# Nissan Figaro Engine and Gearbox Mount Polyurethane Bush Replacement Fitting Guide

**Before starting read this guide thoroughly and ensure you have the correct tools and parts and have properly assessed the job.**

This guide is written specifically for The Figaro Shop Poly Bushes, extra tools or parts maybe required if original parts have been modified, you should also check the condition of all items to satisfy yourself they are serviceable. For any questions contact The Figaro Shop on 01235 812511.

Please note this information is provided in good faith based on various information sources believed to be accurate. As with anything you should only carry out work with the correct tools and skills. We are therefore not responsible for anything occurring from this information\advice, you are doing so at your own risk!

# Tools Needed

- Trolley \ car jack
- Two sets of axle \ support stands
- Wheel chocks
- Metric socket set: 14mm
- Metric spanners: 10mm, 14mm
- Torque wrench
- Large flat bladed screwdriver or metal chisel (needed to remove bushes)
- Metal hack saw (needed to remove bushes)
- Hammer
- Goggles
- Torch \ Inspection lamp
- Mole grips (optional)
- Pry bar (optional but assists positioning)
- Wire brush (recommended)
- Half round metal file or Metal sandpaper (to clean up inside mounts)
- Angle Grinder with flap disks and\or drill with wire wheel (if cleaning up existing mounts)
- Vice or Press (To press in new bushes)

# Parts Needed

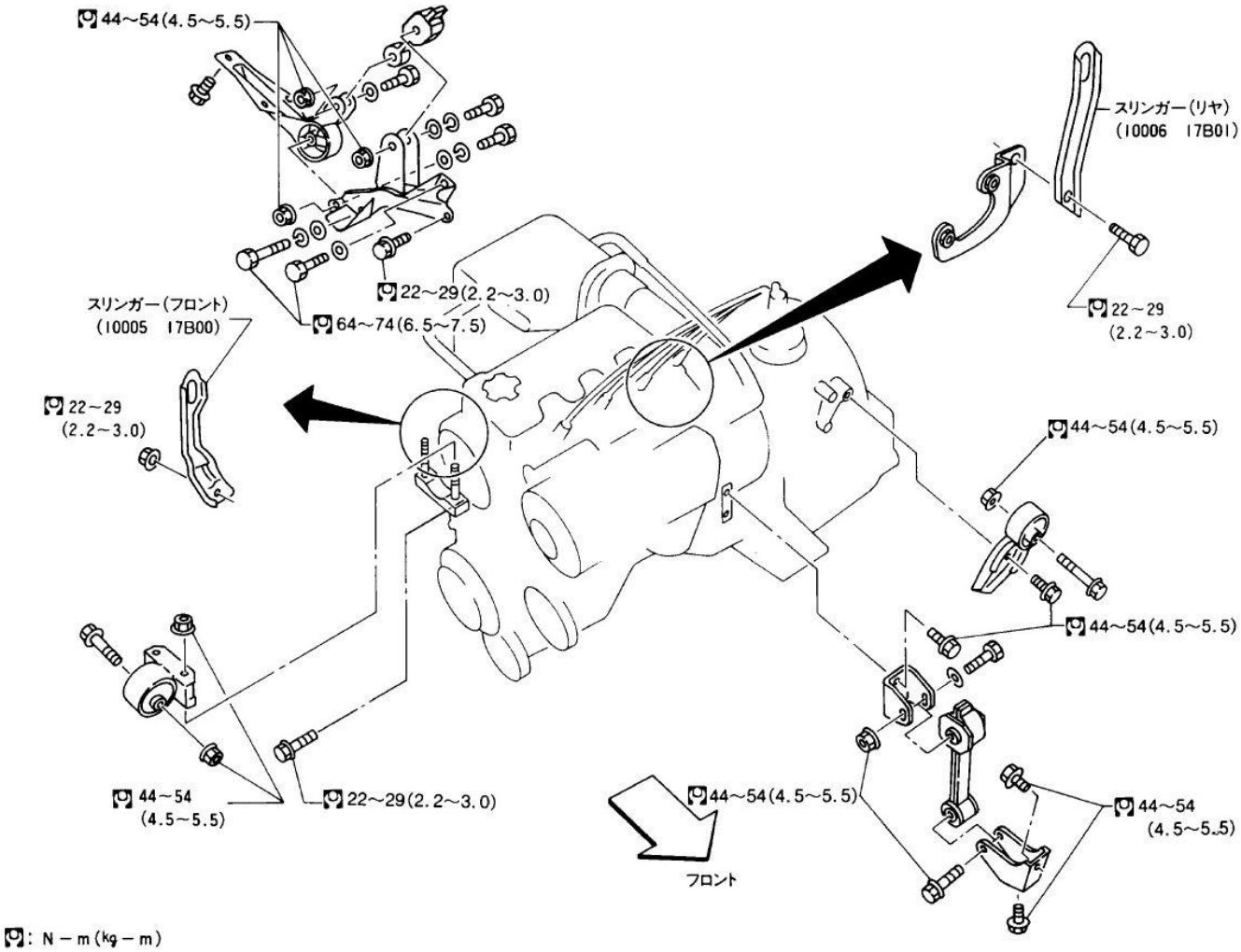
- New Engine and Gearbox Poly Polyurethane Bush Kit
- WD40\Penetrating Fluid (recommended)
- Hammerite Direct to Metal Spray Paint Black Smooth 400ml (if re painting mounts)
- Grease\Washing up liquid (for lubricating edge of rubber to aid fitting in mount)

# Reference Materials

- Figaro JPN TSM (Technical Service Manuals) - http://figaroownersclubforum.com/thread/5583/
- Jacking Points - http://figaroownersclubforum.com/post/16823/thread
- Figaro Owners Club - http://www.figaroownersclub.com/

**Fig 1. – New Figaro Shop Poly Bush Kit.**

**Fig 2. – Nissan Figaro TSM – Engine and Gearbox Mounts Exploded Diagram with Torque Settings**



# Removal Procedure (all)

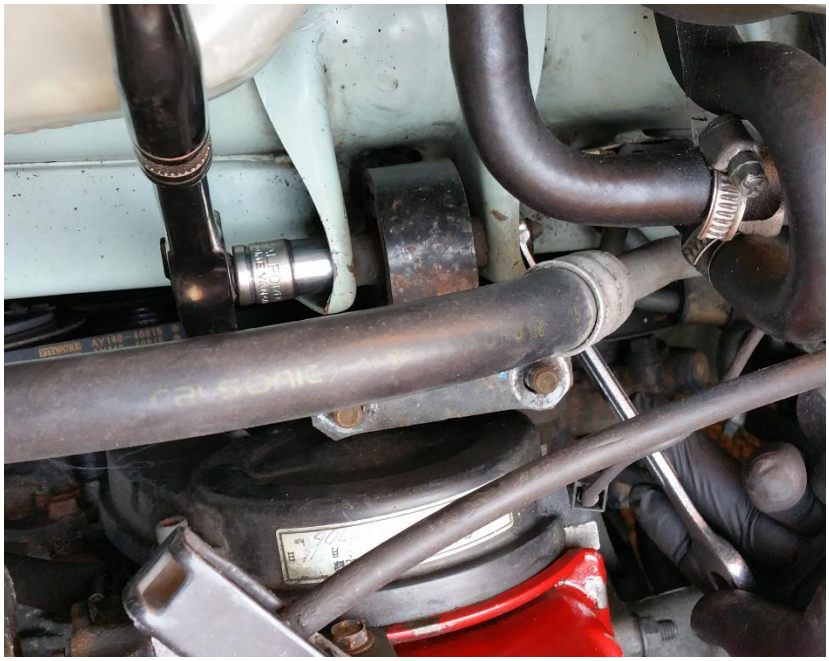
1) Park the car on a flat hard surface apply the hand brake and ensure the gearbox is in Park.
2) Chock the rear wheels to ensure there will be no movement.
3) Jack up the front of the car to allow enough space for access under the engine and fully support the front of the car on axle support stands and check it's fully stable with no movement; ensure the stand feet are positioned correctly so that they won't move or topple over. Care should be taken at all times whilst working under the car.

# Removal and Refitting Procedure (Engine Cambelt side)

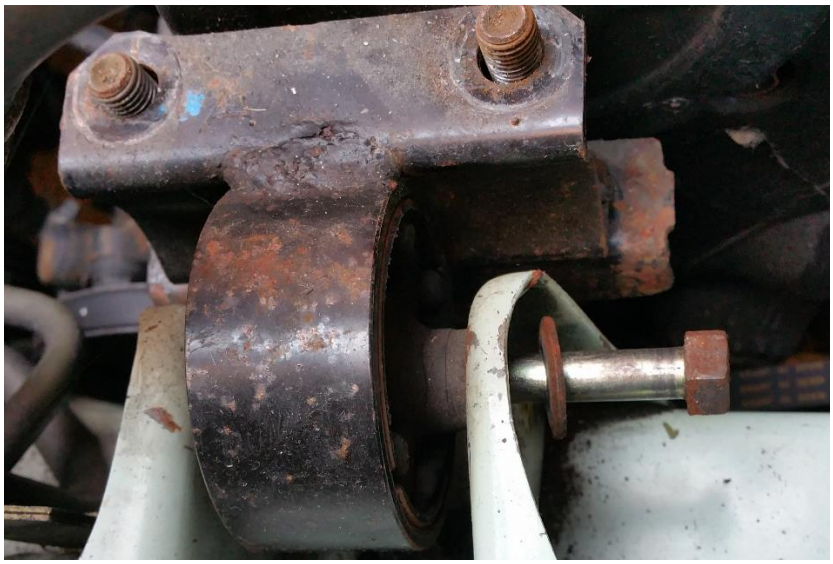
1) Support the engine using a jack and a piece of wood to ensure no damage to the engine sump. Support with another set of stands.

2) Using a 14mm socket or spanner undo and remove the top two nuts, ensure that the engine hasn't moved and is still properly supported.

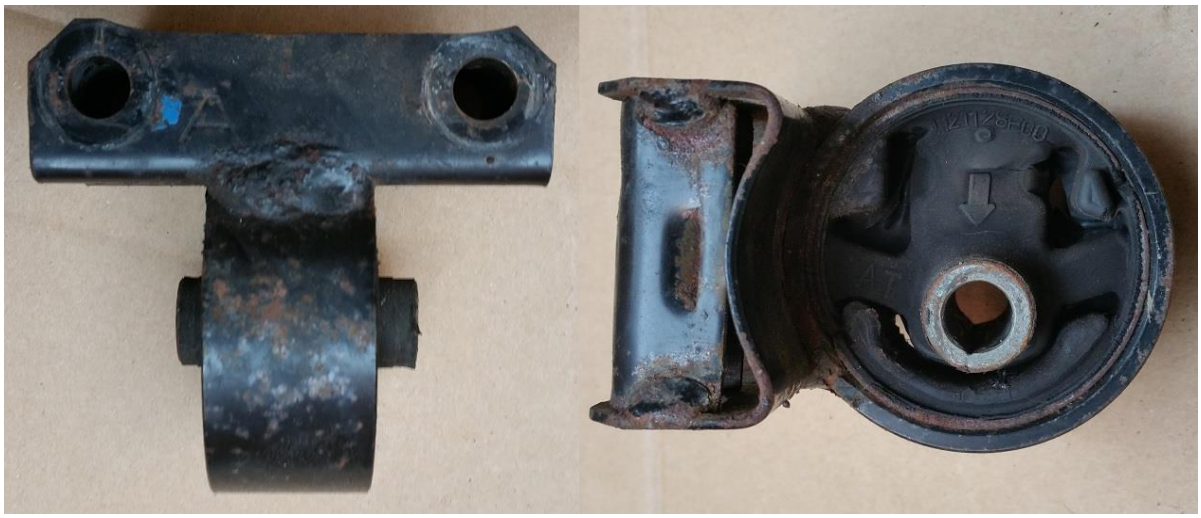
3) Using undo the bolt holding the mount to the wing, hold it with a 14mm spanner one end and undo using a 14mm socket.



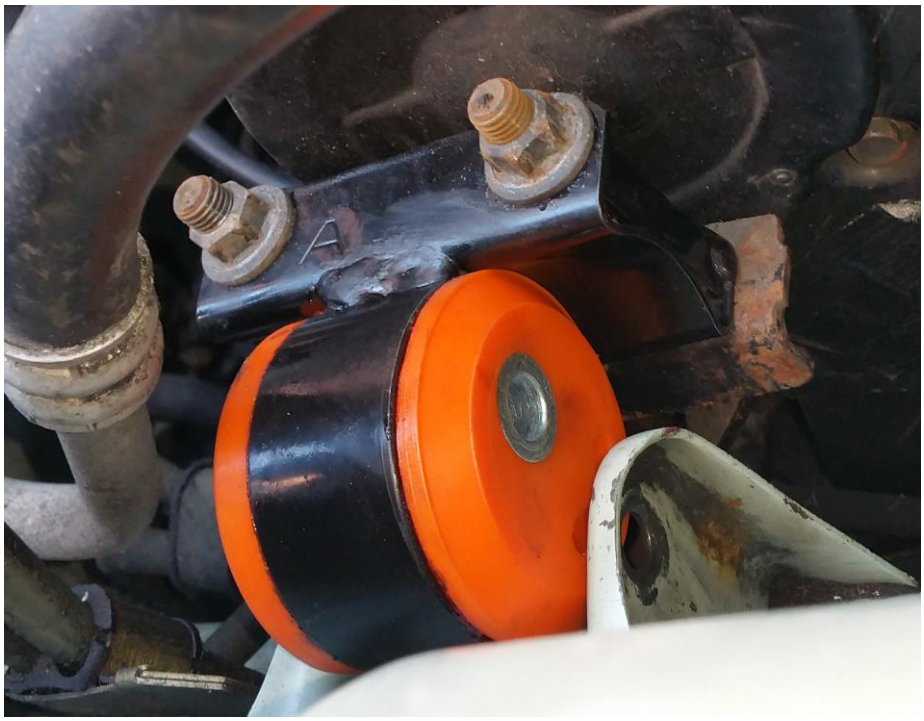
4) Withdraw the bolt, washer and nut and lift the mount off the two studs, ensure the engine does not move and is still stable.



5) Below shows the removed mount, note the stamped A which denotes the on the top.



6) Next follow the steps in the bush removal and replacement section.
7) To refit raise the engine up using the jack to aid fitting the new mount. Attach the mount with the A at the top as shown and tighten the two top nuts to the correct torque (Nissan TSM Details as 33-39 ft-lbf \ 44-54 N-m).




8) Lower the engine slowly and guide the mount into the wing support ensuring the holes line up, this maybe stiff due to the new mount and using a small amount of grease can help.

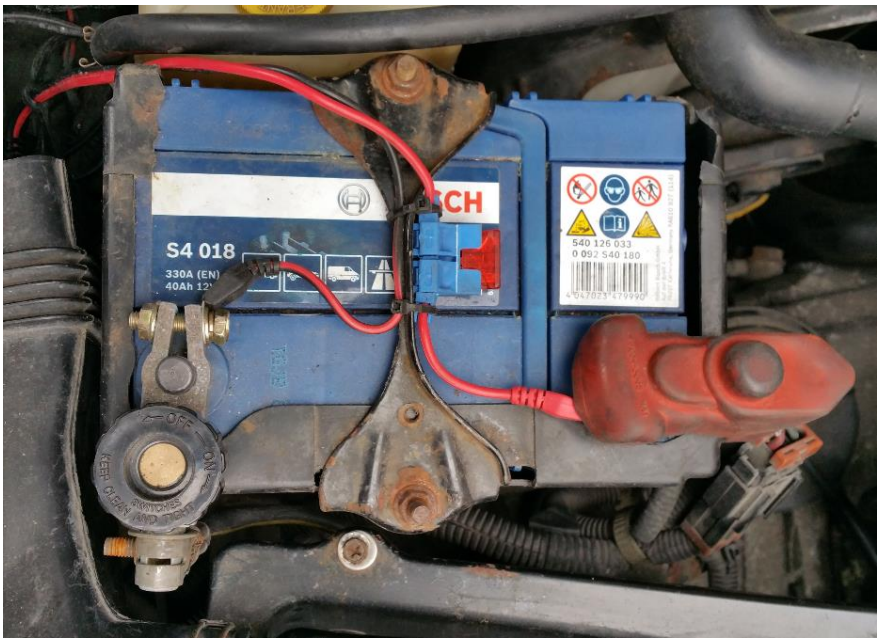
9) Put the washer on the bolt and slide it through the hole, hold one end with a 14mm spanner and tighten the nut with a 14mm socket to the correct torque (Nissan TSM Details as 33-39 ft-lbf \ 44-54 N-m).

10) Lower and remove the jack and ensure the engine is stable and the mount is supporting it properly.

# Removal and Refitting Procedure (Gearbox side)

1) Support the gearbox using a jack and a piece of wood to ensure no damage to the gearbox. Support with another set of stands.

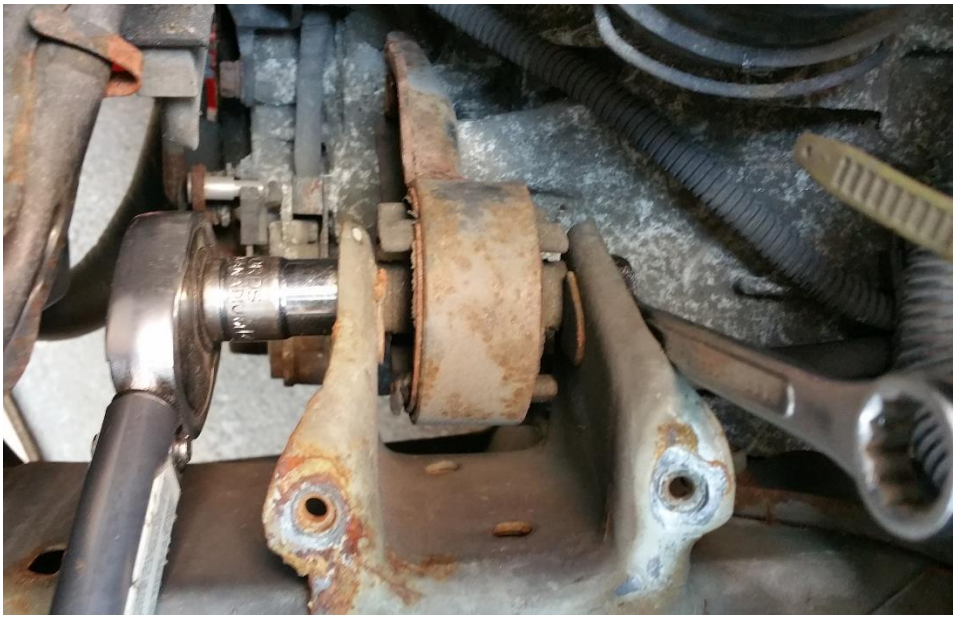
2) Using a 10mm spanner loosen the battery terminal nuts and remove from the battery posts.




3) Next using a 10mm spanner remove the top two battery support rod nuts.
4) Withdraw the battery support and rods and move the leads out of the way and remove the battery.

5) Using a 10mm socket remove the four bolts holding the battery tray in place and remove it. It's a good time to clean it up and if needed respray it.

6) Undo the bolt holding the mount to the wing, hold it with a 14mm spanner and undo using a 14mm socket, ensure that the engine and gearbox hasn't moved and is still properly supported. Withdraw the bolt, washer and nut.



7) Locate the three bolts holding the mount to the gearbox and remove them using a 14mm socket.

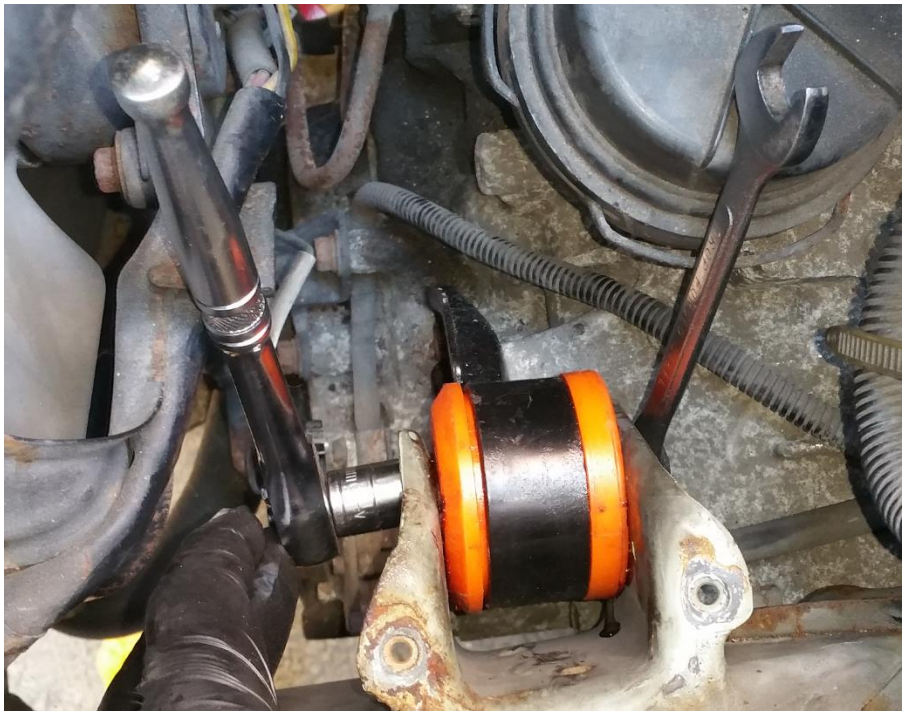
8) Lift the mount out of the bracket, ensure the engine does not move and is stable.

9) Below shows the mount and correct positioning of the bolts, spring and flat washers.

10) Follow the steps in the bush removal and replacement section.
11) To refit adjust the gearbox position using the jack as needed to aid fitting the new mount. Position the mount from below as there are metal lugs at the top in the wing support part as shown below. The gearbox may need lowering slightly.

12) Align the bottom section with the three holes and attach the mount with three bolts and their associated washers and tighten to the correct torque using a 14mm socket (Nissan TSM Details as 33-39 ft-lbf \ 44-54 N-m).
13) Raise the jack slowly and guide the mount into the wing support ensuring the holes line up, this maybe stiff due to the new mount. Grease can aid fitting.

14) Put the washer on the bolt and slide it through the hole, hold one end with a 14mm spanner and tighten the nut with a 14mm socket to the correct torque (Nissan TSM Details as 33-39 ft-lbf \ 44-54 N-m).



15) Lower and remove the jack and ensure the engine is stable and the mount is supporting it properly.

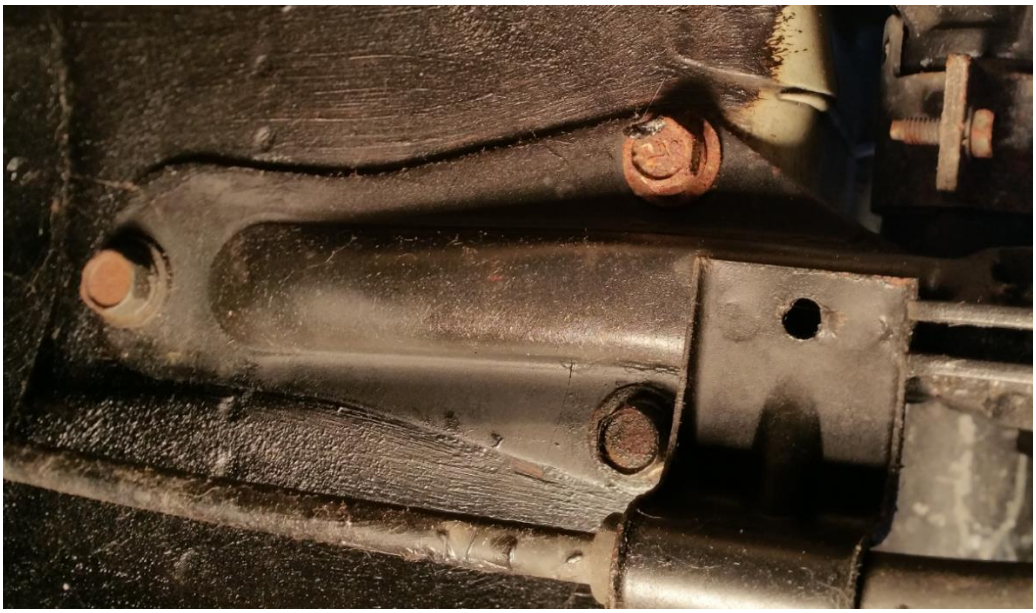
16) Refit the battery tray and using a socket fit the four 14mm bolts and tighten (Nissan TSM has no torque details).

17) Refit the battery support rods by hooking the ends to the slots in the body. Replace the battery and locate the rods in the support bar and tighten the end nuts using a 10mm spanner (Nissan TSM has no torque details).
18) Reattach the battery terminals and tighten using a 10mm spanner (Nissan TSM has no torque details).

# Removal and Refitting Procedure (Gearbox rear)

1) Support the gearbox using a jack and a piece of wood to ensure no damage to the gearbox. Support with another set of stands.

2) Ensure the car is absolutely stable at all times and there is no risk of any movement.
3) Using a 14mm socket undo the three bolts with spring and flat washers holding the mount to the floor, ensure that the engine and gearbox hasn't moved and is still supported.



4) Remove the gear control cable from the mount clip.
5) Undo the bolt holding the mount to the gearbox bracket, hold it with a 14mm spanner and undo using a 14mm socket, ensure that the engine and gearbox still hasn't moved and is still supported. Withdraw the bolt, washer and nut.

6) Undo the bolt holding the mount to the top support bracket, hold it with a 14mm spanner and undo using a 14mm socket, ensure that the engine and gearbox hasn't moved and is still supported. Withdraw the bolt, two washers and nut.

7) Remove the mount from the car.

8) Below shows the mount removed.

9) Follow the steps in the bush removal and replacement section.
10) To refit locate the mount into the correct position. Note that the insert on the mount is keyed and needs to be located correctly into the fitting with the slots in the correct position as shown below.

11) Put the washer on the longer bolt and slide it through the rubber mount hole, hold one end with a 14mm spanner and tighten the nut with a 14mm socket to the correct torque (Nissan TSM Details as 33-39 ft-lbf \ 44-54 N-m).

12) Put the washer on the shorter bolt and slide it through the top mount hole, the top support bar may need re-aligning. Hold one end with a 14mm spanner and tighten the nut with a 14mm socket to the correct torque (Nissan TSM Details as 33-39 ft-lbf \ 44-54 N-m).
13) Using a 14mm socket tighten the three bolts with spring and flat washers holding the mount to the floor (Nissan TSM has no torque details).
14) Reseat the gear control cable in the mount clip.

# Bush Removal and Replacement Procedure

1) Once the mount is removed from the car the below procedure details how to remove the old bush.
2) Remove the blade form a hack saw and inset it through the gap in the rubber, reattach it to the saw as shown below.

3) Cut through the rubber joining sections around the centre part. Remove and re-attach the blade as required for each section. Once cut all the way round remove the blade and the middle section as shown below.

4) Place the mount on a piece of wood to support it, locate the gap in the metal inserts join. Then using a small chisel and hammer locate the point to one side of it and between the insert and the mount frame. Hit it straight down and avoid damaging the mount.

5) The insert should move away from the edge and also push out as shown below.

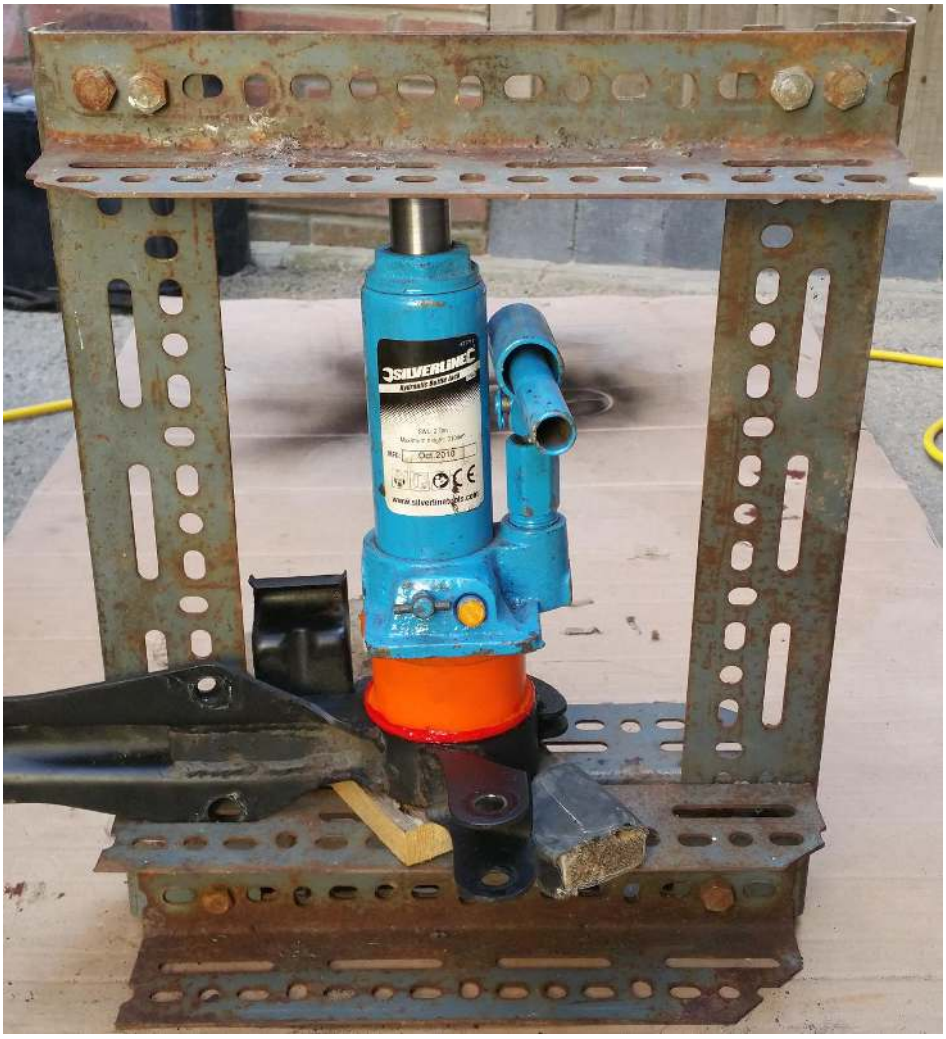
6) Once one side is tapped out the other should fall out from the mount as shown below.

7) Using a half round metal file or sand paper clean up the inside of any scoring or rust.

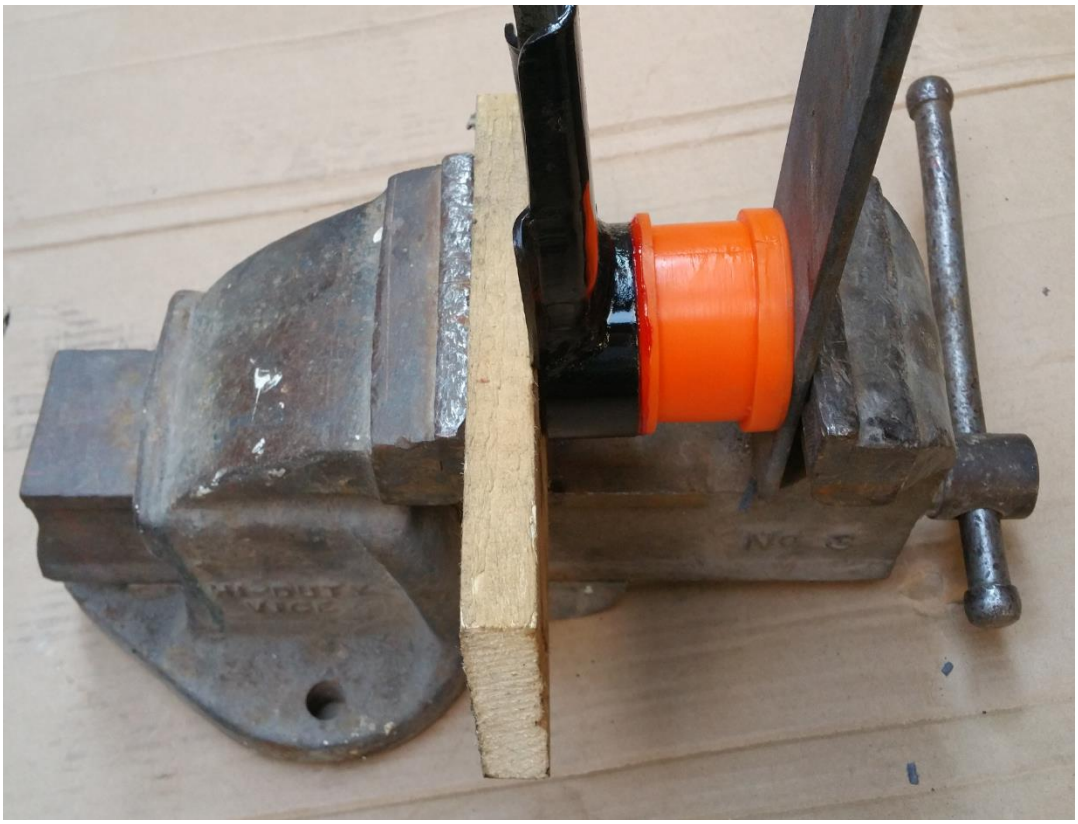
8) It's a good opportunity now to clean up the mounts using a wire brush and spray with some Hammerite Direct to Metal Spray Paint Black Smooth paint. For ease of spraying and drying loosely attach some wire to hang them up with. Ensure they are fully dry before fitting the inserts.

9) It's important to note that all the bushes and metal inserts are different for each mount so ensure the correct one is being fitted, also the bush need to be fitted with the holes in the correct position. See below point 16 for pictures these.
10) The bush fitting is tight to get over the edge lip. To aid fitting one edge is tapered, a small amount of grease or washing up liquid can be added to just this edge to help it slide into the mount, but don't apply to the whole insert else the bush will move around when fitted. Also don't fit the metal bush insert first as the big hole compresses slightly to aid fitting.

11) There are several ways to press the bush into the mount. If you don't have the appropriate tools then a local garage can press them in for you. I used two ways as detailed below.
12) For the first I used some old metal thick shelf racking frame angle and cut into pieces and bolted it together to make a small press frame. I then used a small bottle jack to apply the pressure. The mount was placed on some wood to allow it to lay flat and level as the mounting hole edge sections stick out. It's important that the mount and bush are level otherwise the bush will jam or get damaged when pressed in. Below shows this setup.




13) The other way is to use a big vice with wide enough jaws. In order to ensure the bush is pressed in evenly I used a thick piece of metal and a piece of wood either side. Ensure when tightening the bush goes in evenly. Below shows this setup.



14) If you have difficulty getting the bush to stay level in and go in evenly then an appropriately sized metal hose clip can be placed around the mount edge to help guide the bush in.
15) Once the bush edge is in evenly then it should go in easily and can be pushed in fully by hand.
16) Once in the correct position insert the metal insert, note they are different. Below shows the correct positions, bushes and inserts for each mount.

17) It's worth noting that when fitted as these are new they will be stiffer, therefore you will feel the engine more, especially if there are any issues such as a miss-fire.



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