

# Land Rover Defender Discovery TD5 Diesel 2.5 Starter Motor Repair Kit Install

by **x8rltd** on June 30, 2015

## **Intro:** Land Rover Defender Discovery TD5 Diesel 2.5 Starter Motor Repair Kit Install

### **The Problem**

The Nippon Denso starter motor fitted to Land Rover Discovery and Defender TD5 2.5 Diesel models produced from 1998 to 2004 is prone to failure and is very expensive to replace.

The cause of the fault with these starters is worn contacts and a worn plunger assembly within the solenoid housing. The wear to the brush gear, armature, drive gear and bearings is nominal and these components rarely fail, the starter motor is a very robust unit save for the solenoid contact and plunger which cause the faults.

During its service life these copper contacts are spark eroded and wear away to the point that the electrical contact is lost causing the starter motor to no longer fire / function. It is a very straight forward job to replace these components with our new parts to restore the starter motor to full health, with no difference in cranking power in comparison to a brand new unit.

It is extremely rare that the unit cannot be overhauled to restore function.

### **Our Solution**

We offer replacement contacts and a plunger assembly which can be fitted within the solenoid housing to restore the starter motor to full power. The replacement process is extremely easy, pictorial and video instructions are provided by us to guide you through this process. Our repair kit allows you to save the cost of a new starter motor which will have the same contacts and plunger fitted causing the same faults over time. Our repair kit includes all the components you will need to restore your starter motor including, x2 contacts, x2 long copper contact bolts, Teardrop insulator (not supplied by many) 3x insulators, 2x O ring seals, 2x washers, 2x lock washers, 2x full size nuts, 2x half size nuts. All needed is included to successfully repair your starter motor. Please view our video to see our parts being fitted and tested.

### **Symptoms of the fault**

Symptoms of this fault are very obvious, turning the key to start the vehicle you will hear a clicking sound and the vehicle will not start, this may well be intermittent with the first few attempts clicking then the starter engaging and the engine starting or you may be unable to start the vehicle at all.

### **Vehicles affected and compatibility**

This fault affects the below vehicles, our kit can be installed within these starters to restore function:

Land Rover Discovery Series 2 Models (II) TD5 2.5 Diesel manufactured from 1998 through to 2004.

Land Rover Defender 90 /110 Models TD5 2.5 Diesel manufactured from 1998 through to 2006.

Engine codes:

10P, 15P and 16P

Starter motor part numbers:

OEM: 228000-7220, NAD101240.

Others: ACD STM617, Lucas LRT00171, Hella CS1242, Delco Remy DRS3718, XL 91371, QS2556, 80551389, 2.0 kW, 2.2 kW.

To be certain of compatibility part numbers can be found on a silver sticker on the starter motor body.



### Step 1: Clamp the starter motor in a vice

Clamp the starter motor in a vice.



### Step 2: Testing the starter motor on the bench

To test you will need 3 wires from the battery to the starter. 2x positive 1X negative. Black being the negative connection and Red being positive as shown here.

Connect the negative cable, the black cable shown on the negative terminal of the battery to the long bolt that goes through the starter motor, this is made of steel which will give you the earthed connection you require.

Connect one of the positive leads, shown in red, to the positive terminal of the battery as well as to the bolt on the starter that has the power cable fitted when on the vehicle.

With the other positive cable from the battery very briefly touch the connector situated on the side of the starter. If the starter is functioning this will fire the starter motor up and the gear will spin. If not the terminals and plunger should be replaced.



### Step 3: Removal of solenoid housing cover and plunger

Start by clamping the starter in a vice with the gear facing down.

Remove the 3x 8mm bolts from the end cover, when undoing the last bolt the cover will start lifting, to prevent it from popping off it is best to keep a finger on the cover while removing the last bolt.

Lift the cover off.

Remove the plunger from the starter motor with the spring.

When removing parts, lay them out in order of removal for easier reassembly later.





#### Step 4: Removal of the first contact

Remove the 14mm nut and washer, the plastic spacer/locator and the O ring behind it.

Now from the inside of the starter motor you will be able to remove the bolt and contact.

Remove the plastic locator that sits inside, this goes through the bolt hole, this will just pop out from the inside.

Replace the components removed with our new components in the same order.





### Step 5: Removal of the second contact

Remove the 12mm nut and the wire on the bolt that goes into the side of the starter motor, gently slide the wire off of the bolt.

Behind the wire will be a 14mm nut, once removed, there will be a metal washer and a plastic spacer, remove these to find a small O ring.

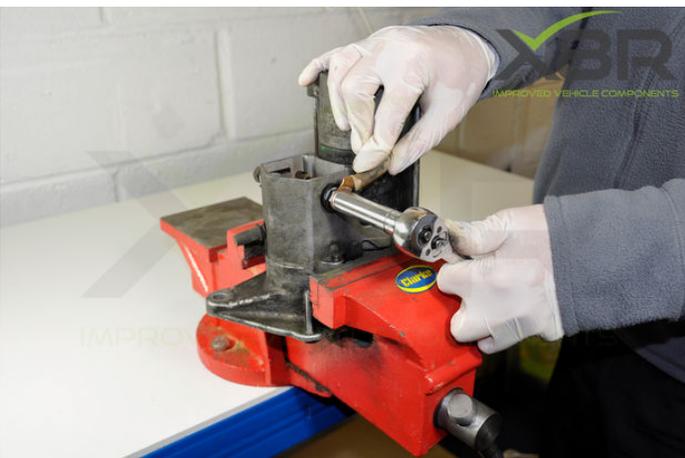
Now from the inside of the starter you will see the contact/bolt and a wire with a connector, hold the connector and try pushing the bolt out. If it does not move, get a small flat headed screwdriver. Holding the connector again, lever the bolt out.

When pulling or levering the bolt out, please be very careful as it is possible to damage the starter.

Now with the bolt out of the way you can push the connector back, exercising caution, you will now be able pull the contact out.

Like the other side, there will be a plastic locator behind the contact, this will just pop out.

Replace the components removed with our new components in the same order.







### Step 6: Refitting plunger and cover

Insert new plunger remembering spring in the same way as the old plunger.

Refasten end cover.

Using the same method as in Step 1, test the starter to check install has corrected the issue, starter should fire up and gear should turn and engage.

If you need any further guidance on this install or would like to purchase the parts shown please call us on +44 01843 446643 or email us at sales@x8r.co.uk . Please also check out our instruction guide on YouTube.  
www.x8r.co.uk



