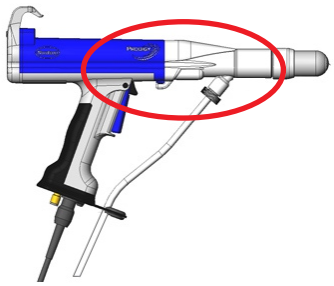
Prodigy® HDLV® System Troubleshooting - Generation III

Use the procedures listed in this document to isolate and correct common problems with Prodigy HDLV Systems. Refer to your system and component manuals for more troubleshooting, repair, and parts information.

Problem

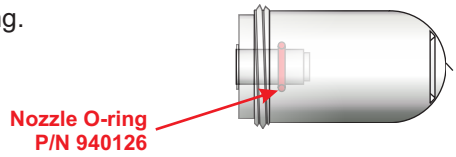
Powder inside gun inlet adapter



Possible Cause and Corrective Action

Internal nozzle O-ring worn

Replace the internal nozzle O-ring.



Powder delivery hose not seated properly in tubing adapter

Loosen the retaining nut to remove the nozzle and retaining nut assembly.

Pull the tubing adapter from the end of the flexible powder tube.

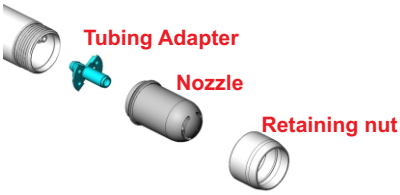
Loosen the lock knob and gently pull the flexible powder tubing out of the gun adapter. Clean the surfaces.

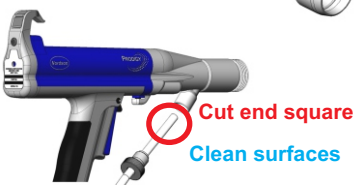
If the end of the feed tubing is damaged, cut the damaged end off with a tubing cutter.

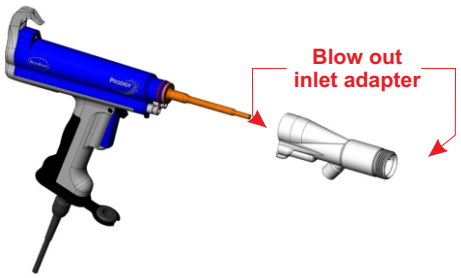
Remove the set screw and inlet adapter from the spray gun. Blow the adapter and powder tube clean.

Install the inlet adapter. Feed the flexible powder tubing through the inlet adapter. Tighten the lock knob. Install the tubing adapter on the tube then gently pull the tube back until the adapter stops against the flange.

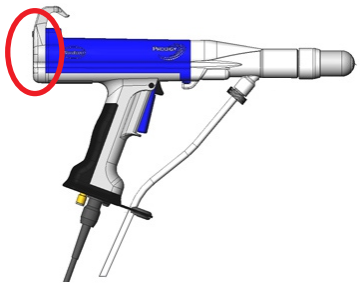
Install the nozzle and retaining ring.





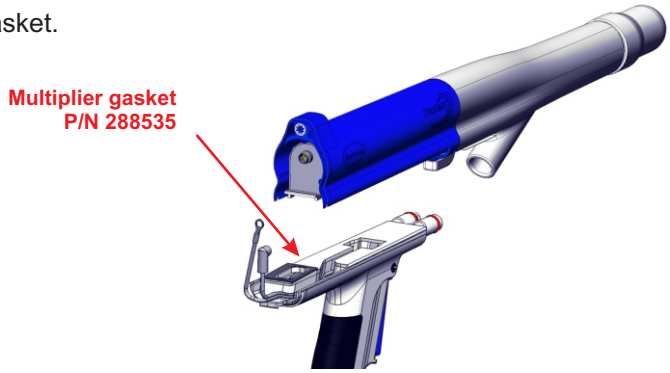


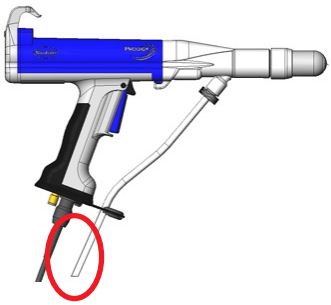
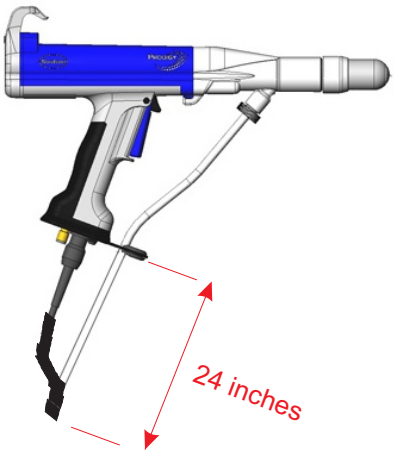
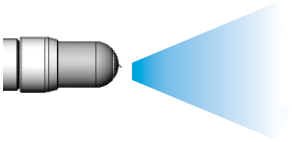
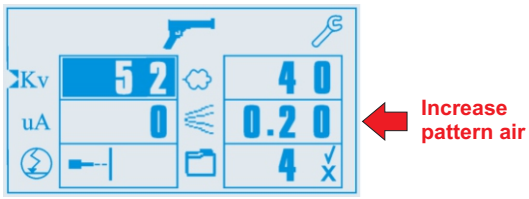
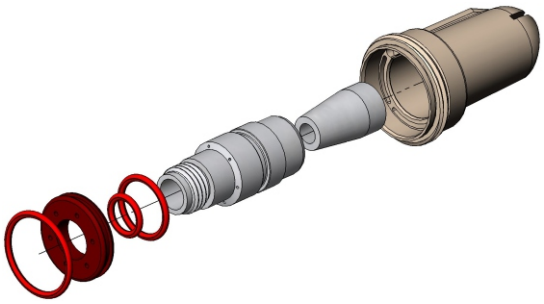
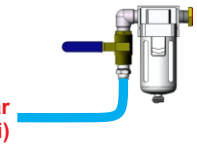
Air leaking around end cap



Multiplier gasket worn

Replace the multiplier gasket.



Problem	Possible Cause and Corrective Action
Powder feed tubing too stiff 	**Spiral wrap too close to gun** Remove any spiral wrap that is within 24 inches of the gun handle. 
“Fingers” in spray pattern 	**Pattern air setting too low** Increase the pattern air setpoint. 
	Nozzle plugged Remove the nozzle, disassemble, and clean.  
	Input air pressure too low Increase the input air pressure. 
	Assist air compensation too low Increase the assist air compensation setting.

RETURN TO MAIN SCREEN

	%		%
1	-10	6	15
2	05	7	-10
3	-05	8	10
4	25	9	00
5	20	10	00

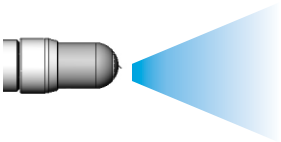
	Calibration constants incorrect Verify that the calibration constants on the manifold match what is entered in the manual gun controller.

RETURN TO AUX TOOLS

PUMP FLOW	PATTERN FLOW
A: 0.0000	A: 0.0000
B: 0.0000	B: 0.0000
C: 0.0000	C: 0.0000

Problem

Powder delivery problems: Surging, fading, intermittent flow, low flow



Possible Cause and Corrective Action

Problems with powder flow can be caused by a number of different factors. Check the following first:

Assist air compensation incorrect

Increase or decrease the assist air compensation setting for the current preset.

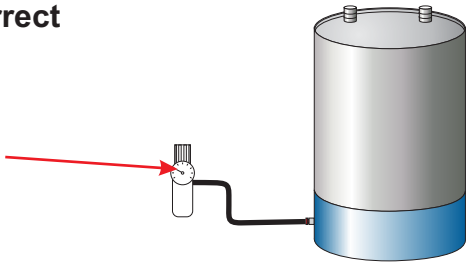
Go to a *positive* number if the gun is surging.
Go to a *negative* number if the gun is fading.

RETURN TO MAIN SCREEN			
	%		%
1	-10	6	15
2	05	7	-10
3	-05	8	10
4	25	9	00
5	20	10	00

Check the following possibilities in order:

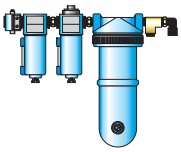
1 Fluidizing air pressure incorrect

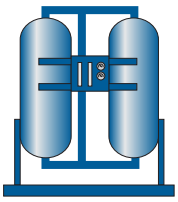
Increase or decrease the fluidizing air pressure. The powder should be gently boiling.



2 Powder damp or contaminated

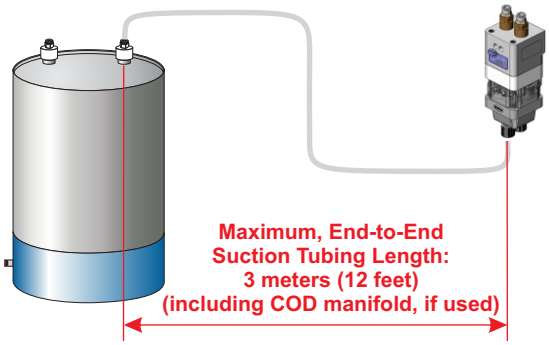
Check the air driers and filter/separators. Check the powder in the feed hoppers and make sure it flows easily.





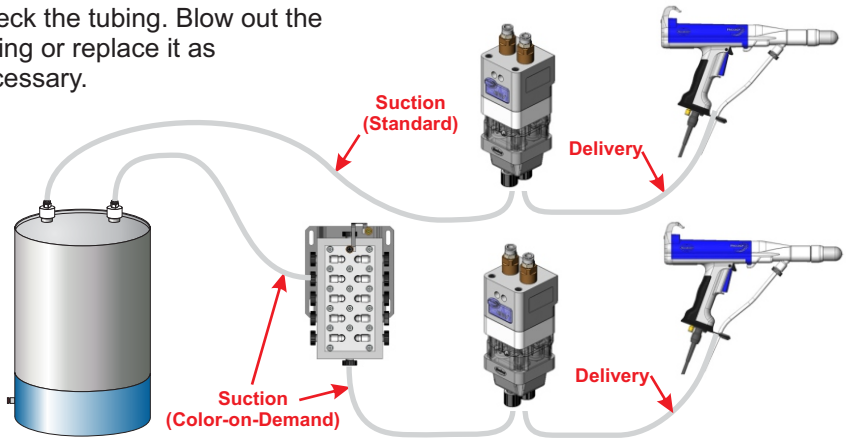
3 Suction tubing too long

Move the hoppers closer to the pump and shorten the suction tube length.



4 Suction or delivery tubing blocked or kinked

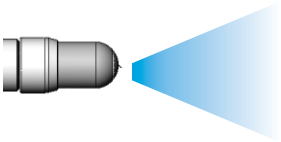
Check the tubing. Blow out the tubing or replace it as necessary.



NOTE: Delivery tubing must be arranged in a 3-ft. coil parallel to the ground and must be 60 ft. from the pump to the spray gun.

Problem

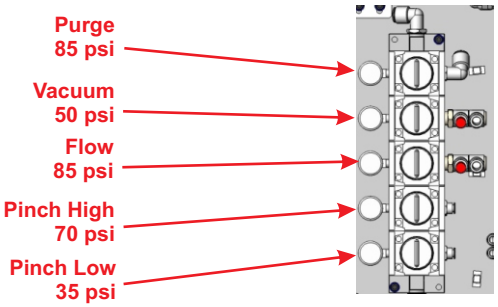
Powder delivery problems *(continued)*



Possible Cause and Corrective Action

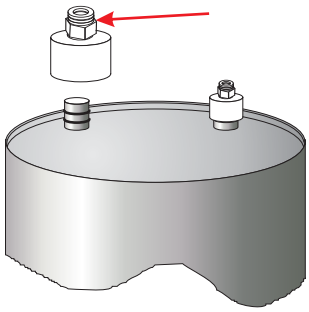
5 Pump panel regulator pressure incorrect

Adjust the regulators in the pump panel to the proper pressures.



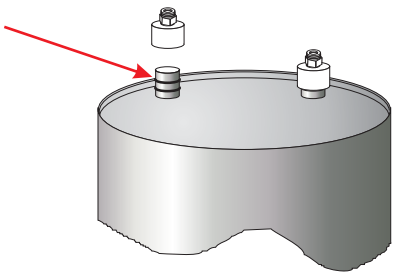
6 Pump adapter 8-mm tube fitting loose

Tighten the 8-mm tube fitting.



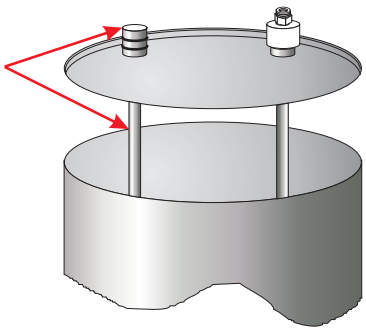
Pump mount O-rings worn

Replace the pump mount O-rings. Refer to your pickup tube instruction sheet or hopper manual for part numbers.



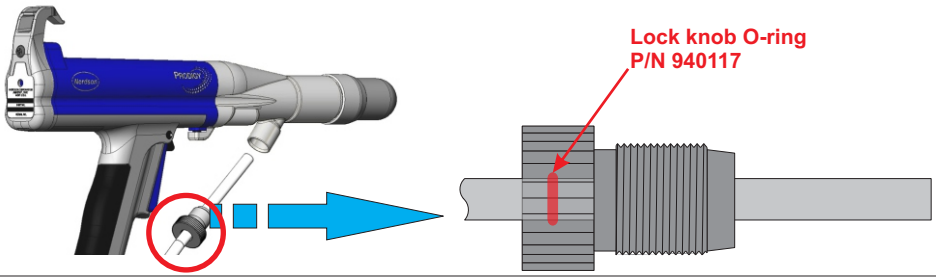
Pickup tube not tightly threaded into pump mount

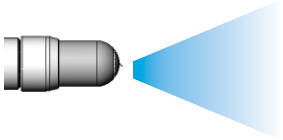
Tighten the pickup tube into the pump mount.

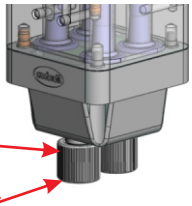


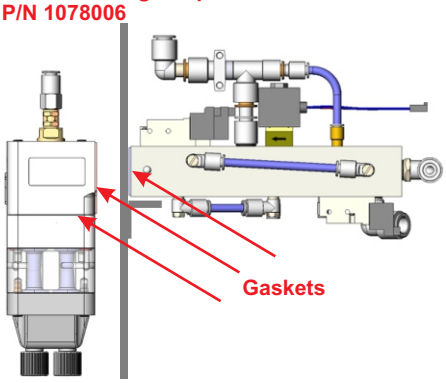
Air leaking around lock knob

Replace the lock knob O-ring.



Problem	Possible Cause and Corrective Action
Powder delivery problems *(continued)* 	**Pump inlet tube retaining nut or O-ring loose** Check the O-ring and tighten the retaining nut. Check barbed tubing adapter for wear. Check for air leaks between the manifold and cabinet and between the manifold and pump.





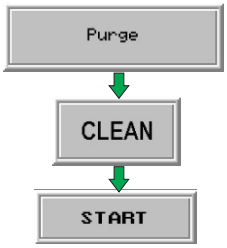
Problem with pump or pump control manifold

Vacuum Check (requires 0-30 in. Hg vacuum gauge)

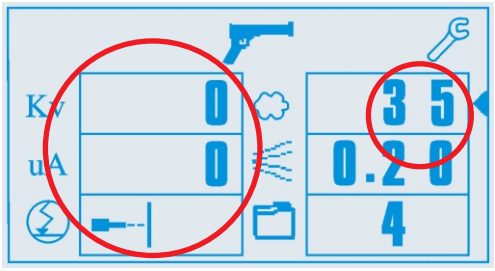
1. Purge the pump and gun. Do not load a new color.

Purge without Color-on-Demand

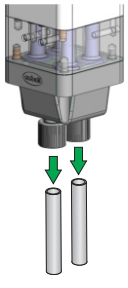
Purge with Color-on-Demand



2. Set the kV output to zero. Set the powder flow to 35%.

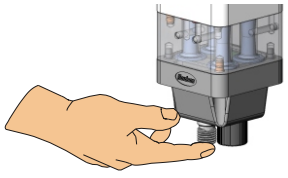


3. Disconnect the powder tubing from the pump. Connect a vacuum gauge to the suction fitting or remove the fitting nut and place your finger over the fitting.



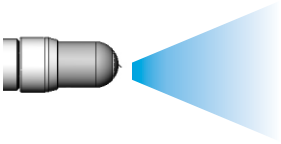
Vacuum Gauge
0-30 in. Hg

OR



Problem

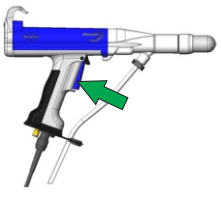
Powder delivery problems *(continued)*

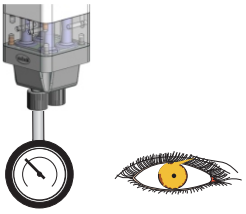


Possible Cause and Corrective Action

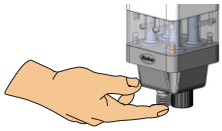
Vacuum Check (continued)

4. Trigger the spray gun and watch the vacuum gauge or feel for the vacuum.



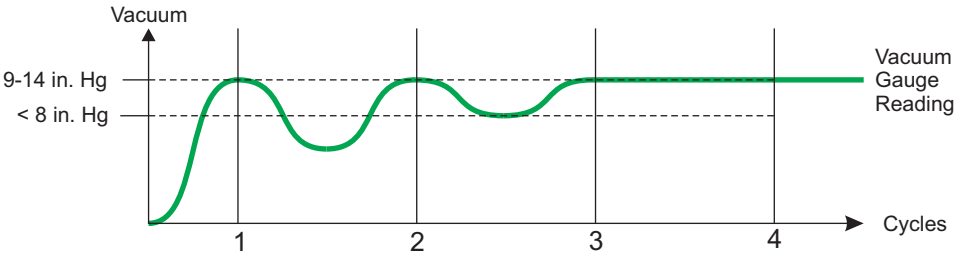


OR



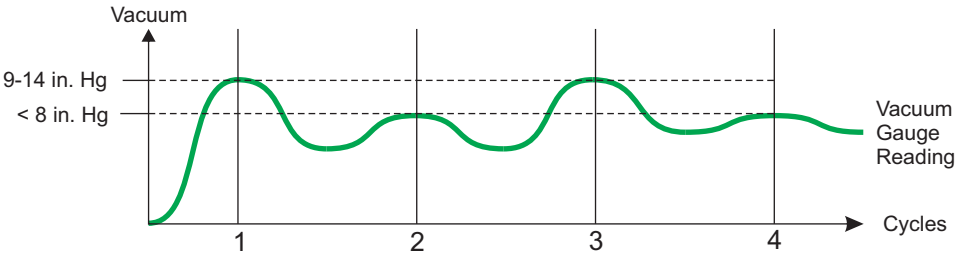
Correct Vacuum Reading (9-14 in. Hg) Both Sides of Pump (or you feel vacuum pulling hard on fingertip):

Perform Procedure **A - Delivery Check**



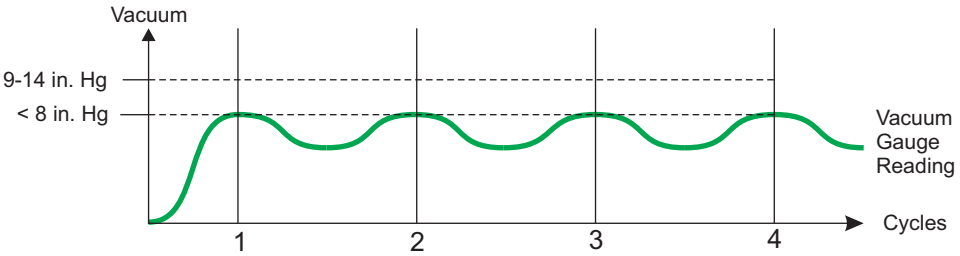
Low Vacuum (Less than 8 in. Hg) One Side of Pump (or you feel less vacuum on one side of pump cycle than the other):

Perform Procedure **B - Suction Check**

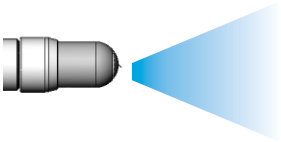


Low Vacuum (Less than 8 in. Hg) Both Sides of Pump (or you feel only weak or no vacuum on both sides of pump cycle) :

Perform Procedure **B - Suction Check**



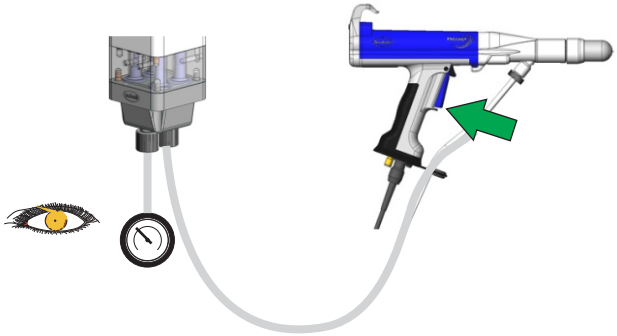
Problem	Possible Cause and Corrective Action
Powder delivery problems *(continued)*	



A - Delivery Check

Correct vacuum reading (9-14 in. Hg). Problem is not in pump or control manifold.
Check for problems in delivery tubing (1) or suction tubing (2).

1. Reconnect the delivery tubing to the pump.
2. Trigger the spray gun and observe the vacuum gauge.



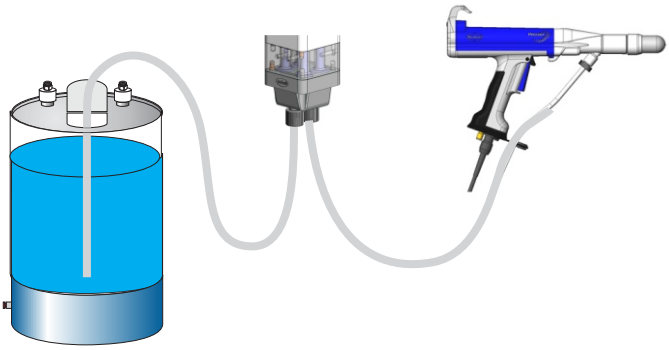
 **= < 8 in. Hg**

Problem is in delivery tubing or spray gun:
- ✓ Clean or replace delivery tubing.
- ✓ Check spray gun lock nut O-ring. Replace if missing or damaged.
- ✓ Remove nozzle and powder tubing adapter from spray gun and clean or replace.

 **= 9-14 in. Hg**

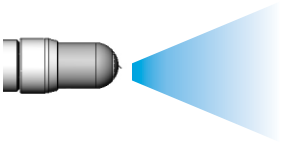
Problem is in suction tubing, fittings, pickup tube, or powder:
1. Connect suction tubing as shown below.
2. Trigger gun and observe powder flow.

- If problem disappears, then check suction tubing fittings and adapter O-rings. Clean pickup tube. If you have a Color-on-Demand system, perform procedure **C - Bubble Test**.
- If problem remains , suction tubing is blocked. Replace suction tubing.



Problem

Powder delivery problems *(continued)*

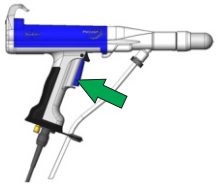


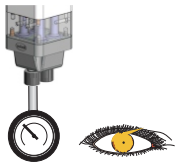
Possible Cause and Corrective Action

B - Suction Check

Low vacuum reading (less than 8 in. Hg) in one or both sides of pump. Problem is in pump or control manifold:

1. Remove the pump and replace it with a known good pump.
2. Connect the vacuum gauge to the pump suction fitting.
3. Trigger the spray gun and observe the vacuum gauge.

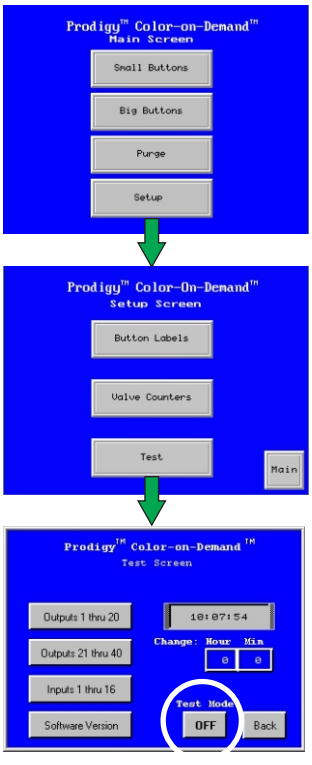


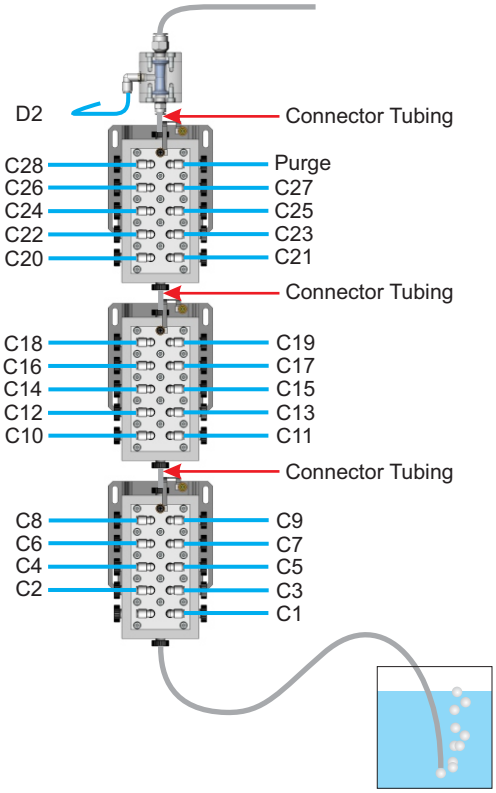


- If problem disappears, then original pump was bad. **Go to Page 9.**
- If problem remains, then pump control manifold is bad. **Go to Page 9.**

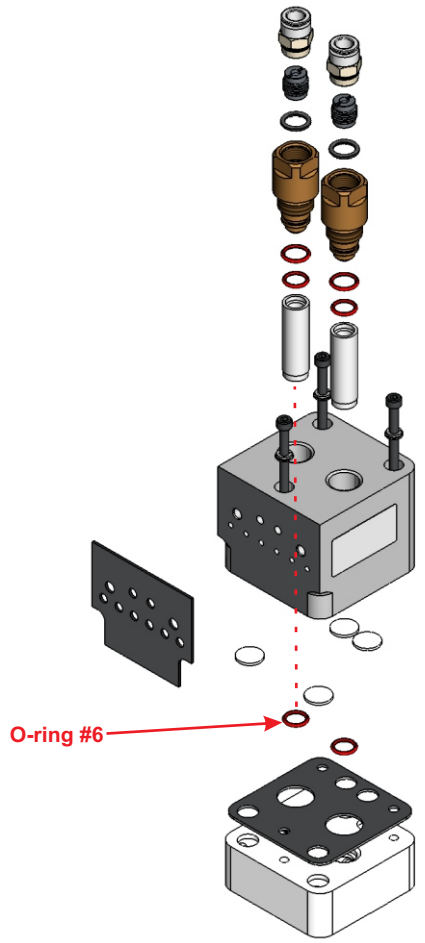
C - Bubble Test for Color-on-Demand System

1. If your D2 dump valve has a clear body, check for powder inside the body. If powder is visible, then disassemble the dump valve and replace the pinch valve. If no powder is visible, then proceed with the bubble test.
2. Disconnect the delivery tubing from the COD manifold outlet and install a new length of delivery tubing from the manifold outlet to a container of water.
4. Turn the COD controller Test mode ON by toggling the Test Mode Button. This pressurizes all the air lines to the COD manifold pinch valves. If any of the pinch valves are leaking, bubbles will appear in the water.
5. If bubbles appear, kink the blue D2 air tubing. If the bubbles stop, then the D2 pinch valve is leaking. If the bubbles continue, kink the rest of the pinch valve air tubes, starting with D1, until you find the leaking pinch valve. Replace all the pinch valves in the manifold with the leaking valve, since it is likely that the other valves are close to failure also.
   If no bubbles appear, then check the short pieces of tubing connecting the manifolds and D2 dump valve and replace any that are worn out.



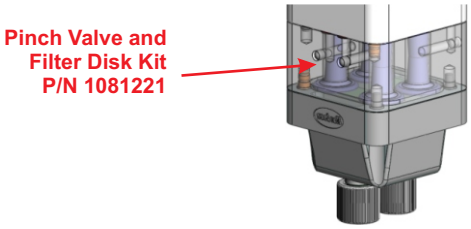


Problem	Possible Cause and Corrective Action
Pump is bad, requires repair (determined by suction check B)	**Fluidizing tube blinded or plugged** Replace the fluidizing tubes. Verify O-ring #6 is in place. If missing, powder buildup could occur in the muffler.



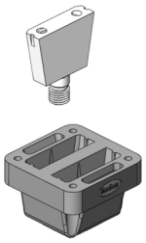
Pinch valve leaking

Replace the pinch valves and filter disks.



Lower Y-block plugged

Remove and clean the lower Y-blocks.

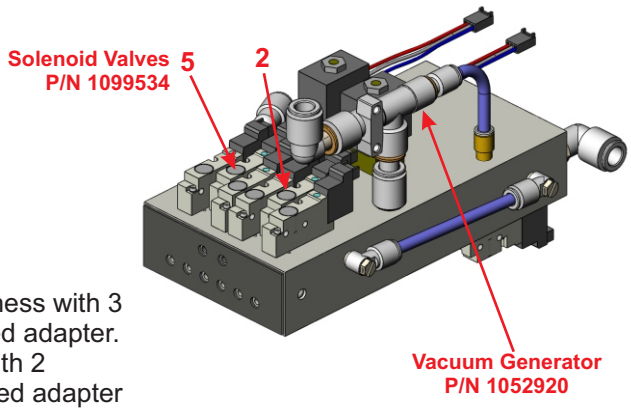


Control manifold is bad, requires repair (determined by suction check B)

CAUTION: Turn off and relieve air pressure to the pump cabinet before servicing the manifold. Failure to observe this caution may result in equipment damage.

Pump manifold valves 2 and 5 contaminated with powder

Remove and inspect the valves. If they are contaminated, blow out the manifold and replace the valves.



Note: If using an old harness with 3 positions, use the supplied adapter. If using a new harness with 2 positions, then the supplied adapter can be discarded.

Vacuum generator blocked

Remove and inspect the vacuum generator venturi nozzle. If it is blocked, blow it out or replace the vacuum generator.

1. Remove vacuum generator at the manifold. Check for vacuum with your finger.
2. Remove the vacuum generator vent hose at the bottom of the cabinet (inside). Trigger the gun on. Check for exhaust and increase the powder flow.
3. Check for proper direction of the check valve.

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