ROTTWEILER INTAKE SYSTEM INSTALLATION
2019+ KTM 690 ENDURO

Note: Please read and understand all notes, precautions and warnings within this document before performing these procedures. It is solely you and/or the installer's responsibility to adhere to the guidelines of all factory torque specs and procedures mandated by the manufacturer of your motorcycle. Always wear the appropriate safety equipment. If you believe that these instructions are beyond your capabilities, you should seek out a professionally trained motorcycle mechanic to install any aftermarket product/s including these.

- **Installation time:** 1 to 2 hours depending on experience.

- **About these instructions:** Please note that while these directions are very detailed with many pictures and pages, the installation in its entirety is not as complex as you may think. We have chosen the 'downloadable' approach to our instructions for this kit to allow the installer to use a laptop or tablet device to get the most in-depth and detailed pictures and descriptions possible, and have the ability to link to other items or information available.

- **Tools needed:** (Most can be found in your stock tool kit)
  - 2mm Hex (for velocity stack bolts)
  - 4mm hex
  - 5.5mm socket (for velocity stack bolts)
  - 10mm open end wrench
  - T30 Torx (Or 8mm socket)
  - T20 Torx
  - Flat head screwdriver (for hose clamps)
  - Zip Tie Cutters
  - Biodegradable Foam Filter Oil (See Oiling Instructions)

ONLINE INSTRUCTIONS QR CODE LINKS

Scan these codes with your iPhone's camera or a QR code reader to get direct links to online versions of these instructions.

THESE ONLINE INSTRUCTIONS

ALL INSTRUCTIONS PAGE

YOUTUBE

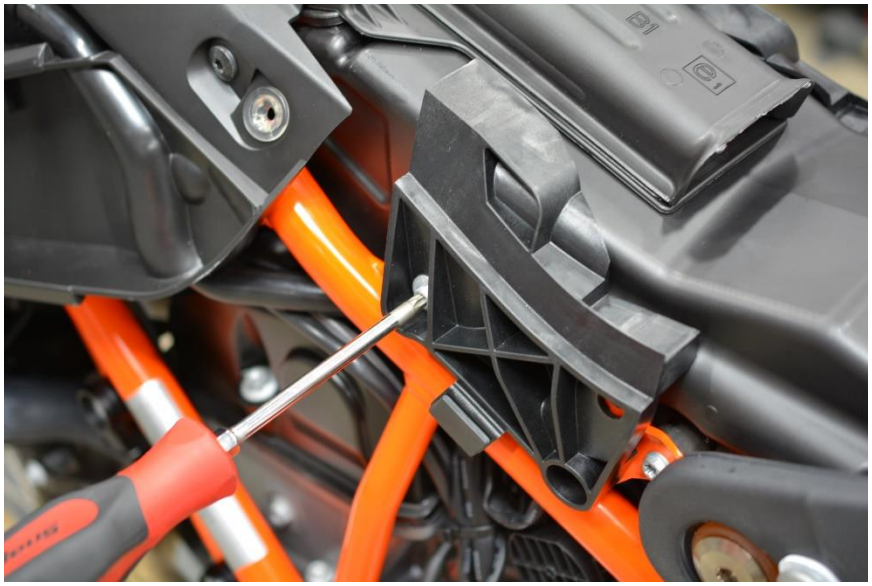
FACEBOOK

INSTRUCTIONS

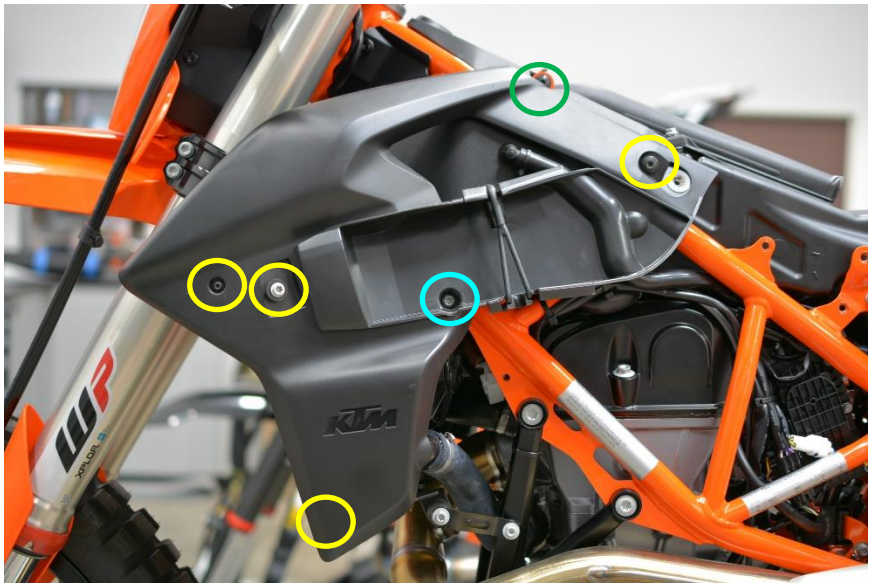
REMOVING THE STOCK AIR-BOX

1. Remove the seat and side fairings.

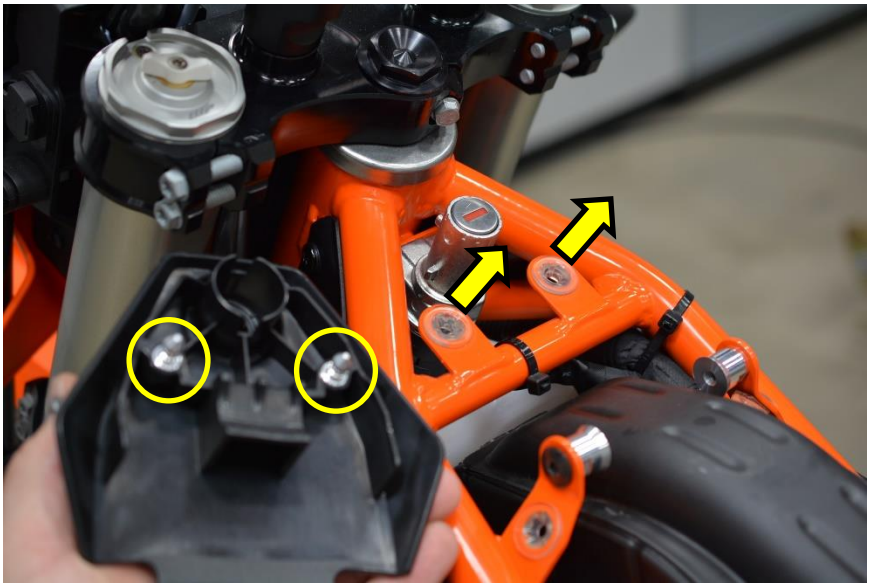
2. (T30 TORX) Remove seat supports on both sides. 3 bolts each. You will not reuse these parts or hardware.



3. (T30 / T20 TORX) Remove the LEFT and RIGHT black colored fairings. NOTE: The left side will have one more BOLT than the right so don't be confused when you think you have lost one! The GREEN circles indicate a pressed pin that can be removed by hand by pulling out on the shroud from the top.



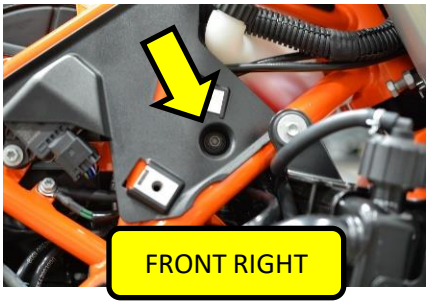
4. Remove upper key cover by lifting up from the back.

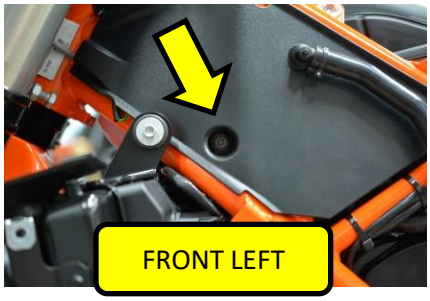


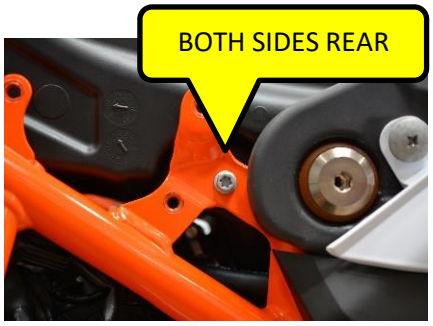
5. (T30 TORX) Remove the forward seat supports. It is not likely, but you may need a thin 13mm open end wrench if there has been any Loctite applied to these bolts.

6. (T30 TORX) Remove the screws from the regulator and tilt back. This is only to get access to the forward-right airbox bolt.

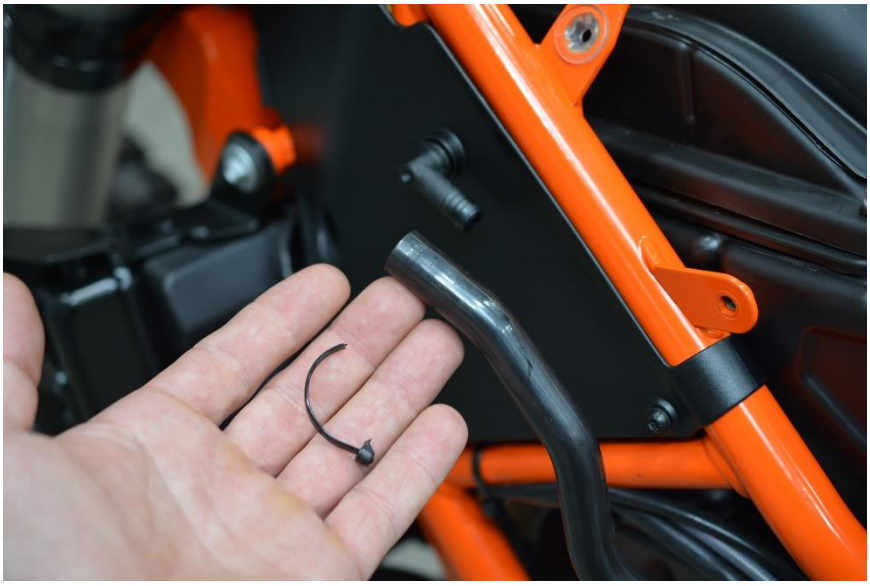
7. (T30 TORX) Remove all 4 air-box screws located 2 on each side front and back.







8. (ZIP TIE CUTTERS) Cut the zip tie and remove the crankcase breather hose on the left side.



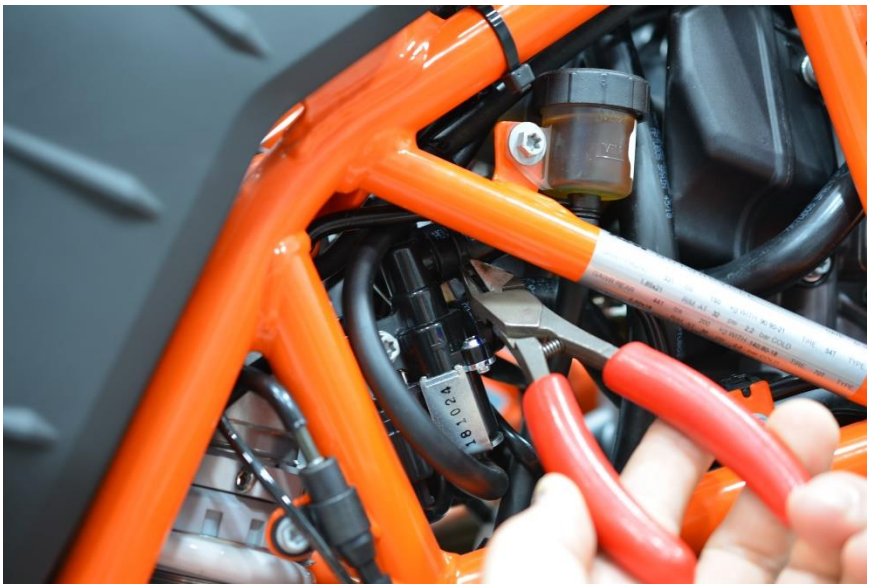
9. (FLATHEAD SCREWDRIVER) Loosen the FORWARD hose clamp on the throttle body. The position of this may vary depending on the Austrian guy's mood that day. If you loosen the wrong hose clamp, the rubber velocity stack will just pull out of the air-box which is no big deal. You're not reusing it.

10. Temporarily disconnect the large ECU plug from the computer to give the air-box some room to pull back. You can remove the ECU if you like by pulling it up and out of it's rubber keepers.

11. Pull up on the rear of the air-box and remove the temperature sensor plug by depressing the tab and pulling back. You may be able to remove this plug beforehand by shifting the air-box to the right slightly.

12. Pull up and back on the air-box until it pops up.

13. (ZIP TIE CUTTERS) Cut the upper zip tie on the SAS valve. (See NOTE below picture)



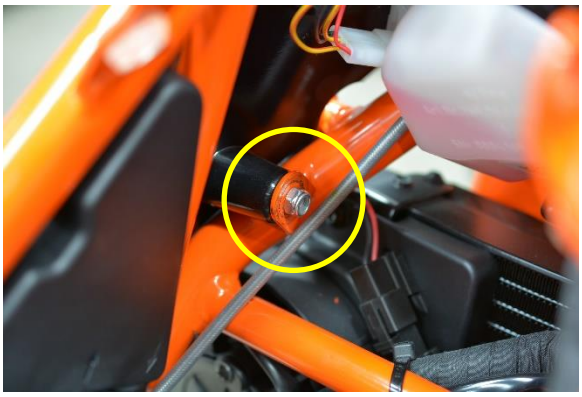
NOTE: If you are also installing an SAS delete kit, you should perform that at this time, and then come back to the intake instructions where you left off. For more information, click this link if you are viewing these instructions online or go to our downloads/instructions page and search for the appropriate emissions removal instructions.

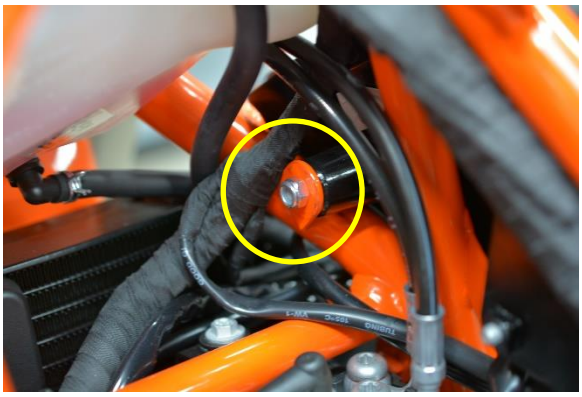
Most of our customers also install an aftermarket muffler and consequently remove the SAS system which would no longer be useful due to the removal of the catalytic converter. This is one of the two hoses attached to the underside of the stock air-box that travels to the SAS valve pictured above. The other being the crankcase breather which is kept with the Rottweiler Intake System. As such, there are no provisions for feeding air to the SAS system within the Rottweiler Intake System kit and this hose is discarded with the rest of the stock air-box. If you wish to keep this system functional (which is only useful if you are retaining the stock muffler), you will simply need to

attach a small ½" UNI type filter to the end of the hose that leads to the SAS valve pictured above. You may also simply plug the valve where the hose was removed to retain the system in a non-functional condition.

14. Remove the air-box, carefully extracting the hoses from the frame. You may have to twist slightly so that the front air-box mounts will clear the frame.

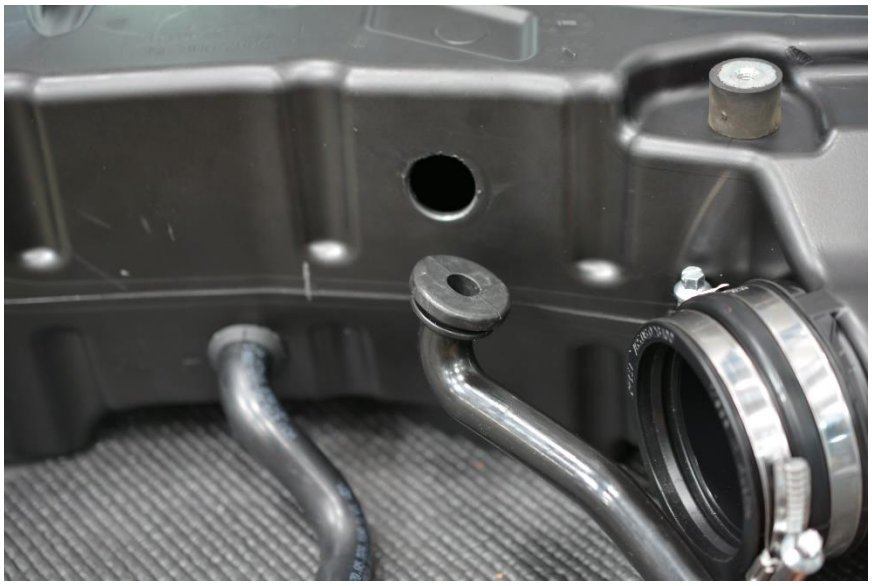
15. (T30 TORX + 10mm SOCKET) Locate two of the supplied 6mm Nylock nuts and re-affix the black plastic pieces using stock front air-box bolts through the locations shown below.





16. (T20 TORX) Remove the temperature sensor from the stock air-box. You will not re-use the screws, but the temperature sensor will be transferred to the Rottweiler base plate later.

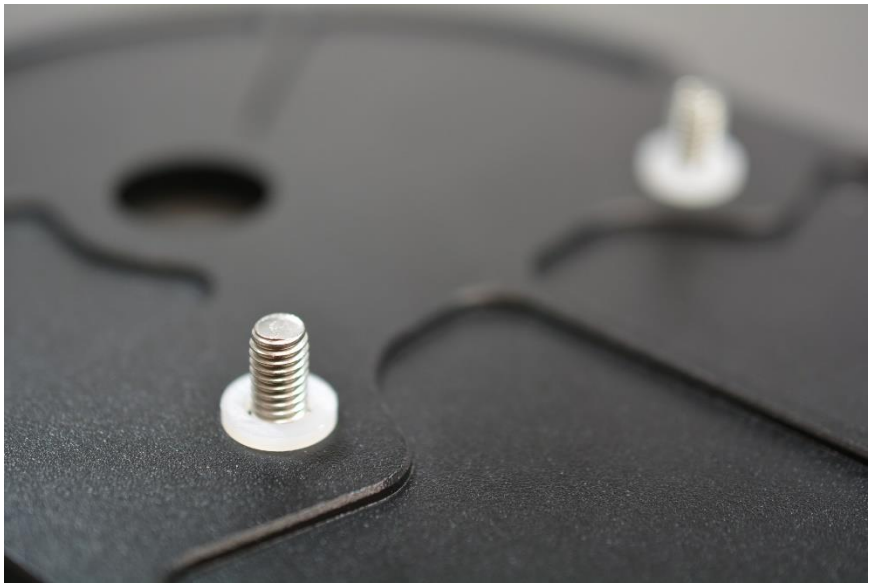
17. Remove the crankcase breather line from bottom of the stock air-box. This hose can be removed from the outside, but it may help to remove the stock filter and help it out from the inside. This will also be transferred to the Rottweiler base plate.



ASSEMBLING THE BASE PLATE

18. Insert the 6x16mm stainless button head bolts (the second longest bolts) through from the top of the plate through to the bottom. (pocketed side)

19. Slide the nylon washers over the threads of the bolts making sure that the ‘gripping’ tabs inside the washer towards the plate.

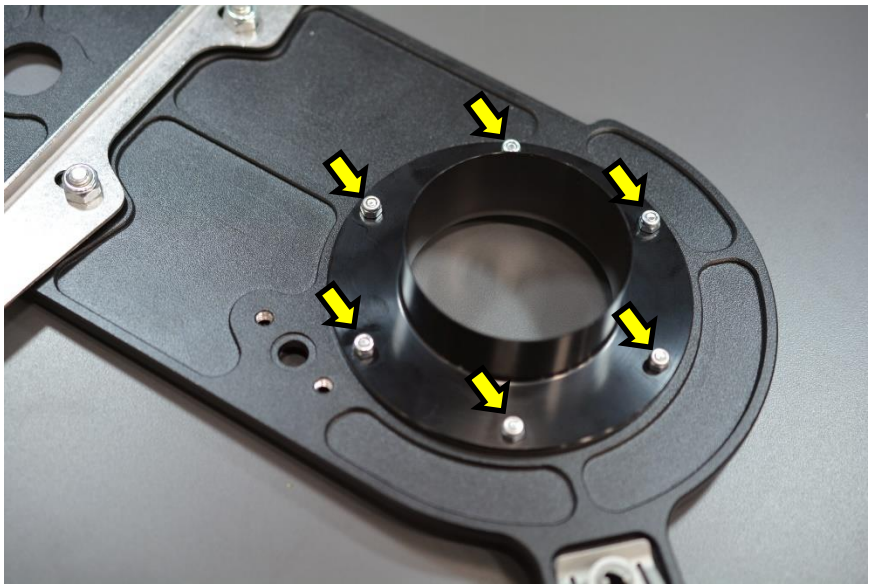


20. (4mm HEX + 10mm SOCKET) Install the mounting bracket as shown using the two 6mm nylock nuts but do not tighten them. Screw them on so that the bracket is held lightly but can move forward and back. The assembly will be bolted to the frame next.

21. Install the Viton o-ring on to the bell-mouth side of the velocity stack as shown.

22. Insert the velocity stack from the bottom through to the top and align the 6 holes.

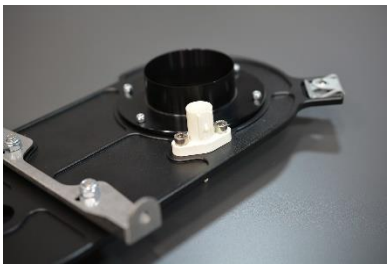
23. (4mm Hex + 5.5mm SOCKET) Insert the (6) 3mm flathead bolts from the top down and thread the nuts. Tighten snug in a circular pattern ensuring that the velocity stack is flush with the bottom of the base plate.



24. Locate the two 5x12mm locking bolts and the one small black o-ring.

25. Install the o-ring on to the temperature sensor as shown and insert it through the bottom of the plate. NOTE: This is a replacement O-ring as the stock air-boxes have been found to be missing them at times.

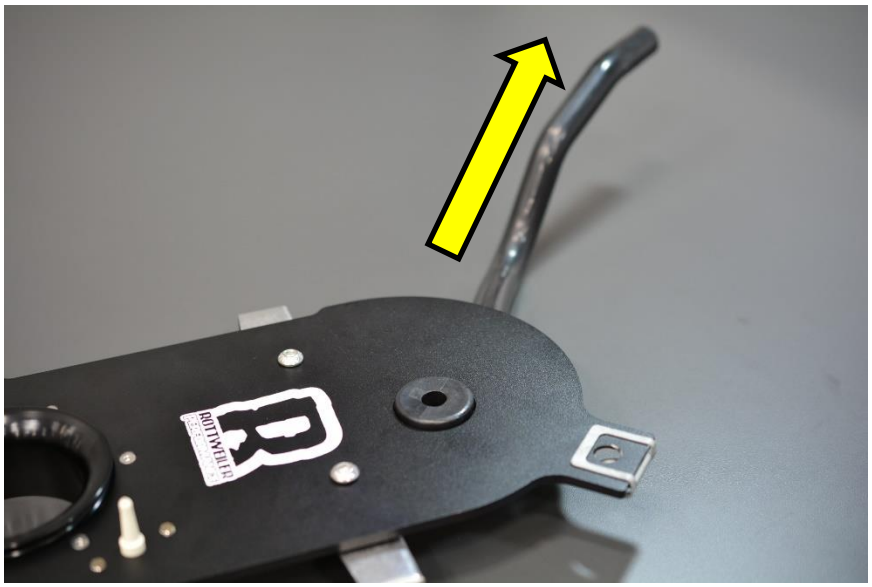
26. (4mm HEX) Use the 5x12mm locking bolts to secure the temperature sensor to the base plate pointing the locking tab to the outside. Do not overtighten these screws. Snug is fine.



27. NOTE: If installing a Crank Case Blanking Kit at this time, the hole below will be plugged and the hose will get its own breather filter. See this link here for more information.

28. (If routing the crank case breather into the intake) Locate the crankcase breather tube and insert into the base plate as shown. It may help to find a soft tip screwdriver to help work it through little by little with small bites.

29. Angle the tube as shown.

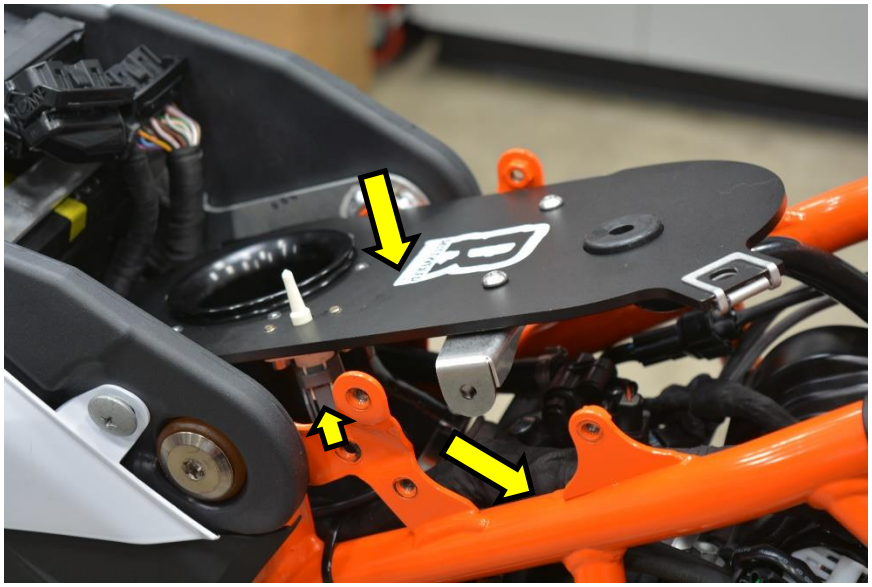


30. Locate the silicon intake tube and install to the velocity stack with one hose clamp. Orientation does not matter.

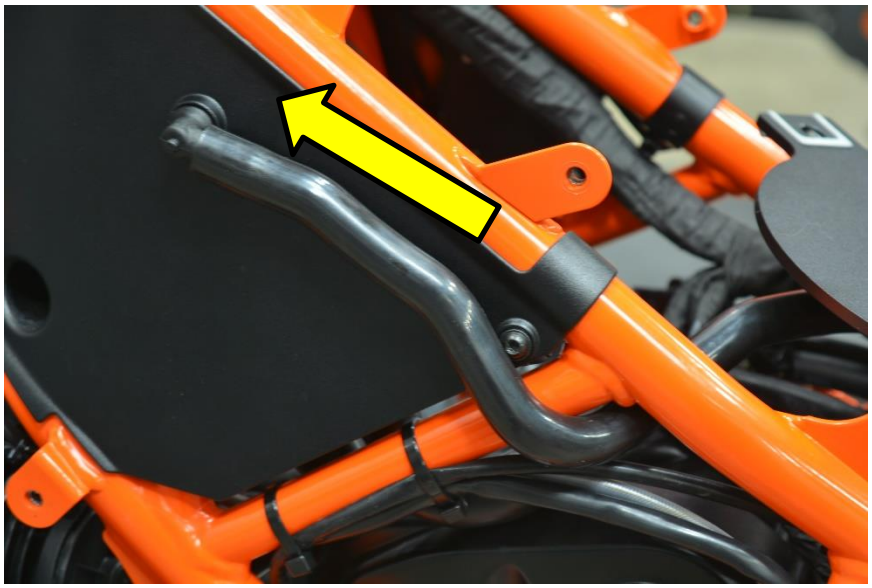
31. (FLATHEAD SCREWDRIVER) Point the tube forward and centered as shown and tighten the hose clamp. You may locate the worm drive part of the hose clamp between the nylock nuts.

32. Install the second hose clamp as shown pointing to the left side of the bike and on the bottom.

33. Plug the temperature sensor back in and lower the assembly into the bike guiding the silicon hose over the throttle body. You may need to loosen the hose clamp slightly to allow it to slip on but do not tighten it at this time.

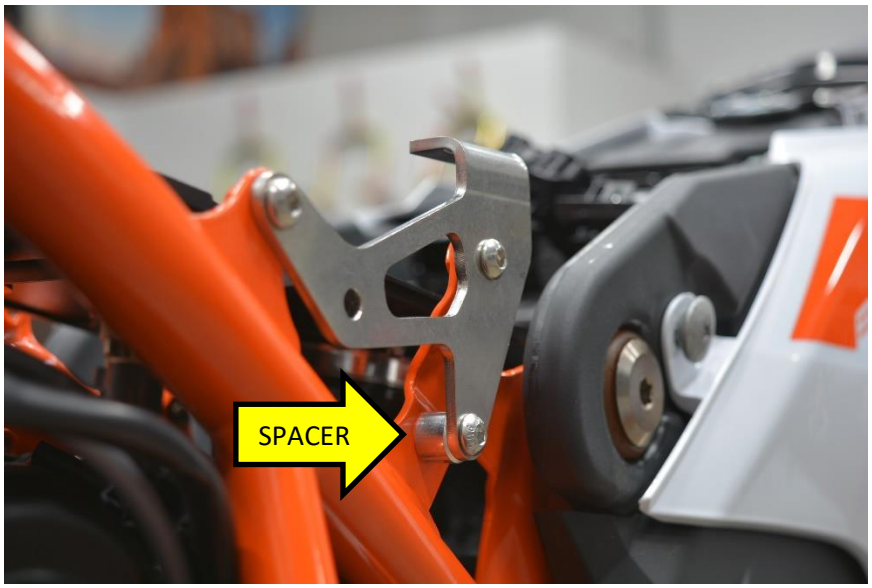


34. (If routing the crank case breather into the intake) Route the crankcase breather through the frame and plug it back into the fitting on the left side of the bike.



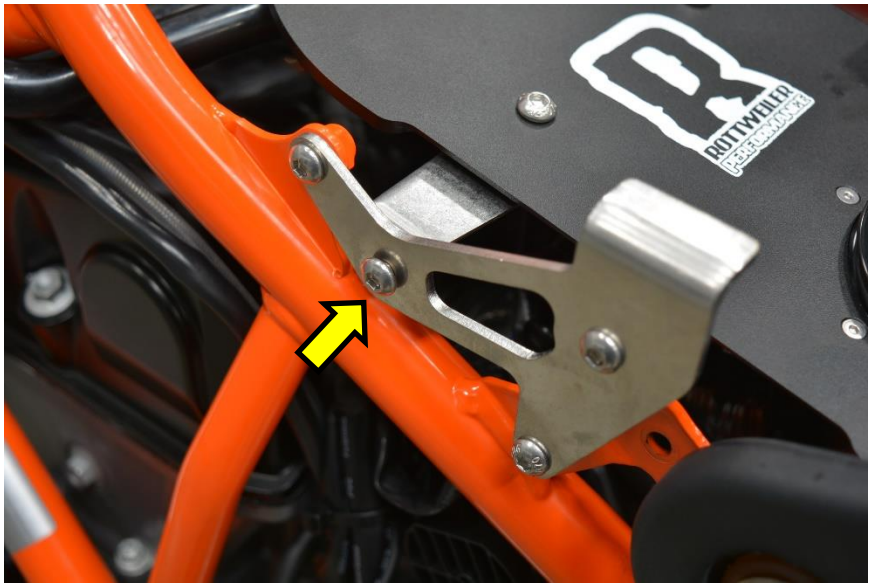
35. (4mm HEX) Using one of the 6x20mm button head bolts and two of the 6x10mm button head bolts per side, affix the seat support plates to both sides of the frame and using the aluminum spacers at the bottom to bridge the gap.

NOTE: Before performing this step, inspect the procedure in line 25 and the following note to determine the best way for you to proceed given the two choices below.

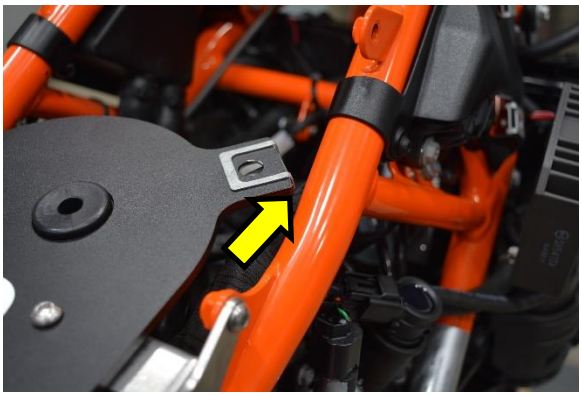


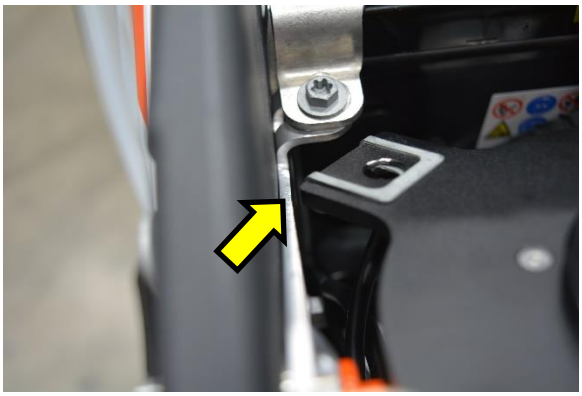
36. (4mm HEX + 10mm WRENCH) Using the remaining 6x10mm button head bolts and 6mm locking nuts, loosely affix the base plate mounting bracket (Line 20) to the seat support plates. Do not tighten at this time.

    NOTE: If getting the nuts on the backside becomes tricky or your sausage fingers won't get in there, the mounting bracket and seat support plates can be pre-assembled loosely before the base plate is lowered into the frame (Line 19) and assembled in that fashion.

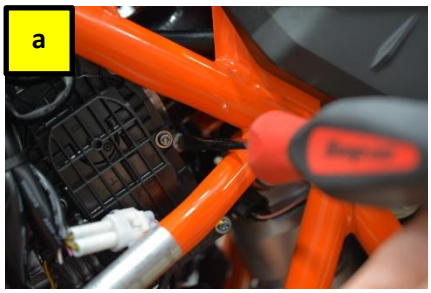


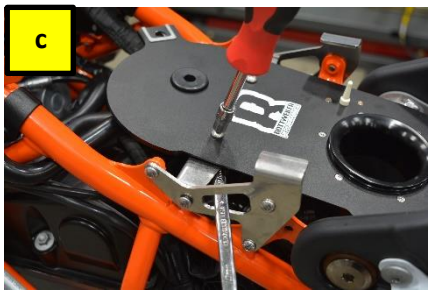
37. At this point many of the fasteners have been left loose. Ensure that the base plate is centered and neither of the fastening tabs on the right are in contact with the frame (front) or the subframe support (rear). You will want the fastening tabs as close as possible but leaving room for the filter element's base which will cover these.



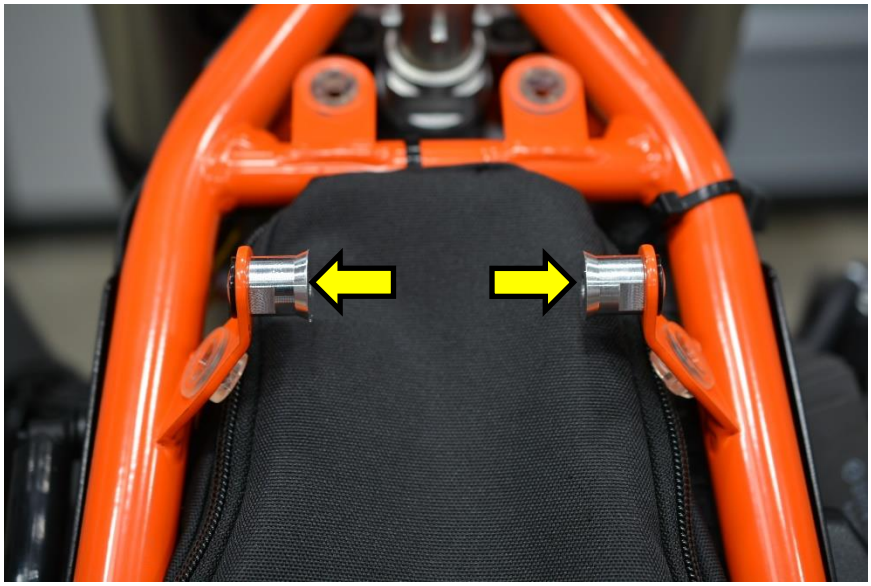


38. Once satisfied, you may begin to tighten:
    a. Hose clamp at the throttle body
    b. Mounting bracket sides
    c. Mounting bracket top





39. Reinstall the two seat locating lugs back onto the frame.



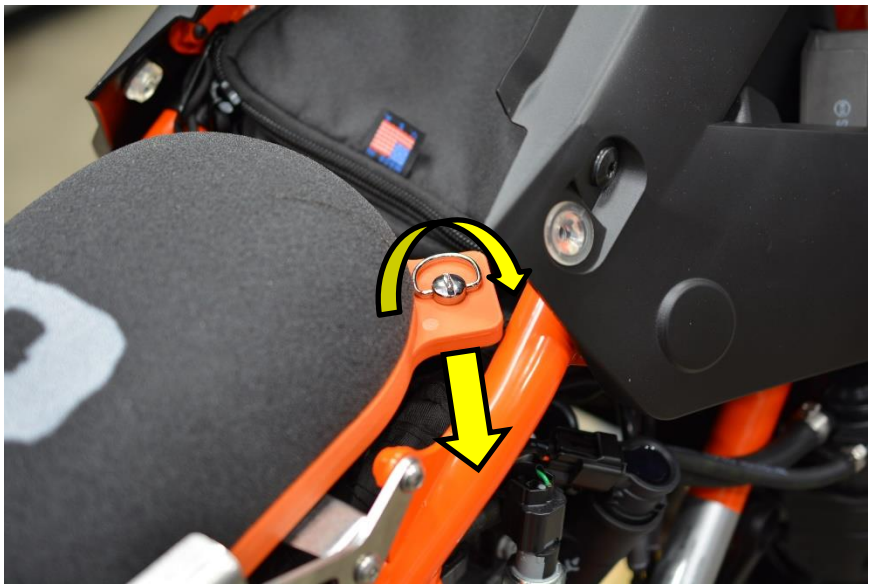
40. If you have purchased a Rottweiler Performance Storage Bag, now would be the best time to install it.

41. Reinstall (in this order):
    a. Ignition key cover
    b. (T30 TORX) Regulator rectifier
    c. (T30/20 TORX) Black inner shrouds
        - Left shroud has 5 bolts
        - Right shroud has 4 bolts

31. OIL YOUR FILTER! Please see the oiling instructions at the end of this document to properly oil your filter element. (Pictured below the filter is dry for instructional purposes)

32. Install the filter by 'hooking' the left side tab underneath the base plate on the left-hand side. Gently push on the base of the filter from left to right ensuring that the filter is hooked properly by trying lightly to pry it upward. It should not tilt up when rolled from left to right if done properly. (Left underside shown below)

33. Making sure that the base plate 'ears' are located up inside the orange filter base on both ends, turn the ¼ turnkey tabs clockwise until they latch and click into place. This may take some downward pressure to get the locks to catch the base plate tabs and a long screwdriver can make this a bit easier.



34. Inspect that the rear attachment tab is not contacting any part of the bike and that the filter is at lease 6-10mm away from the ECU plug. If any part is in contact, the base plate can be shifted forward by slightly loosening the two bolts in the base plate and shifting the assembly forward a small amount.

35. Install the seat and make sure that there is no interference with the filter element. You may find light oily marks on the bottom of the seat pan. This is completely normal as there is some flex in the seat and during installation it may touch the filter slightly.

36. You are now ready to reassembly the remaining parts that were removed and enjoy your new Rottweiler Intake System and the benefits of unrestricted horsepower and rideability.

NOTE: During the first ride inspect the element that there are no issues. The seat and filter can be removed by hand very quickly and inspection to ensure that you have oiled your filter properly is easily done.

FUELING / MAPPING NOTES FOR THE KTM 690 ENDURO / HUSKY 701

Q: 'Do I need to adjust the fueling for the KTM 690 Enduro with an intake and exhaust? If so, how do I go about doing that?".

A: First off, as tested at sea level, which will be the most volatile in terms of air fuel mixture as the oxygen content is higher than at altitude, the KTM 690 Enduro tested to stay within safe AFR levels during full Dynometer pulls with no additional fueling. The AFR's varied between 12.8 (rich) @ 4000 RPM to 14.4 @ 8000 RPM (Leaner but still very safe). This was on setting #2 with no additional fueling added via a Powercommander V.

Q: "What if I would like to take advantage of Rottweiler Performance's dyno tuned maps or run dual maps for say 'Economy' and 'Power' when I want them?"

A: While a 'Piggyback ECU' (Powercommander V) is not needed to achieve 'safe' levels of fueling on the KTM 690 Enduro, there can be many advantages to using them. If your goal is maximum power, total control over the fueling curves or the ability to switch back and forth between two maps on the fly, the PCV is highly recommended and Rottweiler Performance can even set them up for you when requested so that they come completely 'plug and play'. You will receive a detailed certificate with your name on it, a diagram of what we activated, what maps we installed and our signature that your unit is set up and ready to go.

Q: I have no idea what a piggyback ECU is or a Powercommander. How much do I need to know ahead of time?

A: Not very much at all. In short, a piggyback ECU is like a digital jetting kit. It very simply 'hijacks' the signals that your stock computer sends to your physical fuel injector and modifies them in a +/- fashion based on your throttle position and engine RPM. This is achieved by physically plugging in 'T' connectors at certain points on the wiring harness and uploading a map (shown below) within the PCV software. You can keep it as simple or as complex as you are comfortable with as a PCV is like a pocket knife, you can use just the one blade, or open up all kinds of other handy tools.

Powercommanders typically come pre-installed with a map that is very similar to a jet kit for carburetors. Remember those? They are still around but since the onset of increasing emissions laws and the necessity to pass stricter and stricter output levels, almost all motorcycles are now fuel injected for this and other reasons. Powercommanders come delivered like a jet kit and are typically pre-tuned for a muffler and small typical mods. You also have many choices for maps available on the Rottweiler Performance website under 'DOWNLOADS/PCV MAPS. The details are found in the notes box at the bottom of every map opened within the PCV software (Highlighted in green below) and are also described on the website.

Q: I want to install a Powercommander and one of your maps, but I can't find one that is exactly my setup. What should I do?

A: At Rottweiler Performance we should have a few maps available for your model. Running the wrong map will not be dangerous for the motor at all, but may not be as perfect as one that is closer to your setup. Just find the map that most closely resembles your setup and that should work very well. Brands of mufflers do not matter, and a perfect map is almost impossible to create due to constant changes in conditions so all you need to do is get close and you should be very happy with the outcome. A dyno tune is always great, but you would probably not feel much difference after a tune has been custom made vs what we already offer for free.

Highlighted in red below would be an example of 19% more fuel at 15% throttle and 3500 RPM. Simple as that. Circled in green is the mapping notes that can be left by the installer.

RPM \ % Throttle	0	2	5	10	15	20	40	60	80	100
250	0	0	0	0	0	0	0	0	0	0
500	0	0	0	0	0	0	0	0	0	0
750	0	0	0	0	0	0	0	0	0	0
1000	0	0	0	0	0	0	0	0	0	0
1250	0	0	0	0	0	0	0	0	0	0
1500	-4	0	0	0	0	0	0	0	0	0
1750	0	0	0	0	0	0	0	0	0	0
2000	0	15	5	-7	0	0	0	0	0	0
2250	0	0	0	0	-6	0	0	0	0	0
2500	0	-3	-2	-2	20	0	0	2	-2	-6
2750	0	-7	-2	0	-13	2	5	-7	-8	-6
3000	0	-2	5	8	25	10	3	-12	-4	-6
3250	0	4	11	14	7	13	6	-15	-3	-1
3500	0	2	7	13	19	13	8	-8	-2	-2
3750	0	0	0	9	9	11	11	2	2	-4
4000	0	0	0	3	5	12	14	5	3	-10
4250	0	0	-9	0	5	11	21	1	0	4
4500	0	0	-11	-2	4	11	14	11	3	-7
4750	0	0	-16	-2	2	10	6	10	4	1
5000	0	0	-18	-2	2	13	6	2	-2	4
5250	0	0	-14	0	3	13	10	12	0	-2
5500	0	0	0	3	5	8	8	-10	-1	0
5750	0	0	0	4	5	6	3	-2	-1	2
6000	0	0	0	0	2	0	4	6	2	-1
6250	0	0	0	0	0	2	7	-8	2	2
6500	0	0	0	-2	-2	-1	6	10	4	4
6750	0	0	0	-7	-7	-6	4	3	6	3
7000	0	0	0	-9	-8	-5	6	4	7	8
7250	0	0	0	-10	-10	-8	5	0	8	8
7500	0	0	0	0	-12	-9	5	7	9	10
7750	0	0	0	0	-11	-8	4	4	11	9
8000	0	0	0	0	-11	-9	1	8	11	12
8250	0	0	0	0	0	-11	3	8	12	10
8500	0	0	0	0	0	-11	3	8	9	9
8750	0	0	0	0	0	0	0	5	8	16
9000	0	0	0	0	0	0	0	0	2	8

Map 1 Notes

2014-2015 KTM 690 Enduro
Akrapovic Slip On exhaust
Rottweiler Intake

CALIFORNIA EMISSIONS WARNING

The California Air Resources Board (CARB) does not permit the removal or alteration of OEM emission control devices unless certified by CARB, other than for racing vehicles on closed courses. These products are legal for use ONLY in competition racing vehicles and may not be legal in California for use on public roads, streets or highways. Check your local laws and regulations to determine that compliance needed in your city or state.

GENERAL NOTES ON MAPPING

At Rottweiler Performance we have tested average air fuel ratios on a number of motorcycles with this system and the results have been that no extra mapping is necessary to maintain safe air fuel ratios. (no leaner than 14.7 and no richer than 12.5) In addition, we have also found that installing Rottweiler Fueling Dongles can help low end fueling tremendously and makes for a smoother running motorcycle. This should be considered a stepping stone to a proper mapping system such as a Powercommander piggyback ECU for full fueling control. If what you are looking for from this system is an air box that won't fail and cause dirt to enter the engine, then we would suggest simply installing the Rottweiler Fueling Dongles. If you are looking to maximize power output to its fullest, we would suggest that you look to Rottweiler Performance for Powercommander options and either have your bike tuned by a qualified tuner or download one of our free tunes providing we have something close to what you are looking for. Rottweiler Performance keeps a full stock of Powercommander units and has mapping support to go along with that and a number of tutorial videos on our site to help you understand how these units work and how to set them up.

PRECAUTIONS AND WARNINGS

Please keep in mind that while our findings have been very conclusive during our testing processes, it is impossible to predict exactly how every motorcycle will react with various modifications and that you the consumer must assume full responsibility for both the final condition of your vehicle and personal safety when opting to modify or alter your motorcycle. We suggest that like any other engine modifying product such as an exhaust, that you perform the proper investigation/s as to what that particular modification/s has done to your fueling and the general intended use of your motorcycle and if it is deemed safe for your engine. CPR Fabrications / Rottweiler Performance will not be liable for any issues arising from the use or installation of any OEM or aftermarket product/s sold by either CPR Fabrications / Rottweiler Performance, or any authorized dealer / reseller of their products. The purchaser accepts any and all responsibility that they have chosen to 'undo' what the original vehicle manufacturer has 'done'.

YOUR ROTTWEILER PERFORMANCE INTAKE FILTER

All foam air filters should be thoroughly oiled to provide the best filtration performance. The recommended oils are specifically formulated for foam air filters. When the oil is correctly applied, it provides a tacky coating over all the surfaces of the structure of the foam filter. As dust particles pass into the filter, they collide with the foam structure and are then retained in the sticky oil coating. The oil coating also flows around the dust particles to continue to present a tacky surface for further dust particles.

CPR Fabrications / Rottweiler Performance does not provide any warranty of any kind other than backing the general craftsmanship and quality of its products. The use of any aftermarket products is at the sole discretion of the user and may void the warranty.

OILING YOUR FILTER AND PRE-FILTERS

For the best overall results and longevity of your filter it is recommended that you use biodegradable filter oil systems and follow the instructions below. Always use the products in accordance with instructions. Improper use of cleaning chemicals or use of non-approved chemicals can damage filter materials. Under no circumstances use cotton gauze filter oil, engine oil or any other oil not specifically manufactured for foam air filters.

Do not allow any other chemical other than the recommended filter oil to come into contact with the filter element whatsoever. If any warranty situation arises, and it is determined that any other such chemical has come into contact with the filter element, any and all warranties shall be immediately void.

1) These instructions apply to both the base main filter and pre-filters. They both should be thoroughly oiled before use.
2) Read the label on the can prior to spraying and use in an open, well ventilated area. Holding the aerosol about 25mm/1" from the filter, spray in a deliberate circular motion all over the foam surface until the course foam pores just start to fill up with oil and/or penetrating the inside of the filter. Then, wearing protective gloves use your finger tips to 'massage' the oil deep into the foam.
3) The aerosol contains a mix of oil concentrate and a thinning agent which helps the oil to penetrate deep into the foam. The thinning agent will evaporate off after around 5-10 minutes, so it is important to massage the oil into the foam as soon as it is applied to ensure the oil works its way through to the fine, inner layer of foam. If you think you have over oiled your filter, you can dab the surface of the foam with a strong absorbent paper tissue/paper kitchen towel, which will remove most of the excess oil.

It is important to resist the tendency to simply oil the outside and then the inside of the filter. This may leave the middle layer dry reducing the ability of your Rottweiler Intake Filter element to do its job. Make sure to thoroughly oil the entire filter from the outside until the inside starts to become visually moist with oil primarily from the outside first. Once this has been confirmed, you may then oil the inside well but not oversaturated.

4) Once you are confident that your Rottweiler Intake Filter is properly oiled through all three layers of the foam, spray the sealing foam on the base of your Rottweiler Intake filter with the same filter oil used on the main filter foam and your filter is now ready to install.

DO NOT USE ANYTHING OTHER THAN FILTER OIL ON THE FILTER BASE SEALING GASKET. GREASE PRODUCTS LIKE NO TOIL RIM GREASE ARE KNOWN TO HARDEN AND CAUSE DAMAGE TO THE SEALING GASKET BASE. ANY AND ALL WARRANTIES EXPRESSED OR IMPLIED WILL BE VOID IF UNAPPROVED CHEMICALS ARE USED.

CLEANING

For the best overall results and longevity of your filter it is recommended that you use biodegradable filter oil systems and follow the instructions below. Always use the products in accordance with instructions. Improper use of cleaning chemicals or use of non-approved chemicals can damage filter materials.

Most biodegradable oiling kits are intended to be used in a two-part cleaning process where the cleaner breaks down the sticky dust retention oil on the filter, which is then washed off using warm water and washing up liquid/dish washing soap.

1. Follow the instructions for the particular brand of oil in which you have used to originally oil the filter. Mixing cleaning solutions between brands can lead to poor performance during the cleaning process.

2. The next step is to wash the filter out in warm soapy water for a final rinse. Fill a sink, washing bowl or bucket with a strong solution of water and liquid/dish washing soap, then submerge the filter in the solution. You should see any remaining oil and dirt residue rising out of the filter as it enters the water which may turn white as it mixes with the water/detergent mix. Repeat this process until you are satisfied that the filter is completely clean and then rinse with clean water only to ensure no dish washing detergent is left on the filter.

This stage of the process should take no more than 4 – 5 minutes, leaving the filter submerged in water for a prolonged period of time may cause the glues in the filter to soften and eventually break down.

Now the filter is clean you will need to leave it in a warm, dry place until is fully dried out. Do not use a high-pressure air line or heat gun to speed the process up.

Once the filter is dry, you may re-oil the filter element with your chosen brand of foam filter oil.

Under no circumstances use cotton gauze filter oil, engine oil or any other oil not specifically manufactured for foam air filters.