

Tick Adjustable Clutch Master Cylinder Install Instructions

Time listed below is cumulative time for installing the Tick adjustable master not the time for that step. Replacing the clutch master with an oem unit will take less time.

Below are a few photos showing you the OEM unit next to the Tick unit. Tick unit is metal, OEM is plastic. Tick unit has straight slave fluid line, OEM line has several kinks and looks to be a smaller inner diameter.



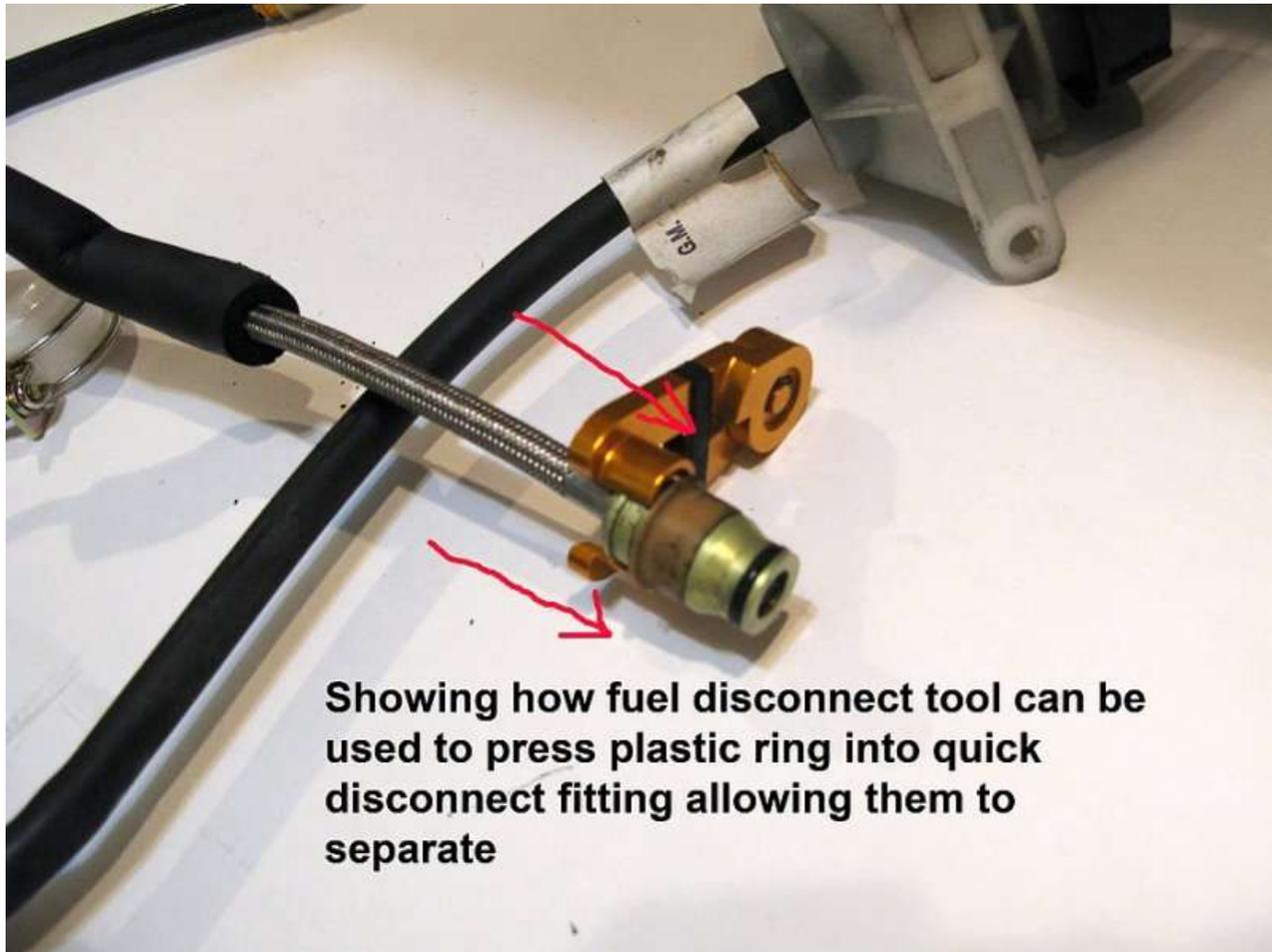


Starting Time: 0:00

1) Jack up front of car and remove driver side front wheel (Wheel nuts 19mm socket)

2) Disconnect clutch fluid line quick disconnect fitting by sliding the plastic ring inward. This is located on driver side between the frame and the engine. I use a fuel disconnect tool see below:

Time: 0:15

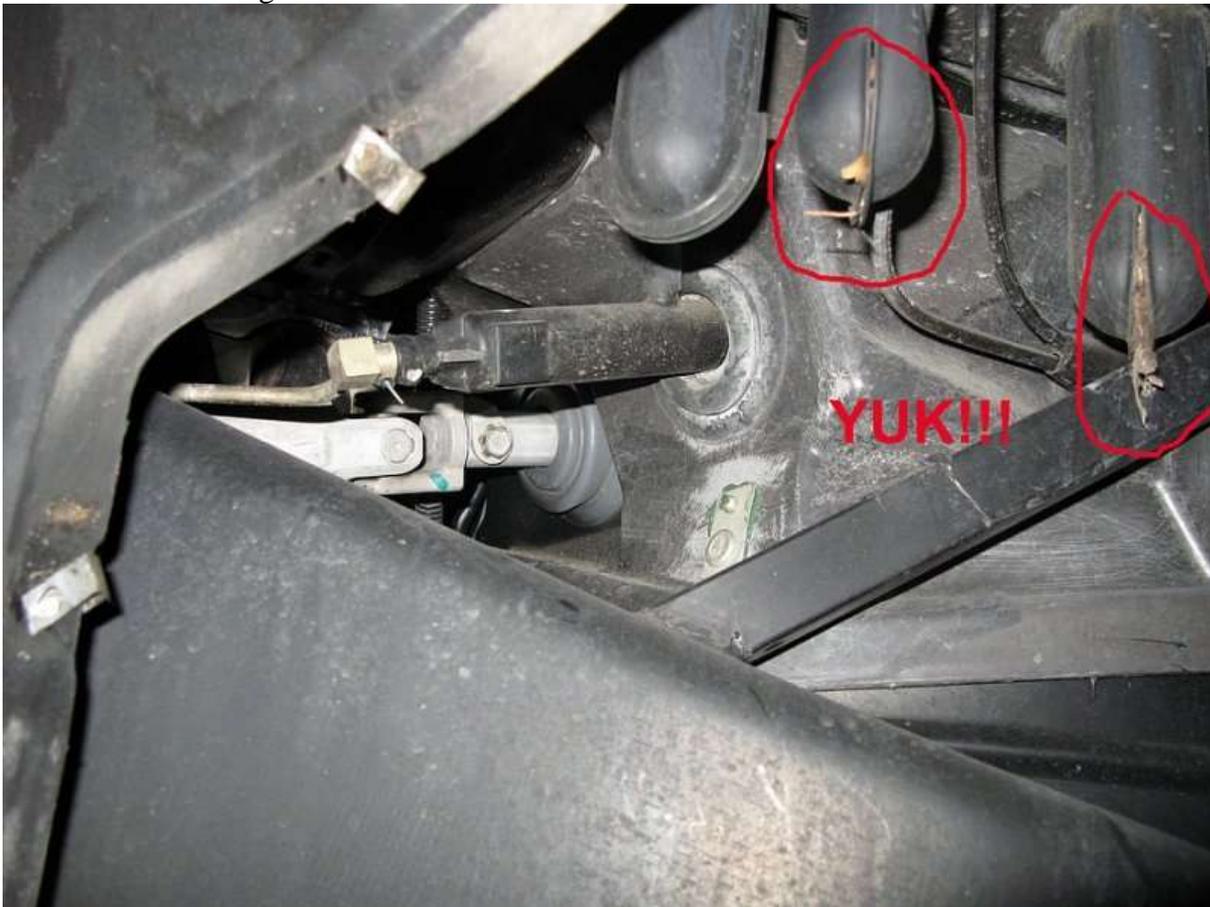


3) Remove lower portion of inner fender to get to master cylinder. (6) 7mm screws in wheel well and (2) 7mm screws underneath. If you installed “frame savers” it may prohibit your ability to remove the piece all together. I just let it hang down as shown below:

Time: 0:20



3a) In the photo below, notice those alien “pods” hanging down. Give them a pinch and see what falls, mine were full of leaves and bugs.



4) Remove panel in the driver's foot compartment where the courtesy light is mounted. There should be two round gray plugs in the front. They will pull straight down. In the rear, near the firewall, I had a metal speed nut. If anyone knows of a technique to remove a speed nut I would like to hear it. If it weren't for my difficulty removing the speed nut this would be done in about 2 minutes. Instead it took me 10. Once you get the panel down unclip the courtesy light and let it hang.

Time: 0:35

5) Remove master rod clip from clutch pedal. Below is a photo of the clip so you can see how it comes off. Once off, remove the rod from the pedal and let it hang.



IF YOU ARE INSTALLING AN OEM MASTER YOU CAN SKIP STEP 6

6) Remove the dead pedal/fourth pedal. 10mm deep socket. I tried to skip this step until I noticed the upper bolt holds the dead pedal over the bottom of the clutch pedal assembly you will remove shortly.

Time: 0:45

7) Reach in and twist the master cylinder counter clockwise to release it from the firewall. Leave it for now and it should look like this:



IF YOU ARE INSTALLING AN OEM MASTER YOU CAN SKIP STEP 8

8) Remove the two clips that hold the clutch fluid reservoir. Pull outward on the inner plastic pin not the outer piece. The fasteners are something like this (shown with center pin pulled out):



9) Remove fluid from master fluid reservoir and clean out as best as you can. Then disconnect reservoir line from master cylinder. Remove the master with the line going to the slave cylinder and (reservoir – tick only). The easy part is over.

Time: 0:55

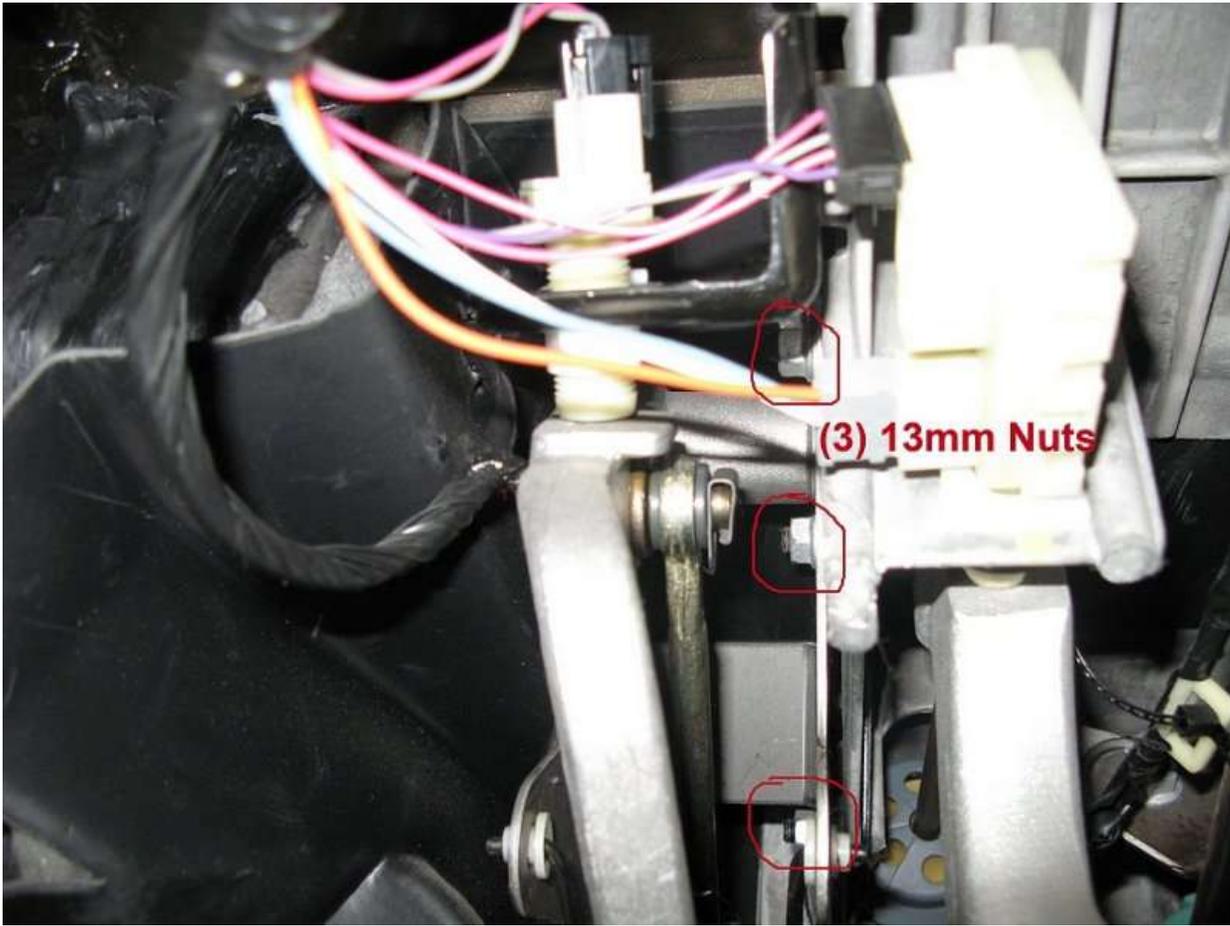
IF YOU ARE INSTALLING AN OEM MASTER YOU CAN SKIP STEPS 10-15

10) Remove the clutch pedal assembly by removing the sensor plug near the base and then the (3) 13mm nuts. A ratchet wrench (longer the better) is a must. Here is a photo of the sensor plug and the nuts you need to remove:

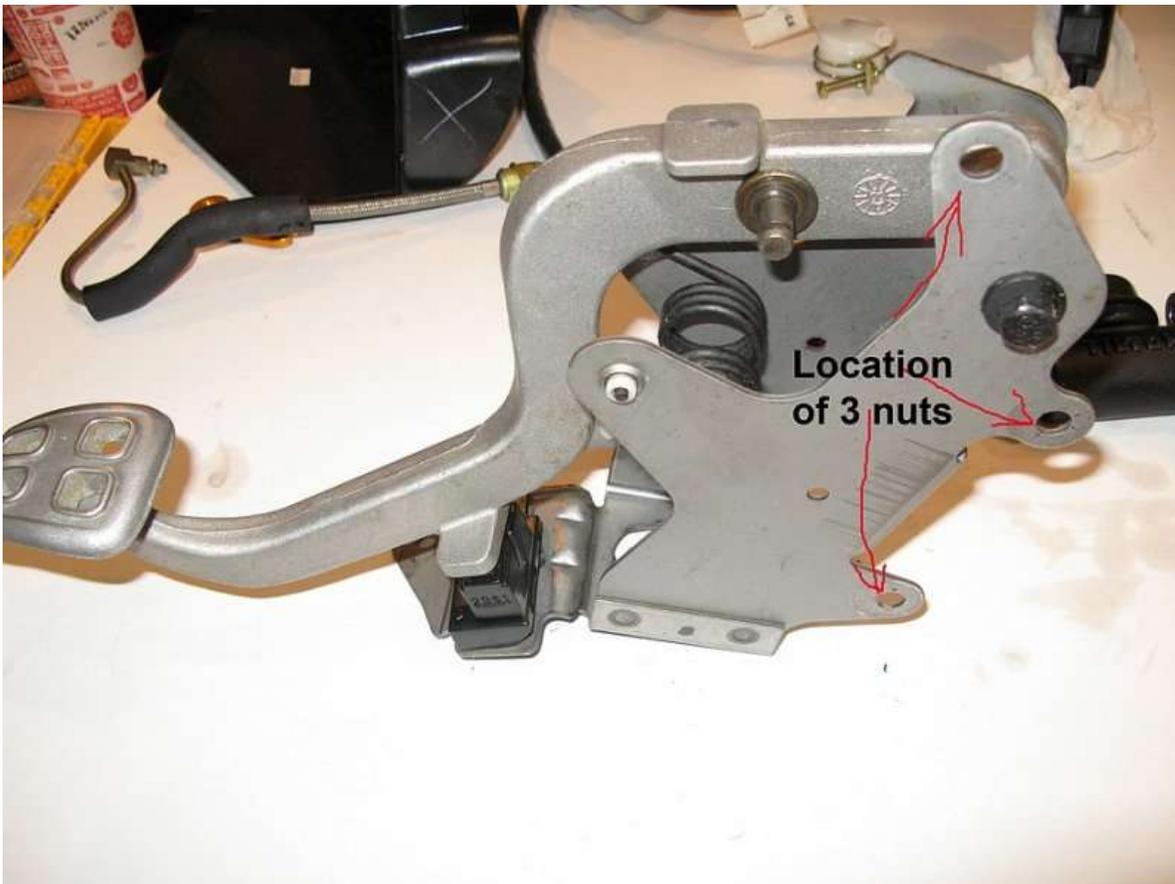


**Remove Plastic
Fastener**

Remove Sensor Plug



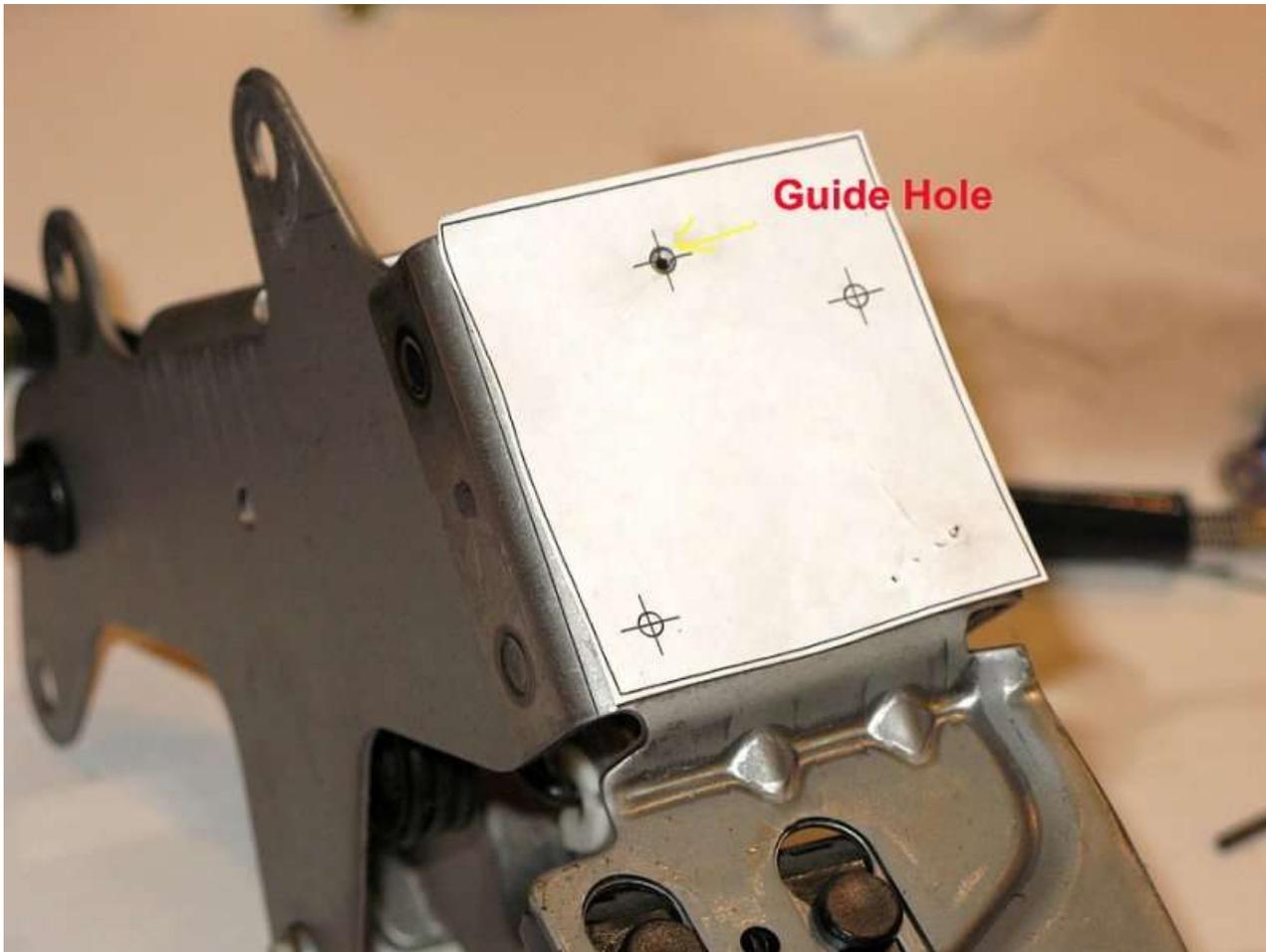
Here is a photo of what you are taking out: (Tick Master install only)

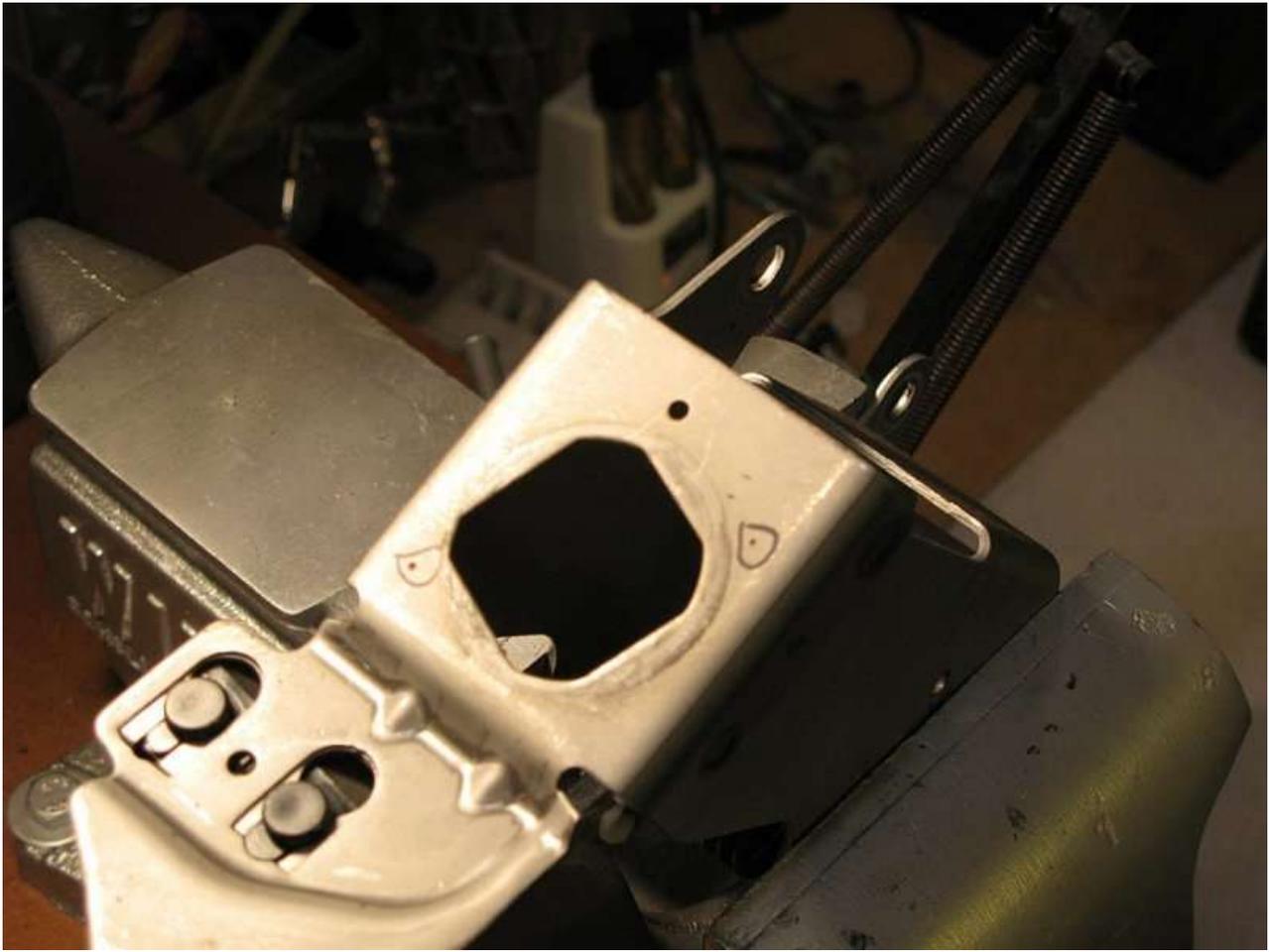


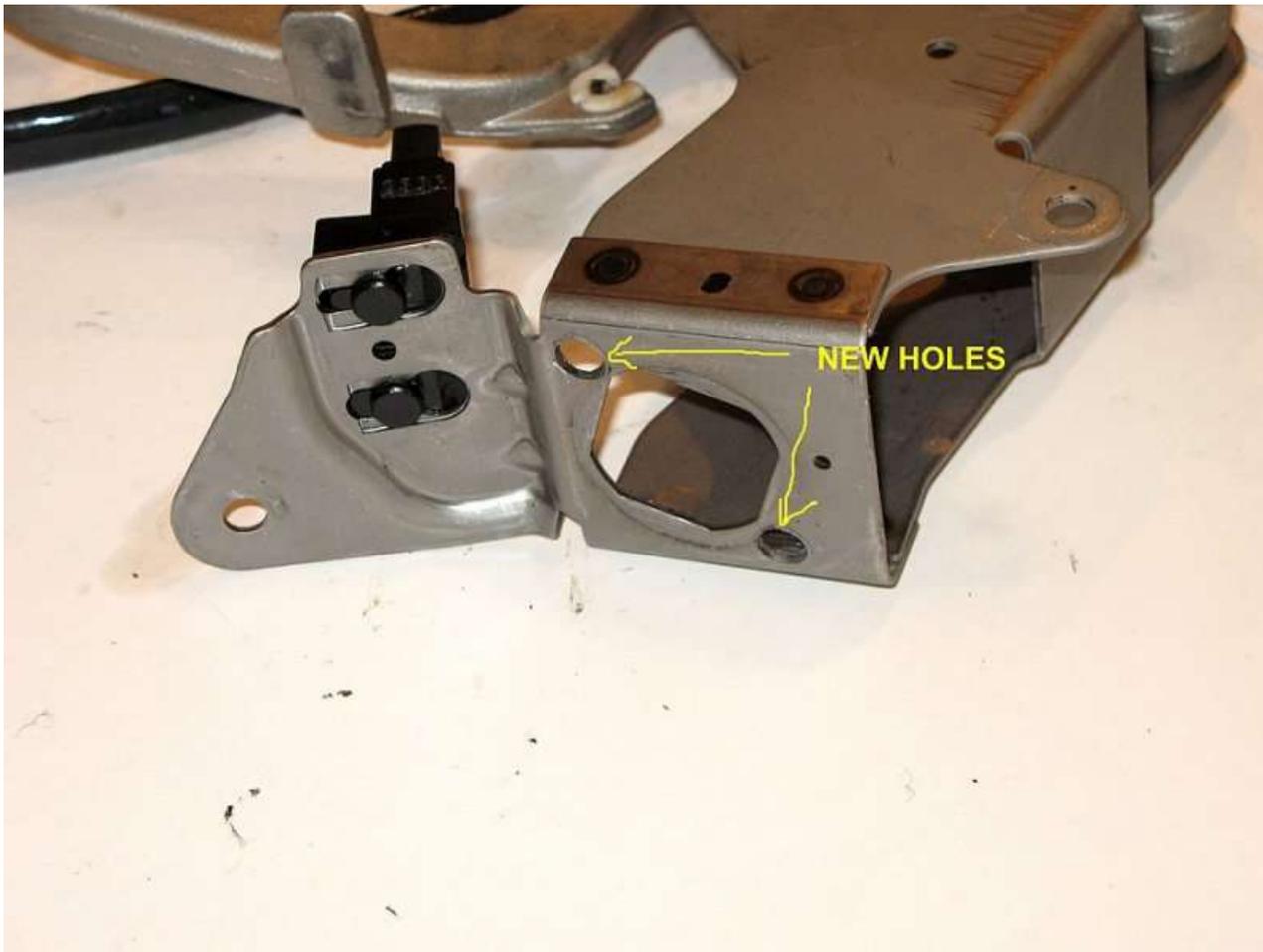
Pull out pedal assembly and there should be a wire fastened to the side of the assembly (see top photo in the above set (left side of assembly), use needle-nose pliers to pinch the fastener inside the pedal assembly and push it outward. Move the assembly to your workbench. While you are still swearing about how hard it is to get up there and remove those 3 nuts just keep in mind it's going to be a whole lot harder getting them back on later....

Time: 1:10

11) Once you have the pedal assembly on your workbench there is this paper template but not a whole lot of instructions. Here is where the template goes, there is a small hole in the pedal assembly you use to line it up. And what it looks like after you center punch for your new holes and what it looks like after the two holes are drilled out. 3/8" bit required.







12) Now mount the Tick master to the pedal assembly and secure with the two allen bolts. Sorry I forgot to take a photo of this step. You are going to mount the master so the fluid cap on top of the master is tilted at 2:00, it's not straight up. Attach the rod to the pedal and install the clip. Remove the spring from the clutch pedal. There are no instructions to re-install the spring so place it in your spare parts box. Do not install the hose or line yet. You might want to test fit the white plastic cap because it's not easy to install in the tight quarters of the firewall.

Time: 1:35.

13) Reinstall the pedal assembly with the new master cylinder attached. Attach the wire/fastener on left side of assembly while getting it lined up. It's not as easy as taking it out since the master is installed. The rubber cap on the reservoir came off during this process as it was poked through the firewall, so keep an eye out for it. Once it is in place and looks good coming out the firewall, find a person with small hands to get those (3) 13mm nuts back on. Of course with the master in place it makes it even worse. I just tried a nut at a time in my hand and just felt my way up in there. I spent about 45 minutes getting these on, it should only take 10-15 at most, but I'm a big guy and I'm not in the best shape to work in awkward positions for any length of time. Attach sensor plug to sensor.

Time: 1:50



14) Install the white plastic reservoir adapter and have it facing upwards towards the clutch fluid reservoir. Note how it was mounted in the above photo. Install the clamp. The adapter can be a pain as it is very tight. This is the point where I used a razor blade and cut off the firewall grommet from the old master cylinder because it provides a much better fit. I positioned the cut at the bottom and the grommet can be seen in the above photo. I cut the end of my clutch fluid reservoir tube because it was already enlarged from the former master cylinder fitting. Cutting the end off helps make a stronger fitting on the white plastic adapter

Time: 2:05

15) Install the clutch fluid reservoir and attach the tube to the new master cylinder. I used an automotive clamp instead of the provided wire ties to secure the hose. Screw on the supplied master cylinder fluid line to the blue Earl's fitting and tighten. Let the slave cylinder line hang out as seen in the above photo

IF INSTALLING THE TICK CLUTCH MASTER SKIP STEP 16

16) OEM install only! Move slave cylinder fluid line to new master cylinder by tapping out pin. Once you have the fluid line installed, insert new master from fender wheel well access and twist to lock in. Let the slave cylinder line hang out as seen in the above photo. Attach reservoir line to new master cylinder. From inside the car attach master cylinder rod to clutch pedal with clip.

17) Fill reservoir with DOT 3/4 fluid. Press in on the plastic check valve at the end of the slave cylinder line using the flat end of a drill bit or something similar that won't damage the plastic check valve!! Wait for fluid to flow from the check valve. Refill reservoir as necessary. If you don't have a remote bleeder installed for your slave cylinder, keep running fluid through this line to gravity bleed this part of the system and watch fluid until it comes out clean. Remember to install cap on reservoir.

Time: 2:20

18) Connect the new fluid line to the slave cylinder line. Check that the line is away from headers or any moving parts, use wire ties as necessary to secure the line. If you have a slave speed bleeder line now is the time to bleed the system until the fluid runs clear.

Time: 2:35

19) Double check the reservoir cap is on. Check the pedal assembly for feel. If the pedal is soft, pump gradually. Start the car and test it.

TICK ONLY INSTALL STEP:

20) Install dead pedal. Once you have adjusted the clutch pedal (may take a few test drives) Install courtesy light into trim panel. Install trim panel under dash.

This project took me about 4 hours total and that include taking photos and documenting little things along the way and searching for a few tools that were misplaced and cleaning inside the fender.