C7 Corvette NA/Dry sump

C7 Z51 optioned drysump car with stock air box. How the PCV system works now is filtered clean MAF metered fresh air enters the dry sump tank drawn from the main air intake bridge assy through a hard line that attaches to the very front most barb on the oil reservoir tank. It then splits and runs from the tank (and cyclonic separator) to both valve covers. One connection on the driverside front, and 2 lines on the passenger side valve cover. One connects app 1/2 way back, and the other to the front of it. This filtered fresh air then is drawn down into each valve cover, and from there travels around the rocker arms and is pulled down the pushrod valleys into the main portion of the crankcase, all the while flushing and making up for the foul/dirty vapors being evacuated (drawn out) the valley PCV barb that pints toward the drivers side front of the engine compartment and located under the throttle body.



Note! If a high HP or forced induction apllication the optional greater flow PCV valve may be needed!

There is a U shaped convoluted hard plastic tube that then is connected to the vacuum barb that comes off of the drivers side of the intake manifold snout. This U shaped tube you unsnap from both the IM snout barb, and the valley PCV barb and set aside to save if reverting to stock in the future. You mount the main catchcan (If Elite, make sure you chose the E2-X system) to a bracket that attaches to the front of the driverside cylinder head in one of the 8mm threaded holes not used in

the C7. You will run one hose from the valley PCV barb (with NO checkvalve inline) to the center fitting on the can. This is the inlet of the foul vapors from the crankcase. Then, one outer fitting (both come from the same outlet chamber so either one) WITH checkvalve inline flowing AWAY from the can will attach to the vaccum barb on the drivers side of the IM snout. This will provide evacuation suction at idle, deceleration, and light cruise. The opposite outer fitting will run, WITH checkvalve inline flowing AWAY from the can, to a Venturi Vaccum Valve (included) you install into a hole you drill (1/2" drill bit) into the intake coupler in the flat spot just before the throttle body inlet. This will provide the evacuation suction needed to continue evacuation when accelerating or at WOT. So no matter what driving mode, the crankcase is always being evacuated.



Now back to the dry sump and the cleanside separator. Replace the oil fill cap with the CSS (cleanside spearator). The plastic base will install with 1/4 turn clockwise to secure, and billet top portion simply pushes in and seats and seals with the O rings. Unsnap that front most hard line from that barb, and snap onto the CSS barb (or if a non OEM barb on CSS cut end off tube and slide 3/8" hose over each to complete the connection). Then run a 3/8" hose to the "T" that is installed into the hard line that connects to the passengerside valve cover.

Now you are left with the open barb at the front top of the oil tank. Run a hose from it, to a T you install into the hard line that connects to the front of the passenger side valve cover. This prevents any pressure pockets from building in the sump tank.

Venturi supplement: Note, the venturi must install at the 45* angle as shown and the best sealant



we have found is Permatex Right Stuff. Make SURE surfaces are cleaned with brake clean or rubbing alcohol and apply a generous bead under the mounting collar, and after pushed in place, tape securely with painters tape and then also apply some on the inner side so when cured if helps hold it in place. Let cure overnight!

Note: The checkvalves always install in the 2 outer fittings on the main can and make SURE they both flow AWAY from the can. Only the center is the inlet from the valley PCV barb.

Now let's review the routing for a NA LT1 Drysump:

The CSS replaces the oil fill cap on the oil tank. The line coming from the main intake air tube, OEM or CAI, will connect directly to the CSS.

The front most barb on the oil tank will not run direct to a T that you add into the RH valve cover hard line. Once done, that covers the fresh air side of the system.

Catch can:

The center of the can with NO checkvalve connects directly to the PCV barb located below and to the side of the throttle body mount flange. This is in the valley cover.

Catch Can Continued:

One outer fitting on can with checkvalve inline flowing AWAY from the can will connect to the intake manifold vacuum barb located on the side of the intake manifold snout just above the valley PCV valve barb.

The opposite outer fitting on can (both exit from the same outlet chamber so does not matter witch) with checkvalve inline flowing AWAY from the can will connect to the Venturi Valve.

For those with other accy's that block the standard mounting location, anywhere you can fit it will work as well.

That completes the installation.