

# A Replacement OVS

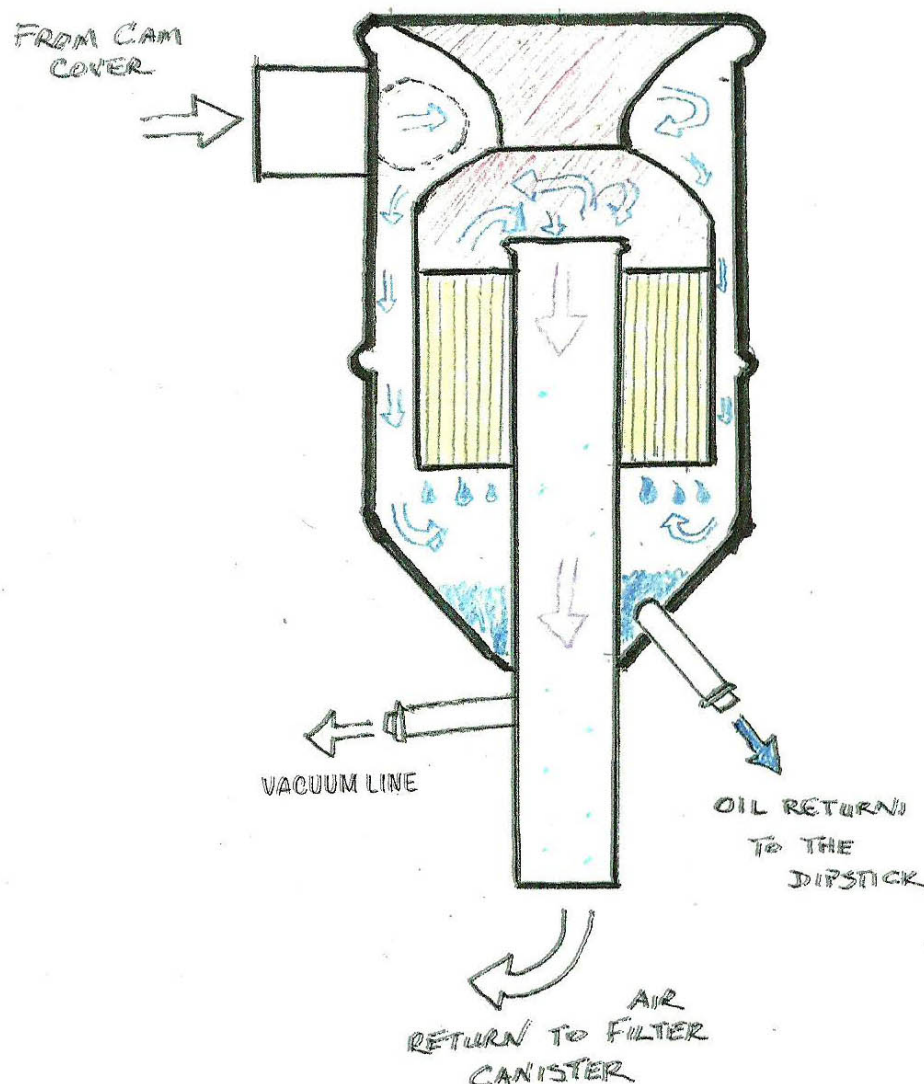
Interview with Rick Lesniewicz

## WHAT IS AN OVS?

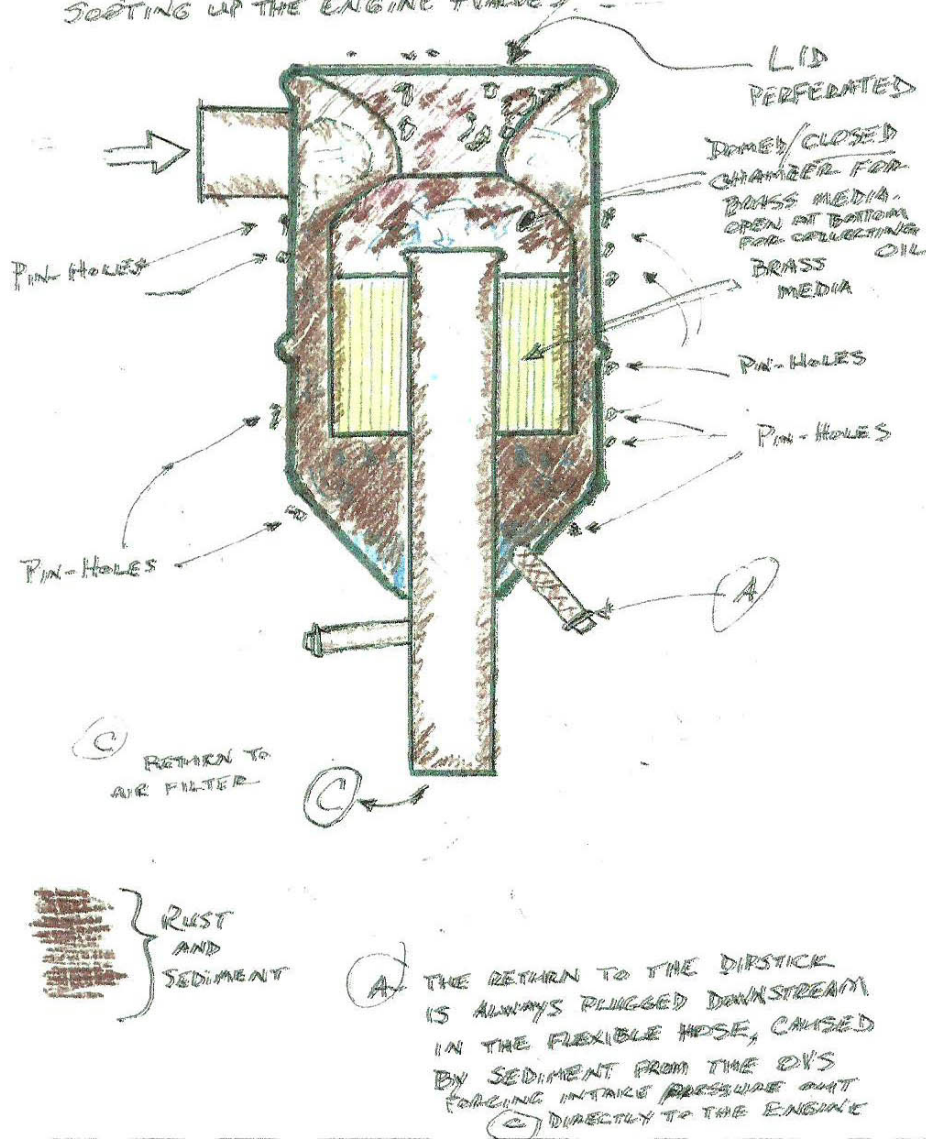
An OVS (Oil Vapor Separator) filters the gases that circulate in a fuel injected Alfa engine by separating out the oil and returning it to the sump. Pulling the oil out from the gases avoids having it combust in the cylinder and results in cleaner exhaust emissions. Cleaner exhaust was the primary reason that OVSeS were fitted to SPICA engines; OVSeS are also used on Bosch fuel injected engines.

## WHAT ARE THE SYMPTOMS OF A BAD OVS?

- Attempts to clean them draw rust and sludge from them — the tip of the iceberg
- Oily film and residue in your engine bay and on the unit caused by external rust (pinholes on the OVS body and lid)
- Excessive oily residue in your air filter and cannister
- Poor starting and running characteristics because the spark plugs are oiled and have built up carbon
- Compression and power goes down from carboned valves
- Excessive smoke from the tail pipe
- Prematurely blackened oil when you pull the dipstick after a recent oil change
- Sludge on the oil cap



WHEN THE OVS BECOMES BLOCKED + CORRODED FROM RUST & SEDIMENT... THE DRAFT FROM THE CAM COVER EITHER BACKS UP IN THE SUMP + BLOWS GASKETS OR FINDS ITS WAY INTO THE AIR FILTER MIXING WITH FUEL + SOOTING UP THE ENGINE + VALVES.



- Oil return line to the sump is blocked with debris from the OVS corrosion
- Oil pools in your intake runners where it condenses from the intake filter canister; this oil should have been returned to the sump
- False diagnosis that your piston rings are worn

### HOW TO DETERMINE IF AN OVS IS FAULTY?

Start with the oil return line to the sump. On most SPICA cars it is a small plastic line that follows the front subframe rail under the radiator to the dipstick on the left side of the engine. It is simple to release the connections at both ends on the bottoms of the OVS and the dipstick tube. (Some later Bosch cars have a direct connection to the sump closer to the OVS.) Try to pass air through the oil return line. If air does not pass through this line, your OVS is corroded and is passing crud to the line. A temporary fix is to auger out the line using an 18 gauge wire and solvent, but you are putting a band-aid on a problem that needs a tourniquet.

Another clue is oil weeping around the OVS. The OVS will develop pin-holes from rusting from within. Some of these holes are disguised under the black paint of the OVS. Mine had two pinholes visible when I removed it for inspection. After I removed the paint it looked like it had been the target of a shotgun blast.





The ineffective solution has been to rinse with solvents until clear and then JB Weld the holes—a total waste of time.

#### **WHY FABRICATE YOUR OWN OVS?**

My first inclination was to source a replacement from any source, including used ones. Unfortunately, the used ones that I acquired were just as bad as mine.

Centerline was the only source for new ones that I found, but they were back ordered. Also, theirs was a relatively expensive plastic bolt-in product for which they had no idea (and still don't to my knowledge) when back orders would be filled.

I never approached European suppliers, because OVS didn't appear on their websites. I could find no one in the industry who offers one remotely similar to what Centerline offered on back order, nor any alternative.

That there were no solutions in the marketplace was confirmed after talking to professional Alfa repair shops. I concluded that I had to fix the OVS problem on my own.

#### **HOW DID YOU PROCEED?**

I decided to do an “autopsy” on my OEM unit (my car is a '73 and it looked like it was an original) and study how it coalesced and separated oil from gas coming off the cam cover. I knew the carbon steel OEM materials were not a solution, as they had a limited lifespan much like a steel exhaust system. Also, it was impossible to monitor the internal workings of the OEM OVS. I had heard about Rube Goldberg catch cans and homemade PVC contraptions others had tried, but they didn't meet my criteria.

The dimensions of the components of the unit were not unique, so I used those to construct a close facsimile of the OEM unit

in brass. The factory used brazing on steel to assemble the OEM unit. Soldering brass using low temperature solder is a technique that any handyman, me included, could replicate. Using brass also avoids corrosion inherent in the OEM steel units and their failure characteristics.

One thing led to another, and after weeks of searching for components and drafting designs, I came up with a design that I could fabricate myself using better materials, which looked like the original OVS at an affordable cost.

#### **WHY IS ASSEMBLY DONE BY THE BUYER?**

I didn't want to compete with anyone who has a stake in a finished product; it just went against my grain.

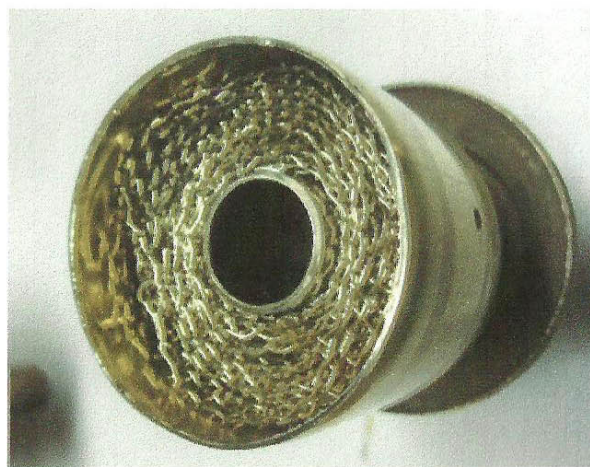
My prototype had to satisfy simple criteria:

- It had to look like an original, but be superior to it and corrosion free.





- It had to allow for internal inspection. Mine has a top peep hole, covered by a plug, that allows inspection.
- It had to cost \$100, a price low enough to make it unattractive for someone to steal my idea and compete with me.
- A fully assembled unit hides the inner workings. Customers should know what is inside the unit and how it works, so as to gain an appreciation of how critical an OVS is to a fuel injected engine.
- Anyone without a fear of flame should be able to build it.



#### WHAT IS YOUR BACKGROUND?

I'm retired from a career in sales and marketing with Owens Corning (Fiberglas). Before that I was an USAF pilot. I've always been good at solving problems, but I know my limits.

I've been into Alfas exclusively as a hobby for almost forty years. I do almost all my own work on cars, because I love to cuss, am basically frugal, and curious how anyone can charge \$120/hour doing something simple that is written in a manual.



#### YOUR EXPERIENCE WITH THIS PROJECT?

It's been invigorating!

Since the middle of June, when this idea spawned, I have made friends all over North America, and my car is happier too. Thanks for allowing me to share my story.

For more information visit [velocissima.com/classifieds/RickOilSep.htm](http://velocissima.com/classifieds/RickOilSep.htm)

This interview appeared in the September, 2020, issue of *Overheard Cams*, the magazine of the Alfa Romeo Association, and is reprinted here with permission. Thank you, folks!