



MAKING YOUR DREAMS A REALITY

FITTING INSTRUCTIONS

Air Box, NSR250 MC21/MC28

BPCX-0007 / BPFX-0007



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Please note that the following pictures and instructions start from “fitting” the air box and associated parts to a street bike. Please note that these instructions assume that the owner will be using all associated components such as oil pump, shorty fuel tap, idle adjuster and choke attachments. Depending on how you have your motorcycle configured, you may or may not require all these components and we provide blanking plugs for holes in the air box to accommodate all set ups.

Your first job is to remove all the standard parts such as tank, air box, carbs, carb clamps, air solenoids and the solenoid/coil/relay stay.

It's best to remove the solenoids completely from the carburetors as it will give you an easier time and more access inside the air box during fitting.

Stuff some tissue in to the carb insulators to avoid debris, tools, parts and small animals dropping into your engine.

Also remove the 2T oil pump hoses from the oil pump, taking note which one goes to which spigot. If they're old and stubborn to remove then they can be left in situ on the 2T pump rather than risk damaging the hose (all too easy on a 25+ year old hose!). I'll explain both fitting methods.

The air box can be fitted with the cowling and seat fitted, but we recommend removing the complete cowling, as this will give you much better access to things such as 2T oil pump hoses and the carburetor clamps.



Before starting, please first familiarize yourself with the names of the components and the labels for the holes as shown, and then follow the procedure below.

List of Contents:

1 x Air Box BPCX-0007/BPFX-0007

1 x Coil/Relay Stay BPSY-0253

1 x Solenoid Stay (installed on air box) BPSY-0252

1 x ¼ turn bolt. (installed on air box, secures BPSY-0252)

1 x cable tie (for securing the Air Filter Element)

1 x Air Filter Element TPER-0102

2 x Boost Bottle Blanking Plugs TPER-0074

4 x M6x30mm. Button Head Bolts CHSS-0630

5 x 16mm. blank grommets RUBB-0016-0

3 x 16mm. single hole grommets RUBB-0016-1

4 x 24mm. blank grommets RUBB-0024-0

3 x 24mm. single hole grommets RUBB-0024-1

1 x 24mm. double hole grommet RUBB-0024-2

1 x Two stroke Oil hose blanking plate BPSY-0264

1 x shorty fuel tap TYLY-0237

3 x Seal Gap

Note that we have pre-installed some of these grommets into the air box for a typical street configuration



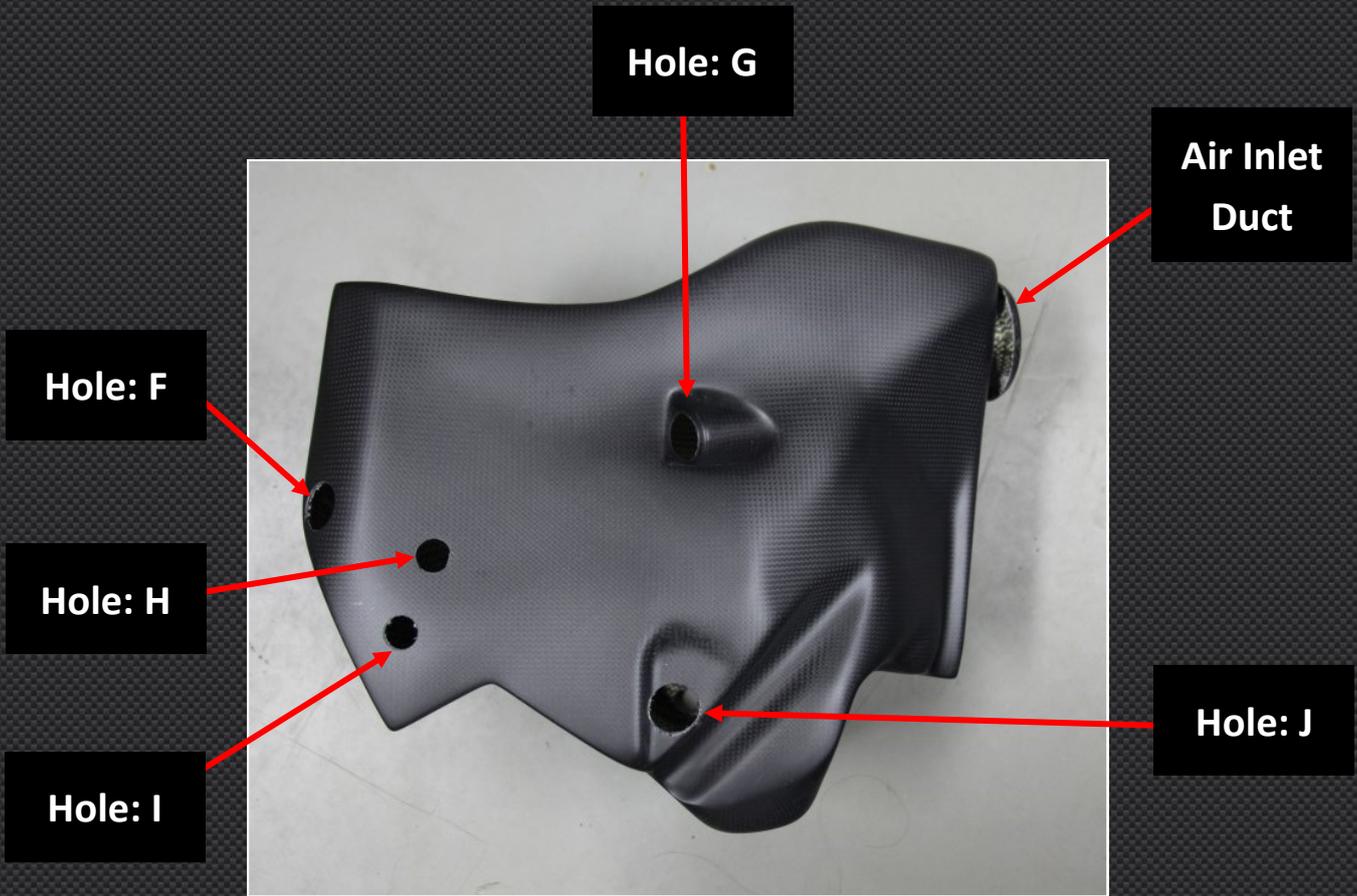
We will be referring to the following holes in the photos in the text below.



Hole A	Carburetor clamp access, (Right)
Hole B	Two Stroke Oil line



Slot A	Solenoid Stay Securing point
Hole C	Carb. Solenoid/TPS Wires
Hole D	Oil Pump Cable
Hole E	Solenoid Stay Securing bolt
Hole F	Throttle Cable



Hole F	Throttle Cable
Hole G	Fuel Tap
Hole H	Choke Cable
Hole I	Idle adjuster MC21
Hole J	Carburetor clamp access, (Left) & Idle adjuster MC28



Note that the air box is supplied with Grommets fitted to all the various holes and is shipped with grommets fitted for street use. We will explain the purpose of each grommet and options in the steps below

Some steps are related specifically to a model (MC21 or MC28). If this is the case then the model will be stated at the start of the step. If no model is stated, the step applies to both models.

Let's get started.

- 1) Simple job to start. Fit the coil/relay stay and secure to the frame mount. Be sure to refit the earth wire.



- 2) Trim some material from the rear inboard top side of the generator/sprocket cover as shown in the photo to obtain clearance for the air box.



3) Make sure the wiring harness is running below the main left side frame rail at the front and then above the casting for the rear shock as shown in the photo to get clearance with the air box. The air box is relieved to provide adequate clearance for a street harness.



4) (MC21 ONLY) Remove boost bottle. We won't be using this.

5) (MC21 ONLY) Clean and degrease the boost bottle holes in the insulator.

6) (MC21 ONLY) Fit the boost bottle blanking pieces (TPER-0074). Smear some RTV sealant on them first and then press into the holes. Use a finger inside the intake and press the blanks down until you feel them flush with the insulator.

They will retain themselves in there without sealant, but the sealant will help retain them and gives you peace of mind. If you remove the tissue in the intakes for this step, be sure to replace it.





7) Remove the 4x outside M6 bolts from the insulator and replace with the 4x M6x30 button head bolts.

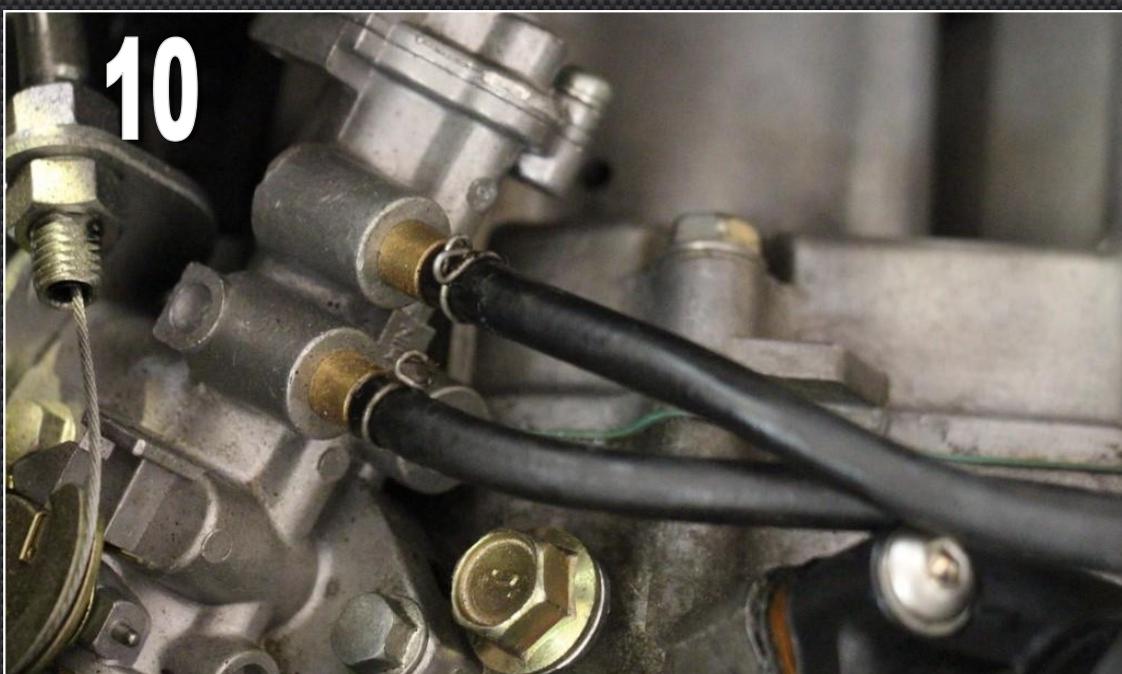


Next steps are to prepare the air box for fitting to the bike.

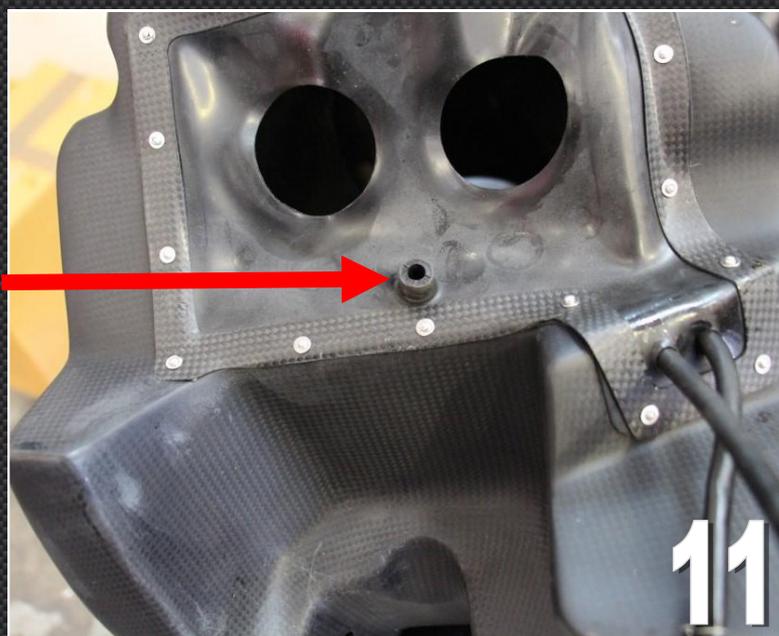
8) The various grommets for the most part will need to be installed on the cables and wiring prior to securing to the air box. We have put them in their allotted holes for convenience but note the easiest way is to remove them from the air box prior to installation. We will go through this in more detail below.

9) (MC28 ONLY) Hole I is not used. No need to remove this grommet.

10) Pre-fit the 2T hoses through the rubber as shown, in the correct position and orientation. Once fitted, make sure that the retaining clips are also fitted. They're easy to lose so be careful.



11) Pre-fit the transmission breather hose through the small hole in the insulator sealing rubber as shown in the photo. You can actually pull this quite a way through and makes for easy fitting onto the transmission breather spigot.



12) Make sure that all the wires/cables etc. are handy, but not in the way of the air box during fitting. We've utilized all the space available so it's quite a snug fit.

13) Grommet Fitting

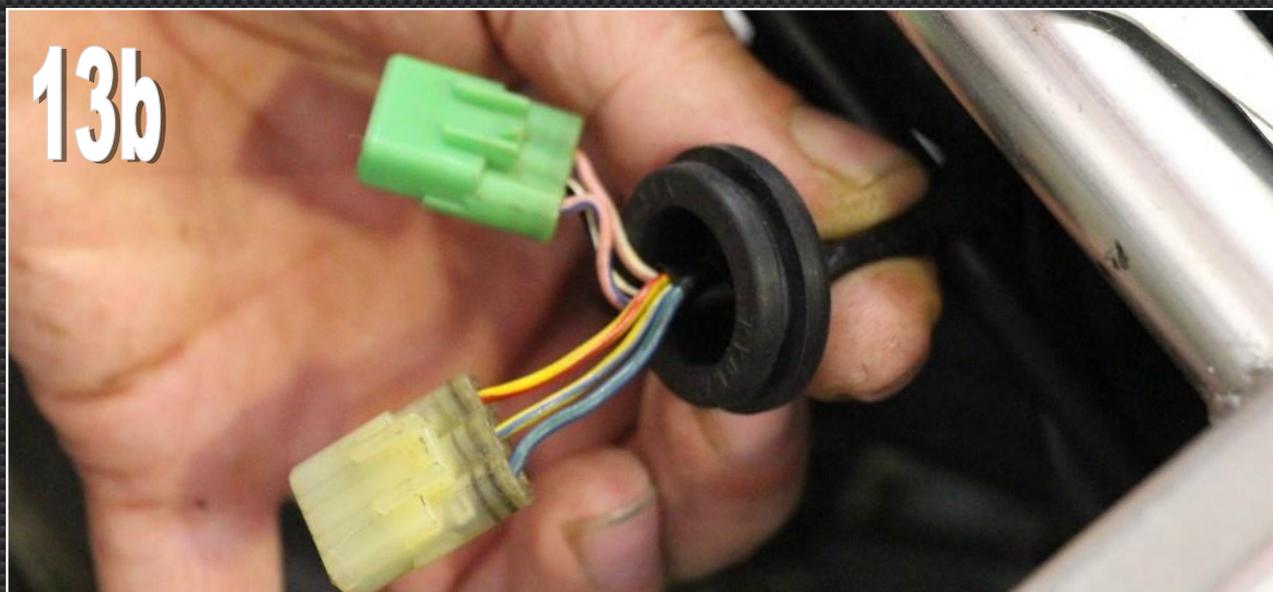
Pre-fit the grommets to all the cables and wires as shown below. Check the pictures below to make sure you get the correct grommet fitted to the correct cable/wire. I found that it's easier to fit the grommets prior to fitting the air box as there's more space to work with.

Once the air box is fitted, we'll then poke the cables/wires and grommets through holes and to the inside of the air box, as the grommets are easier to fit into their holes from the inside as you can use a torch and see what's going on. Then, if removing the air box, poke the grommets through the holes to the outside, followed by the cable/wire. This way once the grommets are fitted they can stay fitted.

13a) Oil pump cable in hole D using single hole 16mm. grommet.



13b) Solenoid/TPS wires in hole C using single hole 24mm. grommet



13c) Throttle cables in hole F using the double hole 24mm. grommet.



13c

13d) Choke cable in hole H using single hole 16mm. grommet.



13d

13e) Leave the Idle adjuster for now. We will discuss it later.



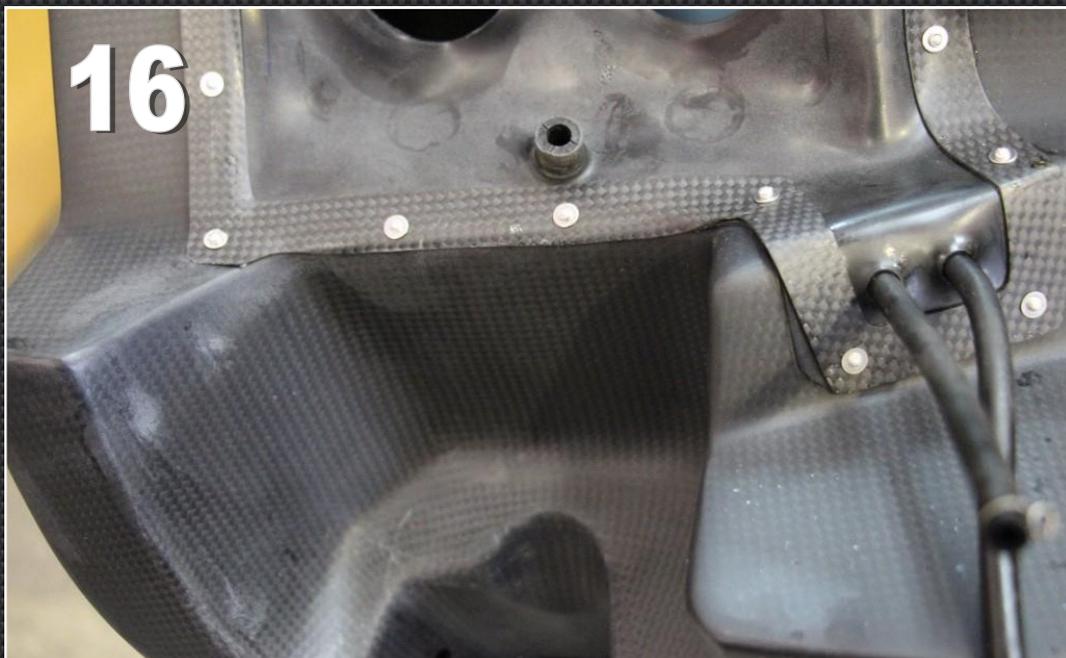
Air box fitting

14) Lower the air box into the frame and while lowering, reach in from the right-hand side of the engine and fit the transmission breather hose onto the spigot. It's a good idea at this point to guide the 2T pump cable into its hole as it's a little tricky to get to once the air box is completely fitted.

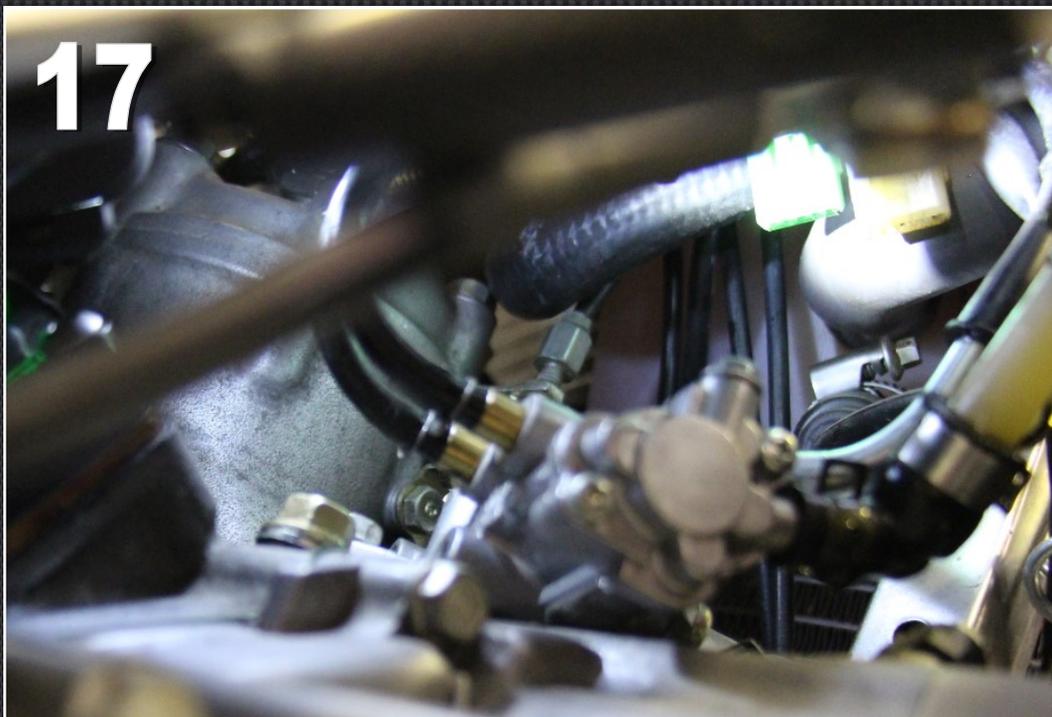


15) Push the air box down further, just make sure that you guide the transmission breather hose up through the hole in the sealing rubber so that it doesn't kink or jam. Let the air box rest a little way above the engine.

16) From the right-hand side, you can just about sneak your fingers in and fit the 2T hoses to the 2T oil pump. Make sure that the clips are securely in position. If you did not remove the 2T hoses from the pump then you can poke them through the rubber and into the air box. Best to remove the retaining clips before doing this and then re-fit the clips when they're safely through the rubber.



17) Now you can slowly push the air box all the way down, but do pay special attention to make sure that the breather and 2T hoses do not kink. The insulator sealing rubber will pop over the carb intakes. Check again for kinked hoses and also make sure that the hoses are fully onto their spigots. Not such a huge problem if the transmission breather hose comes off, but you don't want the 2T hoses kinked or improperly fitted.



18) Push the insulator rubber down the outside of the intakes as far as you can and then fit the carb clamps to the insulators.



Cables and Wires

19) Poke all the remaining cables through their respective holes and into the air box, followed by pushing the grommets through the holes and into the inside of the air box. The air solenoid and TPS connectors are a little tricky, but I used a hook to gently guide them through the hole and into the air box, followed by the grommet.



Note here that the air solenoid stay is already pre-fitted to the air box, but if it is getting in the way then feel free to remove the single quick fastener and then remove the stay. You can re-fit this at any time.



20) At this point you can fit the solenoid/TPS grommet into the air box hole, but leave the other grommets out for the time being.

Carburetors and cable Fitting

20) Prior to fitting the carburetors, we need to fit the grommet onto the idle adjuster cable

22) (MC21 ONLY) Unscrew the adjuster cable from the carburetor. Note the arrangement for the plate, washers and spring. Now fit one of the spare single hole 16mm. grommet to the adjuster cable as shown and refit the washer, spring, washer and plate and screw back onto the carburetor until the adjuster just touches the stopper. Give it a turn or so. You can readjust the idle once everything is back together. This will go in hole I so remove the 16mm. blank grommet from hole I as it will be replaced with the grommet now on the Idle adjuster.



23) (MC28 ONLY) Fit the single hole 22mm. grommet from hole J over the idle adjuster knob and slide it up the cable. No need to disassemble the adjuster cable.



24) Now fit the throttle cables and 2T oil pump cables to the carbs. It's usually easier to fit the throttle cables and 2T oil pump cable prior to actually popping the carbs into the insulator as you can move the carbs around a little.

25) Fit the 2T hoses to their respective spigots.

26) Install the carburetor to insulator clamps in the orientation shown.



27) You should still have the tissue in the intakes, so now it's a good time to remove it.

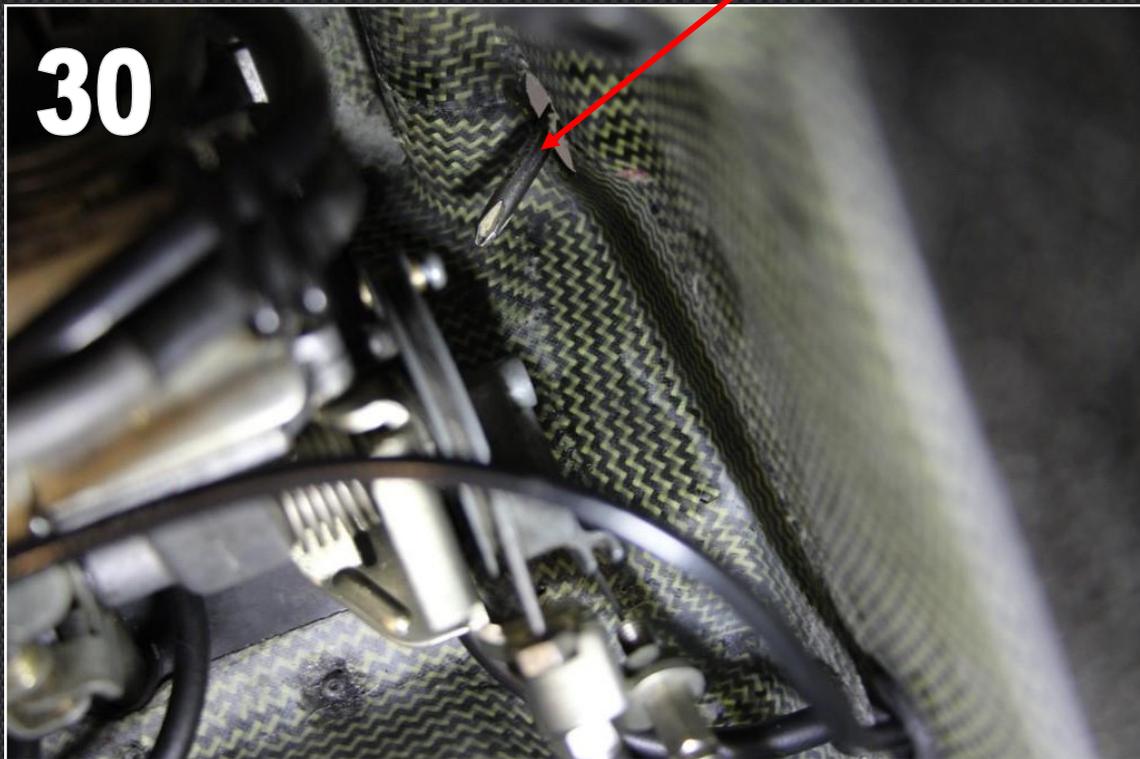
28) The 2T hoses are fitted too, right?

NOTE: Forgetting to fit these hoses WILL cause catastrophic engine failure.

29) Note that the transmission breather cable should run down between the carbs, so check that it's in the correct position prior to fitting the carbs. See picture 26 above.



30) Use the access holes (A and J) in the air box and a long screw driver to fully tighten the carb clamps.



31) (MC28 ONLY) Poke the idle adjuster cable out through hole J (note this is also carburetor clamp access hole) and fit the 24mm. grommet.

Note that MC21 and MC28 use different holes for the idle adjuster.



See pictures at top for more details.

32) (MC21 ONLY) Poke the idle adjuster cable out through hole I and fit the 16mm. single hole grommet.



33) (MC21 ONLY) Fit the 24mm. blank grommet to the carburetor clamp access hole J (left side) and the 16mm. blank grommet to access hole A (right side.)

34) (MC28 ONLY) Fit the 16mm. blank grommets to the access hole A on the right side.

35) Fit the throttle cable 24mm. grommet and 2T oil pump cable 16mm. grommet into the holes F and D respectively.



36) Connect the choke cable and fit the 16mm. grommet into hole H.

37) Re-fit the solenoid stay if you haven't already, and fit the solenoids onto the stay.

Plug together the solenoid and TPS connectors and clip them onto the solenoid stay in the same fashion as the stock stay. Check that the 24mm. grommet in hole C is still fitted correctly.



Air Filter

38) Fit the foam filter onto the air box intake, and secure with the cable tie.



We are mainly done at this point. The remaining work is deciding which fuel tap you want to use.

We provide the shorty fuel tap in the kit and this would be the primary option for racers as it allows quick removal/fitting of the fuel tank.

The OEM fuel tap can of course be used, but requires that the tank is fitted prior to the fuel tap being fitted.

Here's how it's done.

Fuel Tank fitting and shorty fuel tap option.

- 1)** The shorty fuel tap (TYLY-0237) is provided with the kit. Fit this in exactly the same way as the original fuel tap.
- 2)** Fit the fuel hose onto the fuel cock, turn the fuel tap to "ON".
- 3)** Lower the tank onto the air box and secure as usual.



Fuel Tank fitting and OEM fuel tap option.

- 1) Remove the OEM fuel tap from the fuel cock.
- 2) Fit the 24mm. grommet in Hole G over the fuel tap as shown.



- 3) Slightly loosen the fuel cock so that it is possible to rotate the cock. Leave it tight enough so that it doesn't leak as I presume that you may still have fuel in the tank.
- 4) Lower the tank onto the air box and secure as usual. No need to fit the hose at this point.
- 5) Shine a torch into the fuel tap hole, and you can use a small screwdriver in the tapped hole that normally secures the fuel tap to rotate the cock so that the spigot that the fuel tap locates on faces the hole in the air box. Once you're somewhere near, use the same method but this time poke the screwdriver through the OEM fuel tap, then into the tapped hole on the fuel cock and then push the fuel tap onto the cock. This should get the cock perfectly lined up with the hole in the air box.





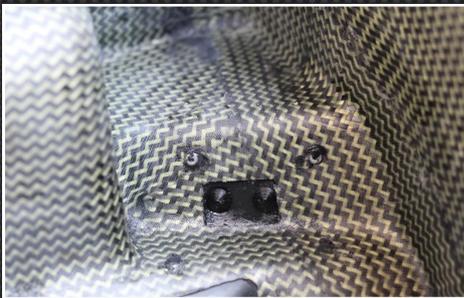
- 6)** Now pull the tap back off, remove the fuel tank, and lock up the nut to retain the cock in this new, adjusted position.
- 7)** Now, fit the fuel hose onto the fuel cock and lower the tank onto the air box again, and secure as usual.
- 8)** Use the screw driver through the fuel tap method again as in step 5) above, poking it into the tapped hole and slide the fuel tap onto the cock. Remove the small screw driver and fit the bolt to retain the tap in position.
- 9)** Now fit the grommet into the hole G to seal everything up once and for all.



For track day or race use, you may wish to choose a different configuration for the grommets, such as removal of 2T oil pump for example. We've covered these different options by including extra components to blank off any unused holes.

Examples:

If the 2T oil pump is not used then we can simply fit the blanking plate BPSY-0264 into the 2 holes that normally seal the oil pump hoses. Fit this from the outside. You may want to glue this into position with some RTV sealant if you have no intention of reverting back to using the oil pump. Then, use one of the 16mm. blank grommets to block hole D as this is now unused.



And of course for weight loss and convenience, you'll probably want to remove the oil pump and associated oil reservoir, so you'll need our blanking plug (TYLY-0012) and holder (TYLY-0015).



It may also be convenient for a racer to not bother having the idle adjuster accessible from the outside of the air box. Personally, I run no idle on a racer as it's not needed on a stroker. In this case just use blank grommets on holes J and I. Removal of the actual idle adjuster cable is optional. Again, I'd completely remove it as it's just another thing to get in the way.

You'll notice that we keep the transmission breather hose inside the air box. If you wish to drill a hole and route the hose to the outside world then you can use one of the 24mm. grommets with a hole stamped in. We chose to keep it inside the air box as any oil mist blown out will be sucked through the engine, rather than into the atmosphere, or onto the rear wheel.

Final Check.

- Make double sure that all the grommets are properly fitted, and that the throttle and oil pump cables are tight. Check the throttle operation a few times to be sure that it operates smoothly.
 - Check the oil pump setting.
 - Check that the choke operates smoothly.
 - Start the engine and set the idle.
- Re-fit all the bodywork and you're ready to rock.

It is important to note that at no point did we talk about carburetor settings as we do not know the specification of your bike. However, we are more than happy to help and provide any data that we have acquired through testing. If you have any questions then please do not hesitate to contact us by email.

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