

Kit Component Replacement Instructions For Delco 10-MT Starters

Caution: *Always* Disconnect the Negative (-) Battery Cable Prior to Removing or Installing a Starter.

1. Scribe or draw reference marks between the drive end frame & field case and also the commutator end plate & field case to allow for proper alignment during reassembly. **Note:** Prior to and during the various stages of the unit disassembly process, closely examine and note the position of components within the assembly.
2. Begin unit disassembly by removing the screw that attaches the motor field lead to the solenoid motor terminal post. There may or may not be a *tube* spacer between the two.
3. Remove the two thru-bolts located in the commutator end (C.E.) plate; these extend through the field case and into the drive end (D.E.) housing. Pry the C.E. plate from the field frame. Inspect the C.E. plate for any armature washers/spacers that may be stuck to the grease on the inside surface. Remove these washers/spacers along with any that are on the armature shaft and set aside with the C.E. plate.
4. After noting the positioning of the brushes, brushholders and leads, slide the field case from the assembly and set aside.
5. Remove the armature and drive (as an assembly) from the D.E. housing by manipulating the armature in such a way as to allow the drive's shift collar to slide off of and away from the shift lever fork. On some models it will be necessary to remove the solenoid and shift lever assembly from the drive housing to accommodate armature removal. If required, remove the two solenoid attaching screws and then twist the solenoid approximately 45 degrees to allow it to slide off. Set the solenoid and the plunger spring aside. Remove the shift lever pivot pin keeper, pivot pin and shift lever.
6. Drive replacement requires removal of the thrust washer, stop ring and collar from the armature shaft. The thrust washer should slide easily from the shaft. The stop collar is *snapped* over the stop ring and therefore needs to be driven off (toward the armature core) to gain access to the stop ring. The use of a hammer and a deep-well *socket* (metal cylinder) will usually accommodate this.
7. Once the drive is removed, clean the armature. Remove any carbon buildup from the commutator with an extra fine polishing cloth and then wipe completely clean.
8. Apply a small amount of grease to the armature shaft drive spline area and install the new drive. Place the stop collar onto the armature shaft and then install the stop ring. Stop ring installation can be accomplished by resting the ring on the end of the shaft with a piece of hardwood held on top of it. *Force start* the ring onto the shaft with a light hammer blow. Slide the ring down until it snaps into the shaft groove. To force the stop collar over the stop ring, obtain a suitable common steel washer and drop it over the shaft onto the stop ring. Slide the stop collar up the ring and then, using two common slip joint pliers, squeeze the *washer-stop ring, stop collar sandwich* until the collar is in position. Remove the common washer and install the new thrust washer. Set this assembly aside.
9. Begin replacement of the D.E. housing and C.E. plate bushings, by comparing the new bushings against the old. Once a match is identified, remove the old bushing by using a sharp, angle-face chisel to split the side of the old bushing and pry it free with a small screwdriver. Use extra care so as not to damage the housing. Using an appropriate bushing driver, push the new bushing into position. Size the bushing using the mating armature shaft end. Proper installation and sizing will allow the shaft to spin freely within the bushing. **Note:** A small amount of high temperature grease should be applied to the bushing surfaces at this time or prior to final installation.
10. With the field case assembly sitting flat on your work surface, begin brush replacement by again inspecting and noting the position the components: i.e.; brush arms/holders, springs, leads and pins (if applicable). One at a time remove and install the brushes in the holders. Ensure that once installed and screws tightened, the brushes will ride flat with full surface contact against the commutator. Flex the holders and springs by hand to check for free, positive movement.
11. Begin unit reassembly by reviewing and reversing the previous disassembly instructions.
12. Install the armature into the D.E. housing. The drive shift collars must straddle the shift lever fork buttons. Check that the new thrust washer is still present and has not fallen off the armature shaft (the raised shoulder on this washer should be toward the stop ring.).
13. With the housing-armature subassembly held in the *armature upright* position, gently lower the field case assembly over the armature until the brushes rest against the commutator end. Spread the brushholders away from the commutator to allow the field case to be lowered fully, seating into position onto the D.E. housing. Manually retract and release the brushholders/brush arms to ensure free, unrestricted travel. Rock the armature side to side to see that spring tension will cause the brushes to follow this motion and will ride flat on the commutator.
14. Install the new leather brake washer onto the armature shaft, up against the commutator end. Install the C.E. plate and align all of the reference marks (Step 1). Install and tighten the thru-bolts. Check for armature binding by rotating the armature with the drive pinion in the direction of starter rotation. Use a screwdriver to pry (lever) the pinion gear around. You will be unable to rotate the armature by finger pressure.
15. Install the plunger spring and solenoid if previously removed.
16. Reconnect the motor field lead to the solenoid motor terminal post.
17. Verify quality of repair and reinstall on vehicle.

Remember to test the condition of the battery and starting system wiring. Insure that the battery is fully charged prior to on vehicle operation.

