



Installation Instructions

P/N 12654HKR – 1995-98 Nissan 240SX LS/T56 Swap Mount Kit

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Thank you for choosing a Hooker Headers swap mount kit to complete your engine swap project. Hooker swap mount kits are designed using precise digitizing equipment and CAD modeling software to ensure each component is designed to the highest level of geometric and dimensional accuracy. Please read these instructions thoroughly before attempting installation of these components.

PRE-INSTALLATION CONSIDERATIONS

Check that the hardware package includes the following: (4) M10 x 1.25 x 25 bolts, (7) M10 x 1.5 x 30 bolts, (1) M10 x 1.5 x 20mm bolt, and (4) M10 flat washers.

Installation of this kit requires the use of a Prothane™ transmission mount (P/N 7-1604 – **Figure 2**) and Ultra Mounts™ solid or polyurethane engine mounts for a 1997 - 04 C5 Corvette (**Figure 3**). The Prothane™ mount is available from numerous aftermarket sources



Figure 2



Figure 3

Note: a cost-effective alternative to purchasing the above referenced engine mounts is to use self-made solid mounts cut from 2.25" round 6061-T6 aluminum bar stock. After cutting two 2.950" long pieces from the bar stock, center-drill and tap the ends of the pieces to accept M12 or 7/16" SAE fine thread hardware.

An engine hoist and floor jack will be required to position the engine/trans into the vehicle in its proper orientation. Use of an angle-adjustable engine sling will greatly ease the hoisting/loading operation and negate the possible need to reposition the lifting chains mid-operation. An automotive lift or a jack and jack stands will be required to safely raise and support the vehicle.

CAUTION! WORK ONLY ON A LEVEL SURFACE. USE JACKS /JACKSTANDS OF SUFFICIENT CAPACITY TO LIFT AND SUPPORT YOUR VEHICLE. NEVER WORK UNDER A VEHICLE SUPPORTED BY A FLOOR OR BUMPER JACK.

TIPS FOR A SUCCESSFUL ENGINE SWAP

1. Mark all hoses, wires, and vacuum lines, according to function. Use masking tape and a pen to achieve this.
2. Whenever possible, utilize the existing wiring and lines.
3. Get a wiring diagram of your vehicle and one for the vehicle from which the new motor was removed. Make photocopies of both systems. Add your modifications to these copies, so you will have accurate records for future reference.
4. Think carefully before removing or defeating any emissions device; a legal engine swap requires the emissions components to be transferred from the donor vehicle in their entirety and be in working order. Defeating any of these devices may cause you legal difficulties, especially when you try to sell the vehicle.
5. Save as much hardware that is removed from the donor engine as possible...you may need some of these items later on.
6. Taking the time to do it right is cheaper than taking short-cuts and having to do it again. Make sure you pay close attention to critical areas like fuel systems and brake lines...neglecting to double-check your work could have life or death consequences.
7. Do not overstress components that are designed for stock four or six cylinder torque by over-abuse with a motor of greater horsepower.
8. Don't forget to upgrade your radiator, fan(s) and hoses to accommodate the cooling requirements of your LS engine.

VEHICLE PREP

1. Remove hood from vehicle.
2. Disconnect battery and fuel lines; bend fuel lines and filter to rest in cavity behind passenger side strut tower.
3. Remove existing wiring harness and set aside for raiding plugs to complete electrical connections to the swap engine harness.
4. Remove factory anti-sway bar. This swap will require relocating or replacing the factory bar with an aftermarket unit.
5. Remove power steering cooler lines; do not remove the two hard lines on the rack itself.
6. Drain and remove radiator/hoses from vehicle.
7. Remove shifter cover and boot from shifter then remove shifter from transmission.
8. Remove the driveshaft, transmission cross member, engine/transmission and engine mounts from vehicle. Save the transmission cross member bolts for re-use.
9. If equipped with ABS, unbolt the control unit from the passenger side of the vehicle and move it aside.
10. Remove heater hoses and heater control valve from core at firewall while being careful not to damage core inlet/outlet tubes.
11. Remove the firewall mounted anti-vibration weight and factory exhaust heat shield from the vehicle.
12. Drain and remove radiator/hoses from vehicle.
13. Using a manual or air powered rotary file, slightly widen the slots in the engine cross member, that accept the studs of the engine mounts, until M12 fasteners will pass through the length of the slots (Figure 4). This modification will provide a needed strength upgrade over the M10 studs of the stock engine mounts.

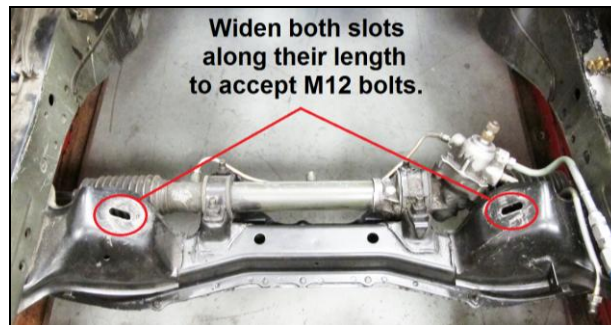


Figure 4

13. Using a 3-4lb hammer, drive the transmission tunnel sheet metal inward, 4" forward of the body seam and within the red perimeter indicated in Figure 5, to provide additional clearance for the swap transmission. The required depth of the deformation will be approximately 3/4" - 1".

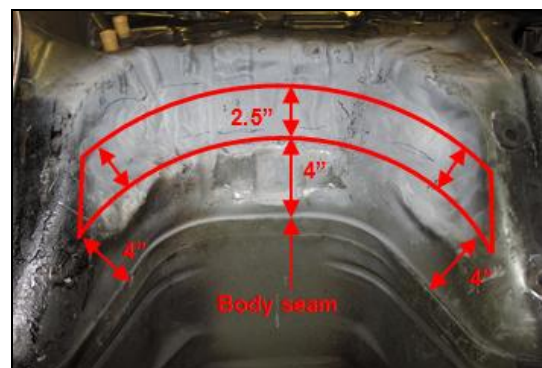


Figure 5

SWAP ENGINE/TRANS PREP

1. Carefully remove the following components from the engine and set aside: spark plug wires, exhaust manifolds/O2 sensors, wiring harness/computer, MAF sensor, starter motor/plate and dust covers, A/C compressor/bracket and hoses, EGR solenoid and hoses, oil dipstick/tube and motor mounts.
2. Carefully remove the following components from the transmission and set aside: shifter/shifter housing and, if present, the urethane bumper pad attached to the transmission case forward of shifter housing.
3. Trim manufacturing index lugs on the transmission case flush with the case surface as indicated in Figures 6 & 7.

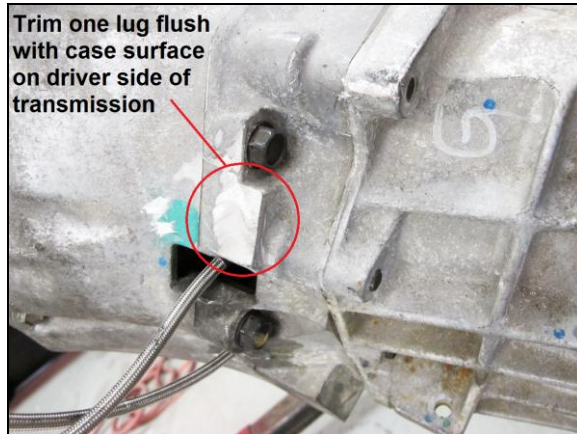


Figure 6

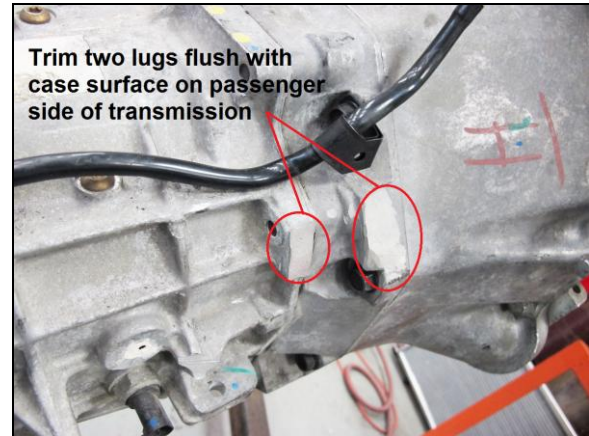


Figure 7

ENGINE/TRANS INSTALL

1. Securely attach lifting sling to engine/transmission and connect to engine hoist. In order to be able to lower the assembly into its proper position in the vehicle, the Initial position of sling should provide at least a 45° tilt angle of the engine/transmission.
2. Using the supplied M10 bolts, attach the Hooker left and right engine brackets and mounts to the engine, as shown in Figures 8 & 9.
3. Install the single shorter bolt in the hole indicated on the passenger's side mount. If you are using Ultra Mounts, all four studs protruding from the mounts must be trimmed to measure 7/8" long before installing. Do not fully tighten any bolts at this time.

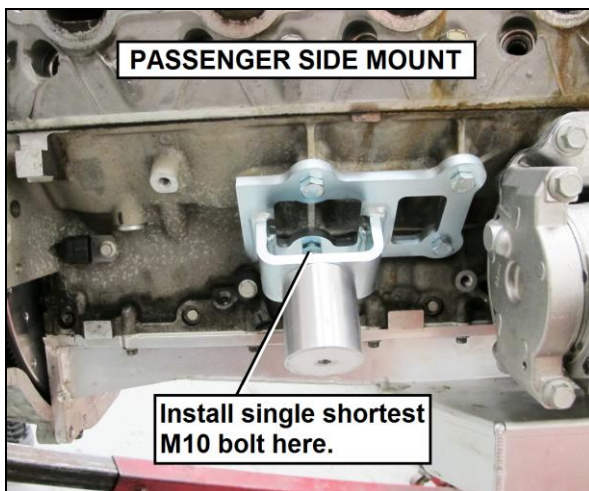


Figure 8

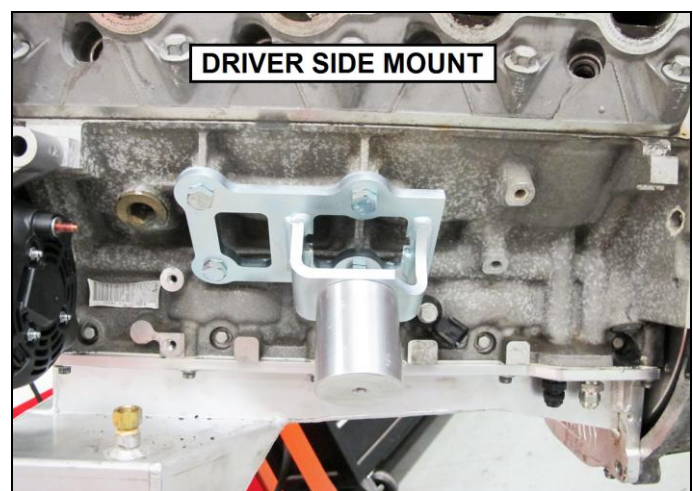


Figure 9

3. Lift the assembly high enough to clear the radiator support at the front of the car. If your hoist will not go high enough to clear the support, have an assistant lift the end of the transmission up to clear it as you move the hoist under the vehicle.
4. Lower the assembly into the engine compartment while paying attention to not hang it up on any components in the vehicle.
5. Insert the engine mount studs into the receiving slots on the engine cross member; lower the assembly down onto the cross member but do not install the fasteners on the mount studs at this time.
6. Lift the vehicle to create enough space for a work area and operation of a floor jack beneath it; **secure vehicle with suitable jack stands or by putting the lift on its locks.**
7. Position a floor jack under the transmission and raise it up until the transmission just contacts the transmission tunnel. Use a block of wood between the floor jack and transmission if your jack has insufficient stroke to accomplish the task.
8. Install the separately purchased Prothane™ transmission mount onto the bottom of the transmission and then install the Hooker transmission cross member over the studs of the mount and onto the vehicle with the four included M10 x 1.25 fine thread bolts and flat washers. See Figure 10 for the correct orientation of the cross member and mount to the transmission.



Figure 10

9. Lower the floor jack to place the weight of the transmission onto the cross member; install the nuts on the studs of the Prothane™ mount but do not tighten them at this time.
10. Move to the front of the vehicle and lower the hoist to place the full weight of the engine on the mounts.
11. Remove the engine sling from the engine then the hoist from under the vehicle.
12. If you are not going to be installing Hooker headers, level the motor (the engine can be rotated slightly in either direction by using a jack positioned with an off-center bias on either side of the bell housing.) then install the lock washers and nuts onto the bottom studs of the motor mounts; tighten all motor/transmission mount hardware. If you are next going to install Hooker headers on your vehicle, open the packaging of that product and proceed to follow the instructions contained within.

After installing your Hooker headers you can finish fabricating and/or installing the remaining parts to finish your project. After completion, give your vehicle a test drive and carefully check for any unsuspected noises and/or vibration. Correct any issues before putting the vehicle into service. After several days of driving, retighten all the fasteners of your Hooker swap mount components.