VOLTAGE 12 ROTATION See Tabulation BRUSHES 4 POLES 4

VENTILATED No FRAME DIAMETER 4 1/2"

BEARINGS Absorbent bronze bearings used at both ends.

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.

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 Adjust to .005" to .062" with thrust washers between the steel thrust washer and the commutator end head. Refer to parts and equipment list for thrust washer package.

TEST SPECIFICATIONS (77°F)

	Terminal Voltage	Maximum Amperes	RPM	Torque Ft. Lbs.
No Load Test	10	35	4800 Min.	-----
Stall Torque Test	4	175	0	6.5

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SERVICE
INFORMATION

Unit	Rotation	Internal Wiring	Special Instructions
MAY-4146	CCWDE	Figure 1	See Note 1
MAY-4153	CWDE	Figure 2	See Note 1
MAY-4301	CWDE	Figure 2	See Note 1
MAY-4302	CWDE	Figure 3	See Note 1
MAY-4303,A	CWDE	Figure 3	See Note 1

NOTE 1 - The drive end bearing must be flush with the bearing bore on the inside of the end head.

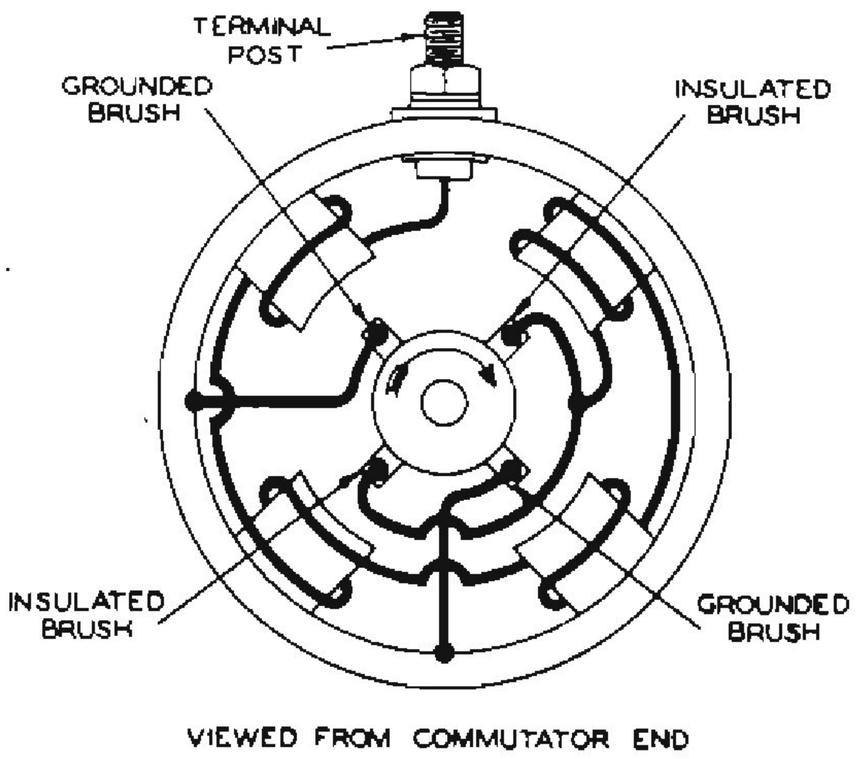


Figure 1

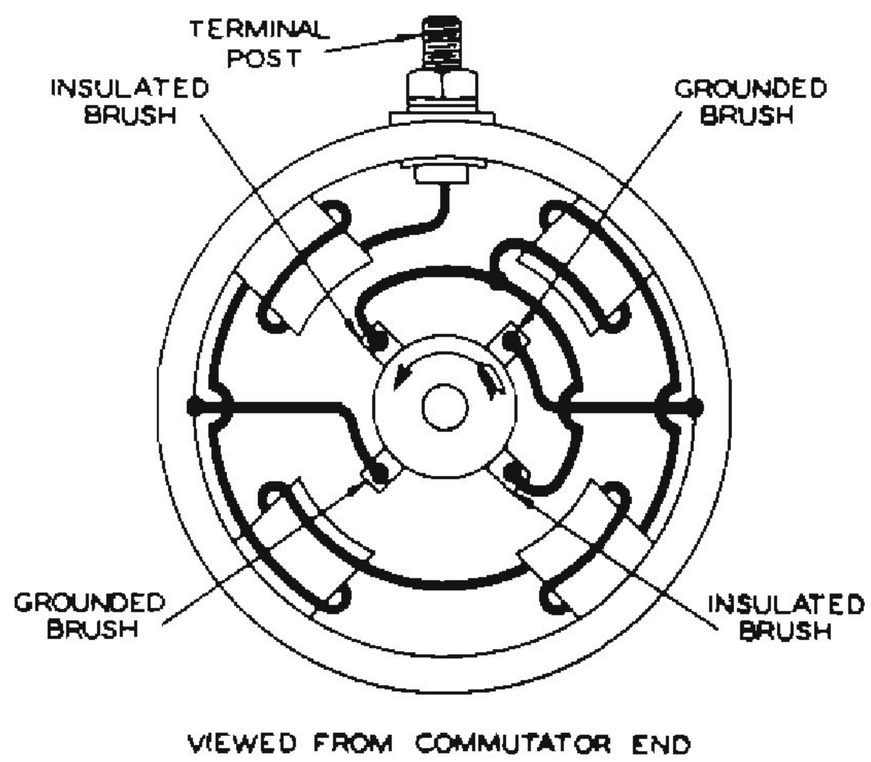


Figure 2

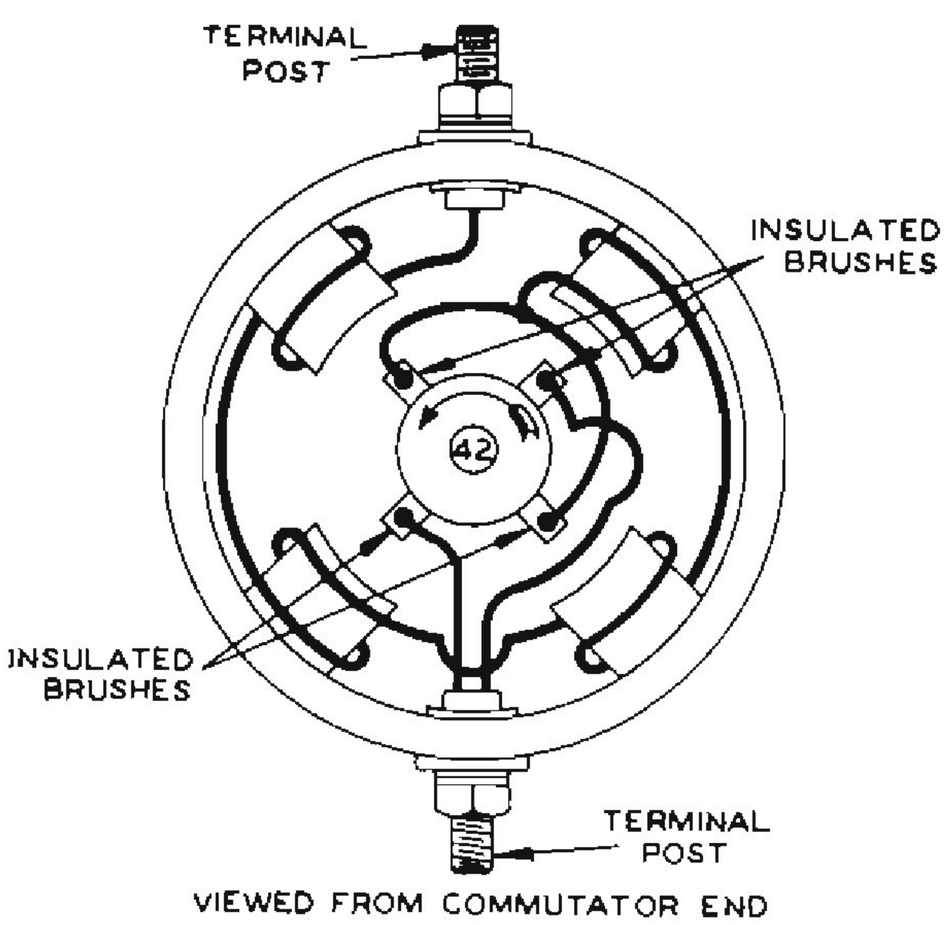


Figure 3

prestolite SERVICE MANUAL

STARTING MOTOR SECTION

(Issued 3-16-78)

VOLTS 12 ROTATION See Tabulation 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 film of light oil before assembling drive.

STARTING SWITCH — See Tabulation

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 and the reading is taken just as the spring leaves the brush. The pull of the spring scale is to be at right angles to the line of force exerted by the brush spring.

TRANSMISSION — See Tabulation

END PLAY — On motors using Bendix drives - see tabulation. On motors using magnetic shift clutches - armature end play should be held between .005" minimum and .030" maximum. This can be accomplished by installing MU-54, MU-54A or MU-54B thrustwashers between MAD-96 thrustwasher and the commutator end plate.

COMMUTATOR END PLATE — Be sure felt oiling pad is in the outer end of the commutator end bearing before assembling the commutator end plate on the motor.

MAGNETIC SHIFT CLUTCHES — In operating the solenoid plunger by hand, it will be noted that - first, the switch contact is made and then, about 3/16" further, travel bottoms the plunger and brings its outer end about flush with the solenoid housing.

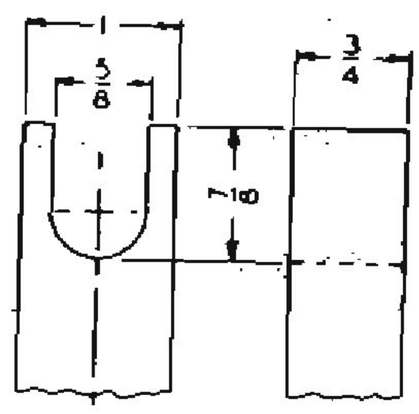
With the solenoid switch closed and the plunger and the plunger fully bottomed, a clearance of 1/16" minimum should be maintained between the outer edge of the pinion and the thrustwasher next to the outer pinion housing bearing.

To check the 1/16" clearance, apply pressure against the plunger (not the shift fork) until it bottoms and then check the clearance between the pinion and thrustwasher. Adjust by turning the link screw in or out as needed. After having adjusted for full mesh position, release the plunger and check the "at rest" position.

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SWITCH ACTION TEST

To test switch action, slip a steel spacer (See illustration for dimensions) over the armature shaft between the pinion and the thrustwasher next to the outer pinion housing bearing. With this spacer in place, the magnetic switch plunger should bottom and the switch contact should close under normal voltages.



TEST SPECIFICATIONS Standard (Test 1)

No Load Draw	10 volts, 35 maximum amperes, 4800 minimum RPM
Stall Torque	4 volts, 175 maximum amperes, 6.5 minimum Lbs. Ft.

TEST SPECIFICATIONS 14:22 Gear Reduction (Test 2)

No Load Draw	10 volts, 45 maximum amperes, 2900 minimum RPM
Stall Torque	4 volts, 185 maximum amperes, 8.0 minimum Lbs. Ft.

Unit	Rot.	Test	Starting Switch Mounted	Transmission	End Play	Special Instructions
MAY-4132	CWDE	1	On Motor	Pos. Shift Pinion		See Notes 1,2
MAY-4138	CWDE	1	Separate	Bendix	1/16" max.	See Notes 1,2,3
MAY-4139	CWDE	2	Separate	Bendix	1/16" max.	See Notes 2,4,5
MAY-4146	CCWDE	1	Separate		1/16" max.	See Notes 4,6,7
MAY-4147	CWDE	1	On Motor	Mag. Shift Pinion		See Notes 1,2,8
MAY-4148	CWDE	1	Separate	Bendix	1/16" max.	See Notes 1,2,3
MAY-4149M	CCWDE	1	On Motor	Bendix	.005" min.	See Notes 2,3,4, 9,10,11
MAY-4150M	CWDE	1	On Motor	Bendix	.005" min.	See Notes 1,3,4, 9,10,11
MAY-4152	CWDE	1	On Motor	Bendix	1/16" max.	See Notes 1,5
MAY-4153	CWDE	1	Separate		1/16" max.	See Note 1
MAY-4154	CWDE	1	On Motor	Bendix	1/16" max.	See Notes 1,5

NOTE 1 - With frame on end and commutator end up, the pole pieces should be assembled the short tip to the right or in a clockwise direction from the center of the pole pieces.

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

NOTE 3 - The intermediate plate bearing must be flush with the bearing bore on the Bendix end.

NOTE 4 - With frame on end and commutator end up, the pole pieces should be assembled with the long tip to the right or in a clockwise direction from the center of the pole pieces.

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NOTE 5 - The main intermediate plate bearing must be flush with the bearing bore on the inner end and the Bendix shaft bearing must be flush with the bearing bore on the Bendix end.

NOTE 6 - The drive end bearing must be flush with the bearing bore on the inner end.

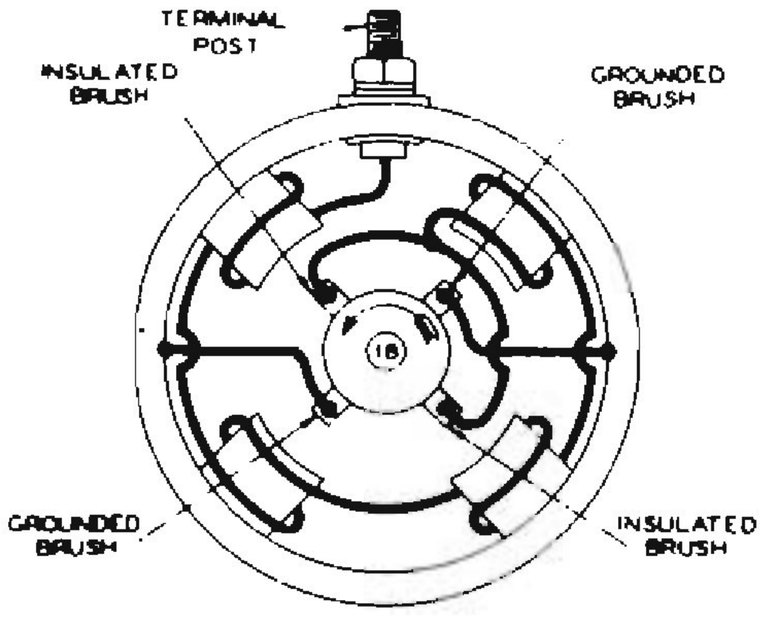
NOTE 7 - The oil hole in the drive end head must not be drilled through the bearing.

NOTE 8 - The pinion, when "at rest", should check within 1.188" to 1.359" when measured from the mounting face of the pinion housing to the outer edge of the pinion.

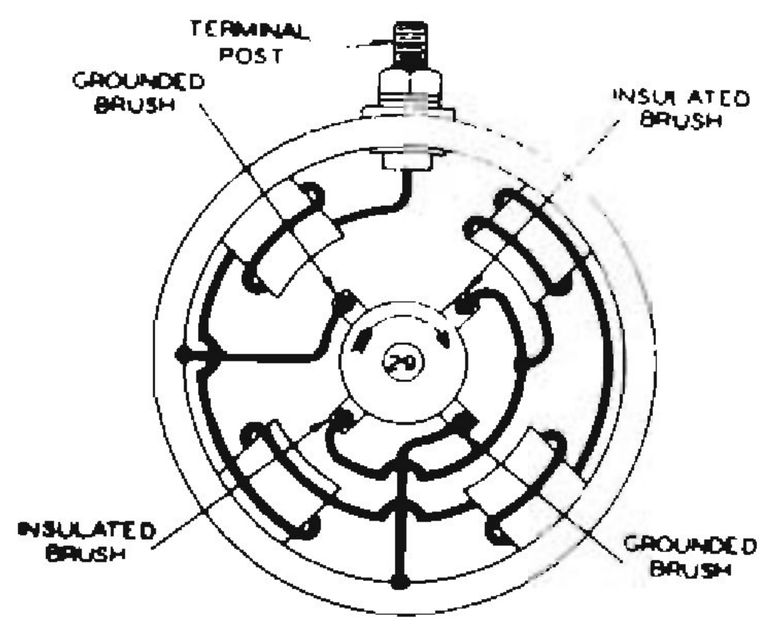
NOTE 9 - Stake intermediate bearing screws at assembly.

NOTE 10- The pinion should be 1.220" to 1.342" from the mounting face of the pinion housing to the outer edge of the pinion just before the pinion drops off of the spiral. Adjust by installing MU-54 or MU-54B thrust-washers as required on the commutator end of the armature shaft.

NOTE 11- After installation of new field coils, paint the inside of the frame and soak the field coils with air-drying varnish. Keep varnish off of brush leads, pilot seats and threads. After draining off excess varnish, drying can be hastened by baking in an oven at 200°F. When re-using the old armature, its core and windings should be given the same treatment being careful to keep the commutator and bearing seats clean.

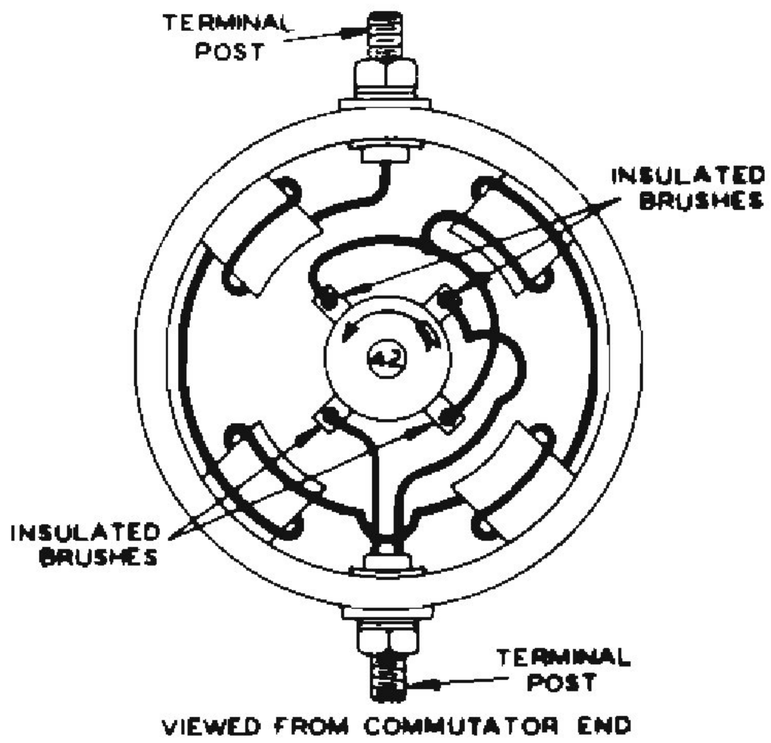


Internal Wiring of CWDE Standard
CCWDE Gear Reduction



Internal Wiring of CCWDE Standard
CWDE Gear Reduction

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Internal Wiring of CWDE Rotation
2 Wire System