

INSTALLATION INSTRUCTIONS

OIL CATCH CAN KIT

2013+ FR-S, BRZ, 86, ALL






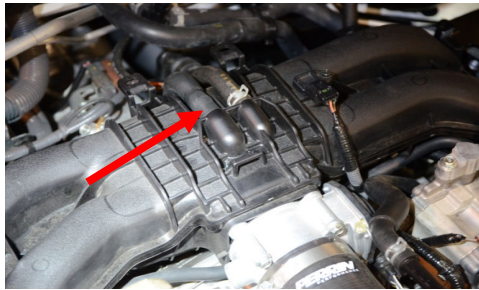
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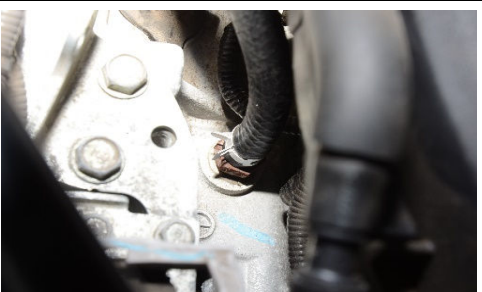
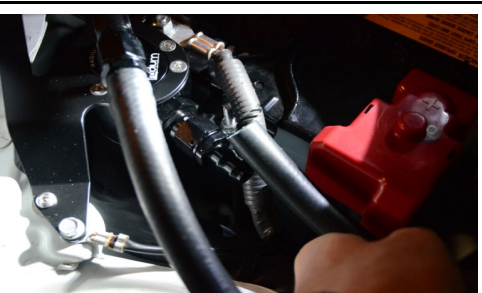
The Radium Engineering oil catch can kits for the FR-S/BRZ/86 can be installed together or separately. The PCV catch can kit installs on the RH side of the engine bay and interfaces with the PCV valve hose and may use 1/2" or 3/8" hose, depending on the manufacture date of the kit. There is no functional or performance difference between the two hose sizes.


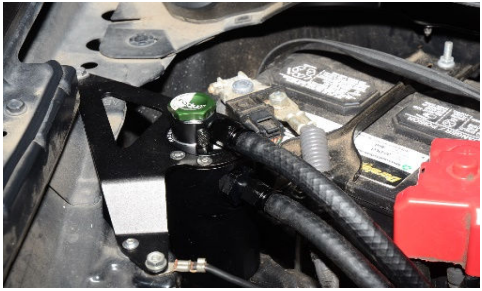




The crankcase vent catch can kit installs on the left hand side of the engine bay and interfaces with the crankcase vent line and always uses 1/2" hose. Skip to the section below for the kit you are installing.


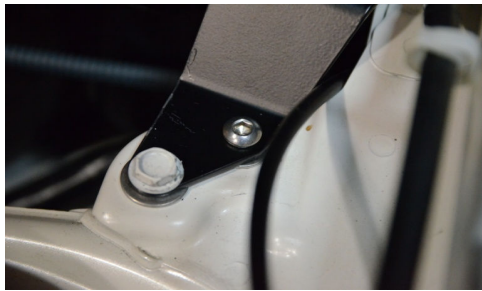




Installation in a right hand drive (RHD) car is not pictured in these instructions, but follows a similar process to what is shown.






STEP	TOOLS NEEDED	INSTRUCTIONS	PHOTO
1	3mm Allen wrench	<u>SECTION 1: PCV CATCH CAN KIT</u> Begin by preparing the catch can for installation. Use the four M5 countersink screws to fasten the bracket to the catch can. Install the -AN fittings as shown. Make sure there are O-rings are lubricated. The 90° swivel fitting goes on the top port and the straight fitting goes in the side port. Tighten fittings. Make sure a plug fitting is installed in the bottom of the catch can. If a remote drain kit is going to be used, install the adapter into the bottom of the catch can.	
	1" Wrench		
2	3mm Allen wrench	<u>NOTE:</u> Kits manufactured after May 2016 use banjo fittings. To assemble the fitting into the top (inlet) port, first note that the black banjo can be accidentally installed upside down. This would create hose end interference. Make sure the -AN male portion of the banjo is furthest away from the catch can's top surface. Also, before inserting the banjo bolt, make sure there is a crush washer on both sides of the banjo. Finger-tighten the green banjo bolt. Proceed with the rest of the installation steps as shown. Do not fully torque green banjo bolt until proper hose routing has been achieved.	
	1" Socket		
	1-1/8" Socket		
3	10mm socket	Locate the ground wire connection near the battery in the engine bay on the RH strut tower. Remove this bolt using a 10mm socket. This bolt will be reused.	
4	10mm socket	Further back, near the fender, locate the bolt shown and remove with a 10mm socket. This bolt will be reused.	

5	12mm Socket	Remove the nut holding on the battery negative cable to the battery terminal.	
		Rotate the cable 90 degrees and reinstall the nut.	
		The cable should now look as shown in the picture.	
6	10mm Socket	Place the catch can with bracket in position next to the battery. Line up the mounting holes in the bracket with the holes where the fasteners were removed in the previous steps.	
		At the location where the ground wire was attached to the body, slip the ground wire ring terminal under the catch can bracket as shown. Note: If installing on a right hand drive vehicle, use the included washer in place of the ring terminal.	
		Install the M6 screw that was removed from this location. Do not tighten.	
7		Locate the hole next to the ground wire.	
		Slip one of the included M6 washers under the bracket and install the included M6 screw as shown.	
		Thread on the included M6 nut to the screw, but do not tighten yet.	
8	10mm Socket	At the third and final hole, slip the other included M6 washer under the bracket then install the screw that was removed from this location.	
	4mm Allen Wrench	You may now tighten all 3 mounting screws.	
		Note: If this was installed into a left hand drive vehicle, as depicted, you will be left with one extra M6 washer.	
9		For right hand drive vehicles, there are 2 brake lines (shown with arrows) that are in close proximity to the catch can.	
		These will need to be simply bent slightly out of the way.	
		Be sure not to kink or put too much stress onto the ends of the hard tubes.	
10		Carefully remove the cover from the center of the engine's intake manifold.	
		If your PCV kit includes 1/2" hose, disconnect the OEM PCV hose from the intake manifold shown in the picture.	
		If your PCV kit includes 3/8" hose, leave the OEM PCV hose connected to the intake manifold and disconnect the OEM PCV hose from the PCV valve located on the opposing side on the engine block (not shown).	

11		Install the straight plastic male-to-male hose barb union fitting that is included in the kit into the end of the factory PCV hose.	
12	Oil Lubrication	Locate the length of rubber hose included in the kit. Insert one end onto the hose barb union fitting from the previous step. Due to the aggressive shape of the hose barb, a clamp is not needed. Some light lubrication may be necessary.	
13		Install, but do not fully tighten, the hose barb –AN adapters included in the kit on to the fittings on the catch can, as shown.	
14	Hose Cutter	For PCV kits with 1/2" hose, route the hose from step 12 to the top port fitting of the catch can as shown. Make a mark on the hose and cut it squarely to length. For PCV kits with 3/8" hose, route the hose from step 12 to the side port of the catch can. Mark the hose and cut to length. Remove the hose barb fitting from the catch can top port and push it into the end of the hose, some lubrication may be necessary. Screw the hose barb fitting back onto the fitting of the catch can.	
15		For PCV kits with 1/2" hose, use the remaining length of hose and attach it to the fitting on the intake manifold where the PCV hose was originally removed. (not shown) For PCV kits with 3/8" hose, connect one end of the remaining hose from the kit to the PCV valve on the engine block, securing in place with the provided spring clamp. (shown in picture at right)	
16	Hose Cutter	Route the hose from the previous step to the last remaining catch can port. Mark the proper length and cut the hose squarely. There will be excess hose left over.	

17	Oil Lubrication	Install the hose barb fitting into the end of the hose. Some lubrication may be necessary.	
		Screw the hose end onto -AN fitting on the catch can.	
18	1-1/8" Socket	Both hoses should now be routed. Tighten all fittings and hose ends.	
	Torque wrench	Tighten the banjo bolt to the torque specified on the bolt head. Make sure adequate clearance is provided so that the catch can dip stick can be accessed.	
19		Use the included zip ties to secure the hoses to each other. Pay close attention to possible chafing points, and secure hoses away from them. Reinstall the plastic cover on the center of the intake manifold. INSTALLATION COMPLETE.	
		Note: Radium catch cans are pressure sealed and designed to withstand boost pressure. For turbo and supercharger applications, these hoses can remain routed as instructed. There will be boost pressure in the hoses and catch can from the intake manifold, but the PCV valve will be closed.	
		Periodically use the dip stick to check how much oil has accumulated and drain as needed.	
20	3mm Allen wrench	SECTION 2: CRANKCASE CATCH CAN KIT	
	1" Socket	Begin by preparing the catch can for installation. Use the four M5 countersink screws to fasten the bracket to the catch can. Install the side port AN fitting. Make sure the O-ring is lubricated. (See Step 2 for Banjo Fitting information)	
		Make sure a plug fitting is installed in the bottom of the catch can. If a remote drain kit is going to be used, install the adapter into the bottom of the catch can.	
21	10mm Socket	In the engine bay, on the left side strut tower, use a 10mm socket to remove the screw shown in the picture.	
		Unclip the plastic cable guide and remove. It will not be reused.	
22	10mm Socket	Further back towards the firewall, use a 10mm socket to remove the M6 screw shown in the picture.	

23		Place an M6 washer over each of the 3 hole locations where the catch can bracket mounts.	
		Note: For right hand drive vehicles, the battery grounding ring terminal will be used in place of the one aforementioned washer to space the bracket off the chassis.	
24	10mm Socket	Place the catch can and bracket in position and line up the mounting holes on the bracket with the holes from steps 21 and 22.	
		Reinstall the bolt removed in step 21. Do not tighten yet.	
		Install the M6 screw and nut included in the kit as shown in the picture. Do not tighten yet.	
25	10mm Socket	Reuse the screw removed in step 22 and install into the last mounting hole in the bracket.	
	4mm Allen Wrench		
		Make sure there is an M6 washer between the bracket and the body.	
		Tighten all mounting bracket fasteners.	
		Note: If this was installed into a right hand drive vehicle, you will be left with one extra M6 washer.	
26	Pliers	Disconnect the crankcase breather from the intake pipe fitting.	
27	Pliers	Install the plastic male-to-male hose barb union fitting that is included in the kit into the end of the hose. Re-use the factory spring clamp.	
28	Oil Lubrication	Locate the 1/4" rubber hose included in the kit and install one of the hose barb adapter fittings.	
		Some lubrication may be necessary.	

29		Connect the hose from the previous step to the top port fitting of the catch can.	
		With hose routing complete, the banjo bolt fitting can now be tightened (if applicable)	
	1-1/8" Socket		
30	Hose Cutter	Route the hose from the previous step to the crankcase breather hose.	
		Estimate proper hose length and cut the hose squarely.	
		Connect the 1/2" rubber hose to the barb fitting as shown.	
		NOTE: For a cleaner appearance, the catch can hoses may be routed underneath the intake manifold.	
31		Using the remaining section of 1/2" rubber hose, repeat step 28 using the other hose barb adapter included in the kit.	
		Connect this hose to the side port fitting on the catch can, as shown.	
32	Hose Cutter	Route the hose from the previous step to the fitting on the intake pipe.	
		Cut to correct length and push on to the fitting, as shown.	
33		Use the included zip ties to secure the hoses to each other. Pay close attention to possible chafing points, and secure hoses away from them. Make sure all fittings and hoses are installed and tightened. The installation is now complete.	
		Note: For turbocharger and centrifugal supercharger applications, this catch can side port hose must be routed into the inlet of the turbocharger or centrifugal supercharger. It should <u>not</u> be routed into a compressor pipe.	
		Installation is complete.	