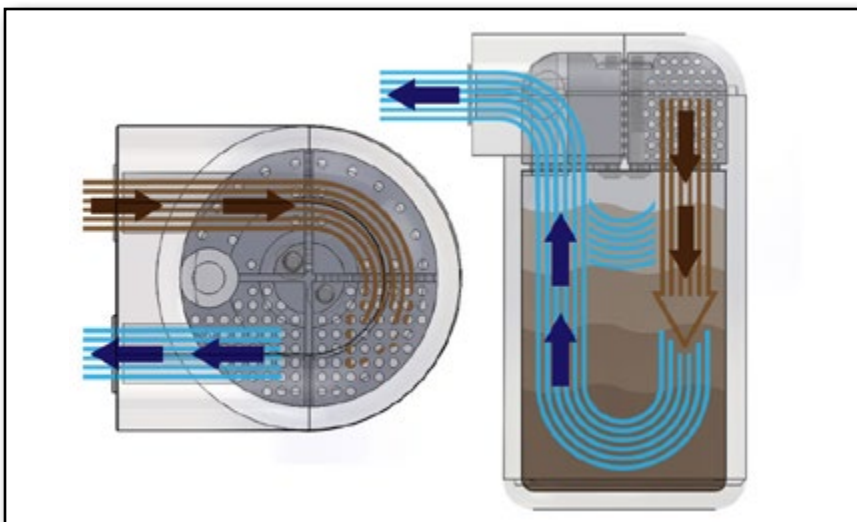


# ECS TUNING

## BMW E9x 3 Series N54 Catch Cans and Full System Kits Installation Instructions



Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

## INTRODUCTION

### BMW E9x 3 Series N54 Catch Cans and Full System Kits

Our ECS Tuning N54 Catch Cans and full system kits offer the following features:

- Constructed of strong and lightweight 6061-T6 billet aluminum
- Black anodized for corrosion resistance
- In-house designed and engineered
- All mounting hardware included in full kits
- Easy installation
- Full kits includes precise fit silicone hoses
- Catch Cans include a dipstick to check content level
- Easy and customizable installation

### ECS Difficulty Gauge



**1 - Easy**

2 - Moderate

Pro - 4

Advanced - 3

Installing one of our Catch Can systems is so easy, that any level of experience is all you need. The complete kits include all components and hardware for installation, and the Catch Can itself is designed to work with standard hardware and fittings, so even a custom installation is simple to engineer. We'll take you through the connections and installation highlights of a full kit, which will give you all of the knowledge you need for any installation. Thank you for looking to ECS Tuning for all your performance and repair needs. We appreciate your business!

## TABLE OF CONTENTS

Kit Contents.....	<a href="#">pg.4</a>
Required Tools and Equipment.....	<a href="#">pg.6</a>
Shop Supplies and Materials.....	<a href="#">pg.7</a>
Installation and Safety Information.....	<a href="#">pg.8</a>
Getting Started.....	<a href="#">pg.9</a>
Installing the Catch Can.....	<a href="#">pg.10</a>
Cleaning and Maintenance.....	<a href="#">pg.18</a>
Schwaben Tools .....	<a href="#">pg.24</a>

**KIT CONTENTS**



ECS Tuning Baffled Catch Can



Silicone Hose - 180 degree bend



Silicone Hose - Straight

Catch Can Bracket



**KIT CONTENTS**

20-32mm Hose Clamp  
Qty 4



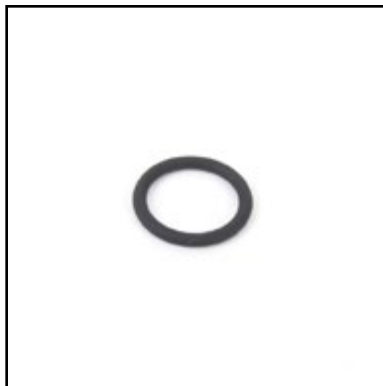
Black Zinc M6 Flange Nut  
Qty 2



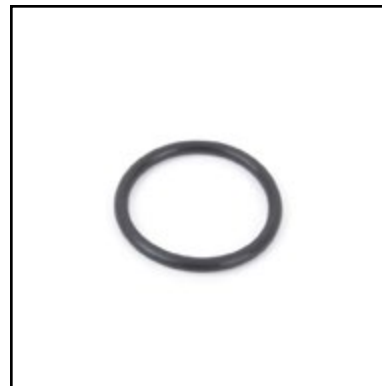
7/8"- 14 ORB x 3/4" Hose Fitting  
Qty 2



Fir Tree Clip  
Qty 1



2.5mm x 16mm O-Ring  
Qty 1



3mm x 28mm O-Ring  
Qty 1



PCV Plug  
Qty 1

**REQUIRED TOOLS**

Note: The tools required for each step will be listed by the step number throughout these instructions.

**Standard Automotive Tools**

- Protecta-Sockets (for lug nuts).....[ES#2221243](#)
- **3/8" Drive Ratchet** .....[ES#2765902](#)
- 3/8" Drive Torque Wrench.....[ES#2221245](#)
- **3/8" Drive Deep and Shallow Sockets**.....[ES#2763772](#)
- 3/8" Drive Extensions.....[ES#2804822](#)
- Hydraulic Floor Jack.....[ES#240941](#)
- **Torx Drivers and Sockets** .....[ES#11417/8](#)
- 1/2" Drive Deep and Shallow Sockets .....[ES#2839106](#)
- 1/2" Drive Ratchet
- 1/2" Drive Extensions
- 1/2" Drive Torque Wrench .....[ES#2221244](#)
- 1/2" Drive Breaker Bar.....[ES#2776653](#)
- File Set
- Air Nozzle/Blow Gun
- Bench Mounted Vise
- Crows Foot Wrenches
- **Hook and Pick Tool Set**.....[ES#2778980](#)

**Required For This Install**

- 1/4" Drive Ratchet .....[ES#2823235](#)
- 1/4" Drive Deep and Shallow Sockets.....[ES#2823235](#)
- 1/4" Drive Extensions .....[ES#2823235](#)
- 1/4" Drive Torque Wrench
- Plier and Cutter Set.....[ES#2804496](#)
- **Flat and Phillips Screwdrivers** .....[ES#2225921](#)
- Jack Stands .....[ES#2763355](#)
- Ball Pein Hammers
- Pry Bar Set.....[ES#1899378](#)
- Electric/Cordless Drill
- Wire Strippers/Crimpers
- **Adjustable (Crescent) Type Wrenches**
- Drill Bits
- Punch and Chisel Set
- **Hex Bit (Allen) Wrenches and Sockets** .....[ES#11420](#)
- Thread Repair Tools .....[ES#1306824](#)
- Open/Boxed End Wrench Set .....[ES#2765907](#)

**Available On Our Website**

**Specialty Tools**

- Heat Gun
- Razor Blades

## SHOP SUPPLIES AND MATERIALS

**Standard Shop Supply Recommendations:** We recommend that you have a standard inventory of automotive shop supplies before beginning this or any automotive repair procedure. The following list outlines the basic shop supplies that we like to keep on hand. Shop supplies with a hyperlink are available on our website.

- Hand Cleaner/Degreaser - [Click Here](#)
- Pig Mats - for protecting your garage floor and work area from spills and stains - [Click Here](#)
- Spray detailer - for rapid cleaning of anything that comes into contact with your paint such as brake fluid - [Click Here](#)
- Micro Fiber Towels - for cleaning the paint on your car - [Click Here](#)
- Latex Gloves - for the extra oily and dirty jobs - [Click Here](#)
- Medium and High Strength Loctite Thread lock compound - to prevent bolts from backing out - [Click Here](#)
- Anti-Seize Compound - to prevent seizing, galling, and corrosion of fasteners - [Click Here](#)
- Aerosol Brake/Parts Cleaner - for cleaning and degreasing parts
- Shop Rags - used for wiping hands, tools, and parts
- Penetrating oil - for helping to free rusted or stuck bolts and nuts
- Mechanics wire - for securing components out of the way
- Silicone spray lube - for rubber components such as exhaust hangers
- Paint Marker - for marking installation positions or bolts during a torquing sequence
- Plastic Wire Ties/Zip Ties - for routing and securing wiring harnesses or vacuum hoses
- Electrical tape - for wrapping wiring harnesses or temporary securing of small components

## INSTALLATION NOTES

- **RH** refers to the *passenger side* of the vehicle.
- **LH** refers to the *driver side* of the vehicle.
- Always use the proper torque specifications.
- If applicable to this installation, torque specifications will be listed throughout the document and at the end as well.
- Please read all of these instructions and familiarize yourself with the complete process **BEFORE** you begin.

## PREPARATION AND SAFETY INFORMATION

ECS Tuning cares about your health and safety. Please read the following safety information. This information pertains to automotive service in general, and while it may not pertain to every job you do, please remember and share these important safety tips.

- Park your car in a safe, well lit, level area.
- Shut the engine off and remove the key from the ignition switch.
- Make sure any remote start devices are properly disabled.
- **ALWAYS** wear safety glasses.
- Make sure the parking brake is applied until the vehicle is safely lifted and supported.
- If using an automotive lift, be sure and utilize the factory specified lift points. Lifting a vehicle in an incorrect location can cause damage to the suspension/running gear.
- When lifting a vehicle using a jack, always utilize the factory specified lift points. Lifting a vehicle in an incorrect location can cause damage to the suspension/running gear. **ALWAYS** support the vehicle with jack stands.
- **ALWAYS** read and follow all safety information and warnings for the equipment you are using.



**Never get underneath a vehicle that is supported only by a jack. Always make sure that the vehicle is securely supported on jack stands.**



## GETTING STARTED

Here is a picture of the N54 Catch Can system installed on our 335i. As you can see, the Catch Can is about the only visible component, but don't be intimidated, this is an easy installation. The only things that limit access are the cowl tray and the engine cover. The cowl tray is a common design, and has to be removed for many different service procedures on these newer BMW's. As a result, they've designed them for easy removal. So now, to get started, remove the following:

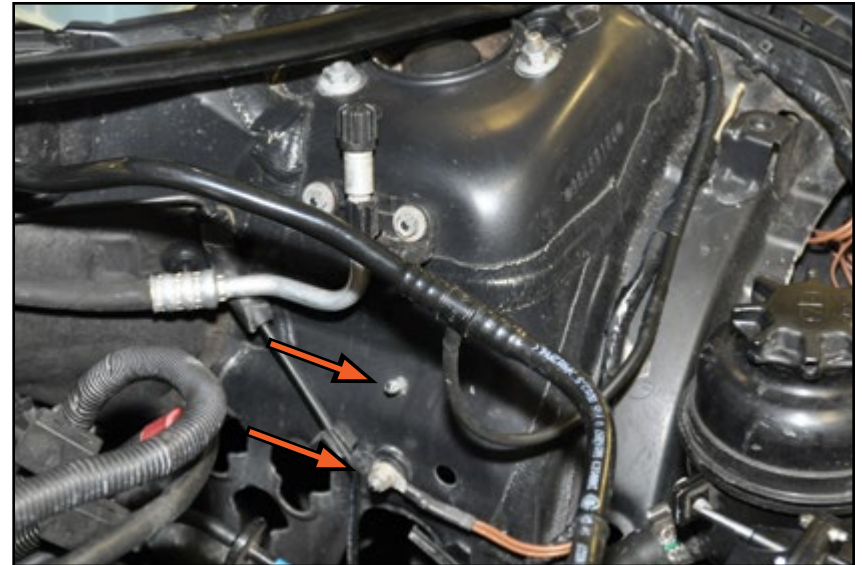
- Cowl Tray - remove the cabin filter, wiring harness channel, side covers, then the cowl tray.
- Engine Cover - hold down screws at the front and rear.
- Air Box - this is optional, but can give you some extra working room.



## INSTALLING THE CATCH CAN

### Step 1:

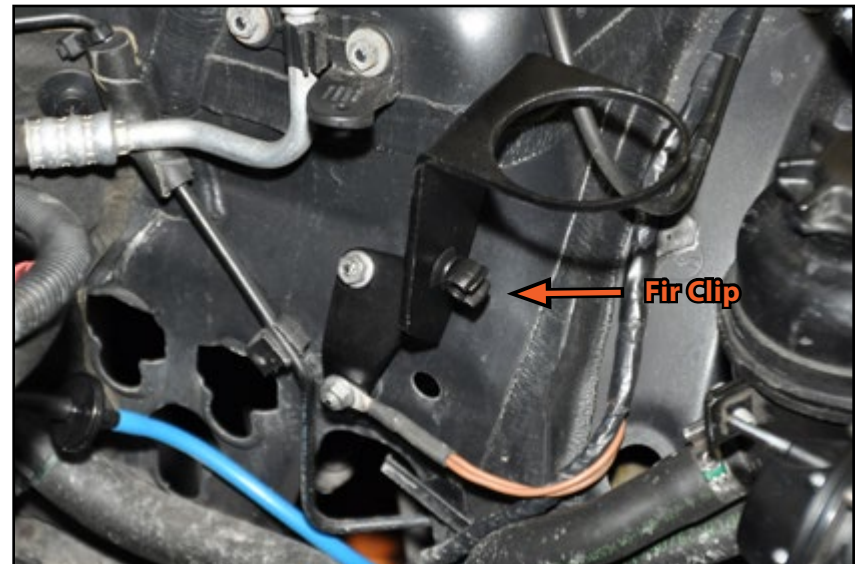
Locate the two studs on the LH (driver) side inner fender, the lower of which will have a ground wire attached. This is where you will mount the Catch Can Bracket.



### Step 2: 10mm Socket, Ratchet

Remove the ground wire and mount the Catch Can Bracket in place, relocating the ground wire onto the lower stud. Two nuts are included with the kit to be used here. (This will leave the one you took off as an extra).

Also install the Fir Clip into the side of the Catch Can Bracket. This will secure the vacuum line that runs along side.

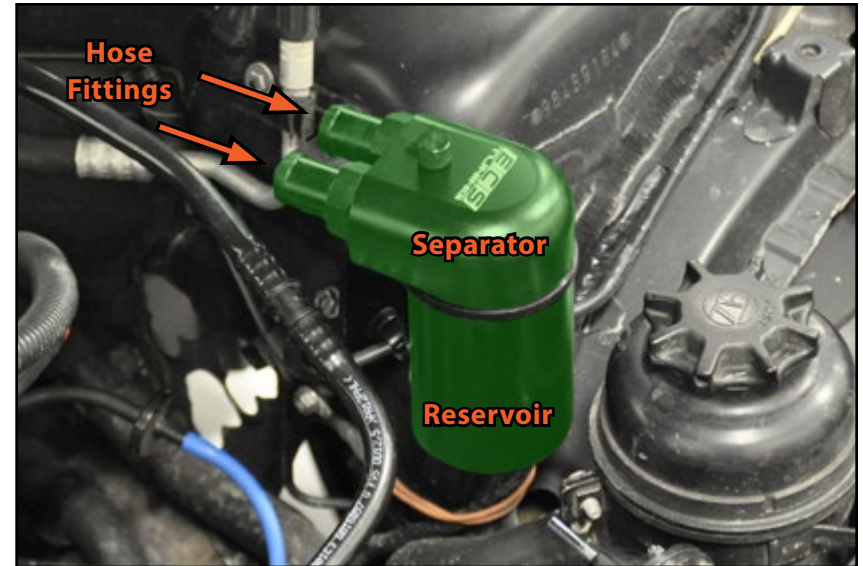


## INSTALLING THE CATCH CAN

### Step 3: Crescent (Adjustable) Wrench

Install the Catch Can into the bracket by doing the following:

- Unthread the Catch Can reservoir **and** remove the O-ring from the Catch Can separator.
- Thread the hose fittings into the Catch Can separator and tighten them.
- Place the separator into the bracket.
- Lubricate the O-ring with clean engine oil, then install it into the groove in the separator.
- Thread the reservoir onto the separator to lock the Catch Can into the bracket.



### Step 4: Small Angled Pick

Moving to the back of the engine, remove the crank vent hose between the valve cover and the intake tube (highlighted). These are a little tricky at times, due to the self locking fittings on the end. You'll have to use a pick and gently work around the perimeter of each fitting to release it.





## INSTALLING THE CATCH CAN

### Step 5: Heat Gun -or - Razor Blade

Now you'll have to separate the fittings from the Crank Vent Hose itself, they're needed to install the system. There are two ways you can do this:

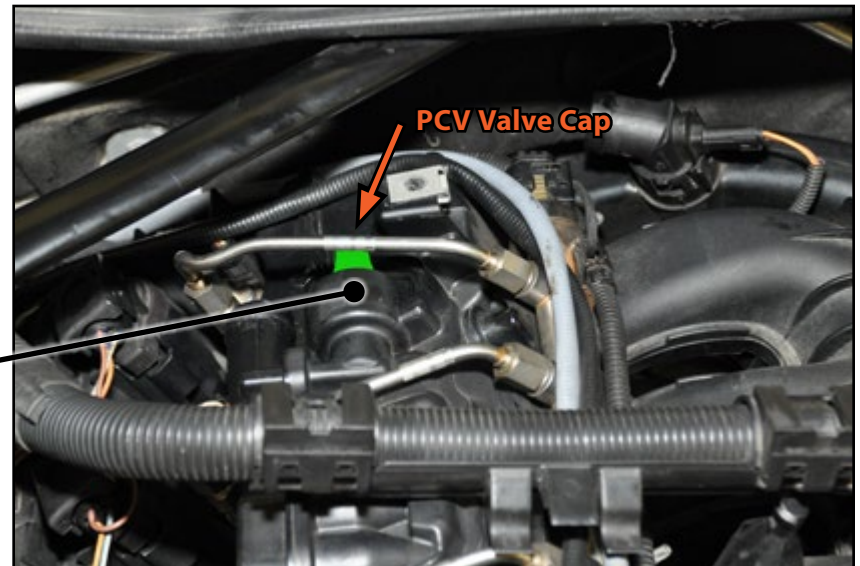
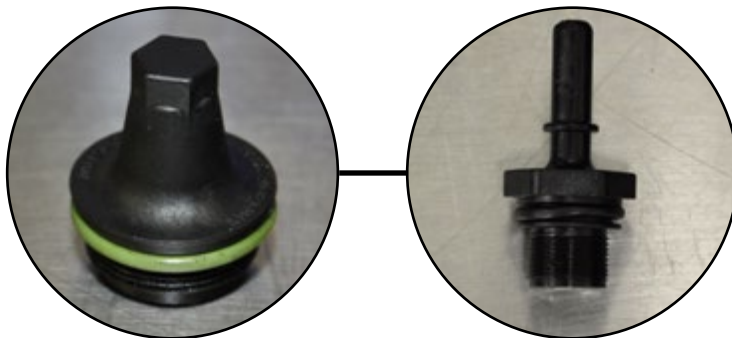
- 1) Heat the ends of the hose and pull the fittings out - use caution with this method since you can easily get the fittings too hot and melt them.
- 2) Carefully slice the hose at each fitting using a sharp razor blade, then pull the fittings out.

Set these fittings aside just for the moment.



### Step 6:

Locate the PCV Valve Cap (highlighted). It's threaded into the valve cover, but it's partially hidden under a fuel injector pipe. The PCV valve is located inside this cap.



## INSTALLING THE CATCH CAN

### Step 7: 13mm Socket, Ratchet

Here we've taken pictures of a valve cover off the car so you get a clear picture of what's going on. The PCV Valve Cap has a 13mm hex on the end. Unthread and remove the cap.

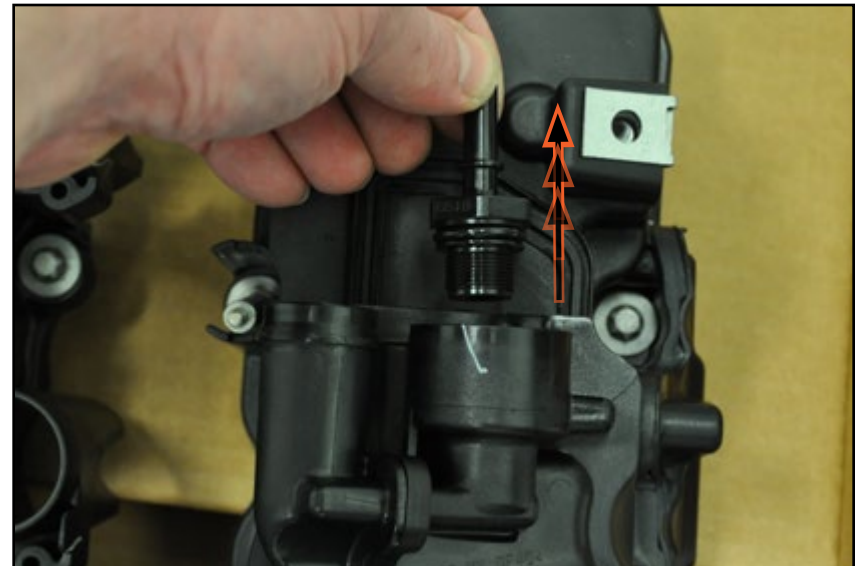


### Step 8:

Underneath the cap, you'll see the end of the PCV Valve. Grab the end of it and pull it out.



You can set the PCV Valve aside. You will not be reusing it.

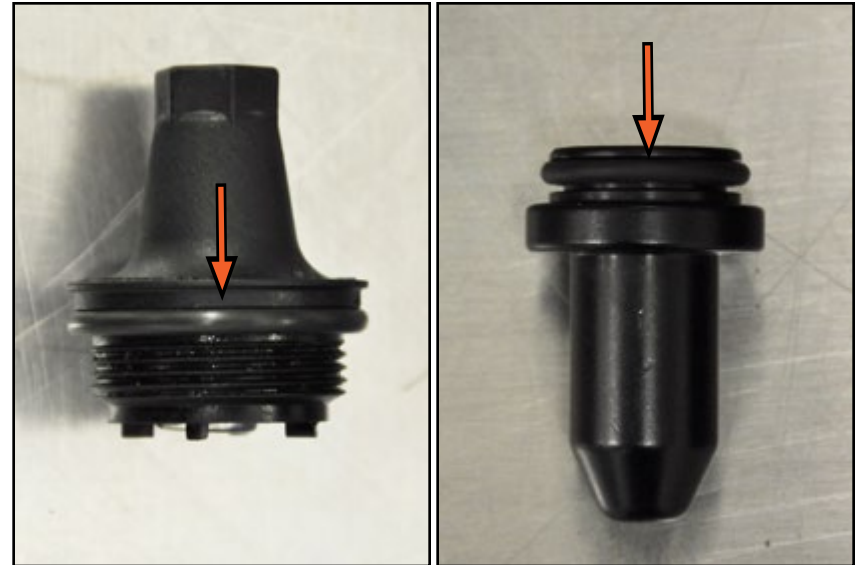


## INSTALLING THE CATCH CAN

### Step 9:

Replace the o-ring on the PCV valve cap with the new one from your kit, and install the remaining o-ring from the kit onto the new PCV plug.

- *Be sure and lubricate both of these O-rings with clean engine oil prior to installation.*



### Step 10:

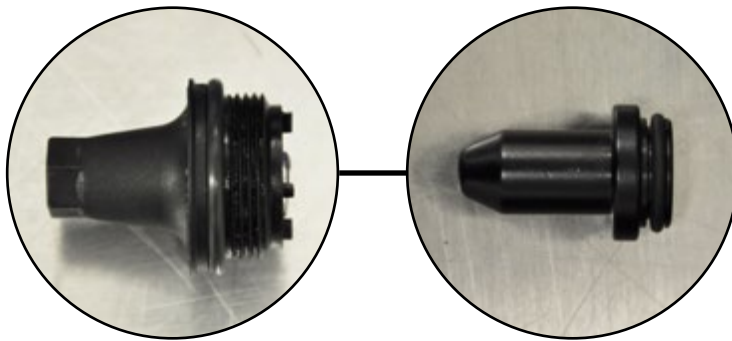
Slide the PCV plug into the PCV cap.



## INSTALLING THE CATCH CAN

### Step 11: 13mm Socket, Ratchet

Install the PCV plug and cap back into the valve cover.



### Step 12:

Reinstall the crank vent hose fitting onto the intake tube. This will be the Catch Can return.





## INSTALLING THE CATCH CAN

### Step 13:

Reinstall the crank vent hose fitting onto the valve cover. This will be the Catch Can feed.

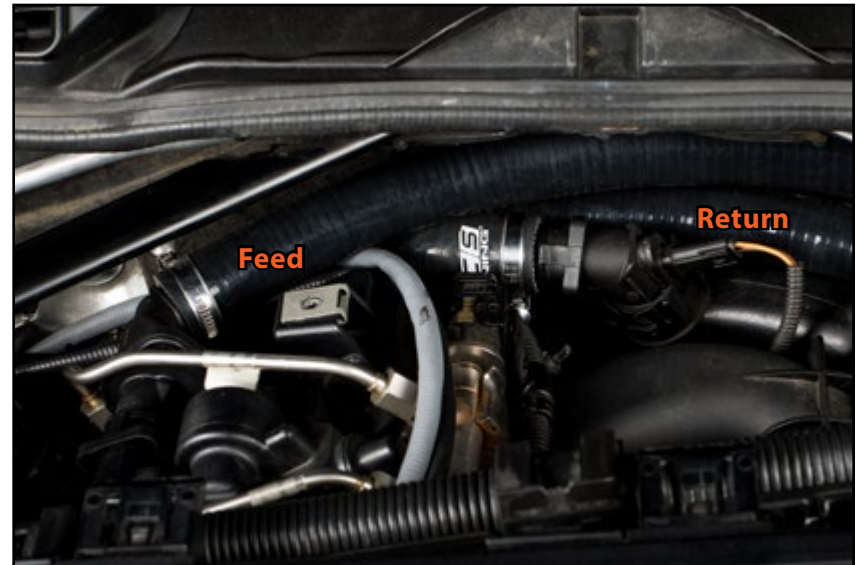


### Step 14: Flat Blade Screwdriver

Install both of the Catch Can hoses. The feed hose comes straight off the valve cover fitting. The return hose has a 180 degree bend on the end and connects to the intake pipe.



For the best routing of the hoses, make sure the return hose is underneath the feed hose, as shown in the picture.

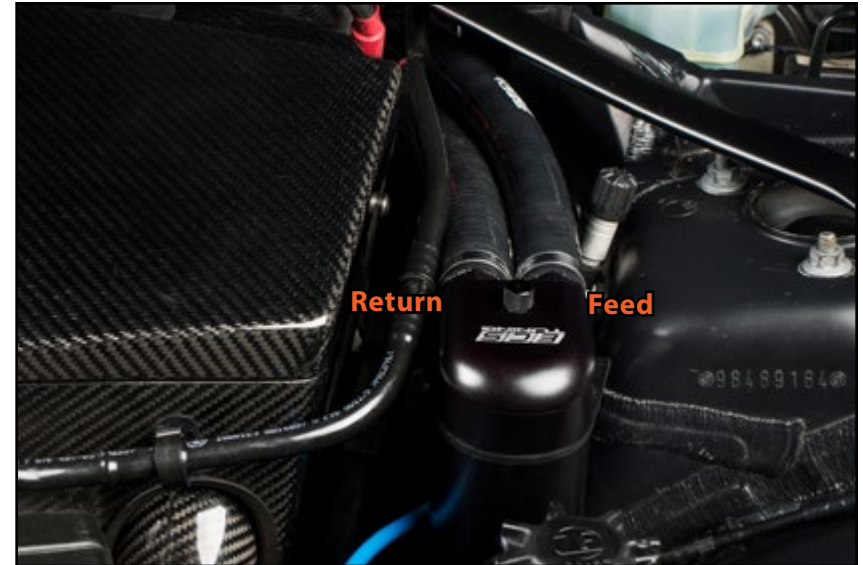




## INSTALLING THE CATCH CAN

### Step 15:

Connect both hoses at the Catch Can, making sure to correctly locate the feed and return.



### Step 16:

For reference, you can confirm the feed and return sides by looking into the end of the Catch Can Separator. In the feed side you will see a number of small holes, and the return side a flat plate.

***Reassemble the Air Box, Engine Cover, and Cowl Panel, and your installation is complete!***



Please read through the following section, Cleaning and Maintenance, before operating your vehicle with the Catch Can system installed.



## CLEANING AND MAINTENANCE

### Step 1:

We recommend that you check the level of the waste in your catch can on a regular basis. Start with once a week until you determine the amount of time it takes your car to fill the reservoir. Note that the dipstick does not go all the way to the bottom of the reservoir. When you begin to see waste register on the dipstick, you already have about an inch of buildup in the bottom. Empty and clean the reservoir when the waste registers approximately 2" up on the dipstick.



### Step 2:

About twice a year, we recommend that you remove the separator for cleaning. To remove it, remove the lines and the reservoir. Remember to remove the o-ring seal, then lift the separator out of the bracket.



If the o-ring seal needs to be replaced, it is available as a replacement part on our website, [ES#3097721](#)



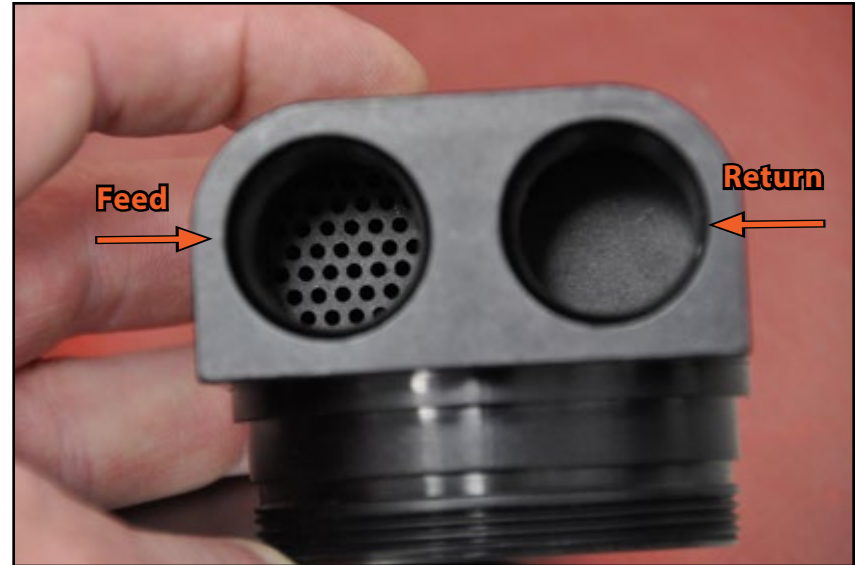
## CLEANING AND MAINTENANCE

### Step 3:

Once you have removed the separator, note the position of the baffle inside. The feed side of the separator has a number of small holes in it. Through the return side you will only be able to see a flat plate.

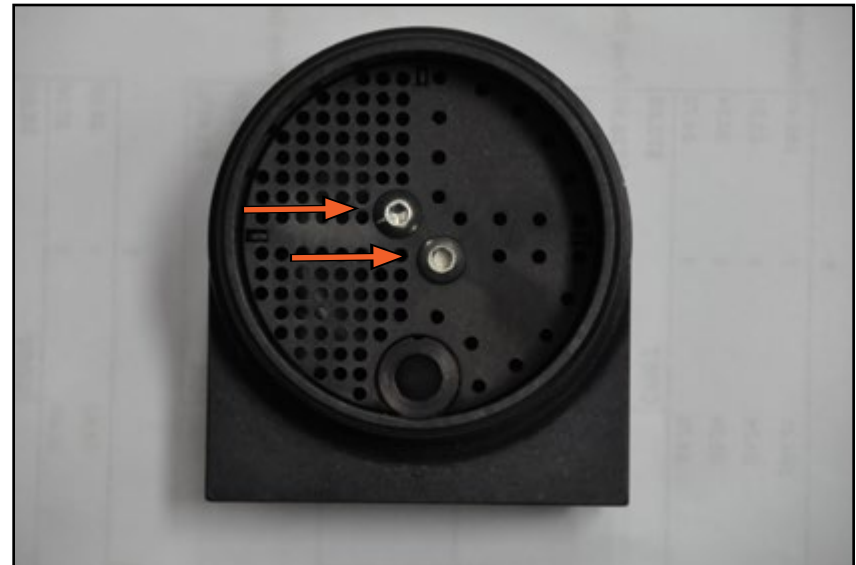


The baffle can be reversed for custom applications, it is important to note the position now so the separator is reassembled in the correct order.



### Step 4:

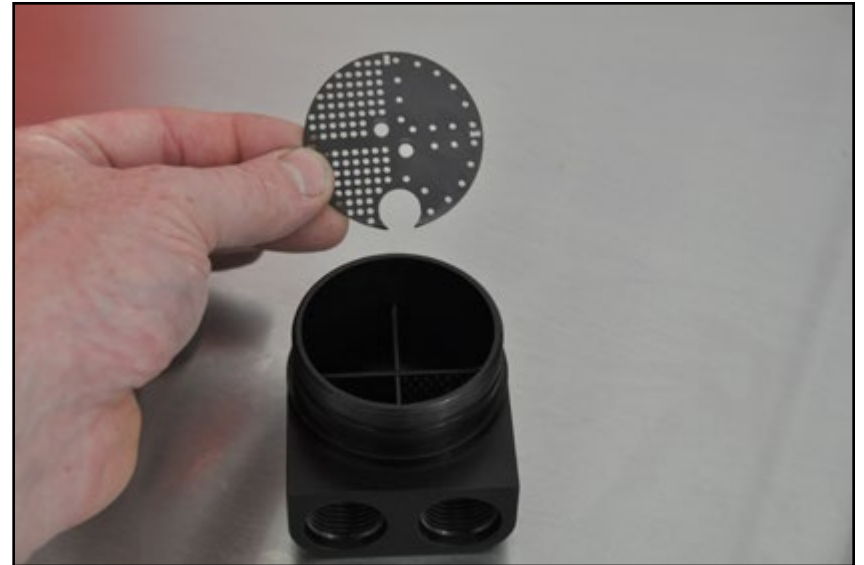
Using the 2.5mm Allen wrench included with the kit, remove the two baffle plate screws.



## CLEANING AND MAINTENANCE

### Step 5:

Lift the baffle plate out of the separator housing.



### Step 6:

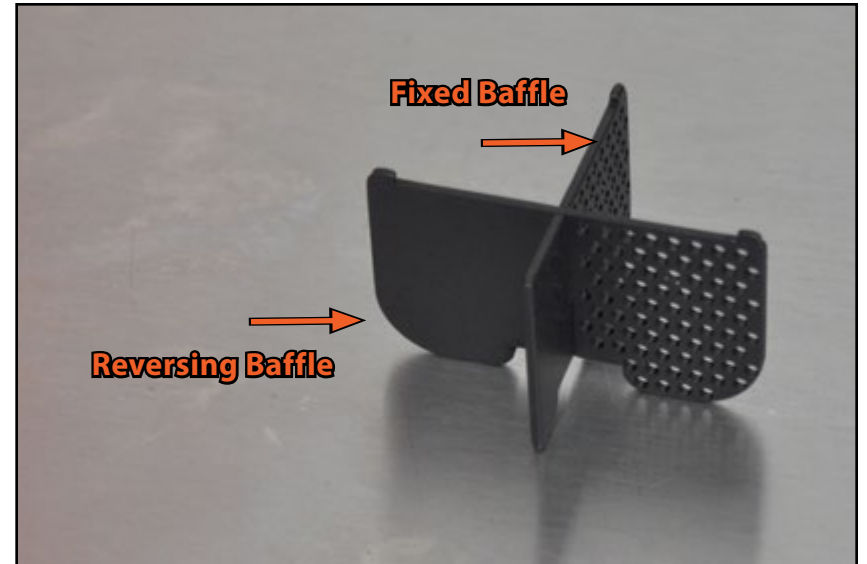
Lift the remaining baffles out of the separator housing.



## CLEANING AND MAINTENANCE

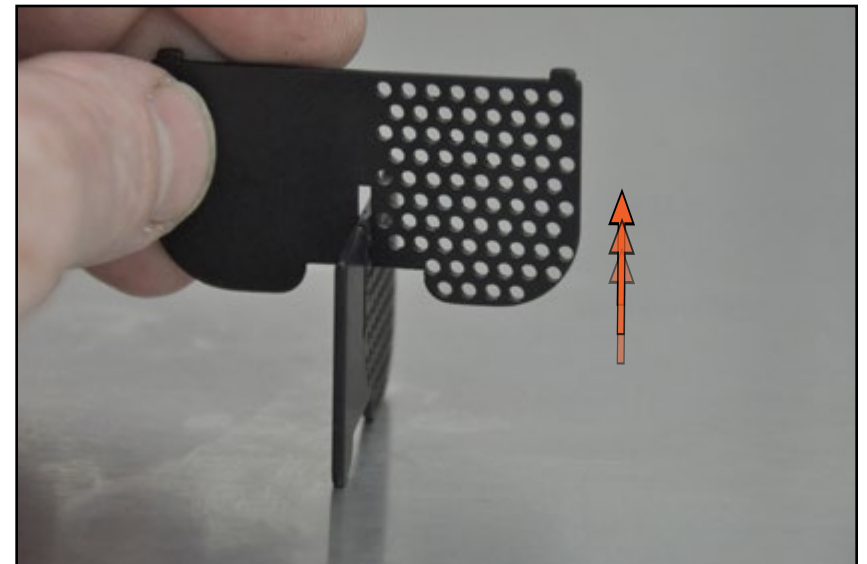
### Step 7:

Note the positions of the fixed baffle and the reversing baffle.



### Step 8:

Slide the two baffles apart.



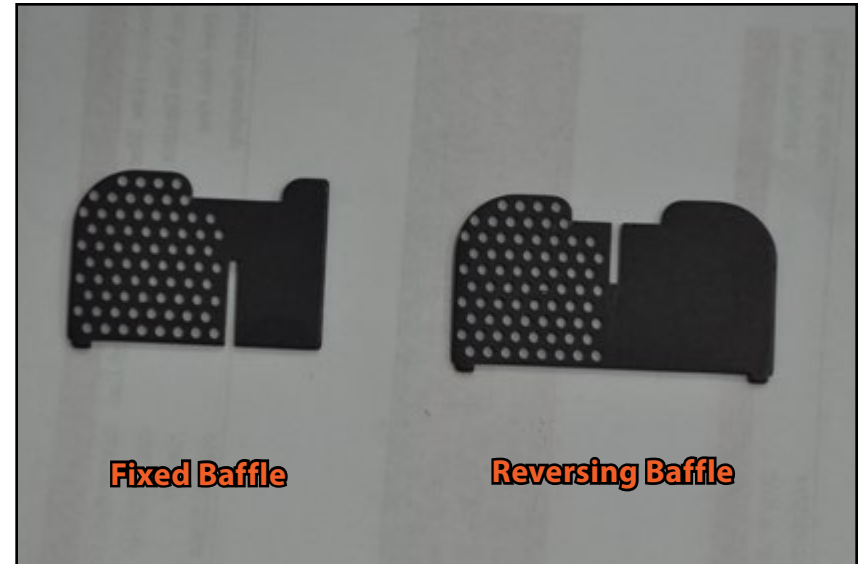
## CLEANING AND MAINTENANCE

### Step 9:

Clean the separator baffles, housing, and reservoir, using any mild cleanser or solvent. Note in the picture on the right that the fixed baffle is shorter than the reversing baffle.



Any mild cleanser or solvent can be used to clean the catch can, however we recommend that you test all cleansers on an inconspicuous area inside the reservoir to check for discoloration before you clean the outside surfaces.



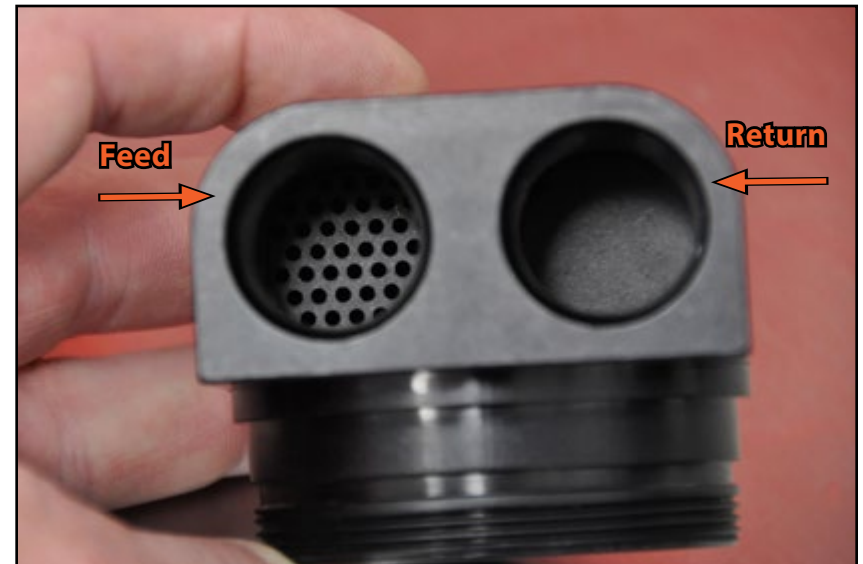
**Fixed Baffle**

**Reversing Baffle**

### Step 10:

Reassemble the baffles into the separator housing and make sure that the baffles have not been reversed and the feed and return sides are positioned correctly.

Reinstall the catch can into your car. Be sure and lubricate all o-rings with clean engine oil.

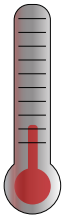


**Feed**

**Return**



## CLEANING AND MAINTENANCE - COLD WEATHER



### COLD TEMPERATURE WARNING

In cold temperatures, the crank vent system will generate a much greater amount of moisture which can present a risk of freezing.

When the temperature outside approaches freezing, your catch can should be cleaned on a weekly basis to prevent freeze up of the crank vent system and damage to engine seals.

When the temperature reaches freezing and below, we recommend disconnecting the feed and return lines and installing the original PCV hose between the intake pipe and PCV valve assembly.

**SCHWABEN - BUILD THE ULTIMATE TOOL COLLECTION**

At ECS Tuning, we carry a line of high quality Schwaben tools and equipment to help you build your ultimate tool collection. Never before has affordability and quality been so closely related. Our entire Schwaben line is subjected to strict in house testing for strength and durability. See what we have to offer and equip your garage without breaking the bank.





## Your BMW N54 Catch Can Installation is complete!



These instructions are provided as a courtesy by ECS Tuning

Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

Although this material has been prepared with the intent to provide reliable information, no warranty (express or implied) is made as to its accuracy or completeness. Neither is any liability assumed for loss or damage resulting from reliance on this material. SPECIFICALLY, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY IS MADE OR TO BE IMPLIED WITH RESPECT TO THIS MATERIAL. In no event will ECS Tuning, Incorporated or its affiliates be liable for any damages, direct or indirect, consequential or compensatory, arising out of the use of this material.