



Porsche patina: Rejuvenating a 928 — Part II

By Pablo Deferrari

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Considering a 928? Then you should pull the trigger, because once you've entered this brotherhood, it's for life.

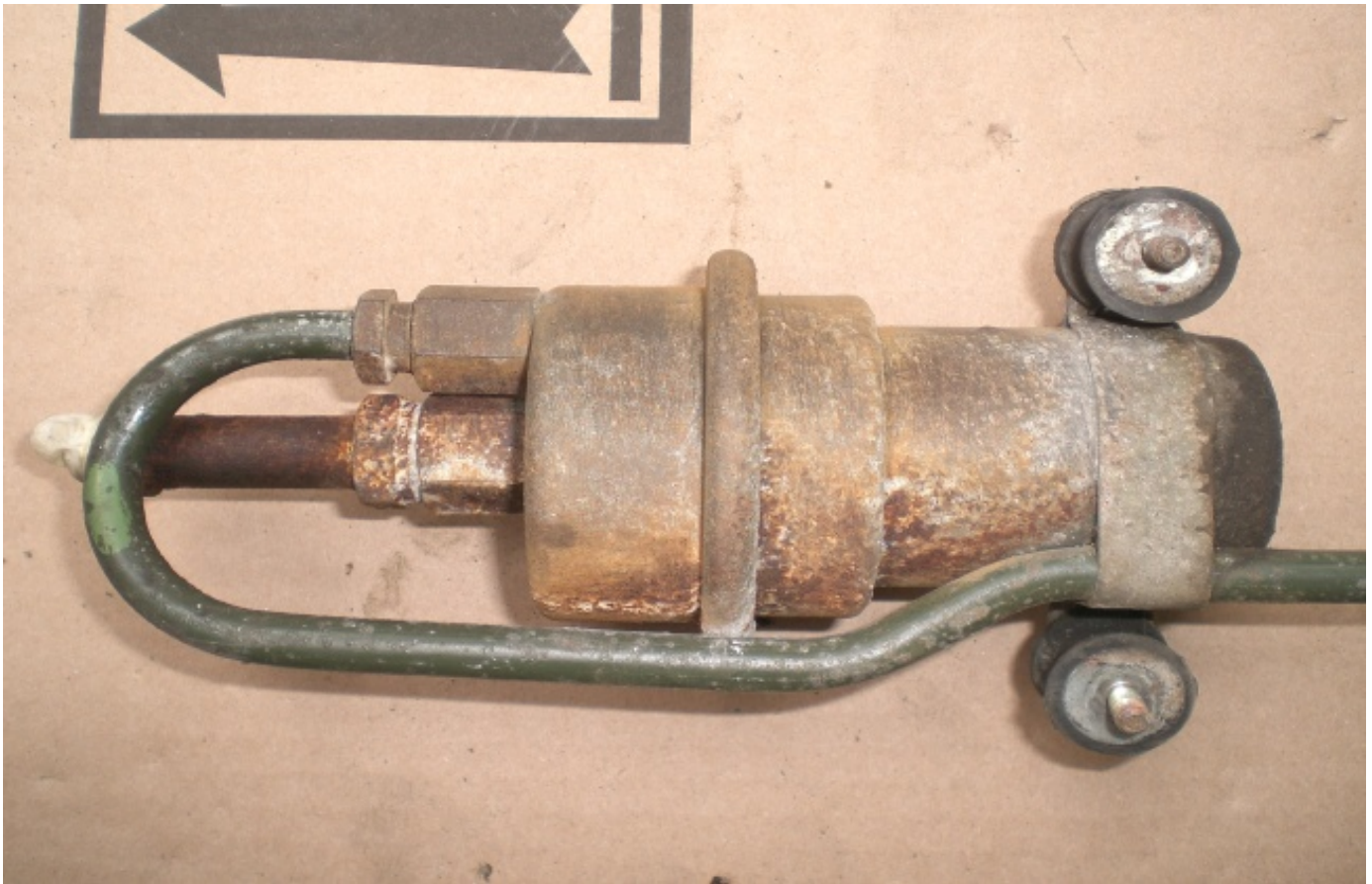
I've been running on a high with the discovery of the enthusiasm and passion that 928 owners seem to possess boatloads of. It's the intoxicating sort that keeps one committed to a project like this no matter what the challenge. This made seeing the tank, fuel pumps, fuel level sending unit, and all the ancillaries that hold this lot together off the car and scattered about the place easy to take in. I began to see that working on this old girl wouldn't be entirely too difficult, and being that I'm not entering her in Pebble Beach or Amelia Island, I had time on my side. You can't rush intimacy. I opened a can of beer and took a good long pull while I looked down her nicely rounded flanks — I can't wait to drive this thing. I put the can down and slid under her rump staring at the void where the tank's been living for 34 years. Now, I tend to skim over a car I'm looking to buy because I know exactly what to look for and what sorts of things I tell myself "no problem" when something pretty major but fixable surfaces, when major structural damage rears its head though, I lose interest immediately. So imagine my surprise to find everything aft of the gearbox, once hidden by the fuel tank, to look like it did when she left Werk II in Zuffenhausen. Nothing but the factory gray primer ... no ripples, rust, weld seams to suggest a clip, nothing — virginal. I couldn't see any evidence of damage when I looked on the hatch floor before I bought it, what I was seeing now confirmed it.

INDUSTRY PULSE

Do you consider yourself knowledgeable about 928s?

- 1. Yes
- 2. No

Answer Now



The fuel accumulator with a healthy coating of patina. If you look at the right side you can see where it was just beginning to seep. There's one on ebay as of this writing for \$238.

With a solid structure, anything is possible ... even the fuel hose debacle. Now, try to stay with me for a moment here. I'll assume you know nothing about 928s and their fuel hoses/lines like me before I got involved with this old girl. Normally, if one needed to replace a fuel hose of the high pressure or return line varietal, you could buy it from your favorite Porsche parts provider on the internet. Don't have? No problem, just ring Porsche and order it, they'll have it for sure. Wrong, you're SOL mein schatz. No longer available from Porsche, there aren't even any in das Vaterland. You could try ebay.de and search for "Porsche Old Timer 928 kraftstoffschlauch" with the part numbers you need, but it's a long shot. Before you reach for the fifth of Jack though, relax, this is where the chaps I talked about in the opening paragraph come in.



Fuel hoses already replaced by the previous owner using correct SAE30R9 high-pressure fuel injection hose and high pressure fuel clamps. The upper one here is the supply hose and the lower one is the return hose. I'll rebuild these using Cohline high-pressure fuel hose. Which method to clamp the supply hose onto the barbs though? Not sure yet.

Apparently this nonsense about fuel hose being NLA is not a new phenomenon. The problem is that demand dwindled to the point that companies no longer found it viable to stock let alone produce the said item ... it's business, nothing personal. Luckily, the guys on the 928 forums have figured out a few ways to address this problem. The ingredients seem simple enough; 7.5mm and 9.5mm high-pressure fuel hose (preferably the German Cohline stuff), the barbs and nipples you already have on the old hoses to reuse, and a means to fasten the hose to the barbs and nipples. This is the sticky bit. Some have used clamps with great success, some have used the Oetiker high-pressure fuel clamps (essentially a clamp that creates a nice uniform bite around the diameter of the hose) crimped with Knipex pliers, and a few have enlisted the services of a local hydraulic shop to use ferrule collars to crimp the hose similar to the way the original was made. There's also a more expensive option using AN fittings and braided high-pressure lines, all custom made, heavy duty/high-quality stuff used in racing applications. Those are your options, and the good thing is that each has been used by lots of 928 owners with great success.



The usual suspects. The big snakelike guy is the one that comes off the fuel pump, up and around the tank, along the rear passenger side wheel well before mating up with the accumulator. The upper two in the center are in the engine compartment, and the little guy on the bottom is the return line to the fuel sending unit. The only one missing here is the hose coming off the fuel filter ... that's the money shot.

It seems that the only tricky bit is the high-pressure supply line with the barbed ends. I've heard that you shouldn't clamp a rubber hose around a barb because the rubber will get cut by the barbs upon compression possibly causing it to leak or burst as it ages. Apparently the factory high-pressure hose has a plastic inner liner that is force fit over the barb without the use of crimp collars; the ferrule collar you see is only there to protect the ends and not crimped. Technically, this is the type of hose made to be used with barbed end fittings. It makes sense to me and something to consider when I rebuild these lines.

So what option am I choosing? Dunno yet. I'll consult with my friend James, an old-school Porsche Master Tech, to see what he thinks. For now though, I set out to remove the frayed return line that goes into the fuel sending unit first by cutting off the crimped ferrule with a dremel and pulling the line out. It reveals a nipple so I'll use an Oetiker high-pressure fuel clamp here with some 9.5mm Cohlne high pressure hose, both available from Belmetric. The longest line from the fuel pump to the fuel accumulator is something I need an opinion on. The problem is twofold; it's 34 years old and because it's been wrapped in a snugly foam insulator to protect it from the elements and wasn't by a heat source, its suppleness and flexibility can be deceptive. Even with a coating of white powder over it, logic tells me that because of its age, it's gotta go. You'll never know what condition the insides are in — fuel can wreak havoc on rubber over time. Anyhow, this one has nipple fittings with crimped ferrules so technically I can use the high pressure crimp clamps.

The supply and return lines under the hood have already been replaced with proper SAE30R9 hose and Swedish ABA clamps. The owner before the guy I bought the car from did his due diligence and used one of the methods described above to address the issue on these two critical lines — I have a problem with this. You see, these two hoses happen to live very close to the exhaust manifold on the left bank (passenger side) of cylinders and judging from the kind of DIY butchery I found so far, I can't trust the workmanship with so much at stake. It looks right, and didn't leak so far, but I'm not taking chances here so I'll rebuild them properly — to my standards.



...and there she is, Part # 928 356 037 00. Just looking at this beautiful hose is enough to make a grown man weep. Will you look at those cadmium plated fittings?

Right, that leaves me with only three things that are suspect in the fuel chain: the fuel accumulator, the new-looking Mahle fuel filter and the last high-pressure fuel supply hose that connects it to the hard line under the car.

Before we go on, let me lay some more of this car's history on you. It turns out that this old girl sat for a total of about 10 years before the last two owners, and two or three more years during their watch. What that means is that she was idle for close to one-third of her life. Not good. The CIS system hates it and can become resentful at your attempts to wake it up, and fuel begins to revert back to its state of dinosaur DNA glop. This is the reason why I'm dissecting the fuel system, I'm gonna make sure everything on this end is clean and new so that there aren't any doubts along the way. It also explains why the car was not only dumped in the first place, but sold so cheap to me. Neither of them, even with the help of the local gas station mechanic, who probably knew as much as your Grandma about 928s, could figure out why she coughed and died. Logically, I have to do a thorough job here because no one else did.



Here's what an Oetkier high-pressure crimp clamp and the Knipex pliers to crimp them with look like. This may very well be the method I use to finish the return hoses. (images borrowed from Belmetric)

We left off staring into the passenger side rear wheel well where the last three suspects live, behind a plastic protective cover that has long gone missing like the beer I thought I just opened. It's no wonder the fuel accumulator (a component that maintains fuel pressure after the car has been shut off to ensure a drama free restart) is covered in rust and badly pitted. The only shiny thing in there was the fuel filter that the previous owner mistook for a new fuel pump (one of his selling points) adorned with fresh channel lock teeth marks on the fittings. No worries though, out she comes along with the fuel accumulator and high-pressure fuel hose with little fuss. I separate all three, set the fuel accumulator aside, pitch the fuel filter and carefully inspect the hose which had seen better days. I figured this is one to rebuild but, wait for it ... I hit pay dirt. A quick call to my longtime parts go-to guy, Mike Liptak, over at our local Porsche dealer tells me that this hose is still available but it'll be coming out of Germany, ETA four weeks. This is the best news I've heard all day because that's one less hose I have to rebuild.

Did the fuel accumulator give up the ghost? By plugging the outlet orifice and pumping about 3 Bar of compressed air into the inlet — it holds pressure. The problem is this, there's fuel sloshing around on the upper chamber of the accumulator where the diaphragm expands into telling me that although it holds pressure just fine, the fuel trapped in the upper chamber suggests a small hole in the diaphragm. I have the later style type that has screw on the top with grooves along its shaft designed to allow seepage of fuel when the diaphragm ruptures giving you fair warning. Earlier versions of the 79 and the automatics had a hose instead to allow any leakage back into the fuel tank. When I turned the screw and broke the rust seal holding it in place, gas leaked out. I tightened it down again and it still wept. Looks like I'll need a new one. Because the accumulator had no plastic "splash shield," rust and time sealed it enough to give the impression that it was still good. Anyway, loads of progress today; slow, but in better shape than yesterday.

Tempted? You should be, because so far, this project really isn't a big deal. As long as you're mechanically inclined, seek help from those that have already been there and not afraid of roving your hands around Stuttgart metal, you can do what I am doing. Sure, there'll be some complications along the way and it may take you a while, but that's all part of the adventure. The upside? Not only is the work gratifying knowing that little by little you'll be preserving one of Porsche's greatest cars that very few own (there's a pompous air of exclusivity here if you care about that sort of thing), you'll be amongst the high ranks of its custodians with enough experience to help others just starting out.



This is how the crimped ferrules are removed from the fuel hoses. Two cuts with a dremel cutting wheel, peel back the cut strip and off it comes. Yep, the boys on Rennlist showed me this trick.

Listen to me, take the risk. With a sensible initial purchase investment and some cojones, you can't get hurt if you buy the right car, take your time and do things the right way. It's cool if you can't do it all once, you can creep along in increments as the budget allows. And, unlike 356s, early 911s and 914s, you won't have to deal with serious rust issues unless of course a previous accident was poorly repaired. These old girls have aluminum doors, fenders, hood and hot-dip galvanized steel for rest of the body making them pretty robust in this department. These points alone make it a terrific opportunity to own one of the most expensive Porsches in its day, not to mention a true GT car in every sense of the word, at a reasonable price. Have plenty of money? Want a vintage gentleman's Porsche with Avant Garde design, smooth power, superb handling and old world build quality? Good, because there are plenty of near perfect examples out there needing nothing but you, a full tank of gas and maybe a good old-fashioned Italian tune-up.

Either way, rest assured that if things do go amiss, you'll meet a bunch of the contemporary craftsmen behind this machine on forums and 928 parts specialists ready to help you sort anything out. As ROG100 (Roger, a parts supplier with a focus on 928s) mentioned, "Many of us here are already restoring early OB's and (are) way ahead of the curve." You'll be in great hands for sure.

A dyed-in-the wool, air-cooled 911 junkie, Pablo Deferrari doesn't discriminate against other Porsches. He is fascinated by the company, the people behind these great machines and how every model's existence had unmistakable DNA from the model before it. The stories behind each car and how they all in some way saved Porsche from the brink of extinction inspires him honor their place in its history by saving them one at a time.

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