

2003-05 STARTING & CHARGING SYSTEMS**Starter - Z4****DESCRIPTION**

Bosch starter is a brush-type, series-wound electric motor with an overrunning clutch. Field frame carries pole shoes and field coils, and is enclosed by commutator end frame and drive bushing. Armature shaft drive end drives a reduction gear.

TROUBLE SHOOTING

NOTE: See TROUBLE SHOOTING article in GENERAL INFORMATION.

REMOVAL & INSTALLATION

CAUTION: When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See COMPUTER RELEARN PROCEDURES article in GENERAL INFORMATION before disconnecting battery. Obtain radio code card from customer. Note stored stations and restore them after connecting battery. Stored settings of on-board computer and clock will also be lost. All available central keys must be recoded for cars with first generation infrared transmitter locking systems.

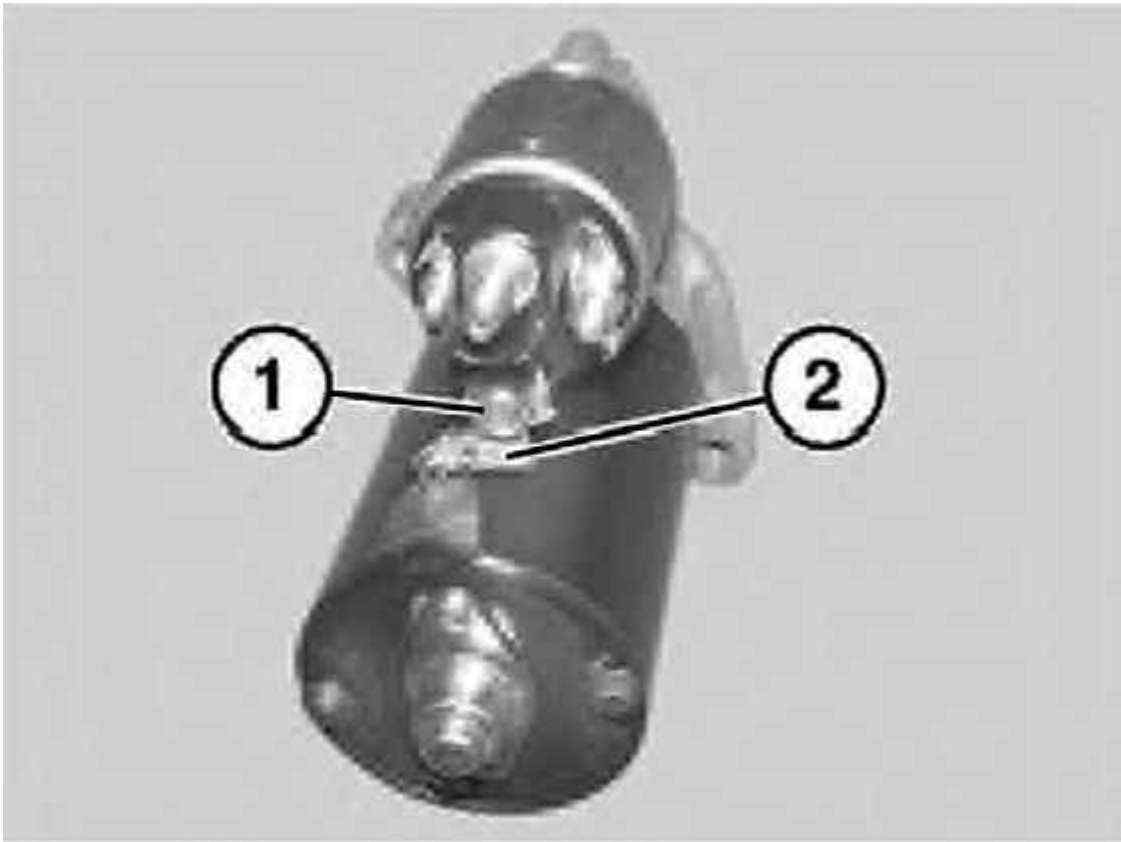
SOLENOID SWITCH

CAUTION: DO NOT turn cable lug while tightening down. There is a risk of a short circuit to starter motor housing.

NOTE: Numbers in text apply to numbers in figures.

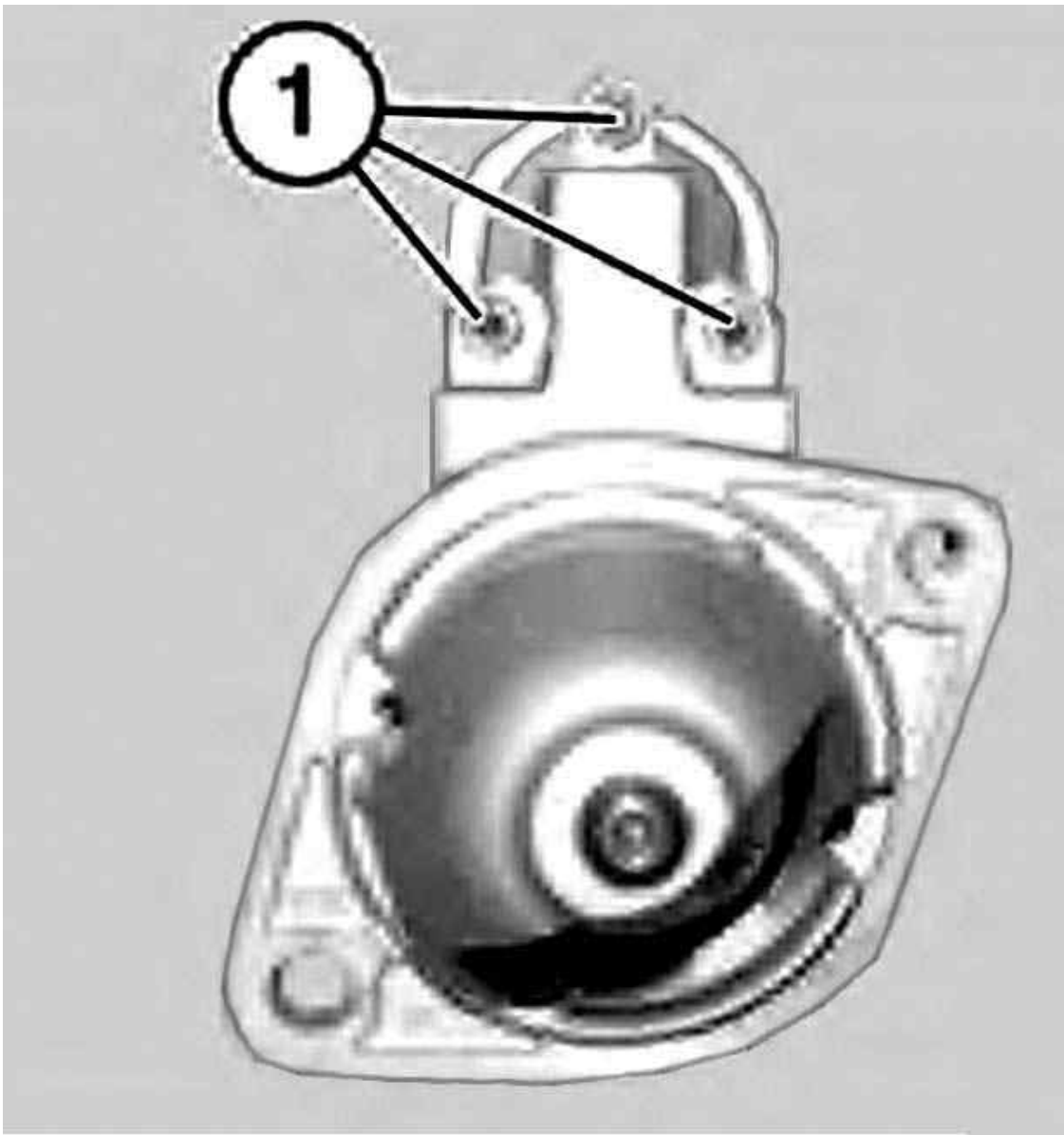
Removal & Installation

1. Turn off ignition. Remove starter. See STARTER .
2. Remove nut (1). See Fig. 1 . Remove cable lug (2).
3. Remove screws (1). See Fig. 2 .
4. Remove solenoid switch (1) and spring (2). See Fig. 3 . Unhook pin (3).
5. To install, reverse removal procedure. Check pin (3) for wear and apply grease. Tighten nut for cable lug to specification. See TORQUE SPECIFICATIONS . Do NOT turn cable lug while tightening down.



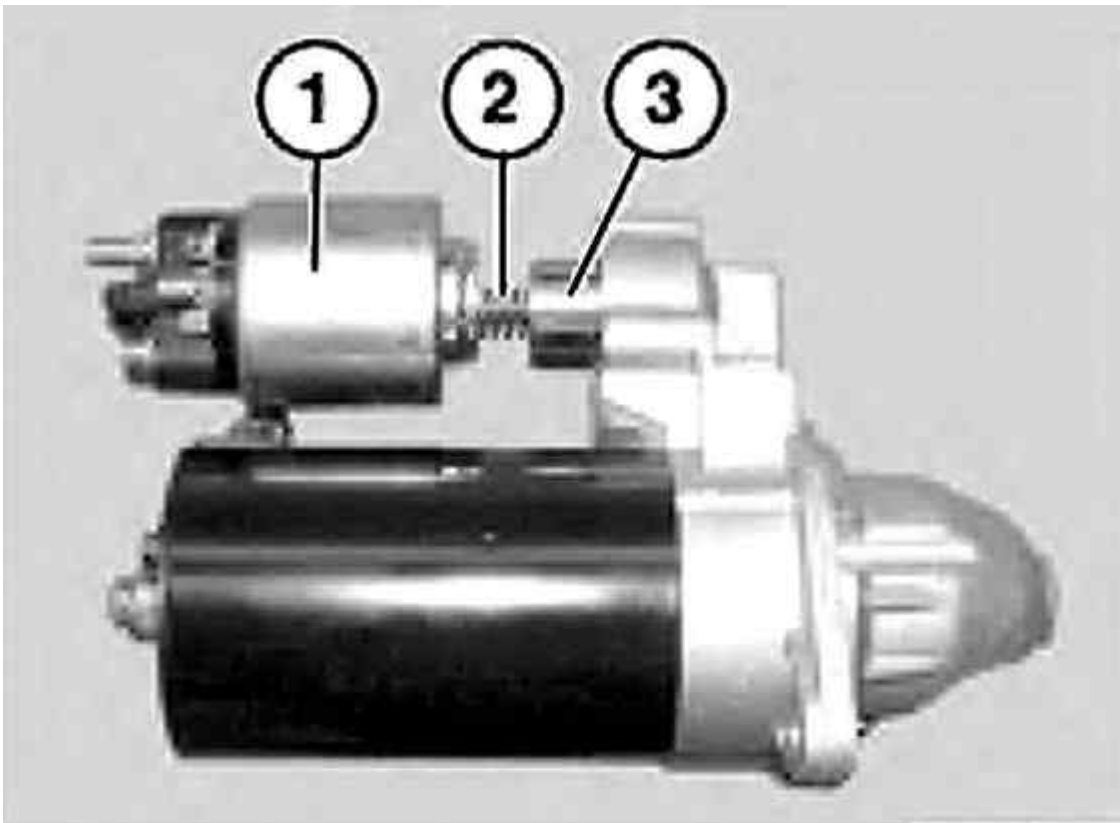
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Fig. 1: Removing Cable Lug
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 2: Removing Solenoid Switch Screws
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 3: Removing Solenoid Switch

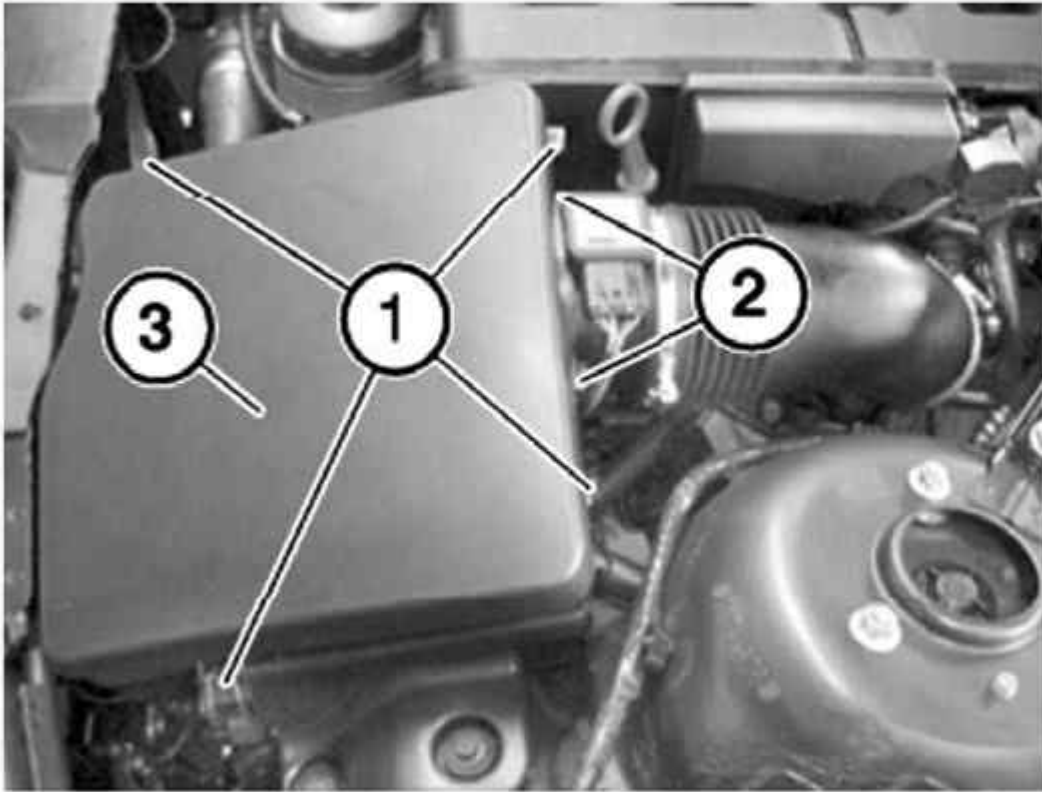
Courtesy of BMW OF NORTH AMERICA, INC.

STARTER

NOTE: Numbers in text apply to numbers in figures. All procedures can be performed from above.

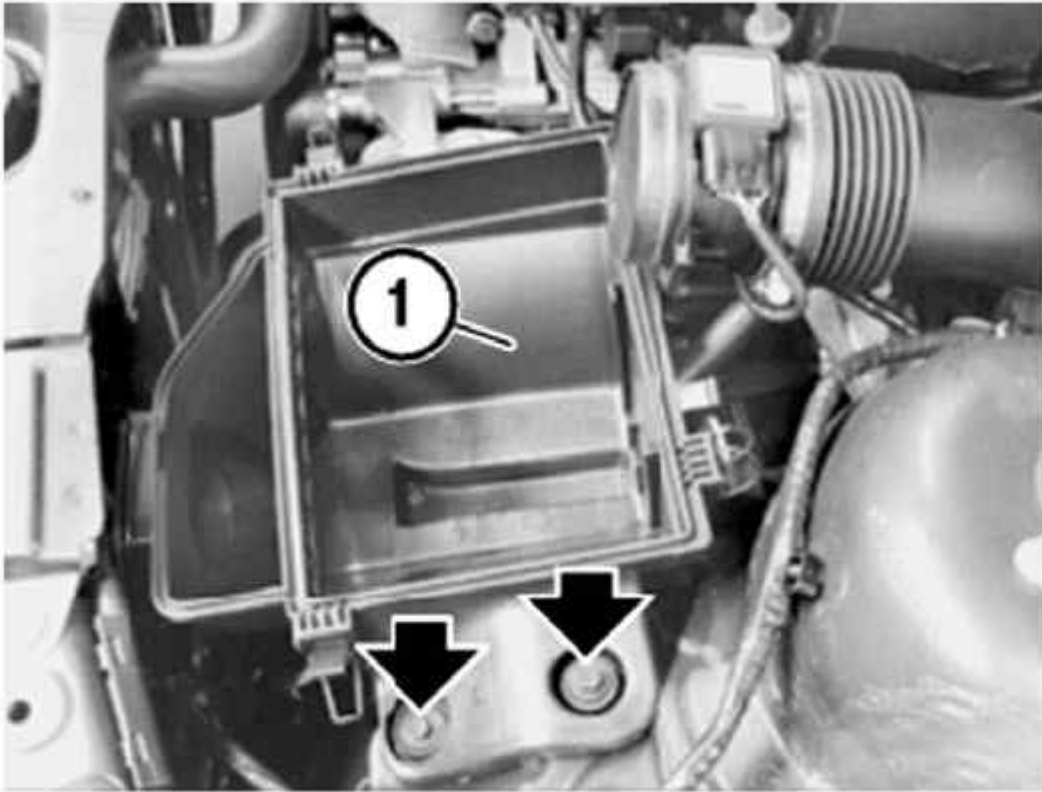
Removal & Installation

1. Switch off ignition. Disconnect battery negative lead from battery.
2. Open clips (1). See **Fig. 4** . Open retainers (2) on air-mass flow sensor. Remove top section (3) of intake filter housing.
3. Unfasten screws. See **Fig. 5** . Remove intake filter housing (1).
4. Remove nut (1) and remove lead from starter motor. See **Fig. 6** . Remove nut (2) and disconnect battery positive leads from starter motor. Remove screws (3) and remove starter motor (4).
5. To install, reverse removal procedure. Check starter motor pinion and ring gear for damage. Tighten fasteners to specification. See **TORQUE SPECIFICATIONS** .



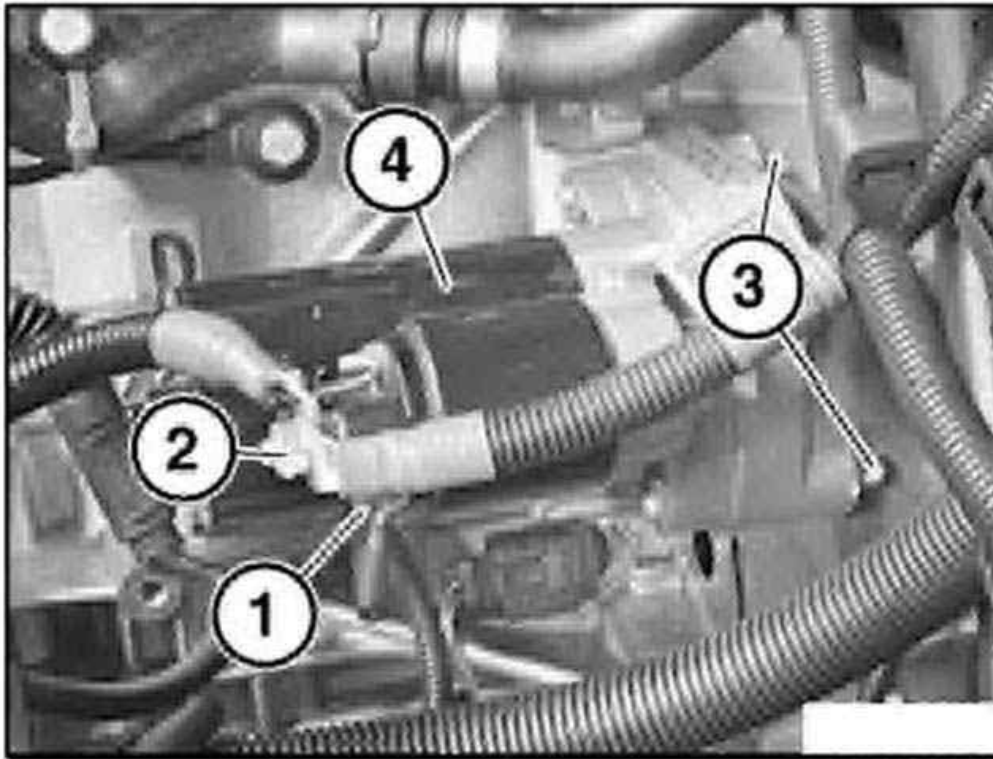
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Fig. 4: Removing Top Of Intake Filter Housing
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 5: Removing Intake Filter Housing
Courtesy of BMW OF NORTH AMERICA, INC.



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Fig. 6: Removing Leads From Starter Motor
Courtesy of BMW OF NORTH AMERICA, INC.

TORQUE SPECIFICATIONS

Torque Specifications

Application	Ft. Lbs. (N.m)
Starter-To-Transmission Bell Housing	33 (45)
INCH Lbs. (N.m)	
Electrical Leads-To-Starter	
5 mm	44 (5)
6 mm	62 (7)
8 mm	115 (13)

WIRING DIAGRAMS

2005 BMW Z4

2003-05 STARTING & CHARGING SYSTEMS Starter - Z4

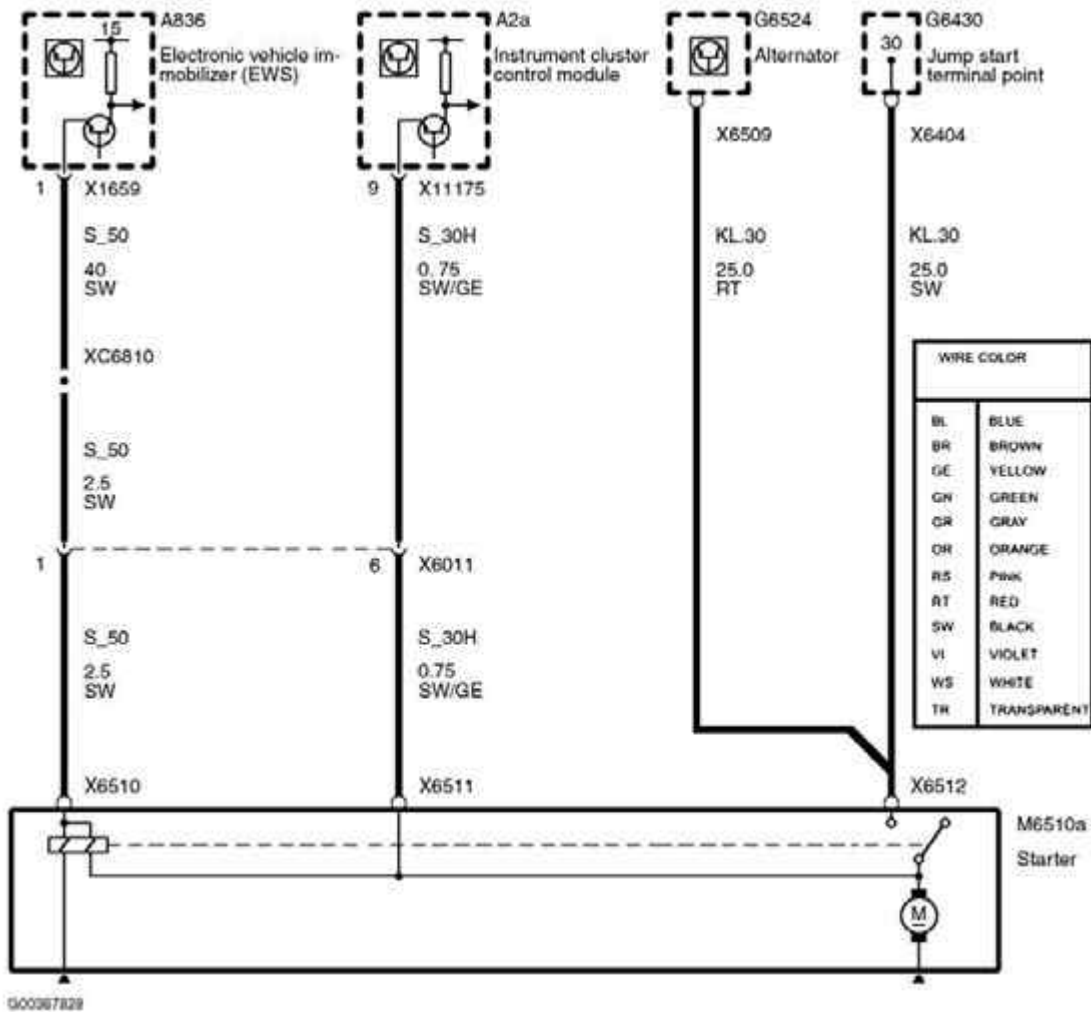


Fig. 7: Starter System Wiring Diagram (Up To 9/03)
 Courtesy of BMW OF NORTH AMERICA, INC.

2005 BMW Z4

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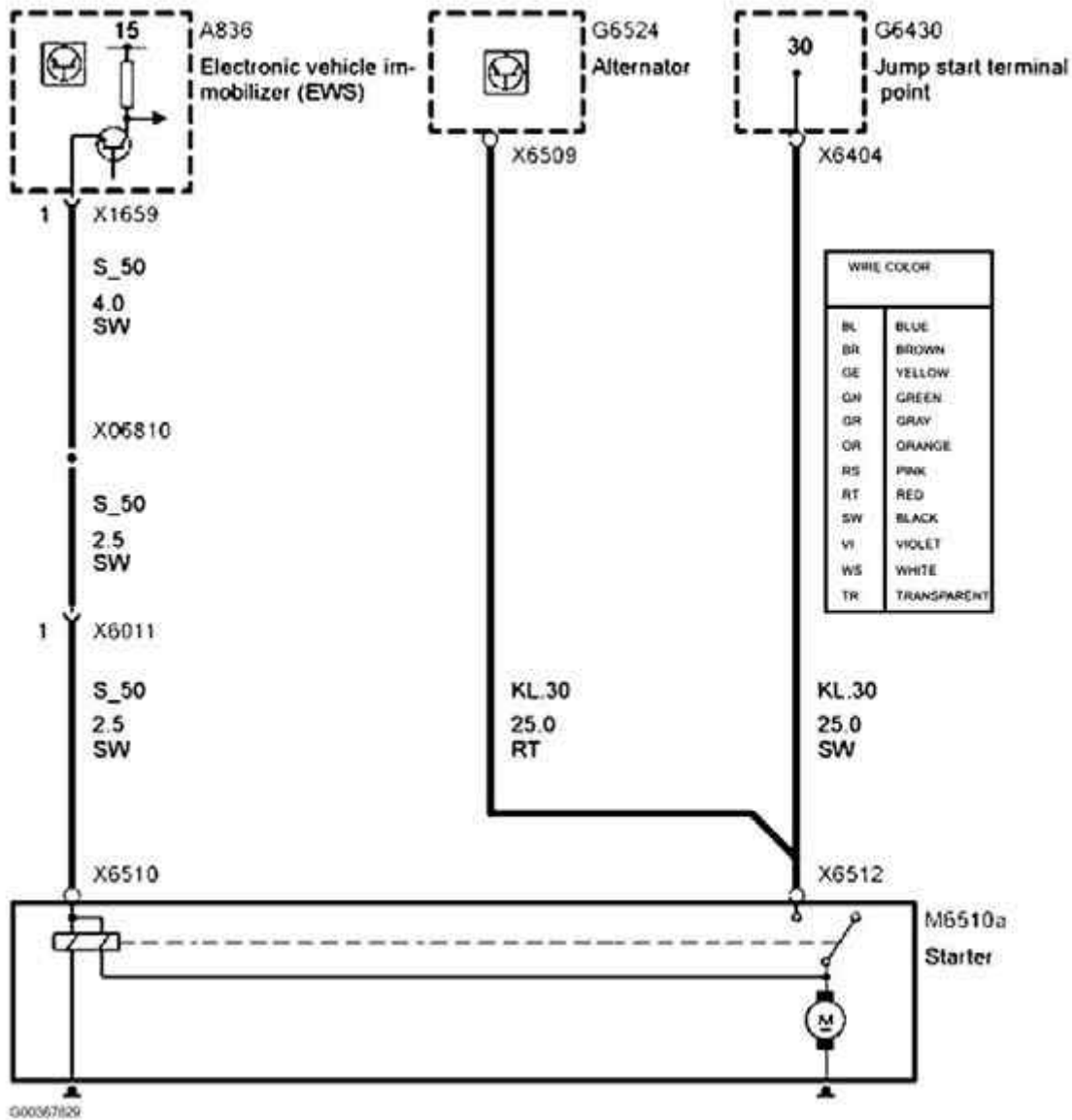


Fig. 8: Starter System Wiring Diagram (From 9/03 To 9/04)
Courtesy of BMW OF NORTH AMERICA, INC.

2005 BMW Z4

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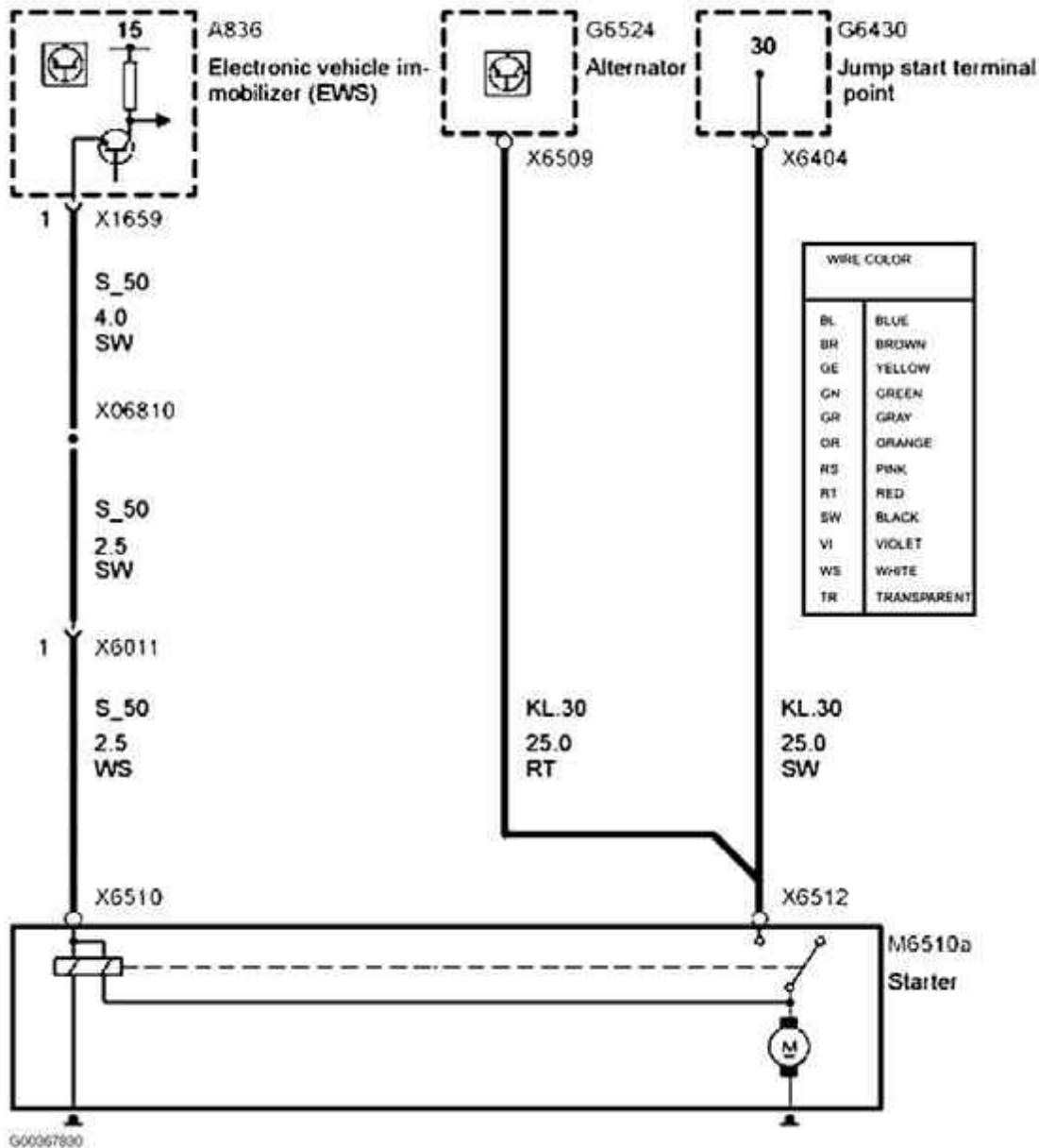


Fig. 9: Starter System Wiring Diagram (As Of 9/04)
 Courtesy of BMW OF NORTH AMERICA, INC.