Procedure for Straightening (XL, Xli, and GSK) Etcher Spray Tubes:

**Material:** Fixture – P/N 602916 (30 inch), P/N 700579 (60 inch).

**Objective:** Accurately set the Etcher spray tubes so they are centered when the oscillation cam is at **Top Dead Center (TDC)**. This procedure should be done at the module build level to get the tubes centered and repeated at final inspection to be sure the tubes are still centered before shipment.

**Procedure**

1. TDC oscillation cam per Figure 1. This can be done by two methods; disconnect motor coupling and adjust using vise grips / channel locks or use electrical controls to slowly position cam.

2. Loosen the bolts on the lower yoke so the spray tubes will rotate freely.

3. Install fixture across the spray tubes. The holes drilled in the fixture will slide over the nozzles in position 1 (closest to the manifold), 4 or 7. If the fixture slides down over the nozzles, then they are centered.

4. Repeat for all lower spray tubes.

5. Tighten the bolts on the yoke so the spray tubes are no longer free to rotate independently.

6. Remove fixture.

7. Repeat for Upper Rack.
Procedure for (XL, Xli, and GSK) Etcher Spray Bar Balancing:

Material:
- 3/8 to ¼ reducing bushing.
- ¼ Jaco fitting and tubing.
- Pressure Gauge.
- Seven (7) numbered spray tubes.

Objective: Accurately set the Etcher Upper Spray Bar Pressure.

Procedure

8. Remove the first spray nozzle (next to the throttle bolt)
9. Install reducer bushing, using Jaco fitting and tubing connect to pressure gauge.
10. Connect the spray bar to a water source.
11. Turn the throttle bolt out until no change of pressure. Document as full pressure (example 30 PSI).
12. The three (3) middle spray bars (tubes #3,4,5) should be at full pressure.
13. Spray tubes #2 and #6 should be 3 PSI less than full pressure. Adjust the throttle bolt to set pressure.
14. Spray tubes #1 and #7 should be 6 PSI less than full pressure. Adjust the throttle bolt to set pressure.
15. With a 30 PSI full pressure: the tubes should be as follows (Figure #1):

<table>
<thead>
<tr>
<th>#1</th>
<th>#2</th>
<th>#3</th>
<th>#4</th>
<th>#5</th>
<th>#6</th>
<th>#7</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>27</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>27</td>
<td>24</td>
</tr>
</tbody>
</table>

16. This procedure is for Upper Spray Bar only. The lower spray bar throttle bolt is left wide opened.

Figure #1