



88-91 Honda Prelude H-series Swap Brackets



Installation Instructions

(v2)

So what exactly did you get? These are a little different than most aftermarket swap mounts as it is more accurate to call them mount brackets or swap brackets. These brackets bolt onto H or F series motors and the 3G Prelude chassis, allowing the use of OE rubber engine mounts with your engine swap.

The OE mounts you will use with this kit:

Rear: 88-91 Prelude

Right (trans): 88-91 Prelude (manual transmission version)

Left (timing): 90-93 Accord

NOTE: In order to have clearance around the front of the motor as well as stop the radius rod from hitting the crank pulley a Prelude Engineering LLC traction bar is required for this swap. Traction bars from other manufacturers may work as well but we can not guarantee anything.

prelude-engineering.com/traction-bar/

ALB Compatibility:

This swap kit will not fit with the OE location of the ALB components, nor does the required Prelude Engineering LLC traction bar have a mount for the ALB accumulator. You will need to relocate/modify those items or convert to standard brakes.

Dual Height:

This kits allows for mounting the engine at two different heights; "high position" and "low position". The high position provides 7/8" or 22mm greater ground clearance than the low position. Using the high position requires removing part of the under hood support structure.

The high position is intended as the default and recommended position. H/F series swaps hang notably lower than the original engine and regaining that ground clearance greatly improves the driving experience.

However Prelude Engineering LLC understands some may not want to perform the hood modification so we offer the option to mount the engine lower, similar to other H/F series swap kits.

To use the low position you will need to purchase the low position spacer and bolt kit when you order the swap brackets.:



Attention: If you are replacing a current H22 swap kit with the Prelude Engineering LLC swap brackets keep in mind the engine will not be in the exact same position as before, even when using the low position spacer kit. You may need to adjust the exhaust and/or intake lengths.

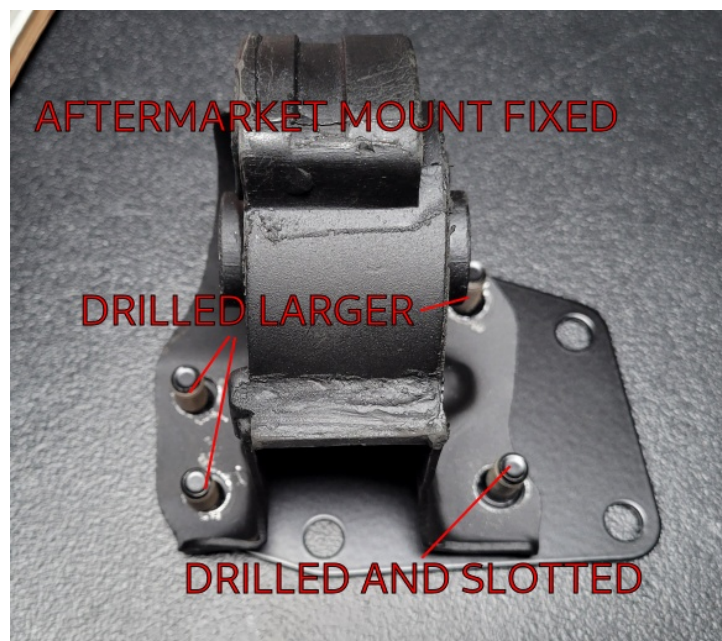
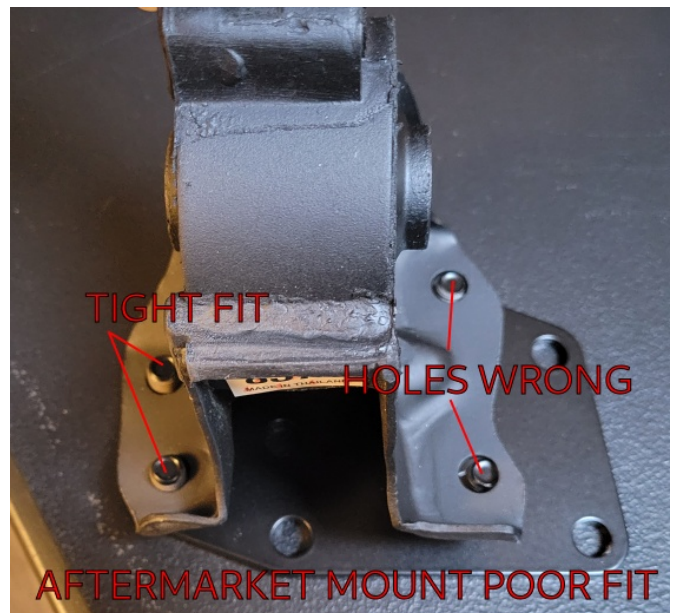
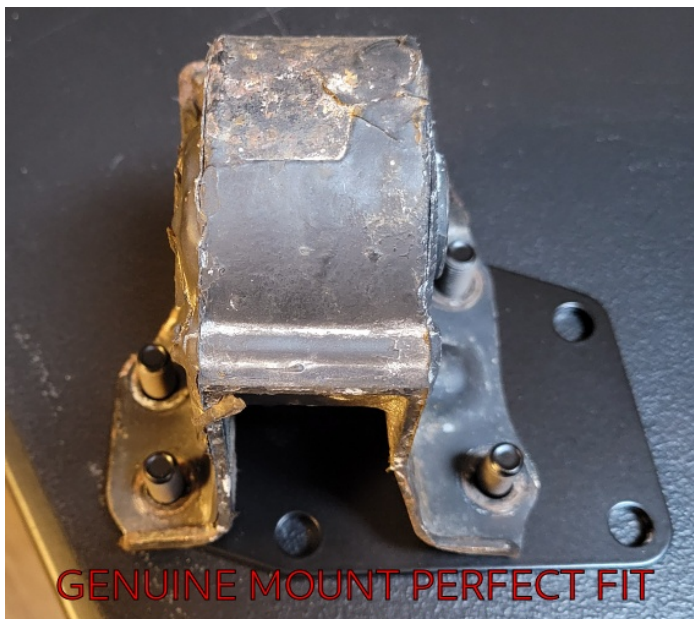
Aftermarket OE Replacement Mount Disclaimer:

The Prelude Engineering LLC swap brackets were designed around a set of genuine Honda rubber mounts. The aftermarket replacement mounts currently on the market tend to have the hole locations slightly off. This can vary from mount to mount or between manufacturers.

The following pictures show a genuine Honda mount fitting perfectly onto the transmission chassis adapter bracket, then a newly bought aftermarket mount which does not fit. The solution is to drill out the holes on the aftermarket mount and also slot one of the holes to get it to fit.

Unfortunately we can not control the quality of these aftermarket mounts, just know you may need to make adjustments.

Further, please see this video with information about the rear mounts currently being sold on the market and how to modify them: <https://youtu.be/ylovES9Zfws>



Mount Brackets are for use with the Following Engines and Transmissions:

Engines: H22A, H23A, F18A/B, F20A/B/Z, F22A/B, F23A/Z

Transmissions: Any H-series manual transmission except ATTS. M2B4 is also not recommended, see the warning below.

Any Accord F-series manual transmission will also work by drilling and tapping the Prelude mount holes.
(M10x1.25 thread)

M2B4 LSD Transmission Warning:

The early LSD transmission (M2B4) has a wider case around where the differential is held, compared to other H/F transmissions. Prelude Engineering LLC does not recommend using this transmission! If you do decide to use it you will likely have to grind/cut part of the subframe to make clearance for the case and fill bolt. You will also need to use a custom short right axle from: RAXles.com

What Other Major Parts do you Need?

Engine Timing Side Block Bracket:

Your H or F series engine needs the "P13" timing bracket (post mount) on the engine. The "P13" identifier is cast on the underside of the bracket. This bracket is the most common and was used through the 90s. Later engines (like the Euro-R) may have a different bracket with narrower bolt holes, you will need to swap the correct bracket onto the engine in that case.

Axles and Half-Shaft:

88-89 Prelude (Small spline hubs): Use 90-93 Integra manual axles.

90-91 Prelude (Large spline hubs): Use 90-93 Accord manual axles.

Half-Shaft: 90-93 Accord manual half-shaft.

Shifter & Cables:

Get a 90-93 Accord manual shifter, shifter base, and cables.

Clutch Slave Cylinder:

92-01 Prelude.

Clutch Hydraulic Flex Line:

Use a braided clutch line kit for a 92-96 Prelude. Remove the 3G Prelude hard line and clutch damper from the firewall before you install the engine.

Engine Wiring Harness / OBD Components:

We recommend buying an H/F series milspec harness from: Rywire.com

<https://www.rywire.com/product-p/h1-milspec.htm>

If you're not familiar with Honda OBD wiring then for simplicity sake select all OBD1 options and 88-91 Prelude resistor box on the Rywire ordering page. Also include the charge harness.

Distributor: 93-95 Prelude VTEC, it must be internal coil type to work with the Rywire harness.

Alternator: 92-95 Prelude, 90-93 Accord

Injectors: 93-95 Prelude VTEC

ECU:

Stock ECUs (can not be tuned):

H22 / H23 / F20 (VTEC): Use a "P13" ECU from the 93-95 Prelude VTEC (Not 1996+).

H23 (Non-VTEC): Use a "P14" ECU from the 92-95 Prelude SI (Not 1996).

F22,F23: Use the ECU from a 90-95 Accord.

Modified / Aftermarket ECUs (tuning ability):

If you want to be able to tune there are many options but the most common and accessible would be something like a "P28" ECU with Hondadata S300 installed for tuning.

All these ECUs are OBD1 spec, do not try to use OBD2 ECUs.

Radiator Hoses:

Upper hose: Use one from a 92-96 Prelude. You will need to trim it shorter.

Lower hose: Use a 3g Prelude lower hose.

Speed Sensor:

88-89: Reuse the speed sensor from your B20a.

90-91: Use a speed sensor from a 92-96 Prelude or 90-93 Accord.

Power Steering Pump and Bracket:

H-series use the pump and bracket from a 97-01 Prelude. F-series use pump and bracket from the Accord.

Fuel Rail:

There are multiple possible fuel rails available with the H/F series, some of these have the high pressure line attaching on the left. This is the wrong rail and you should acquire one where the pressure line attaches on the right (just like the B20a rail).

Alternator:

Use the alternator from a 92-95 Prelude or 90-95 Accord.

Power Steering Pressure Hose:

We can make you a hybrid power steering pressure hose for this swap.

prelude-engineering.com/engine-swap-hybrid-power-steering-line-service/

A/C Compressor and Bracket:

Use the AC compressor and block bracket from a 97-01 Prelude.

A/C Lines and Wiring:

We sell custom AC lines and the wiring conversion to make you new compressor work.

prelude-engineering.com/engine-swap-ac-lines-b-h-series-v2/

prelude-engineering.com/ac-compressor-control-unit-bypass-plug-and-play-kit/

Basic Installation Procedure:

NOTE: These instructions are not meant to be a complete detailed H/F series engine swap guide. They will hit the major points and most minor points but not necessarily every single detail.

We are assuming you just pulled your stock engine and transmission and have done nothing else.

Remove the battery and tray if you haven't already.

Shifter Setup:

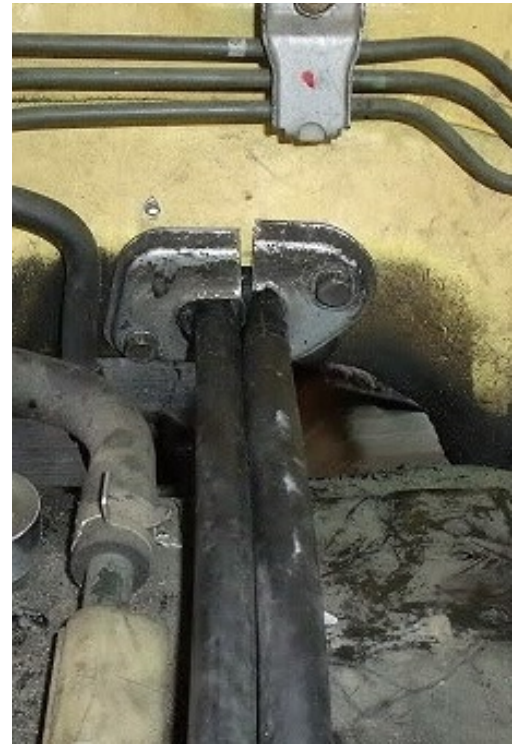
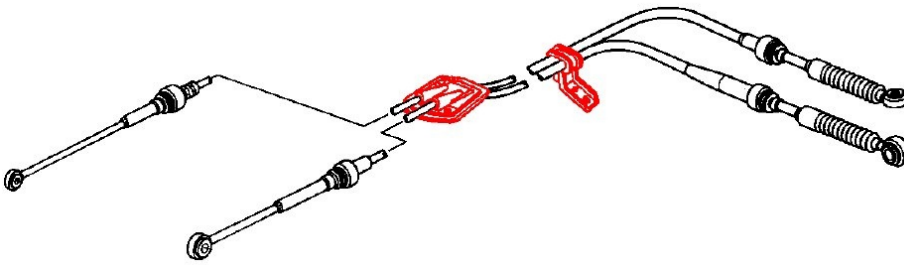
Remove the stock shifter and cables.

To mount the 90-93 Accord shifter you will put it in place, mark the hole locations, drill them, then use longer bolts with nuts to bolt it down. Alternatively you could install M8x1.25 nutserts in the holes for easier service:



The 90-93 Accord shifter will also require removing the filler plate under the shifter and denting the sheet metal some for clearance. To seal the bottom use foam or rubber door strip (or even expanding foam) from the hardware store to achieve an air-tight seal to the bottom of the shifter.

On the 90-93 Accord shifter cables strip any seals or brackets from them except for the very front bracket which bolts to the transmission. Then cut the seal and bracket off your old cables and install it onto the new ones. After that install the cables into the car and hook them onto the shifter:



Clutch Line:

Remove the clutch hard line and clutch damper from the firewall. This is hard to get to even with an empty bay, don't forget to do it.

Engine and Transmission Studs:

Remove any studs present on the timing side block bracket and where the transmission bracket bolts onto the transmission. The transmission studs tend to gall the threads when removed. Try heating the case around the studs before attempting to remove them.

If the transmission threads gall use an M10x1.25 tap or thread chaser to clean them up before continuing.

Install the Engine and Transmission Assembly:

Install the rear mount onto the subframe in the car and the rear engine bracket onto the engine. The bolt hole locations on the rear bracket are precise, remember to start every bolt before tightening any of them:



Now you will drop the engine in. The H22 is wider than the B20a, we recommend removing the crank pulley and all accessories for the install. If possible installing it with the intake and exhaust manifolds removed will also make things easier.

When you pick up the engine have it tilting with the transmission end ~3 inches below level. This will help with guiding it into place. The engine should not be leaning significantly to the rear or front.



Lower the engine into the bay, having someone help for this part is a really good idea. You need to guide the rear mount bracket around the rear mount and get the through bolt in.

WHICH HOLE TO USE?

Mounting in High Position: Lower hole

Mounting in Low Position: Upper hole

Spin the nut onto the through bolt but don't tighten anything yet.

Now the engine can "swing" around the rear mount bolt to some degree. Lower the engine down until there is good room to work around the transmission mount.

Bolt the transmission chassis mount bracket onto the chassis. There are two versions; one for the manual chassis and one for the automatic chassis. The manual bracket goes on easy with 4 regular bolts. The automatic is a little more complex, it has a countersunk hex bolt that must be tightened first, here is the tightening sequence for the automatic bracket:

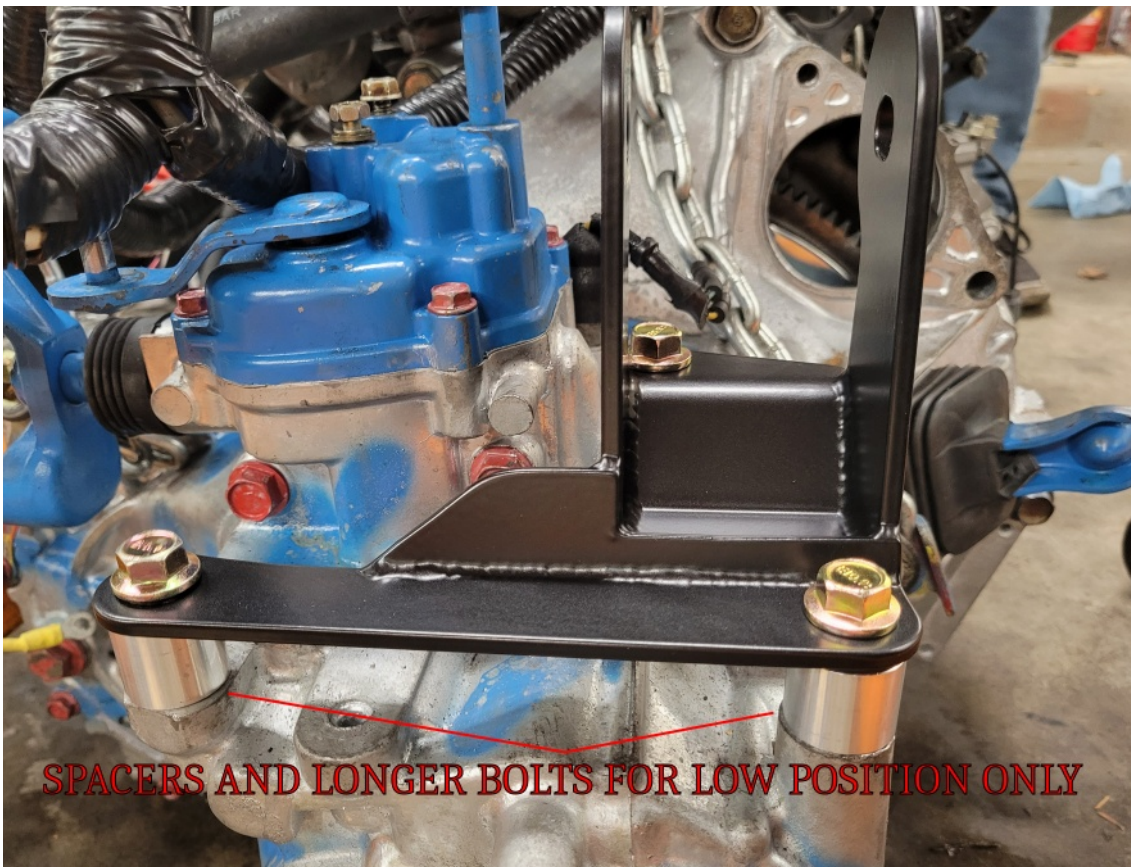


WARNING: On the 1988 automatic chassis, the hole for bolt #2 will not have any threads. You must install an M8x1.25 nutsert into the hole before installing the bracket.

Install the mount bracket onto the transmission, you will add spacers here if you are mounting in the low position.

Mounting in High Position: Don't use spacers.

Mounting in Low Position: Add the spacers and use longer bolts.



Raise the engine up and install the OE manual transmission mount onto the bracket with the studs and nuts. Slip the through bolt in and finger tight the nut like with the rear mount:



Install the timing side chassis bracket. There are two allen socket head bolts with special clipped washers. The flat portion of the washers should face the vertical part of the bracket before tightening:

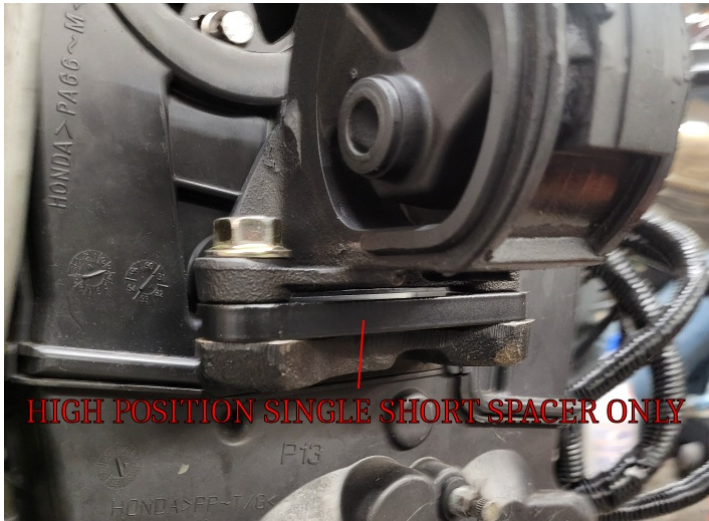


WARNING: On the 1988 chassis there might be only one threaded hole here in the chassis for the allen socket head bolts. In that case just use a single bolt.

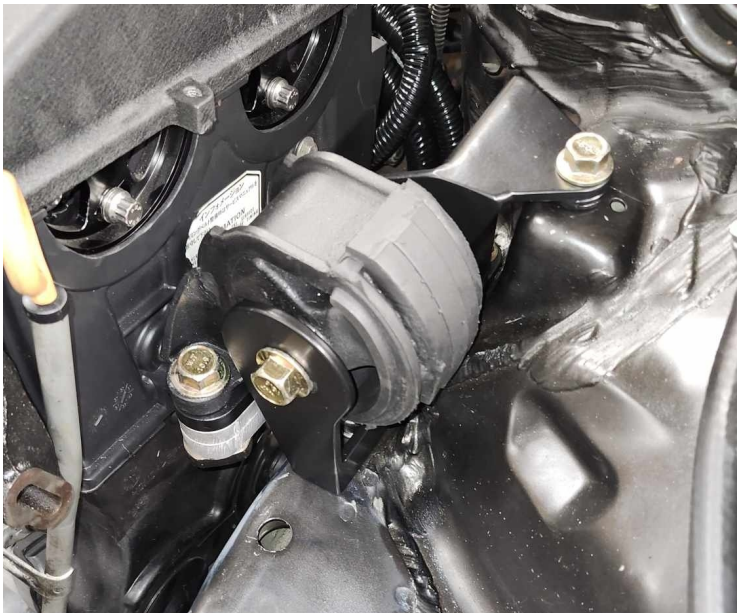
Install the 90-93 Accord timing side mount onto the engine:

Mounting in High Position: Use single short spacer.

Mounting in Low Position: Use single short spacer *plus* larger spacer and longer bolts.



Install the through bolt with the nut finger tight as before:



Now that the engine is in place you can tighten all the through bolts. If you want to eke out slightly more ground clearance lift the engine until all the slack is taken out at the through bolts, then tighten the bolts.

Traction Bar and Axles:

Install the traction bar, radius rods, and axles.
The torque rod from the traction bar will act as the front mount:



Please see the traction bar installation instructions for more info:
[Prelude Engineering LLC Traction Bar Instrucitons.pdf](#)

Trim Hood Support:

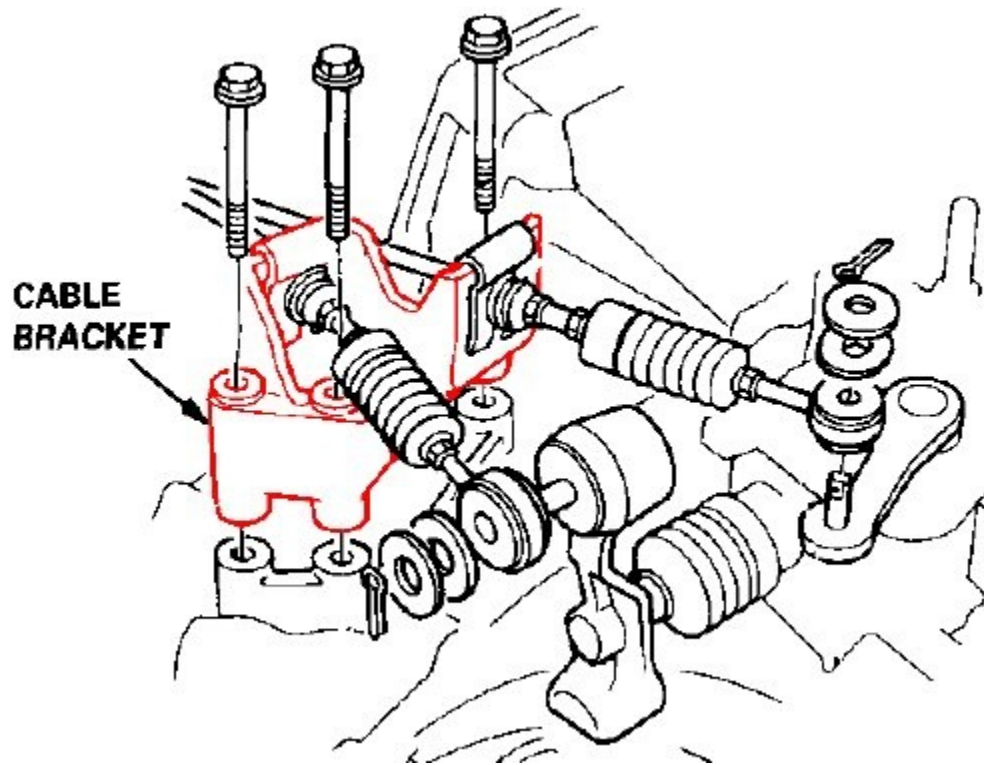
Only required if you are mounting the engine in the high position. Now you need to remove some support from under the hood so that it is able to close:



There is a way to do it so that the exterior paint isn't damaged. See this video for the instructions:
<https://youtu.be/cX9LtSfu7ZE>

Shifter Cable Bracket:

Install the shifter cable bracket onto the transmission:



Speed Sensor:

88-89: Place the 88-89 OE speed sensor into the transmission in the orientation shown. Then fab a short bracket/tab to hold it down:

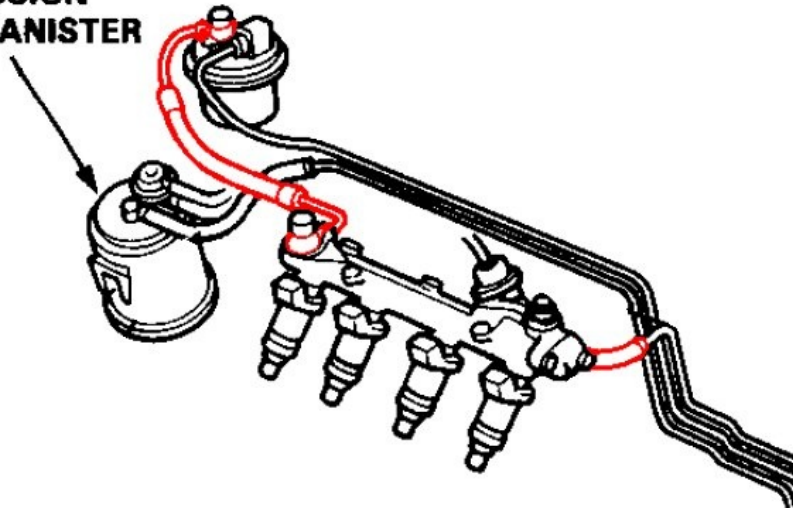


90-91: You can use the 92-96 Prelude or 90-93 Accord speed sensor.

Fuel System:

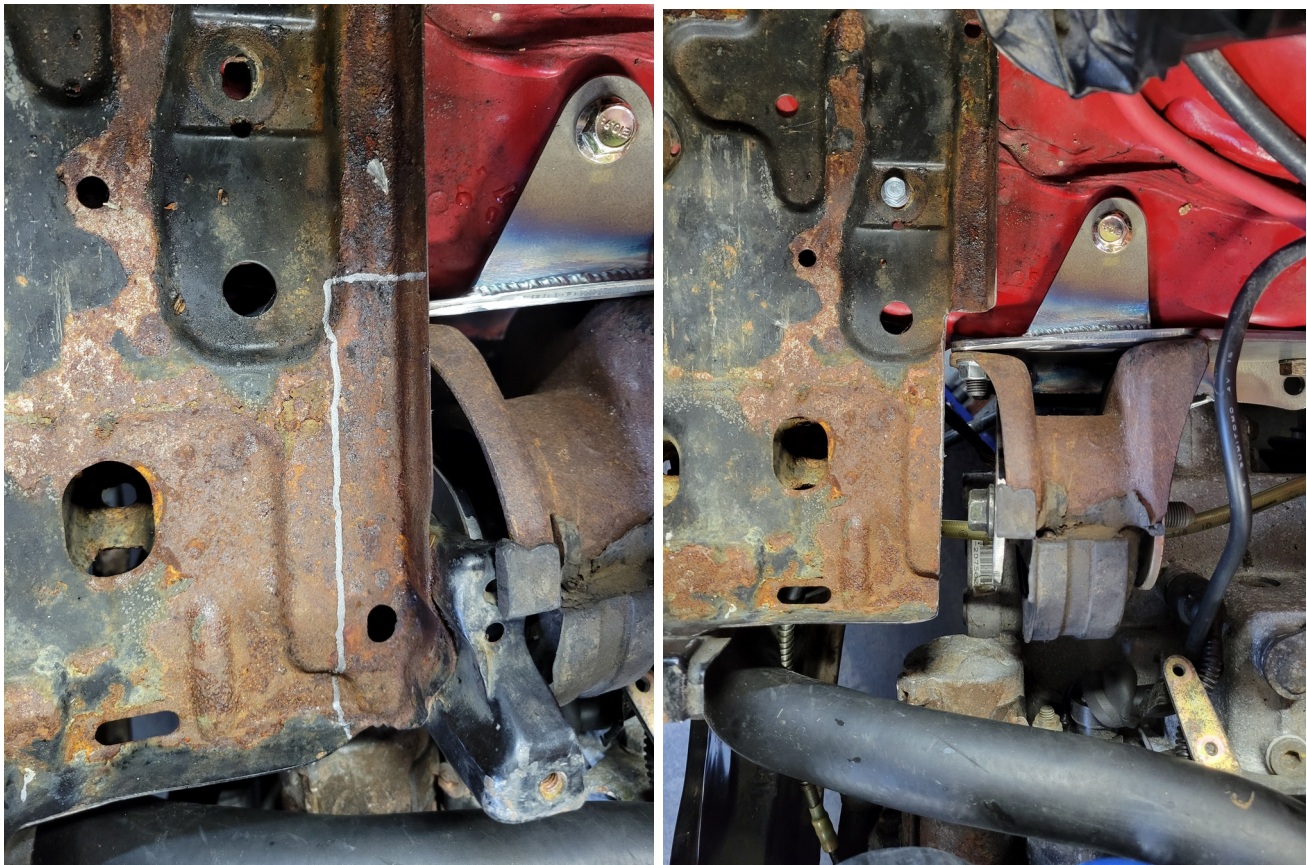
If you have the correct H/F series fuel rail you can hook up the 3g Prelude feed and return lines without modifications:

EVAPORATIVE EMISSION (EVAP) CONTROL CANISTER



Battery Tray:

If you are going to keep the battery in the OE location you will need to trim the corner of the tray to clear the transmission mount. You can keep the same size battery:





Engine Accessories:

Install the engine accessories starting from the bottom:

AC compressor + bracket

Alternator + bracket

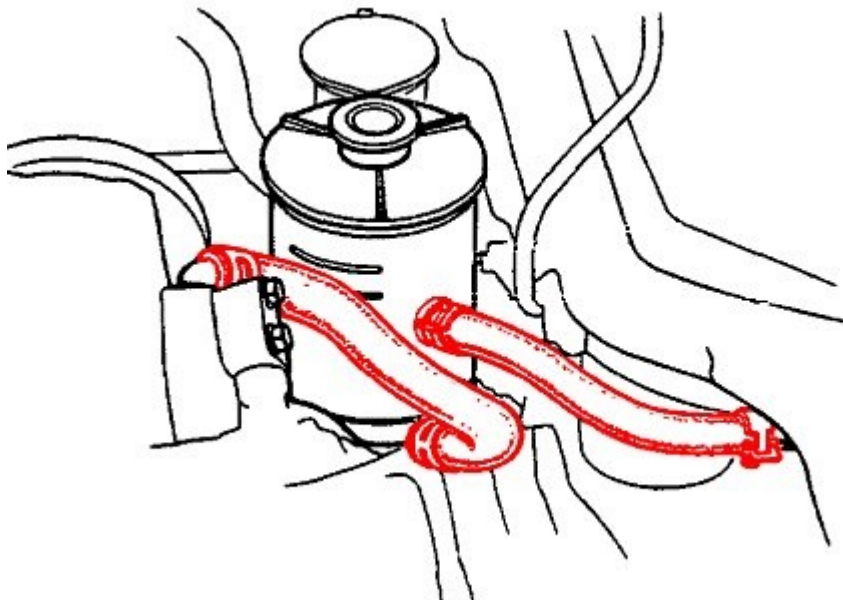
Power steering pump + bracket

After you install the power steering belt check the clearance to the chassis. The clearance is supposed to be very close but it should not touch. If it is touching then loosen the left and right engine mount through bolts. With those loose use a pry bar to shift the engine slightly before tightening the bolts again:



Power Steering Reservoir:

The power steering pulley will be very close to the reservoir. You can take the reservoir off the mount and secure it slightly further away from the pulley using zip ties or drilling new holes for the mount:



Intake/Header/Exhaust:

Intake Tube:

The 3G Prelude air box and tubing does not fit with this swap. You will need to do something custom. We suggest at least 3" tube with the appropriate silicone couplers for the intake.

Exhaust Manifold:

You can use the OE manifold for the H22 or an aftermarket one, there is plenty of clearance with the traction bar. Some aftermarket manifolds hang notably lower than the oil pan and you may want to speak to a local fabricator to modify it for ground clearance.

Exhaust:

The stock 3G Prelude exhaust would be acceptable (maybe not ideal) for an F-series swap but too small for H-series. Trubendz.com sells DIY exhaust kits for the 3G Prelude. I would suggest 2.5" or 3" for an H22.

Either way you will need to DIY or have an exhaust shop mate the header to the rest of the exhaust.

When using rubber engine mounts we suggest having a good length of flex pipe before the catalytic converter (like the stock header). 6-8" should be enough.

Cooling:

Radiator Hoses:

Install the 3G Prelude loser hose, it might require slight trimming.

Install the 92-96 Prelude upper hose, it will require trimming because it is too long.

Radiator Fans:

The large main fan on the right side can be reused. The smaller fan on the left will be very tight and must be replaced with a slim fan if you want to fit the AC compressor and lines.

Cruise Control:

The new timing side mount and bracket will interfere with the cruise control actuator. If you want to retain cruise control Prelude Engineering LLC offers a relocation kit that will tuck the actuator into the rear of the engine bay:

prelude-engineering.com/cruise-control-actuator-relocation-kit/

Automatic Chassis?

If your Prelude is currently an automatic and you are converting it to manual at the same time as this swap then follow this auto-to-manual video: <https://youtu.be/Hb-EOylyHHc>

However ignore these steps from the video:

Anything to do with the engine, engine harness, transmission, or engine mounts

Installing the clutch hard line

Installing the shifter and cables (you will use the 90-93 Accord shifter)

You are mainly doing the column, pedals, and interior wiring from the video. Everything else will be from the engine swap. Instead of installing the OE hard line setup we recommend installing a braided clutch soft line kit for a 92-96 Prelude.

Swap Wiring:

Prelude Engineering LLC does not officially support any engine harness but we do strongly recommend a Rywire.com swap harness. We have experienced quality and consistency issues with other brands. Here is the harness from Rywire you can use for this swap:

<https://www.rywire.com/product-p/h1-milspec.htm>



Although we do not offer free support for any engine swap harness (please contact the company that made your harness). We do maintain a blog post about 3g Prelude specific engine swap wiring which should be very helpful when wiring up your swap:

prelude-engineering.com/blog/3g-prelude-engine-swap-wiring-information/



Contact us if you have any questions about the swap.

Bolt Information:

Here are the bolt lengths for each position, in case you get them mixed up.

Note: If there are bolt supply issues the lengths supplied with your kit may vary 5-10mm. Example: 50mm bolt supplied in place of a 45mm one.

When measuring bolts you measure from under the head to the end of the threads:



