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# Installation – GM LS Universal

## GM LS Engine Universal

The LS based motors have a PCV system that at best is pretty ineffective. This allows oil mist to enter the intake manifold causing undue carbon buildup on the piston tops & valve surfaces & detonation from the contaminated air charge. The catch can goes in-line in your OEM system and due to its design & surface area, condenses these vapors & mist to droplets that then fall to the bottom of the can so only the water vapors, unburnt fuel, & combustion blow-by gasses enter as designed.

The result? Little or no oil contamination in the intake air charge & more consistent power & fuel economy. Just take off your throttle body sometime & reach a finger into the intake manifold snout and see how much oil is on your finger. There should be zero.

What makes the RX catch can work so well? The design. It has a capacity of almost one quart. Anything less is not as effective because the surface area required for cooling the vapors & mist to condense is inefficient.

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contact as much surface area as possible. We also employ a 4 chamber and 3 step design which is unequaled on the market today.

The mounting bracket uses the bottom threaded hole on the passenger cylinder head (very low, near the block). Use the included shoulder bolt to mount angling to the left, so the can will be mounted offset to clear.

Modding the routing to use a good portion of the OEM plumbing. You can retain the stock PCV valve. Note: There is no problem having both PCV valves intact.

The stock PCV valve & tubing is used in the complete PCV mod, all that is needed is a 4 1/2" 3/8 tube. You cut the stock plastic tube 2" behind the PCV valve & slide the 4 1/2" line onto it & to the outlet on the catch can. Then you remove the line from the TB (OEM fresh air source) and the fitting on the front of the valve cover & plug each. You then cut the plastic tube running along the pass side valve cover where the foam covering has a window in it (cut at the front most opening of the window). You will reuse the tube from the TB to go between the inlet in the catch can & the plastic line you cut along the passenger side valve cover.

The final step is to install the clean side separator

Installing the clean side separator allows for an emissions compliant closed system that retains 100% MAF metered air.

Replace your oil fill cap with the cleanside separator below. This will be the fresh air source. Nothing should be open & unfiltered. Then you cap off the fitting from the throttle body (should already be on yours if modded before) where the fresh air did draw from before. That covers the fresh air source

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If your OEM tubing is missing: In order to draw the vapors out you will need to run a hose from the rear of the drivers side valve cover routed around the rear of the engine up to the catch can location at the front of the passenger side cylinder head. Then you will attach to the center (inlet) fitting on the catch can. Then from the outer fitting (outlet) you run a short hose (provided) to the PCV valve (fat side towards the catch can). The OEM line that the PCV valve fit in is plastic & should be cut off app. 2" behind the PCV valve & a 3/8" hose will slide right on it. The front (narrow end) of the PCV valve then plugs into a small 2-3" hose that fits onto the vacuum source at the front passenger side of the intake manifold. (On the latest revision a PCV valve is integrated into the catch can to avoid confusion, and having the OEM valve still in place will not negatively affect the operation).

Note: On LS6 style valley covers the OEM draw is from the Valley cover & is a metered orifice but a PCV valve is still needed. Just plumb the catch can between the vacuum source & the barb on the valley cover.

Lastly, you need to cap off the other fittings on the passenger side valve cover & you are finished. Just remember the vacuum source pulls from the

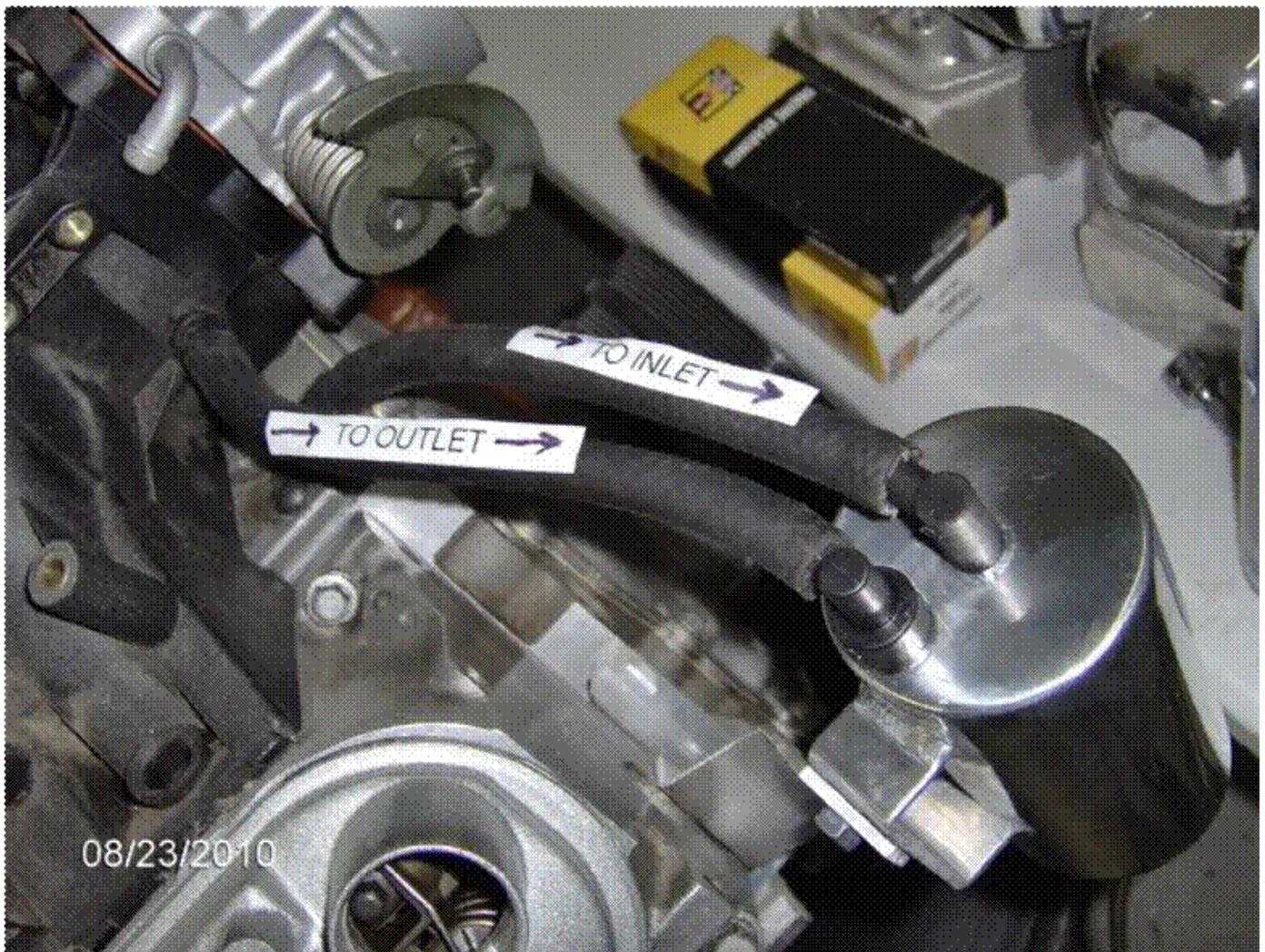
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thousand miles, with engine off and warm, open the drain valve on the bottom of the can to drain any accumulated oil/water/etc. from the can. Do NOT reuse the oil as it will be full of contaminants that have flashed off in the crankcase!

This shows the system routing for a LS6/LS2/LS3/LS7 application.

LS6/LS2/LS3/LS7 style valley cover fitting showing the correct hose routing.

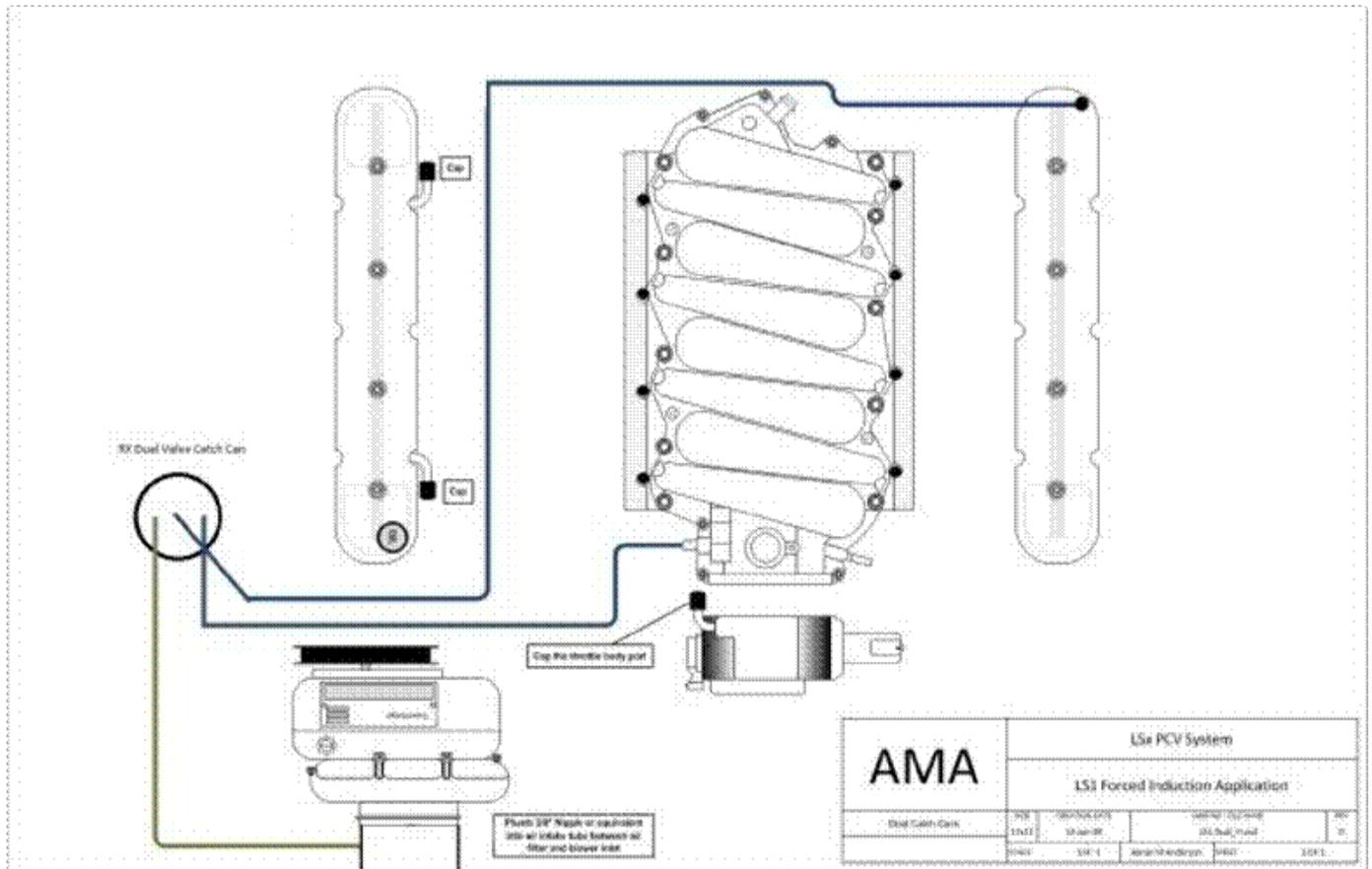


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Below is an example of a dual can setup for race applications where the

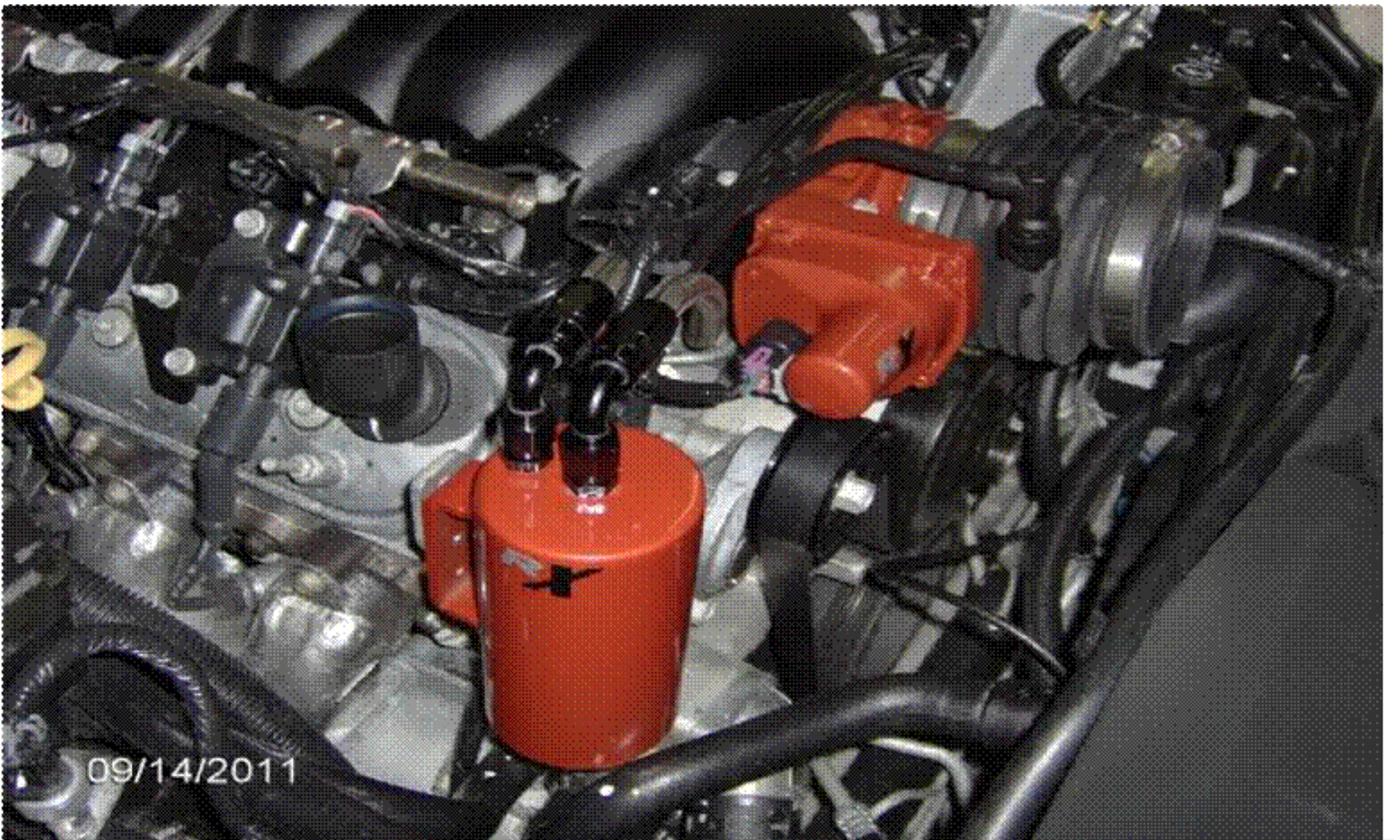
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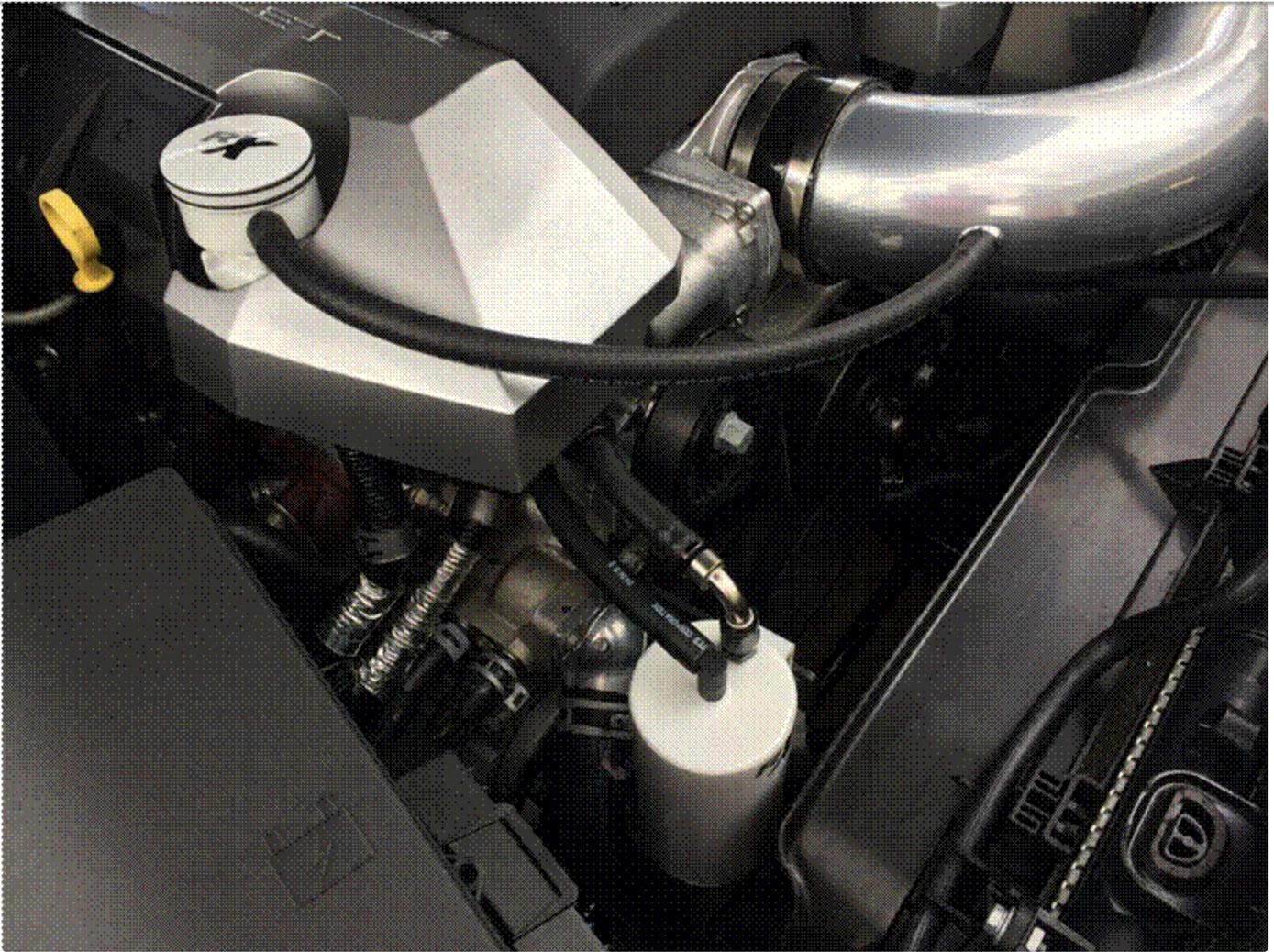
Note: The clear hose running from the drain should be loosely secured (so it can rotate when opening the drain) with zip ties to the fan shroud or frame where you can easily place a drain pan or bottle to catch the trapped oil when it is time to drain. It is recommended it be drained every oil change if not sooner. This oil will be contaminated and should NOT be reused in the motor.



Below are some pictures of the LS3 C6 Corvette:

Note: The fuel rail cover needs to be notched to fit. Also on light trucks use the bolt on the brake master cylinder for the mount.





Note: Dirty side (foul vapors from crankcase) may be from valley cover OR rear of drivers side valve cover. You can "T" both together and then run to center (inlet) of RX separator can.

The RX check valves are inline for silent operation.

This system is available direct at: [www.tracylewisperformance.com](http://www.tracylewisperformance.com) or by phone at: 941-799-7934.