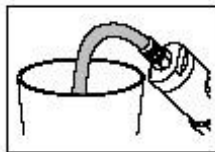


Dispense Valve Trouble-shooting Hints

- *Tech Tips - Valves*

Common Dispense Valve Problems and Set-up Hints

1. **Adhesive Dripping From Dispense Valves.** The problem of adhesive dripping from Dispense Valves can sometimes be attributed to air that is trapped in the product feedline. Typically, when the adhesive container is changed, an air bubble is trapped in the feedline. After a valve is placed in service, it must be properly "bled" of trapped air. This procedure calls for holding the valve upwards at a 45-degree angle. A polyethylene tapered tip dispense needle should be installed along with a short length of clear tubing (supplied with valves; also can be purchased as item # 993111). Position the clear tubing over a cup and open the valve for about 30 to 45 seconds. During that time, adhesive will flow out of the valve and thru the clear tubing. Air bubbles will also be seen thru the clear tubing. After removing this trapped air, remove the clear tubing and place the valve in a vertical position. Suck back adjustment is next.



2. **Improper Adjustment of Suck-back.** The valve suckback adjustment must be properly set so air is not "pulled back" into the valve and past its seat. This same adjustment is sometimes referred to the stroke adjustment, and if fully closed, no adhesive will flow. On the hand-held Dispense Valves (97112 / 97116), the suckback adjustment is the small knurled fitting where the black feedline passes thru. On the stationary mounted Dispense Valves (97113 / 97114), the round knob on the top is the suck-back adjustment. It should be adjusted to where the product is "pulled back" approx. 1/8" back into the dispense needle. This knob is on the inlet side of the valve. After adjustments to these suckback knobs / fittings, one will observe the adhesive being "pulled back" up the dispense needle. When setting up these valves, it is suggested to use a polyethylene tapered tip dispense needle in order to view the adhesive while it is dispensed.





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- 3. Improper incoming air pressure.** As a rule of thumb, the incoming air supply pressure must be at least 65 psi and a maximum of 90 psi. This minimum pressure is required to physically actuate (open and close) the majority of our Dispense Valves. The 97113 / 97114 Valves, which is a dual actuation type of valve, requires that minimum pressure for proper operation. The Hand-held valves 97112 / 97116, are single actuation, and also require the minimum pressure in order to open. The mechanics of the valve cause it to close upon loss of pressure. The term "spring close" is often used to describe this type of valve. Quite often our customers confuse this actuation pressure with reservoir (product) pressure.
- 4. Introduction of air into Product Bottle.** Quite often, the introduction of air into the product lines happens when the product bottle is replaced in the reservoir. The trapped air is "pushed" thru the feedline into the dispense valve where it becomes trapped. There is no way to avoid this when changing the bottle of adhesive. This trapped air will cause dripping of product resulting in erratic dispense patterns. One solution to this issue is to use the Anti-Bubbler kit, item # 984687, onto the end of the feedline that is placed into the bottle.
- 5. Moisture contamination.** When dispensing instant adhesives from open-top bottles, the concern is moisture entering the adhesive while it is inside a reservoir. Loctite recommends the air supply be equipped with an airline filter and dryer to remove not only moisture from the air, but to prevent contamination of the adhesive in the reservoir. Loctite's Air Line Filter / Dryer Assembly (item # 996149) consists of a filter (40 micron); regulator and gauge; air dryer with a silica gel desiccant cartridge; all necessary fittings; and an air line to connect it to the controller. The dryer has an indicator for monitoring the amount of moisture absorbed by the cartridge. When the indicator color changes from blue to pink, the cartridge element must be replaced.
- 6. Adhesive air absorption.** It is known that adhesives do absorb air based on the pressure and time duration within the reservoir. Unfortunately, the air cannot be removed after it has been "soaked into" the adhesive. One example was a customer that dispenses a light cure adhesive with a viscosity of 900cPs at a reservoir pressure of 10psi. They reported that the adhesive becomes "air soaked" after 8 hours inside the fluid reservoir. One solution is to remove the bottle of adhesive after the dispense process. Another suggestion is to reduce the air pressure inside the reservoir or reduce the initial volume of adhesive placed into the reservoir possibly by using only 1/2 of a bottle. Small bubbles can combine to form a large bubble. One final suggestion is to have the valves be inverted upwards after the dispensing process so that the needle points UP. This will allow the "small" bubbles to continuously escape instead of collecting within the valve head to form a large bubble. The Fluid Waveform Analyzer has the capability of "seeing" if air bubbles are present before the operator can.
- 7. Flushing of the Dispense Valves.** If flushing of the dispense valve is required, use Loctite's Equipment Flushing Solvent, item # 12121. Be sure to remove any residual Equipment Flushing Solvent by forcing air thru the feedline and dispense valve prior to dispensing any adhesive. Typical time to flush with Equipment Flushing Solvent is 30 to 45 seconds while it may take an additional 2 to 3 minutes to flush with air.
- 8. Different Type of Valve.** If curing of the cyanoacrylate adhesive continues to be an issue, the process may be better suited for a valve that does not have suckback capabilities. Loctite's CA valve (item # 98013) would be less prone to curing because it does not have suck back.