

Fig. 20—Removing Clutch Assembly

scale on a line parallel to the edge of brush and take a reading just as spring leaves brush. Spring tension should be 32 to 36 ounces (9 to 10 N). Replace springs that do not meet specifications.

TESTING ARMATURE

Testing Armature for Short Circuit

Place armature in growler and hold a thin steel blade parallel to the core and just above it, while slowly rotating armature in growler. A shorted arma-

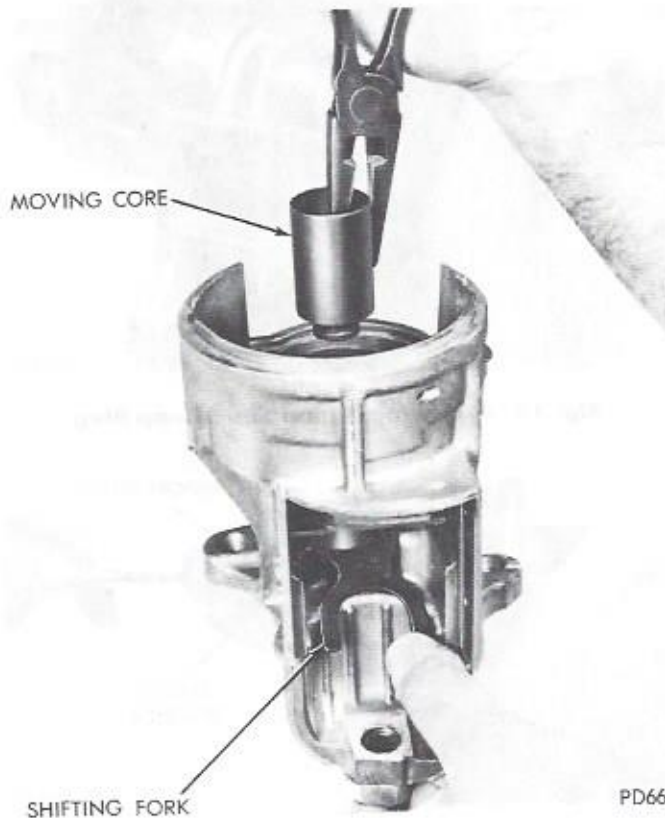


Fig. 21—Removing Solenoid Core

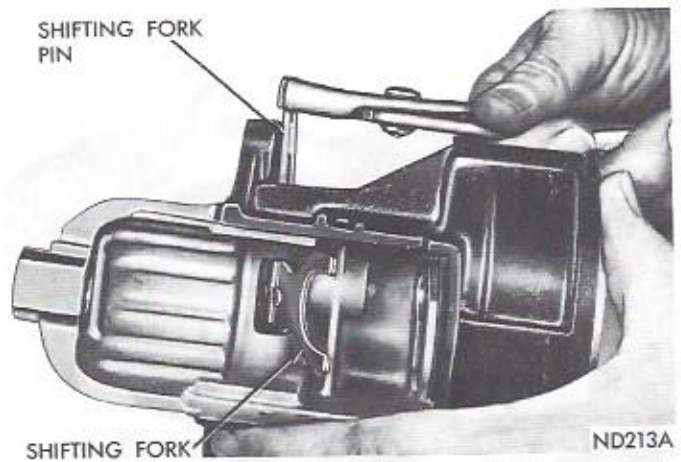


Fig. 22—Removing Shifter Fork Pin

ture will cause blade to vibrate and be attracted to the core. Replace armature if shorted.

Testing Armature for Ground

Contact armature shaft and each of the commutator riser bars with a pair of test lamp test probes. If lamp lights, it indicates a grounded armature. Replace grounded armature.

Testing Commutator Run-Out, and Refacing

Place armature in pair of "V" blocks and measure runout with dial indicator. Measure both shaft and commutator. A bent shaft requires replacement of armature. When commutator runout exceeds .004 (0.10 mm) inch, commutator should be refaced. Remove only a sufficient amount of metal to provide a smooth, even surface.

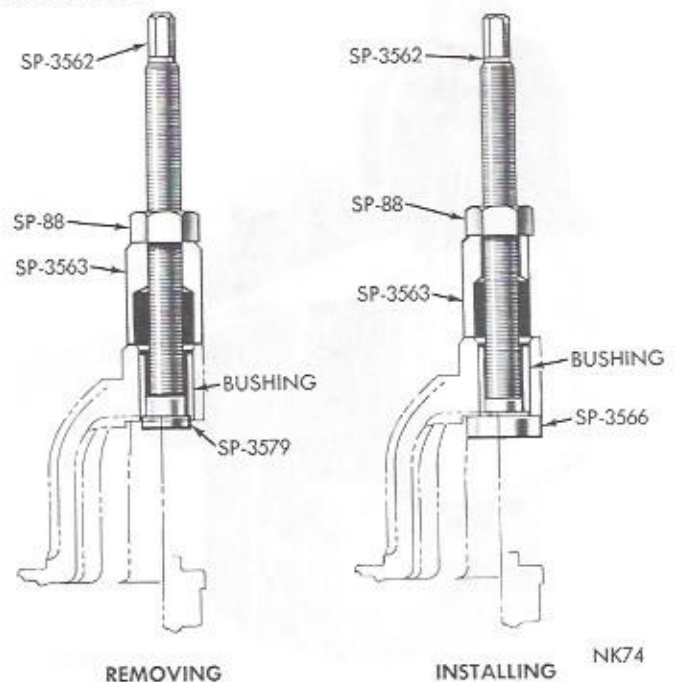


Fig. 23—Replacing Pinion Housing End Bushing