

Exhaust Manifolds Pre Cats Removal

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This is a poor man's way of doing headers. They won't be as good as the headers but still very effective. The concept here is inside your exhaust manifolds you have catalytic converter (Cats) material. This material is very restrictive with the flow of the exhaust. Since an engine is a cool ass air pump you want very little restriction. Gutting the pre-cats will still allow your vehicle to pass emissions, as long as you let it warm up first. Once warmed up the main cat will take care of the emissions.

What you need:

Jack and Jackstands

13mm sockets (3/8" drive) (deep well)

15mm sockets (3/8" and 1/2" drive) (deep well)

3/8" U-joint

3/8" socket extensions... get a few different sizes (3", 6")

3/8" ratchet

1/2" ratchet (for torquing the hard bolts)

WD-40 (lots of it)

Flat head screwdriver (small)

Flat head screwdriver (large)

Drill (corded preferred)

Hammer

a tool smaller than 1/4" in diameter with a small hook or impeller on the end (handle of a 5 gallon bucket works great) you can improvise for this tool

1/4" drill bit

1/4" small bolt, with washer and nut (wrench for this combo needed also)

a little bit of masking tape

7/8" wrench (or monkey/adjustable wrench) or even better an O2 sensor wrench

Safety glasses

MIL Eliminators (you can also make your own) (not needed for 2001+ vehicles)

1/4" socket and 13 mm wrench (only if you remove the complete header studs)

Dremmel with steel grinder bit (only needed for an extra NEW step)

Front exhaust manifold gasket (really not needed but some people are picky)

Before you do this:

The day before you attempt this get some WD-40 on all front header bolts and on the bolts for the Y-pipe and just aft of the main cat on the exhaust.

How to do it:

1. Remove the ground on the battery.
2. Jack up the front of the car as high as you can. I recommend jacking up from just

behind the front wheels because you can get the car as high as possible this way.

3. Remove the O2 sensor on the Y-pipe by disconnect the electrical bracket (use flat head if you have to). You can remove the O2 sensor by using the 7/8" wrench. Put the O2 sensor aside. Do not bang the sensor, it is very sensitive. Put it in a safe place, and don't get them mixed up. (This step does not apply to 2001+ vehicles)

4. Remove the Y-pipe and Cat as one big unit. You'll need to remove 7 15mm nuts. Once all removed, using the small screwdriver get the Y-pipe off the muffler hanger and put aside. You may need to use the WD-40 and the 1/2" drive to get the bolts off.

5. Remove the O2 sensors (2 of them) on the front exhaust manifold. 2001+ vehicles only have one O2 sensor. Use the 7/8" wrench to do this, and the small screwdriver for the electrical brackets. Again put these aside in a safe place and do not mix them up.

6. Remove the front exhaust manifold by using the 13mm socket, in combination with the U-joints, and extensions. You can reach every bolt from underneath. To get to the top bolts, it's much easier to have someone else hold the socket down on the bolt while you remove them.

7. If you remove the entire stud with the nut don't worry, i'll explain how to fix this.

8. Once you have the front manifold out look at it. The bottom bend is where you are going to drill a hole. Essentially the pre-cats are inside that engulfed section of the manifold. So drill the hole so you can stick an implement of destruction in there and destroy the pre-cats.

9. If you are using a 5 gallon bucket handle for your tool, then do this, take it off the bucket, and cut the handle so that you'll have a 70/30 cut. Take the plastic handle and toss it. Straighten out the handle as much as you can, but do not make the funky little hook at the end straight.

10. Drink a beer

11. Stick the handle (or implement of destruction) in the drill, push it through the hole in the manifold and start drilling. This is the fun part. It takes a little bit of time and at first all you get is a bunch of powder. After doing this for a while some bigger chunks will come out, as well as some steel wool and some white cottony stuff. It all needs to come out and be clean. Using a flashlight to look inside as you do this will help. After a while put the manifold on the ground (cement preferred) and bang it with a hammer along the seams. Don't bang to hard, just enough to shake things inside loose. You may also use other tools to assist.

12. Using the large flathead screwdriver, and with your safety glasses on (very important) get under the car and start smashing the pre-cat material in the rear manifold. Be careful, there is an o2 sensor just above the pre-cats and you do not want to bang it. Clean the manifold out as much as you can.

13. Using the dremmel and steel grinding wheel, you'll notice a lip on the holes openings on the front manifold. Just grind this lip down so it's a smooth opening. This is a New step and not needed but will help that much more with performance and yields.

14. Using a small piece of masking tape, tape the nut for the 1/4" bolt in the wrench, stick the wrench in the manifold and place the nut just over your 1/4" hole you drilled earlier. Now pass the bolt through and tighten it. If you don't use much tape the wrench will come off easily with the tape.

15. Drink a beer

16. If you removed the entire header studs, the do this. Put a 13mm wrench on the nut,

and you'll notice the end of each header stud has a small 1/4" drive on it. Use your 1/4" socket here, but what you want to do is tighten the stud to remove the nut.

17. If you removed the entire header studs, now is when you put them back in, using the 1/4" socket, all you want to do is make them tight, DO NOT over tighten these studs or you are in serious trouble.

18. Place the gasket back on the front manifold holes

19. Put the manifold back up and tighten it on. I'm not sure of torque numbers, just put it on tight.

20. Put the top O2 sensor back in the front manifold

21. This is the fun part... with both manifolds gutted and re-installed, start the car. It will be loud and sound awesome. pop the revs a few quick short times. Essentially you just want to blow out any other material in there.

22. Drink a beer cause that sound was soooooo cool

23. Put the MILs on the lower O2 sensors, this is not needed for 2001+ vehicles. [How to Build MIL Eliminators](#) If the capacitor and resistor you buy do not look the same as those in the pictures on this site, don't worry about it as long as the ratings are the same.

24. Put the Y-pipe and cat back on.

25. Put the lower O2 sensors back on.

26. Drink a beer cause you are really really really close to being finished

27. Lower the car off the jack stands

28. Re-attach the ground on the battery.

29. If not drunk yet, get in car and go for a spirited ride....

ENJOY!