

Installation Guide and notes

Updated Wednesday, June 11, 2003

San Jose BMW's PowerFlow air induction kit is composed of four parts: A new K&N airfilter with a 4" inner diameter, a new aluminum filter seat, a new aluminum top cover for the airbox, and a new large-diameter intake snorkel.



Installation is simple and easy, with most of the work coming in removing the gas tank to gain access to the airbox and filter. The installation takes place in six basic steps:

1. Remove gas tank*
2. Remove and discard existing snorkel, airbox cover, and filter element.
3. Install new filter seat
Drill out airbox bottom for new 4" filter seat
4. Install new filter element, snorkel, and airbox cover
5. Reinstall gas tank*

*Note: You may be able to get away from removing the tank if you're got a small hand and have a way to get a hole saw down inside the airbox – I didn't bother trying.

The Tech manual that came with your bike gives instructions on removing the gas tank and gaining access to the air filter. What follows is a step by step guide with photos on an R1150R. Refer to your manual for your own bike for differences. All the tools you need are in the stock tool kit, though using t-handle hex or torx drivers can be less awkward. With that said, let the games begin:

1. Remove gas tank:

a. Put bike on center stand and remove both seats.	(Do you really need a photo on how to do this?)
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b. Remove the screw from the fuel line cover on the right side of the engine...



...then remove the cover by pulling out. You may need to twist it slightly to pull the molded-in locating post out of its socket in the engine.



c. Remove the two screws (one left and one right) that secure the side panels to the gas tank. Don't lose the washers (if they're still there – mine weren't)



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d. Remove the two screws on the bottom of the oil cooler trim panels (the part with the Roundel)...



...then remove the trim panel by lifting straight up to disengage the two molded-in locating posts from their sockets in the oil cooler holder. Repeat for both sides.



e. Remove the three screws (two shorter on top, one longer on bottom) of the oil cooler holders, then carefully move the cooler assembly out and away from the fuel tank. Careful, the hoses aren't very long, and the assemblies won't move very far. Watch out for rubber washers and the speed-nuts on the top of the holders.



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f. Remove the long bolt (using a T45 torx driver) securing the fuel tank to the frame on the right side.

This bolt goes through almost 1.5" of rubber bushings, so it may be hard to pull out after you've unthreaded the first inch.



g. Disconnect the fuel pump cable by pressing together on the locking tabs at the end and pulling the plug apart.



h. Disconnect the two breather lines – they're just squeezed onto a plastic fitting so a little twist-and-pull should do the trick. Mine have been somewhat re-routed due to a canistectomy earlier in life, but yours should be similar.



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i. Disconnect the two fuel lines by pushing in on the tabs of the disconnects and pulling them apart. They're on tight, so keep working it. And just wait till you try and get them back together again! With gas leaking out all over your fingers. Curses to the engineer who designed these.



j. Lift the fuel tank up and to the rear to disengage the two sockets on the tank from the frame studs (same round knobby studs the front seat locates onto). There's one on each side of the tank, and it's a tight friction fit, so rocking up and down slightly may help slide them out.



h. Put the tank somewhere safe (I found a 3' stepladder worked great as a temporary stand) keeping the various fuel lines, etc, from getting pinched or damaged.



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2. Remove and discard stock airbox cover, snorkel, and air filter:

a. Remove the diagnostic plug from it's holder. It's already gone in this shot. You don't really need a picture of me pulling it out, do you?



b. Disconnect the plug to the air-temperature sensor by prying the retaining clip out of the plug.



c. Remove the two Phillips screws securing the airbox cover, and then the remove the cover itself. Don't throw it away, yet, we still need the air-temperature probe...



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d. Remove and discard the disgusting filter element. (Ok, I didn't take a photo of just the disgusting old one, so you get a side-by-side of the old and new ones.)



e. Remove the single screw hold the intake snorkel to the engine case up near the front of the snorkel, then Lift the snorkel up out of the airbox (clearing whatever hoses/wires/whathaveyou may be in the way), and put it with all the other stock things you've taken off the bike over the years.

No picture available at this time

g. Look inside the airbox, marvel at the small hole your bike breathes through, and wonder about all the debris that managed to find it's way into the box. Eeew! Do yourself a favor and vacuum out this junk before going farther – the filter is there for a reason, after all.



3. Install new filter seat

<p>a. If you're using the template from SJ BMW, place it over the existing plastic filter seat on the floor of the airbox (it should fit only one way). If you're not using their template, make one up – you need to center the seat so the new cover will seal properly from the top. Otherwise, all that junk you saw above? Eeeew...</p>	
<p>b. Place a 4-inch holesaw over the template (guide bit goes through the hole in the template.) You may want to snip some of the plastic grill away – on my bike, the guide bit hit the plastic and deflected slightly when I first started drilling. Nothing major, but it did cause the template (trapped inside the hole saw) to shift slightly off the stock filter seat which could have been a problem if I had drilled that way.</p>	
<p>c. Take a deep breath – everything up to now has been reversible, but this is a one-way trip.</p>	
<p>d. Slowly (or quickly, entirely up to you) cut the new larger hole. Be aware that cutting plastic is different than wood: not only does the plastic cut into long tangled fine thread, but it also melts if you get going too fast, which can clog up the blade.</p>	

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e. Vacuum out the cuttings in the airbox and below it. Be thorough – don't want this stuff going into the injectors. That would DEFINITELY void your warranty!



And vacuum really well (I recommend Kenmore household appliances.)



f. Run a bead of silicone around the lip of the new filter seat, then put the seat into the hole you just cut. Be sure to press the seat down around its entire circumference to spread the silicone – you don't want any of that debris you saw in step two to slip between the bottom of the airbox and the filter seat.



g. The finished product. Smile, have a drink - the hard parts over and your warranty is probably toast, but daggummit, it's worth it!



4. Install new snorkel, filter, and airbox cover:

a. Test fit the new snorkel into the airbox opening – it should stick up above the box by a quarter-inch or so...



...The new cover has a relief cast into it that will accept the larger snorkel. I found the snorkel didn't fit particularly well, and needed to be pressed down to make it reach the bottom of the opening. However, that also gave me some wiggle room for shifting the snorkel to clear the tank during reassembly.



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b. Using an 11mm wrench, unscrew the air-temperature sensor from the original airbox cover (you kept it like I warned you, right?) and thread it into the new one. Snug but not too tight should do it.



c. Drop the new filter onto the new seat, and after you've finished admiring your handiwork ...



...put the new coverplate on top. Using the two Phillips screws, secure the cover plate down and seal up the opening.



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d. Attach the air-temperature plug back onto the sensor, and push the retaining clip back in. There's no place to mount the diagnostic plug holder (you can drill and tap holes if you want to, I didn't bother), so just leave the plug sitting in front of the air sensor for now. Sharp-eyed readers may not that my plug is now facin 90° clockwise from original. That's where my sensor bottomed out, and the plug rotated gracefully, so that's where I left it...



e. The snorkel currently (as of June 2003) supplied in the kit doesn't have a hole in the mounting tab to secure it to the engine case. In my case, this didn't matter, since the tab didn't come near the screw hole anyway. I left it unsecured, but it's pretty well immobilized between the frame, airbox, and gas tank, so I'm not too worried at this point. A new snorkel is supposedly on it's way, so this may be fixed in the future.



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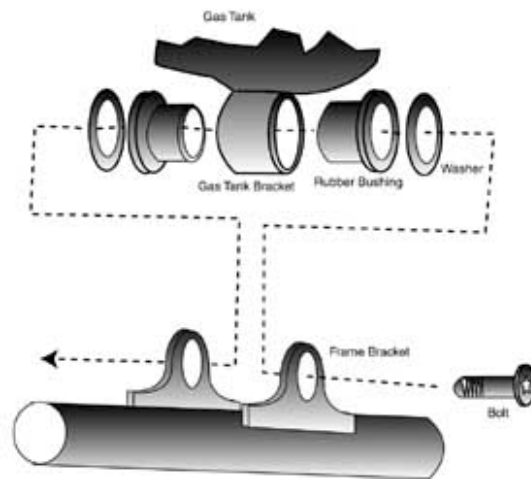
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6. Reinstall gas tank. Resinstallation is, as they say, the opposite of removal. There are a few things to watch for, though.

a. Mounting the gas tank: mount it as you do the front seat – down, then forward to catch the knobby locating wheel thingies. Careful not to pinch any wires or the fuel tubes, or drain tubes, or the fuel pump connector. In fact, there's a fair bit going on, so stay alert. It's a tight friction fit into the locator knobs, so again, some rocking may help get it all the way forward and in. You've seen this picture before.



b. Gas tank mounting bolt. The gas tank has two rubber bushings that push into the mounting bracket on the right rear side of the tank, each with its own metal washer on the outer face. This whole sandwich then fits down inside mounting tabs welded to the frame. The mounting bolt then goes through this whole assembly: frame tab, washer, bushing, (tank bracket), bushing, washer, frame tab. Watch out – while trying to get the front of the tank mounted into its locating knobies, I knocked both bushings out by catching them on the frame tabs. It was a pain to get the inner one back into the tank bracket without taking the whole tank off again.



c. Oil coolers – there are rubber isolators mounted between the oil coolers and the fuel tank. It's easy to catch them and peel them away due to the limited amount of free play caused by the short cooler lines. You've been warned.



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OK, that's about it. Crank 'er up, roll the throttle, and listen to 'er bark. Better yet, take it for a spin, and be sure to go wide-open-throttle a few times. Doesn't that sound better? Do it while passing wannabe bikes like R1's and 929's for kicks, but remember, wearing superman's costume won't make you fly. Go Forth and Have Fun!

Disclaimers: You do this modification at your own risk. I take no responsibility for any damage you might cause yourself or your bike by following these instructions. I'm not a lawyer, nor do I play one on TV, however, I did meet a lawyer once. A Møøse once bit my sister ... but that's neither here nor there. So there.

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