

DIY: 03-06 AWD Vibe/Matrix Subframe Replacement

I'll get straight to the point... The rear subframe on the 03-06 AWD Vibe/Matrix is notorious for rotting out. Garages quote over \$2500 to replace. **Bad news?!** Car isn't worth that, so many send them to the scrap yard. **Good news?! You can replace it yourself with this fancy how-to.** I probably missed a few steps. I probably forgot to take some pictures, didn't use the right tools. As always, it's not my fault if you break things, cause a forest fire, etc.

It's also likely this procedure is basically the same for 2009-2010 AWD Vibe/Matrices, as well as the GT/XRS of those years. They share the same rear subframe. It could even be the same for the 2011-2013 Matrix, but I have no idea as those were only sold in Canada. :lol:

Essentially, the easiest way to do this, is to drop the subframe, diff, and all the suspension and hub assembly components, excluding struts, all as one unit. Once it's off the vehicle, you can transfer things around as needed.

THE TOOLS

3/8 Drive:

- 10mm to undo the miscellaneous bolts for the e-brake cable, ABS sensor, etc.
- 14mm bolts to disconnect drive shaft. Not enough room for 1/2" drive.
- Wobbly extension to make it easier to reach drive shaft bolts

1/2 Drive:

- 14mm
- 17mm—this will undo most of the suspension related things. You will also need a 17mm wrench to hold the nut or bolt on most of these.
- 19mm—this will undo the 4 major bolts holding the subframe to the vehicle, and some of the bolts holding the differential to the subframe.
- 21mm—wheelz. Gotta get the wheels off!
- 30mm 12-point socket—for axle nut. Yours might be different if you've removed/replaced the axle or axle nuts in the past. OEM is a 30mm 12 point. Most aftermarket are 32mm 6 point.

Impact Gun! I have a cheaaappppp battery operated impact from Amazon. It has served me well and even zipped off the axle nuts (torque spec is something like 176 ft/lbs.)

- Various pry bars and/or screw drivers (they serve the same purpose, right)
- Breaker bar for when things get tough.
- Marker to mark drive shaft and rear diff alignment.
- PB Blaster or your preferred flavor of penetration oil.
- Some source of light so you can see what you're doing.
- Pliers, to remove stubborn ABS sensor from hub. We couldn't get ours out, so we ended up bolting the control arm thingy and leaving that on the vehicle.
- Preferred adult beverage(s).
- jack & jack stands (in my case a lift in my garage)

THE HOW

- 1) Jack up vehicle as high as you jack and/or jack stands can allow. This will provide you with ample working rooming. Properly support vehicle.
- 2) Remove wheels.
- 3) Remove the drum, brake shoes, and hardware.
 - a. To separate brake shoe from the e-brake cable, pull the spirally thing on the cable back, and finagle the shoe off it.
 - b. Once separate, undo the 10mm bolt holding the e-brake cable to the hub assembly.
 - c. Unbolt the ABS sensor from the hub. Follow the wiring and remove the bolts holding it down to the suspension. Good luck wiggling ABS sensor out of the hub assembly. It can be a PITA.
- 4) Unstake axle nut, remove axle nut.
 - a. Tap end of axle to free it from hub assembly now before you forget.
- 5) Unbolt strut from control arm. This should be a 17mm bolt.
- 6) Unbolt lower sway bar link end. I believe this was a 14mm. If you're planning on replacing them, cut it off to make life easier. We used vice grips on the back side of it to hold the stud while hitting it with the impact to break it free since we are reusing them.
- 7) There is a vent line on the passenger side for something, that is on the subframe. Undo this vent line before you forget.
- 8) Consume adult beverage
- 9) Undo the muffler/exhaust clamp and move out of way so you can drop subframe. We didn't remove from the vehicle, just undid the bolts to it.
- 10) Break free the three 17mm bolts holding the lower control arm thingy to the vehicle. I suppose you could remove these at this point to, but we waited until we were ready to drop the whole thing.
- 11) Break free the four 19mm bolts holding the subframe to the vehicle.
- 12) Now that all of those are broke free and ready to drop, mark the driveshaft/rear diff so when you bolt them back together, you can line them up.
 - a. Unbolt the four 14mm driveshaft bolts. Properly support drive shift so it doesn't just dangle.
- 13) Consume adult beverage—you're ready to drop the subframe!
- 14) Now get a few strong fellas. My brother and I held the subframe up while dad used the impact to undo the bolts from steps 10 and 11. Don't drop it... It's kinda heavy!

Subframe should now be out of the car. Time for lunch break... BRB.

Alrighty, now that you're back from lunch, begin swapping over all the parts your new subframe didn't come with that you removed from the vehicle. This should be self-explanatory when you are comparing your new replacement to the old one removed. Hopefully you cleaned up your replacement subframe. We are getting ours sandblasted and then painting it before reinstalling.

This may be a good time to opt to replace the gas tank if needed, as the gas tank straps on the AWD are a pain to remove when the subframe is on the vehicle. We aren't this time but did last time.

THE NOTES

Now that you've read this far, and since uploading pics is difficult. Pictures are located at the below Google Drive linky. They are named as to what they are, and I did try to put relevant comments on the picture (when you click on it) to point out what it is for.

<https://drive.google.com/drive/u/2/folders/1PNXywEayraPcmOORD3RWgBqBktM2z-ty>

I will also save my true secret for last... The rear subframe for the 03-06 AWD Vibe/Matrix is the exact same as the below vehicles:

99-06 Celica GTS (must be GTS as that has independent rear suspension). Downfall of this, is it does not come with the differential mounting bracket.

03-06 Vibe/Matrix AWD

09-10 Vibe/Matrix AWD

09-10 Vibe/Matrix GT/XRS (maybe S model, but their equivalent of the GT)

Quite possibly the Matrix AWD/XRS from 2011-2013. No confirmation there as they were made in Canada and not brought into the US.

As always, www.car-part.com is a fantastic resource for finding parts in junkyards near you.

Hope this helps others in need! Let me know if you have any questions.

PS: find me on Instagram @TheWanderingVibes

-Byerscrew/Zbyers