



BNR LE2 IM Spacer Install Guide

Remove plastic engine cover along with the insulation by removing the oil cap and star bolt holding it down, there is only one threaded bolt located on the front drivers side. If it doesn't come right up with all bolts removed it might need to be pried a little using your hands to get it off of the retainer shown below



also make sure to remove the oil cap as that will hold the cover down, just put it back on after you get the cover off to prevent anything going into the engine.

if you have a larger arm you may also want to remove the air box, we did not

Begin removal of the charge pipe by removing the clip shown below



the orientation of the clip while on the charge pipe is shown in the subsequent photo.



Simply use a flathead screwdriver to gently pry that clip off of the charge pipe towards the PASSENGER side of the car, be careful not to lose the black plastic retainers as they can fall off. Once the retainer is removed you can gently wiggle the pipe off of the Throttle Body

Halfway down the charge pipe around where the arrow points

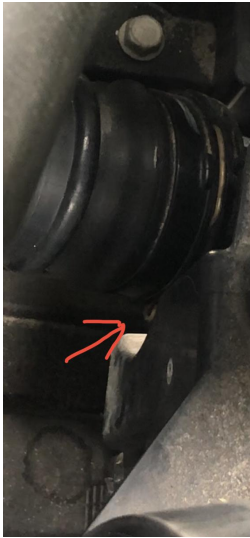


you'll find a bolt that needs to be removed



This is a 10mm bolt.

The bottom end of the charge pipe has a clip as well but we were able to remove it by hand by simply sliding the part of the clip pointed to in the picture



up from the passenger side which brought the clip up enough to be pulled off by hand. You can see what the clip looks like off the vehicle; you'll have to wiggle the charge pipe to get it off of the bottom.



Remove the tubes from the top of the charge pipe starting with the section in the bracket on the top



then removing the clip as shown below



just be careful with this part as the plastic is brittle

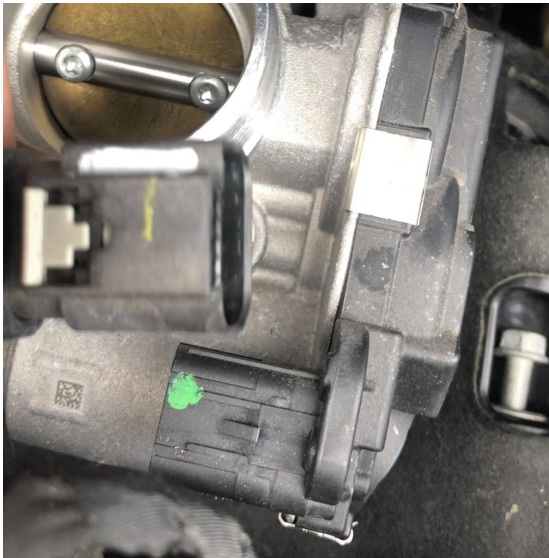
Use a pair of pliers to remove the hose from the coolant reservoir using a rag or something underneath to catch any coolant that might run out but there should be too much

The last thing holding the charge pipe in is shown below, to remove this piece simply apply pressure to the opposite clip while you pull the locking side out of the receptacle side



Now the charge pipe should be completely loose and you can wiggle it out of the engine bay

Next you'll remove the throttle body, this must be done to remove the intake manifold from the engine bay which is necessary for another step later on



to remove the sensor plug simply slide the gray plastic retainer back towards the passenger side of the car like shown in the picture, for us the plug popped off just doing that but some people have some issue getting the plug off so it might need to be wiggled or worked loose

After it's unplugged all you need to do is remove the 5(five) 10mm bolts visible from the top of the throttle body and it should come right off. Be careful not to move the fin on your throttle body.

Next we'll unhook everything from the manifold itself so that it can be removed



if you look behind where the throttle body was (or still is in our picture) you'll see a tube going into the back and a green clip, position your flathead like shown in the image and gently pry the green clip up toward you, be careful as it'll come quick once it's free and is at risk of falling into the engine bay. After this clip is removed the hose should wiggle off of the receptacle



there are two wire retainers that need to be unclipped from the manifold, do so by squeezing the flared end together and working them out through the holes



this wire is removed in the same way as the wire on the Throttle Body however we had a little more trouble with this one and ended up using a flathead to gently work it off towards the back of the engine



Under the manifold on the passenger side you'll find the rubber grommet and plug. The things on the grommet don't have to be removed, however the wire must be removed in order to get the rubber off of the manifold. This sensor was a challenge to get off and required us to use both

hands one to hold the rubber and the other to work the plug off after getting the plastic slid back (like the plugs on top of the engine)



Once you get the wire unplugged the rubber will slide off of the manifold towards the back of the engine as you can see in this image



Now that everything is loose or unplugged we will remove the bolts, there are 5 10mm bolts holding the manifold onto the engine two on top (one visible one not) one on their side, and finally one more hidden underneath in the middle, bolt locations are shown in the images that follow be aware that they do not loosen all the way to removal they will stay stuck in the manifold which is why it must be removed so once they're all loose just pull the whole thing out of the engine bay (pictures in order: top driver side, top passenger, side passenger, side driver: not pictured, opposite passenger side bolt, underneath)



Drivers Side Top (LONG)



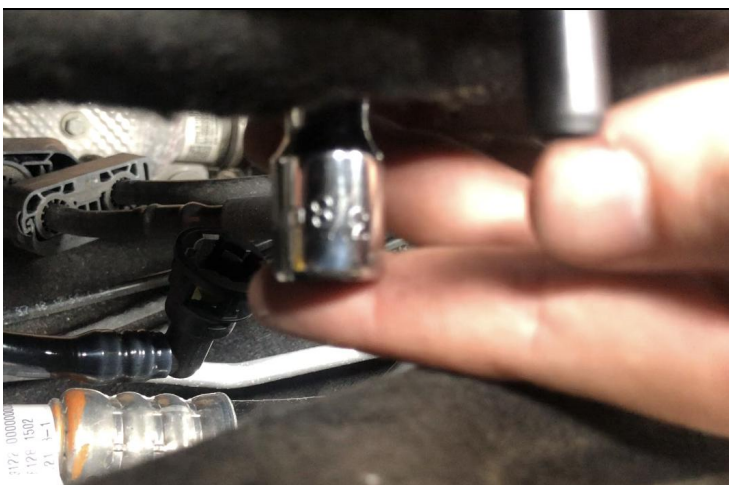
Passenger Side Top *Hidden* (LONG)



Passenger Side *Side*(SHORT)



Drivers Side *Side* (SHORT) hard to picture this bolt is in the opposite location of the passenger side *side* bolt and is located directly behind and below this portion of the engine.



Under where the rear hose connects there's a little hole that you can get into with an extender as seen in the image, from there you should be able to get the 10mm socket onto the bolt head and loosen it enough to be removed

After all the bolts are off the manifold should come right out

Next we'll remove the stock bolts from the manifold, we'll need to use the hardware that was supplied with the spacer to reinstall. The images below show how we removed them, the two on the sides have a plastic retainer that must be moved out of the way allowing the bolts to slide right out and the other three need to be tapped out from the "front" of the manifold (pic23,24,25,26,27)



To install, simply reverse the steps followed for removal, its important to note that you now have a full extra inch of material so you might have to spin and angle things in order to get them back on where they need to be.

NOTE: THE 3(THREE) LONG BOLTS GO INTO BOTH TOP HOLES AND THE BOTTOM MIDDLE HOLE, THE SHORTER BOLTS ARE FOR THE SIDES. WASHERS ARE TO BE PLACED AGAINST BOLT HEADS