

Nippon Denso Contact Replacement Instructions



Nippon Denso Starter Motor

I have learned over 28 years of repairing starters that this Nippon Denso type are one of the best and most reliable on the market. Nearly every part on this type of unit rarely fails, apart from the solenoid contacts and the plunger.

This type of Nippon starter have hundreds of applications from Land Rover, Toyota, Kabota, marine, Harley Davison, etc.

Whether 1kW to 5kW it is nearly always the contacts that fail – they simply wear away due to the current, so when you turn your ignition key you get a click, maybe a few times before the starter works. In this case, the contacts will be the problem.

How to save yourself an absolute fortune

I have used a Land Rover defender/discovery 2kW starter as an example. Typical part numbers are: Denso OE 228000-7220, or Lucas LRT00171.

Ok, you have a few choices:

- 1) find yourself a cheap Chinese unit for about £130
- 2) visit a Land Rover agent and pay well over £200
- 3) repair your own OE unit for the price of the contacts and maybe the plunger if needed.

Now, this is not exactly a mind numbing job. Try to get the bloke up the road to fit them, as he knows nothing about cars, and finds it hard to do anything including going to work, to show how easy the job is. Anyway, couldn't find him, luckily my wife was available, and if she can do it, anyone can.

<http://www.sandcelectrical.com>



1. Disconnect your battery, make sure you don't lose your radio code. Don't worry if it's a Nippon Denso starter motor on your Kabota lawnmower (not many of them have radios).



2. Remove the three 7mm or 8mm screws on the back plate.



3. Remove the rubber gasket. Lift out the plunger. You will usually notice either one or both contacts have burnt away. I usually change both of these in most cases.



4. Check the plunger. You will see this will be very dirty and pitted, but in most cases, can be cleaned with a small wire brush or file. (I used to use a small model drill bit). If the round copper plate on the plunger has lost a substantial amount of copper and worn thin, then change it, it's up to you.



5. Remove both solenoid posts, nut, washer, insulator and O-rings. Make note of the order that you remove them in, as when replaced they must be insulated from the starter body. Note: Japanese normally usually always use 12mm or 14mm nuts on these units. One post usually falls out, the other you may need to lightly tap out.

6. Clean any dust and dirt from the inside housing.

7. All of the original nuts, washers, plastic insulators and rubber O-rings and bolts can be reused, unless by this time you have dropped any of them and they have bounced half way along your garage floor and out of sight. I can supply nuts and washers if you need them.



8. Refit the new contacts. Remember, both sets of contacts need the square plastic insulator sandwiched between the contact and the metal body of the starter. Also, the electrical connection coming from the inside of the solenoid housing fits in between the copper bolts and the copper contact. Then, it is totally insulated by the square insulator to the case.

9. Be careful when you tighten the nuts as the edge of the contacts sometimes lifts. They must be totally flat against the surface of the starter to enable whole surface contact between plunger and contacts.
10. Double check tight bolts, make sure there are no gaps. The main battery terminal has a serrated edge, this grips the contact so is slightly harder to tighten.



11. You can now re-fit the plunger. Don't forget the spring. Push the plunger down with your finger to make sure all moves freely and makes good flat contact with both contacts.



12. Replace rubber gasket and back plate.



13. Connect the lead from the main starter body. It is important not to over tighten as you may move the contact inside starter from their flat position.



14. Refit rubber boot.

15. To test on bench, earth the case with negative jump lead to the battery minus. Take the battery positive to positive stud without the rubber boot, then link a small wire from main positive stud to small spade. The starter should throw forward and spin.



16. Be proud of yourself, go and make a cup of tea, refit to Land Rover/Kabota/Toyota/boat etc.

Ring 01279 445668 if you need advice, and ask for Steve.
Ok, I'm off to the pub.