



# INSTALLATION INSTRUCTIONS

## LS2, LS3, LS7, LS9 CATCH CAN KITS

### 05-13 Chevrolet Corvette

P/Ns: 20-0785-FL, 20-0786-FL, 20-0787-FL

Document: 19-0330

Support: info@radiumauto.com

## COLOR LEGEND FOR EACH STEP

**20-0785-FL CATCH CAN KIT, PCV, GM LS2/LS3/LS7 ENGINE, FLUID LOCK**

Follow **GREEN** and **YELLOW** areas below

**20-0786-FL CATCH CAN KIT, CCV, 05-13 CORVETTE, FLUID LOCK**

Follow **GREEN** and **ORANGE** areas below







**20-0787-FL DUAL CATCH CAN KIT, 05-13 CORVETTE, FLUID LOCK**

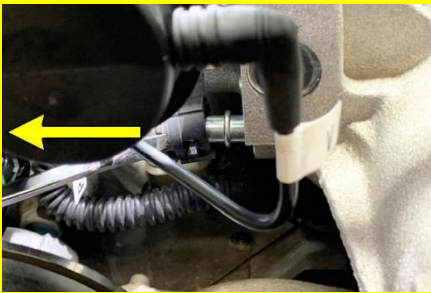



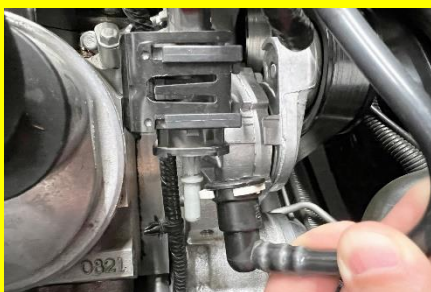
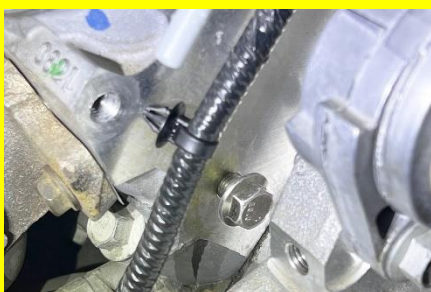
Follow **GREEN**, **YELLOW**, and **ORANGE** areas below









20-0787-FL	
ITEM DESCRIPTION	QTY
CATCH CAN, FLUID LOCK, PREASSEMBLED	2
BRACKET, CATCH CAN, GEN IV LS ENGINE	1
BRACKET, CATCH CAN, C6 CORVETTE	1
OIL FILL ADAPTER, GM	1
10MM SAE FEMALE TO 3/8IN BARB, STRAIGHT	4
10MM SAE FEMALE TO 90DEG 3/8IN BARB	2
10MM SAE FEMALE TO 45DEG 3/8IN BARB	3
10AN ORB TO 10MM SAE MALE	1
PCV VALVE, 10AN ORB TO 10MM SAE MALE	1
10AN ORB SWIVEL BANJO TO 10MM SAE MALE	3
ROUND CAP, SMALL	1
ROUND CAP, LARGE	1
M10X1.5X20MM BOLT	2
SPRING CLAMP, 3/8IN HOSE	8
CATCH CAN SERVICE INTERVAL STICKER	2
3/8IN PCV/FUEL HOSE	8.5FT







STEP	TOOLS NEEDED	INSTRUCTIONS	PHOTO
1		<p>NOTES:</p> <p>a. The terms "driver-side" and "passenger-side" will NOT be referenced. As depicted, these instructions will always reference "LH" and "RH" areas of the vehicle.</p> <p>b. Aluminum wrenches are recommended to prevent surface marring on all anodized finishes.</p> <p>c. Lubricate all O-rings with engine oil prior to installation.</p>	

2	10mm Socket Wrench	Disconnect the negative battery terminal.	
		CAUTION: Disconnecting the battery may cancel fault memories of some control units. Consequently, before disconnecting the battery, always cross examine any fault memories.	
3		20-0785-FL CATCH CAN KIT, PCV, GM LS2/LS3/LS7 ENGINE Follow YELLOW section.	
		20-0786-FL CATCH CAN KIT, CCV, 05-13 CORVETTE Follow ORANGE section.	
		20-0787-FL DUAL CATCH CAN KIT, 05-13 CORVETTE Follow YELLOW/ORANGE sections.	
4	Oil Lubrication	20-0785-FL PCV CATCH CAN KIT	
	4mm Allen Wrench	Find the 10AN ORB to 10mm SAE quick connect banjo fitting and the baffled oil cap in the kit. Lubricate the O-rings and install the fitting to the baffled oil cap, as shown.	
5		Spin off the OEM oil cap and remove the RH engine cover.	
		<b>Dry Sump Engines</b> The following vehicles use a "dry sump" oil system: Grand Sport (M/T ONLY), Z06, 427, and ZR1. All other vehicles are wet sump. Excluding the ZR1 because of fitment issues, the PCV catch can kit is compatible with these vehicle's dry sump. The lines will just route underneath the RH engine cover. First, remove the RH engine cover. Next, remove the "pseudo" oil cap.	
6	Oil Lubrication	Lubricate the large O-ring on the Radium Engineering oil cap.	
		Temporarily install the new cap to prevent debris from falling into the engine. NOTE: For dry sump engines, the Radium Engineering oil cap will screw directly to the valve cover (without a fill neck).	
7	Oil Lubrication	Lubricate the O-ring on the provided PCV valve and install to the catch can side port, as shown.	
	1" (or 25mm) Wrench		







8	Flat Head Screwdriver	At the front RH side of the engine, there is a short line that loops from the crankcase to the intake manifold.	
		For LS2 and LS7 engines, these are barbed connections that use a hose.	
		For the LS3 engine, the tubing has SAE quick connectors. To disconnect, gently pry and rotate the locks. Simultaneously pull each connection to release, as shown.	
9		As shown, pull the OEM line out. This will NOT be reused. The LS3 SAE quick connect variation is shown.	
10		For these GEN IV engines, GM replaced the mechanical PCV valve with a 2.5mm fixed orifice integrated into the lower port. Without a PCV valve, pressure (equal to or greater than atmospheric pressure) will flow into the crankcase. This is undesirable making this port useless.	
		To plug the port, use the smaller rubber cap for SAE quick connect ports and the larger rubber cap for barbed ports. Gently clasp the rubber cap using long needle nose pliers.	
11		Push the rubber cap all the way onto the lower port on the engine as shown.	
		NOTE: This will be tight. A clamp is not necessary as the crankcase will only experience negative pressure.	
12		The tubing at the EVAP solenoid will need to be rerouted through the catch can bracket.	
		To remove, pull the white SAE lock away and pull the quick connector OFF the solenoid, as shown.	
13		There are two M10x1.5mm threaded holes on the front of the RH cylinder head. NOTE: Some engines will use one of these threaded bosses as an engine ground point. This is not discussed in this manual but if an engine ground is mounted here, it will need to be relocated.	
		As shown, pull the wiring loom stay out to expose the second female thread.	
		Next, loosely screw one of the provided M10x1.5mm bolts into the lower female thread. As shown, do NOT tighten.	















14		Slide the lower slotted portion of the catch can bracket over the bolt from the previous step. Insert the other included bolt through the catch can bracket hole and into the upper threaded hole on the cylinder head.	
		As shown, reinsert the SAE quick connector back onto the EVAP solenoid until a "click" is felt.	
15	15mm Socket	Tighten the catch can mounting bracket bolts.	
	15mm Wrench		
16a	Hose Cutter	<p>The first hose connects the catch can side port to the intake manifold.</p> <p><b>LS2 and LS7 Engines ONLY</b></p> <p>Cut the hose to 6-1/2" (165mm) long. Lubricate the external O-rings on one of the straight quick connect hose ends and insert into the hose. Secure with a spring clamp. Insert a second spring clamp over the hose, as shown.</p>	
	Pliers		
	Oil Lubrication		
16b	Hose Cutter	<p><b>LS3 Engine ONLY</b></p> <p>Cut the hose to 5-1/4" (133.5mm) long. Slide 2 spring clamps over the hose. Lubricate the external O-rings on the 45 degree quick connect hose end and one of the straight quick connect hose ends. Insert each hose end onto the hose and secure with the spring clamps, as shown.</p>	
	Pliers		
	Oil Lubrication		
17	Pliers	<p>For the LS2 and LS7 engine, push the hose over the intake manifold barb and secure using the spring clamp.</p> <p>For the LS3 engine, lubricate the internal O-rings inside the 45 degree SAE quick connect hose end. Push the hose end over the intake manifold SAE quick connect male fitting until a "click" is felt.</p>	
	Oil Lubrication		
18	Thread Locker	Apply a medium-strength thread locker to the four provided M5x0.8mm flat head bolts.	

19	3mm Allen Wrench	Position the catch can into the mounting bracket and secure.	
20	Oil Lubrication	Lubricate the internal O-rings inside the straight SAE quick connect hose end. Push the hose end over the catch can PCV valve until a "click" is felt.	
21	Oil Lubrication	Lubricate the O-ring on the provided 10AN ORB to 10mm SAE quick connect fitting and install to the catch can top port, as shown.	
	1" (or 25mm) Wrench		
22		<b>Wet Sump Engines ONLY</b> To reinstall the OEM RH engine cover, temporarily remove the oil cap. Then, simply line up the engine cover and press downwards until it pops back into place, as shown.	
		Reinstall the Radium Engineering oil cap.	
23a	Hose Cutter	The second hose connects the Radium oil cap to the catch can top port.	
	Pliers	<b>Wet Sump Engines ONLY</b>	
	Oil Lubrication	Cut the provided hose to 6" (152.5mm) long. Install 2 of the spring clamps over the hose. Lubricate the external O-rings on the 90 degree SAE quick connect hose end and the other straight SAE quick connect hose end. Insert the hose ends into the hose and secure using the spring clamps, as shown.	
23b	Hose Cutter	<b>Dry Sump Engines ONLY</b>	
	Pliers	Cut the provided hose to 9.75" (247.5mm) long. Install 2 of the spring clamps over the hose. Lubricate the external O-rings on the 90 degree SAE quick connect hose end and the 45 degree SAE quick connect hose end. Insert the hose ends into the hose and secure using the spring clamps, as shown.	
	Oil Lubrication		



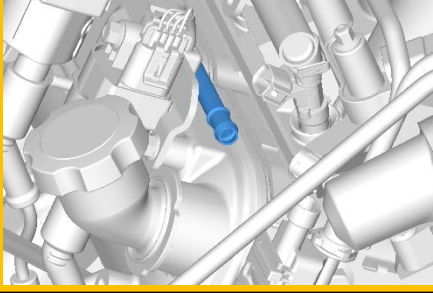






24a	Oil Lubrication	Lubricate the internal O-rings inside the SAE quick connect hose ends. Push the hose ends over the SAE quick connect male fittings until a "click" is felt.	
		<b>Dry Sump Engine ONLY</b>	
		1. For engine cover clearance, the 45 degree hose end must be rotated downwards off the oil cap, as shown.	
		2. The (dry sump) engine cover can now be reinstalled. No modifications required.	
24b		For wet sump engines (shown), the 90 degree hose end attaches to the oil cap and the straight hose end attaches to the catch can.	
		Reinstall all components in reverse order.	
		<b>PCV CATCH CAN INSTALLATION COMPLETE</b>	
25	Oil Lubrication	<b><u>20-0786-FL CCV CATCH CAN KIT</u></b>	
	4mm Allen Wrench	Find one of the swivel banjo fittings in the kit. Lubricate the O-ring and screw the fitting into the catch can side port.	
26	Marker	The catch can mounting bracket will secure underneath the RH hood lock. First, outline the hood lock flange to mark the current mounting location.	
27	10mm Socket	Remove the three M6x1mm screws that secure the RH hood lock.	
28	10mm Socket	Slide the catch can mounting bracket behind the RH hood lock. Lineup and reinstall the hood lock using the OEM screws.	

28b		There is a battery cable and wire loom that may come in close contact with the catch can when installed. As a test, place the catch can in the mounting bracket. If there is any interference, these wires will need to be slightly repositioned.	
		NOTE: The RH hood lock must be free to move in the locking and unlocking positions. Test and confirm now that it can properly latch and unlatch.	
29	Thread Locker	Apply a medium-strength thread locker to the four provided M5x0.8mm flat head bolts.	
30	3mm Allen Wrench	Position the catch can into the mounting bracket and secure.	
31	Oil Lubrication	Find the other swivel banjo fitting in the kit. Lubricate the O-ring and screw the fitting into the catch can top port.	
	4mm Allen Wrench		
32		Pull upwards to remove the RH engine cover. The (wet sump) LS3 engine cover is shown.	
33		Find the crankcase breather line that connects to the intake pipe. An aftermarket intake on an LS3 engine is shown.	
		To remove the SAE quick connector, first rotate the lock. Now pull the connector away to release.	

34a		Follow this same crankcase breather line to the crankcase port and remove. This crankcase breather line will NOT be reused.	
		<b>Wet Sump Engines ONLY</b>	
		For the LS2 engine, simply pull to remove the hose from the barb.	
		For the LS3 engine, first rotate the SAE quick connector lock. Now pull the connector away to release, as shown.	
34b		<b>Dry Sump Engines ONLY</b>	
		This crankcase breather line will route all the way back to the dry sump reservoir near the catch can and firewall.	
		To remove, first rotate the SAE quick connector lock. Now pull the connector away to release, as shown.	
35	Hose Cutter	Cut the provided hose in half.	
36	Oil Lubrication	Lubricate the external O-rings on the straight SAE quick connect hose end and one of the 45 degree SAE quick connector hose ends in the kit.	
	Pliers		
		Insert a hose end into each hose and secure using the provided spring clamps, as shown.	
37	Oil Lubrication	Lubricate the internal O-ring inside the straight SAE quick connect hose end. As shown, push the hose end over the catch can side SAE quick connect male fitting until a "click" is felt.	
		Lubricate the internal O-ring inside the 45 degree SAE quick connect hose end. Push the hose end over the SAE quick connect male fitting on top of the catch can (not shown) until a "click" is felt.	
38	Hose Cutter	The following hose lengths will be determined by the engine type, aftermarket modifications as well as the hose paths.	
		Route the side catch can hose to the intake pipe and cut to length.	



39a	Oil Lubrication	<b>LS2, LS3, and LS7 Engines ONLY</b>	
	Pliers	Lubricate the external O-rings on the 90 degree SAE quick connect hose end. Insert the hose end and secure using a spring clamp.	
		Lubricate the internal O-rings inside the 90 degree SAE quick connect hose end. Push the hose end over the SAE quick connect male fitting on the intake until a "click" is felt. A Corvette Z06 (LS7) is shown.	
39b	Oil Lubrication	<b>LS9 (ZR1) Engine ONLY</b>	
	Pliers	Lubricate the external O-rings on the straight SAE quick connect hose end. Insert the hose end and secure using a spring clamp.	
		Lubricate the internal O-rings inside the straight SAE quick connect hose end. Push the hose end over the SAE quick connect male fitting (shown) on the intake until a "click" is felt.	
40a	Hose Cutter	<b>Wet Sump LS2 Engine ONLY</b>	
	Pliers	An SAE quick connect hose end is not required for the LS2 engine's crankcase port.	
		Route the top catch can hose to the barbed crankcase port (shown) on the engine and cut to length. Push the hose over the barbed crankcase port and secure using a spring clamp.	
40b	Hose Cutter	<b>Wet Sump LS3 Engine ONLY</b>	
	Oil Lubrication	Route the top catch can hose to the crankcase port on the engine and cut to length. Lubricate the external O-rings on the 45 degree SAE quick connect hose end. Insert the hose end into the hose and secure using a spring clamp.	
	Pliers	Lubricate the internal O-rings inside the 45 degree SAE quick connect hose end. Push the hose end over the crankcase SAE quick connect engine port until a "click" is felt.	
40c	Hose Cutter	<b>Dry Sump Engines ONLY</b>	
	Oil Lubrication	Route the top catch can hose back to the dry sump reservoir port. Cut the hose to length for best fitment.	
	Pliers	Lubricate the external O-rings on the 45 degree SAE quick connect hose end. Insert the hose end into the hose and secure using a spring clamp. Lubricate the internal O-rings inside the 45 degree SAE quick connect hose end. Push the hose end over the reservoir SAE quick connect port until a "click" is felt.	
41		Reinstall all components in reverse order. Start the engine and check for any leaks or errors.	
		<b>CCV CATCH CAN INSTALLATION COMPLETE</b>	

SERVICING	<p>It is recommended to check catch can fluid level every 5,000 miles (8,000km). It may be necessary to check more frequently in extreme cases.</p>	<p>Catch can contents can be monitored using the dipsticks. When collected fluid reaches a certain level, a float ball in the catch can will block the passage into the collection chamber and the catch can will not collect any additional fluid.</p> <p>To empty, unscrew the bottom half of the catch can. Carefully drain contents into an oil-safe container and dispose of in the same manner as used motor oil. Contents may also be drawn out through the dip stick hole using a hand vacuum pump and a straw.</p>	
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