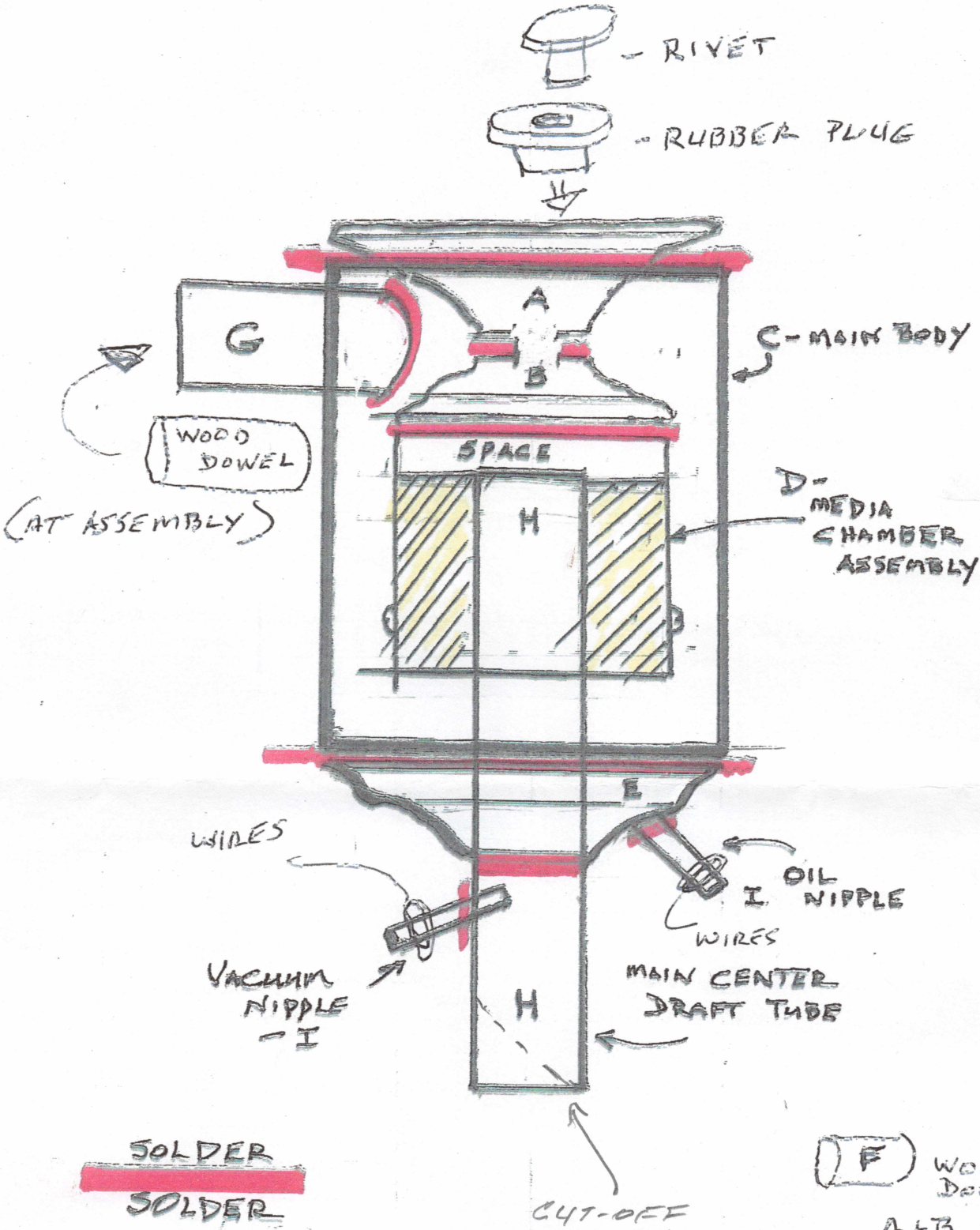

OVS Parts List

A.....Main body, Lid

B.....Media chamber, Lid

C.....Main Body

D.....Media Chamber

E.....Oil collecter

F.....7/16" wood dowel to center hole in A & B WHEN SOLDERING

G.....Inlet port with Large dowel

H.....Center Draft Tube

I...Nipples (Short-oil return /Long- Vac on H)

REVISION 9/27/20

INSTRUCTIONS

Parts included in the package

Part F is a centering dowel to mate A and B at the facing of the center holes which butt together with solder . You will understand more later.

Part G has a a 5/8" dowel that nests in the inlet port to help you position this awkward piece (radius-ed inlet port) on the Body, C at the time of soldering... It is critical to stabilize the inlet port when flux and gravity work against you just as you are setting up to solder. It is an impossible balancing act without the dowel . These two dowels are sacrificial..They must be IN PLACE at the time you solder. The smaller one for centering A and B matches up both center holes so you can install a plug later. The big one for part G is a must to hold the piece steady WHILE YOU SOLDER. They might char a little but they are disposed of after the parts cool down.

There is a paper packet with wires that will replace oem nipple barbs and a rubber plug and SS rivet to cap the lid.

The final solder of the Center Draft Tube, H, to the Main Body Oil Collector, E, (Base) will lock H in position, mating it to the body and only then will it be stationary and be part of the finished unit with no moving parts. It will tend to want to exit the media when you handle it.. The FINAL operation you have is drilling the hole in the Main center draft tube for the Vacuum line (the longer of the two nipples) .....Copy the OEM location and angle. USE A 7/32" drill and rat-tail file or chain saw sharpener file to firmly seat the nipple. ..Make them nest to receive solder..

A word on hand tools.. I recommend a rat-tail semi-fine file for dressing the nipple ports; definitely a large fine half round file to dress the inlet port/body... This can be a PITA but just go steady and not too far. YOU WANT TO END UP WITH A reasonably **FLUSH Mating** OF THE INLET, G ON THE BODY, C. DO Not TRY TO INSERT THE WHOLE INLET PORT INTO THE HOLE IN THE MAIN BODY by enlarging the hole. Final fitment is easiest by wrapping 120 or 220 sand paper for metals on the body of the unit with the rough side OUT .. This allows you to use the paper to form the exact profile and curvature you are looking for while you rub the inlet port on it to and fro and you should get a near perfect fit in a few minutes with repeated trial dry fittings..

SOLDER!!!! I watched some You-tubes on brass tube soldering..Some of them recommended silver solder. I don't. It takes too much heat and is not necessary for this project.. I used a Bernzomatic Butane Detail Torch Part No. ST2200 (Butane is not included so buy a can).. It fills like a butane lighter and it will run dry when you least want it to so keep it filled after every job phase and follow the directions on the package to be careful refueling if the torch is hot.. follow the simple rules .. safety from fires.. and TAKE YOUR TIME...BRAKELEEN only the surfaces to solder applied to a paper towel If you don't like Brakleen, use a solvent of your choice to clean the production oil off the metals. Leave NO finger prints or oil before soldering on the area to solder.. light scuffing with green Scotch-brite where you want solder applied.. Brakeleen again..WATER SOLUBLE FLUX PASTE is highly recommended (Oatey H-20 #30132 .. Water rinses off the residue after it cools... I used 50% tin /50% lead solder and recommend it.. **The 50/50 solder melts and flows at 365F** .. This is lower than what your oven is when you bake a frozen pizza. You want to be this low so you don't melt off all the other parts that are already soldered on the project**. DO NOT USE SILVER SOLDER!!! It IS TOO HOT for such a small project**. NOR DO I THINK A MAPP TORCH IS APPROPRIATE..You will learn how much heat it takes to melt the solder by test touching the solder to the hot brass which dulls in color and observe the flux boiling. Never put the solder in the flame, it will vaporize. Solder should follow behind the flame as you track the torch on the joint. It takes two hands. It is not the flame that melts the solder. It is the metal if it is hot enough at 360-400F. **The internet is full of video tutorials on "Soldering brass tubing". Use it.. IT's FREE and IGNORE SILVER SOLDER.**

REVISION 9/27/20

Building the OVS

I recommend you FIRST READ ALL THE INSTRUCTIONS NOW so you have a full understanding of the process and how the components fit together.

Phase ONE--- On your table, stack the parts DRY as if it was assembled UPSIDE DOWN.. Get familiar with the orientation of the parts. THIS IS CRITICAL to understand what you are trying to achieve in the end. There are ONLY TWO VARIABLES AND THEY ARE THE VERTICAL POSITION OF THE FLOATING CENTER DRAFT TUBE, H, AND THE CENTERING OF THE MEDIA CHAMBER.,ABD inside the main Body, C.

So starting with Part A, cup side down , stack B, then D nested in B with the gapped side of D (1/4" space) against B ... (this gives more plenum space in the media chamber above the media).. Then cover your "tower" with the body and finally close it with E.. (H is located in the media)...If it is a tight fit between E and H ... just wiggle it and twist it a little when finally positioning them.. NO OILS .. bad karma for soldering. So now you know what it looks like upside down...

Questions 1---" How do you get the lid A to solder to the top of C the main body without a lip in your favor ..the lid is like a Bowl and inverted and the two don't nest!.????". Answer – Eyeball the slope of the lid edge and contact with the body.. **You will see the body needs to be slightly chamfered or beveled inward on the top edge.. to increase the mating surface with A.** Not all of the .065 wall, just about half so the solder can call it home.. a file or a Dremel grind stone will do it but you must "knock-down " the inner edge of the body for the solder to be strong. It creates a "valley" and the solder will hold if you have fluxed and prep cleaned both surfaces well.

Question 2-- "How do you center the media chamber inside the body..the lid/body relationship is easy to get out of kilter with no lip to nest to? Answer: You solder the body and lid upside down and a smidge move of the body on the lid will get you center and don't touch it as you solder . You want the media chamber to be center with about a 3/16" halo around it between the chamber and the body sides. Some have used a long through bolt or threaded rod and nut as a jig. Your draft tube has some angular freedom like a pole in mud so it will be fine when it is mounted through the base E and nested on the body when you solder the oil collector on the body.

Question 3—How do you know the FINAL vertical position of the draft tube if it is floating and the last bit to be soldered.....? Answer: When YOU test seat the bottom Collector to the body everything above it will be soldered. Top lid to body....media chamber to top lid ... when you get the bottom and draft tube working to just a little effort to slide against each other you then peak into the inspection hole on the top lid and flush up the top of the draft tube with the top of the media. Pretty cool. Now you can mark on the shaft where the bottom oil collector and shaft gets solder. Don't forget the Bra-KLEEN and Scotch Brite (GREEN).

Let's get started. Phase TWO

1. Solder A and B—secure hole to hole with 7/16" pilot wood dowel that is discarded after the parts A/B cool.
2. Solder the A/B unit to the D. You now have ABD soldered and H is still floating in the media
3. Solder the short Oil return nipple I to E (You will be getting comfortable with soldering by now)

4. Inlet port G-- solder to body .. MAKE SURE YOU HAVE THE CORRECT ORIENTATION WITH THE ORIGINAL OEM part AS A GUIDE AND USE THE 5/8" LOCATING DOWEL .The dowel will support G in the final position before soldering. READ ON

5. **IMPORTANT FILE: DOUBLE CHECK THE ORIENTATION OF THE INLET PORT (G). IT IS EASY TO REVERSE THE INTENDED DIRECTION OF IT IF IT IS OFF 180 DEGREES. THE RESULT WILL PUT THE INLET PORT ON THE WRONG SIDE OF THE MOUNTED OVS. NOT TERMINAL BUT NOT CORRECT. IT STILL CAN BE PLUMBED WITH THE ORIGINAL HOSE BUT IT ISN'T Correct AND PRETTY EASY TO DO.**

6. Apply solder to the joint with the Body horizontal and G positioned.. Remove and discard the dowel after the pieces cool..
7. Chamfer the top edge of the Body, C slightly to receive solder.
8. Take sub-assembly (A,B, D and H) and invert it and place the body on the lid (Is the bevel/chamfer done on the top edge of the body C?) CENTER THE MEDIA CHAMBER BY EYEBALLING the spacing between the chamber and the inner body wall.. solder the Body, C to Top Lid A after you are satisfied you have centered the media chamber with the assembly upside down inside the body..
9. Let everything cool
10. Slide bottom E on H to nest with body and CHECK THE H POSITION THROUGH THE PEEP HOLE ON THE TOP LID TO DOUBLE CHECK THE END OF H IS FLUSH WITH THE MEDIA NOT FLUSH WITH THE ¼" rise of the media CHAMBER WALLS.. Solder Oil collector bottom E to body C.. then the draft tube H to E after double and triple checking the location of H in the media.
11. Drill hole (7/32 " bit) for vacuum nipple in H and solder nipple in place in the draft tube H.
12. One last step. Reproduce the barb on the nipples with the little brass curly-q wires I sent you in a packet. There is a photo to show how they go on.. Scotch- brite the tip of the nipple, clean, slip on the wire , flux, 10 seconds of heat and drop the solder on it. DONE... This will secure your oil return and vacuum hoses in place when you clamp them.
13. Have a cold one.. Congrats you are Finito!!!. To install the top plug A) Insert rubber seal included B) Using thumb pressure a dab of liquid soap to lube the SS rivet included and push it home in the center hole of the rubber seal. To open/inspect OVS inside down the road, pull the rivet out with pliers, then lift out the rubber seal.
14. Installation: The bracket/OVS fit is just a tad loose .. Two little stick- on bumper cushions like the soft "buttons" for the bottom of vases or rubber washers...on the firewall side of the bracket act as shims perfectly... Also, the inlet is slightly smaller (3/4" v. 19mm) than the original so the original "26" clamp might bottom out before it seals completely and could weep oil. Wrap a few plies of electrical tape on it before you install the inlet hose to correct that. You should be good to go.

DISCLAIMER-- There are some basic safety principles in the public domain to follow. It is up to the reader to follow them. Guard yourself against sharp edges on the components which can lacerate you. THEY WILL CUT YOU if you aren't careful. Soldering safety guidelines should be followed around anything flammable. And the objects you will be soldering will be HOT enough to severely burn bare flesh before they cool. DO NOT USE BRA-KLEEN ON A HOT SURFACE. JB Weld or epoxies are not recommended but it's up to you to decide how it applies to this project. Performance of the product is neither guaranteed, nor implied but is based on the original design concepts and geometry.

A few words on OVS operation and what to expect.. The unit is based on a close facsimile to the original unit. It SHOULD provide the service intended of separating oil and returning it to your engine sump. IT CANNOT DO THAT IF YOUR RETURN LINE IS RESTRICTED AND THIS EFFORT AND INVESTMENT WOULD BE IN VAIN if the line is restricted.

Once cleared the line should remain clear of debris because your new OVS will not shed rust and corrosion like the old one did.

Paint? Your choice in a rattle can.. I don't recommend powder-coating because it involves heat close to the solder melting point.

PS be sure to prime your return line after it is cleared with clean oil with a pet syringe found at your local pharmacist behind the counter after it is cleared.., 20 milliliters is what ALFA prescribed. It will probably take repeated attempts to clear the line with a full length of 18 Ga wire with a bent over loop on the business end (so it doesn't snag) to auger the crud out. Once the wire makes it to the dipstick where the hose has been removed, rinse the line out with a solvent, fuel, or Bra-Kleen and blow it clear with compressed air. Of course, you have the option to replace the line, however with access limited, I found the clean-out procedure a very adequate solution. Thanks for everything. Rick RLESN@Comcast.net I am always available to answer ANY questions.