved serrations of the flange.



### 100% EXPANSION

Grooved serrations are now completely filled and tube metal has flowed to the point of least resistance beyond the flange.

For additional technical support: