

Installing a CP Oil Catch Can in a C5 Corvette Dave@Conceptual Polymer

Preface: As I have mentioned in “PCV Line Oil Removal 102”, the warmer the catch can, the easier it is for airborne oil and water to escape past filter media. This is true for a couple of reasons:

1. Oil flows more easily as it is heated and is therefore harder to “trap” with a given size of filter media.
2. A catch can that is cooler than the blowby gas contacting it will allow moisture in the gas to condense on the inner surfaces of the catch can. While moisture in of itself is not very harmful, it can react with other residual elements to form acid. Therefore, trapping both oil and water is beneficial to engine longevity.

Now that we know that “cooler is better” when it comes to the location of your catch can installation, this procedure will detail steps recommended to install a Conceptual Polymer catch can in the right-front corner of the engine bay of a C5 Corvette. Installation in other types of vehicles should be very similar to this one.

Tools: The only tools/supplies you will need are:

Citrus-based cleaner with paper towels

Electric drill

#29 drill bit

Hand chamfer/countersink tool

8-32 plug tap

Tap handle for above

Tapping fluid or light oil

Loctite 222 thread-locking compound or equivalent

(2) 8-32 x 3/8 pan head slotted, Phillips, or hex head screws, stainless steel or zinc-plated

Screwdriver for screws listed above

Small strip of double-sided tape

6-ft of 3/8-inch I.D. fuel line hose

(4) worm gear or similar hose clamps

1.0. Clear and clean the area.

- 1.1. Remove the air filter box or aftermarket air filter. While you’re at it, take a few extra minutes to clean the lower radiator shroud and surrounding area with a mild cleaner or just water.
- 1.2. It is important that you also clean the area below the engraved VIN number that is shown in figures 1 and 2.

2.0. Catch Can Alignment

- 2.1. As shown in figures 1 and 2, hold up the catch can assembly so that it is positioned just beneath the VIN number.

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Figures 1 and 2: Catch can mounting position alignment

3.0. Drilling and Tapping of Bracket holes

- 3.1. Remove the bracket from the catch can top and apply a strip of double-sided tape to the bracket's back surface and shown in figure 3.



Figure 3: Double-sided tape (3M VHB)

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- 3.2. Affix the bracket in the same area you chose in step 2. Push hard against the bracket to encourage the tape to keep the bracket in place while you perform the next step.
- 3.3. Using the drill and #29 bit positioned inside one of the bracket screw holes, drill through the steel wall as shown in figure 4. There is a fairly big air gap behind the wall, but be prepared to reduce pressure against the drill as the drill bit breaks through. Because you are drilling through steel, do NOT run the drill at high speed. Medium-low to medium speeds, along with sufficient pressure will allow a sharp drill to cut a hole fairly easily.



Figure 4: Drilling bracket holes

- 3.4. Repeat for the second hole and remove the bracket and tape. See figure 5.

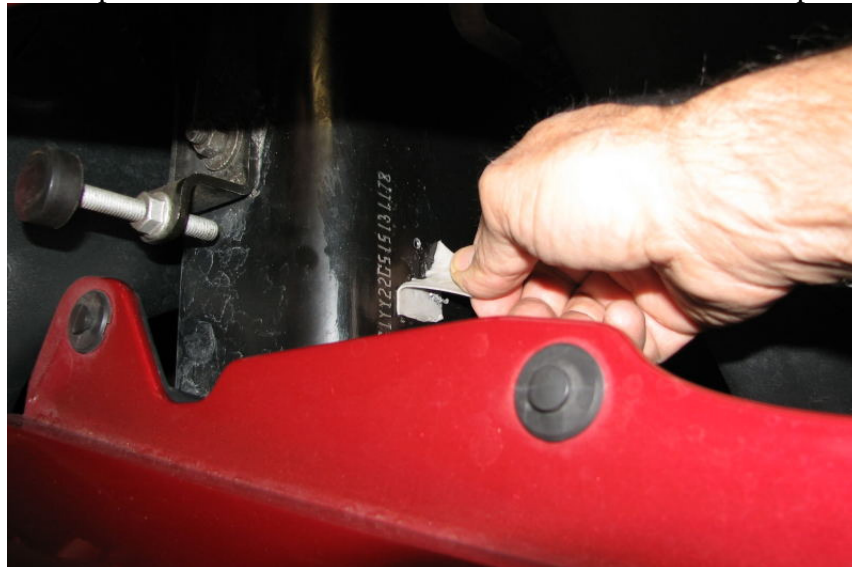


Figure 5

- 3.5. Chamfer each hole with the countersink tool and then thread the holes with the 8-32 tap. See figures 6, 7, and 8.

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Figure 6: Using the countersink tool



Figure 7: Applying tapping fluid to 8-32 tap

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Figure 8: Threading holes with 8-32 tap

- 3.6. Clean the holes and apply the thread-locking compound to each screw as shown in figure 9.



Figure 9: Applying thread-locking compound.

4.0. Final Assembly

- 4.1. Assemble the bracket to the steel wall using the two screws. Align and tighten.
- 4.2. Assemble the catch can to the bracket using the supplied 6-32 x 1/4 brass thumb screws (2 each). To avoid criss-crossing the hoses you will be connecting, shortly, align the catch can so that the “IN” port (aluminum or zinc body unit) is on the right side as you are facing the catch can. The glass body unit should have the “VAC-C” port on the right side.

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- 4.3. At this point you are ready to install the hoses to and from the catch can. Remove the oil-fill tube cap by twisting it counterclockwise and pulling on it, simultaneously.
- 4.4. Remove the passenger side plastic engine cover and note the PCV hose that contains the PCV valve. This hose comes from the rear of the engine bay and is plugged into a curved connector tube. See figures 10, 11, and 12.



Figure 10: Removing the plastic cover

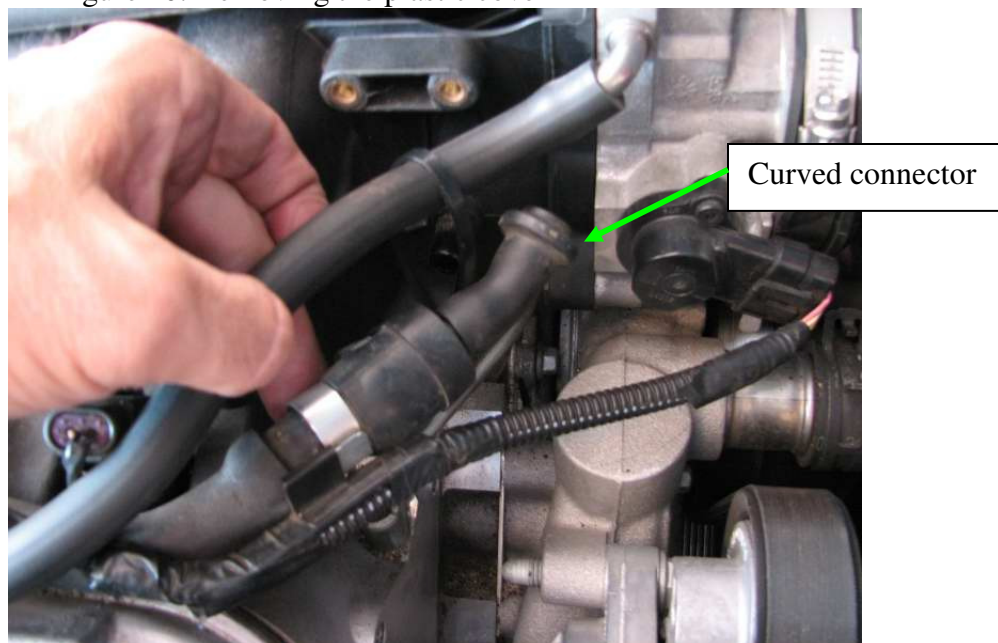


Figure 11: Removing the curved intake port connector

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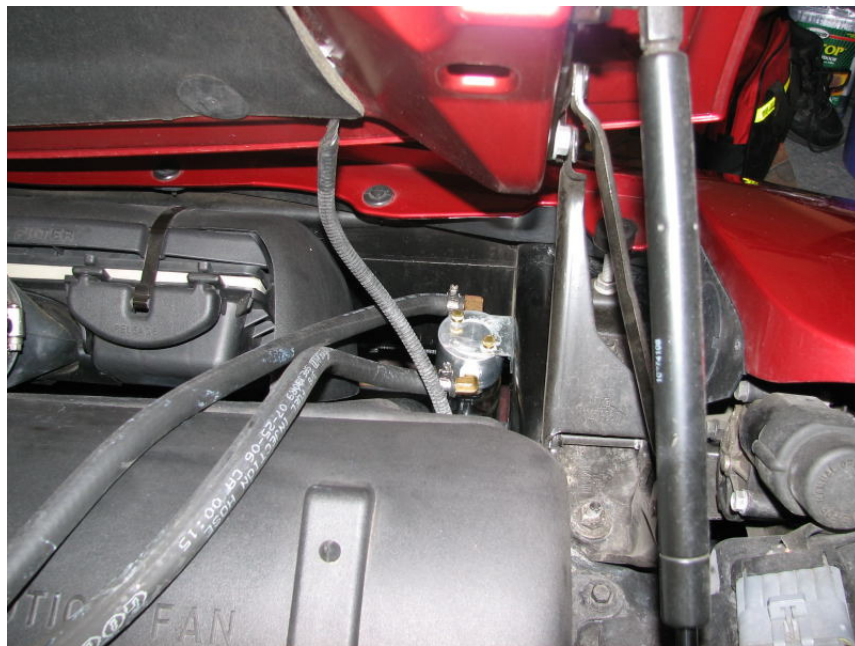
Figure 12: The intake inlet port

- 4.5. Remove the curved connector. When you do this, part of the PCV valve will be exposed. Connect the fuel line hose to the PCV valve, secure with a hose clamp, and then cut the hose as necessary to connect to the “IN” (aluminum or zinc catch can) or “VAC-C” port (glass-body catch can).
- 4.6. Run the remaining length of hose from the opposite port of the catch can to the engine’s intake port (into which the curved connector was assembled before you removed it). Trim hose as necessary. See figures 13 and 14, and 15.



Figure 13: Hoses, plumbed and ready!

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Figures 14 and 15: Hose installation to catch can

- 4.7. Secure each hose end with a hose clamp and be sure to keep the hoses away from rotating parts.
- 4.8. Get ready to trap some oil!

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