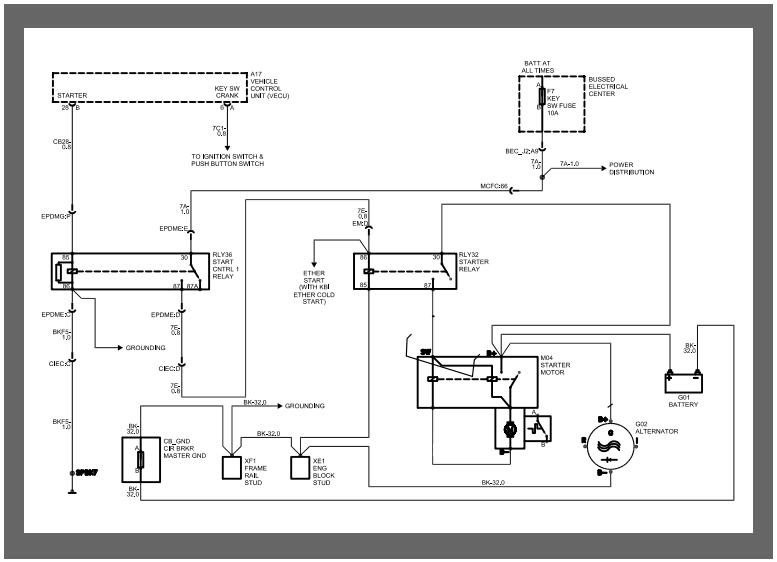
VOLVO

ELECTRICAL SCHEMATICS

FOR THE VOLVO ENGINE
PREVOST BUSES (PREVH/PREVX)

From Engine Build Date September 12, 2010

(includes Wiring Diagrams)



JANUARY 2011
(REVISED - SUPERSEDES ISSUE DATED FEBRUARY 2009)

PV776-K-SCHEMBUS-JAN-11

ATTENTION

The information in this manual is not all-inclusive and cannot take into account all unique situations. Note that some illustrations are typical and may not reflect the exact arrangement of every component installed on a specific chassis.

The information, specifications, and illustrations in this publication are based on information that was current at the time of publication.

INTRODUCTION

WIRING DIAGRAMS

Engine Controls

COMPONENT LOCATION VIEWS

1. Preliminary Information

This Electrical Troubleshooting Manual contains wiring diagrams for the vehicle's electrical systems. It is intended to provide the technician with the information necessary to diagnose and repair the vehicle's electrical systems.

The information in this manual is not all-inclusive and cannot take into account all unique situations. Although every effort has been made to ensure that all the information is as accurate as possible, due to our product upgrades, some information may not be applicable to all chassis. Not all chassis are equally equipped, and care should be taken to determine exactly what equipment is installed on the vehicle.

The information, specifications, and illustrations in this publication are based on information that was current at the time of publication. We reserve the right to make changes at any time, without notice.

2. Safety Information

Please take the time to familiarize yourself with the contents of this manual before attempting to work on a vehicle. Make sure you completely understand the instructions for performing a test before beginning the test procedure

Correctly performed service procedures are critical for technician safety for safe, reliable operation of the vehicle.

Cautionary *signal words* ("Danger", "Warning", "Caution") may appear in various locations throughout this manual. Information accented by one of these signal words must be observed to minimize the risk of personal injury to service personnel, or the possibility of improper service methods which may damage the vehicle or render it unsafe. Additional *Notes* and *Service Hints* are utilized to emphasize areas of procedural importance and to provide suggestions for ease of repair.

Particular service operations may require the use of special tools for specific purposes. These special tools should be used in the manner described, whenever specified in the instructions.

Anyone using a service procedure or tool not recommended in this manual must first satisfy himself thoroughly that neither his safety nor vehicle safety will be jeopardized by the service method he selects. Individuals deviating in any manner from the instructions provided assume all risks of consequential personal injury or damage to equipment involved.

Volvo Trucks North America cannot anticipate every possible occurrence that may involve a potential hazard. Accidents can be avoided by recognizing potentially hazardous situations and taking the necessary precautions. Performing service procedures correctly is critical to technician safety and safe, reliable vehicle operation.

3. General Shop Safety Practices

The following list of general shop safety practices can help technicians avoid potentially hazardous situations and reduce the risk of personal injury.

- Perform all service work on a flat, level surface. Block wheels to prevent vehicle from rolling.
- DO NOT wear loose-fitting or torn clothing. Remove any jewelry before servicing vehicle.
- ALWAYS wear safety glasses and protective shoes. Avoid injury by being aware of sharp corners and jagged edges.
- Use hoists or jacks to lift or move heavy objects.
- NEVER run engine indoors unless exhaust fumes are adequately vented to the outside.
- Be aware of hot surfaces. Allow engine to cool sufficiently before performing any service or tests in the vicinity of the engine.
- Keep work area clean and orderly. Clean up any spilled oil, grease, fuel, hydraulic fluid, etc.
- Only use tools that are in good condition, and always use accurately calibrated torque wrenches to tighten all fasteners to specified torques. In instances where procedures require the use of special tools that are designed for a specific purpose, use only in the manner described in the instructions.
- Do not store natural gas-powered vehicles indoors for an extended period of time (overnight) without first removing the fuel.
- Never smoke around a natural gas-powered vehicle.

4. Definitions

The following definitions indicate the use of these signal words as they appear throughout the manual:

Service Hint: A helpful suggestion that can make the service or procedure being performed quicker and/or easier while possibly reducing service costs.

Note: Indicates a procedure, practice, or condition that must be followed in order to have the vehicle or component function in the manner intended.

Caution: Indicates an unsafe practice where damage to the product could occur.

Warning: Indicates an unsafe practice that could result in personal injury.

Personal injury: Means that the injury is of a temporary nature and that full recovery is expected.

Danger: Indicates an unsafe practice that could result in death or serious personal injury. Serious personal injury is considered to be permanent injury from which full recovery is NOT expected, resulting in a change in life style.

5. How To Use This Manual

The following section describes how this manual is organized, the type of information this manual contains, what the information means, and how to use the information to troubleshoot electrical problems.

Circuit schematics divide the entire electrical system into individual systems. Each circuit is shown completely and independently in each system. Other components that are connected to the circuit may not be shown unless they influence the circuit operation.

Many of the electrical schematic diagrams in this manual show multiple occurrences of the vehicle control unit, the engine control unit, or other control modules. The diagrams are formatted in this way for clarity and ease of use, and do not imply that more than one vehicle control unit, engine control unit, or other control modules are installed on any vehicle.

All wiring connections between components are shown as they exist in the vehicle; however, it is important to realize that no attempt has been made on the wiring diagram to represent components and wiring as they physically appear on the vehicle. For example, a four-foot length of wire is treated no differently in a schematic from one that is only a few inches long. Also, to aid in understanding electrical (electronic) operation, wiring inside complicated components may have been simplified.

Each system normally starts with the component that powers the circuit, such as a fuse or ignition switch. Current flow is shown from the power source at the top of the page to ground at the bottom of the page. In order to concentrate on the essential parts of the system, power supply and ground connections are sometimes simplified in the wiring diagrams. A full representation of the power supply of a fuse or the power distribution from a fuse to various components is given in the Power Distribution diagrams. A full representation of the ground connections is given in the Ground Distribution diagrams.

Within the wiring diagrams, switches, relays, and sensors are shown *at rest*, as if the ignition switch were OFF.

Circuit Schematics

Each schematic represents one circuit. A circuit's wiring and components are arranged to show current flow, from power at the top of the page to ground at the bottom of the page. Note that circuits may share power or ground connections with the circuit shown.

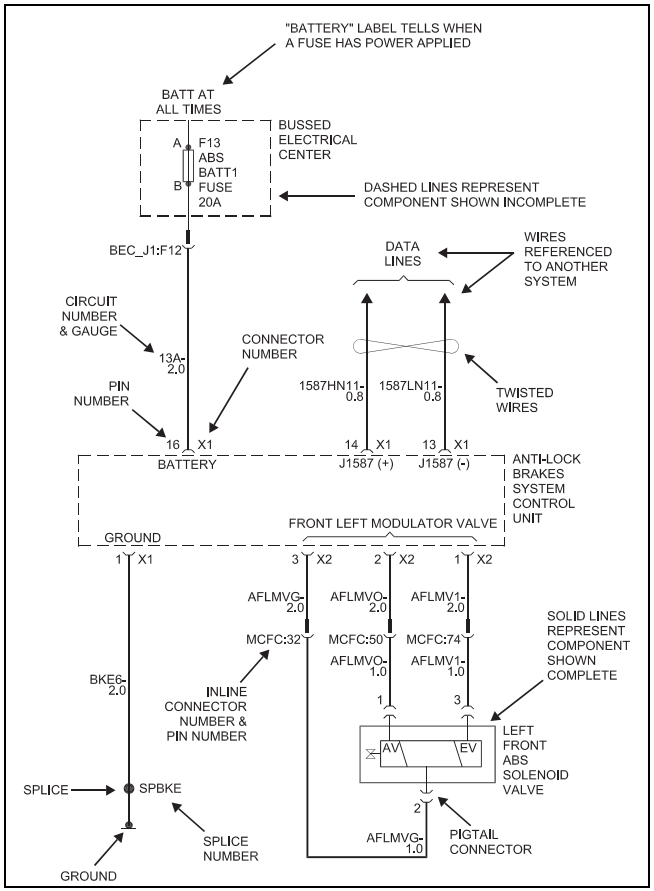


Figure 1. Schematics with descriptions, and how to use them

Wires

Wires are identified by circuit number and gauge number. For example, 13A-2.0, as shown in *Figure 1* — "2.0" indicates a metric gauge 2 wire on circuit "A" coming from fuse "13".

Wires are also identified by their location in a connector. For example, MCFC: 50 — the number "50" after the colon means that those terminals join in cavity 50 within connector MCFC.

Symbols

A description of schematic symbols is located in the symbols library.

Power Distribution Schematics

Power distribution schematics show how power is supplied from the positive battery terminal to the various circuits in the vehicle. Refer to the Power Distribution schematics section to get a detailed picture of how power is supplied to the specific circuit you are working on.

Individual circuit schematics begin with a fuse; so if Power Distribution shows that an inoperative circuit and another circuit share the same fuse, check a component in the other circuit. If the other circuit works, you know the fuse is good and power is available to the inoperative circuit.

Ground Distribution Schematics

Ground Distribution schematics show how components are grounded from the negative battery terminal and vehicle body to the various circuits in the vehicle. Refer to the Ground Distribution schematics section to get a detailed picture of how ground is supplied to the specific circuit you are working on.

If Ground Distribution shows that an inoperative circuit and another circuit share the same ground point, check a component in the other circuit. If the other circuit works, you know the ground connection is good to the same splice point and ground is available to the inoperative circuit.

6. Electrical Testing Procedures

This portion of the manual shows common tests the technician will need to know in order to properly diagnose and repair the vehicle's electrical systems. The following six testing steps provide a good method to use when diagnosing an electrical system:

Step 1. Verify the complaint/problem

Operate the complete system (duplicate the complaint) and see all symptoms for yourself, in order to:

- Check the accuracy and completeness of the customer's complaint.
- Learn more that might give a clue to the nature of the problem:
  - Check power
  - Clean terminals
  - Tighten connections
  - Check alternator belts
  - Turn on lights to check batteries

Step 2. Narrow down the problem

Narrow down the possible causes and locations of the problems in order to more quickly find the exact cause:

- Refer to the wiring diagrams and schematics.
- Refer to service bulletins and letters.
- Check the easy items first:
  - Circuit breakers and fuses
  - Light bulbs
  - Connectors
  - Switches

Step 3. Test the cause

Use electrical test procedures to find the specific cause of the symptoms. You may also find the *Additional Troubleshooting Help* section to provide helpful suggestions.

- Test voltage
- Test continuity

Step 4. Verify the cause

Confirm that you have found the correct cause by operating the parts of the circuit you think are good.

Step 5. Make the repair

Repair or replace the faulty component.

Step 6. Verify the repair

Operate the system as in Step 1 and check that your repair has relieved all symptoms, as well as has not caused any new symptoms.

7. Additional Troubleshooting Help

Intermittent and Poor Connections

Most intermittent electrical problems are caused by faulty electrical connections or wiring, although a sticking component or relay might also cause a problem. Before condemning a component or wiring assembly, check the following items:

- Connectors are fully seated
- Spread terminals, or terminal push-out
- Terminals in the wiring assembly seated into the connector/component and locked into position
- Dirt or corrosion on the terminals, any amount of which could cause an intermittent problem
- Damaged connector/component casing, exposing the item to dirt or moisture
- Wire insulation that has rubbed through, causing a short to ground
- Broken wiring strands inside the insulation

Basic Electrical Knowledge

Without a basic knowledge of electricity, it will be difficult to use the diagnostic procedures needed to repair a vehicle. You should understand the basic theory of electricity and know the meaning of voltage, current (amps or amperes), and resistance (ohms). You should understand what happens in a circuit with an open or a shorted wire. You should be able to read and understand a wiring diagram.

To aid in understanding electrical flow, the following information illustrates the similarities between electrical and coolant circuits in a chassis:

Power Sources: Alternator/Battery ≈ Pump
Pathways: Wires/Terminals ≈ Hoses
Power Users: Light ≈ Engine/Radiator
Power Control: Breaker/Switch ≈ Thermostat

Units of Measure

Flow Volume: Volume of electrical current
Ampere (amps) ≈ Gallons per minute

Pressure: Potential difference between positive (+) and negative (-) power source poles
Voltage ≈ Pounds per square inch

Resistance: Resistance to current flow
Ohms ≈ Restriction

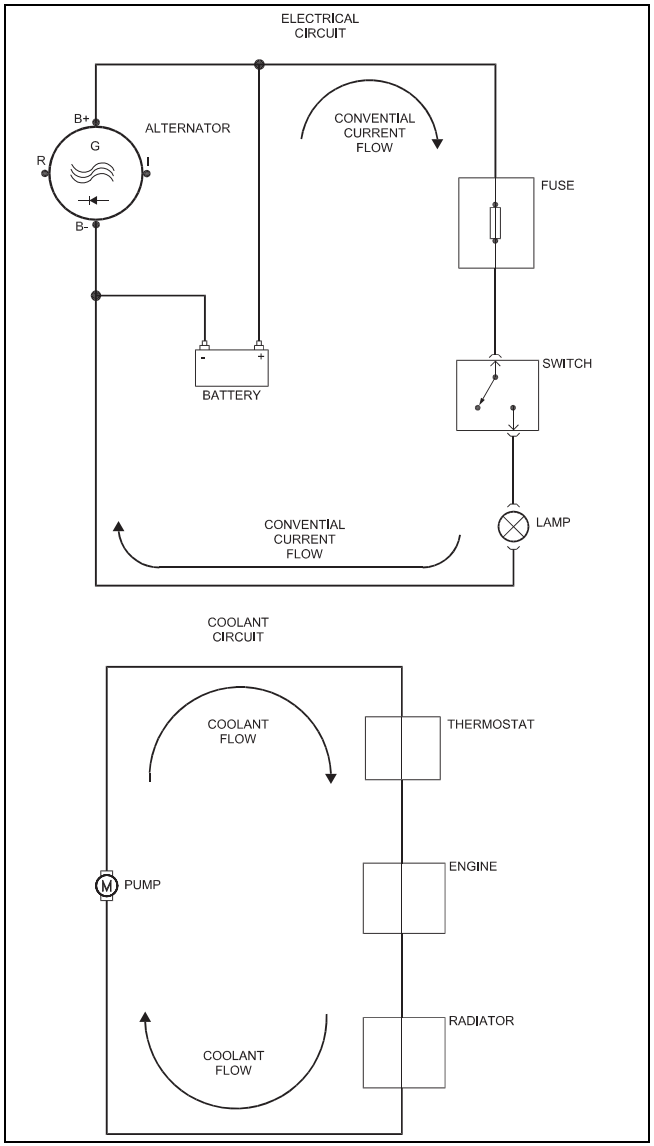


Figure 2. Electrical and Coolant Circuits

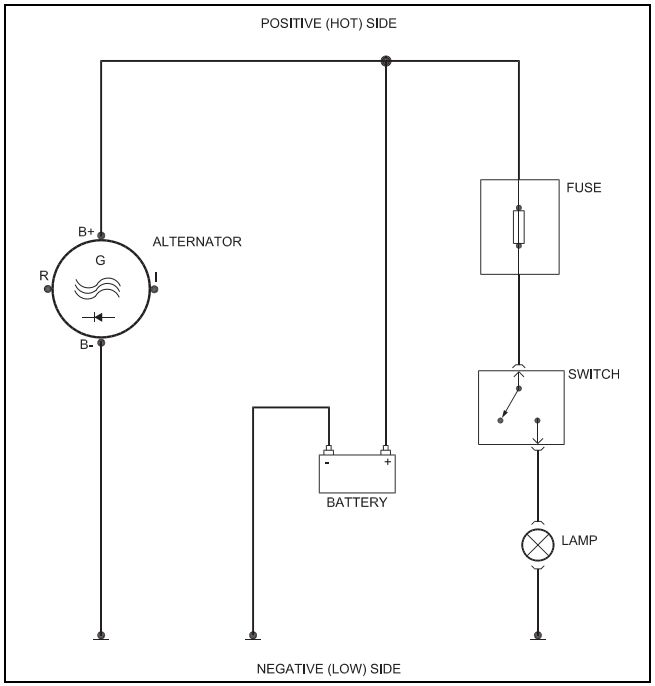


Figure 3. Basic Electrical Circuit

Power Sources:

Battery: - Electro-chemical
- Storage

Alternator: - Electro-magnetic
- Mechanically-driven

Power Controls:

- Circuit breakers/Fuses
- Switches
- Relays
- Solenoids
- Rheostats

Power Consumers:

- Lights
- Motors
- Instruments
- Solenoids
- Radios

Power Conductors:

- Wires
- Terminals
- Cab/Chassis
- Component cases

Types of Electrical Circuits

Closed Circuit

A closed circuit has a continuous path to ground. Current flows from the positive terminal of the battery through each component (fuse, switch, lamp) to ground.

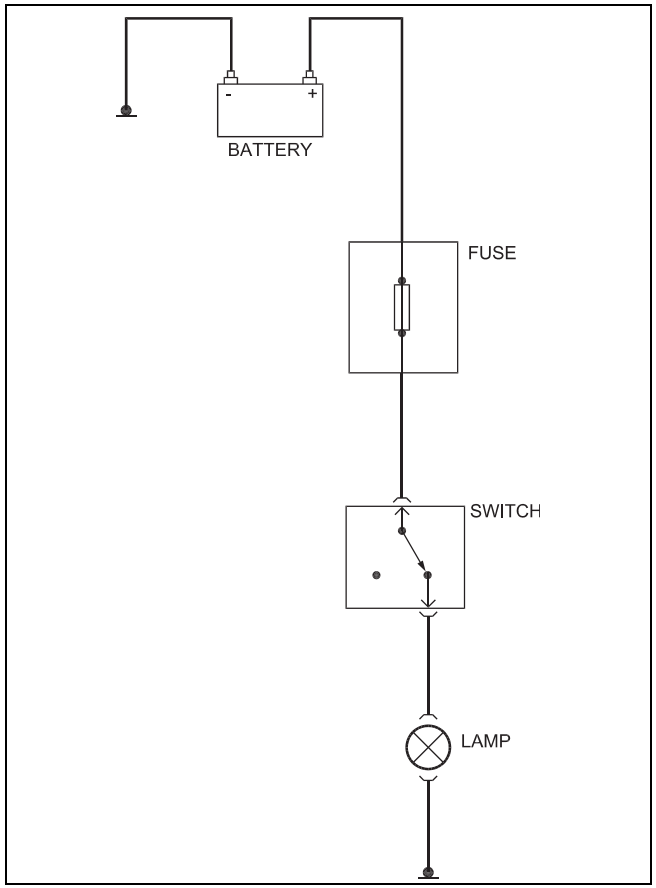


Figure 4. Closed Circuit

Open Circuit

An open circuit has the current path from positive to ground broken. Some causes are normal, such as a switch in the OFF position. Some causes are not normal, such as a blown fuse, a lamp filament open, or a broken wire to ground, as shown in *Figure 5*.

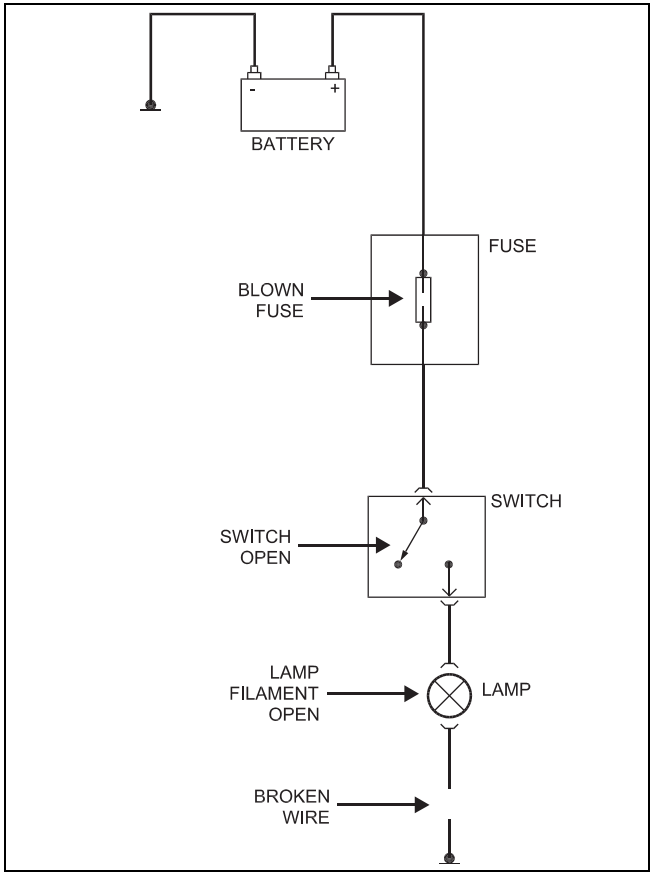


Figure 5. Open Circuit

Short to Ground

A short to ground is when current path is rerouted to ground, leaving out part of the original circuit and causing some or all of the circuit not to function properly. Some causes are wire insulation broken or worn through to bare wire, or a smashed wire between two pieces or metal. The most likely result of the instance shown in *Figure 6* would be a blown fuse when the switch is closed.

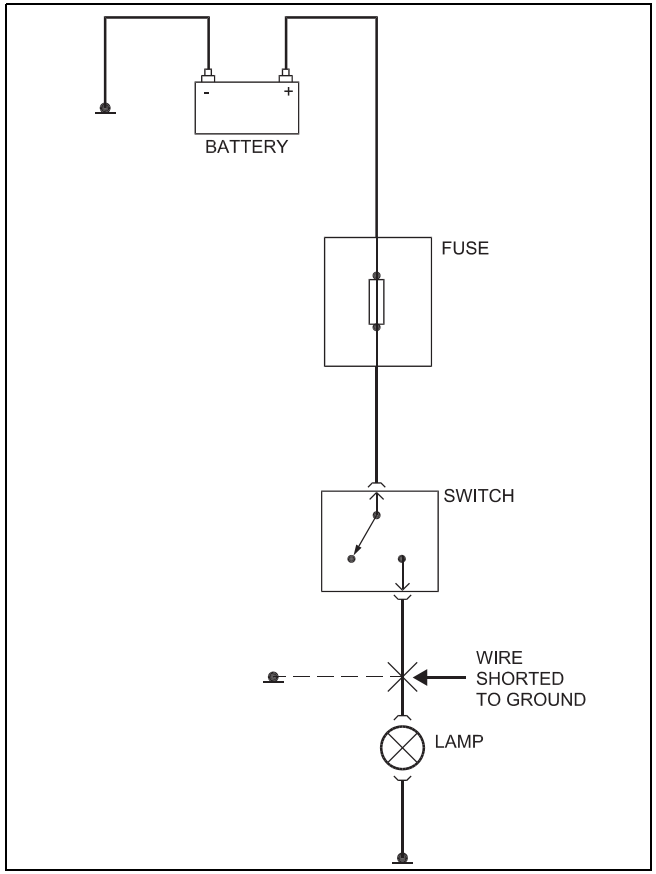


Figure 6. Short to Ground

Cross-Circuit Short

Separate parallel current paths crossed, resulting in undesirable circuit operation.

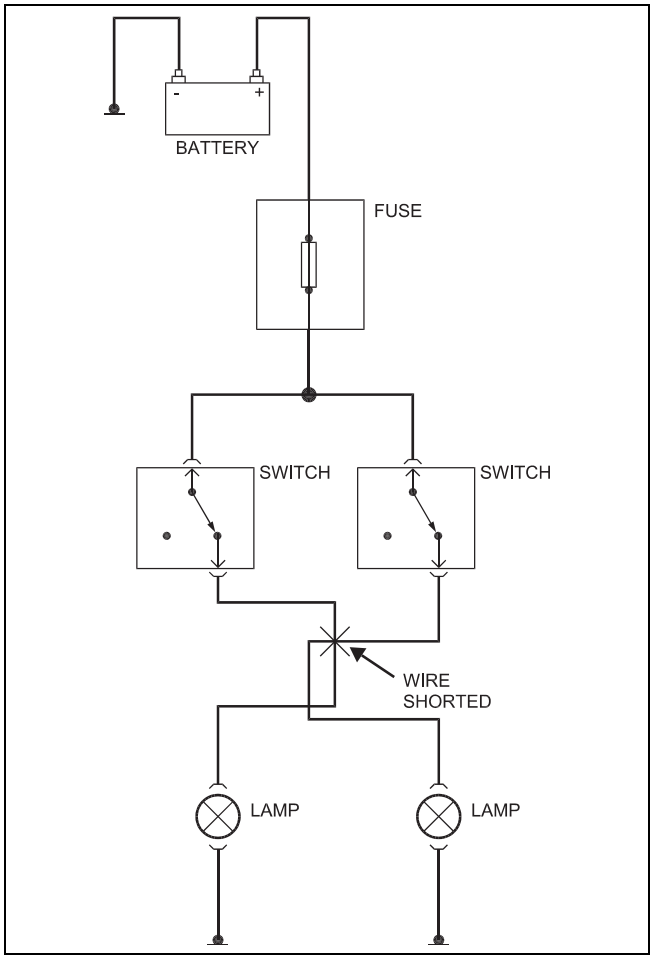


Figure 7. Cross-Circuit Short

Series Circuit (only one path to ground)

Characteristics:

1. **Voltage** — The sum of the voltage drops is equal to the applied voltage.
2. **Current** — Current is the same throughout the circuit.

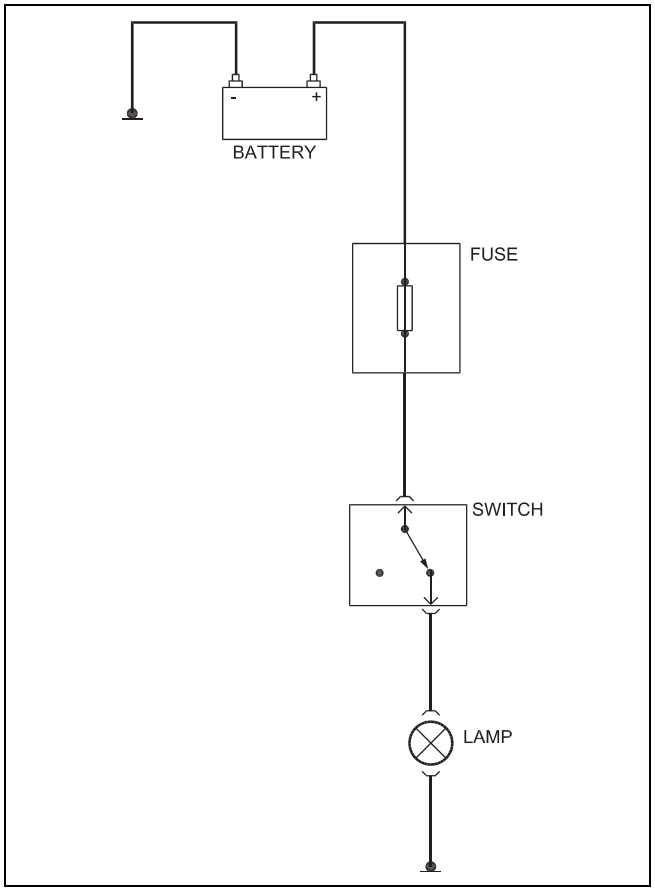


Figure 8. Series Circuit

Parallel Circuit (two or more paths for current to flow to ground, with a component on each path)

Characteristics:

1. **Voltage** — The voltage is equal across each path.
2. **Current** — The circuit's total current draw is equal to the sum of the current draw for all the branches.
3. **Open Circuit** — An open circuit on one path has no effect on the other paths

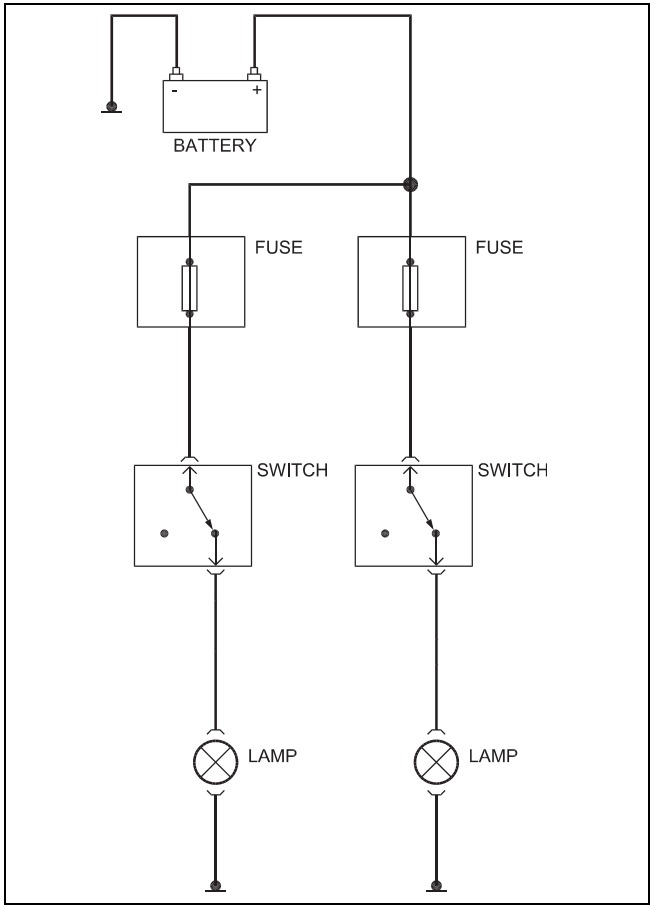


Figure 9. Parallel Circuit

Series/Parallel Circuit (a combination of series and parallel paths in the same circuit)

Characteristics:

1. **Voltage** — The voltage applied to each path is equal.
2. **Current** — The rules for series circuits apply to each series circuit segment. The rules for parallel circuits apply to each parallel circuit segment.
3. **Open Circuit** — An open circuit on one path has no effect on the other paths.

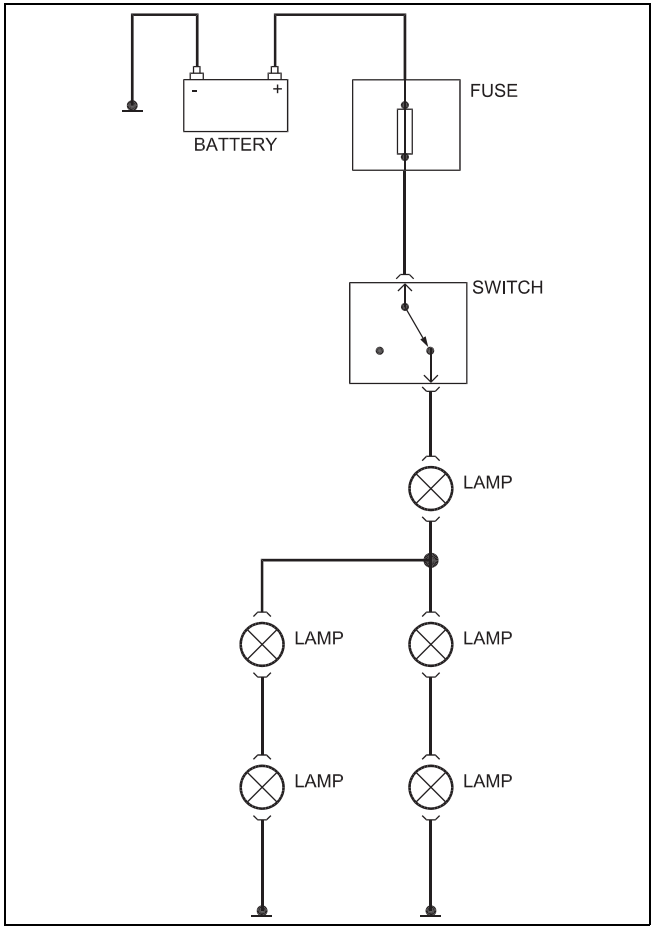


Figure 10. Series/Parallel Circuit

Tools used in Troubleshooting

Multimeter

A multimeter is used to make various electrical measurements, such as AC and DC voltage, AC and DC current, and resistance. It is called a multimeter because it combines the functions of a voltmeter, ammeter, and ohmmeter. Multimeters may also have other functions, such as diode and continuity tests. Read and understand the multimeter's user instructions before operating the multimeter.

Caution: Circuits that include any solid state control modules should only be tested with a 10-megohm or higher impedance multimeter.

Electrostatic Discharge (ESD) Sensitive Devices

All ESD-sensitive devices are solid state. When handling any electronic part, the service technician should follow these guidelines to reduce possible electrostatic charge build-up on the technician's body and inadvertent discharge to the electronic part. If it is not known whether or not a component is ESD sensitive, assume it is susceptible.

ESD Handling Procedures

1. Always touch a known good ground before handling the part. This should be repeated while handling the part and more frequently after sliding across a seat, sitting down from a standing position, or walking a distance.
2. Avoid touching electrical terminals of the part, unless so instructed by a written diagnostic procedure.
3. When using a multimeter, be sure to connect the ground lead first.
4. Do not remove a part from its protective package until it time to install the part.
5. Before removing the part from its package, ground the package to a known ground on the vehicle.

ESD Measuring Procedures

The circuits shown within the boxes are greatly simplified. Do not troubleshoot by measuring resistance at any terminal of these devices unless so instructed by a written diagnostic procedure. Due to the simplification of the schematics, resistance measurements could be misleading, or could result in electrostatic discharge.

Troubleshooting Tests

Testing for voltage

When testing for voltage at a connector without wire seals you do not have to separate the two halves of the connector. Instead, probe the connector from the back. Always check both sides of the connector. Dirty, corroded, and bent terminals may cause problems.

1. Place the multimeter in the appropriate DC volts range, and connect its negative lead to ground.
2. Connect the other lead of the multimeter to the point you want to check.
3. Note the voltage reading. It should be within one volt of measured battery voltage. A loss of more than one volt indicates a problem.

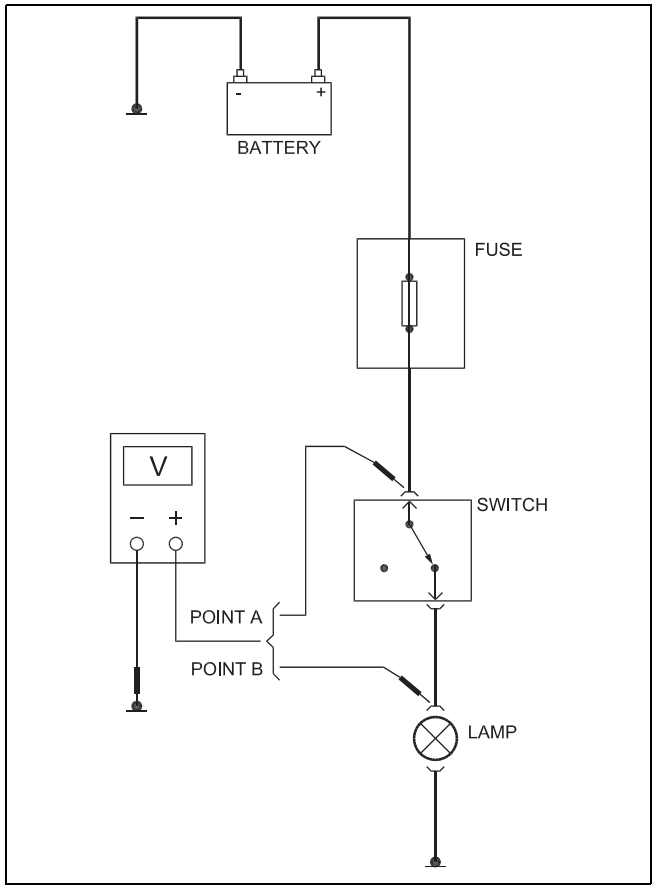


Figure 11. Testing for voltage

Testing for continuity

When testing for continuity at a connector without wire seals you do not have to separate the two halves of the connector. Instead, probe the connector from the back. Always check both sides of the connector because dirty, corroded, and bent terminals can cause problems (no electrical contact = an open).

1. Disconnect the negative cable from the vehicle battery. Place the multimeter in the lowest "OHMS" range.
2. Connect one lead of the multimeter to one end of the part of the circuit you want to test.
3. Connect the other lead to the other end.
4. On the multimeter, a low reading or no reading (zero), means good continuity.

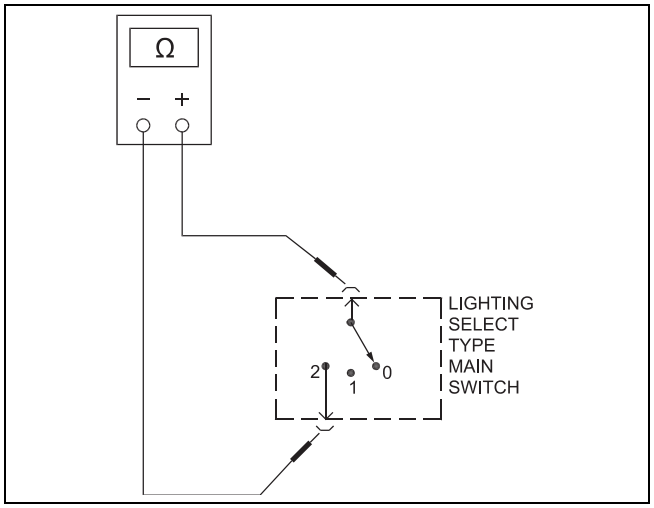


Figure 12. Testing for continuity

Testing for voltage drop

Wires, connectors, and switches are designed to conduct current with a minimum loss of voltage. A voltage drop of more than one volt indicates a problem. Circuits must be operating when checking voltage drop.

1. Place the multimeter in the appropriate DC volts range. Connect the positive lead to the end of the wire/connector/switch closest to the battery.
2. Connect the negative lead to the other end of the wire/side of the connector/ switch.
3. Turn on the components in the circuit.
4. The multimeter will show the difference in voltage between the two points. A difference, or drop, of more than one volt indicates a problem. Check the circuit for loose, dirty, bent terminals, or a defective component.

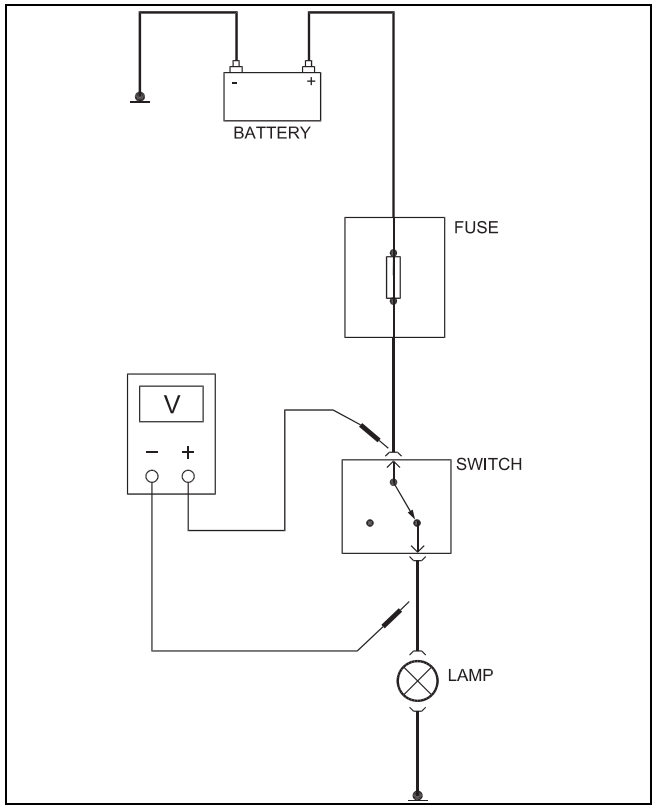


Figure 13. Testing for voltage drop

Testing for a short with a multimeter (volts range)

1. Remove the blown fuse and disconnect the load.
2. Connect a multimeter switched to the appropriate DC volts range, across the fuse terminals to make sure voltage is present. You might have to turn the ignition switch to ON; check the schematic to see.
3. Beginning near the fuse box, wiggle the harness. Continue this at convenient points about six inches apart while watching the multimeter.
4. Where the multimeter voltage drops to zero, there is a short to ground in the wiring near that point.

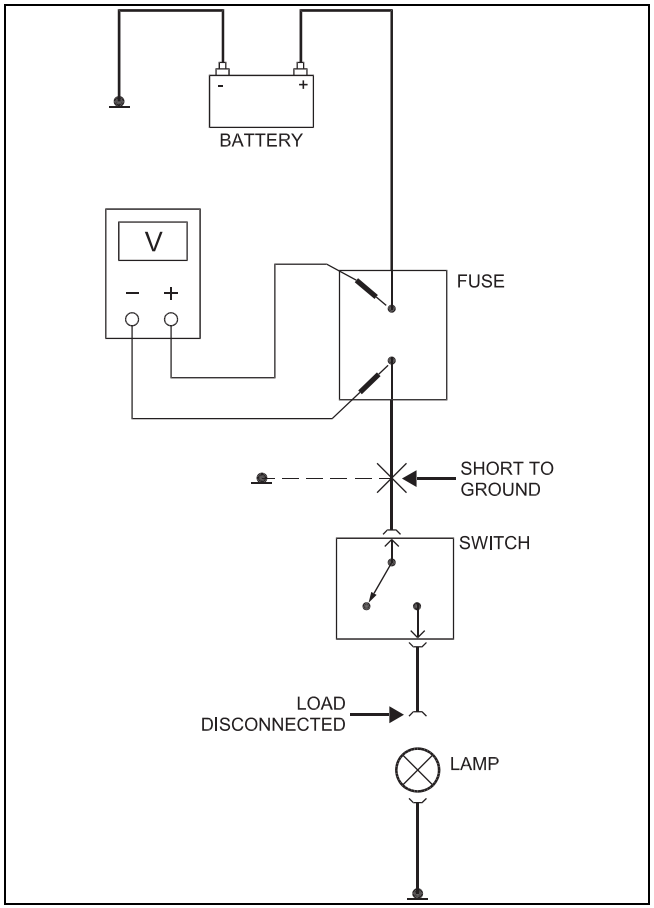


Figure 14. Testing for a short with a multimeter (volts)

Testing for a short with a multimeter (ohms range)

1. Remove the blown fuse and disconnect the battery and load.
2. Connect one lead of the multimeter (switched to the lowest "OHMS" range) to the fuse terminal on the load side.
3. Connect the other lead to a known good ground.
4. Beginning near the fuse box, wiggle the harness. Continue this at convenient points about six inches apart while watching multimeter.
5. If the multimeter displays a low reading or no reading (zero), there is a short to ground in the wiring near that point.

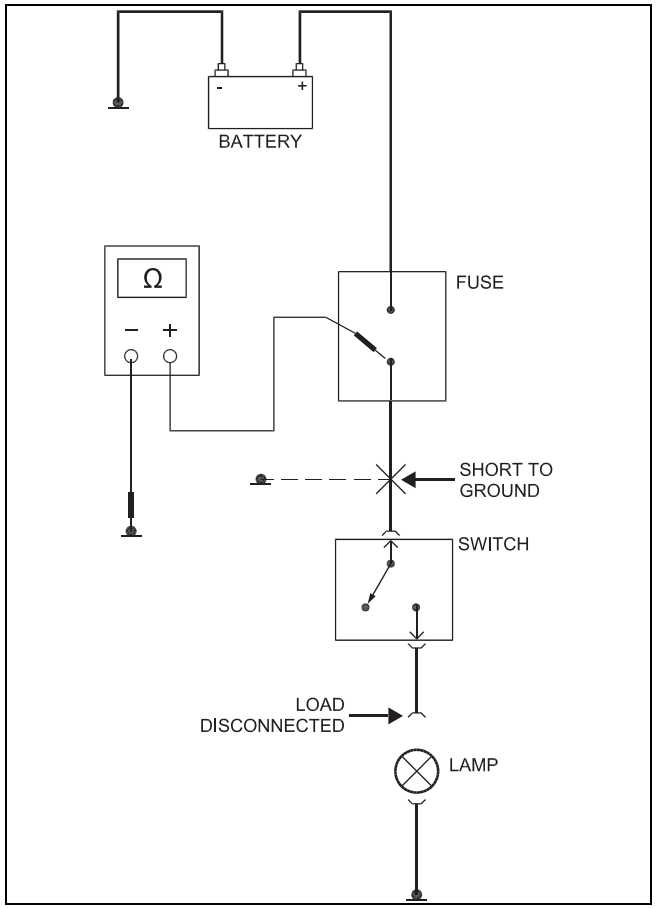


Figure 15. Testing for a short with a multimeter (ohms)

Testing for current draw with a multimeter

When testing for the current draw of a circuit, it is important to know the expected current of a tested circuit. Current draw above or below the specifications of the circuit indicates a problem.

1. Set the multimeter to the highest current range and/or plug the wire test leads into the proper jacks. Switch to a lower current range only when necessary to obtain a satisfactory reading.
2. Connect the multimeter leads in series and on the positive side of the component being tested.
3. Turn the circuit on. Compare reading on multimeter with circuit specifications.
4. If the current reading is close to specifications, the circuit is OK.
5. If the multimeter reading is above or below specifications, check for shorts or opens in series or parallel circuits, or check power source.

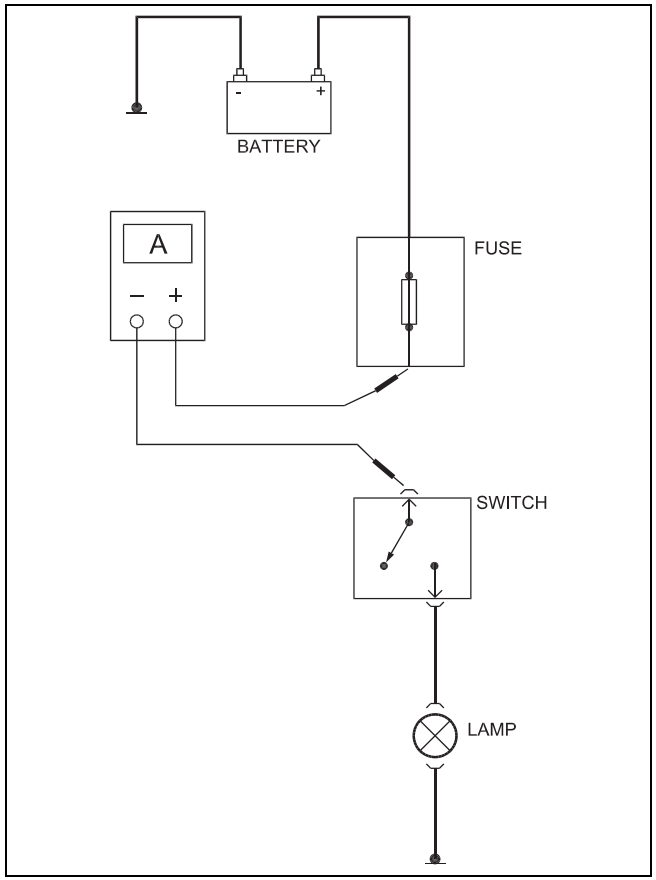


Figure 16. Testing for current draw with a multimeter

Testing maintenance-free battery voltage with a multimeter

1. Discharge battery surface charge.
   a. Headlights “ON” for one minute or
   b. Crank engine starter 15 seconds (do not start engine)
2. Turn off ignition and all accessories
3. Disconnect the battery cables
4. Test each battery separately by connecting a multimeter on the “Volts” range.
5. A reading of 12.4V, the battery is OK. A reading of 9.4-12.4V, the battery must be recharged. A reading below 9.4V, replace the battery.

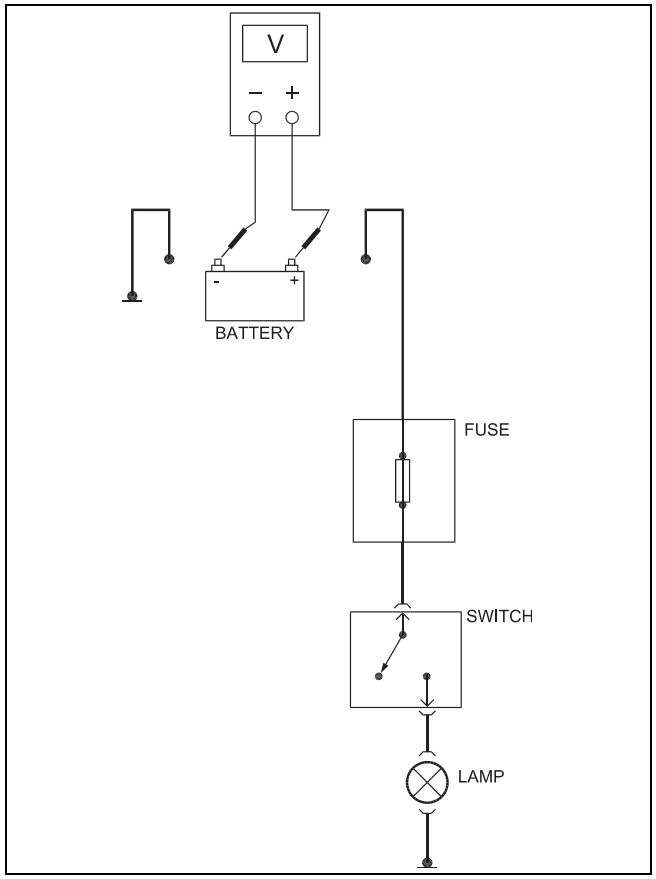


Figure 17. Testing battery voltage with a multimeter

Testing to confirm a short to ground drain on the battery using a multimeter

1. Disconnect the negative battery cable from the battery and connect to the positive lead of the multimeter. Set multimeter on the “Volts” range.
2. Connect the negative lead of the multimeter to the battery negative post.
3. Observe the multimeter. Less than 12 volts shows no short to ground draining battery. 12 volts shows a short to ground draining battery. Remove fuses and/or circuit breakers until voltage drops to find the circuit with the short, or do short to ground test to locate short.

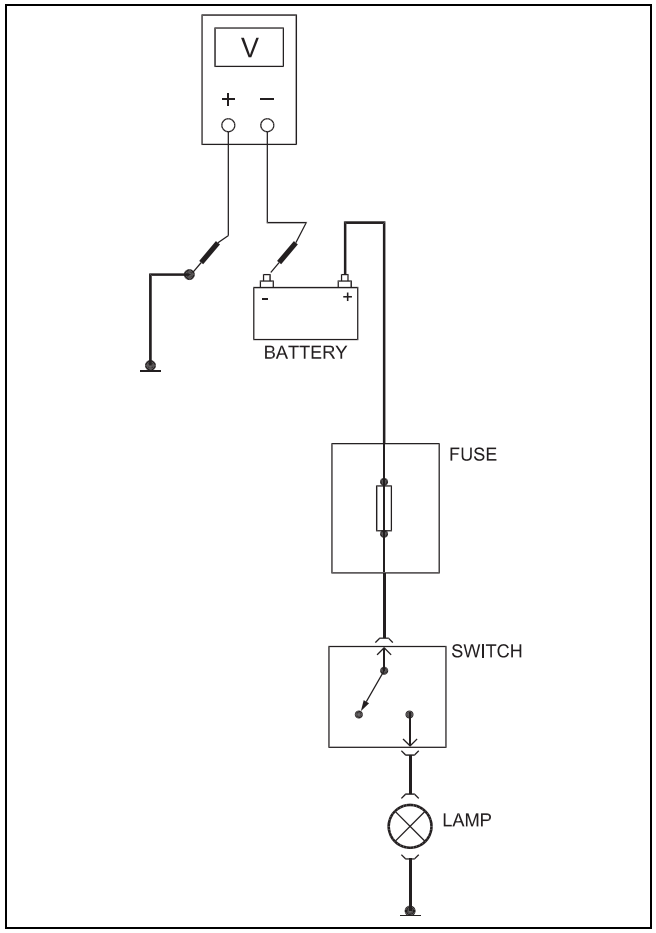


Figure 18. Testing to confirm short-to-ground drain on the battery using a multimeter

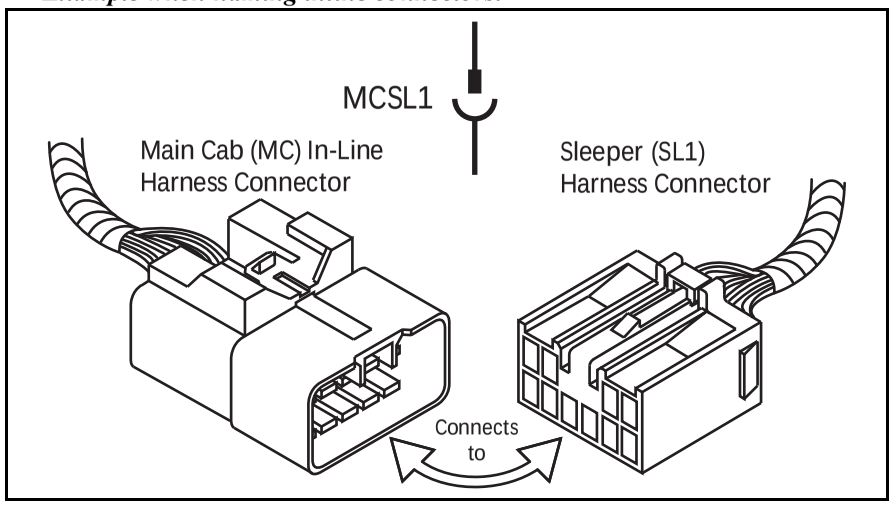
8. Harness Abbreviation List

Name	Definition	Name	Definition	Name	Definition
AC	AIR CONDITIONING	FD	FOG AND DRIVING LAMPS	RFJ	ROOF SIGN JUMPER
AD	AIR DRYER	FRC	FUSE AND RELAY CENTER	RH	REAR WALL HEADER
ABS	ABS HARNESS	FS	FAN SOLENOID	RJ	RADIO JUMPER
AL	ADDITIONAL LIGHTING	HL	HEADLIGHT	RS	RADIO SHELF PREP.
ALS	ALLISON SELECTOR -GEAR	HT	HOOD TILT SWITCH	RSO	ROOF SIGN OVERLAY
AR	AIR RESTRICTION JUMPER	IWDL	INTERWHEEL DIFFERENTIAL LOCK	RW	REAR WALL
AS	AUTOSHIFT	LA	LIFT AXLE OVERLAY	SK	SINK/FAUCET PUMP
AT	ALLISON TRANSMISSION (VOLVO)	LK	DOOR LOCK OVERLAY	SL	SLEEPER
AT	AUTO TRANSMISSION (MACK)	MC	MAIN CAB	SN	SHIFT KNOB
AX	AUXILIARY SWITCH HARNESS	MI	MARKER INTERRUPT	SPJ	SOLENOID PACK JUMPER
B	EXPANSION BLOCK	MJ	MIRROR JUMPER	SPO	SNOW PLOW OVERHEAD
BB	BODY BUILDER DASH OVERLAY	MM	MOBILE MAX HARNESS	PL	SNOWPLOW OPTION
BEC	BUSSED ELECTRICAL CENTER	MO	MIRROR OVERLAY	SR	SIDE REPEATER
BOC	BACK OF CAB LAMP JUMPER	OCP	OVERCRANK PROTECTION	SS	SIDE SENSOR (VORAD)
CB	C.B. STUDS JUMPER	OB	OVERHEAD BUNK	SV	SUNVISOR
CE	CHASSIS EXTENSION	OF	OVERHEAD FRONT	SW	STEERING WHEEL SWITCHES OVERLAY
CTI	CENTRAL TIRE INFL.	OL	MOBILE MAX OVERLAY HARNESS	TBJ	TABLE LAMP JUMPER
DCL	DATA COMMAND LANGUAGE	OPT	OPTIONAL DATALINK	TBP	TRANSMISSION BATTERY POWER
DL	DOOR — LEFT	PL	SNOW PLOW OVERLAY	TE	TAIL LIGHT EXTENSION
DLR	DIFFERENTIAL LOCK	PM	POWER MODULE	TL	TAIL LIGHT
DR	DOOR — RIGHT	PS	PREMIUM SOUND OVERLAY	TLK	TOUCH LOCK OVERLAY
DV	DRAIN VALVE -HEATER	PTO	POWER TAKE-OFF	TR	TRANSMISSION
EB	ENGINE BRAKE JUMPER	PW	POWER WINDOW	TS	TEMP A START OVL.
EN	ENGINE	QC	QUALCOMM	US	ULTRASHIFT
EPDM	ENGINE POWER DISTRIBUTION MODULE	RA	REAR AXLE	VA	REAR WALL VALANCE
FA	FRONT ANTENNA (VORAD)	RAJ	REAR AXLE JUMPER	VE	VORAD/ECS OVERLAYS
FC	FRONT CHASSIS	RF	ROOF SIGN	WB	WASHER BOTTLE

9. Harness Naming Convention

Inline connectors are named by combining a set of harness abbreviations.

Example when naming inline connectors:



In some cases, there is more than one connector between two harnesses. In this case a number is added to the end of the set of harness abbreviations.

Example when using more than one connector:

MCSL2: 3 — Main Cab and Sleeper Harness Inline, Connector 2, Pin 3

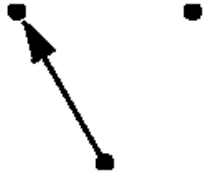
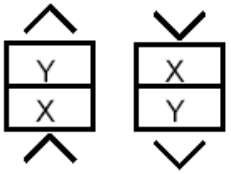
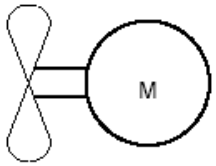
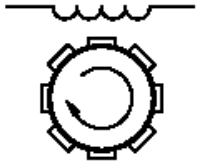
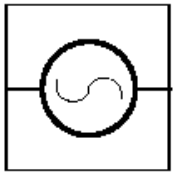
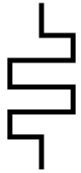
MCSL4: C — Main Cab and Sleeper Harness Inline, Connector 4, Pin C

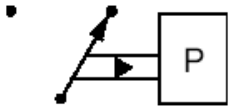
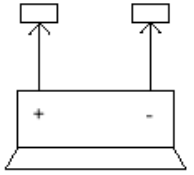
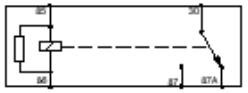
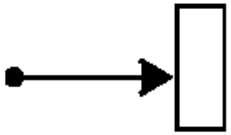
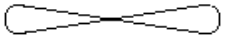
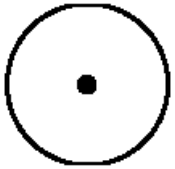
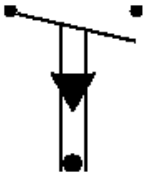
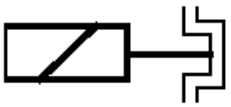
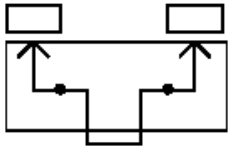
10. Color Abbreviations

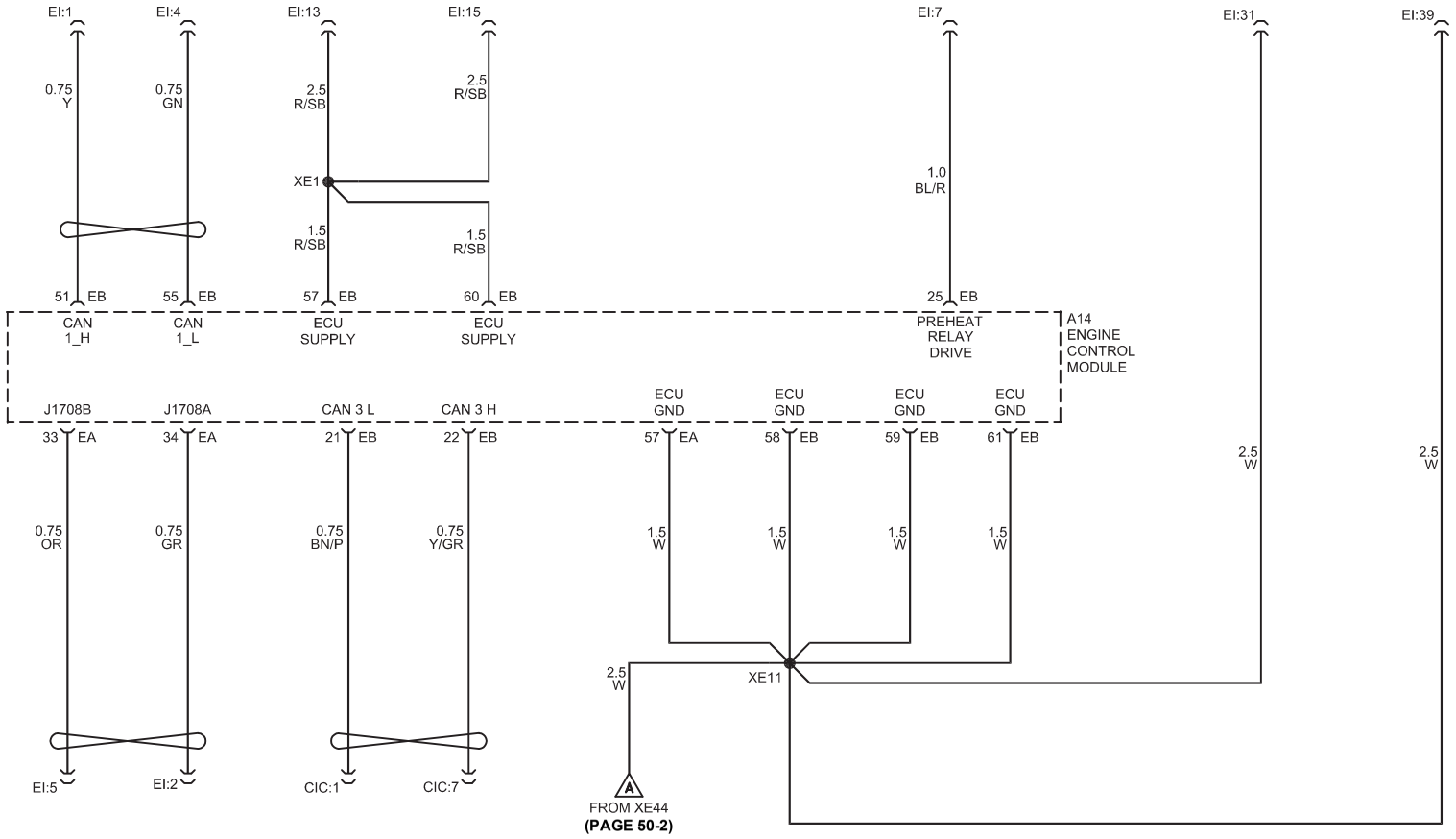
Abbreviation	Color
BL	Blue
BN	Brown
GN	Green
GR	Gray
OR	Orange
P	Pink
R	Red
SB	Black
VO	Violet
W	White
Y	Yellow

11. Symbol Library

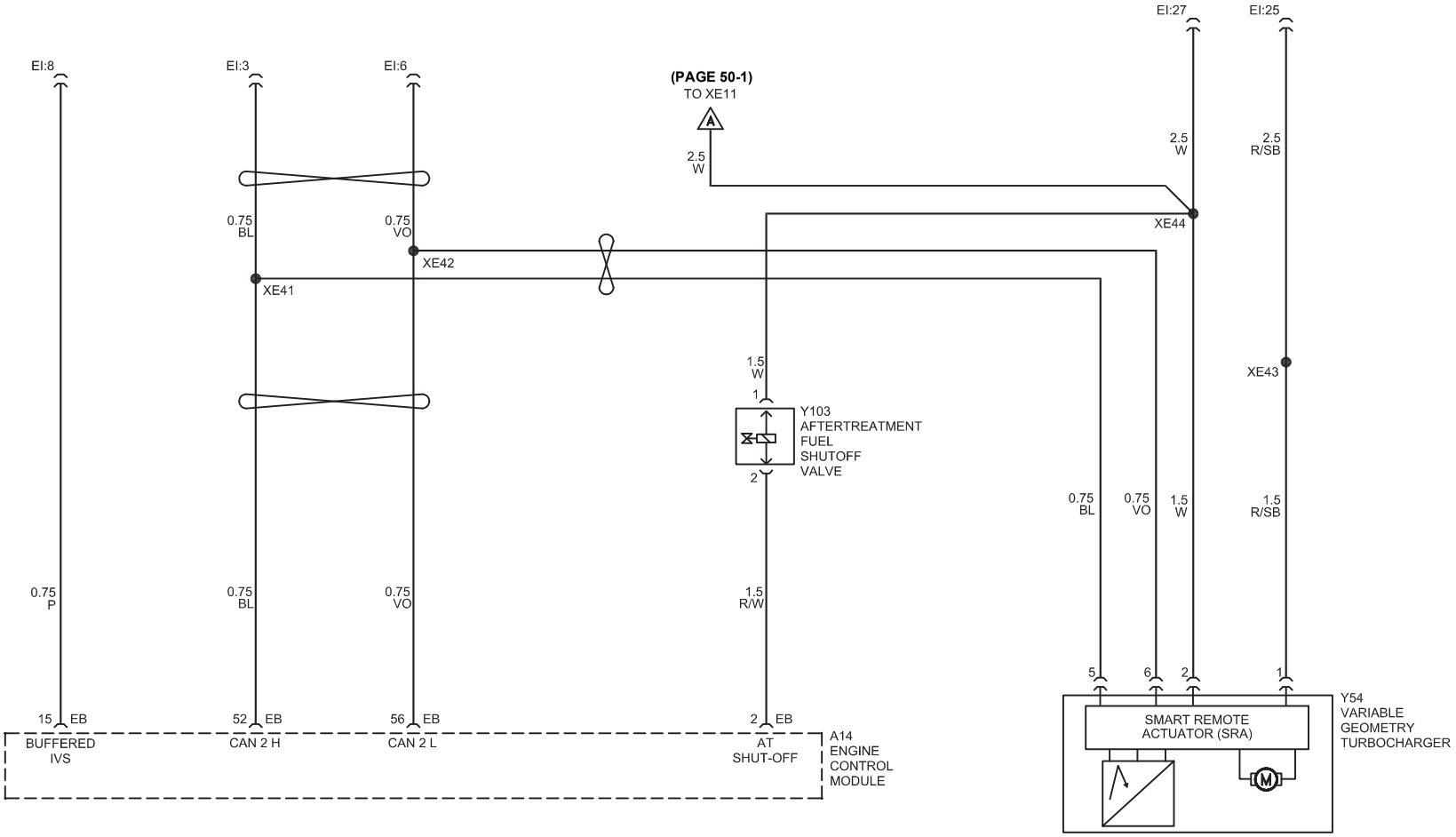
The symbol library contains symbols used in the wiring diagrams and their meanings.

Symbol	Definition	Symbol	Definition	Symbol	Definition
	2-Pole Switch		Connector [Y: connector identifier, X: connector-cavity identifier]		Ground
	Blower Motor		Diode		Hall Sensor
	Circuit Breaker		Fan Speed Sensor		Heating Element
	Component Shown Complete		Fuse		Lamp
	Component Shown Incomplete		Fusible Link		Light Emitting Diode (LED)

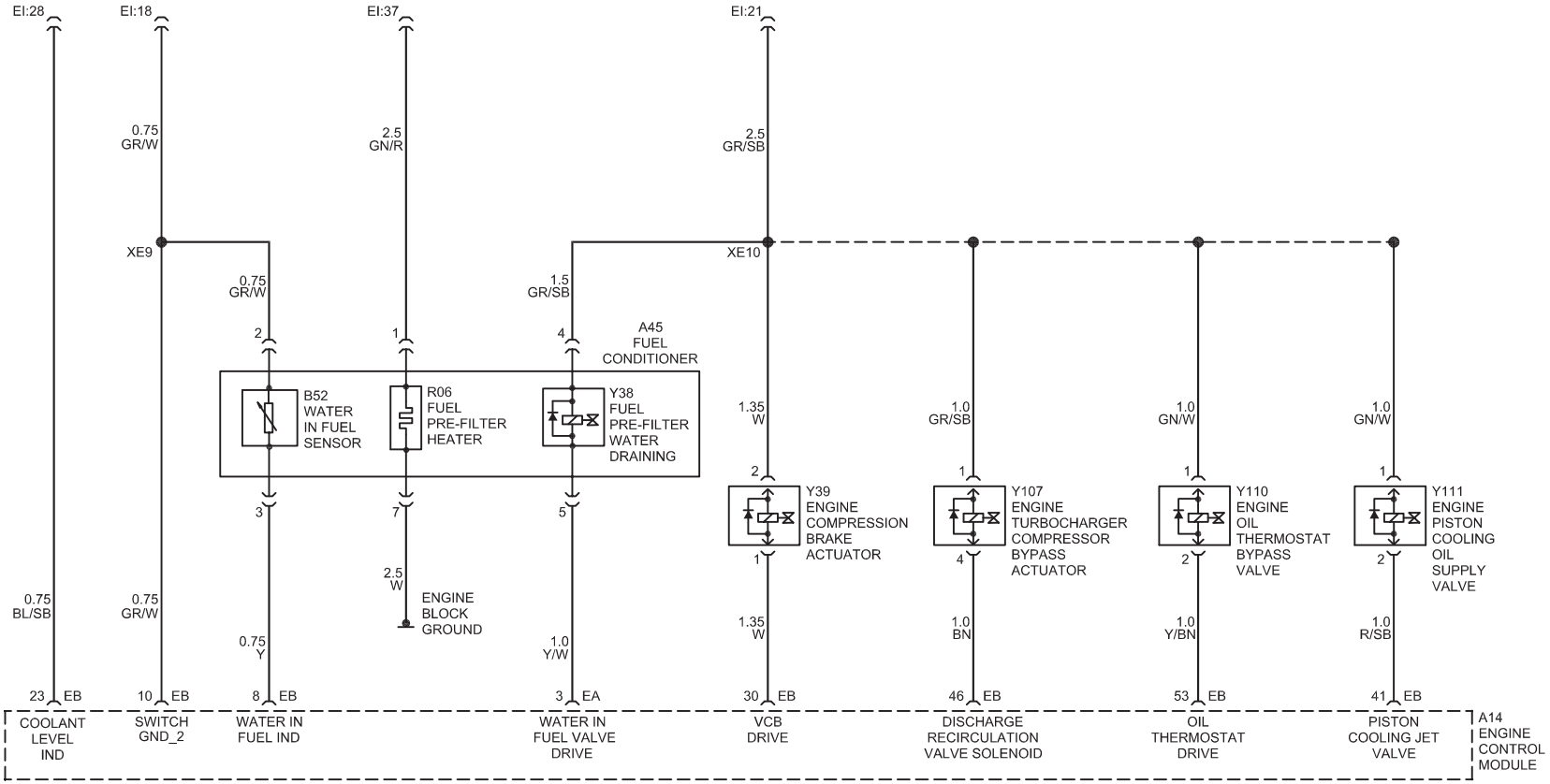
Symbol	Definition	Symbol	Definition	Symbol	Definition
	Motor		Pressure-Controlled Switch		Speaker
	Optional Connector		Relay		Splice
	Potentiometer		Resistor		Twisted Wire Pair
	Power Outlet		Solenoid		Variable Resistor
	Pressure Switch		Solenoid Valve		Wear Sensor


EI:1
EI:4
EI:13
EI:15
EI:7
EI:31
EI:39
0.75 Y
0.75 GN
2.5 R/SB
2.5 R/SB
XE1
1.5 R/SB
1.5 R/SB
1.0 BL/R
51 EB
55 EB
57 EB
60 EB
25 EB
CAN 1_H
CAN 1_L
ECU SUPPLY
ECU SUPPLY
PREHEAT RELAY DRIVE
A14 ENGINE CONTROL MODULE
J1708B
J1708A
CAN 3 L
CAN 3 H
ECU GND
ECU GND
ECU GND
ECU GND
33 EA
34 EA
21 EB
22 EB
57 EA
58 EB
59 EB
61 EB
2.5 W
2.5 W
0.75 OR
0.75 GR
0.75 BN/P
0.75 Y/GR
1.5 W
1.5 W
1.5 W
1.5 W
2.5 W
XE11
EI:5
EI:2
CIC:1
CIC:7
A
FROM XE44
(PAGE 50-2)

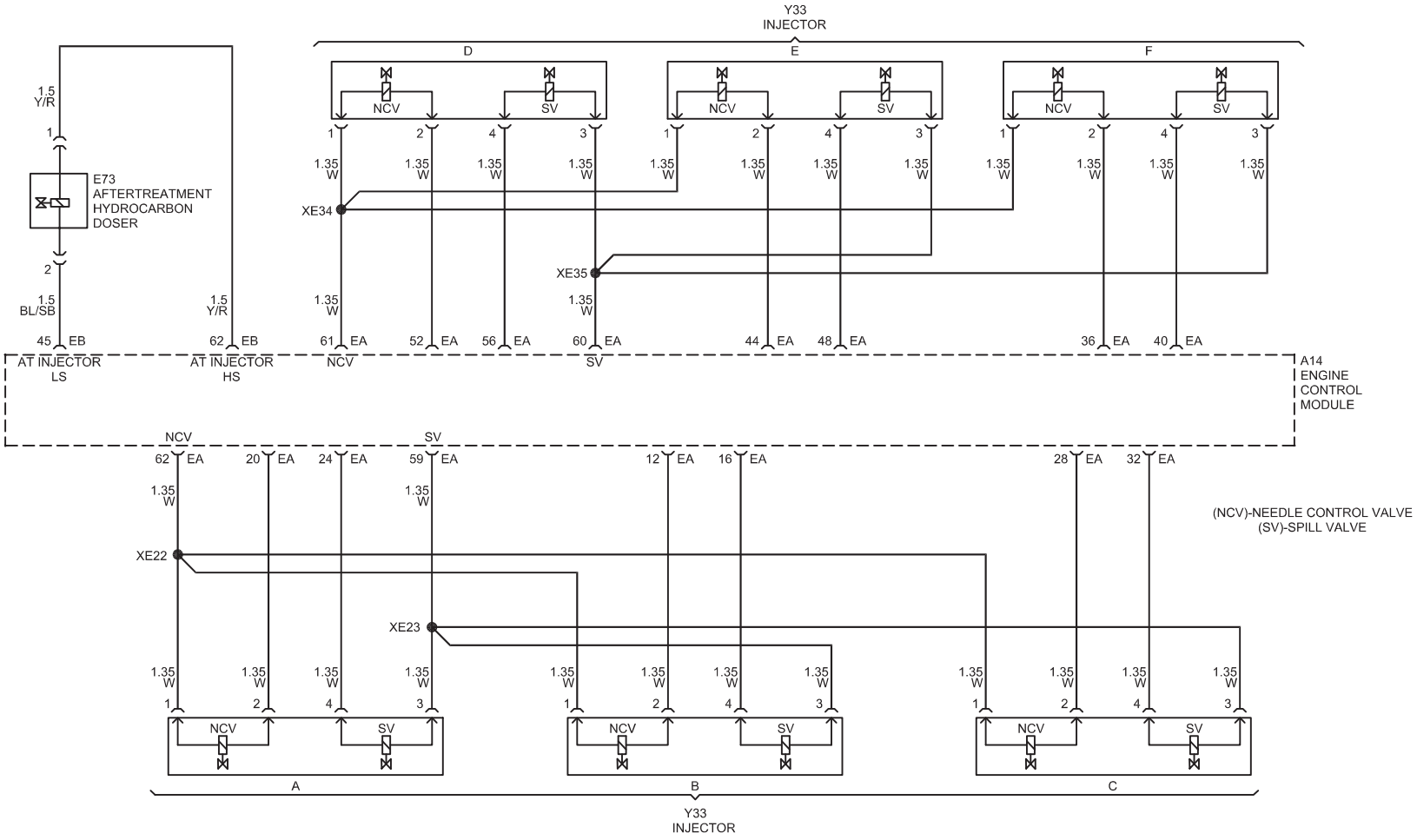
Variable Geometry Turbocharger, Aftertreatment Fuel Shutoff Valve

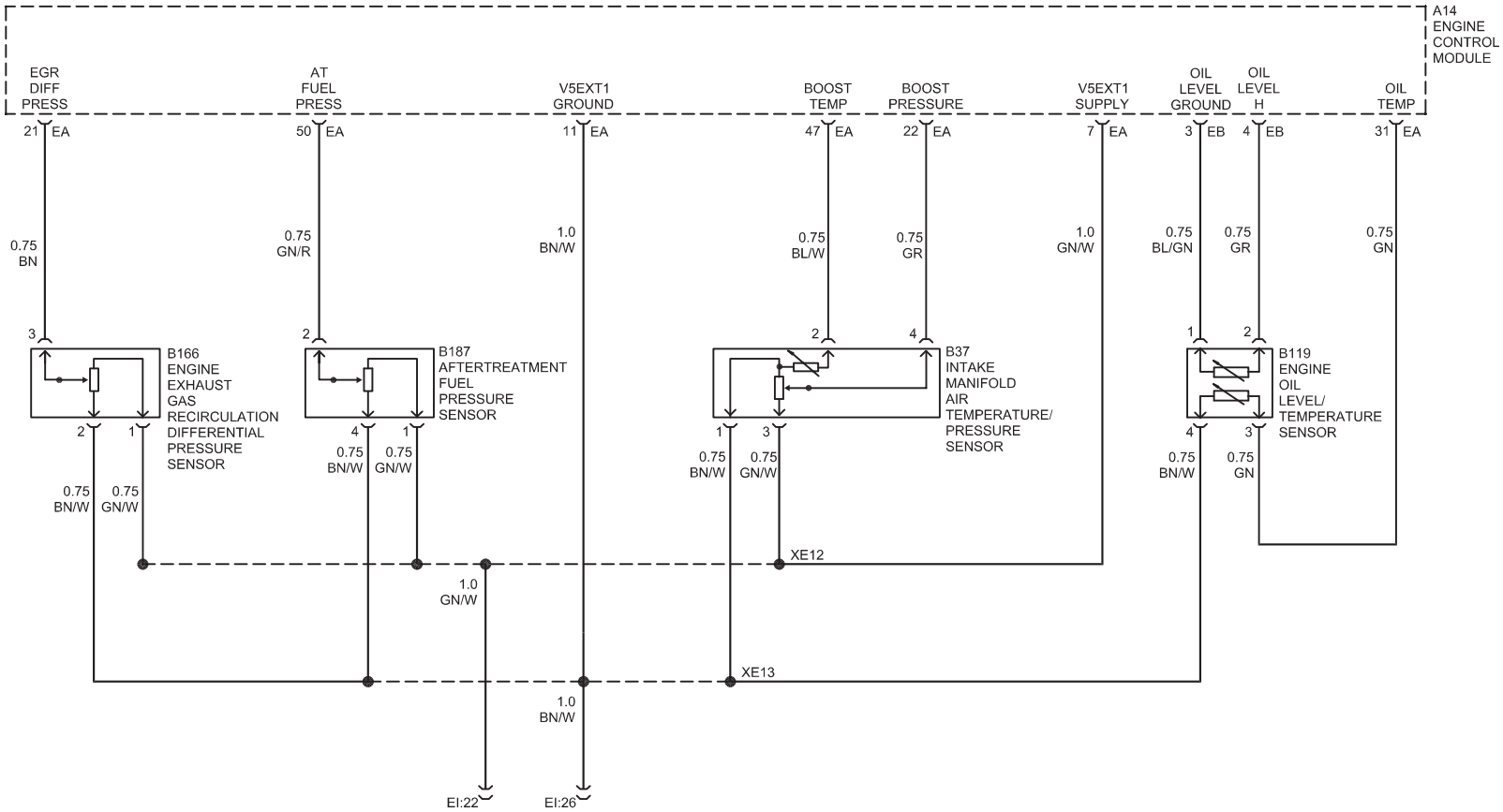


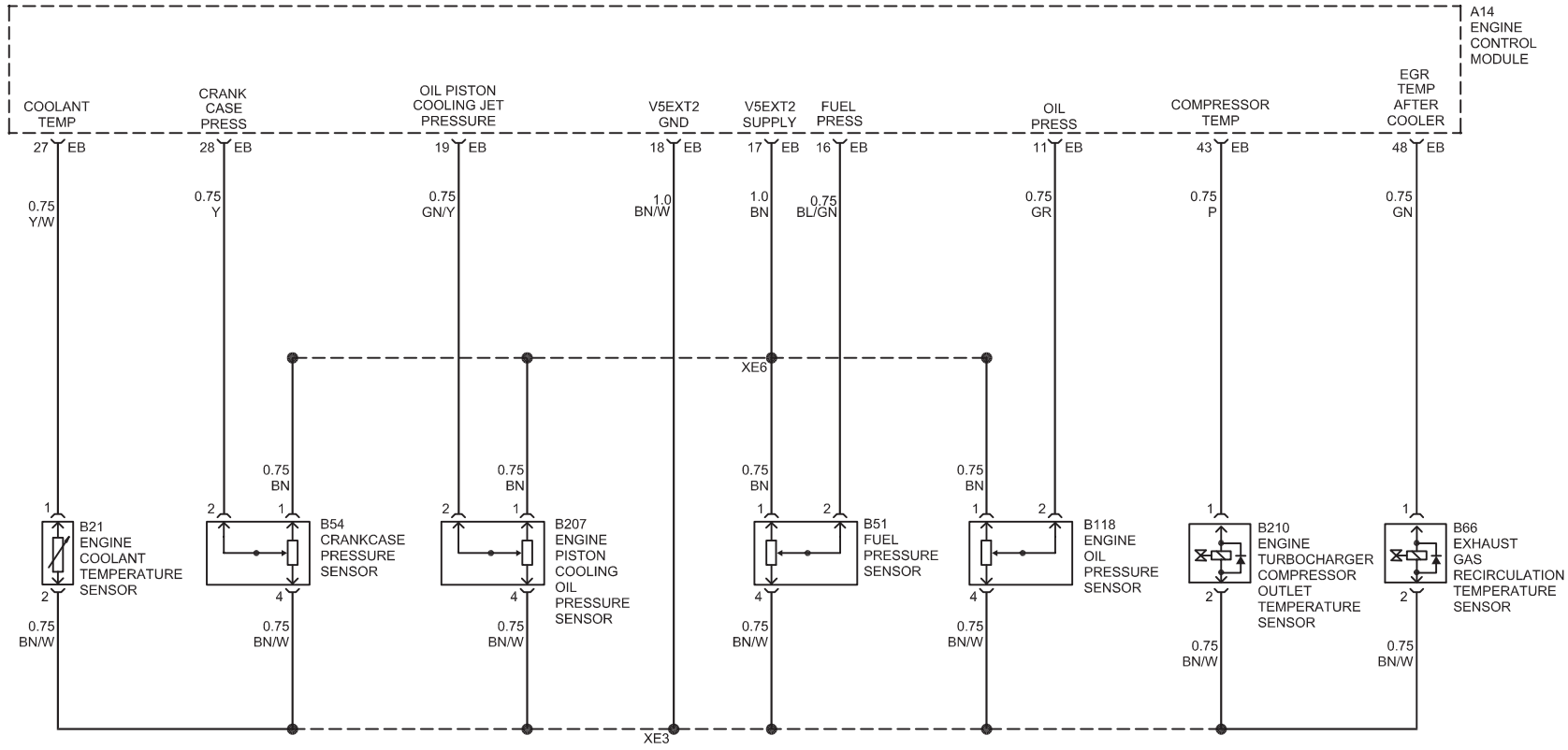
Fuel Conditioner, Solenoids



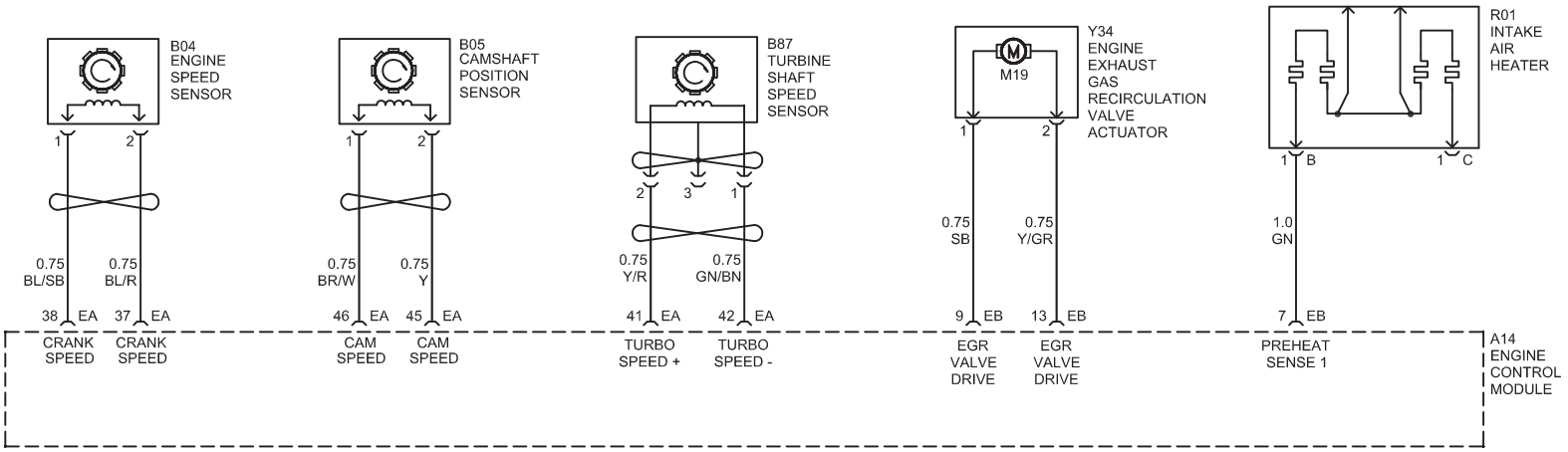
Injectors, Aftertreatment Hydrocarbon Doser



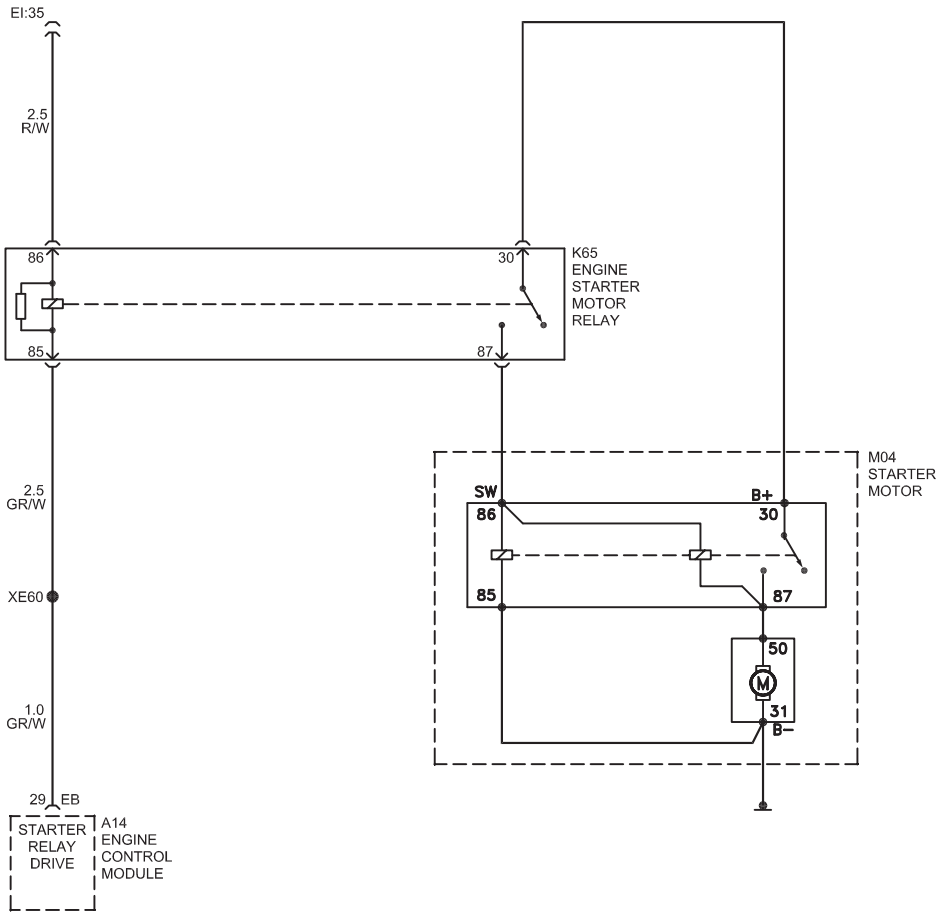

A14
ENGINE
CONTROL
MODULE
EGR
DIFF
PRESS
21 EA
0.75
BN
3
B166
ENGINE
EXHAUST
GAS
RECIRCULATION
DIFFERENTIAL
PRESSURE
SENSOR
2
1
0.75
BN/W
0.75
GN/W
AT
FUEL
PRESS
50 EA
0.75
GN/R
2
B187
AFTERTREATMENT
FUEL
PRESSURE
SENSOR
4
1
0.75
BN/W
0.75
GN/W
V5EXT1
GROUND
11 EA
1.0
BN/W
BOOST
TEMP
47 EA
0.75
BL/W
BOOST
PRESSURE
22 EA
0.75
GR
2
4
B37
INTAKE
MANIFOLD
AIR
TEMPERATURE/
PRESSURE
SENSOR
1
3
0.75
BN/W
0.75
GN/W
V5EXT1
SUPPLY
7 EA
1.0
GN/W
OIL
LEVEL
GROUND
3 EB
OIL
LEVEL
H
4 EB
0.75
BL/GN
0.75
GR
1
2
B119
ENGINE
OIL
LEVEL/
TEMPERATURE
SENSOR
4
3
0.75
BN/W
0.75
GN
OIL
TEMP
31 EA
0.75
GN
XE12
1.0
GN/W
XE13
1.0
BN/W
EI:22
EI:26

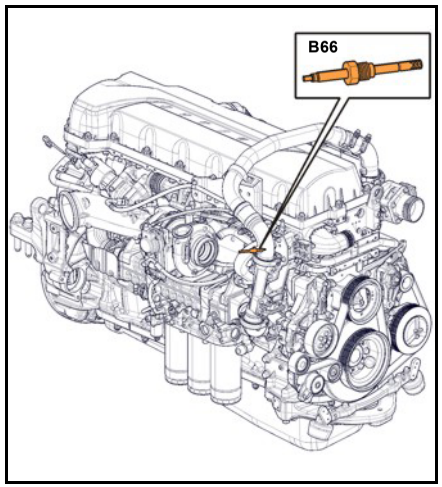

A14
ENGINE
CONTROL
MODULE
COOLANT TEMP
CRANK CASE PRESS
OIL PISTON COOLING JET PRESSURE
V5EXT2 GND
V5EXT2 SUPPLY
FUEL PRESS
OIL PRESS
COMPRESSOR TEMP
EGR TEMP AFTER COOLER
27 EB
28 EB
19 EB
18 EB
17 EB
16 EB
11 EB
43 EB
48 EB
0.75 Y/W
0.75 Y
0.75 GN/Y
1.0 BN/W
1.0 BN
0.75 BL/GN
0.75 GR
0.75 P
0.75 GN
XE6
0.75 BN
0.75 BN/W
B21 ENGINE COOLANT TEMPERATURE SENSOR
B54 CRANKCASE PRESSURE SENSOR
B207 ENGINE PISTON COOLING OIL PRESSURE SENSOR
B51 FUEL PRESSURE SENSOR
B118 ENGINE OIL PRESSURE SENSOR
B210 ENGINE TURBOCHARGER COMPRESSOR OUTLET TEMPERATURE SENSOR
B66 EXHAUST GAS RECIRCULATION TEMPERATURE SENSOR
XE3

Sensors, Intake Air Heater, Engine Exhaust Gas Recirculation Valve Actuator

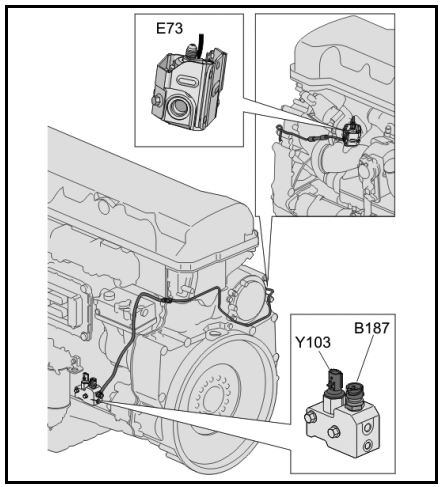


Engine Starter Motor Relay, Starter Motor

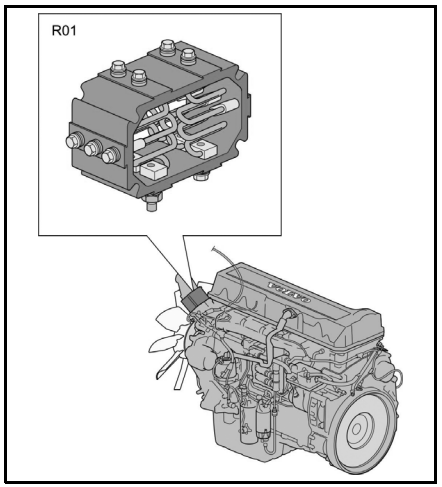




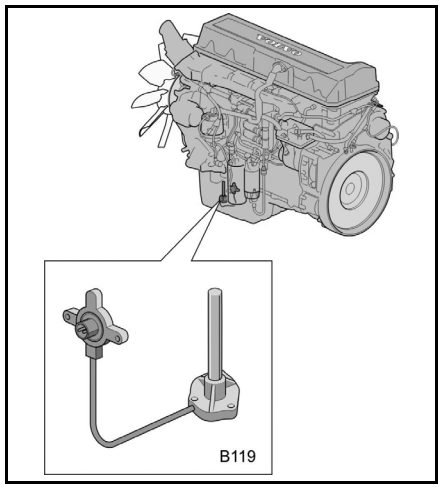
1. Right Side of Engine



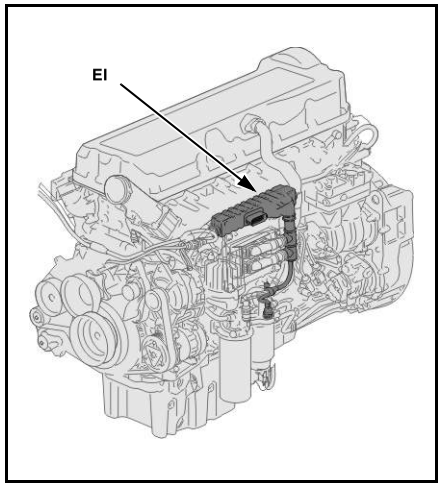
3. Left Side of Engine



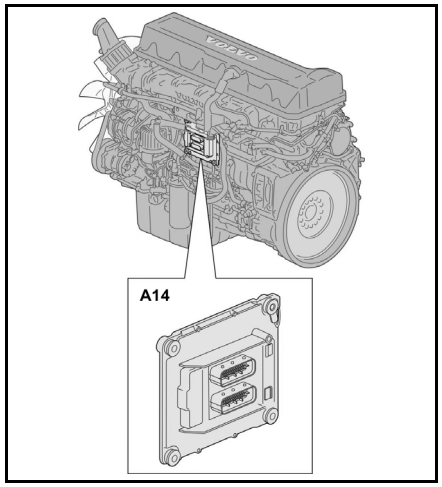
5. Front of Engine



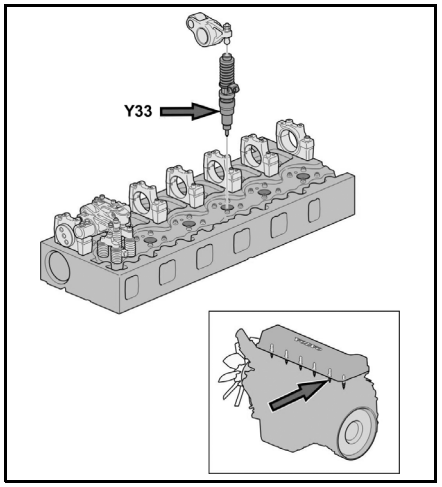
7. In Oil Pan



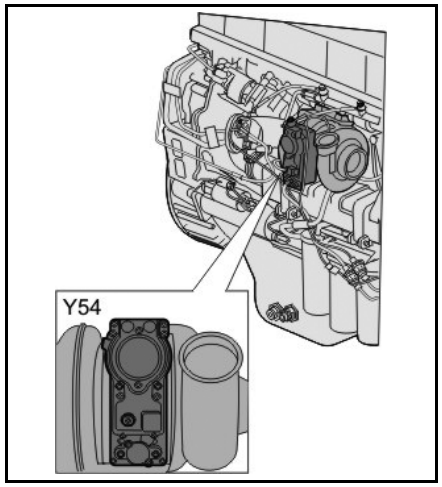
2. Left Side of Engine



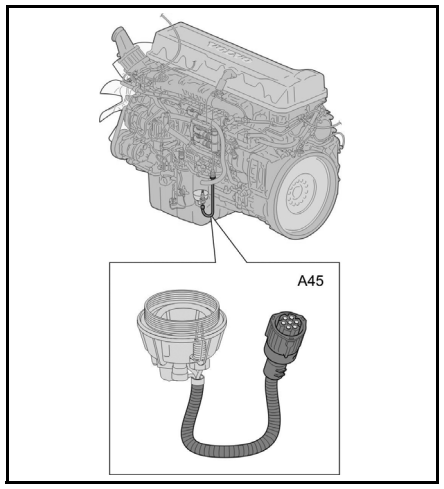
4. Left Side of Engine



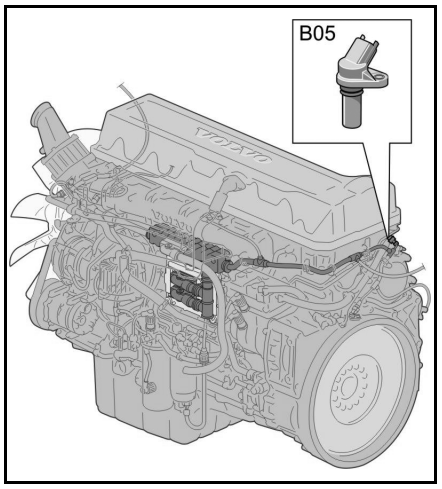
6. Top of Engine



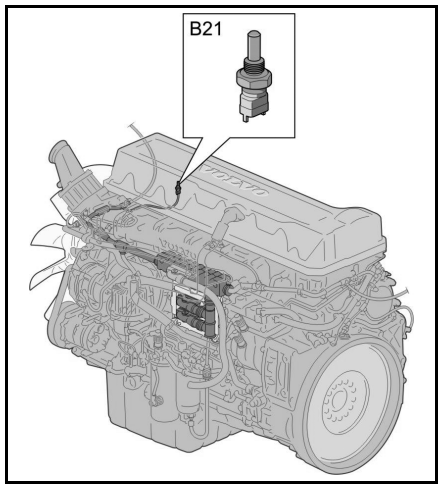
8. Right Side of Engine



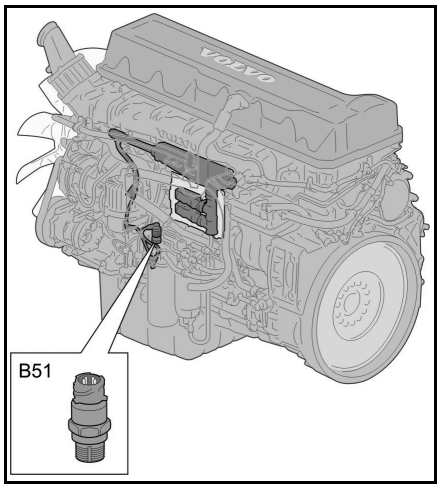
9. Left Side of Engine



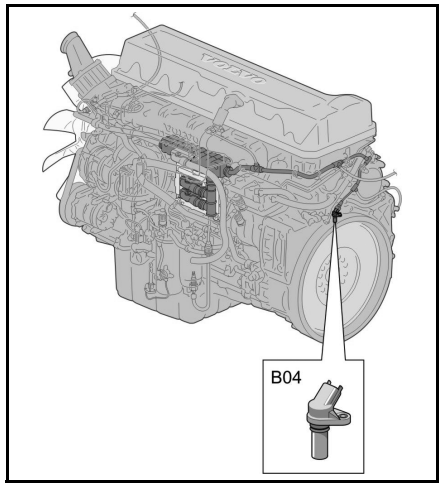
11. Rear of Engine



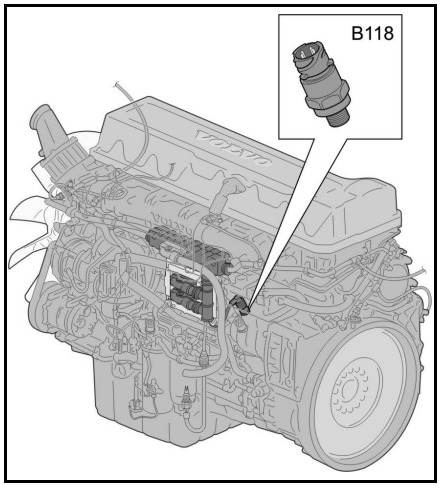
13. Right Side of Engine



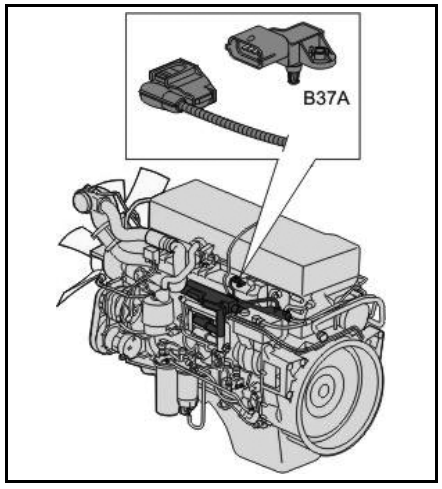
15. Left Side of Engine



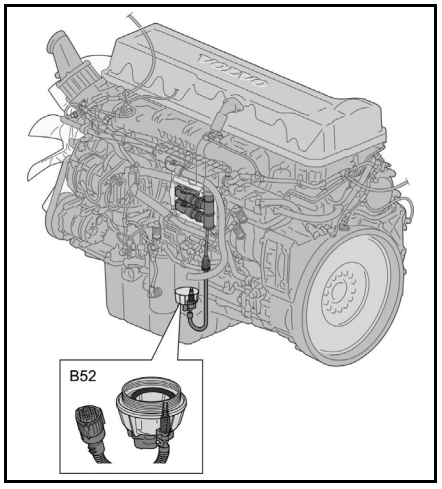
10. Rear of Engine



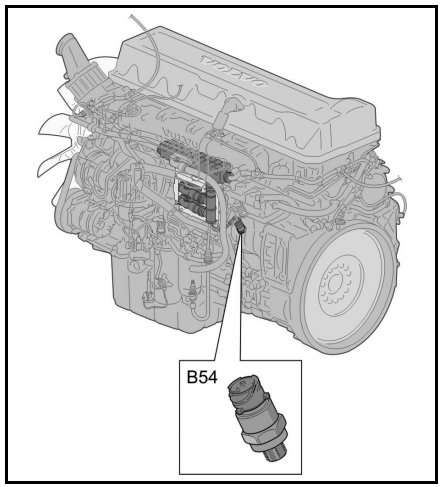
12. Left Side of Engine



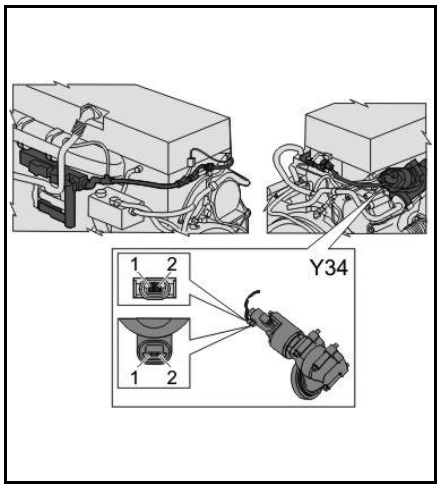
14. Left Side of Engine



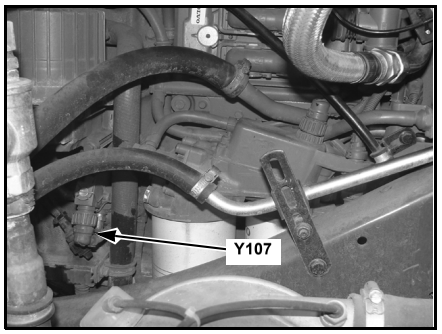
16. Left Side of Engine



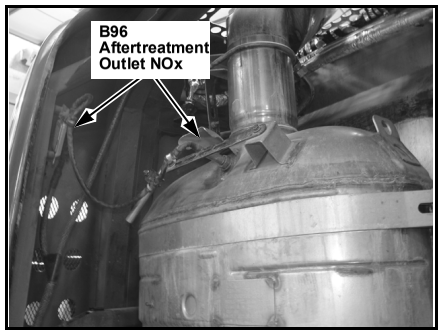
17. Left Side of Engine



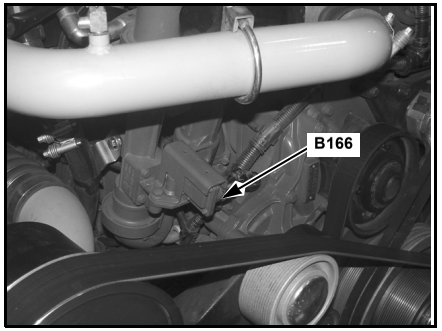
19. Side of Engine



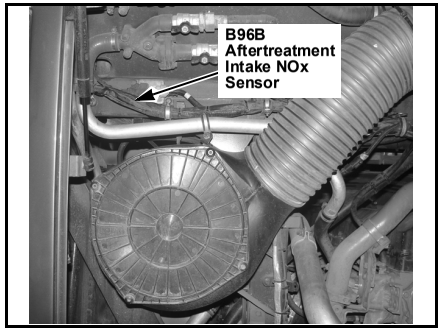
21.



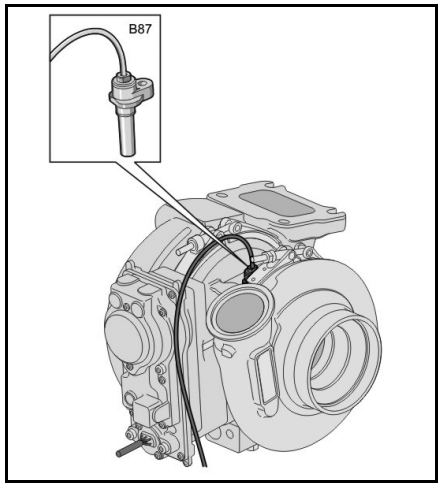
24.



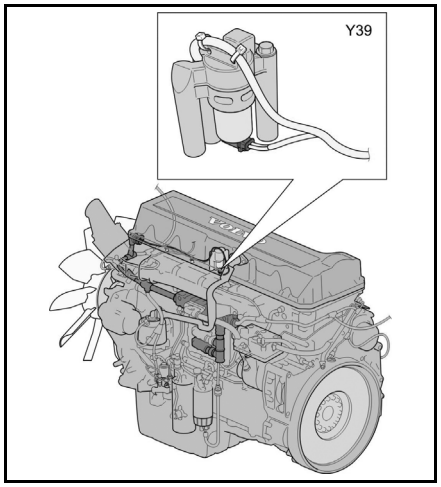
22. Left Side of Engine



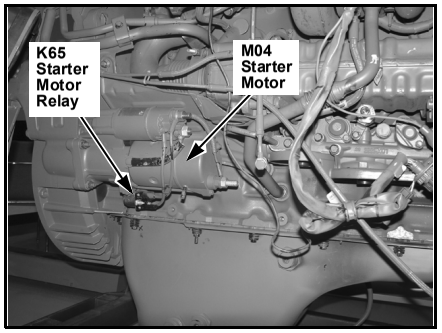
25.



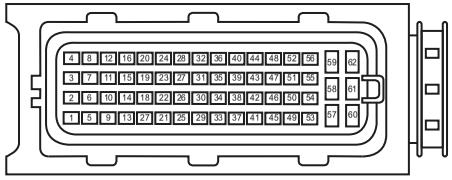
18. On Right Side of Engine



20. Left Side of Engine



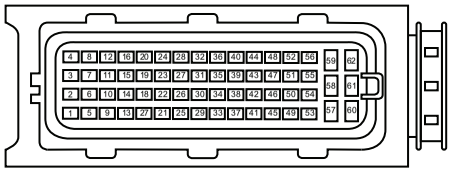
23. Right Side of Engine



[harness/wire insertion side]

A14.A
Size: 62–Way | Harness: ENGINE
Supplier: AMP | Supplier Part Number: 1-1394682-1B

PIN	CIRCUIT	CIRCUIT FUNCTION
PINOUT INFORMATION N/A		



[harness/wire insertion side]

A14.B
Size: 62–Way | Harness: ENGINE
Supplier: AMP | Supplier Part Number: 2-1394682-1B

PIN	CIRCUIT	CIRCUIT FUNCTION
PINOUT INFORMATION N/A		