

STARTER

1994 Volvo 960

1994 ELECTRICAL
Volvo Starter - Bosch

960

DESCRIPTION

Starter is a brush-type, series-wound electric motor with an overrunning clutch (drive assembly). Field frame is enclosed by commutator end frame and drive bushing and carries pole shoes and field coils. A spline armature shaft drive end carries drive assembly.

TROUBLE SHOOTING

NOTE: See TROUBLE SHOOTING - BASIC PROCEDURES article in TROUBLE SHOOTING section.

BENCH TESTING

STARTER NO-LOAD TEST

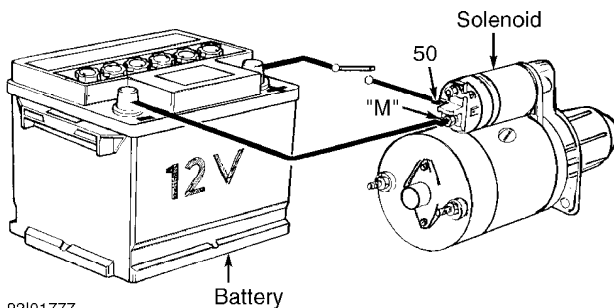
With starter on bench, operate starter and check ammeter, voltage and RPM. Readings should be within specification. See STARTER NO-LOAD TEST SPECIFICATIONS table.

STARTER NO-LOAD TEST SPECIFICATIONS

Application	Volts	Amps.	RPM
0 001 218	10.5	160	4200
0 001 110	11.2	95	2800
0 001 108	11.5	75	2900
0 001 107	11.5	75	2900

SOLENOID TEST

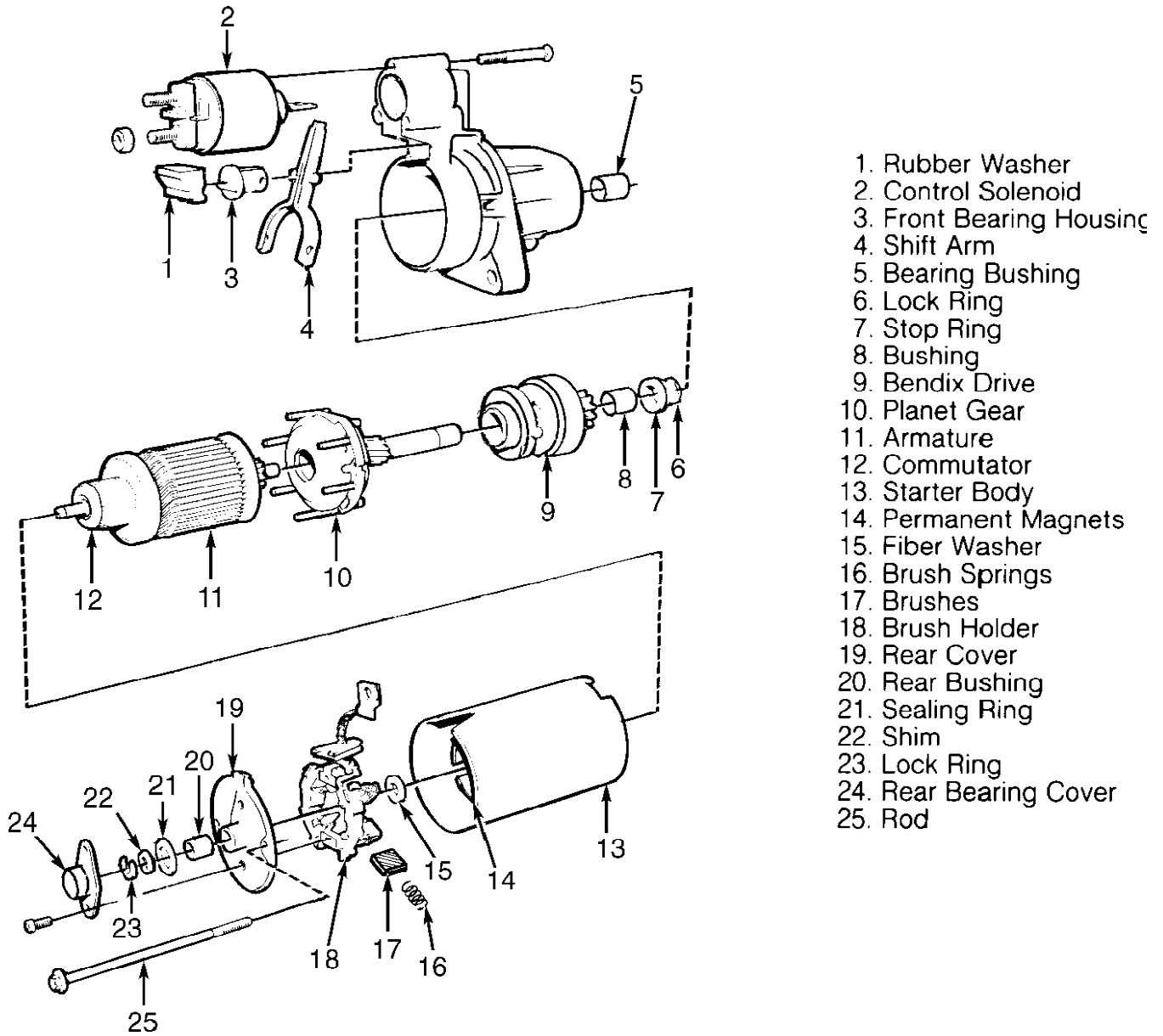
Connect battery negative lead to starter solenoid terminal "M". Connect battery positive lead to solenoid terminal No. 50. See Fig. 1. If plunger does not extend firmly, replace solenoid.



92|01777
Fig. 1: Testing Starter Solenoid
Courtesy of Volvo Cars of North America

OVERHAUL

NOTE: Use illustration for starter overhaul. See Fig. 2.



92E01775
 Fig. 2: Exploded View Of Bosch Starter (Starter 0 001 108 Is Shown;
 Others are Similar)
 Courtesy of Volvo Cars of North America

STARTER SPECIFICATIONS

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Application	Specification
Armature Core Runout	
Bosch (0 001 218)	.002" (.05 mm)
Bosch (0 001 110)	.002" (.05 mm)

Bosch (0 001 108)	.....	.002" (.05 mm)
Bosch (0 001 107)	.....	.002" (.05 mm)
Armature End Play		
Bosch (0 001 218)	.....	.002-.012" (.05-.30 mm)
Bosch (0 001 110)	.....	.002-.015" (.05-.40 mm)
Bosch (0 001 108)	.....	.002-.015" (.05-.40 mm)
Bosch (0 001 107)	.....	.002-.015" (.05-.40 mm)
Carbon Brush Minimum Length		
Bosch (0 001 218)	.....	.27" (7 mm)
Bosch (0 001 110)	.....	.23" (6 mm)
Bosch (0 001 108)	.....	.31" (8 mm)
Bosch (0 001 107)	.....	.17" (4.5 mm)
Carbon Brush Test Voltage		
Bosch (0 001 218)	.....	10.5 volts
Bosch (0 001 110)	.....	11.2 volts
Bosch (0 001 108)	.....	11.5 volts
Bosch (0 001 107)	.....	11.5 volts
Commutator Diameter		
Bosch (0 001 218)	.....	1.13" (28.9 mm)
Bosch (0 001 110)	.....	1.14" (31.2 mm)
Bosch (0 001 108)	.....	1.14" (31.2 mm)
Bosch (0 001 107)	.....	1.14" (31.2 mm)
Commutator Runout		
Bosch (0 001 218)	.....	.0004" (.010 mm)
Bosch (0 001 110)	.....	.0004" (.010 mm)
Bosch (0 001 108)	.....	.002" (.05 mm)
Bosch (0 001 107)	.....	.002" (.05 mm)

WIRING DIAGRAMS

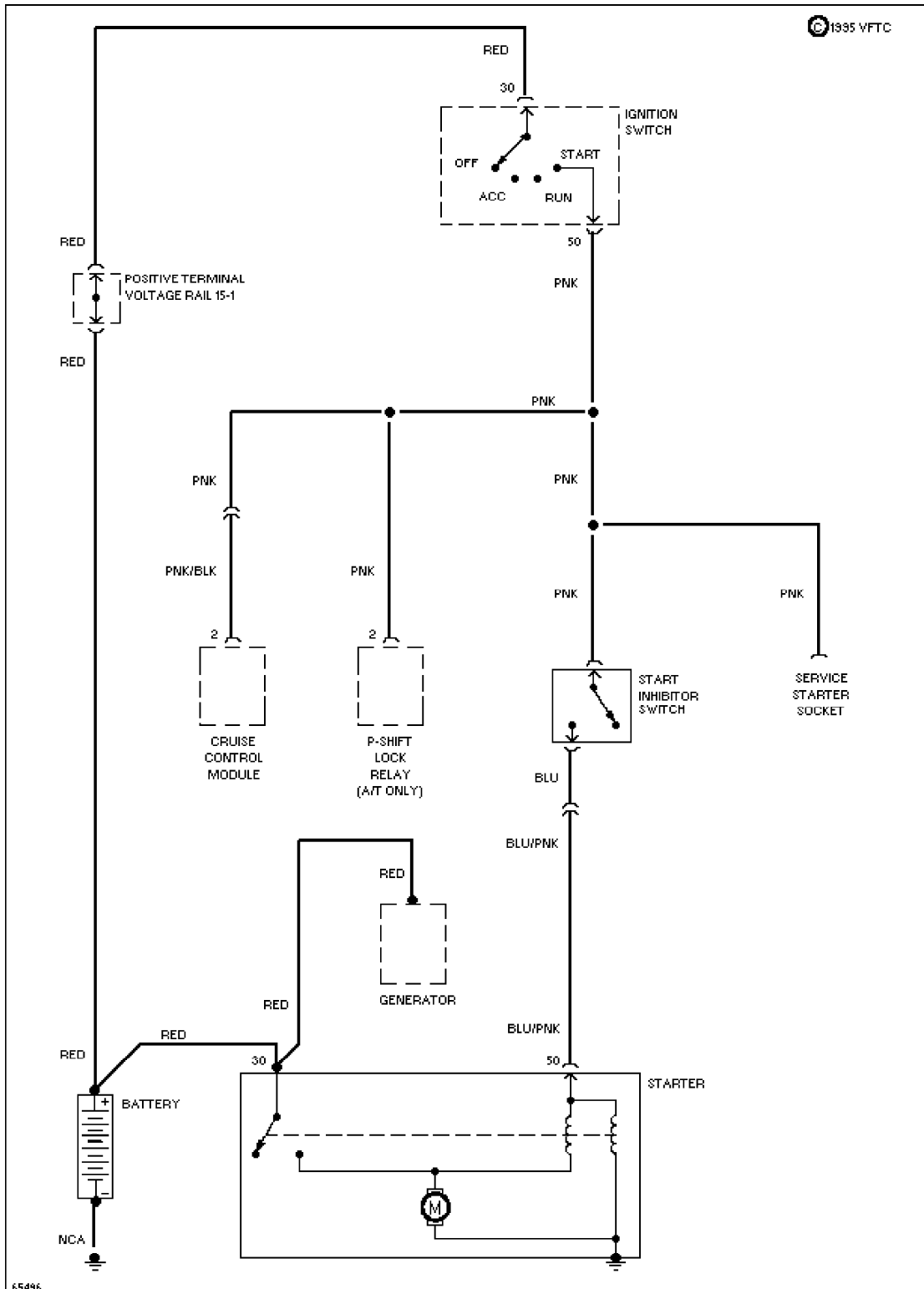


Fig. 3: Starting System Wiring Diagram (960)