

Kristian Irog
4/14/2022
Cosmo Owners Group

Manual Conversion

My write up on a manual conversion for the Eunos Cosmo 13BRE.

Parts that are OEM or Off the shelf

- RX7 T2 Transmission
- RX7 T2 Starter
- RX7 T2 Clutch Master Cylinder
- RX7 T2 Clutch Slave Cylinder
- OEM Auto Counterweight
- RX7 FC T2 Clutch / Pressure Plate (I used a SPEC 6 puck with pressure plate)
- RX7 FC T2 Short Shifter
- RX7 FC T2 Throw-out Bearing
- RX7 FC T2 Clutch Fork
- Right hand drive FD Brake Pedal

Modified or Custom Parts needed

- FD Clutch Rod (Modified)
 - * Extended about an inch
- Cosmo 2 Piece Drive shaft (Modified)
 - * Used the yoke from the FC T2 Drive shaft and had it attached to mate with the transmission

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** Was told that the Ford XR8 uses the same yoke as the FC T2 (Can't confirm)

- Custom Reinforcement plate on the firewall for the clutch master cylinder

- Custom Transmission Mount

- Custom Length Braided RX7 FC Clutch line

*Need to use the banjo setup from an FD master cylinder

* (M10 x 1.0) (Inverted Flare for master cylinder / Bubble Flare for Slave Cylinder) (I used 2

Feet Length)

- Aftermarket Flywheel (I used an ACT Prolite Flywheel)

Steps (How I did it)

1. I had the motor out of the car. Disconnect the lines to the radiator. Take off the auto trans/flex plate/converter. Reuse the auto counterweight if using an aftermarket flywheel (highly suggest you use an aftermarket flywheel)
2. Remove the very large flywheel nut (I used a ½ drive impact and held the flywheel in place with my own method)
3. Attach the aftermarket flywheel with the auto counterweight
4. Attach clutch and pressure plate accordingly.
5. On the transmission install clutch fork and throw out bearing (Lubricate accordingly)
6. Connect the transmission to the engine
7. Attach starter to transmission.
8. Attach the clutch slave cylinder

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9. Now on to the firewall... Drilling the holes for the master cylinder, I literally eyeballed it.

No other way to explain it.

10. Have the reinforcement plate installed (Mine has rivets attaching it to the firewall).

*I suggest that the engine is out of the car when doing this, it makes it a lot easier.

11. Install FC master cylinder. Use the banjo Bolt from a FD master cylinder.

12. Remove factory foot rest and the install the clutch pedal. (Trim the metal on the pedal assembly to your needs, depends on your positioning also might have to cut some of the rug and insulation stuff)

13. Attach the nuts to the studs from the master cylinder. (This is the hardest part in my opinion, I had to be upside down and in an awkward position, then couldn't fit a socket so I used a small wrench and turned it like 1/8 inch at a time until it got tight took me like 2 hours)

14. Install the clutch rod (Going to have to play with it a little depending on the exact length you are using)

15. Install engine and transmission with driveshaft.

16. Attach the custom clutch line (Use the banjo fitting from the FD master cylinder

17. Remove the auto shifter stuff inside the car

18. You will need to trim the shifter opening up top a little bit to accommodate the shifter as well as the shifter surround (Some people have told me you don't have to but I had to in order to get the shifter to fit correctly)

19. Fill fluid and bleed the system

20. HAVE FUN!!!

**Please refer to FSM or look up official torque specs for all nits and bolts

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AFTERMARKET CLUTCH AND FLYWHEEL



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TORQUE CONVERTER REMOVED



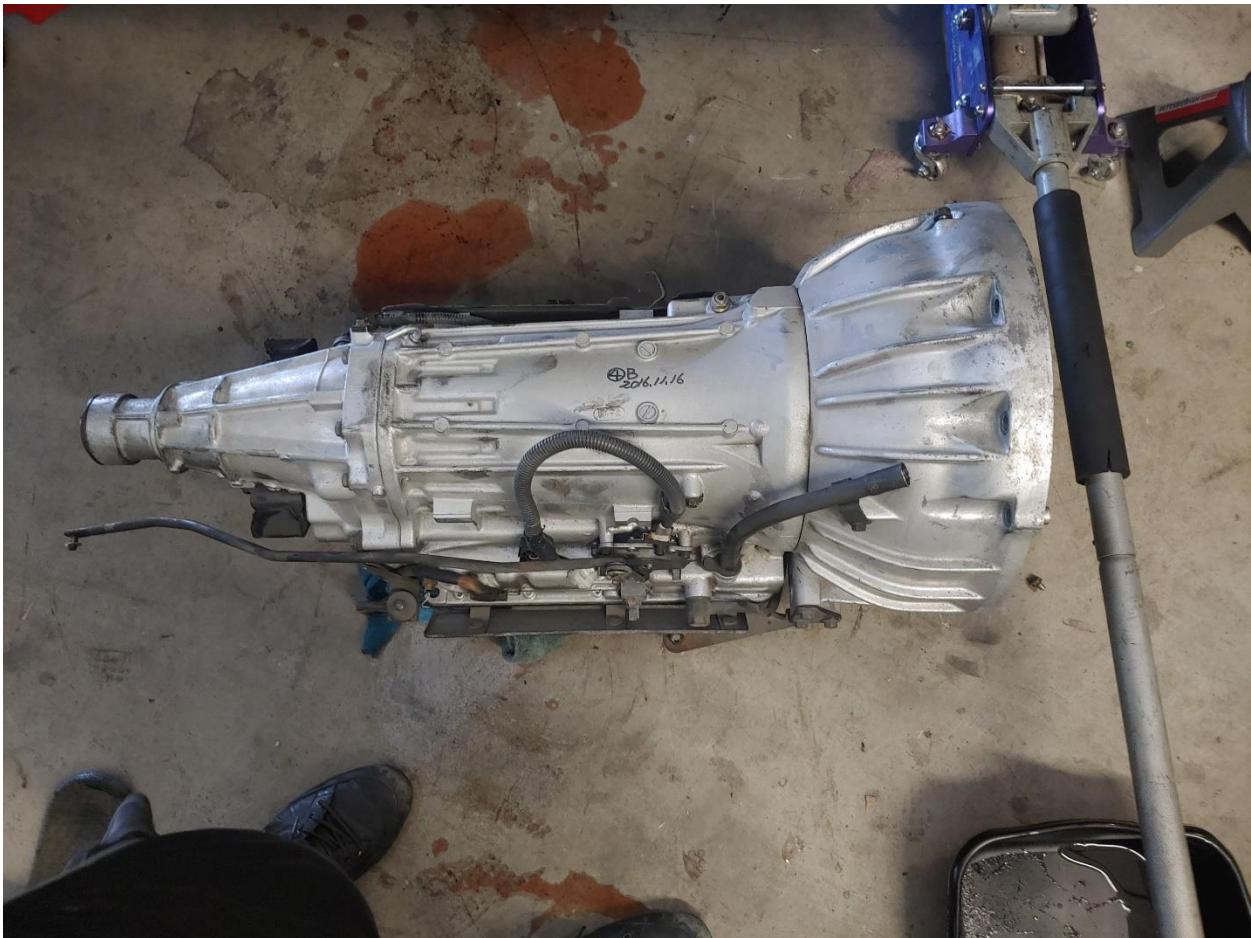
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ENGINE OUT WITH AUTO FLEXPLATE STILL ATTACHED



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AUTOMATIC TRANSMISSION



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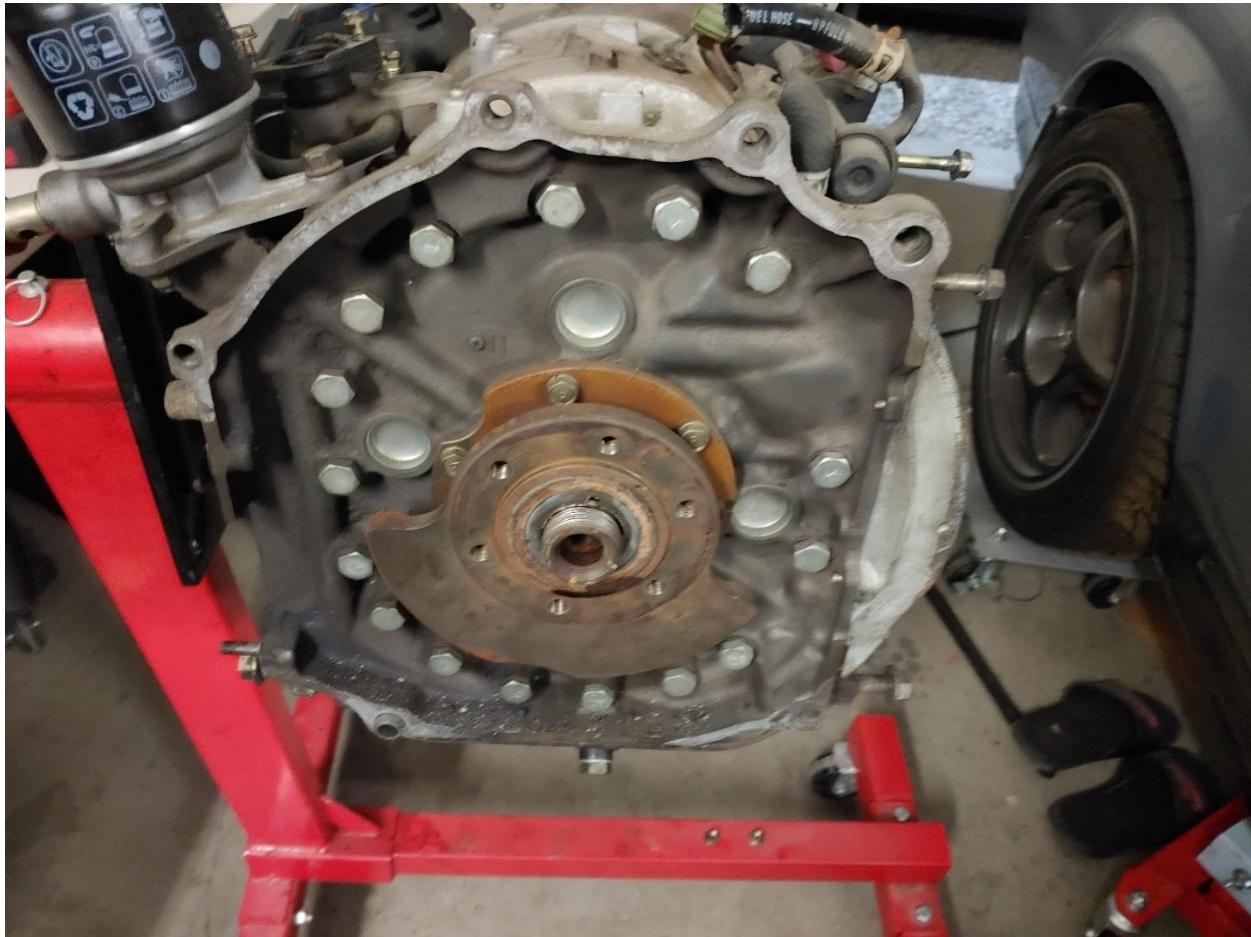
**REMOVING THE FLEXPLATE REQUIRES THE REMOVAL OF
THE LARGE NUT (REFER TO OTHER GUIDES, LOL)**



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FLEXPLATE REMOVED AUTO COUNTERWEIGHT REMAINS

(REPLACE THE PILOT BEARING IN THE E SHAFT WHILE YOU
ARE DOING THIS)



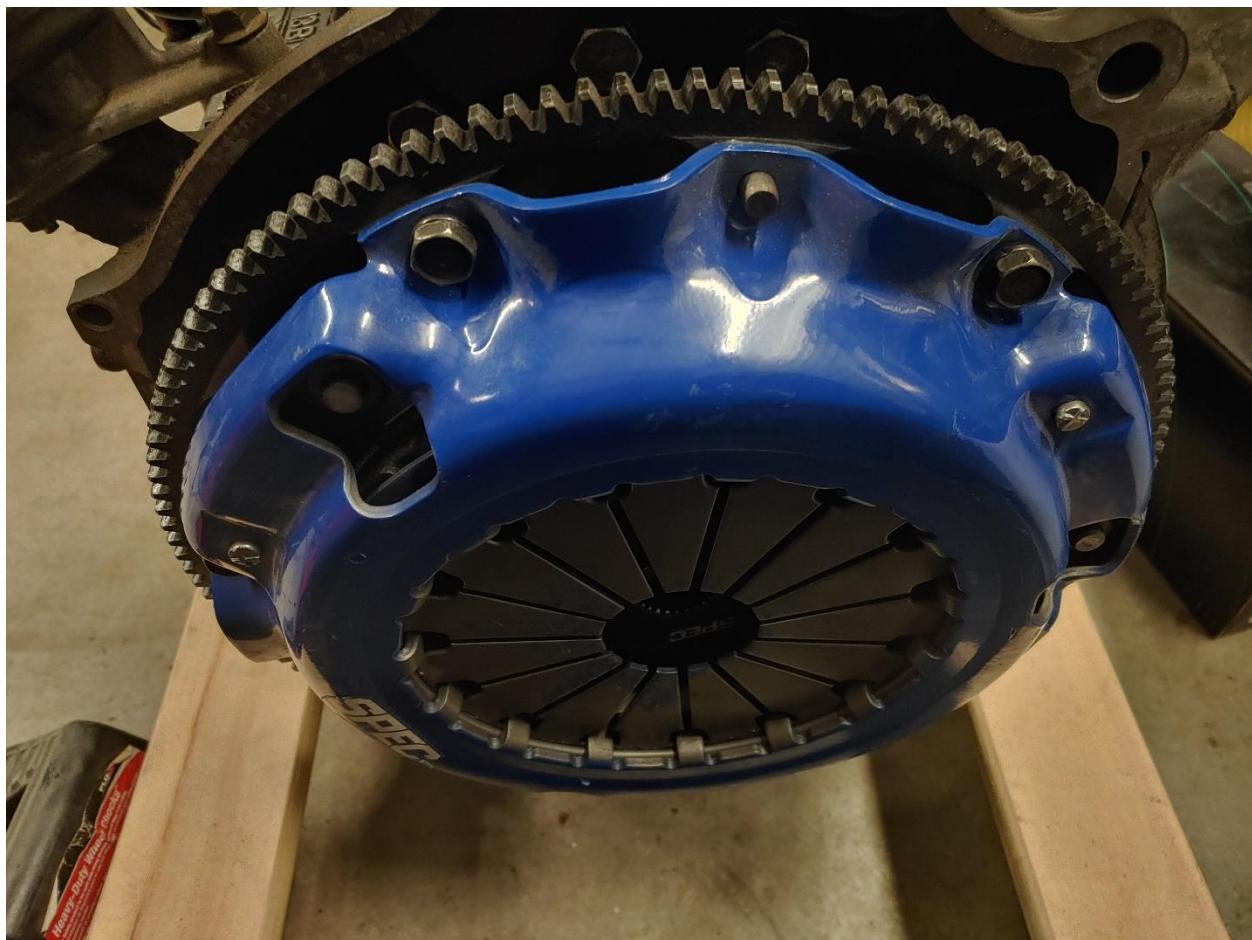
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AFTERMARKET FLYWHEEL INSTALLED (*TORQUE THE
LARGE NUT PROPERLY, REFER TO THE FACTORY SERVICE
MANUAL)



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AFTERMARKET CLUTCH SETUP INSTALLED (*ALWAYS USE
PROPER TORQUE SPECS)



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AUTO SHIFTER REMOVAL



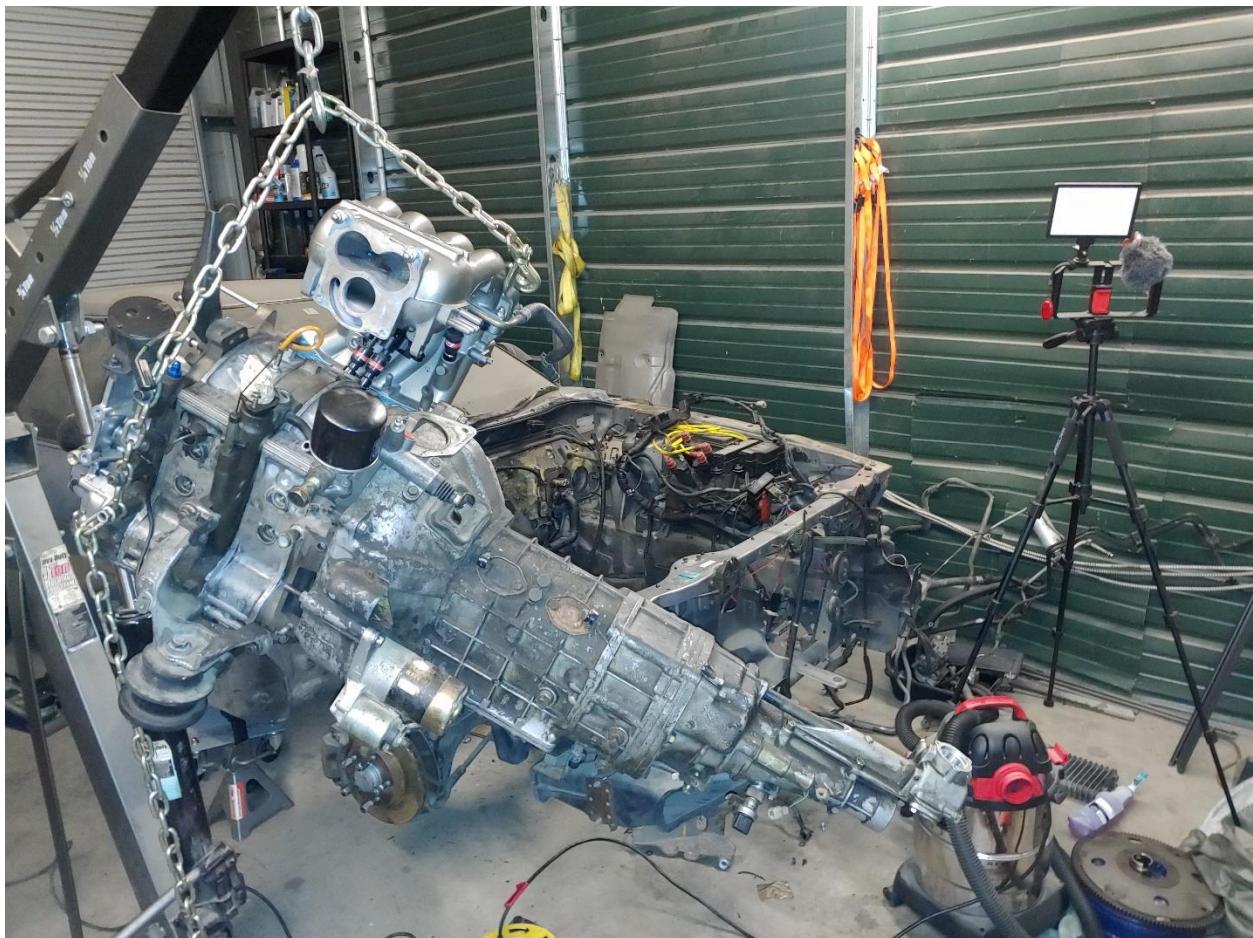
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MANUAL TRANS CONNECTRED, STARTER CONNECTED, AND

CLUTCH SLAVE CYLINDER CONNECTED



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I INSALLED ENGINE AND TRANSMISSION TOGETHER



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TRANSMISSION POSITIONED, HAVE TO TRIM THE SHIFTER

HOLE A LITTLE BIT IN THE FRONT AND ON THE RIGHT SIDE

IN ORDER TO FIT PROPERLY.



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I USED A TRANSMISSION JACK TO POSITION THE
TRANSMISSION WHEN MY MOUNT WAS BEING MADE



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POV 1 OF TRANSMISSION MOUNT



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POV 2 OF TRANSMISSION MOUNT



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POV 3 OF TRANSMISSION MOUNT (THIS WAS ACTUALLY A
MOCK UP AS I USED SOME RUBBER BUSINGS IN THE FINAL
PRODUCT TO HELP WITH VIBRATION)



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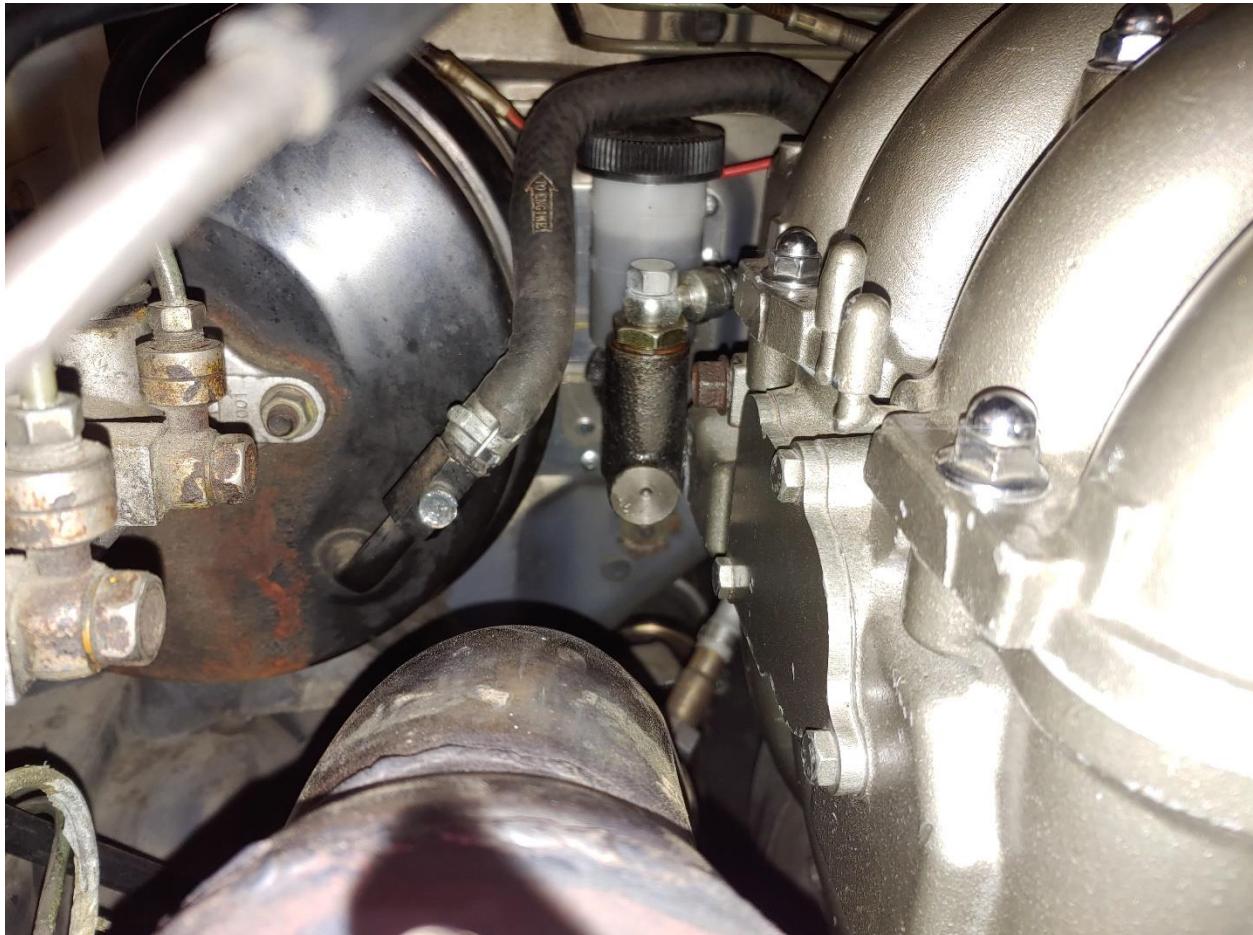
REFORMENT PLATE (IGNORE THE FD MASTER

CYLINDER, I KNOW IT IS UPSIDE DOWN AS WELL. I
WAS PLAYING AROUND WITH FITMENT OF DIFFERENT
MASTER CYLINDERS AT THE TIME)



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FINAL FC MASTER CYLINDER INSTALLED CLEARS
THE THE UPPER INTAKE MANIFOLD (YES THAT IS JB
WELD I USED TO PLUG THAT BROKEN BRAKE
BOOSTER NIPPLE, IT WORKS LOL)



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BANJO FITTING SETUP ON THE FC MASTER CYLINDER



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I CUT THE BRAKE PEDAL AS IT WAS THE EASIEST
SOLUTION. I WILL INSTALL AN FD PEDAL ASSEMBLY
IN THE FUTURE



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EXTENDED CLUTCH ROD AND RHD FD CLUTCH PEDAL ASSEMBLY INSTALLED



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ACTUALLY TRIMMED TOO MUCH OF MY SURROUND

AND BROKE A PIECE AS YOU CAN SEE. LOOKING
BACK I DON'T THINK YOU ACTUALLY HAVE TO TRIM
IT, YOU CAN JUST REPOSITION IT A LITTLE. I ALSO
USED A RUBBER SHIFT BOOST FROM A Z31 300ZX, IT
FIT PRETTY GOOD. I AM MAKING A SHIFT BOOT TO
CLEAN IT ALL UP SOON.



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**FOLLOWING 3 PICS ARE NOT MINE THEY ARE FROM A
FELLOW MEMBER NAMED SAM TIERNEY WHO WAS
KIND ENOUGH TO MEASURE A DRIVESHAFT HE HAD
THAT WAS A COSMO PIECE WITH FC YOKE (I USED
THIS SAME KIND OF DRIVESHAFT IN MINE.**

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CUSTOM 2 PIECE DRIVE SHAFT (PHOTO CREDIT TO
SAM TIERNEY)



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MEASUREMENT IS FROM JOIN TO JOINT.



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I HOPE THIS WAS A HELPFUL WRITEUP! PLEASE
FORGIVE ANY SPELLING OR GRAMMATICAL ERRORS
AS I DID NOT BOTHER TO PROOFREAD ANY OF THIS!
LOL