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NISSAN PATROL – GU

Guide to Installing Rear Coil Spring Seat Reinforcement

Safety Notes::

Ensure required precautions are taken to prevent the ignition of Petrol or LPG Vapours by open flame, or sparks from grinding or welding.

Ensure appropriate, correctly serviced Fire Extinguishers are on hand in case of fire.

Ensure appropriate Personal Safety Equipment is worn at all times.

Special Notes:: All welding must be carried out by a qualified, competent welder, who has experience of Stress Failure Analysis for Fabricated Structures, and who can confidently work in overhead, awkward positions.

1. Pre paint the internal surfaces of reinforcement plates with a suitable metal primer, such as Kill Rust, in the areas that can not be painted after installation, and allow to dry before installation.
2. Raise the car on a hoist and using the manufactures procedures, remove the rear coil springs and shock absorbers. Special attention should be given to not damaging the brake lines or ABS wire looms.
3. Use a suitable device to support the differential housing, at a height that will allow access to the upper spring mounts for welding, but will not cause the brake lines and ABS wire looms to become stretched. **** (Reconnecting temporarily the sway bar works well)****
4. Remove the axle bump stops from both sides. Retain the bump stops and bolts for refitting at a later time.
5. In the area around the chassis rear spring mounts, Inspect for and Repair, any cracks that may have already formed. Severe cracks or cracks that travel the full width of a member will require special methods of Repair.

Minor cracks can be repaired by light grinding of the affected area and using full depth penetration welds, care being required to not burn holes in the thin material.

Welds that will be under the reinforcement plates, will require light grinding, to ensure the plates can correctly mate to the chassis surface with no gaps.

6. Clean all the spring seat and chassis surfaces where plates are to be installed, to allow for easy marking out.
7. **Note::** Due to the need for highest quality weld and the awkward positioning of the welds, Metal Inert Gas (MIG) is the preferred weld medium.
8. Hold in place the spring seat plates and using a suitable marker, mark out all weld points.
9. Hold in place, one at a time, the side support plates and mark out all weld points.
10. **Safety Check::** that there are no **fuel leaks** on the vehicle. If found, repair all leaks and wash down to remove any **fuel residue** that could be **ignited by sparks**, before proceeding further.
11. **Safety Check::** that there is no dry vegetation collected in the chassis or on top of the fuel tanks, etc, that can be **ignited by sparks**.
12. **Safety Check::** that no diff lock air lines, wire looms, or fuel lines are positioned inside the chassis cavity, as they will be damaged by heat when welding and at worst, **could catch fire**.

13. **Safety Check::** that there is sufficient clearance between the fuel and brake lines, above the right hand side spring seat, so heat from welding can not cause damage **or a fire**.
Special attention should be given to The Plastic Mounting Blocks, also.
14. **Safety Check:: ENSURE::** an operable and fully charged, B (E) class fire extinguisher is on hand and that you know how to use it.
Safety:: At all times a competent person must be watching for signs of fire. **** A water spray bottle is handy to keep heat down and to put out any small fires****
15. Using an abrasive buff, remove any paint or rust in the areas previously marked out, to ensure high quality welds are preformed on clean material.
16. **NOTE::** It is the **Installers RESPONSIBILITY**, to ensure that all items, as listed 1 to 15 above, are carried out in the manner prescribed.
17. Correctly position the LHS and RHS spring seat plates in their respective spring seats and hold each in place with suitable clamps, to ensure there is no gap between the factory seat and the new plate. Apply Plug Welds to all 6 holes, leaving a flat surface after welding.
18. Check that the mounting bolts and the nut threads for the bump stops are in good condition. If not, repair with a tap and die, 10 mm x 1.25 mm.
19. Installation of the side support plates.
The rear side support plates on LHS & RHS, will require a slight curl/bend in the ends to match the factory mount. This can be done on a vice with jaws opened to 25 mm and use a ball peen hammer to curl ends to the required amount.
21. ******* Weld ONLY the areas marked with coloured Marker Pen *******

Place the LHS rear side support plate in position and temporally install the bump stop mounting bolt, leaving the bolt slightly loose. **Do not** tighten at this time. Using 3 suitable clamps, clamp the side plate in position, in both planes, to ensure there is no gap present between the new plates and the factory mount surfaces. Tack weld the side support plate in position at numerous points and then remove the clamps.
22. Ensuring the plate is hard against the factory surface, weld the plug weld holes.

Applying a continuous weld, commencing at the chassis face and finishing at the end closest to the centre of the vehicle, weld the top edge of the new side support plate to the new spring seat plate. This weld should tie in the top seat & side support plate to the factory spring seat.
23. Tighten the bump stop bolt to pull the plate hard against the chassis, while tapping the side support plate into its correct fitment.

Finish welding all other areas as marked on the plate.
20. Repeat process 21 to 23 above, for the remaining three side support plates.
21. Paint all repair work when completed.
22. Remove the bump stop bolts and refit the bump stops on both sides.
23. Ensure the brake and fuel lines on the RHS are not rubbing together and are not in direct contact with the frame metal at any point. These pipes must be isolated in their original plastic blocks, or by some other form of isolating material.
24. Replace any other items previously removed for welding access and re-install springs, shock absorbers, and wheels.
25. Road test vehicle.