

# PERRIN

## Engine Mounts for EJ Series Engines

2023-01-05

PSP-DRV-055

Thank you for purchasing this PERRIN product for your car! Installation of this product should only be performed by persons experienced with installation of aftermarket performance parts and proper operation of high performance vehicles. If vehicle needs to be raised off the ground for installation, the installer must use proper jacks, jack-stands and/or a professional vehicle hoist for safety of the installer and to protect property. If the vehicle is lifted improperly, serious injury or death may occur! Please read through all instructions before performing any portion of installation. If you have any questions, please contact our tech department prior to starting installation. We can be reached in any of the following methods:

Email [Tech@PERRINperformance.com](mailto:Tech@PERRINperformance.com)

Instant Chat off the main page of [www.PERRINperformance.com](http://www.PERRINperformance.com)

Or simply call our tech team at 503-693-1702

### GENERAL MODIFICATION NOTE

Modifications to any vehicle can change the handling and performance. As with any vehicle extreme care must be used to prevent loss of control or roll-over during sharp turns or abrupt maneuvers. Always wear seat belts, and drive safely, recognizing that reduced speeds and specialized driving techniques may be required. Failure to drive a vehicle safely may result in serious injury or death. Do not drive a vehicle unless you are familiar with its unique handling characteristics and are confident of your ability to maintain control under all driving conditions. Some modifications (and combinations of modifications) are not recommended and may not be permitted in your state or country. Consult the owner's manual, service manual, instructions accompanying these products, and local laws before purchasing and installing these modifications. You are responsible for the legality and safety of the vehicle you modify using these components.

### SPECIAL NOTES:

- The use of a factory service manual is highly recommended for installation. These can be purchased online at <http://techinfo.subaru.com>.
- Expect added NVH during all driving situations especially at Idle. Some NVH can be reduced by raising the stock Idle RPM. Roughly 100-200 RPM more than stock is a good starting point. This must be done using an ECU reflash device like an Accessport. If using an Accessport, this parameter can be adjusted by going to Tune/Adjustments/ Idle.
- A threaded type adjustable jack stand placed under the engine, is required to safely install these mounts. These are generally too tall to use typical car jack stands with, which means this install needs to be done on professional type hoist. Failure to use an adjustable jack stand while lifting engine can result in a very dangerous situation.
- We highly recommend taking these to a shop to install do to having to raise engine and the potentially unsafe working condition from working in a small area.
- Special care must be taken when installing PERRIN Engine Mounts with aftermarket headers. Wrapping and/or additional shielding on the header primaries is required to keep heat away from the PERRIN Engine Mount to prevent bushings from being damaged. Especially during dyno tuning (with very little air flowing around headers and mounts), care must be taken to prevent damage to the bushings.
- If "U" bracket is removed from motor mount for maintenance reasons, re-torque bolt to 40ft-lbs

### Included Parts with PERRIN Engine EJ Mount Kit:

- (1) PERRIN Left Engine Mount
- (1) PERRIN Right Engine Mount
- (2) Extra thick M10 Washers



### Installation Instructions

1. Raise car off ground using professional hoist or jack and jack stands.
2. Remove lower splash guard from car. This step will vary from year to year.

3. Remove intake system from car. This step will vary greatly depending on intake installed.
4. If Top Mounted Intercooler is installed, remove intercooler to expose Pitch Stop Mount.
5. If Front Mount Intercooler is installed, remove engine bay boost tubes. **NOTE: This still will vary depending on intercooler setup.**
6. Locate pitch stop mount and remove forward 14mm bolt and nut.
7. Remove (2) 14mm nuts and washers securing engine (engine mounts) to engine crossmember. **NOTE: Some aftermarket front swaybars may need to be unbolted to gain clearance to reach these nuts. In most cases removing the left and right bushing, and center plate/jack point will work.**
8. Remove bolts securing downpipe to catback exhaust (this step may vary do to different exhaust systems).
9. If aftermarket transmission mount is installed, remove lower connection at tranny crossmember. **This is done to ensure no damage occurs to tranny mount while engine is raised up.**
10. Engine should now be free to raise up. Place threaded adjustable jack stand under oil pan and make sure that a block of wood is used between oil pan and stand to help protect pan from getting damaged. Raise engine up roughly 2.5”.
11. Locate and remove (4) 14mm bolts securing OEM engine mounts to block. The forward bolts are easy to access, but rear bolts are located in a small, cramped area. Using a combination of 3/8 drive ratchet, 14mm socket, and 14mm wrench will help remove the rear bolts.



12. Locate PERRIN Engine Mount marked RIGHT and install this to the right side of engine using OEM bolts removed earlier. **NOTE: Make sure and align mount so the “Front and Arrow” are pointed toward front of car. Snug both bolts down then tighten bolts to 30-35ft-lbs. NOTE: Take care to not cross thread or overtighten these bolts or removal of engine may be necessary to fix.**
13. Locate PERRIN Engine Mount marked LEFT and install this to the left side of engine using OEM bolts removed earlier. **NOTE: Make sure and align mount so the “Front and Arrow” are pointed toward front of car. Snug both bolts down then tighten bolts to 30-35ft-lbs. NOTE: Take care to not cross thread or overtighten these bolts or removal of engine may be necessary to fix.**
14. Drop engine down slowly making sure to line up stud with slots in engine cross member. **NOTE: If stud does not line up with slots in subframe, raise engine slightly to reduce weight on mounts. Then use a prybar to move engine left to right or front to back. Make sure it is centered left to right when done.**
15. Reinstall OEM washer and nut to stud on motor mount. Tighten nuts to 45ft-lbs. **NOTE: Included are (2) washers that can be used if vehicle did not have these during the removal process.**
16. Tighten/reinstall all the follow items you may have loosened or removed in earlier steps:
  - a. Connection on subframe where transmission mount bolts to. If this mount doesn't line up use a pry bar to help move engine around.
  - b. 14mm nut and bolt securing pitch stop mount to transmission.
  - c. Top mount intercooler or boost tubes from front mounted intercooler.
  - d. Catback Exhaust system
  - e. Intake system.
  - f. Lower splash guard.
17. Start engine and take car for test drive. Initially you will notice additional noises and or vibrations in the car. This perfectly normal after installation.
18. Periodically inspect mounts to ensure no damage has occurred to them from extreme conditions like drag racing or road racing.

Questions, Comments and Suggestions Contact: [Tech@PERRINperformance.com](mailto:Tech@PERRINperformance.com)

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Call Our Tech Team at 503-693-1702

# PERRIN

# Engine Mounts for Subaru FA DIT Engine

2023-01-05

PSP-DRV-055

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## GENERAL MODIFICATION NOTE

Modifications to any vehicle can change the handling and performance. As with any vehicle, extreme care must be used to prevent loss of control or roll-over during sharp turns or abrupt maneuvers. Always wear seat belts, and drive safely, recognizing that reduced speeds and specialized driving techniques may be required. Failure to drive a vehicle safely may result in serious injury or death. Do not drive a vehicle unless you are familiar with its unique handling characteristics and are confident of your ability to maintain control under all driving conditions. Some modifications (and combinations of modifications) are not recommended and may not be permitted in your state or country. Consult the owner's manual, service manual, instructions accompanying these products, and local laws before purchasing and installing these modifications. You are responsible for the legality and safety of the vehicle you modify using these components.

## SPECIAL NOTES:

- The use of a factory service manual is highly recommended for installation. These can be purchased at <http://techinfo.subaru.com>.
- WRX models with CVT tranny will NOT be able to jack the engine up enough to easily remove motor mounts through described methods below. To remove motor mounts on these models, complete header/turbo removal must be done to gain access and remove mounts from of car. These instructions are NOT included.
- Expect added NVH during all driving situations especially at idle. Some NVH can be reduced by raising the stock idle RPM. Roughly 100-200 RPM more than stock is a good starting point. This must be done using an ECU reflash device.
- A threaded type adjustable jack stand placed under the engine is required to safely install these mounts. These are generally too tall to use typical car jack stands with, which means this install needs to be done on professional type hoist. Failure to use an adjustable jack stand while lifting engine can result in a very dangerous situation.
- We highly recommend taking these to a shop to install due to having to raise engine and the potentially unsafe working condition from working in a small area.
- Special care must be taken when installing PERRIN Engine Mounts with aftermarket headers. Wrapping and/or additional shielding on the header primaries is required to keep heat away from the PERRIN Engine Mount to prevent bushings from being damaged. Especially during dyno tuning (with very little air flowing around headers and mounts), care must be taken to prevent damage to the bushings.
- If "U" bracket is removed from motor mount for maintenance reasons, re-torque bolt to 40ft-lbs

## Included Parts with PERRIN FA DIT Engine Mount Kit:

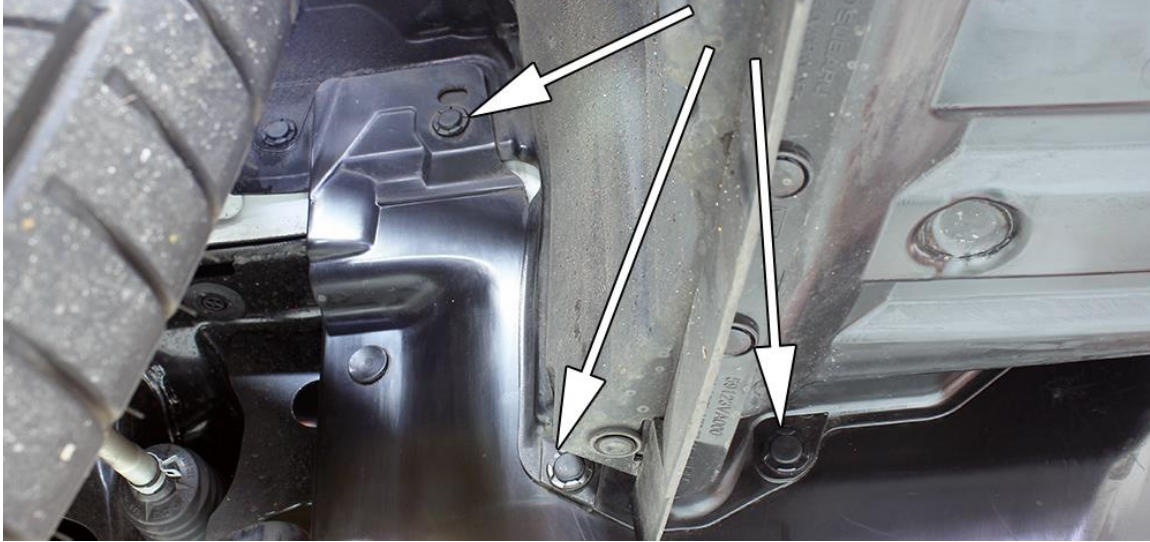
- (1) PERRIN Left Engine Mount
- (1) PERRIN Right Engine Mount
- (2) Spacers with Flat
- (2) Extra thick M10 Washers



## Installation Instructions

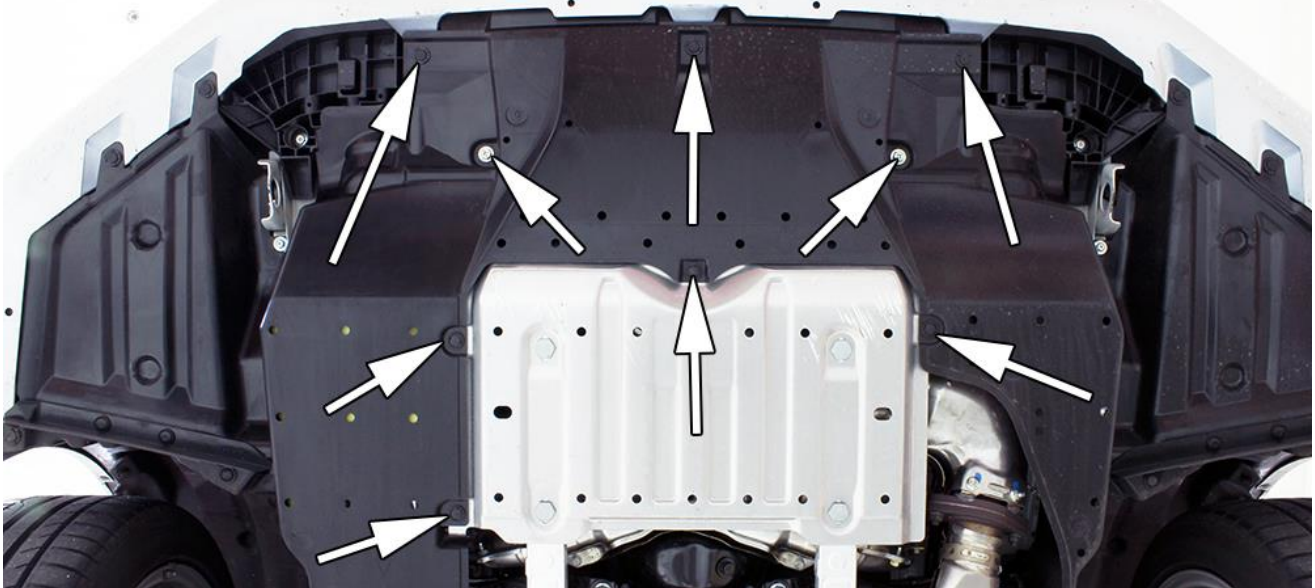
1. Using a professional vehicle hoist, or proper jack and jack stands, raise vehicle off the ground. The vehicle's weight must be supported by jack stands. Death or serious injury could result from an improperly supported vehicle.
2. Using proper panel removal tool or flat head screwdriver, locate and remove (3) plastic fasteners in each wheel well as shown below.

## Remove Plastic Fasteners In Both Left and Right Wheel Wells.

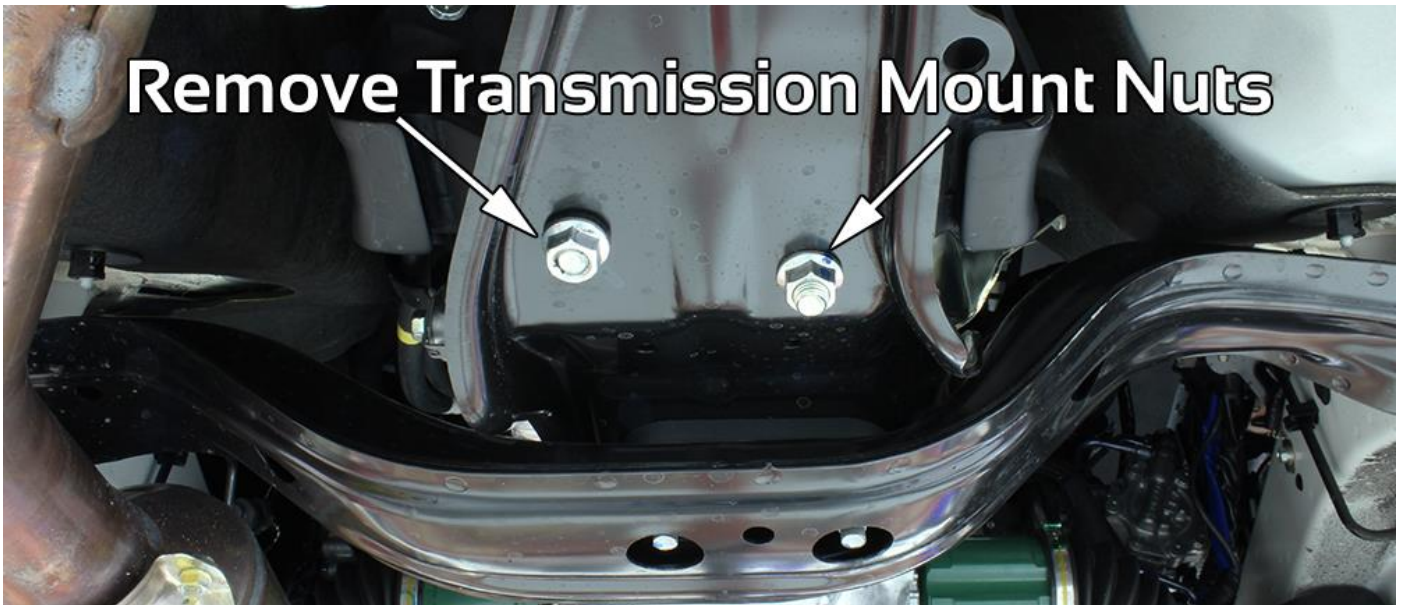


3. Using proper panel removal tool or flat head screwdriver, locate and remove (7) plastic fasteners and (2) 12mm headed bolts from lower portion of splash guard as shown below.

## Remove (7) Plastic Fasteners and (2) Bolts



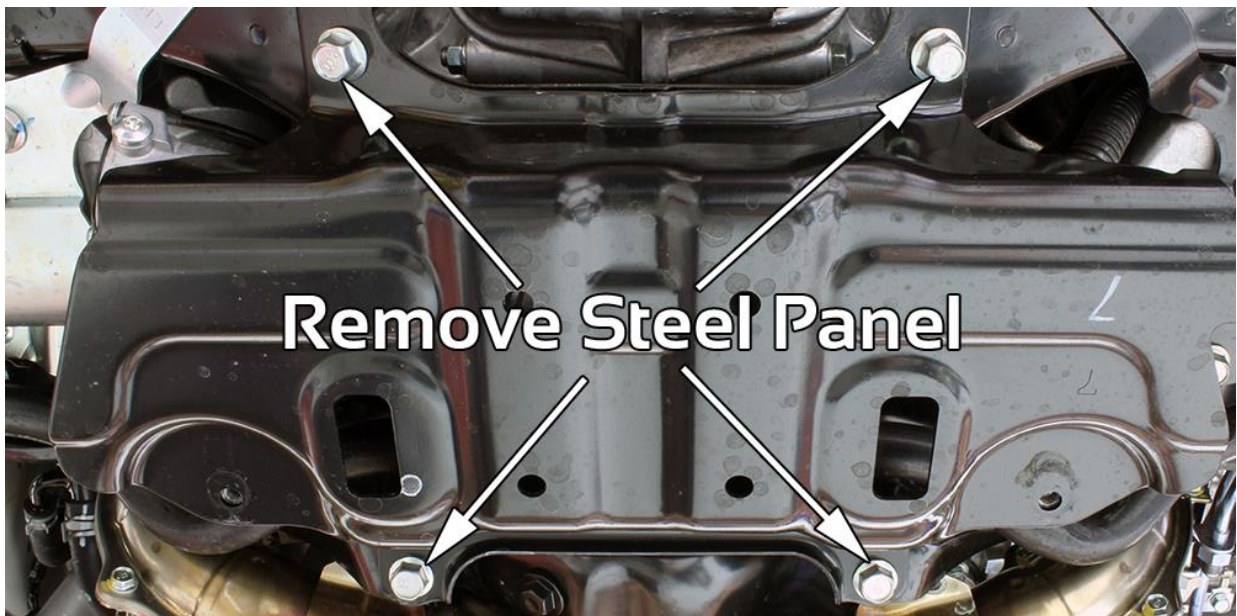
4. Using the above diagram, remove lower aluminum skid plate from (2) large aluminum crash bars. Each of the (4) large bolts are secured with nuts on the backside. Take note of this as these may become lost during the next few steps.
5. Remove (2) large aluminum crash bars from chassis.
6. Remove (2) 14mm nuts securing transmission mount to sub frame. This is done to allow engine to be raised up higher in future steps.



7. Remove rear section of downpipe from exhaust system. This is the section that is after the "J" Pipe (where primary catalytic converter is) and before catback exhaust. All hardware and gaskets will be reused in future steps.
8. Locate and remove (2) 14mm motor mount nuts on either side of sub frame as shown below.

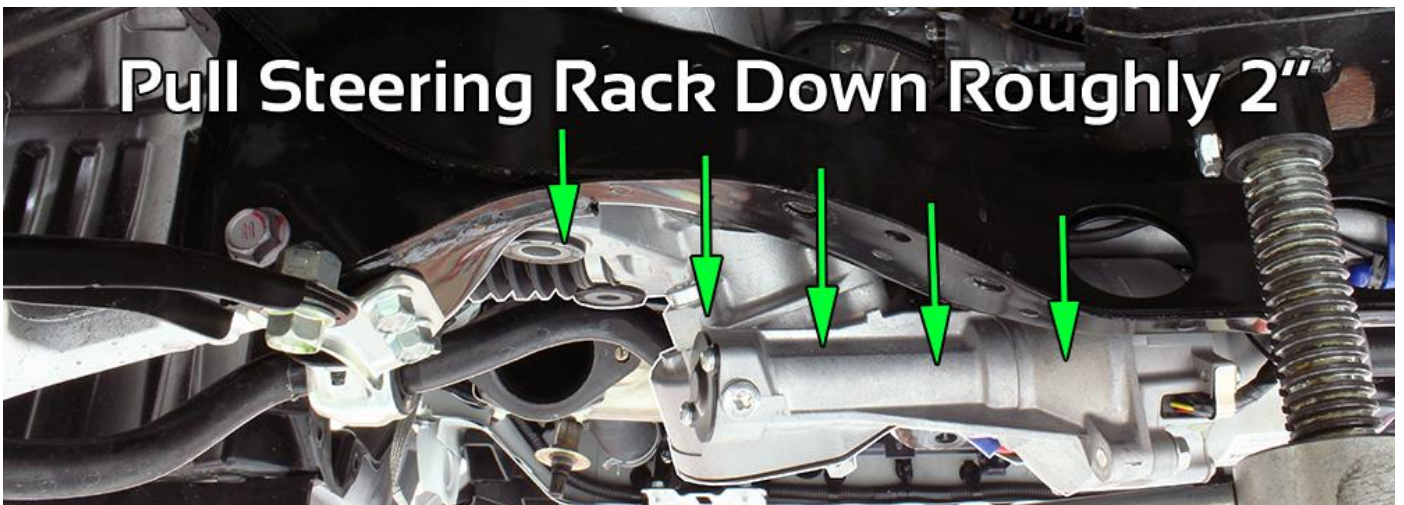


9. Locate and remove (4) bolts securing steel panel covering steering rack as shown below.
10. With panel removed, locate and remove (8) 14mm bolts securing steering rack to chassis. There are (2) steel brackets that will come off during this step. Take note of their orientation as these will be reinstalled in a future step.





11. With bolts removed, pull steering rack down away from chassis roughly 2" as shown below. This is done to add clearance between engine and sub frame and make future steps easier.
12. Locate and remove 14mm nuts and washers on either side of subframe that secure motor mounts to subframe. **NOTE: If aftermarket transmission mount is installed, remove lower connection at tranny crossmember. This is done to ensure no damage occurs to tranny mount while engine is raised up.**



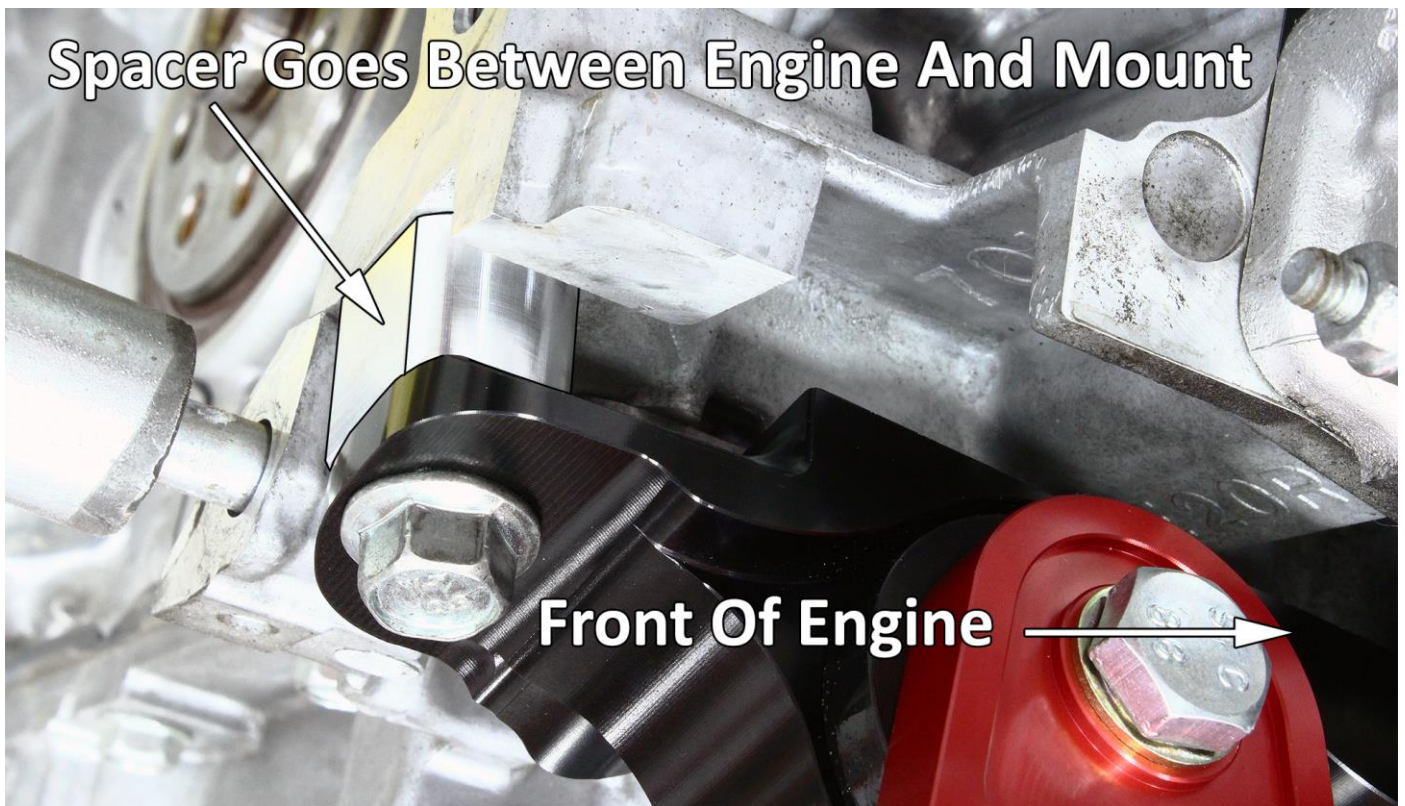
13. Open hood of vehicle and loosen bolt securing pitch stop mount to firewall. Leave hood open at this time. **NOTE: If aftermarket intercooler system, aftermarket pitch stop mount, or aftermarket intake is installed, make sure to remove from engine as the next step will raise engine up enough that damage will occur.**
14. Place proper engine jack or threaded type jack in location shown below and raise engine up roughly 4". The higher you can go the easier it will be to remove both motor mounts.



15. Locate and remove (2) 14mm bolts securing front portion OEM motor mounts to engine. These are located between each runner of the headers.
16. Locate and remove (2) 14 mm bolt securing rear portion of OEM motor mounts to engine (as shown below). **NOTE: These bolts thread into engine mount as well as block. Only unscrew bolts far enough to free mount from engine block.**
17. Remove both mounts from engine and chassis. This step can be tricky finding just the right orientation that will allow them to come out. Take time and make sure engine is raised high enough during this step.

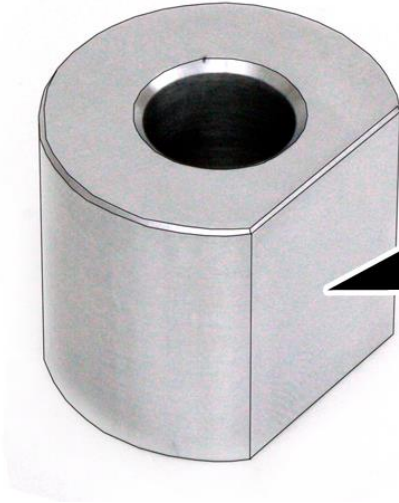


18. Locate PERRIN Engine Mount marked RIGHT and install this to the Right side of engine securing front connection using OEM bolt removed earlier. Leave bolt loose for now. **NOTE: Make sure to align mount so the "Front and Arrow" are pointed toward front of car.**
19. Remove 14mm bolt from rear of OEM mount. **NOTE: Bolt will not drop out of mount, it needs to be unscrewed completely.**



20. Place supplied spacer between PERRIN Motor mount and engine, making sure to line up flat portion with notch in engine (flat to the transmission). Slide 14mm bolt through PERRIN Mount and supplied spacer and thread into engine.
21. Snug both bolts down, then tighten front and rear motor mount bolts to 30 ft-lbs.

# Flat Side Faces Transmission



22. Locate PERRIN Engine Mount marked LEFT and install this to the left side of engine securing front connection using OEM bolt removed earlier. Leave bolt loose for now. **NOTE: Make sure to align mount so the "Front and Arrow" are pointed toward front of car.**
23. Remove 14mm bolt from rear of OEM mount. **NOTE: Bolt will not drop out of mount, it needs to be unscrewed completely.**
24. Place supplied spacer between PERRIN Motor mount and engine, making sure to line up flat portion with notch in engine. Slide 14mm bolt through PERRIN Mount and supplied spacer and thread into engine.
25. Snug both bolts then tighten front and rear motor mount bolts to 30 ft-lbs.
26. Drop engine down slowly making sure to line up stud with slots in engine cross member. **NOTE: If stud does not line up with slots in subframe, raise engine slightly to reduce weight on mounts. Then use a prybar to move engine left to right or front to back. Make sure it is centered left to right when done.**
27. Reinstall OEM washer and nut to stud on motor mount. Tighten nuts to 45ft-lbs. **NOTE: Included are (2) washers that can be used if vehicle did not have these during the removal process.**
28. Reinstall all the following items you may have loosened or removed in earlier steps:
  - a. Reinstall (8) bolts holding steering rack to chassis. (Torque bolts to 44.3 ft-lbs)
  - b. Reinstall (4) bolts holding steel plate to sub frame. (Torque bolts to 44.3 ft-lbs)
  - c. Reinstall (2) nuts securing transmission mount to chassis. (Torque bolts to 25.8 ft-lbs)
  - d. Reinstall "J" pipe/downpipe to exhaust system. (Torque bolts to 25.8 ft-lbs)
  - e. Reinstall (2) aluminum crash bars to chassis. (Torque bolts to 44.3 ft-lbs)
  - f. Reinstall aluminum splash guard to crash bars. (Torque bolts to 25.8 ft-lbs)
  - g. Reinstall plastic splash guard.
  - h. Tighten pitch stop mount bolt. (torque to 44.4ft-lbs)
29. Start engine and take car for test drive. Initially you will notice additional noises and or vibrations in the car. This perfectly normal after installation.
30. Periodically inspect mounts to ensure no damage has occurred to them from extreme conditions like drag racing or road racing.

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# PERRIN

## Engine Mounts for BRZ/FR-S/86

2023-01-05

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### SPECIAL NOTES:

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- Expect added NVH during all driving situations especially at Idle. Some NVH can be reduced by raising the stock Idle RPM. Roughly 100-200 RPM more than stock is a good starting point. This must be done using an ECU reflash device.
- A threaded type adjustable jack stand placed under the engine, is required to safely install these mounts. These are generally too tall to use typical car jack stands with, which means this install needs to be done on professional type hoist. Failure to use an adjustable jack stand while lifting engine can result in a very dangerous situation.
- We highly recommend taking these to a shop to install do to having to raise engine and the potentially unsafe working condition from working in a small area.
- Special care must be taken when installing PERRIN Engine Mounts with aftermarket headers. Wrapping and/or additional shielding on the header primaries is required to keep heat away from the PERRIN Engine Mount to prevent bushings from being damaged. Especially during dyno tuning (with very little air flowing around headers and mounts), care must be taken to prevent damage to the bushings.
- If "U" bracket is removed from motor mount for maintenance reasons, re-torque bolt to 40ft-lbs

### Included Parts with PERRIN BRZ/FR-S/86 Engine Mount Kit:

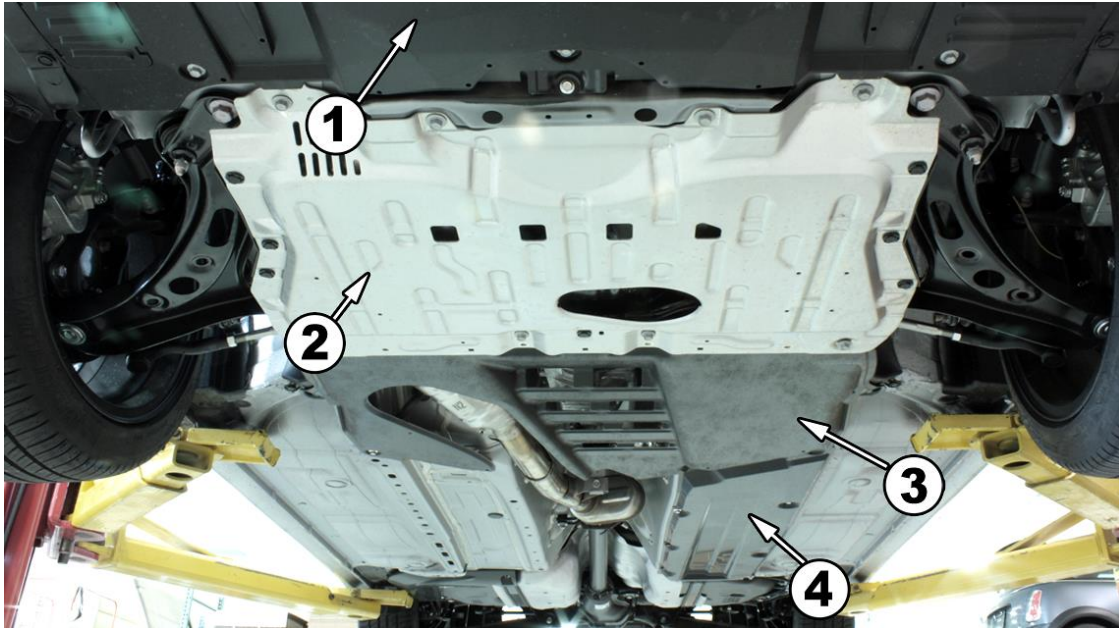
- (1) PERRIN Left Engine Mount
- (1) PERRIN Right Engine Mount
- (2) Spacers with Flat
- (2) Extra thick M10 Washers



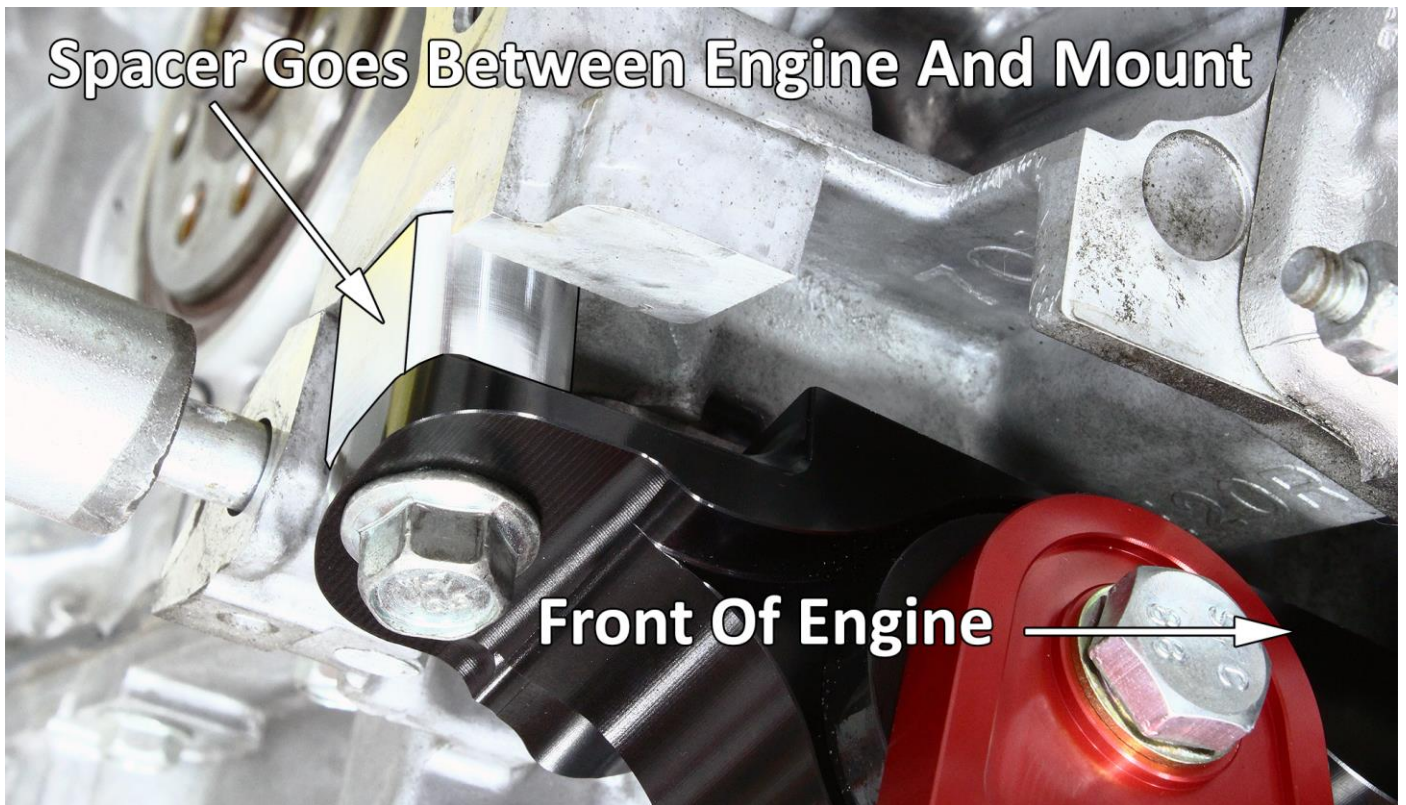
### Installation Instructions

1. Raise front wheels off the ground. The vehicles weight must be supported by jack stands. Death or serious injury could result from an improperly supported vehicle.
2. Unbolt connection where frontpipe and catback exhaust meet. This is done to ensure there is no damage to catback when engine is raised up.
3. If aftermarket transmission mount, or mount insert is installed, unbolt mount from transmission (4) 14mm bolts. **NOTE: If aftermarket mount or insert is installed and engine is raised up, damage to transmission mount can occur.**

4. Using the below diagram, remove lower fiberglass woven shield (#3). Locate and remove (11) 10mm bolts securing it to car.
5. Using the below diagram, remove lower aluminum splashguard (#2). Locate and remove (7) plastic pop-it fasteners, (8) 12mm bolts securing it to car.
6. Locate and remove 14mm nuts and washers on either side of subframe that secure motor mounts to subframe. **NOTE: If aftermarket transmission mount is installed, remove lower connection at tranny crossmember. This is done to ensure no damage occurs to tranny mount while engine is raised up.**



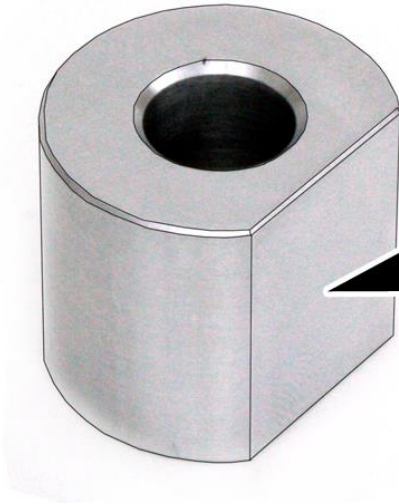
7. Using a threaded jack and a small block of wood, jack up engine from oil pan 2-3". This should be enough room to get motor mounts out from under engine.
8. Locate (4) 14mm bolts securing OEM engine mounts to block. Unscrew rear (2) bolts until they are loose in mount and free from engine. **NOTE: These bolts thread into engine mount as well as block. Only unscrew bolts far enough to free mount from engine block.**
9. Remove front (2) 14mm bolts from mount and remove mounts from car. **NOTE: These can be a little tricky to remove, and additional jacking up of engine may be necessary.**



10. Locate PERRIN Engine Mount marked RIGHT and install this to the right side of engine securing front connection using OEM bolt removed earlier. Leave bolt loose for now. **NOTE: Make sure and align mount so the "Front and Arrow" are pointed toward front of car.**
11. Remove 14mm bolt from rear of OEM mount. **NOTE: Bolt will not drop out of mount, it needs to be unscrewed completely.**

12. Place supplied spacer between PERRIN Motor mount and engine, making sure to line up flat portion with notch in engine (flat to transmission side). Slide 14mm bolt through PERRIN Mount and supplied spacer and thread into engine.
13. Snug both bolts then tighten front and rear motor mount bolts to 30 ft-lbs.

# Flat Side Faces Transmission



14. Locate PERRIN Engine Mount marked LEFT and install this to the left side of engine securing front connection using OEM bolt removed earlier. Leave bolt loose for now. **NOTE: Make sure and align mount so the "Front and Arrow" are pointed toward front of car.**
15. Remove 14mm bolt from rear of OEM mount. **NOTE: Bolt will not drop out of mount, it needs to be unscrewed completely.**
16. Place supplied spacer between PERRIN Motor mount and engine, making sure to line up flat portion with notch in engine. Slide 14mm bolt through PERRIN Mount and supplied spacer and thread into engine.
17. Snug both bolts, then tighten front and rear motor mount bolts to 30 ft-lbs.
18. Drop engine down slowly making sure to line up stud with slots in engine cross member. **NOTE: If stud does not line up with slots in subframe, raise engine slightly to reduce weight on mounts. Then use a prybar to move engine left to right or front to back. Make sure it is centered left to right when done.**
19. Reinstall OEM washer and nut to stud on motor mount. Tighten nuts to 45ft-lbs. **NOTE: Included are (2) washers that can be used if vehicle did not have these during the removal process.**
20. Reinstall all the following items you may have loosened or removed in earlier steps:
  - a. Reinstall aluminum splash guard.
  - b. Reinstall fiber type splash guard
  - c. Reinstall frontpipe to catback exhaust connection.
  - d. Reinstall transmission mount to transmission.
21. Start engine and take car for test drive. Initially you will notice additional noises and or vibrations in the car. This perfectly normal after installation.
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