Evo X ACD / AYC Relocation Kit Install Guide

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Step 1

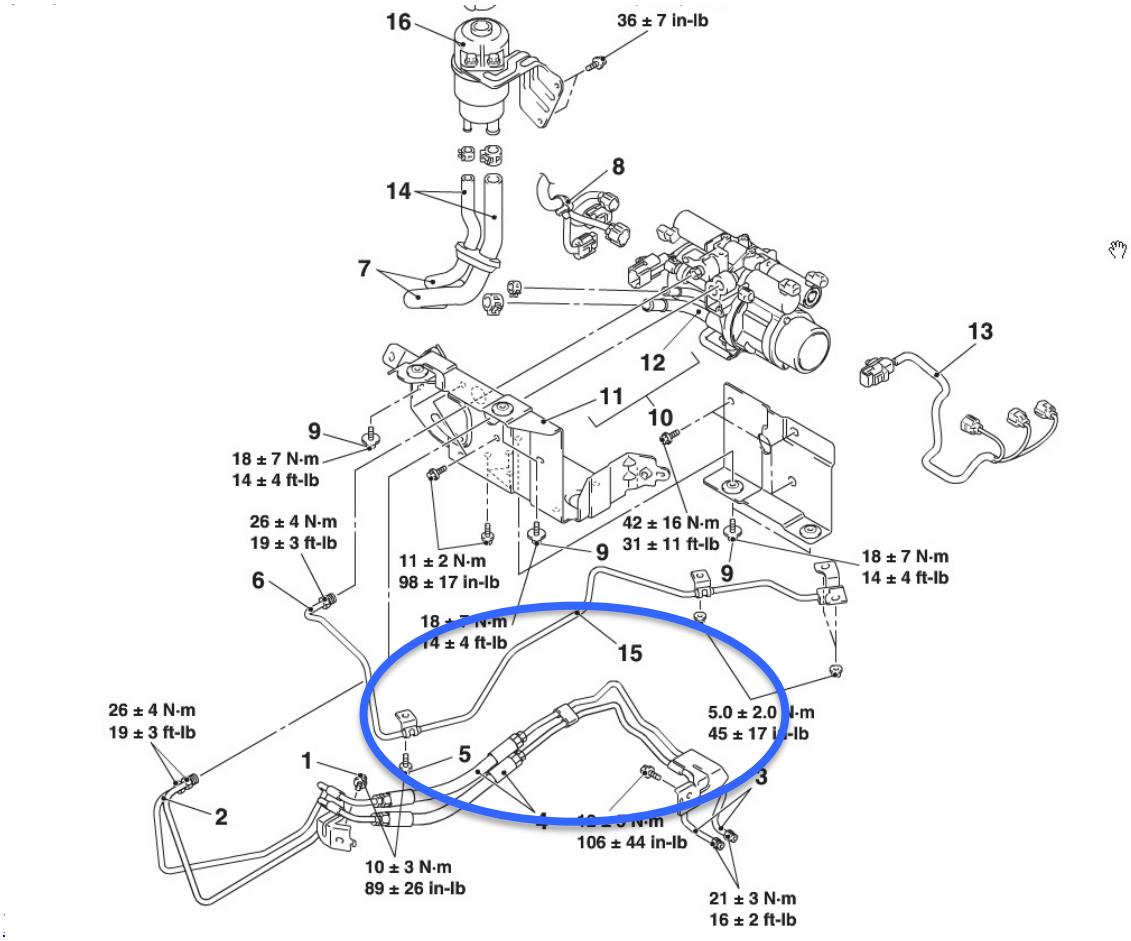
Begin by putting the rear of the car up in the air on jack stands, jack the rear of the car up by placing a small block of wood on the jack and jacking from the rear differential.

Step 2

Remove the rear bumper, you will need to remove the rear license plate as the bolts hold the pumper to the car. There are various plastic clips underneath the car, as well as two screws on each side of the bumper by the tail lights, you will need to open the trunk to expose them. The rear fender liners are also clipped to the bumper and need to be disconnected to remove the bumper. The area you are trying to get to is behind the passenger rear wheel.

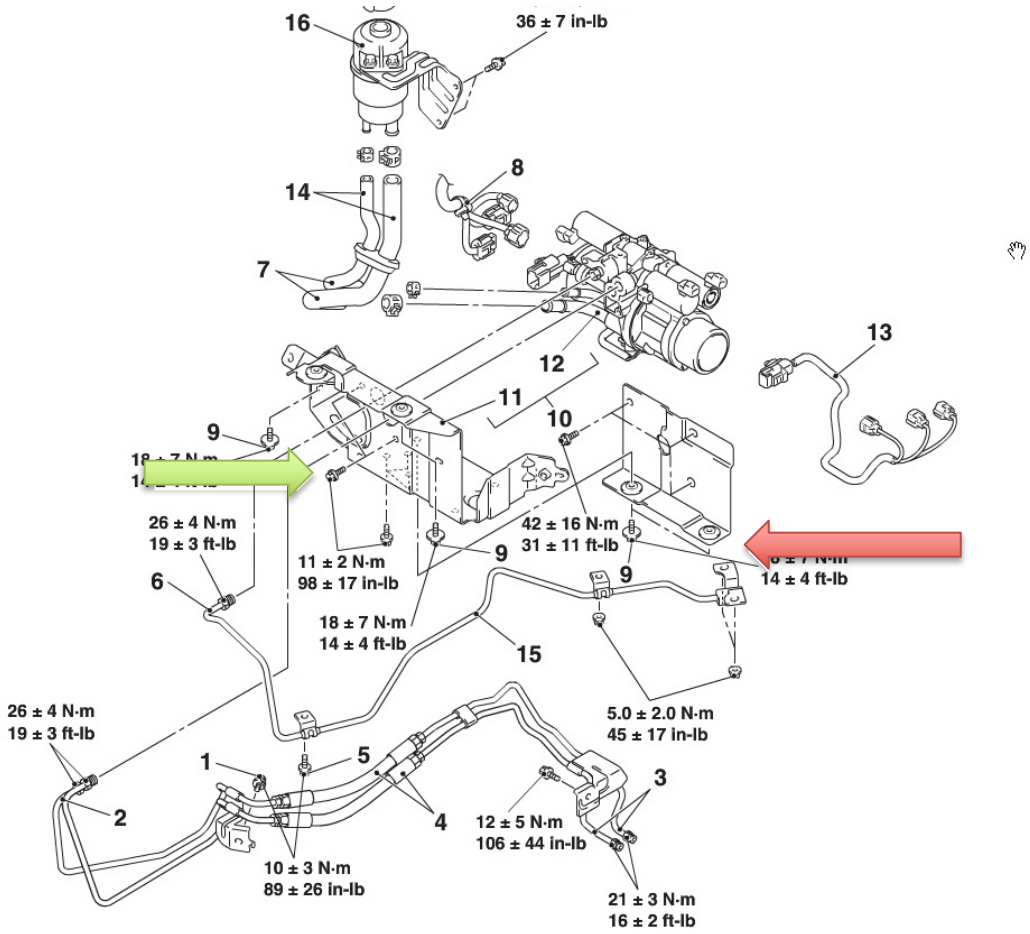
Step 3

You can now remove the hard lines that run to the pump. You will remove the entire assembly circled below, it will not be reused (blue circle). Remove the hard line that runs to the ACD with the connection fitting above the passenger rear axle (#15). Remove the hoses that run from the fluid reservoir to the pump and drain the fluid



Step 4

Remove the ACD pump from the car. This is pretty straightforward, below is an exploded diagram of the factory pump and accessories. You will want to remove the side cover first (red arrow). There are two bolts on the side that bolt to the pump, and two bolts that run through the isolators on the bottom. The pump will remain bolted to the remaining bracket (green arrow). Remove the wiring harness and set off to the side (#13). One the pump is out, remove the remaining bracket (green arrow).



Step 5

Pull the rubber fluid reservoir lines through the opening in the body, leave the rubber grommet that the reservoir lines run through on the vehicle, you will run the new lines through this hole. Pull the wiring harness that runs down to the pump back up into the trunk. Cut the rubber boot off of the wiring harness, and use it to plug the hole back up.

Step 6

Remove the fluid reservoir from the car and attach the supplied relocation bracket. The bracket only goes on one way, so check the alignment of the bolt holes before bolting everything up. You will use the 2 small m6 bolts, 2 m6 washers, and 2 m6 nuts to bolt the reservoir to the bracket.

Step 7

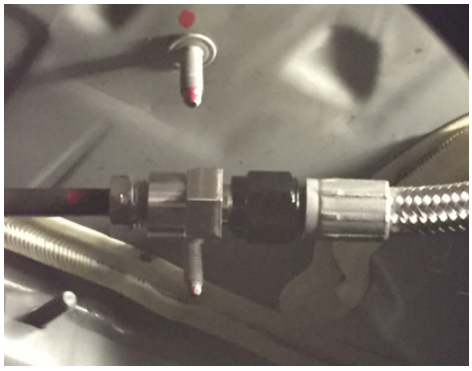
Connect the 3 supplied stainless steel adaptor fittings to the hard lines. Two of them will go on the lines coming off of the rear differential, and the other one goes on the line coming from the transfer case (above the passenger rear axle).

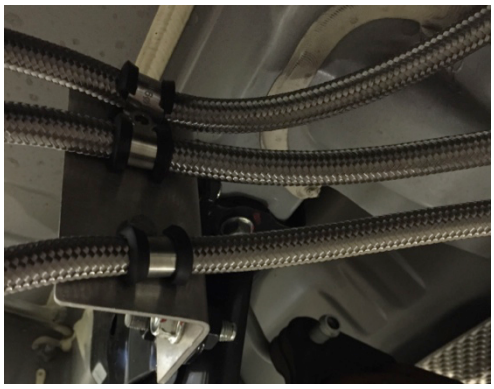
Step 8

Connect the line bracket using the 2 bolts removed from the bracket (#11 on the exploded diagram above) and the supplied large diameter aluminum spacer. The spacer will go between the top bolt and the tow hook mount.

Step 9

Connect the supplied stainless braided lines to the stainless fittings installed in step 7. The straight end connects to the stainless fitting; the bent end will run into the trunk. The long line will run up to the ACD, the two shorter lines will run to the rear differential. Use the supplied line clamps to secure the hoses to the bracket using the supplied, long m6 bolts. You will reuse the nut taken off of the fitting bracket that was removed above the passenger rear axle in step 3.



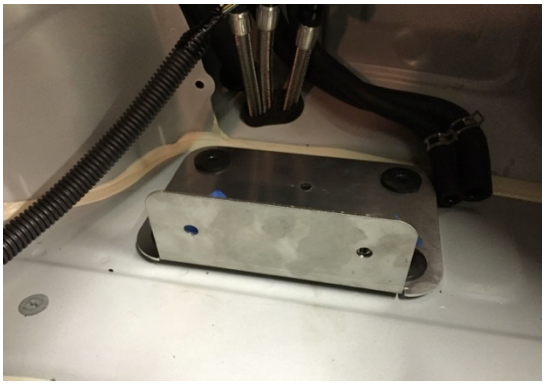


Step 10

Install the supplied black fittings and aluminum crush washers onto the fittings. Take note of the marking on the pump, that denote where the lines run. The left most reads “C” for center diff, the middle reads “L” for left side of the rear diff, and the right most reads “R” for right side of the rear diff. Make sure the surface is clean of debris or build up to ensure that the crush washer has a nice seal. The washers will center themselves onto the fitting, so be sure not to crimp the washer by not having it centered.

Step 11

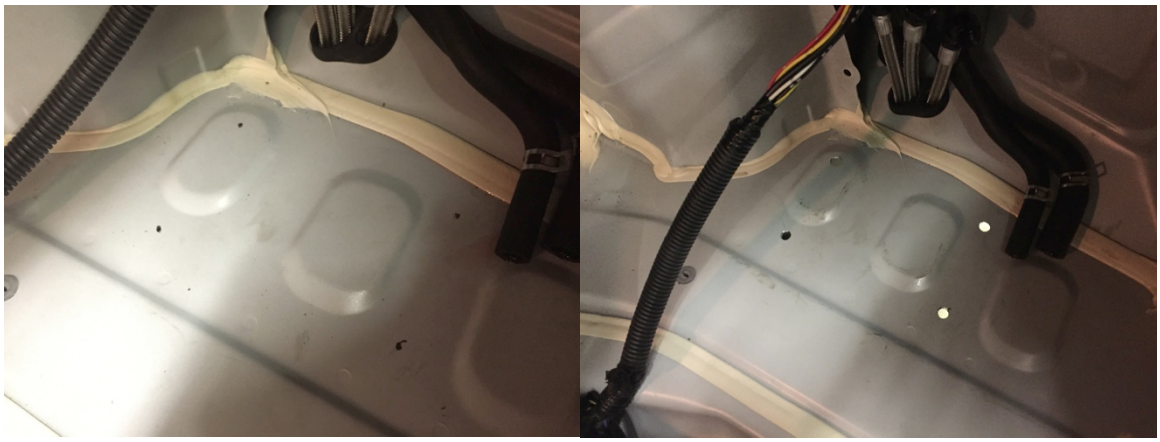
Take the 4 rubber grommets out of the old pump mounting brackets and transfer them to the new relocation bracket. Take the supplied hex head bolts and finger tighten the pump cover to the pump mounting bracket.



Step 12 – **THIS STEP IS CRITICAL, SO READ THROUGH A FEW TIMES TO ENSURE YOU HAVE A GOOD UNDERSTANDING BEFORE DRILLING ANY HOLES.**

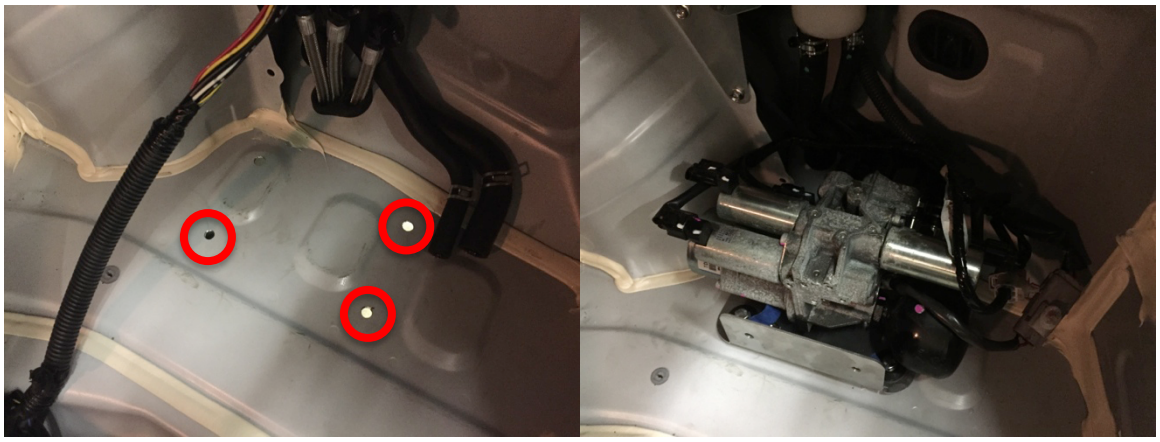
PLACE THE TRUNK LINER BACK INTO THE CAR, and take the pump cover and the relocation bracket assembly and set the pump cover in the corner of the vehicle. The location of the holes you drill will determine the fit and finish of the pump cover to the trunk carpet liner, so take your time here. If you miss drill the holes, you could end up with a poorly fitting cover. The holes in the pump cover are slotted, so you need to make sure that the **pump bracket** is as far **to the back** of the vehicle while bolted to the cover as possible. The easiest way to do this is to put the pump cover in the vehicle and line it up with both the trunk liner, and the seam of the frame rail and **push the bolts** as far towards the rear of the car as you can. This should slide the mounting bracket as far back as possible while keeping the pump cover in the correct location. **CAREFULLY** remove the two bolts from the cover, and gently

remove the pump cover without moving the relocation bracket. Mark the location of the holes with a sharpie or a punch. They should look similar to what is shown below. Drill the holes out for the supplied 8mm mounting bolts.



Step 13

Once the holes have been drilled, take some spray paint and a q-tip and paint the raw metal in the holes you just cut on the car. This will help prevent rusting of the uncoated metal. You can now mount the pump to the relocation bracket. You must do this before bolting the relocation bracket to the car. Take the remaining supplied aluminum spacers and place them over the holes circled below. The pump gets bolted to the car with the 4 long bolts, 8 washers, and 4 lock nuts. Place one washer on each side of the frame.



Step 14

Connect the stainless lines to the back of the pump. Do this one by one, starting with the bottom fitting. Remember, the bottom fitting goes to the left side of the rear diff, the fitting towards the rear of the car goes to the ACD, and the fitting towards the front of the car goes to the right side of the rear diff.

Step 15

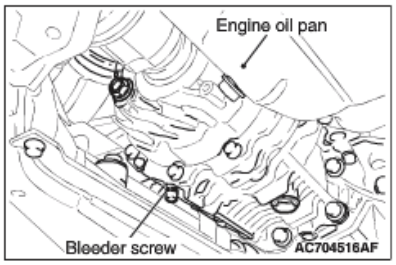
Once the stainless lines are connected, connect the reservoir lines back to the pump and fill the reservoir with fluid. Leave the trunk liner out for now until you're done bleeding the system.

Step 16 – Bleeding the System

There are three different ways the system may be bled, and we have had success with all three. They all seem to work as effectively as the other, some require more work than others.

Method A)

Tephra created a program called "Evo X Tool" that you can use with a Tactrix cable to bleed the system. The downsides to this method are that A- you need to pay tephra for the program (about 20$) and B- you need to have / have access to a Tactrix cable. Once you have the program, you will follow the on screen instructions and the instructions outlined in the Factory Service Manual.



BLEEDING

M1221011600052

⚠ CAUTION

At low temperature the fluid viscosity is so high that air bleeding becomes degenerated. Air bleeding should be done at normal temperatures {10 to 30° C (50 to 86° F)}.

1. Raise the vehicle.
2. Remove the engine room under cover front B assembly. (Refer to GROUP 51, Under cover P.51-16.)
3. Remove the bleeder screw cap of the transfer, then connect the vinyl hose.

⚠ CAUTION

Before connecting or disconnecting scan tool, always turn the ignition switch to the LOCK (OFF) position.

4. Connect scan tool to the data link connector.(Refer to P.22A-9.)
5. Position the steering wheel in a straight ahead direction.
6. Turn the ignition switch to the "ON" position.
7. Perform the actuator test (item No. 01) of scan tool to forcibly activate the hydraulic unit.

   NOTE:
   - *The forced activation (item No. 01: Air bleeding mode) is continued for 5 minutes, then it will be canceled automatically. Also, using the clear key on the scan tool, the activation can be forcibly canceled.*
   - *When the hydraulic unit functions are stopped due to the fail-safe, the forced activation cannot be performed.*
8. From the straight-ahead position, gradually rotate the steering wheel to the right or left. Loosen the bleeder screw, and check that the air is bled with fluid.

⚠ CAUTION

- **During the air bleeding, fill the fluid so that the fluid constantly remains in the oil reservoir.**
- **When the oil is filled into the empty oil reservoir, check that the oil is filled up under the filter inside the oil reservoir.**

9. After bleeding the air, tighten the bleeder screw.
10. Repeat Steps 7 and 8 for two to three times. After checking that air mixing is eliminated, tighten the bleeder screw to the specified torque.

AYC BLEEDING

M1272004800029

⚠ CAUTION

At low temperature the fluid viscosity is so high that air bleeding becomes degenerated. Air bleeding should be done at normal temperatures {10 to 30° C (50 to 86° F)}.

1. Lift up the vehicle.

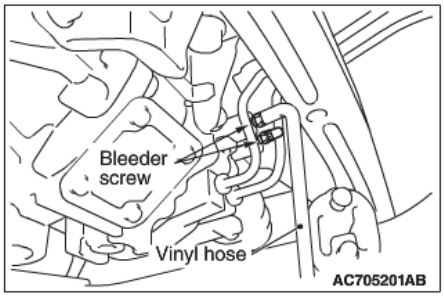
⚠ CAUTION

Turn the ignition switch to the "LOCK (OFF)" position before connecting or disconnecting the scan tool.

2. Set the scan tool to the 16-pin data link connector. (Refer to P.27-6.)
3. Turn the ignition switch to the "ON" position.
4. Set the steering wheel in the straight-ahead position.
5. Using the scan tool, forcibly activate the hydraulic unit (item No. 02). (Refer to GROUP 22A –Actuator Test TableP.22A-113.)

   NOTE:

   - *Forced activation (air bleeding mode) is continued for 5 minutes, and then the operation is canceled automatically. Also, using the clear key on the scan tool, the forced activation can be canceled.*
   - *When the functions are suspended by the fail-safe function, the hydraulic unit cannot be forcibly activated.*



6. Remove the cap on the left of bleeder screw on the torque transfer mechanism, and connect the vinyl hose.
7. Gradually rotate the steering wheel at the straight-ahead position clockwise. Loosen the left side bleeder screw, and check that the air is bled with fluid.

⚠ CAUTION

- **During the air bleeding, fill the fluid so that the fluid constantly remains in the oil reservoir.**
- **When the oil is filled into the empty oil reservoir, check that the oil is filled up under the filter inside the oil reservoir.**

8. After the air bleeding, tighten the bleeder screw and set the steering wheel at the straight-ahead position.
9. Repeat Steps 6 and 7 for 2 or 3 times. After no air mixture is confirmed, tighten the bleeder screw to the specified torque.

   Tightening torque: 9.0 ±1.0 N· m (80 ±9 in-lb)

10. Perform Steps 5 to 8 for the right bleeder screw. Note to turn the steering wheel counterclockwise.
11. When the hydraulic unit is removed, perform air bleeding on the ACD side. (Refer to GROUP 22A –On-vehicle Service P.22A-118.)

Method B)

Place the car in the air on jack stands, and make sure that the reservoir is filled with fluid. ***If you are doing this in a garage or a small space, make sure that you open the garage door, or are in a well ventilated area***. With the car running, crack the bleeder valve on the ACD and spin the front wheels. You want to listen for the pump to kick on and watch the air bubbles come out of the bleeder screw. Do not let the reservoir run out of fluid or you will pump air into the lines. Repeat this process for the AYC in the rear on both sides.

Method C)
Take it to the dealer.

Step 17

Place the trunk liner back in the car, you will need to trim the bottom of the liner to fit around the lines. Remember to measure twice and cut once, its easier to pull the liner out and cut more off, its impossible to add more liner back if you cut off too much. A new liner runs about $140 plus shipping so take your time here.

Step 18

Place the foam jack holder back in the car; this will need to be trimmed as well. Same method as trunk liner, shave a bit off until the desired fitment it acquired. The jack will fit in the spare tire well.

Step 19

Reinstall the rear bumper. Take the car on a test drive to check for leaks. If you get an AWC light, you may need to bleed the system some more.