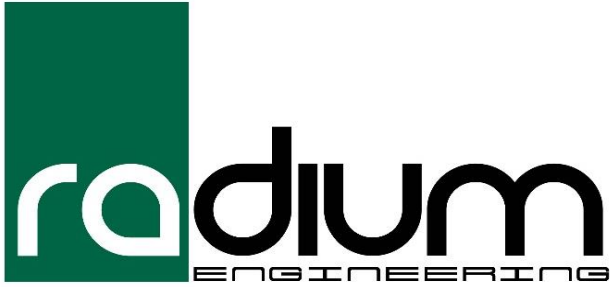


INSTALLATION INSTRUCTIONS

BAFFLED OIL CAP AND CATCH CAN KITS




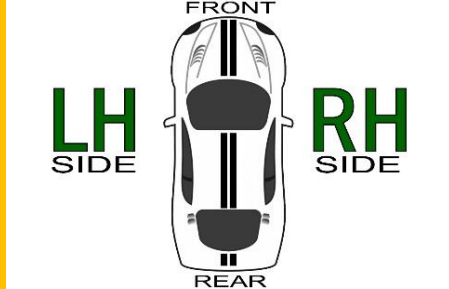










Document: 19-0232







Support: info@radiumauto.com


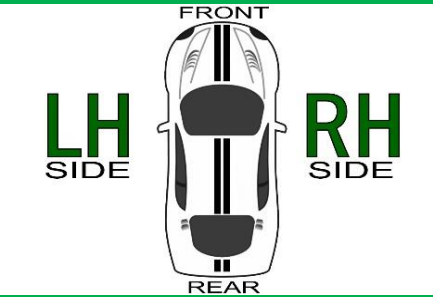


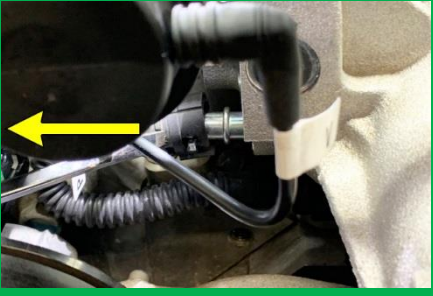

20-0539 Oil Cap, GM Instructions: Steps 1-3
 20-0588 Baffled Oil Cap VTA Kit, GM Instructions: Steps 4-7
 20-0587 Baffled Oil Cap VTE Kit, GM Instructions: Steps 8-23
 20-0562 Catch Can Kit, PCV, Cadillac CTS-V Instructions: Steps 24-55
 20-0563 Catch Can Kit, CCV, Cadillac CTS-V Instructions: Steps 56-79
 20-0564 Dual Catch Can Kit, Cadillac CTS-V Instructions: Steps 24-79







| STEP | TOOLS NEEDED | INSTRUCTIONS | PHOTO |
|------|-------------------|--|-------|
| 1 | Oil Lubrication | <u>20-0539 OIL CAP, GM</u> Lubricate the O-ring found on the 10AN ORB plug. Secure the 10AN ORB plug to the Radium Engineering oil cap. | |
| | 3/8" Allen Wrench | | |
| | | | |
| 2 | | Pop the hood and find the oil cap. Depending on the vehicle, this can be on the RH or LH side of the engine in the front or rear. Spin counterclockwise and pull up to remove the OEM oil cap. | |
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| | | | |
| 3 | | Spin the Radium Engineering cap clockwise to install. NOTE: If the OEM oil cap receiver only has one insertion tab, the Radium Engineering oil cap can be installed in 2 different orientations (180 degrees apart). Some OEM oil cap receivers have 2 dissimilar insertion tabs and can only be installed 1 way. INSTALLATION COMPLETE | |
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| 4 | Oil Lubrication | <u>20-0588 BAFFLED OIL CAP VTA KIT, GM</u> Lubricate the O-ring found on the 10AN ORB to barb fitting. Secure the 10AN ORB to barb fitting to the Radium Engineering oil cap. | |
| | 1" Wrench | | |
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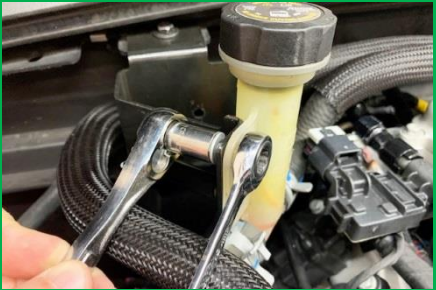




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| 5 | Flathead Screwdriver | Insert and secure the air filter to the 10AN ORB to barb fitting. |  |
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| 6 | | Pop the hood and find the oil cap. Depending on the vehicle, this can be on the RH or LH side of the engine in the front or rear. |  |
| | | Spin counterclockwise and pull up to remove the OEM oil cap. | |
| | | | |
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| | | | |
| 7 | | Spin the Radium Engineering cap clockwise to install. |  |
| | | NOTES: If the OEM oil cap receiver only has one insertion tab, the oil cap can be installed in 2 different orientations (180 degrees apart). Some OEM oil cap receivers have 2 dissimilar insertion tabs and can only be installed 1 way. INSTALLATION COMPLETE | |
| | | WARNING: If ever degreasing the engine, be sure to cover the air filter to prevent any foreign liquids from entering the engine. | |
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| 8 | | 20-0587 BAFFLED OIL CAP VTE KIT, GM |  |
| | | NOTE: Because of RHD and LHD variations, the terms "driver-side" and "passenger-side" will NOT be referenced. As depicted, these instructions will always reference "LH" and "RH". | |
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| 9 | 10mm Socket Wrench | Open the trunk. |  |
| | | On the RH side, remove the battery cover. | |
| | | Disconnect the negative battery terminal, as shown. | |
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| 10 | | At the front RH side of the engine, there is a short hose that loops from the crankcase to the intake manifold. |  |
| | | If applicable, remove any potential obstruction to gain access to this area. | |
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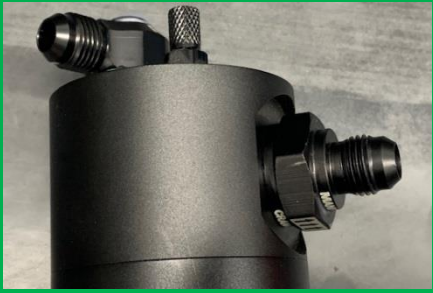


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| 11 | Pliers | Early GEN III engines use barbed connections. Simply pull off to remove. |  |
| | Flat Head Screwdriver | Late GEN IV engines use SAE quick connections (shown). Gently pry and rotate the SAE locks. Simultaneously pull each connection to release, as shown. | |
| 12 | | As shown, pull the OEM hose out. This will NOT be reused. |  |
| | | | |
| 13 | Needle Nose Pliers | For early GEN III engines, the crankcase simply vents through the lower port which is connected to the rear valve covers. For late GEN IV engines, GM replaced the mechanical PCV valve with a small 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. As shown, gently clasp the rubber cap included in the kit using long needle nose pliers. |  |
| | | | |
| 14 | | Push the appropriate rubber cap all the way onto the lower port on the engine as shown. |  |
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| 15 | Oil Lubrication | Lubricate the O-ring found on the provided 10AN ORB to PCV valve fitting. |  |
| | 1" Wrench | Install the PCV valve to the Radium Engineering oil cap, as shown. | |
| 16 | | Pop the hood and find the oil cap. Depending on the vehicle, this can be on the RH or LH side of the engine in the front or rear. |  |
| | | Spin counterclockwise and pull up to remove the OEM oil cap. | |

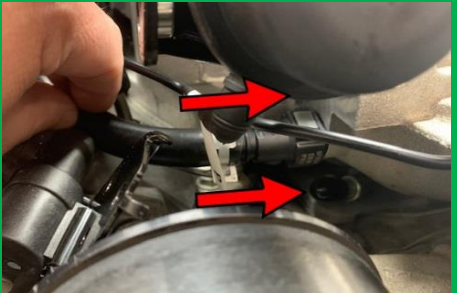





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|----|-------------|---|---|
| 17 | | <p>Spin the Radium Engineering cap clockwise to install.</p> <p>NOTE: If the OEM oil cap receiver only has one insertion tab, the Radium Engineering oil cap can be installed in 2 different orientations (180 degrees apart). Some OEM oil cap receivers have 2 dissimilar insertion tabs and can only be installed 1 way.</p> |  |
| 18 | Pliers | <p>For late GEN IV engines, insert the provided SAE quick connect fitting into the hose and secure using a spring clamp.</p> |  |
| 19 | | <p>Fully insert the hose onto the (upper) intake manifold.</p> |  |
| 20 | Hose Cutter | <p>Temporarily install the 90 degree PushLok hose end to the 6AN male portion on top of the PCV valve.</p> <p>Strategically route the hose tightly around the engine towards the hose end.</p> <p>Line up the hose and cut it to a length that will still permit the oil cap from spinning ON/OFF.</p> |  |
| 21 | Lubrication | <p>Remove the PushLok hose end and lubricate the barbed end, as shown.</p> |  |
| 22 | | <p>Fully insert the 90 degree PushLok hose end to the hose.</p> <p>NOTE: PushLok hose ends do NOT require hose clamps.</p> |  |

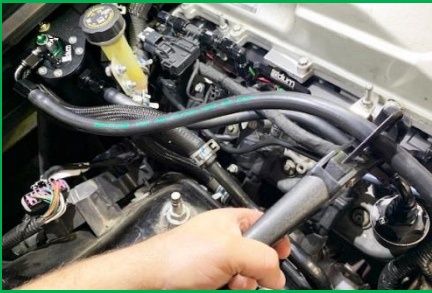


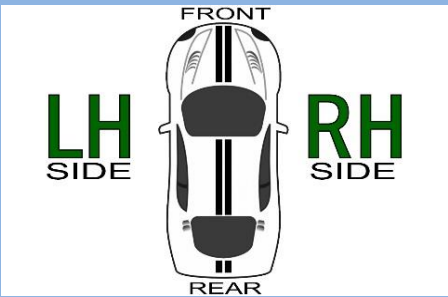


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| 23 | 11/16" Wrench | Screw on the PushLok hose end to the PCV valve and tighten using a non marring aluminum wrench. Reinstall all components in reverse order. |  |
| | | <p>SERVICING</p> <p><i>This kit does not need much attention. Occasionally, check the stainless steel media inside the oil cap. If it ever becomes clogged, a mild degreaser can be used.</i></p> | |
| | | <p>INSTALLATION COMPLETE</p> | |
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| 24 | | <p><u>20-0562 CATCH CAN KIT, PCV, CADILLAC CTS-V</u></p> <p>NOTE: Because of RHD and LHD variations, the terms "driver-side" and "passenger-side" will NOT be referenced. As depicted, these instructions will always reference "LH" and "RH".</p> |  |
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| 25 | 10mm Socket Wrench | Open the trunk. |  |
| | | On the RH side, remove the battery cover. | |
| | | Disconnect the negative battery terminal, as shown. | |
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| 26 | 10mm Socket Wrench | At the front RH side of the engine, there is a short convoluted tube that loops from the crankcase to the intake manifold. |  |
| | | First, remove the solenoid bracket (shown) to gain access to this area. | |
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| 27 | Flat Head Screwdriver | To disconnect the SAE quick connections, gently pry and rotate the locks. Simultaneously pull each connection to release, as shown. |  |
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| 28 | | As shown, pull the OEM tubing out. This will NOT be reused. |  |
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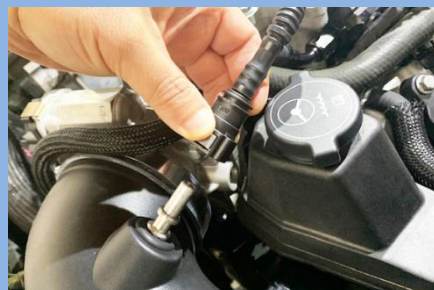
| | | | |
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| 29 | | <p>For these GEN IV engines, GM replaced the mechanical PCV valve with a small 2.5mm fixed orifice integrated into the lower port. Without a PCV valve, pressure (equal to or greater than atmospheric pressure) will flow into the crankcase. This is undesirable making this port useless.</p> <p>As shown, gently clasp the rubber cap included in the kit using long needle nose pliers.</p> |  |
| 30 | | <p>Push the rubber cap all the way onto the lower port on the engine as shown.</p> <p>NOTE: This will be tight. Also, a clamp is not necessary as the crankcase will only experience negative pressure.</p> |  |
| 31 | Adjustable Wrench | <p>Lubricate the O-ring found on the provided 10AN ORB to 6AN Male fitting and install to the oil cap, as shown.</p> |  |
| 32 | | <p>Pop the hood and find the oil cap at the front RH side of the engine.</p> <p>Spin counterclockwise and pull up to remove the OEM oil cap.</p> |  |
| 33 | | <p>Spin the Radium Engineering cap clockwise install.</p> <p>NOTE: The Radium Engineering oil cap can be installed in 2 different orientations (180 degrees apart).</p> |  |
| 34 | 18mm Socket Wrench | <p>Unscrew the 2 strut bar bolts and 2 strut bar nuts.</p> |  |

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| 35 | | Remove the strut bar from the vehicle. |  |
| 36 | 10mm Wrench 10mm Socket Wrench | Unscrew the 2 bolt/nuts that secure the firewall bracket to the supercharger coolant fill neck. |  |
| 37 | 10mm Wrench | Near the firewall, peel up the weather stripping for added access. Remove the M6 mounting bolt shown. |  |
| 38 | | Remove the supercharger coolant fill bracket from the vehicle. This will NOT be reused. |  |
| 39 | 4mm Allen Wrench | The included catch can bracket will mount similarly to the OEM bracket. First, insert the bracket into the lower peg, then lineup the upper hole. Rather than reusing the OEM hex bolt, which is difficult to access, secure the bracket using the included M6x1mm Allen head bolt and washer, as shown. |  |
| 40 | 10mm Wrench 10mm Socket Wrench | When resecuring the supercharger coolant fill neck, make sure the OEM nuts are on the front side and the OEM bolts are on the rear side of the mount. This will permit additional clearance for the catch can side port in a later step. |  |

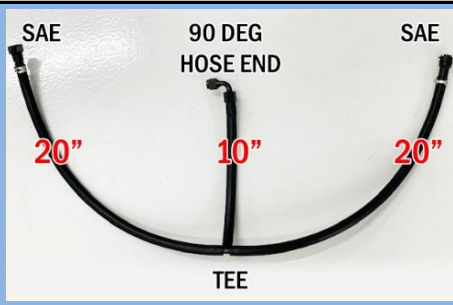


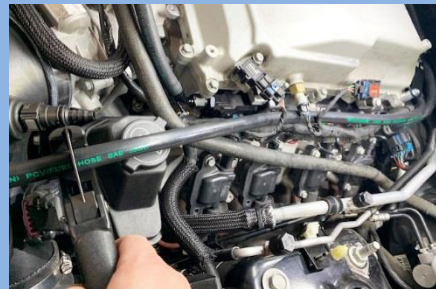


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| 41 | Oil Lubrication | As shown, install the banjo fitting to the top catch can port and the PCV valve into the side port. Use lubrication for the O-rings. |  |
| | 1" Wrench | | |
| | 4mm Allen Wrench | | |
| | | | |
| 42 | 3/16" Allen Wrench | If installing the optional petcock drain, follow the next couple of steps. |  |
| | | 20-0224 Petcock Drain Kit ONLY | |
| | | Remove the lower 4AN ORB plug. | |
| | | | |
| 43 | Oil Lubrication | 20-0224 Petcock Drain Kit ONLY Install the barbed fitting to the bottom drain port. NOTE: The rest of the petcock drain installation will not be discussed as the location of the valve is specific to the customer's requirements. |  |
| | 14mm Wrench | | |
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| 44 | Threadlocker | Apply a medium-strength threadlocker to the provided M5x0.8x10mm flat head screws. |  |
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| 45 | 3mm Allen Wrench | Install the catch can to the mounting bracket, as shown. It can only go on one way. |  |
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| 46 | Pliers | Insert the provided SAE quick connect fitting into the included hose. As shown, secure using a spring clamp. |  |
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| 47 | | Fully insert the hose onto the (upper) intake manifold port until a "click" is felt. |  |
| 48 | Hose Cutter | <p>Temporarily spin the straight PushLok hose end to the 6AN male portion of the PCV valve. Strategically route the hose tightly around the engine towards the hose end.</p> <p>Line up the hose and cut it to a length that will still permit the engine to move feely on the motor mounts. This hose will be roughly 21" long.</p> |  |
| 49 | Oil Lubrication | <p>Lubricate the PushLok barbs and fully insert the hose end into the hose.</p> <p>NOTE: PushLok hose ends do NOT require hose clamps.</p> |  |
| 50 | 11/16" Wrench | Install the hose end to the catch can side port using a non marring aluminum wrench. |  |
| 51 | Oil Lubrication | Find one of the 90 degree PushLok hose ends provided in the kit. Lubricate the barbs. |  |
| 52 | | <p>Fully insert the hose end into the included hose.</p> <p>NOTE: PushLok hose ends do NOT require hose clamps.</p> |  |

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| 53 | Hose Cutter | Temporarily install the 90 degree hose end to the catch can top port. |  |
| | | Line up the hose and cut it to a length that will still permit the engine to move freely on the motor mounts. This hose will be roughly 15" long. | |
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| 54 | Oil Lubrication | Lubricate the other 90 degree hose end in the kit and insert into the hose. |  |
| | 11/16" Wrench | NOTE: PushLok hose ends do NOT require hose clamps. | |
| | | Install the hose end to the oil cap port using a non marring aluminum wrench. | |
| | | | |
| 55 | | Reinstall all OEM components in reverse order. |  |
| | | SERVICING Check dipstick regularly. All vehicles are unique and will accumulate oil at different rates. Unscrew bottom portion of catch can and properly dispose of contents as needed. Do NOT return contents back into engine. If needed, stainless steel media can be cleaned with a degreaser . | |
| | | INSTALLATION COMPLETE | |
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| 56 | | 20-0563 CATCH CAN KIT, CCV, CADILLAC CTS-V |  |
| | | NOTE: Because of RHD and LHD variations, the terms "driver-side" and "passenger-side" will NOT be referenced. As depicted, these instructions will always reference "LH" and "RH". | |
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| 57 | 10mm Socket Wrench | Open the trunk. |  |
| | | On the RH side, remove the battery cover. | |
| | | Disconnect the negative battery terminal, as shown. | |
| | | | |
| 58 | Oil Lubrication | As shown, install the banjo fitting to the top catch can port and the 10AN ORB to 6AN male fitting into the side port. Use lubrication for the O-rings. |  |
| | 1" Wrench | | |
| | 4mm Allen Wrench | | |
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| 59 | 3/16" Allen Wrench | If installing the optional petcock drain, follow the next couple of steps. 20-0224 Petcock Drain Kit ONLY Remove the lower 4AN ORB plug. |  |
| | Oil Lubrication | 20-0224 Petcock Drain Kit ONLY Install the barbed fitting to the bottom drain port. NOTE: The rest of the petcock drain installation will not be discussed as the location of the valve is specific to the customer's requirements. | |
| | 14mm Wrench | | |
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| 60 | | The next few steps will remove the OEM crankcase vent line assembly shown. This will not be reused. |  |
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| 61 | | First, at the rear LH side of the engine, gently pry and rotate the SAE lock. Simultaneously, pull the connection up to release, as shown. |  |
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| 62 | | At the front RH side of the engine, gently pry and rotate the SAE lock. Simultaneously, pull the connection up to release, as shown. |  |
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| 63 | | Gently pry and rotate the SAE lock located on the air filter intake tube. Simultaneously, pull the connection up to release, as shown. |  |
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| 65 | 10mm Socket Wrench | Remove the three M6x1mm hex bolts at the RH rear corner of the supercharger lid. |  |
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| 66 | | Shown are the 3 areas from the previous step. NOTE: The OEM bolts will NOT be reused. |  |
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| 67 | | In the next step, 3 spacers will be placed underneath the catch can mounting bracket holes. |  |
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| 68 | 10mm Socket Wrench | Secure the catch can mounting bracket and spacers using the provided M6x1mm hex bolts. |  |
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| 69 | Threadlocker | Apply a medium-strength threadlocker to the provided M5x0.8x10mm flat head screws. |  |
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| 70 | 3mm Allen Wrench | Install the catch can to the mounting bracket, as shown. It can only go on one way. |  |
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| 71 | Hose Cutter | Using the supplied parts, construct the hose assembly, as depicted. |  |
| | Oil Lubrication | NOTES: 1. Use the included spring clamps to secure the SAE quick connect fittings. 2. Hose clamps are not required on the TEE barbs and the 90 degree hose end. | |
| | Pliers | | |
| | | | |
| 72 | 11/16" Wrench | Carefully place the hose assembly around the back RH side of the engine. |  |
| | | Push the SAE quick connect fittings onto the crankcase ports until a "click" is felt. | |
| | | Tighten the 90 degree hose end to the catch can top port fitting. | |
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| 73 | Oil Lubrication | Install the included 45 degree hose end to the supplied hose. |  |
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| 74 | Hose Cutter | Screw the 45 degree hose end to the catch can side port fitting. |  |
| | | Lineup the hose to the SAE quick connect fitting on the intake and cut to length. The hose will likely measure around 25" but will vary depending on the intake system. | |
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| 75 | Pliers | Install the provided SAE quick connect fitting and to the hose and secure using the included spring clamp. |  |
| | | Push the SAE quick connect fitting on until a "click" is felt. | |
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| 76 | 11/16" Wrench | Tighten the 45 degree hose end to the catch can side port using non marring aluminum wrench. |  |
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| 77 | Diagonal Cutter | Secure the hoses using the supplied zip ties. These specific locations will vary depending on the vehicle. |  |
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| 78 | | Reinstall all OEM components in reverse order. |  |
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| 79 | | <p>Servicing: <i>Check dipstick regularly. All vehicles are unique and will accumulate oil at different rates. Unscrew bottom portion of catch can and properly dispose of contents as needed. Do NOT return contents back into engine. If needed, stainless steel media can be cleaned with a degreaser.</i></p> <p>INSTALLATION COMPLETE</p> |  |
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