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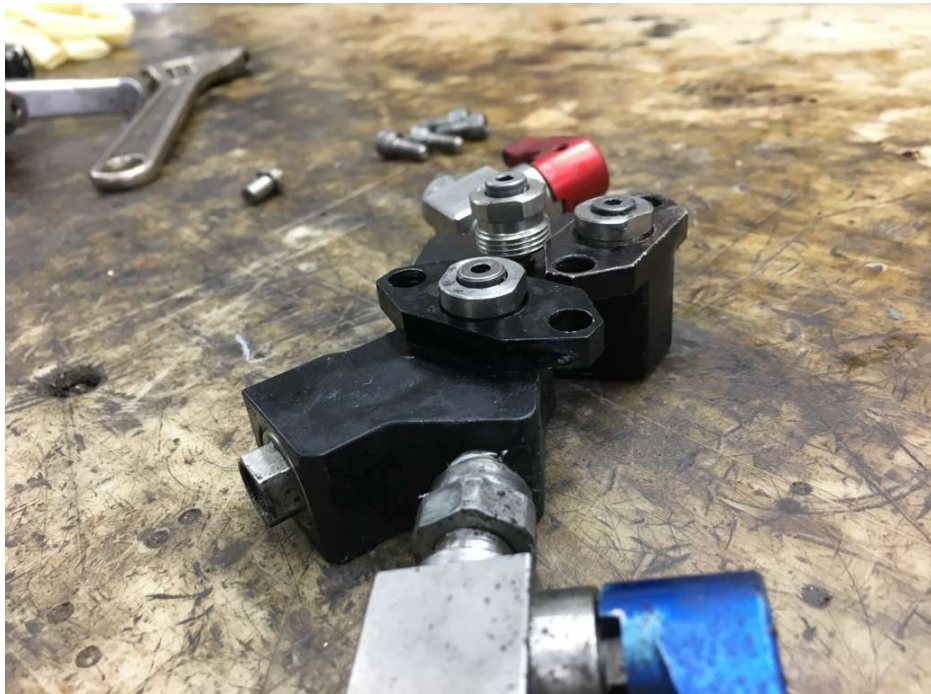
BASIC GUN ISSUES: CAUSES AND CURES

Side Wipe Seal Issues:

One of the main problems I see is side wipe seals getting glued into the side wipe nuts, either A side, B side or both. The side wipe seals **must** be free floating and have spring pressure to seal them against the mixing chamber and hold back 2000 plus psi of fluid pressure.

With no spring pressure, fluid (both A&B in this case) could leak into the gun head when you are on the trigger and purge/spit material out onto your project through the purge air as soon as you let off the trigger. If you coat over the A or B product that just spit out onto your project through the purge air, it will off-gas due to the materials exothermic heat reaction thus causing bubbles.

The picture below shows two side blocks next to a new side wipe retaining nut and side seal (this is what the side seal should look like) Notice the side wipe is fully extended through the retaining nut as it should be.



Side seal spring pressure is a must. The A side seal will glue itself together over time and needs to be cleaned. If it is not sealing against the mixing chamber then it will fill the head of your gun with material if the ball valve is on and the purge air is off. Rule of thumb; always turn your purge/gun air on before you turn your ball valves on so any material leakage will blow out the tip instead of filling your gun.

When you install the side blocks look for the gap between the block and gun head.



This is the extended side seal telling you there is spring pressure on it. The other test is to push on your side seal before install to verify that the seal is free and has spring pressure on it.



Abuse Issues:

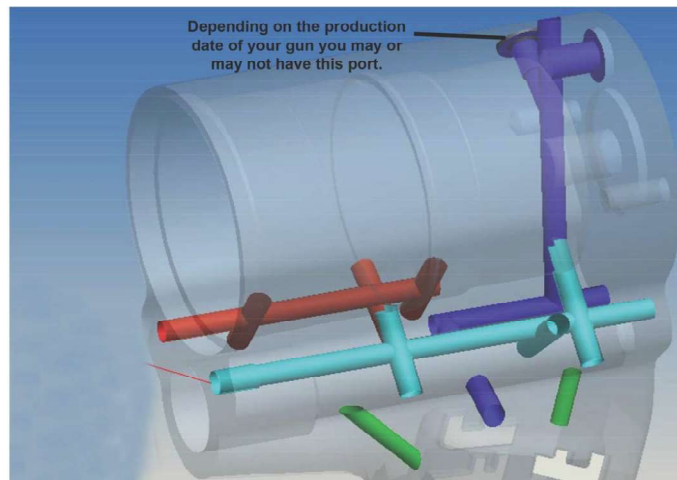
Another thing we see is our share of abused spray guns. In some cases they look like they were beat on with a hammer. Such as the air cap shown in the next picture. This kind of damage can distort the air cap, leading to leakage past the o-ring seal. The P2 gun is over \$3000; it is designed for high pressure and is o-ring sealed with an anodized aluminum body. If it is leaking somewhere, over tightening will not generally help. **And... if you have to hammer on it, you are doing it wrong!**



Check Balls and Springs (Screen Housings and Air Slide Assembly):

The check balls and springs for the air slide valve and the screen housings are there for a reason. They should be replaced with new parts if there is an issue or a crossover. The springs and check balls are there to stop back flow of material in the event of a failure. In the side blocks the check balls stop material flow at the side block in the event of a crossover; in the air slide it prevents material from entering line air line and traveling up the air hose and back to the machine.

Gun Body Air Passages:



Clean all air passages with correct sized drill bits. As you can see by the drawing there are air passages throughout the entire gun body. Each air passage has a specific function. If an air passage is even partially blocked it can create issues with the proper functioning of your gun. It can cause the gun function to seem sluggish or even cease to function at all.

Mixing Chamber Issues and Dressing:

This is a good example of a mixing chamber that was in rough shape and took some work to get a good surface back. I use 320 grit then 1000 grit on a piece of glass (glass provides a good flat surface) with light oil.

There was large circular pitting that is typical of a mixing chamber that was left in RS-98 or NMP for an extended period of time. The mixing chamber is one of the only ferrous metal parts on the gun and will rust and pit if left to soak in either of the solvents as they are oxidizers. I always clean the mixing chamber by hand as opposed to soaking it in polysolvent.



The top mixing chamber in the photo above shows a trashed chamber that sat in the juice/solvent too long, it is shown next to the one I'm surfacing, which at the time of the photo was almost done with its surfacing and was salvageable. Below is the finished product ready for use.



Shut Down:

The proper procedure for greasing the gun on shut down; switch to retract/park and bleed/spray the pressure down to 500 psi to park your pumps in the bottom position. With the ball valves off, trigger the gun rapidly several times to purge/clear the tip. Turn the air down about half way with the gun slide valve.

Grease the tip until grease starts to purge from the tip; shut the air off and the gun is shut down. The grease is there to seal up the gun and prevent any A-side material from hardening, not necessarily for lubrication. Use only white lithium grease as it is less reactive to the A material, petroleum grease will lock up with the A-side and become hard as a rock.

On start up in the morning remove the side blocks, the air cap and the nose of the gun. Wipe the excess grease off the mixing chamber and out of the gun nose, some grease is fine just get the majority of it. Use a new razor blade and clean the sides of the mixing chamber and clean the side holes and nozzle with the proper bits. Inspect for scratches or damage and resurface as needed.

Install the gun nose and air cap. Before installing the side blocks, clean the gun screens if needed and check for side wipe seal spring pressure.

Air Piston and Its Adjustment:

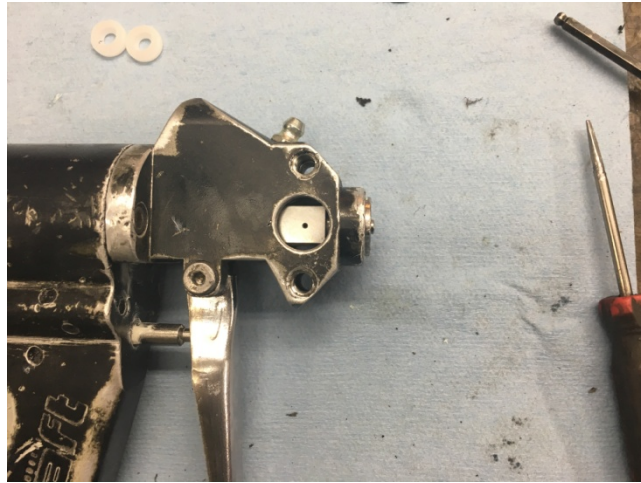
To adjust the piston stop adjustment, push the air cap on the nose of the gun to the back position. The side hole in the chamber should be in line with the center of the side block screw holes. I use a side wipe nut and seal to line it up accurately and adjust the stop screw as needed.



I lock-tight the screw and once this adjustment is set I fill the hole with silicone. I check this adjustment on every gun that comes across my bench but it rarely changes once it's set and lock-tighted in.

The newer version of the P2 has a safety lock on the back and adjusts a little different using a 9/16 wrench but the principle is the same.

Correct adjustment, the side hole is in line with screw holes with the tip pushed all the way back to the stop.



Side Wipe Retaining Nut:

One of my most used cleaning tools is a simple scotch bright hone made from stiff coat hanger type wire with scotch bright pad wrapped to the desired size. Chuck it into your hand drill to clean/ polish various parts of the gun, pumps or whatever.



The other frequently used tool on my bench is a simple plumber's propane torch. Use caution, and common sense of course but a little heat applied to parts that are glued together with A-side and they will come right apart for reuse instead of replacement due to damage.

Block to Valve Adapter Fitting Cleaning:

Figure 1 shows the fitting in question between the block and valve. We have come across this several times, the opening in the adapter fitting ends up with a buildup of material inside its orifice. If the side block is suspected to have an issue internally make sure you remove the fitting when cleaning the side block as you can end up with the same buildup shown in the photo on the next page figure 2. This fitting as you can see is nearly completely blocked off.

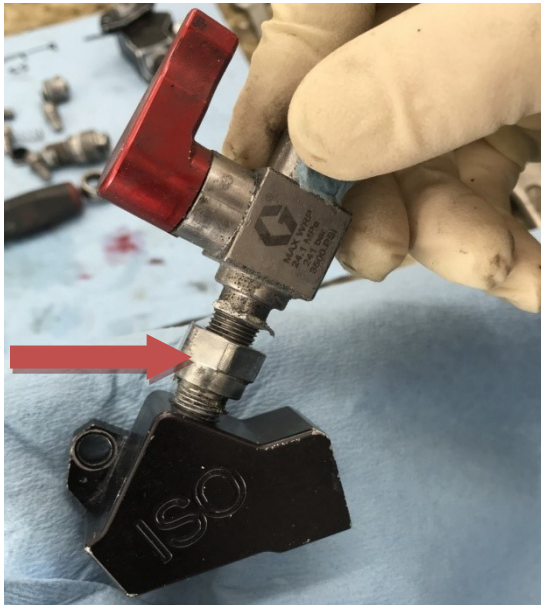


Figure 1

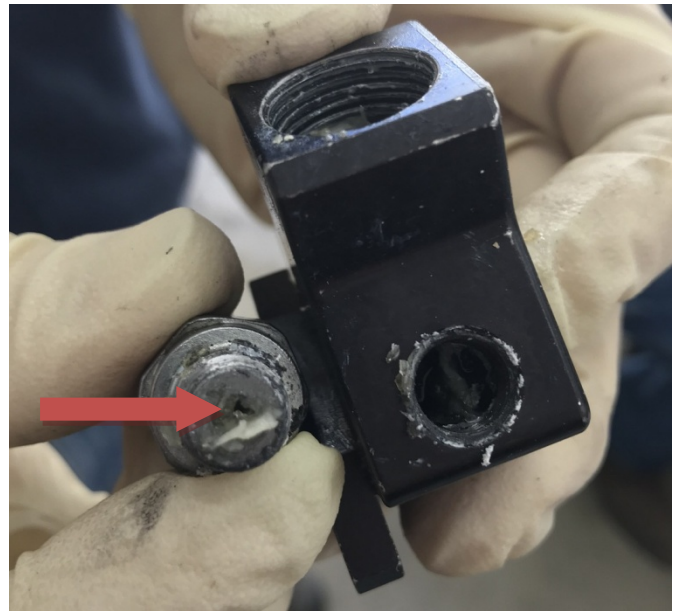


Figure 2

There is a learning curve in all trades. This is the tool of the trade, it sprays glue essentially. The tech needs to know and understand the operation and maintenance of the gun and keep A-side material as your friend not your enemy or it will give you problems. **Pam Cooking spray should be used on the exterior of the gun. The Pam will act as a release agent between the gun and any material it comes in contact with, making cleanup a lot easier.**

Remember: A clean tool is a happy tool and the spray gun is a tool of this trade.