



Raytheeagle

(Reformatted for pdf, with thanks!)

Steps I would use for removal of the egr assembly:

1.Remove wiper assembly. Follow @NutzAboutBolts video for spark plugs for removing this assembly.

2.Drain engine coolant. Otherwise the engine bay will get drenched in coolant:(. Save this for later or put in new coolant. @NutzAboutBolts has a video about that as well;).

3.Remove hoses attached to the cooler. I plugged the larger hoses off with corks to ensure as they move around the engine bay they did not leak out.

4.Remove the support nuts from the egr valve and cooler assembly.

5.Remove the egr pipe.

6.Remove the back nuts from the cooler that are attached to the exhaust manifold. These are either 12 or 14 mm.

7.The egr valve and cooler will come out as 1 unit and you can disassemble later. It is easier to disassemble on the bench;). It is also a bit fiddly to remove this assembly but it can be done.

Now that everything is out, you can take the time to inspect and clean or have clean replacements ready (which is what I did). If you can plan the job, I would buy gaskets ahead of time but the gaskets are most likely okay to be put back in.

To reassemble, I would do the following:

1. Cut (trim) the bottom support for the cooler as getting it back on the 2 studs for exhaust manifold and the stud for the cooler support is near impossible. Trim the bottom 2/3s off of the support so it will slot into the stud nicely and save a lot of fiddling;).
2. Put the egr valve and cooler back together on the bench.
3. Put the cooler assembly onto the exhaust manifold and loosely place the nuts back on.
4. Attach loosely the egr valve and pipe together where it connects to the intake manifold.
5. Attach the supports for the cooler and egr valve. I would do this loosely first.
6. Snug up the egr cooler to exhaust manifold connection.
7. Snug up the egr valve and pipe connections to the intake manifold.
8. Snug up the support connections.
9. Fill the engine coolant. Follow the [@NutzAboutBolts](#) video including starting the system and turning the heat on.
10. Bleed air from the bleed point above the cooler (this is the highest point in the system) to ensure all air is out of the system. This is a plastic pet cock style white valve and looks similar to what is on the radiator drain with and short drain tube.

Some pictures:

Figure 1 Egr assembly side view:



Figure 2 Egr valve from the top view that you can see from the engine bay:



Figure 3 Right side from behind the egr valve looking at the 12mm nut that holds the egr valve to the cooler:



Figure 4 Left side of the from behind the egr valve looking at the 12mm nut:



Figure 5 Bottom cooler support that I trimmed the bottom 2/3s of to aid in reassembly:



Figure 6 View of the back support studs for the cooler:



Figure 7 Downstream view of the egr valve (after the plunger of the egr where the egr pipes connect):



Figure 8 Upstream of egr valve(before the valve and what connects to the cooler):



Figure 9 A look at the fins inside the egr cooler:

