prestolite SERVICE MANUAL

STARTING MOTOR SECTION

(Issued 3-16-78)

VOLTS 24 ROTATION CWDE BRUSHES 4 POLES 4

LUBRICATION

At overhaul, all bronze bearings should be well lubricated with medium engine oil.

Cover armature shaft at drive end with a light film of lubricant before assembling drive.

STARTING SWITCH

Shifting solenoid - Mounted on motor

BRUSH SPRING TENSION

32 to 40 ounces with new brushes. This tension is measured with the scale hooked under the brush spring near the brush. Pull the scale parallel to the face of the brush and take the reading just as the spring leaves the brush.

TRANSMISSION

Overrunning clutch

END PLAY

Adjust to .005" to .030". Refer to Parts & Equipment List for thrust washer package.

COMMUTATOR END HEAD

Be sure felt oiling pad is in the outer end of the commutator end bearing before assembling the commutator end head on the motor.

POLE SHOE ASSEMBLY

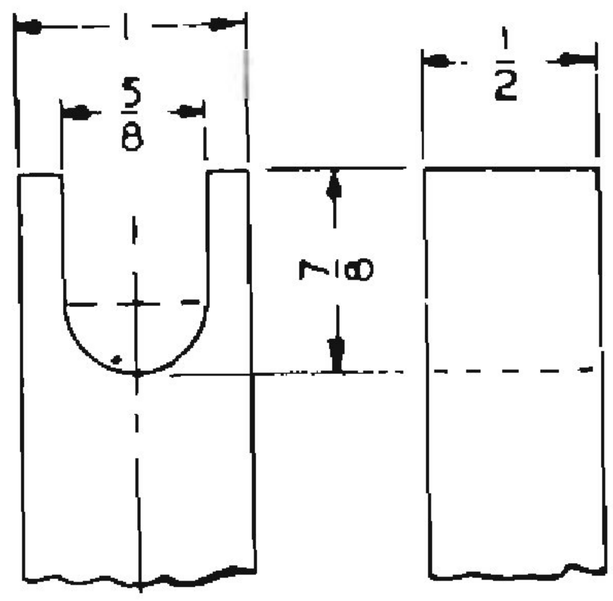
Install pole shoes so that the long tip is the trailing edge.

MAGNETIC SHIFT CLUTCHES

With the switch closed and the plunger fully bottomed, a clearance of 3/32" + 1/32" - 1/64" should be maintained between the outside edge of the pinion and the pinion stop. Have the pinion pushed toward the commutator end and the pinion stop pushed toward the pinion housing bearing. Adjust by turning link screw in or out as required.

SWITCH ACTION TEST

To test switch action, slip a steel spacer (See Illustration for dimensions) over the armature shaft between the pinion and the pinion stop. With this spacer in place, the magnetic switch should bottom and the switch contacts should close under normal voltages.



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TEST SPECIFICATIONS

No Load Draw — 20.0 volts, 42 maximum amperes, 5500 minimum RPM.
Stall Torque — 8.0 volts, 365 maximum amperes, 11.0 minimum Ft. Lbs.

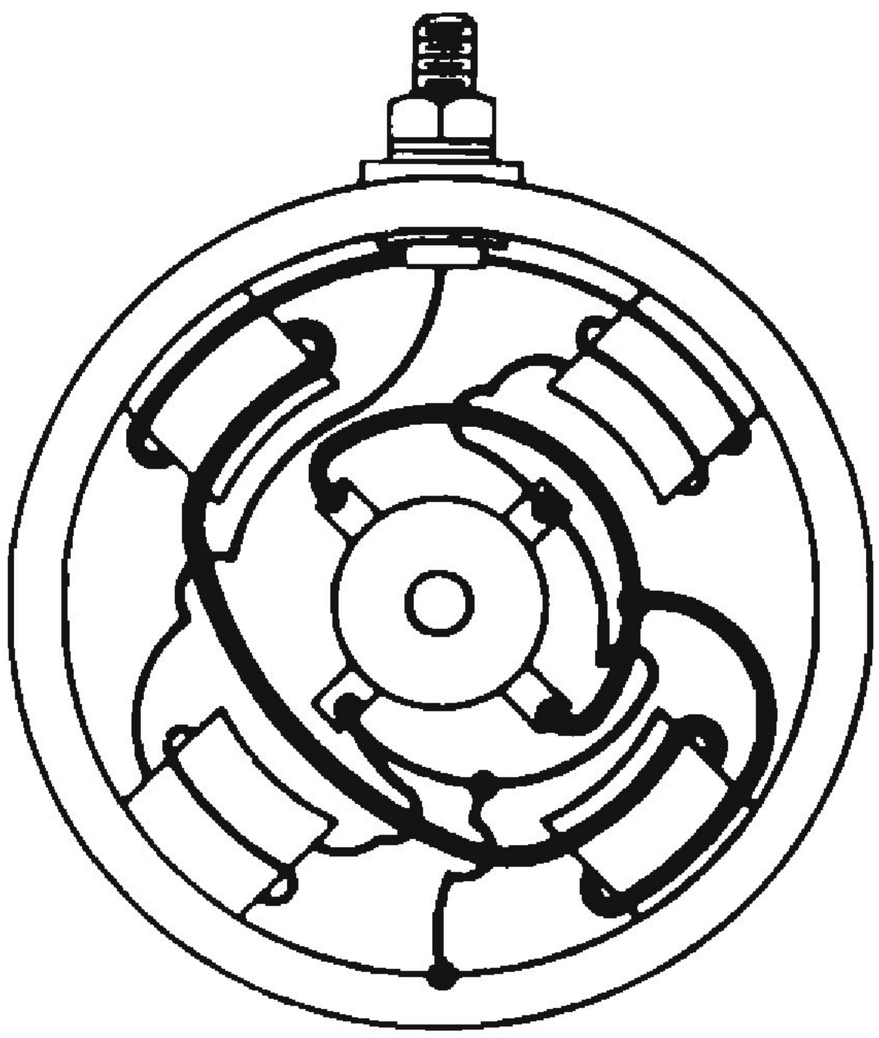
Unit	Pinion Position*	Special Instructions
MFD-6001T	1 25/32"-1 31/32"	Notes 1,2,3
MFD-6002T	15/32"- 21/32"	Notes 1,2,3

*This dimension is measured from the face of the mounting flange to the outside edge of the pinion while in the "at rest" position. Adjust by installing thrust washers just inside the commutator end head as required. Refer to Parts & Equipment List for thrust washer package

NOTE 1 - After inspection of the various parts, paint terminal stud and brush holder insulation with red glyptol. Cover glyptol and all metal surfaces except pilots, head seats, threads, commutator and bearing surfaces with air-drying, fungus-resistant insulating varnish. Allow varnish to soak into field coils and armature windings. Drain and dry thoroughly before assembling the motor.

NOTE 2 - The pinion housing bearing must be flush with the bearing bore on the inside of the housing.

NOTE 3 - Seal shifting linkage cover with a good grade sealant.



VIEWED FROM COMMUTATOR END

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VOLTAGE 24 ROTATION See Tabulation BRUSHES 4 POLES 4

VENTILATED No FRAME DIAMETER 4-1/2"

BEARINGS Absorbent bronze bearings used at comm end. Sealed ball bearings used at drive end.

LUBRICATION Soak absorbent bronze bearings and felt oiling pad with SAE 20 oil. Allow excess oil to drain out before assembling end head on motor. Ball bearings are prelubricated and sealed and require no additional lubrication.

BRUSH REPLACEMENT Replace brushes when they have worn to a length of 1/4" or less.

SPRING TENSION 32 to 40 ounces with new brushes. Measure with a spring scale hooked under the brush spring at the brush. Pull the scale on a line opposite the line of force exerted by the brush spring and take the reading just as the spring leaves the brush.

POLE SHOE INSTALLATION When replacing field coils, install the pole shoes so that the longer tip is pointing in the same direction as the armature rotation.

END PLAY See tabulation for end play dimension. Adjust with thrust washers at comm end of armature. Refer to Parts & Equipment List for thrust washer package.

TEST SPECIFICATIONS (77°F/25°C)

	Terminal Voltage	Maximum Amperes	RPM	Torque Ft. Lbs.
No Load Test	20	42	5000 min.	- 0 -
Stall Torque Test	6	220	- 0 -	3.1

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Unit	Rotation	End Play	Internal Wiring
MFD-6003	CCWDE	Note 1	Figure 1
MFD-6005	CCWDE	.005"	Figure 1
MFD-6101	CCWDE	Note 1	Figure 2
MFD-6103,A	CCWDE	.005"	Figure 2
MFD-6104,XP	CWDE	Note 1	Figure 3
MFD-6105	CCWDE	Note 1	Figure 2
MFD-6201,A	CCWDE	Note 1	Figure 2
MFD-6202	CCWDE	Note 1	Figure 2
MFD-6203	CCWDE	.005"	Figure 2
MFD-6204	CCWDE	.005"	Figure 2

Note 1 - Adjust to .4275"/.4635" from mounting surface to end of armature.

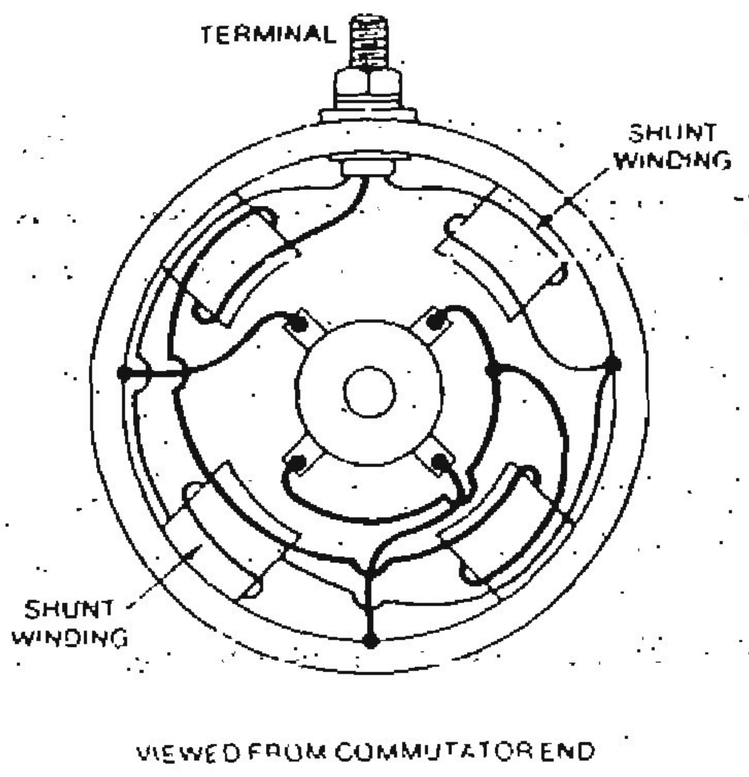


Figure 1
Internal Wiring

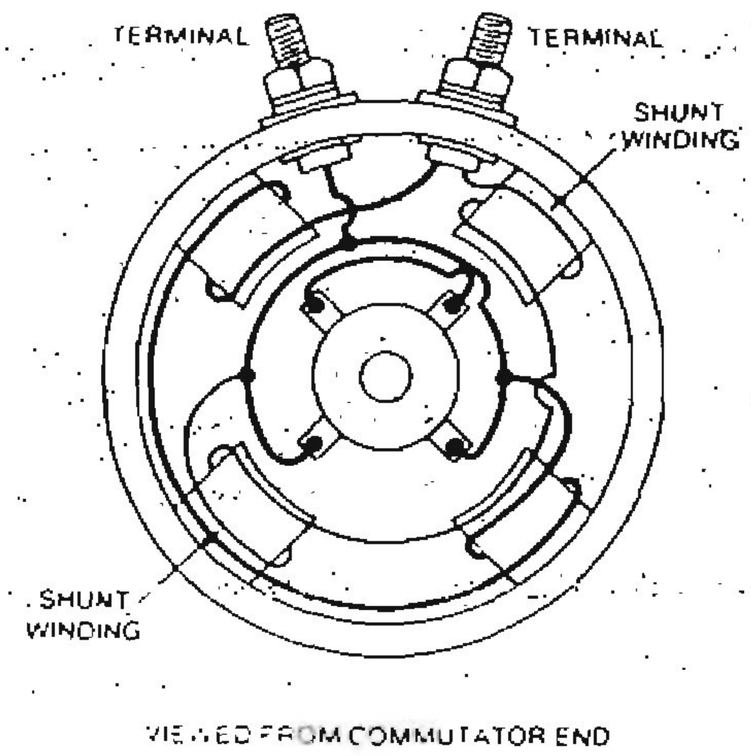


Figure 2

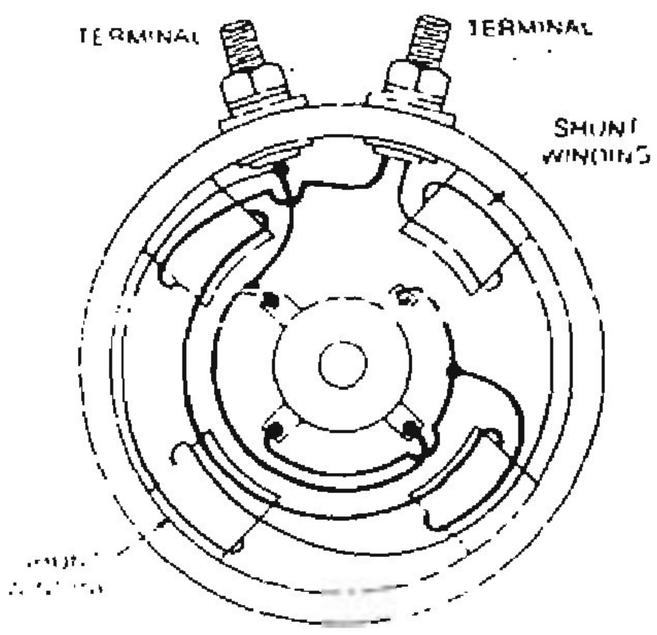


Figure 3

VOLTAGE 24 ROTATION SEE TABULATION BRUSHES 4 POLES 4

VENTILATED No FRAME DIAMETER 4-1/2"

BEARINGS Absorbent bronze bearings used at comm end. Sealed ball bearings used at drive end.

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POLE SHOE INSTALLATION When replacing field coils, install the pole shoes so that the longer tip is pointing in the same direction as the armature rotation.

END PLAY See tabulation for end play dimension. Adjust with thrust washers at comm end of armature. Refer to Parts & Equipment List for thrust washer package.

TEST SPECIFICATIONS (77°F/25°C)

	Motor Terminal Voltage	Maximum Amperes	RPM	Torque Ft. Lbs.
No Load Test	20.0	42	5000 Min.	- 0 -
Stall Torque Test	6	220	- 0 -	3.1

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Unit	Rotation	End Play	Internal Wiring
MFD-7001,S	CWDE	.005"	Figure 1
MFD-7002	CWDE	Note 1	Figure 1
MFD-7004	CWDE	Note 1	Figure 1
MFD-7005,XP	CWDE	.005"	Figure 2
MFD-7006	CWDE	.005"	Figure 1
MFD-7007,S	CWDE	.005"	Figure 2
MFD-7008	CCWDE	.005"	Figure 3
MFD-7009,S	CCWDE	.005"	Figure 3
MFD-7010,S	CCWDE	.005"	Figure 4

Note 1 - Adjust to .4275"/.4635" from mounting surface to end of armature.

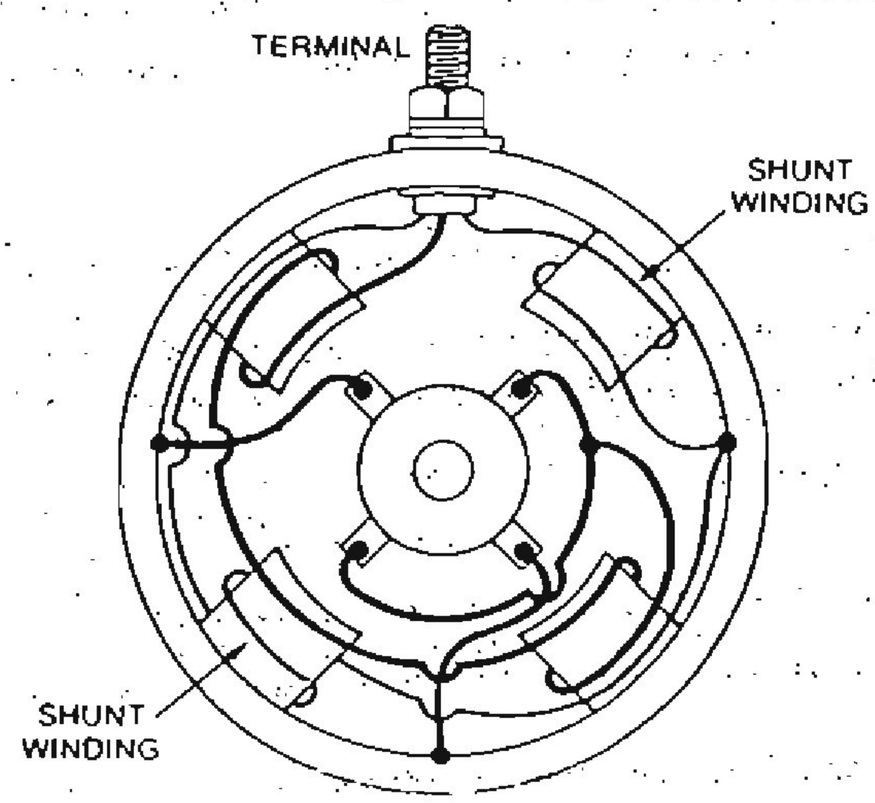


FIG. 1

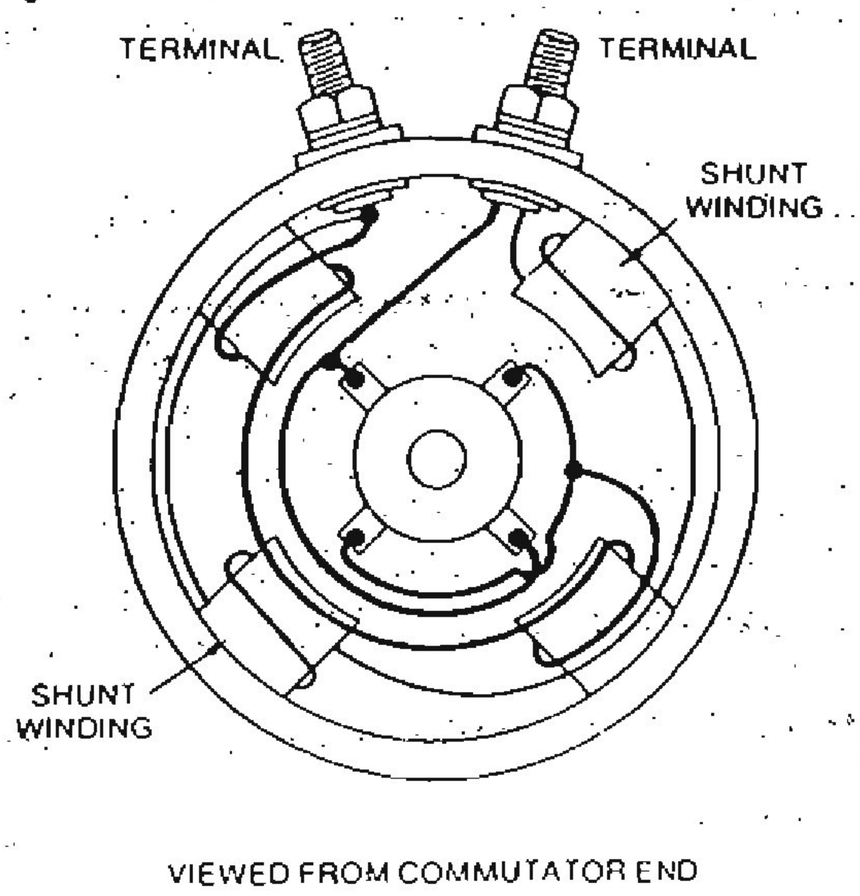


FIG. 2

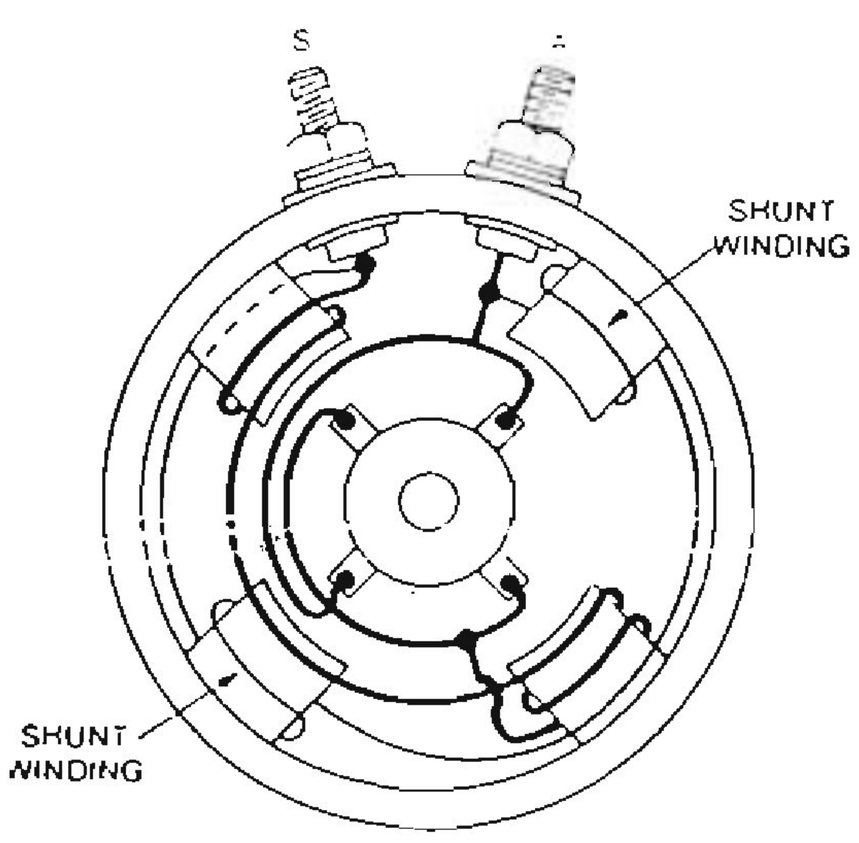


FIG. 3

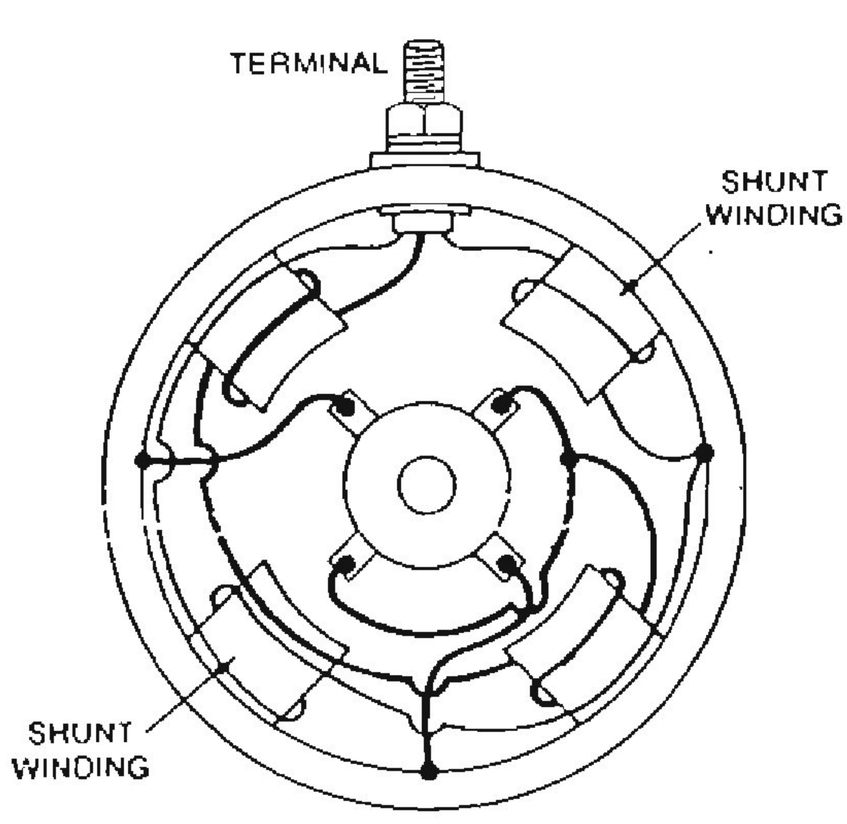


FIG. 4