



INSTALLATION INSTRUCTIONS

CATCH CAN KIT

2008-2016 MITSUBISHI EVO X

Document# 19-0068

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The EVOX catch can kit is available in 3 variations. The PCV kit installs between the PCV valve and the intake manifold. The crankcase kit installs between the valve cover vent port and the pre-turbo air intake pipe. The VTA kit requires welding and vents the valve cover to atmosphere through the catch can. This instruction manual covers all kits.

Section 1: Installation of PCV Catch Can Kit

1. Prepare the catch can by installing the adapter fittings into the ports as shown.

The -10AN to -6AN adapter screws into the top port and the -10AN to -8AN screws into the side port. Make sure an O-ring is present on the side of the fittings that screws into the catch can.

Tighten using a non-marring wrench. Be careful not to scratch the catch can.



2. Apply a medium strength thread-locker to the 4 included Allen screws and install the bracket to the catch can. Tighten with a 3mm Allen hex wrench.

Screw the -8AN straight hose-end on to the side fitting of the catch can and tighten.

Push on the section of 1/2" ID rubber hose included in the kit to the hose-end until it is fully engaged.

A slight bit of oil applied to the barbs will help.



3. Remove the plastic cover on top of the engine.

Remove the PCV hose by loosening the spring clamps and sliding the hose off the fittings.

The spring clamp on the PCV valve end of the hose will be reused.

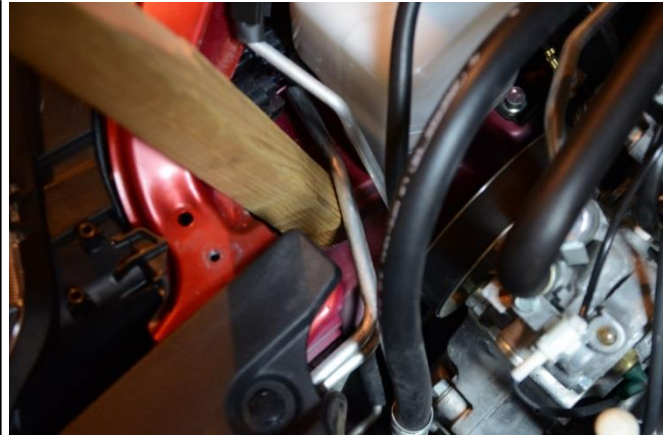


4. Use a 10mm socket to remove the bolt at the inner headlight mounting tab of the RH headlight.



5. If necessary, use a non-marring prying tool such as a piece of wood to gently pry the power steering hard lines away from the core-support. Do not apply excess force or cause damage or kinking to the lines.

This will create clearance for the catch can. Test fitting the catch can in later steps will help determine how much clearance is needed. Lines should not contact catch can body.



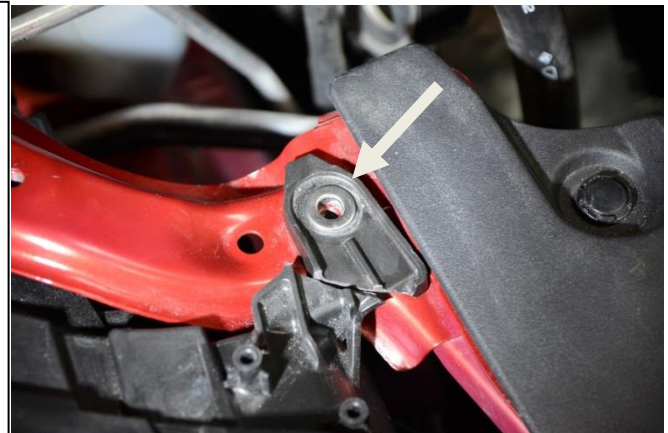
6. If necessary, use the same prying tool to gently pry the A/C hard line inward towards the engine. Do not apply excess force or cause damage or kinking to the lines.

This will create clearance for the catch can hose. Testing catch can fitment in later steps will help determine how much clearance is required.



7. Install the included flat washer on to the headlight tab as shown.

This will be used as a spacer.



8. Place can in position and line up mounting holes with factory threaded holes. If additional clearance is needed, remove catch can and revisit steps 5 and 6.

Note: *The hose coming from the side port of the catch can will be in contact with the A/C hose from step 6. Use the included **split-loom convoluted tubing** to prevent the hoses from abrasion.*

Once clearance is complete, fasten the catch can bracket in place using the included M6x1.0mm screws.



9. Connect the 1/2" hose coming from the catch can side port to the intake manifold port from step 3.

Trim the hose to exact length for best fitment.

Use the included hose clamp and secure the hose to the barb.

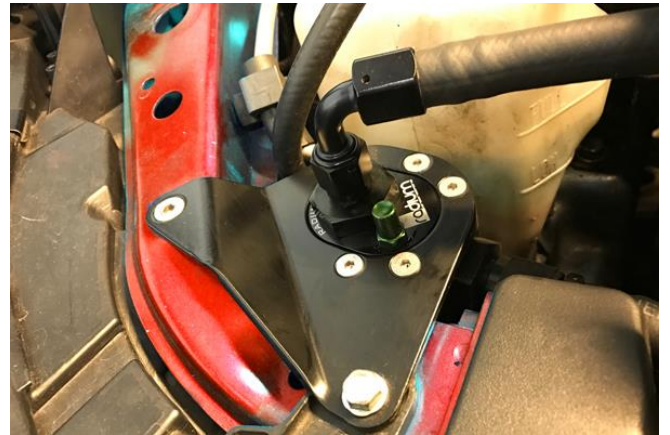


10. Locate the 90 degree push-lok hose end and 3/8" ID hose from the kit.

Push the hose over the fitting's barbs. Some lubrication may be required.

Next, install the hose on to the top port of the catch can.

Do not tighten fitting yet.



11. Route the 3/8" ID hose to the PCV valve.

Trim hose to exact length for proper fitment if necessary.

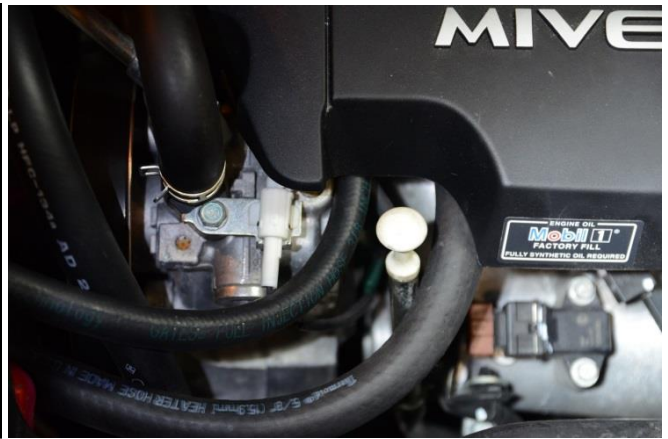
Install using the OEM spring clamp from step 3.



12. With both catch can hoses routed, refit the engine cover.

It is recommended to cut notches into the plastic cover to create clearance for the hoses. Alternatively, use the remaining **split-loom convoluted tubing** to protect the hoses at the areas where they contact the plastic cover.

Installation is complete.



Section 2: Installation of Crankcase Catch Can Kit

13. *To install the optional alternate location crankcase mount kit, go to Section 4.*

Prepare the catch can by installing the two -AN adapter fittings into the catch can ports. Make sure O-rings are installed on the -10AN side of the fittings (the side that screws into the catch can port).

Tighten using a non-marring wrench. Be careful not to scratch the catch can.



14. Apply a medium strength thread-locker to the 4 included Allen screws and install the bracket to the catch can. Tighten with a 3mm Allen hex wrench.



15. Remove engine cover and locate crankcase ventilation port near cylinder #4 on backside of valve cover.

Remove the hose from the barb by loosening the spring clamp and sliding hose off. This spring clamp will be re-used.

Note: The 2010+ EVO X plastic valve cover is shown. The 2008 and 2009 metal valve cover uses a smaller 90 degree barb.



16. Locate the other end of the crankcase ventilation hose on the air intake tube.

Loosen the spring clamp and pull the hose off the barb.

Be careful not to break the plastic fitting that is in the intake tube.



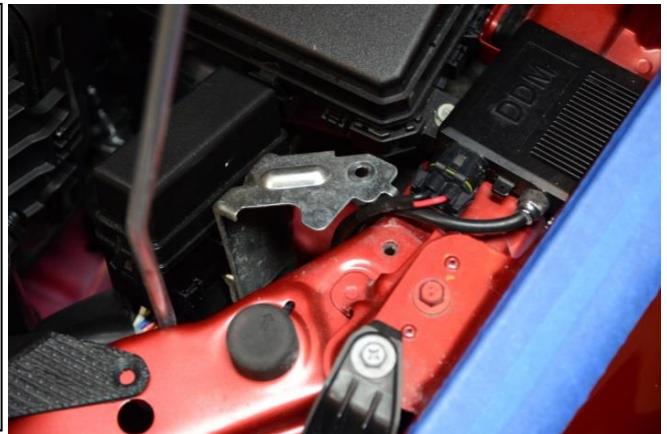
17. Use a 10mm socket to remove the bolt holding the inner headlight tab of the LH headlight.



18. Use a 10mm socket to remove the bolt holding the relay box bracket to the core support.

This is done to provide tool clearance for installing the catch can bracket.

The relay box will be put back in place after the catch can bracket is secure.



19. Locate the M6 washer in the kit and place it in position on the head light mounting tab, as shown. This will be used as a spacer.



20. Locate the M6 countersink screw, fender washer, and M6 nut in the kit. These will be used in the next step.



21. Place the catch can and bracket assembly into position directly behind the LH headlight. Position the bracket so that the mounting holes line up with the headlight fastener hole from step 17 and the large hole near the relay box. Install the M6 countersink screw from step 20 into the bracket, as shown. Hold the fender washer and nut in your hand and position them on the underside of the M6 countersink screw. Install the fender washer first, then the nut. Be careful not to drop the washer or nut. Do not fully tighten.



22. Install the included M6x1.0mm screw in the other hole of the catch can mounting bracket (headlight mounting tab location).

Position the bracket for best fitment, then tighten down both catch can mounting bracket screws.

Re-attach the relay box bracket to the fender.



23. Cut a section of the included rubber hose included in the kit to ~23". Note: Measure before cutting.

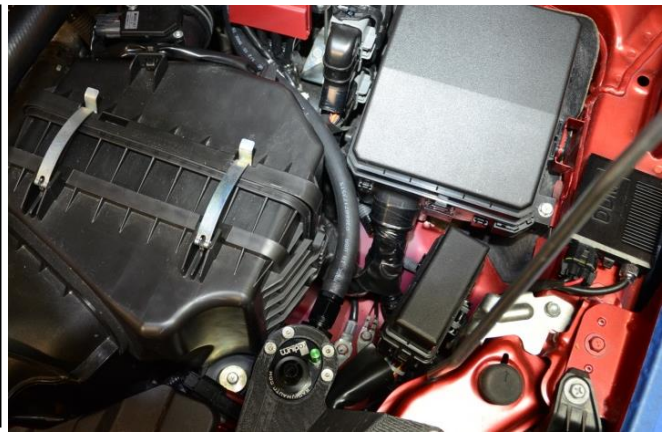
Install the straight hose-end into one end, as shown.

Lubrication may be required.



24. Install the hose from step 23 onto the side port of the catch can and tighten hose-end onto fitting.

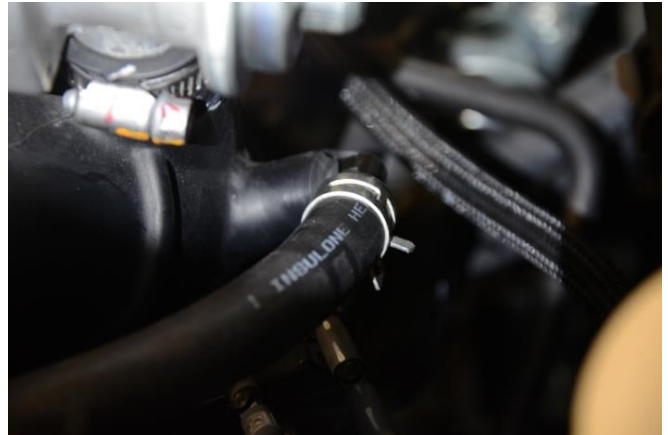
Route the rubber hose between the air box and the fuse box and around the power distribution block to the turbo air intake pipe.



25. Rotate the fitting in the air intake pipe 90 degrees, as shown in the picture.

Using the spring clamp from step 15, attach the catch can hose to the fitting and secure in place with the spring clamp.

Trim the hose to exact length for best fitment if necessary.



26. Measure and cut another piece of the included rubber hose and install the 90 degree hose end into one end of the hose, as shown.



27. Screw the hose-end onto the top fitting of the catch can. Hose routing will vary depending on the valve cover used. Trim the hose length for best fitment if necessary. Secure the hose to the valve cover fitting using the included hose clamp.

The crankcase catch can kit is installed. **For the optional alternate location crankcase bracket, see Section 4.**



Section 3: Crankcase VTA Catch Can Kit Installation

28. NOTE: The Radium Crankcase VTA Catch Can Kit is NOT compatible with 2010+ EVO X plastic valve covers. A weldable 2008-2009 EVO X metal valve cover must be used.

Review **Section 2: Installation of Crankcase Catch Can Kit** (above) for mounting the catch can to the LH bracket. Install the included barb and air filter to the catch can side port (as shown). Next, install the -10AN ORB male fitting to the top port of the catch can.



29. Reference an OEM Mitsubishi service manual and remove the valve cover.

Find a suitable location to weld the included aluminum -10AN male bung.

Drill a 1/2" hole and scuff and prep the area for welding.



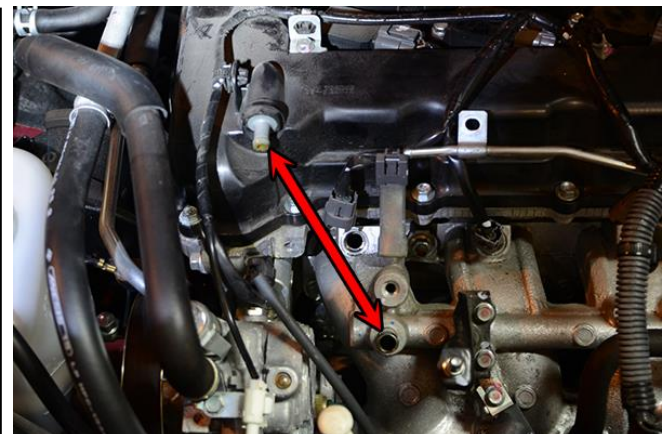
30. Find the two 90 degree -10AN push-lok hose ends and the 5/8" PCV hose in the kit. Temporarily install 1 hose end to the valve cover port and 1 hose end to the catch can top port. Next, measure and cut the 5/8" PCV hose to length. Insert each hose end into the hose. Tighten each hose end to their respective ports using a non-marring wrench.

Use a vacuum cap to plug the turbo inlet barb (shown). *The 08-09 EVO X will use the included 3/8" vacuum cap. The 2010+ EVO X will use the included 1/2" vacuum cap.*



31. For EVO X applications that are still using a MAF sensor, the PCV hose should be removed and the ports should be plugged using the included 1/2" and 3/8" vacuum caps. If not removed, a very small amount of "unmetered" air will enter the system through the catch can's breather filter.

For EVO X applications that have converted to "speed density" via a MAP sensor, the PCV hose CAN remain in place. Furthermore, the Radium 20-0105 PCV Catch Can kit is recommended for the best performance and protection.

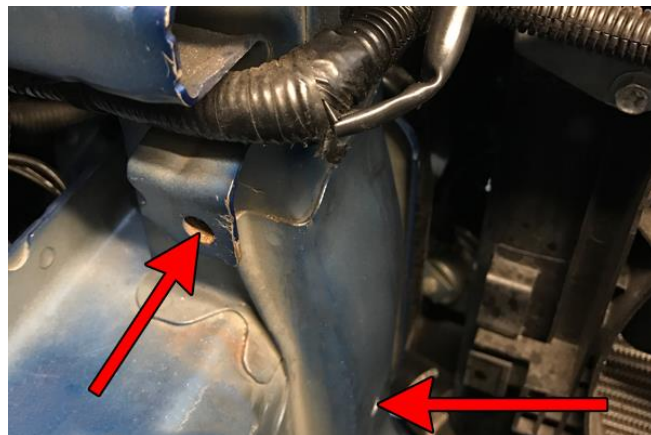


Section 4: Alternate Location Crankcase Mount Kit

28. NOTE: The “alternate location” crankcase mount kit can be used for both crankcase catch can kits listed above.

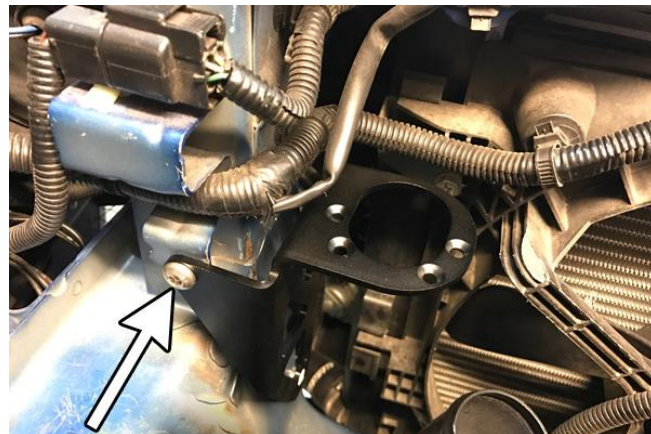
Disconnect and/or remove the components in the LH area behind the radiator. This is generally the mass air flow sensor, intake pipe, air filter, blow off valve, etc.

The bracket will be secured to the two highlighted frame rail holes shown at the right.



29. To secure the bracket, first loosely secure the included button head bolt to the top threaded hole using a 5mm Allen hex wrench.

Chase the threads with a M8x1.25mm tap, if necessary.



30. Next, insert the included sheet metal screw through the bottom hole. Use a 14mm socket wrench to start thread engagement. Once the bolt’s hex flange touches the catch can bracket surface, add another ½ turn.

NOTE: Excessive torque can unload the bolt’s clamping force through the sheet metal.



31. Finally, torque the upper M8 button head bolt using a 5mm Allen hex wrench.

Review **Section 2** or **Section 3** discussed above for installing the catch can to the bracket, attaching the crankcase fittings, routing the hose(s), etc. Radium 20-0106-10 shown at right.

Reinstall all previously removed components.

Installation Complete.

