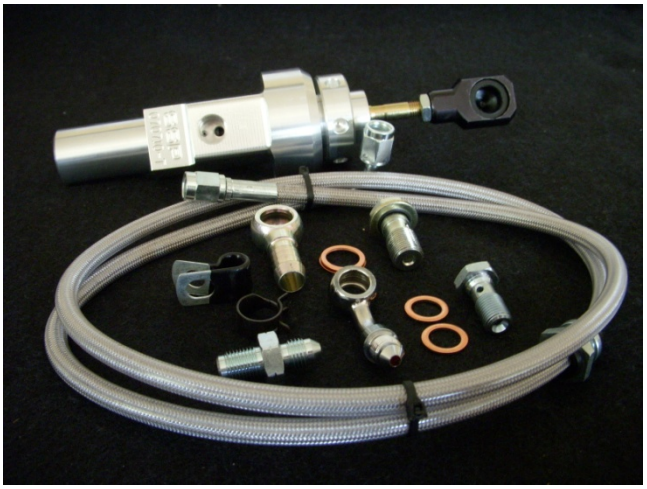
HOW TO: Install Clutch Master Cylinder for EVO X

Presented by SSP Performance AND AMI Customs

Level of difficulty 1-10 (1 being the easiest): 7

Recommended number of people: (2)

Note: Some of the pictures in these instructions show the factory pedal arm being re-used. This is for illustration only. We have supplied an upgraded, adjustable arm. The clutch master cylinder comes pre-assembled, and should not be taken apart.



Parts needed:

(1) SSP/AMI Clutch Master Cylinder Upgrade kit
(1) Quart of DOT 3 or 4 brake fluid
(1) 12-24 inch length of vacuum hose and cup for bleeding system

Tools needed:

- 10 mm socket
- 12 mm socket deep well
- Vise grips
- 10 mm combination wrench
- 13 mm combination wrench
- 14 mm combination wrench
- 9/16 combination wrench
- Common screwdrivers
- Small hammer or mallet
- 3/8 ratchet and a few different length extensions
- Vacuum bleeder (recommended)

Step 1

Remove negative cable from battery with 10 mm deep socket.

Step 2

Remove nut under the hood of the positive distribution center with 12mm socket and ratchet and remove power cable.

Step 3

Remove air-box and MAF housing back to the turbo inlet suction pipe. Unplug the MAF connector.

Step 4a

Remove BOV and BOV pipe by removing two hose clamps with 10mm socket, and move out of the way.

Step 4b

Your engine compartment should look like this at this point.

Step 5a

Remove the ECU. This requires removing the (2)12 mm bolts between the ECU and the electrical junction block, and (1)10 mm bolt on the shock/strut tower. In this picture, the 10mm bolt is already removed.

Step 5b

Remove the ECU mounting plate with ECU attached. Unplug both electrical connectors and set aside.

Step 6a

Remove power/harness and BCS (boost control solenoid) bracket and assembly. There are (2)12 mm bolts and (1)12 mm nut.

One 12 mm bolt on fender

Second 12 mm bolt on fender

Step 6b

Remove BCS assembly by removing (2) 10mm bolts. Unplug both of the BCS electrical connectors, and all vacuum lines, taking note of which hose connects to which port for ease of re-assembly.

Remove 12 mm nut on shock/strut tower to remove the power distribution bracket assembly.

Step 6c

Remove a few harness clips on the power distribution assembly in order to fold it out of the way.

Now fold the bracket assembly forward, toward the front of the car. It should look like this.

Step 7

(Removal of Clutch Master Cylinder and Clutch line)

Remove both horseshoe shaped metal clips that retain the factory clutch line. These are not easy to remove, and must be pried or pulled straight upward. One is on the transmission, and one is on the strut tower. Once removed just pull back on the line and up to remove out of the bracket. Pictured below is the one removed on the strut tower. You will reuse one of these metal clips.

Step 8

Remove the clutch line from the stock master cylinder. To do so, use a small common screwdriver or pick to back the clip out of the end of the master cylinder just far enough to remove the clutch line. Once the clip is out far enough the line just pulls out. No picture due to limited visibility.

Step 9

Remove the hard metal line from the transmission. All that is left at this point is to unbolt it from the slave cylinder.

Step 10

From inside the car, remove the plastic arm from the ball on the clutch pedal assembly. It just snaps on and off the ball, so it can be easily pried off using a longer straight screwdriver. No picture due to limited visibility.

Step 11

Unclip both plastic harness clips that hold the power cable on the back of the strut tower. This step is NOT necessary for removal of the stock master cylinder but does make it easier. However, this step IS necessary for install of the new master cylinder. You can unclip the clips with a small screwdriver.

Step 12

Remove stock master cylinder by turning it clockwise 90 degrees and pulling straight out. It is a very tight fit and once removed through the firewall, pull up toward the top of the strut tower. It may be easier to tap counter-clockwise on one of the ears of the master cylinder from inside the car if you can't get a good grip on it from the engine bay side. You may need a second person to compress the plastic arm from inside the car for it to clear the firewall. Have a rag handy to keep fluid from spilling out of the end of the cylinder. Remove with reservoir line attached.

Step 13

Remove reservoir line by pulling it off the master cylinder and prop it up behind the strut bar.

Step 14

Remove the factory rubber firewall seal from around the factory master cylinder. This will be reused on the new assembly.

Step 15

Install top banjo assembly. When installing the top banjo bolt, make sure you have the dowty seal (metal with rubber inside) under the bolt head, then the banjo fitting, then the copper crush washer. Re-install factory rubber firewall seal on new cylinder.

Step 16

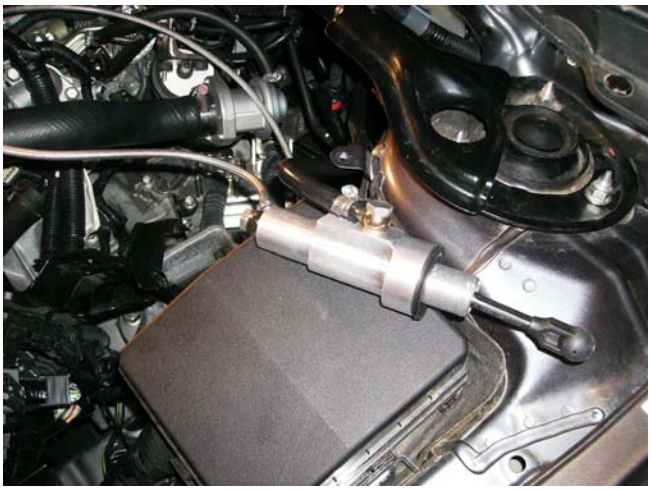
Align the top reservoir banjo fitting to resemble the stock master setup and tighten with a 9/16” wrench. Tighten so the crush washer is crushed, but do not over-tighten. Remember you are threading into aluminum.

Step 17

Align the end banjo fitting as shown, making sure you have a copper washer between the banjo bolt and banjo fitting, and between the banjo fitting and the cylinder housing. Tighten with a 14mm wrench. Attach the straight end of the supplied stainless braided clutch line and tighten with an open end wrench.

Step 18

Install the factory reservoir hose onto the top banjo fitting using the supplied spring clamp.



Step 19

You will install the Upgraded Master Cylinder through the firewall from the engine bay side with both lines attached. Make sure the threaded ring is NOT installed on the cylinder before installing through firewall. Be sure not to damage the threads when installing it through the firewall. Move the power cable up and out of the way and slide Upgraded Master Cylinder in next to the reservoir.

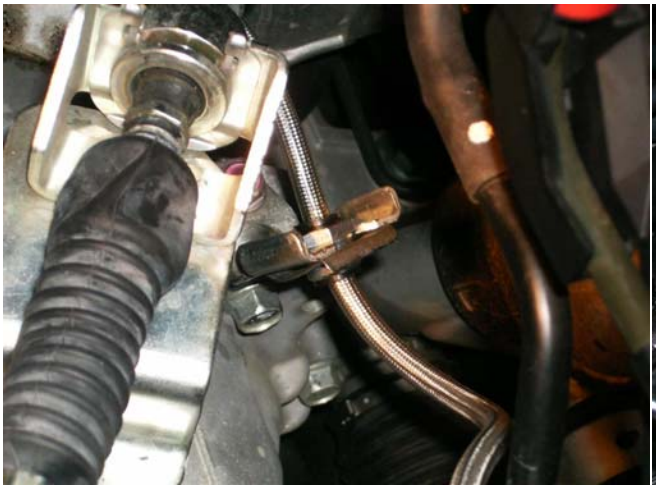
Step 20

Once you have the master cylinder close to the hole in the fire-wall , have the second person guide and help align it from inside the car. The threaded ring is easier to start if the master cylinder is not pushed all the way through right away. Have one person guide the cylinder from the engine side while you start the ring on the cylinder, and slowly draw the cylinder through the firewall with the ring. Use an allen key, or other 90 degree tool, to tighten the ring using the machined holes in the ring. Fully tighten the master cylinder to the clutch pedal assembly. Adjust the length of the arm by threading the ball receptacle so it mates with the ball on the pedal assembly as close as possible. Pop the receptacle onto the ball and tighten the jam nut up against the receptacle.

Picture of the master cylinder installed from engine bay side

Step 21

Route and install stainless clutch line to the bracket on the transmission and reinstall the horseshoe clip. Just tap the clip in place with a small hammer. Attach the supplied insulated metal clamp to the transmission with the existing 12mm bolt on the transmission. Install the 10mm inverted flare to -3AN adapter into the slave cylinder and tighten with a 9/16" box end wrench. Attach the braided line to the slave cylinder and tighten.



Step 22

Bleed the system, add fluid as necessary to the reservoir, if the slave gets stuck you may have to pry against the motor and arm with a bar to reset it. We strongly suggest using a vacuum bleeder to be sure all air is extracted from the system. They are reasonably priced, and can be purchased at most auto part stores. Check all lines for leaks and make sure all line clearances are within reason, not rubbing on anything, then reinstall working backward from steps 6 through 1. Also, don't forget to clamp the plastic clips that hold the power wire. Test drive and enjoy your new Upgraded Clutch Master Cylinder.