

## INSTALLATION INSTRUCTIONS

1. Lower blade, turn control OFF, disconnect electrical connections and detach the snowplow from the vehicle following instructions in the Owner's Manual.
2. Remove battery cables. Loosen thru-bolts and remove end cap with bolts. Remove motor housing and armature from flange or valve block. Make note of the number and position of washers on both ends of the armature shaft and remove them. Remove the armature from the housing, allowing brushes to snap inward.
3. Stand motor housing upright. Remove the nut, internal tooth washer, flat washer and fiber washer from the positive stud. Note position of parts. Do not remove inner plastic stud bushing.
4. CAREFULLY NOTE THE BRUSH LOCATIONS AND ORIENTATION AND ROUTING OF THE BRUSH LEADS FOR PROPER REASSEMBLY.
5. Using slender needle nose pliers, grasp the end of each brush spring and rotate and lift it up over the brush holder to release spring tension. Do not allow springs to slip off retainer posts.
6. Remove three screws holding brush carriage to motor frame. Lift brush carriage out of frame and push brushes out of holders. Set brush carriage aside.
7. Remove and discard the positive brush set with stud. Cut the negative brush leads off at the field winding tab and discard brushes. **(See Figure 1.)**

Cut brush leads here

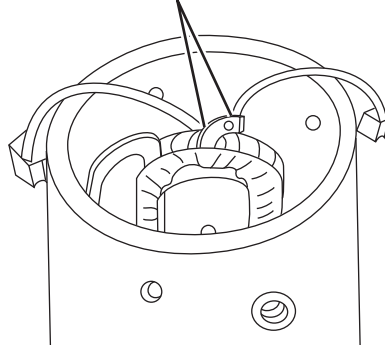


Figure 1

8. Using the furnished hardware, attach the tab in the middle of the negative brush set to the field winding tab. Install the machine screw through the brush tab and then through the field winding tab hole. Secure with the external tooth lock washer and nut.

Position the brush tab with the wires below the screw head. Gently bend the field winding tab away from the motor frame to provide 1/8" clearance. The field winding and brush tab screw or wires must not touch the motor frame or armature after assembly. **(See Figures 2 and 3.)**

Brush tab must be down

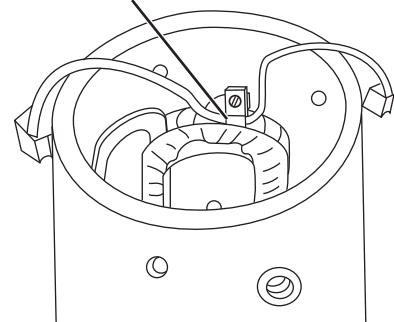


Figure 2

Bend field winding tab to provide 1/8" clearance between screw end and motor frame.

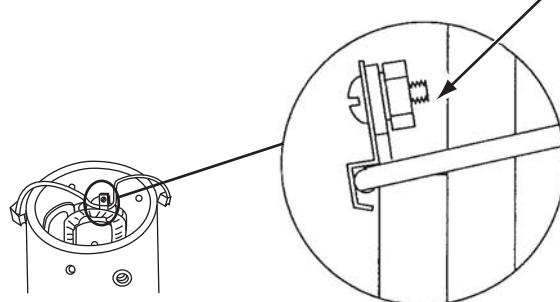


Figure 3

9. Insert stud of positive brush set through inner plastic bushing and secure with hardware removed in Step 3, positioning brushes as noted in Step 4. Do not allow stud to rotate while tightening nut to 50–60 in-lb.
10. Set the brush carriage on top of the motor frame, aligning mounting screw holes vertically. Insert brushes into holders, routing brush leads as noted in Step 4. Push the brush carriage into the motor frame and secure with three screws.
11. Install the armature, pushing the brushes into the holders to clear the commutator.
12. Using slender needle nose pliers, grasp the end of each brush spring and rotate it clockwise up over the armature and brush holder and insert it into the groove on the back of the brush. Make sure the brush leads are not pinched and do not contact the armature.
13. Install the thrust washers on the armature as removed in Step 2.
14. Install end cap and thru-bolts and assemble motor to flange or valve block. Brush leads must be to inside of thru-bolts. Do not lose any thrust washers or allow the armature to slip out of the brushes. Tighten thru-bolts to 55–65 in-lb. Attach battery cables and tighten nuts to 50–60 in-lb.

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