



## **Stall & Flow Test Procedure** (Transfer Pumps & Proportioners)

**Note:** Correct Safety equipment is required to conduct these tests!

**Note:** In the examples below piston movement is referred to as “up & down” for a Vertical Format Proportioner, but could be “left or right” for a Horizontal Format Proportioner.

- 1) All tests can be run with system hot or cold, but it is easier to control with little or no heat.
- 2) Full Air & Electrical Support is required
- 3) It doesn't matter which chemical is done first – ISO(A) or RESIN(B)
- 4) For a P2 Gun, simply remove the “ears” from the gun and have two waste cans nearby to catch test chemical. For a Fusion Gun, pull the gun from the coupling block and select waste cans suitable for cross contamination/disposal.
- 5) The first test should be a TRANSFER PUMP STALL TEST
- 6) Ensure Proportioner is turned off, then disconnect RESIN(B) Transfer pump air supply and open ball valve to release any pressure in the RESIN(B) system. Leave the RESIN(B) ball valve open during the entire ISO(A) test. Ensure ISO(A) gun end ball valve is closed and then open transfer pump ISO(A) air supply to standard pressure. Open gun end ball valve enough to cycle 1 or 2 transfer pump strokes to ensure pump is primed. Now STALL TEST ISO(A) transfer pump to mid cycle (either up stroke or down stroke) and leave it there 60 seconds - watching for any creep. A new pump won't creep, light wear is 1-2 inches of creep in 60 seconds, with 4” of creep in 60 seconds indicating a re-seal required ASAP. Constant movement indicates failure/immediate service or replacement. If the pump simply fails to stall at all, either drum is empty or transfer pump check valve(s) not seating.
- 7) Repeat same test on the same side, but in the opposite direction of pump travel to test the other seals & seats.
- 8) For the ISO(A) TRANSFER PUMP FLOW TEST aim the clean output into the ISO(A) drum and test the flow at low, medium & high output. Listen for disproportionate flow, pressure surging, shifting patterns, unusual air related sounds or failure of the compressor to maintain target air pressure. (note: on newer units watch input pressure gauges as well)
- 9) Repeat section #6 Stall Test (first direction) with RESIN(B) system
- 10) Repeat section #7 Stall Test (second direction) with the RESIN(B) system

- 11) Repeat section #8 Flow Test with RESIN(B) system
- 12) Before conducting the PROPORTIONER STALL TEST on a Graco E or H series, set the pressure imbalance to "999" per the manual. (See Ref. Pg. 28 for E-Series, Ref. Pg. 33-34 for H-Series)
- 13) In preparation set up the Chemical Pressures similar to #6 & 7 above, but turn the Drive Pressure to zero (Air or Hydraulic) and only then turn on the Proportioner.
- 14) With the ISO(A) gun output valve off, the Proportioner on, increase the chemical pressure to 750 PSI ISO(A) side. Stall the pump mid travel and watch for 60 seconds. Pump status is similar to the transfer pump "creep" values above, but far more critical.
- 15) Repeat test on the same side, but in the opposite direction of travel to test the other seals & seats.
- 16) Then shut off the Proportioner, reduce to transfer pump pressure only, energize the RESIN(B) side. Open & release the ISO(A) side. Complete the same 750 PSI test, but on the RESIN(B) system.
- 17) Repeat test on the same side, but in the opposite direction of travel to test the other seals & seats.
- 18) Finally, FLOW TEST THE PROPORTIONER c/w full & balanced Transfer Pump Supply (A&B), but only 750 PSI of balanced chemical output pressures & aiming into a waste garbage bag. Watch A&B flow & gauges to confirm high flow operation.
- 19) Re-set the Pressure Differential value back to original set-point.
- 20) Shut down the Proportioner per manual. End of test.