

# STARTER - BOSCH

1995 Volvo 850

1995-96 STARTING & CHARGING SYSTEMS  
Volvo Starters - Bosch

850

## 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 GENERAL INFORMATION.

## 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

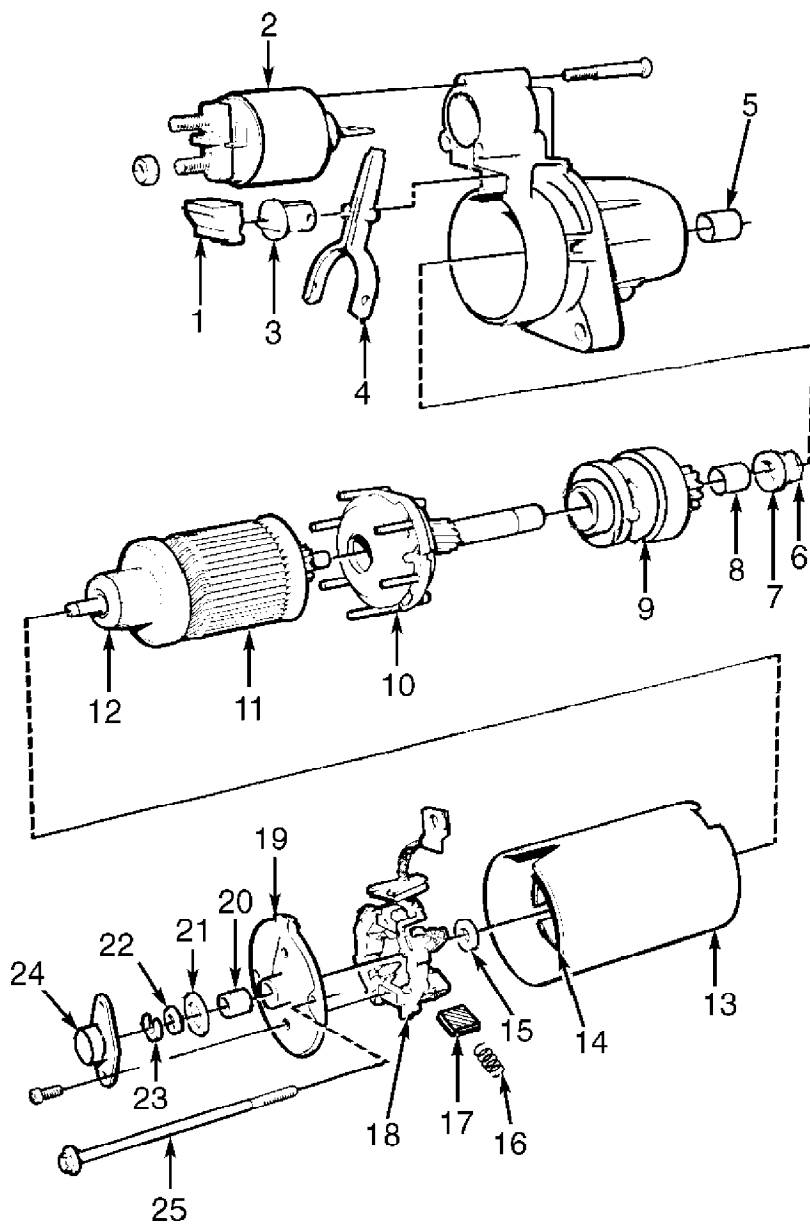
Application	Volts	Amps.	RPM
0 001 108 107 .....	11.5 .....	75 .....	2900
0 001 108 153 .....	11.5 .....	75 .....	2900
0 001 108 166 .....	12.0 .....	75 .....	3000
0 001 108 167 .....	12.0 .....	75 .....	2900
0 001 110 063 .....	11.2 .....	95 .....	2800
0 001 218 173 .....	12.0 .....	75 .....	6100

## SOLENOID TEST

Connect negative battery cable to starter solenoid terminal "M". Connect battery positive lead to solenoid terminal No. 50. See Fig. 2. If plunger does not extend firmly, replace solenoid.

## OVERHAUL

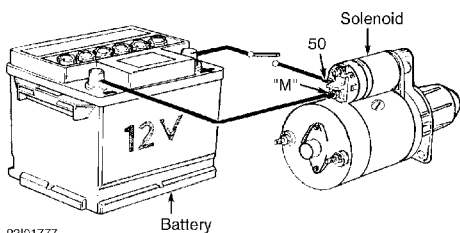
NOTE: Use illustration for starter overhaul. See Fig. 1.



1. Rubber Washer
2. Control Solenoid
3. Front Bearing Housing
4. Shift Arm
5. Bearing Bushing
6. Lock Ring
7. Stop Ring
8. Bushing
9. Bendix Drive
10. Planet Gear
11. Armature
12. Commutator
13. Starter Body
14. Permanent Magnets
15. Fiber Washer
16. Brush Springs
17. Brushes
18. Brush Holder
19. Rear Cover
20. Rear Bushing
21. Sealing Ring
22. Shim
23. Lock Ring
24. Rear Bearing Cover
25. Rod

92E01775

Fig. 1: Exploded View Of Bosch Starter  
 Courtesy of Volvo Cars of North America.



92I01777

Fig. 2: Testing Starter Solenoid  
 Courtesy of Volvo Cars of North America.

## STARTER SPECIFICATIONS

BOSCH STARTER SPECIFICATIONS TABLE

Application	Specification
Carbon Brush Minimum Length	
0 001 108 107 .....	.17" (4.5 mm)
0 001 108 153 .....	.17" (4.5 mm)
0 001 108 166 .....	.44" (11.2 mm)
0 001 108 167 .....	.44" (11.2 mm)
0 001 110 063 .....	.23" (6 mm)
0 001 218 173 .....	.64" (16.5 mm)
Commutator Diameter	
0 001 108 107 .....	1.22" (31.2 mm)
0 001 108 153 .....	1.22" (31.2 mm)
0 001 108 166 .....	1.28" (32.7 mm)
0 001 108 167 .....	1.28" (32.7 mm)
0 001 110 063 .....	1.22" (31.2 mm)
0 001 218 173 .....	1.19" (30.4 mm)
Commutator Runout	
0 001 108 107 .....	.0004" (.010 mm)
0 001 108 153 .....	.0004" (.010 mm)
0 001 108 166 .....	.0004" (.010 mm)
0 001 108 167 .....	.0004" (.010 mm)
0 001 110 063 .....	.0004" (.010 mm)
0 001 218 173 .....	.0012" (.030 mm)
Core Runout	
0 001 218 173 91 62 928 .....	.003" (.08 mm)
All Others .....	.002" (.05 mm)
End Play	
0 001 108 107 .....	.002-.015" (.05-.40 mm)
0 001 108 153 .....	.002-.015" (.05-.40 mm)
0 001 108 166 .....	.008-.028" (.20-.70 mm)
0 001 108 167 .....	.008-.028" (.20-.70 mm)
0 001 110 063 .....	.002-.015" (.05-.40 mm)
0 001 218 173 .....	.002-.028" (.05-.70 mm)

**WIRING DIAGRAMS**

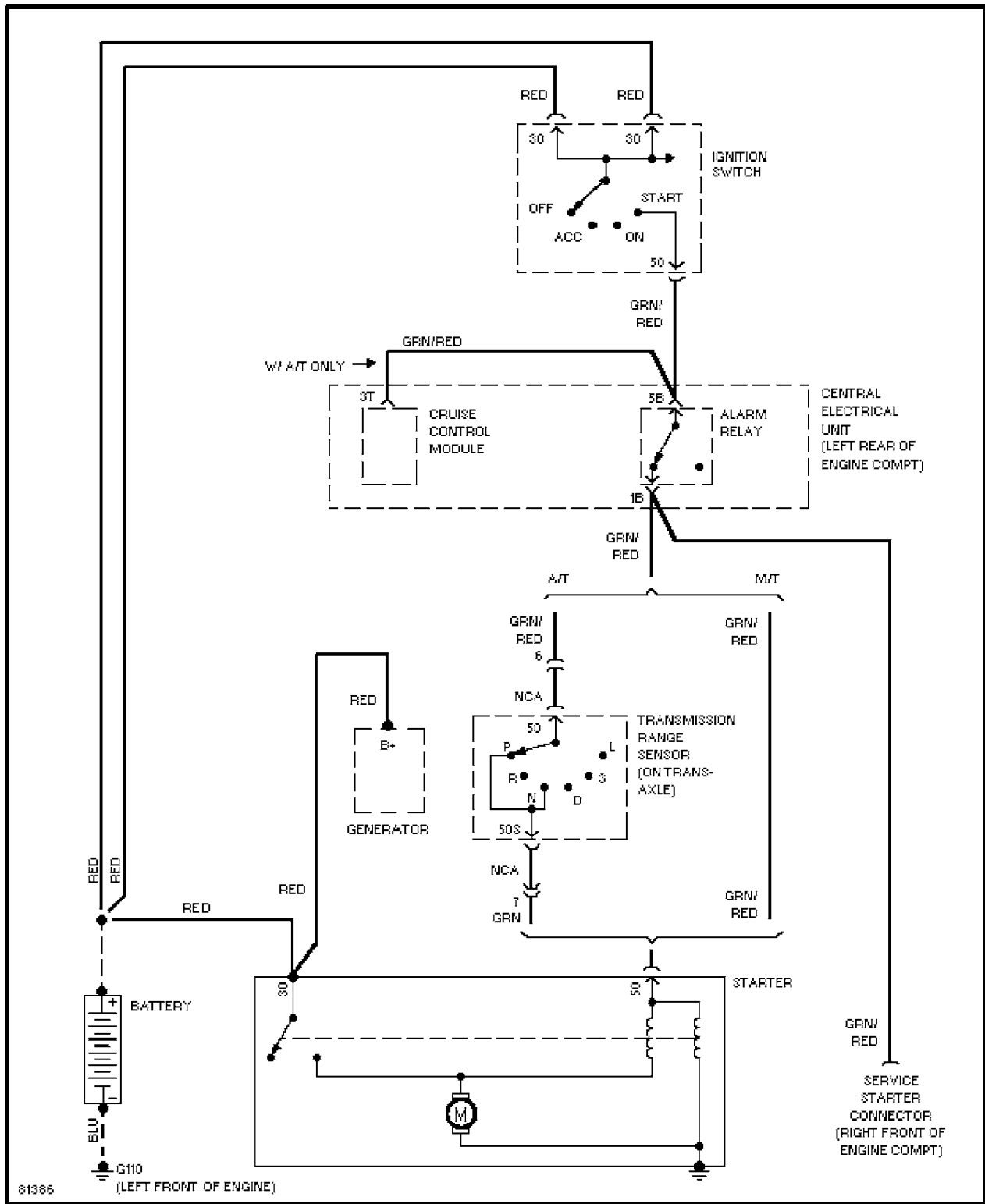


Fig. 3: Starting System Wiring Diagram (1995-96)