



**INSTALLATION INSTRUCTIONS**  
FD3S RX7 Manual Rack Conversion

# 1 Removal of Stock Rack

- 1.1 With your steering wheel centered, remove the pinch bolt from the factory intermediate shaft lower knuckle. If you can not get to the bolt with the steering wheel straight, just remove the bolt first, then put the steering back to center.
- 1.2 Once you have the pinch bolt removed, take a small pry bar or heavy screwdriver and slightly pry open the steering shaft knuckle. This will make removal easier.
- 1.3 Remove the power steering pump, lines and reservoir. I recommend stuffing some paper towels into the holes of the factory rack to keep fluid from coming out when removing it.
- 1.4 Loosen the jam nut on the inner to outer tie rod end, and spin the inner tie rods free from the outer tie rod ends. Do this on both sides.
- 1.5 Remove the mounting bolts from the factory rack. There are four bolts. You will be reusing the passenger mount bolts. Remove the lower knuckle on the intermediate shaft.
- 1.6 Now that the rack is free, you should be able to start working it out of the car, you may need to lightly tap the intermediate shaft with a hammer to get the splines free from the knuckle. Once you have intermediate shaft free, you can remove the entire power rack with the intermediate shaft still attached.

# 2 Install Manual Rack

- 2.1 Make sure the rack is setup in the center of travel, that way you will get equal turning radius. You can check this by turning the input shaft and counting the total full turns of travel lock to lock, then turning it until half your count. You can use a pipe wrench or vice grips.
- 2.2 Install the new universal joint provided in the kit onto your new rack. Do not tighten the allen bolts yet. Do that last.
- 2.3 Passenger side mount: Attach the thick shim on the passenger side of the rack. Use the factory passenger side mount and rubber bushing, and install it onto the new rack over top of the shim piece. See Picture 1 & 2

- 2.4 Drivers side mount: Slide the mounting bracket onto the drivers side, then put the U-bolt clamp over top and tighten it slightly so that you can still rotate the mount.
- 2.5 Install the rack and get your mounts into the proper position. Install the four mount bolts but do not tighten them fully.
- 2.6 Rotate the rack while on the mounts to get the desired angle of operation. After you are happy with the angle of the input shaft and intermediate shaft, and make sure there are no clearance issues, fully tighten all four mount bolts.
- 2.7 Tighten the drivers side mount clamp! Be careful, do not OVERTIGHTEN and break clamp.
- 2.8 Drill and tap the driver's mount using the provided bit and tap. Install the lock bolt to keep your rack in the proper position. This is just an extra layer of protection, and keeps the rack from moving left to right or rotating. USE LOCKTITE RED ON BOTH NUT AND THREADS. See attached picture. (If there is not enough room to do this in the car, get the rack to the proper position and use a sharpie and mark the rack through the hole in the mount, then pull the rack back off the car and drill/tap on your bench.)
- 2.9 Take both jam nuts on the inner tie rod and move them towards the middle of the rack, then tighten them against each other. This will allow you to turn the inner tie rod with a wrench to get the alignment as close as possible.
- 2.10 Turn the inner tie rods until you get both front wheels as close to center aligned as possible. Once you feel they are close, tighten down one of the nuts to lock the inner tie rod to the outer tie rod. You should have 1" of thread engagement minimum.
- 2.11 Tighten all allen head bolts on the universal joint.

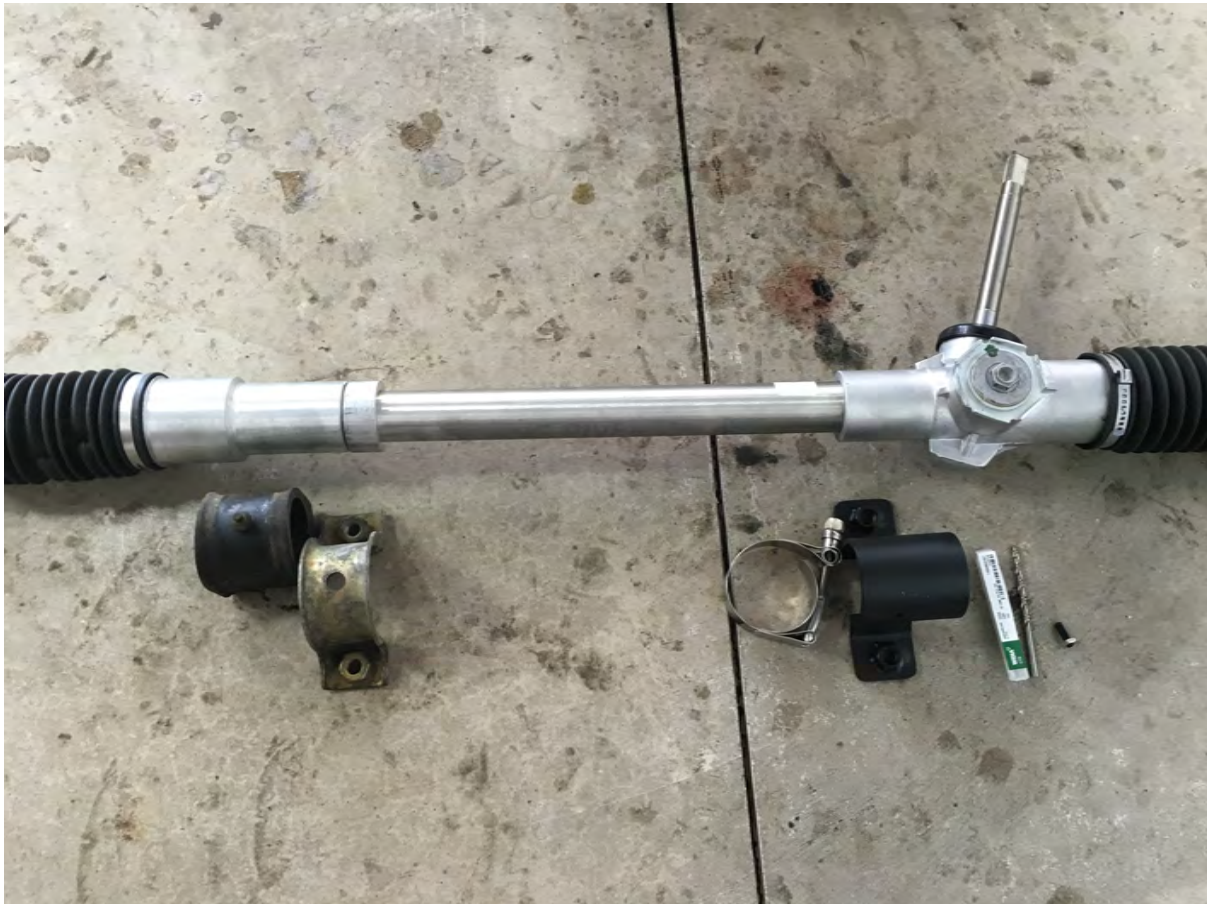
### **3 Alignment**

- 3.1 Now that you have the car roughly aligned, its time to take it to a professional and get the front wheels aligned. DO NOT attempt to drive or track the car without doing so!!!

1 – Passenger side of rack shim installed. Install the factory mount rubber over the shim.



2 – Notice the hole in the drivers mount is facing towards the front side of the rack



3 - Install the rack into the car (my car has aftermarket subframe for 2JZ, but your install will be similar)



4 - Notice how the stock passenger mount sits over the shim



5 - Here is the drivers mount installed, U-BOLT CLAMP is used here now (older kit used weaker t-bolt)!



6 - Installed universal joint. Rotate rack to line up splines for good angle of operation.



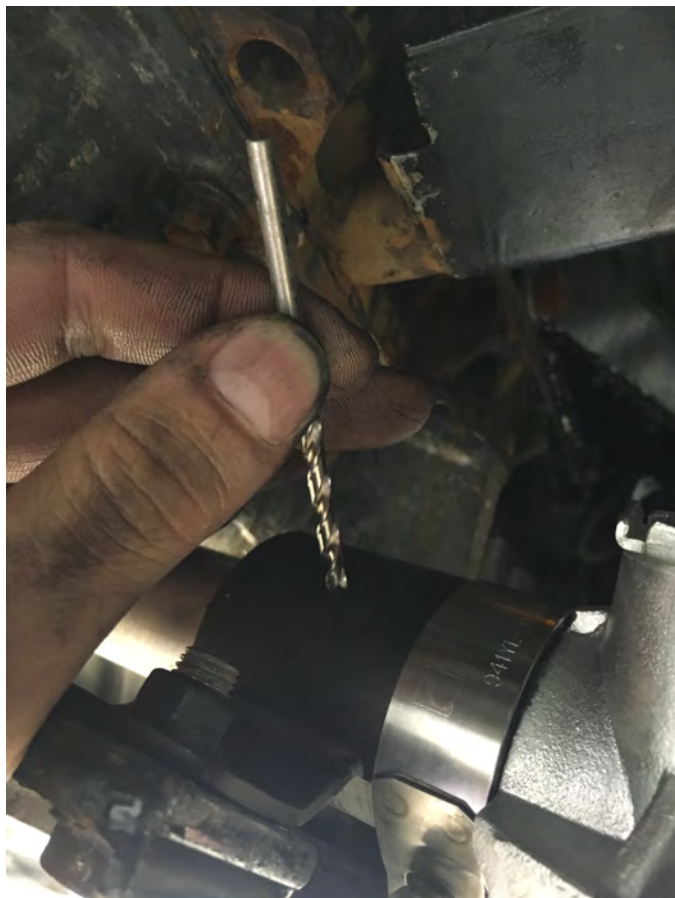
7 - Installed universal joint. Slide joint so it has good engagement on both splines.



8 - Installed tie rod ends



9 - Once you have rack installed and clocked properly, you will drill through the pilot hole and tap



10 - Install the rotation locking bolt, do not overtighten!

