INSTRUMENT PANEL

1998 Mitsubishi Galant

1998 ACCESSORIES & EQUIPMENT
Mitsubishi - Instrument Panels

Eclipse, Galant, Mirage, Montero, Montero Sport, 3000GT

DESCRIPTION & OPERATION

WARNING: Deactivate air bag system before performing any service operation. See AIR BAG RESTRAINT SYSTEMS article. Do not apply electrical power to any component on steering column without first deactivating air bag system. Air bag may deploy.

Instrument cluster includes speedometer, fuel gauge and temperature gauge. Fuel gauge has a built-in voltage limiter to keep voltage supply to gauges at 7 volts. Some models may also have an ammeter, oil pressure gauge, tachometer, voltmeter and/or turbo boost pressure gauge. Oil pressure gauge uses full battery voltage. Tachometer operates by pulse feed.

COMPONENT LOCATIONS

COMPONENT LOCATIONS TABLE

Component	Location
Engine Coolant Temperature (ECT) Sensor	
Eclipse, Galant, Montero & Montero Sport	On Thermostat Housing
Mirage	On Rear Of Cylinder Head
3000GT	On Cylinder Head, Below Ignition Coil
Input Speed Sensor	
Eclipse	On Side Of Transaxle
Output Speed Sensor	
Eclipse	On Side Of Transaxle
Vehicle Speed Sensor	
Eclipse, Galant, Mirage & 3000GT	On Top Of Transaxle
Montero & Montero Sport	On Transmission Tailshaft

TROUBLE SHOOTING

FUEL/TEMPERATURE GAUGE NOT WORKING

Check for blown fuse, faulty voltage limiter and faulty relay. Ensure sending unit connections are clean and tight. Test sending unit for correct operation. Tighten connections in instrument cluster.

SPEEDOMETER NOT WORKING

On mechanical-type speedometers, ensure speedometer cable is properly connected and correctly routed. If speedometer pointer and/or odometer still do not work, replace speedometer cable or speedometer assembly.

On electric-type speedometers, check for faulty vehicle speed sensor, input/output sensors or faulty circuit. For testing, see

SPEEDOMETER TEST under COMPONENT TESTS. Repair or replace as necessary.

TACHOMETER NOT WORKING

Tachometer is serviced as an assembly. If wiring harness is okay, replace tachometer assembly.

WARNING LIGHTS NOT WORKING

Test for defective sending unit, burned-out bulb and broken printed circuit. Ensure all connections are clean and tight.

COMPONENT TESTS

BOOST PRESSURE GAUGE (TURBO)

Resistance Test (Eclipse & 3000GT)

1) Remove instrument cluster from instrument panel. See INSTRUMENT CLUSTER under REMOVAL & INSTALLATION. On 3000GT, remove air distribution duct and combination gauges.

2) On all models, check resistance between boost pressure gauge terminals on back of instrument cluster or combination gauges. See Fig. 1 or 2. Resistance should be 68.2-83.4 ohms on Eclipse, or 72 ohms on 3000GT. If resistance is not as specified, replace gauge.

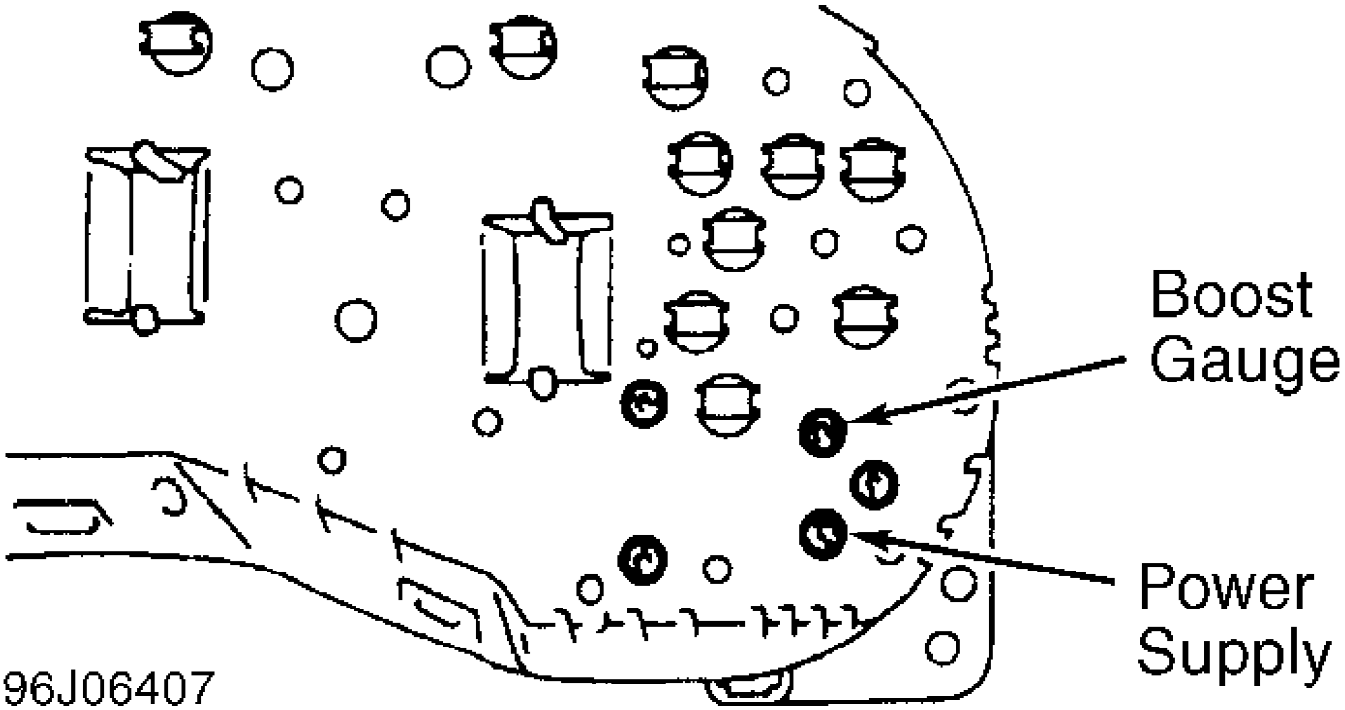

Fig. 1: Boost Pressure Gauge Test Terminals (Eclipse Turbo)
Courtesy of Mitsubishi Motor Sales of America

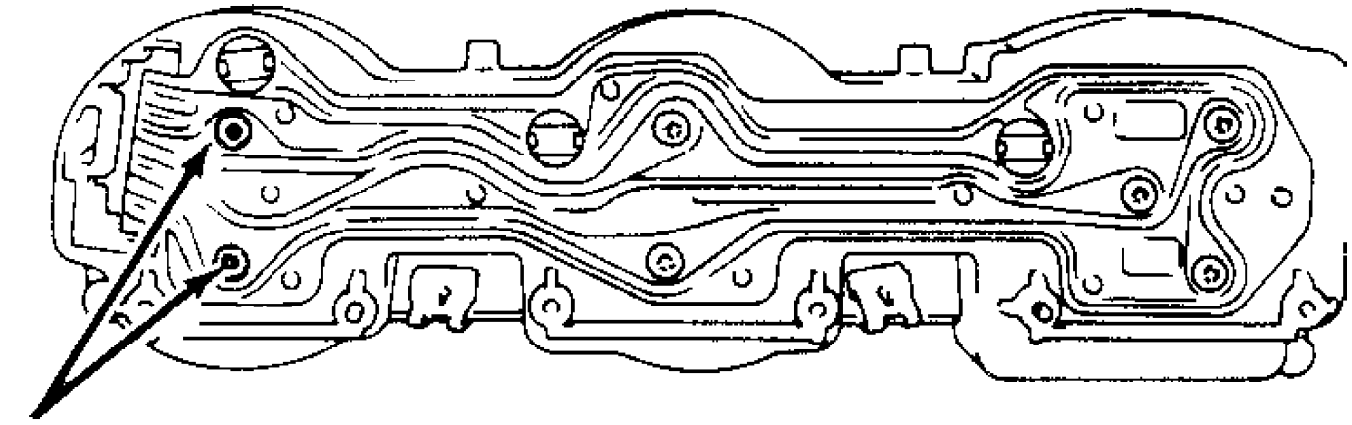

Fig. 2: Boost Pressure Gauge Test Terminals (3000GT Turbo)
Courtesy of Mitsubishi Motor Sales of America

FUEL TANK SENDING UNIT

Resistance Test

Remove fuel tank sending unit from fuel tank. Check resistance between appropriate terminals with fuel float in FULL and EMPTY positions. See Fig. 3, 4, 5, 6, 7, 8 or 9. Compare resistance reading to FUEL TANK SENDING UNIT RESISTANCE SPECIFICATIONS table. If resistance is not as specified, replace fuel tank sending unit.

FUEL TANK SENDING UNIT RESISTANCE SPECIFICATIONS TABLE

Application	Empty	Full
Eclipse		
AWD (1)		
Main	56	1-3
Sub	49-51	1-3
FWD	105-119	2-6
Galant	105-119	2-6
Mirage	102-118	0.9-5.1
Montero, Montero Sport & 3000GT	103-117	1-5

(1) - Equipped with a main fuel sender and a sub fuel sender.

FUEL GAUGE

CAUTION: Gauge coils can be damaged if wire is grounded for too long. Perform test as quickly as possible.

Simple Test

1) Disconnect fuel gauge sending unit connector wire in luggage compartment, in cargo space or at tank unit. Connect a 12-volt, 3.4-watt bulb to harness side of connector between appropriate terminals. See Fig. 3, 4, 5, 6, 7, 8 or 9.

2) Turn ignition switch to ON position. Ensure test bulb flashes, or stays on, and fuel gauge needle moves. If bulb or gauge needle does not function as described, repair fuel gauge circuit.

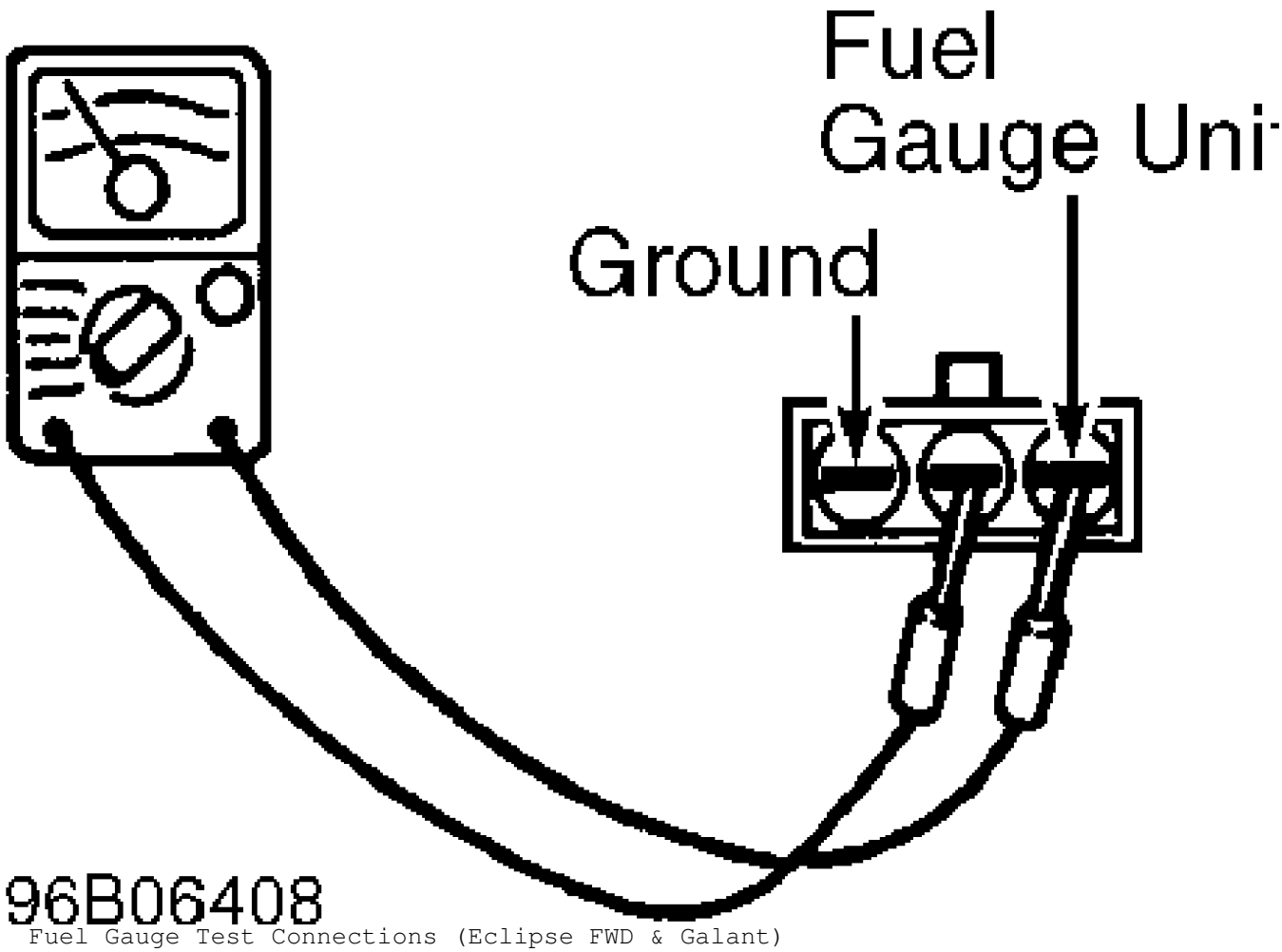

Fig. 3: Fuel Gauge Test Connections (Eclipse FWD & Galant)
Courtesy of Mitsubishi Motor Sales of America

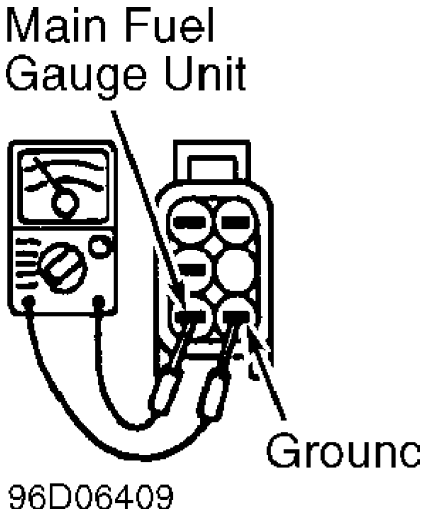

Fig. 4: Identifying Fuel Gauge Test Connections (Eclipse AWD - Main)
Courtesy of Mitsubishi Motor Sales of America

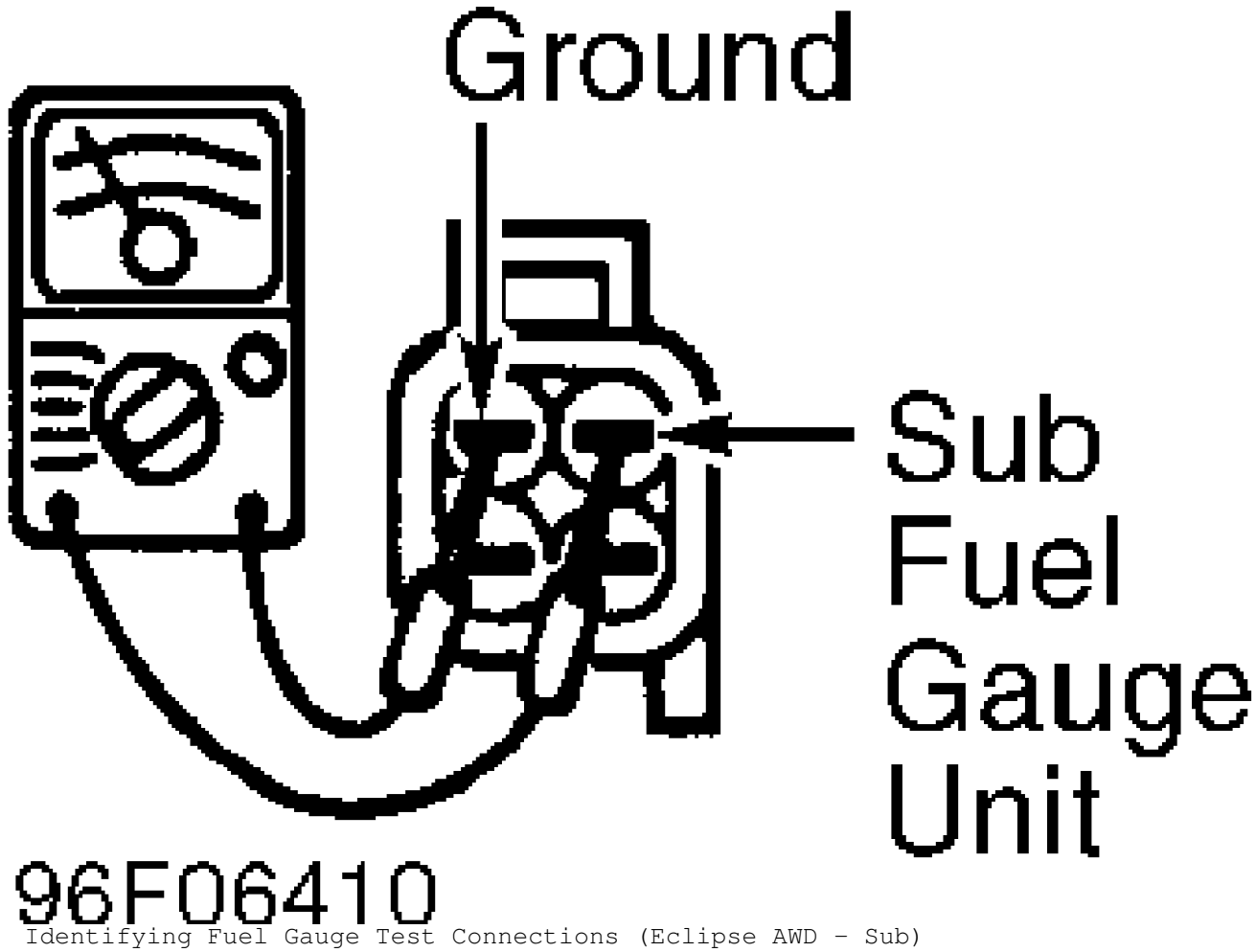

Fig. 5: Identifying Fuel Gauge Test Connections (Eclipse AWD - Sub)
Courtesy of Mitsubishi Motor Sales of America

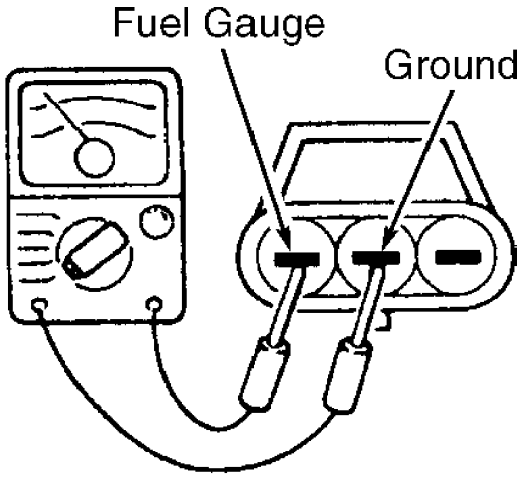

Fig. 6: Identifying Fuel Gauge Test Connections (Mirage)
Courtesy of Mitsubishi Motor Sales of America

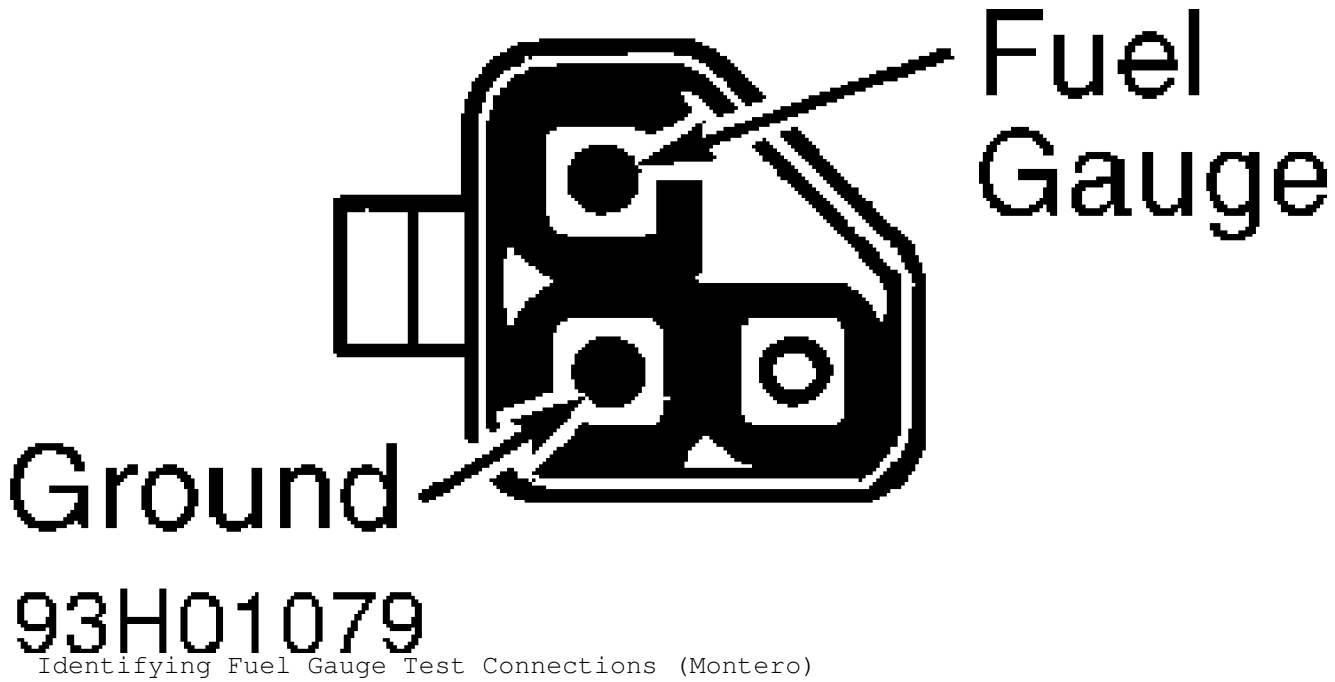

Fig. 7: Identifying Fuel Gauge Test Connections (Montero)
Courtesy of Mitsubishi Motor Sales of America

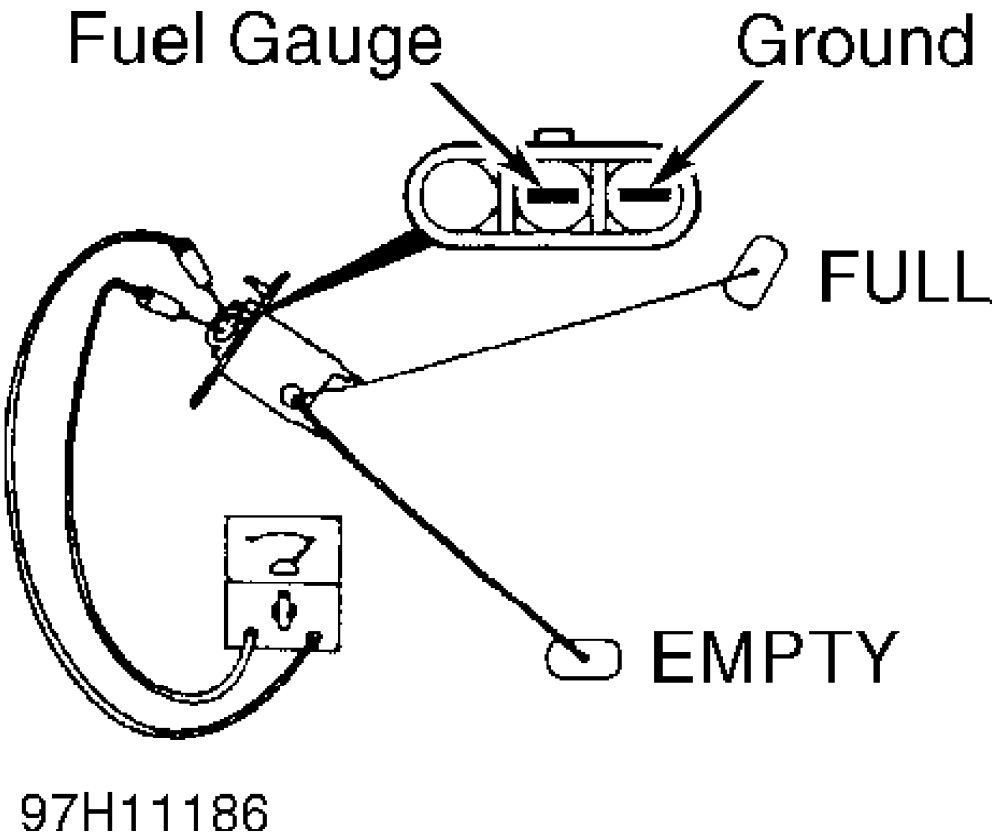

Fig. 8: Identifying Fuel Gauge Test Connections (Montero Sport)
Courtesy of Mitsubishi Motor Sales of America

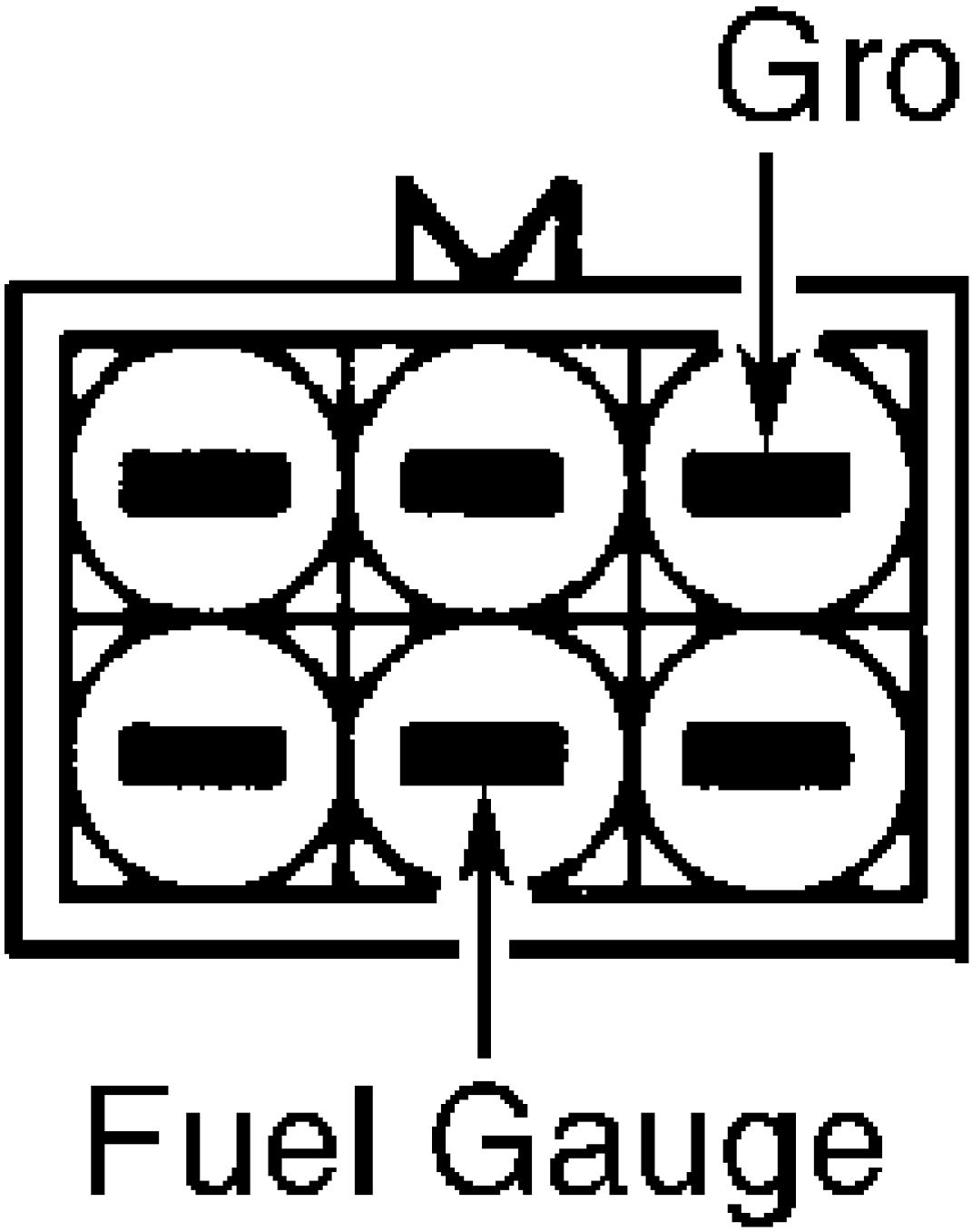

Fig. 9: Identifying Fuel Gauge Test Connections (3000GT)
Courtesy of Mitsubishi Motor Sales of America

NOTE: Fuel gauge resistance test must be completed with instrument panel cluster removed. Use ohmmeter for all measurements. If resistance is extremely low, a short may exist in coil. If resistance is extremely high, a broken wire or similar

problem may exist in gauge.

Resistance Test

1) Remove instrument cluster. See INSTRUMENT CLUSTER under REMOVAL & INSTALLATION. On 3000GT, remove air distribution duct and combination gauges.

2) On all models, check resistance between appropriate terminals of instrument cluster or combination gauges. See Fig. 10, 11, 12, 13, 14, 15 or 16. See FUEL GAUGE RESISTANCE SPECIFICATIONS table. If resistance readings are not as specified, replace fuel gauge.

FUEL GAUGE RESISTANCE SPECIFICATIONS TABLE

Application	(1) Terminals	Ohms
Eclipse	"A" & "B"	219-279
Eclipse	"A" & "C"	102-152
Eclipse	"B" & "C"	112-132
Galant	"A" & "B"	99
Galant	"A" & "C"	262
Galant	"B" & "C"	163
Mirage	"A" & "B"	80-98
Mirage	"A" & "C"	173-211
Mirage	"B" & "C"	93-113
Montero	No. 4 & 8	104-127
Montero	No. 4 & 6	132-162
Montero	No. 6 & 8	71-87
Montero Sport	"A" & "B"	85
Montero Sport	"A" & "C"	107
Montero Sport	"B" & "C"	192
3000GT	"A" & "B"	254
3000GT	"A" & "C"	101
3000GT	"B" & "C"	153

(1) - For terminal locations, see Fig. 10, 11, 12, 13, 14, 15 or 16.

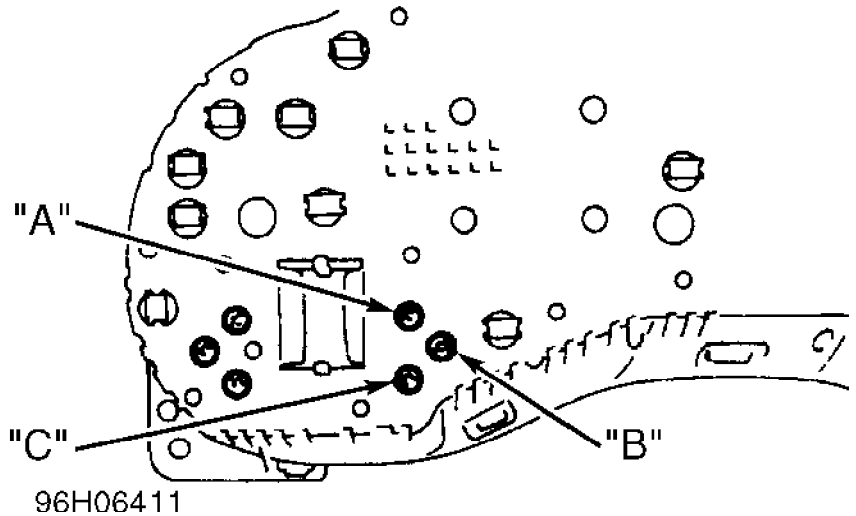

Fig. 10: Identifying Instrument Panel Fuel Gauge Resistance Check Terminals (Eclipse)
Courtesy of Mitsubishi Motor Sales of America

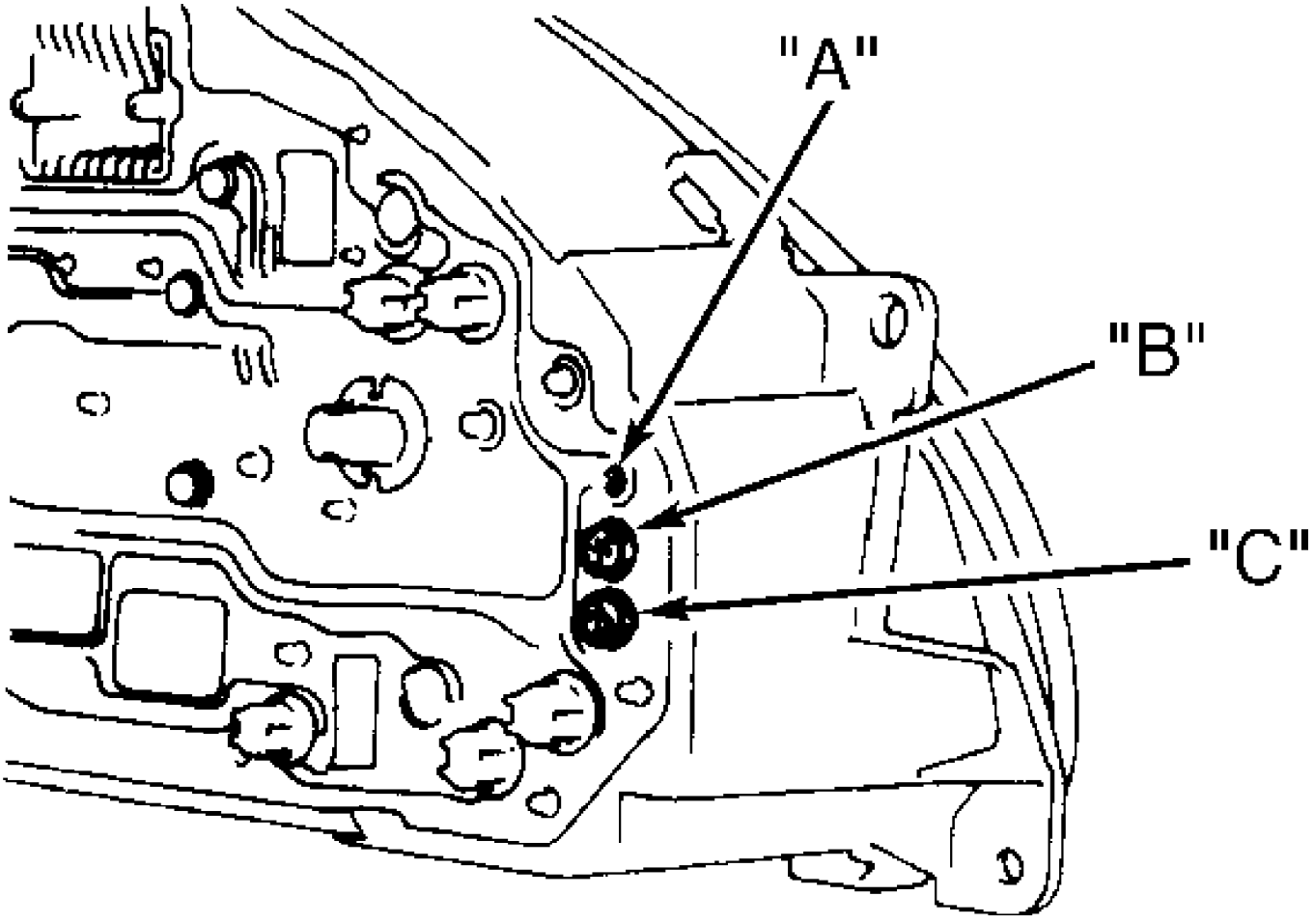

Fig. 11: Identifying Instrument Panel Fuel Gauge Resistance Check Terminals (Galant)
Courtesy of Mitsubishi Motor Sales of America

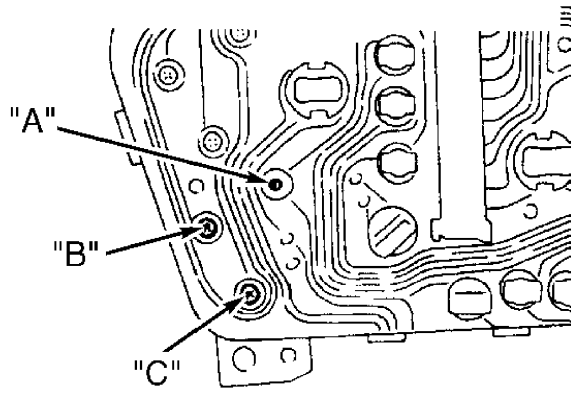

Fig. 12: Identifying Instrument Panel Fuel Gauge Resistance Check Terminals (Mirage - With Tachometer)
Courtesy of Mitsubishi Motor Sales of America

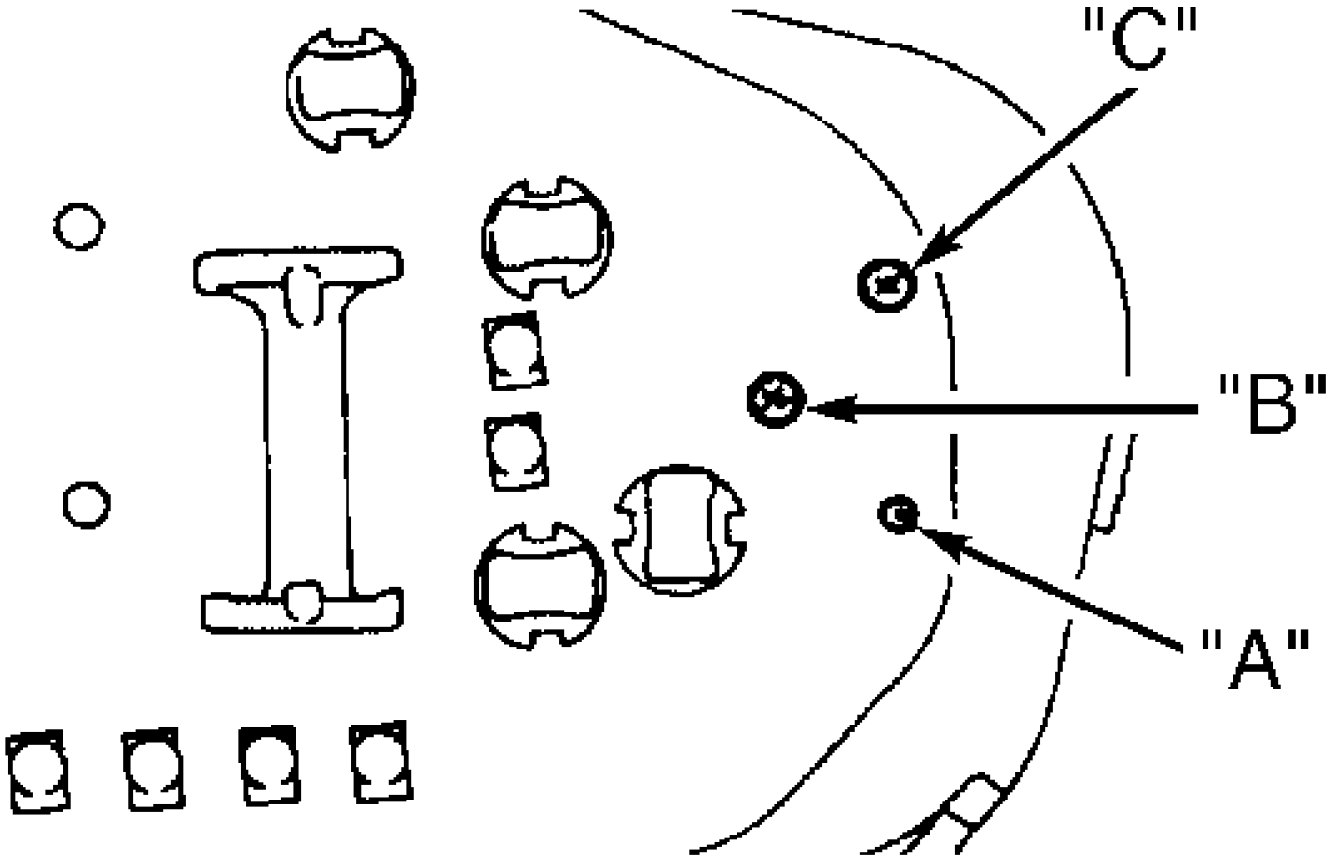

Fig. 13: Identifying Instrument Panel Fuel Gauge Resistance Check Terminals (Mirage - Without Tachometer)
Courtesy of Mitsubishi Motor Sales of America

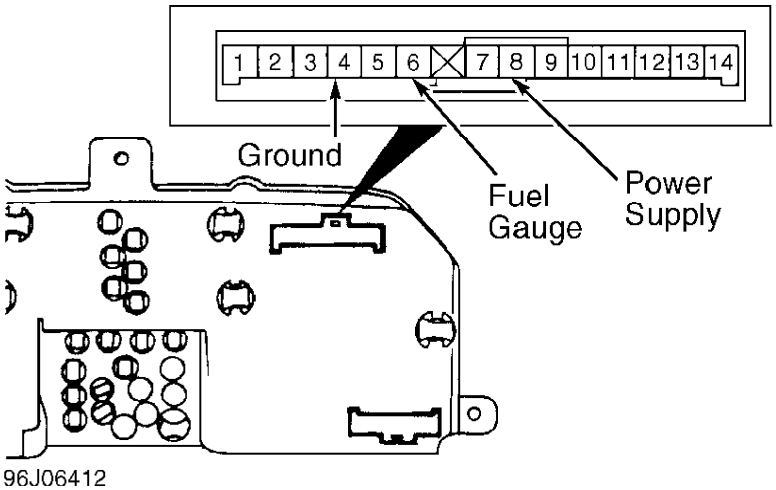

Fig. 14: Identifying Instrument Panel Fuel Gauge Resistance Check Terminals (Montero)
Courtesy of Mitsubishi Motor Sales of America

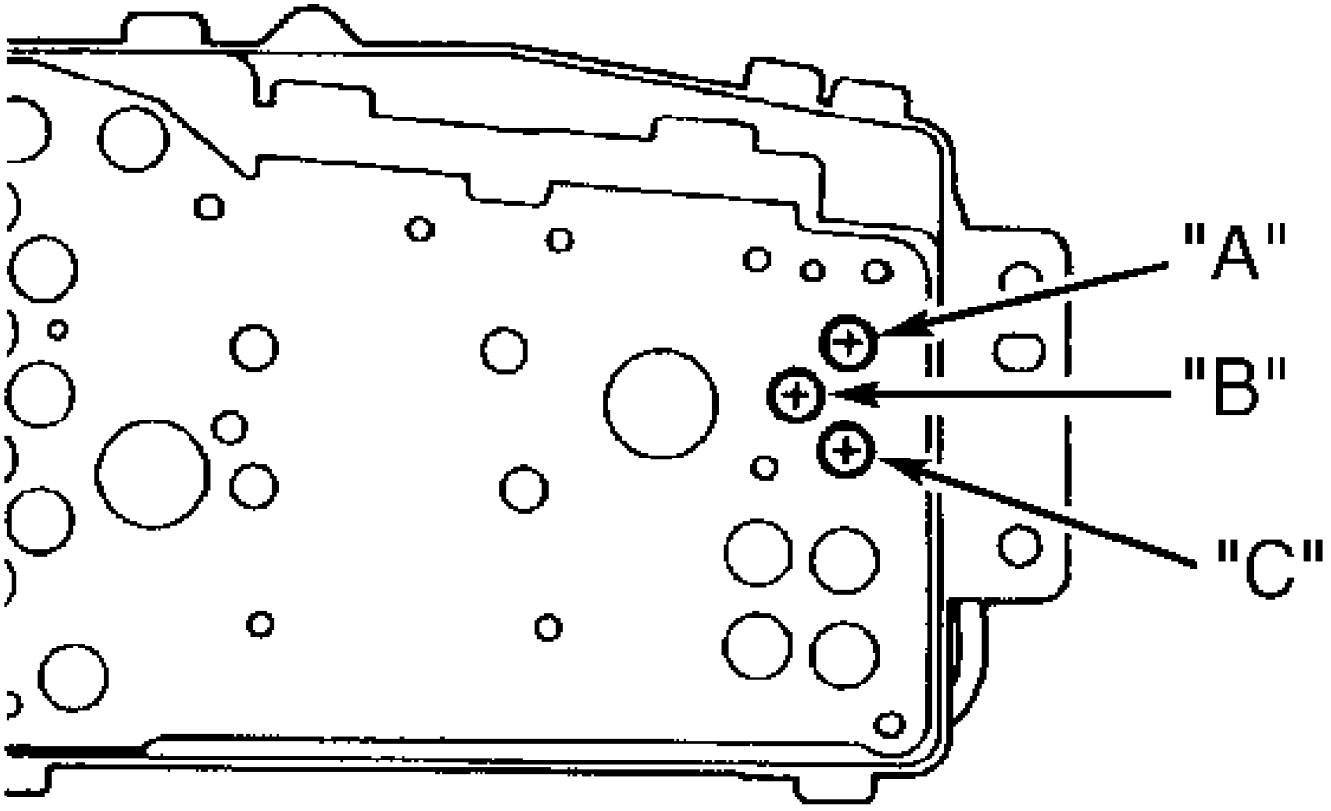

Fig. 15: Identifying Instrument Panel Fuel Gauge Resistance Check Terminals (Montero Sport)
Courtesy of Mitsubishi Motor Sales of America

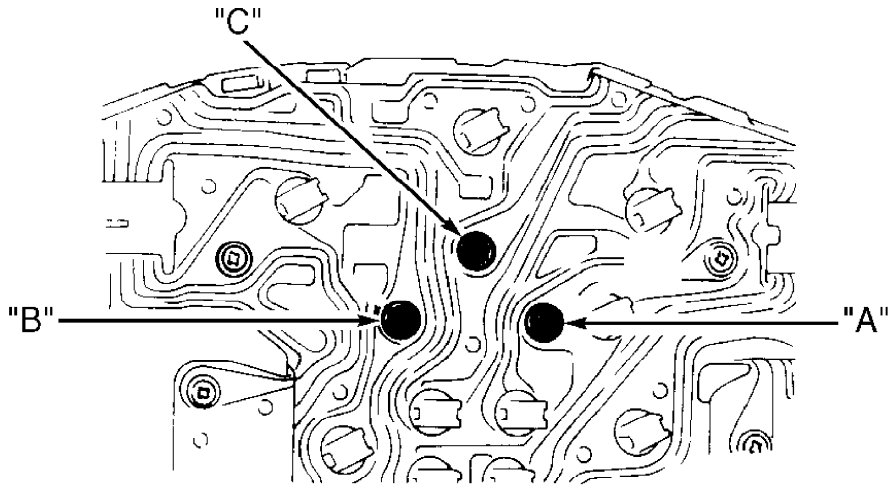

Fig. 16: Identifying Instrument Panel Fuel Gauge Resistance Check Terminals (3000GT)
Courtesy of Mitsubishi Motor Sales of America

INPUT/OUTPUT SENSOR

Eclipse 2.0L Non-Turbo With A/T

Disconnect sensor harness connector. Check resistance between sensor terminals. Resistance should be 300-1200 ohms. Replace sensor as necessary.

OIL PRESSURE GAUGE

Circuit Test (Eclipse, Montero & 3000GT)

1) Disconnect oil pressure gauge wiring connector from sending unit inside engine compartment. Connect a 12-volt test light between harness connector terminal and ground. Turn ignition on, but DO NOT start engine.

2) If test light comes on and gauge needle moves, go to GAUGE RESISTANCE TEST. If test light does not come on and gauge needle does not move, repair wiring to sending unit.

Gauge Resistance Test (Eclipse, Montero & 3000GT)

1) Remove instrument cluster from instrument panel. See INSTRUMENT CLUSTER under REMOVAL & INSTALLATION. On 3000GT, remove air distribution duct and combination gauges.

2) On all models, check continuity between oil pressure gauge terminals. See Fig. 17, 18 or 19. See OIL PRESSURE GAUGE RESISTANCE SPECIFICATIONS table. If resistance is not within specification, replace oil pressure gauge.

OIL PRESSURE GAUGE RESISTANCE SPECIFICATIONS TABLE

Application	Ohms
Eclipse & 3000GT	40-44
Montero	50

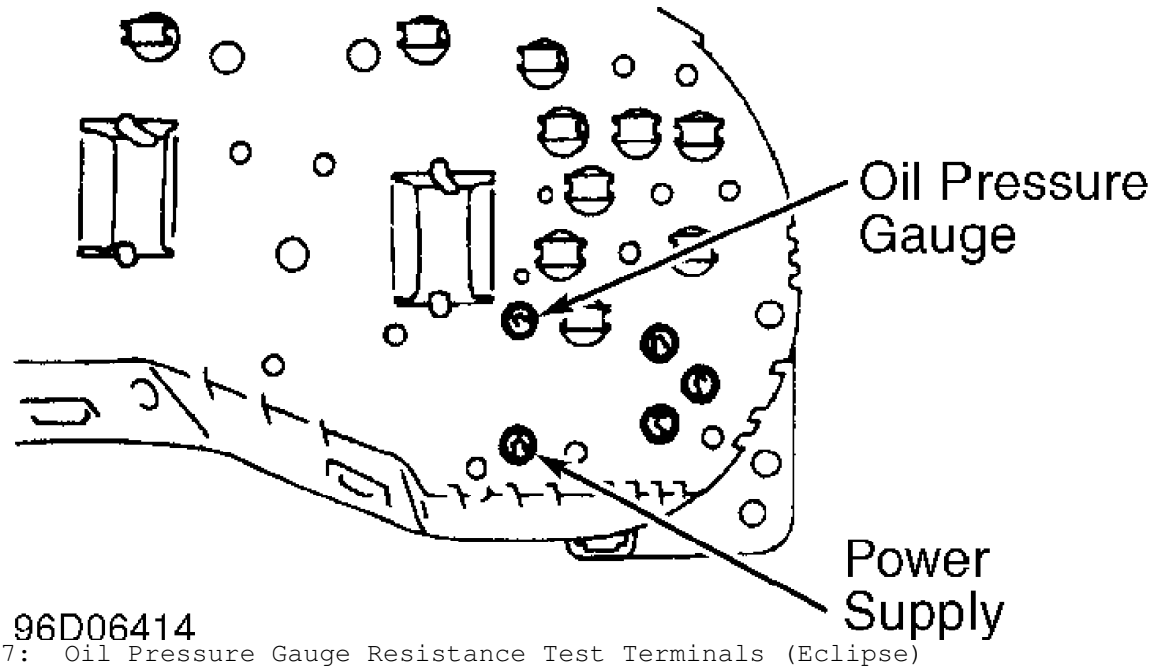

Fig. 17: Oil Pressure Gauge Resistance Test Terminals (Eclipse)
Courtesy of Mitsubishi Motor Sales of America

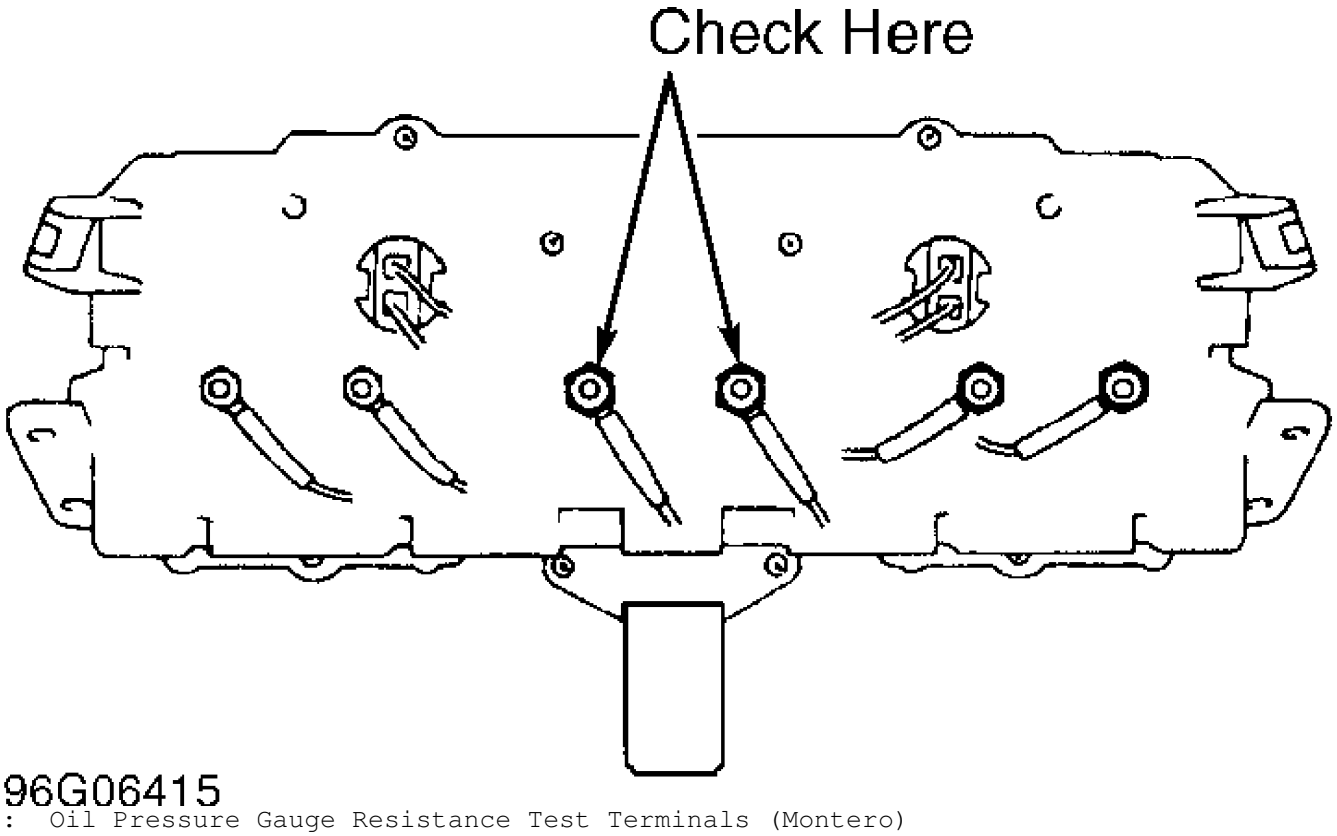

Fig. 18: Oil Pressure Gauge Resistance Test Terminals (Montero)
Courtesy of Mitsubishi Motor Sales of America

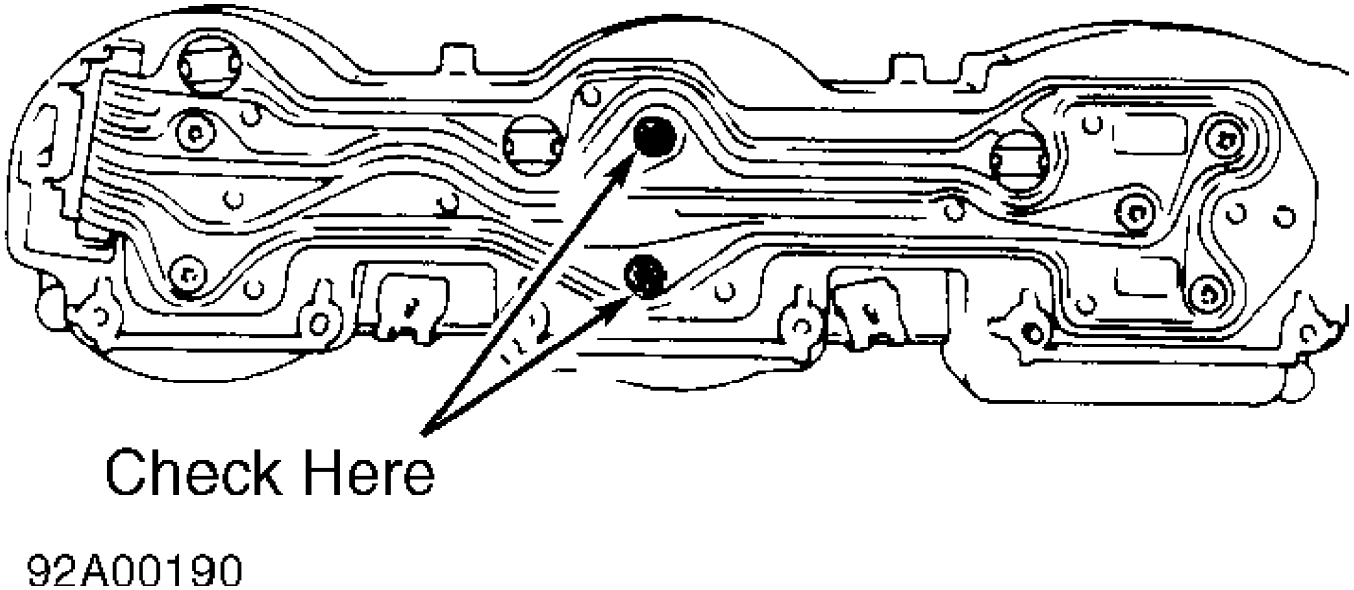

Fig. 19: Oil Pressure Gauge Resistance Test Terminals (3000GT)
Courtesy of Mitsubishi Motor Sales of America

NOTE: On Montero Sport, oil pressure gauge is mounted on multi-meter assembly on center of dashboard.

Circuit Test (Montero Sport)
1) Disconnect harness connector from oil pressure sending

unit. Turn ignition on. Check voltage between ground and sending unit harness-side connector. If battery voltage is present, problem is intermittent. If battery voltage is not present, go to next step.

2) Check sending unit harness connector. Repair as necessary. If connector is okay, check circuit (Yellow wire) between oil pressure gauge and oil pressure sending unit. See WIRING DIAGRAMS. Repair as necessary. If circuit is okay, go to next step.

3) Remove multi-meter assembly. Check voltage between ground and harness-side connector terminal No. 10 (Red/Black wire). See WIRING DIAGRAMS. If battery voltage is present, problem is intermittent. If battery voltage is not present, go to next step.

4) Check harness connector to multi-meter assembly. Repair as necessary. If connector is okay, check circuit between multi-meter harness connector and fusible link No. 6. See WIRING DIAGRAMS. Repair as necessary. If circuit is okay, go to next step.

5) Turn ignition on. Check voltage between ground and multi-meter harness-side connector terminal No. 11 (Black/White wire). See WIRING DIAGRAMS. If battery voltage is present, problem is intermittent. If battery voltage is not present, go to next step.

6) Check harness connector to multi-meter assembly. Repair as necessary. If connector is okay, check circuit between multi-meter assembly harness connector and ignition switch. See WIRING DIAGRAMS. Repair as necessary. If circuit is okay, go to next step.

7) Turn ignition off. Check continuity between ground and multi-meter assembly harness-side connector terminal No. 3 (Black wire). If continuity is present, problem is intermittent. If continuity is not present, go to next step.

8) Check harness connector to multi-meter assembly. Repair as necessary. If connector is okay, check circuit (Black wire) between multi-meter assembly harness connector and ground. See WIRING DIAGRAMS . Repair as necessary. If circuit is okay, problem is intermittent.

Gauge Sending Unit Resistance Test (Montero Sport)

Disconnect harness connector to oil pressure sending unit. Start and idle engine. Check resistance between oil pressure gauge sending unit terminal and engine block. Resistance should be about 2 ohms. Replace sending unit if resistance is not as specified.

REED SWITCH

Continuity Check (Montero)

1) Remove instrument cluster. See INSTRUMENT CLUSTER under REMOVAL & INSTALLATION. Check continuity between reed switch terminals No. 1 and 2. See Fig. 20.

2) Ensure continuity pulses on and off 4 times per revolution of speedometer shaft connection. If continuity is not as specified, replace reed switch.

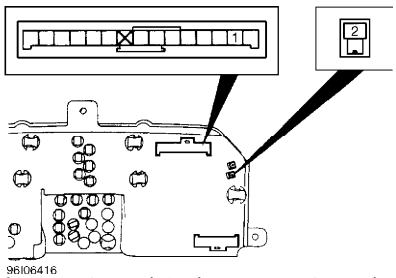

Fig. 20: Identifying Reed Switch Test Terminals (Montero)
Courtesy of Mitsubishi Motor Sales of America

SPEEDOMETER TEST

Calibration Test

Adjust tire pressure to standard value. Using a calibrated, reliable speedometer tester, compare reading of vehicle speedometer to speedometer tester. See SPEEDOMETER ALLOWABLE VARIATION table. Replace speedometer if necessary.

SPEEDOMETER ALLOWABLE VARIATION TABLE

MPH (KM/H)	Allowable Variation MPH (KM/H)
20 (32)	19-22 (31-35)
40 (64)	38-44 (61-71)
60 (97)	57-66 (92-106)
80 (129)	76-88 (122-142)
100 (161)	94-110 (151-177)

NOTE: Speedometer circuit test for Montero and 3000GT is not available from manufacturer at time of publication.

Circuit Test (Eclipse, Galant & Mirage)

1) Remove instrument cluster. See INSTRUMENT CLUSTER under REMOVAL & INSTALLATION. Disconnect instrument cluster harness connector. Turn ignition on. Connect voltmeter between ground and instrument cluster harness-side connector terminal No. 36 (Yellow/White wire) on Eclipse, terminal No. 49 (Yellow/White wire) on Galant, or terminal No. 51 (Yellow wire) on Mirage. Move vehicle forward and backward. If voltmeter reads 4.5 volts or greater, go to step 4). If voltage reading is not as specified, replace speedometer assembly.

2) Connect voltmeter between ground and instrument cluster harness-side connector terminal No. 10 (Black/White wire) on Eclipse, terminal No. 24 (Black/White wire) on Galant, or terminal No. 42 (Black/White wire) on Mirage. Turn ignition on. Move vehicle forward and backward. If battery voltage is present, replace speedometer assembly. If battery voltage is not present, go to step 4).

3) On Mirage, check continuity between ground and instrument cluster harness-side connector terminal No. 11 (Black wire). If continuity is present, go to next step. If continuity is not present, check circuit between ground and instrument cluster. See WIRING DIAGRAMS. Repair as necessary.

4) Check vehicle speed sensor. See VEHICLE SPEED SENSOR under COMPONENT TESTS. Replace as necessary. If sensor is okay, check harness connectors to instrument cluster. Repair as necessary. If connectors are okay, check circuit between power supply and instrument cluster. See WIRING DIAGRAMS. Repair as necessary.

Circuit Test (Montero Sport)

1) Disconnect vehicle speed sensor harness connector. Check vehicle speed sensor. See VEHICLE SPEED SENSOR under COMPONENT TESTS. Replace sensor as necessary. If sensor is okay, go to next step.

2) Turn ignition on. Check voltage between ground and vehicle speed sensor harness-side connector terminal No. 3 (Yellow/White wire). See WIRING DIAGRAMS. If voltage reading is 4.5 volts, problem is intermittent. If voltage reading is not 4.5 volts, go to next step.

3) Check vehicle speed sensor harness connector. Repair as necessary. If connector is okay, check circuit between vehicle speed sensor and instrument cluster. See WIRING DIAGRAMS. Repair as necessary. If circuit is okay, go to next step.

4) Check voltage between ground and vehicle speed sensor harness-side connector terminal No. 1 (Black/White wire). See WIRING DIAGRAMS. Battery voltage should be present. If battery voltage is present, problem is intermittent. If battery voltage is not

present, go to next step.

5) Check harness connectors to vehicle speed sensor and ignition switch. See WIRING DIAGRAMS. Repair as necessary. If connectors are okay, check circuit between vehicle speed sensor and ignition switch. Repair as necessary. If circuit is okay, go to next step.

6) Turn ignition off. Check resistance between ground and vehicle speed sensor harness-side connector terminal No. 2 (Black wire). See WIRING DIAGRAMS. Continuity should be present. If continuity is present, problem is intermittent. If continuity is not present, check circuit between sensor harness-side connector terminal No. 2 and ground. Repair as necessary. If circuit is okay, go to next step.

7) Remove instrument cluster. See INSTRUMENT CLUSTER under REMOVAL & INSTALLATION. Check voltage between ground and instrument cluster harness-side connector terminal No. 53 (Red/Black wire). See WIRING DIAGRAMS. Battery voltage should be present. If battery voltage is present, go to step 9). If battery voltage is not present, go to next step.

8) Check harness connector to instrument cluster. Repair as necessary. If connector is okay, check circuit between instrument cluster harness connector and fusible link No. 6. See WIRING DIAGRAMS. Repair as necessary. If circuit is okay, go to next step.

9) Check voltage between ground and instrument cluster harness-side connector terminal No. 24 (Black/White wire). See WIRING DIAGRAMS. Battery voltage should be present. If battery voltage is present, problem is intermittent. If battery voltage is not present, check harness connector. Repair as necessary.

TACHOMETER

NOTE: DO NOT reverse polarity when installing tachometer, or diode and transistor may be damaged.

Calibration Test

Connect a calibrated, reliable tachometer to vehicle ignition system. Operate engine at various speeds (RPM). See TACHOMETER ALLOWABLE VARIATION table. If comparison between tach-dwell meter and vehicle tachometer readings are not within permissible variation, replace vehicle tachometer.

TACHOMETER ALLOWABLE VARIATION TABLE

Application & Engine Speed (RPM)	Allowable Variation (RPM)
Eclipse, Galant & 3000GT	
1000	900-1100
3000	2850-3150
5000	4750-5250
6000	5700-6300
Mirage, Montero & Montero Sport	
700	600-800
3000	2850-3150
5000	4750-5250
6000	5700-6300

NOTE: Circuit test for Eclipse, Galant, Montero and 3000GT is not available from manufacturer at time of publication.

Circuit Test (Mirage)

1) Disconnect instrument cluster harness connector. Check

voltage between ground and harness-side connector terminal No. 33 (White wire). See WIRING DIAGRAMS. Voltmeter should read 5 volts. If voltage is as specified, replace tachometer. If voltage is not as specified, go to step 4).

2) Check continuity between ground and instrument cluster harness-side connector terminal No. 34 (Black wire). See WIRING DIAGRAMS. If continuity is present, replace tachometer. If continuity is not present, go to step 5).

3) Check voltage between ground and instrument cluster harness-side connector terminal No. 42 (Black/White wire). See WIRING DIAGRAMS. Battery voltage should be present. If battery voltage is present, replace tachometer. If battery voltage is not present, go to step 6).

4) Check harness connectors to ECM, instrument cluster or distributor assembly (1.5L). Repair as necessary. If connectors are okay, check circuit between ECM, instrument cluster and distributor (1.5L). See WIRING DIAGRAMS. Repair as necessary.

5) Check joint connector to instrument cluster. Repair as necessary. If connector is okay, check circuit between instrument cluster and ground. See WIRING DIAGRAMS. Repair as necessary.

6) Check harness and joint connectors to power supply junction block. Repair as necessary. If connectors are okay, check circuit between instrument cluster and power supply. See WIRING DIAGRAMS. Repair as necessary.

Circuit Test (Montero Sport)

1) Remove instrument cluster. See INSTRUMENT CLUSTER under REMOVAL & INSTALLATION. Disconnect instrument cluster harness connector. Connect voltmeter between ground and instrument cluster harness-side connector terminal No. 14 (White wire). Start and idle engine. Voltmeter should read about 5 volts. If voltage is as specified, problem is intermittent. If voltage is not as specified, go to next step.

2) Check instrument cluster harness connector. Repair as necessary. If connector is okay, go to next step on 2.4L engines or step 7) on 3.0L engines.

3) Check noise filter harness connector (located behind instrument cluster). Repair as necessary. If connector is okay, go to next step.

4) Check circuit between instrument cluster harness connector and noise filter connector. See WIRING DIAGRAMS. Repair as necessary. If circuit is okay, go to next step.

5) Remove noise filter (located near throttle position sensor harness). Check resistance between noise filter terminals. Resistance should be 1760-2640 ohms. If resistance is not as specified, replace noise filter. If resistance is as specified, go to next step.

6) Check joint connector behind right side of dash. Repair as necessary. If connector is okay, check circuit between joint connector and instrument cluster harness connector. See WIRING DIAGRAMS. Repair as necessary. If circuit is okay, go to next step.

7) Check voltage between ground and instrument cluster harness-side connector terminal No. 24 (Black/White wire). If battery voltage is present, problem is intermittent. If battery voltage is not present, go to next step.

8) Check harness connector to instrument cluster. Repair as necessary. If connector is okay, check circuit between instrument cluster and ignition switch. See WIRING DIAGRAMS. Repair as necessary. If circuit is okay, go to next step.

9) Check circuit between ground and instrument cluster harness-side connector terminal No. 13 (Black wire). If continuity is present, problem is intermittent. If continuity is not present, check harness connector to instrument cluster and to chassis ground. See WIRING DIAGRAMS. Repair as necessary. If connectors are okay, replace

speedometer.

TEMPERATURE GAUGE

CAUTION: DO NOT connect sender wire directly to ground during test.

Circuit Test

1) Disconnect temperature sender wire from sending unit. Connect a 12-volt, 3.4-watt test light between connector terminal and ground. Turn ignition switch to ON position.

2) If test light flashes and temperature gauge needle moves, go to SENSOR RESISTANCE TEST. If test light does not flash or gauge needle does not move, repair wiring to sending unit.

Sensor Resistance Test

1) Remove Engine Coolant Temperature (ECT) sensor from engine. See COMPONENT LOCATIONS. Place sending unit in 158°F (70°C) water. Check sensor resistance using ohmmeter.

2) ECT sensor resistance should be 90-117 ohms. If ECT sensor resistance is okay, go to GAUGE RESISTANCE TEST. Replace ECT sensor if resistance is not as specified.

Gauge Resistance Test

1) Remove instrument cluster. See INSTRUMENT CLUSTER under REMOVAL & INSTALLATION. On 3000GT, remove air distribution duct and combination gauges.

2) On all models, check resistance between temperature gauge terminals at rear of cluster or combination gauges. See TEMPERATURE GAUGE RESISTANCE SPECIFICATIONS table. See Fig. 21, 22, 23, 24, 25, 26, 27 or 28.

TEMPERATURE GAUGE RESISTANCE SPECIFICATIONS TABLE

Application	(1) Terminals	Ohms
Eclipse	"A" & "B"	161-197
Eclipse	"A" & "C"	51-57
Eclipse	"B" & "C"	210-256
Galant	"B" & "C"	(2)
Mirage	"A" & "B"	86-95
Mirage	"A" & "C"	168-206
Mirage	"B" & "C"	222-272
Montero	No. 4 & 8	103-128
Montero	No. 4 & 9	221-271
Montero	No. 8 & 9	130-160
Montero Sport	"A" & "B"	88
Montero Sport	"A" & "C"	103
Montero Sport	"B" & "C"	191
3000GT	"A" & "B"	51
3000GT	"A" & "C"	139
3000GT	"B" & "C"	190

(1) - See Fig. 21, 22, 23, 24, 25, 26, 27 or 28.
(2) - With positive battery voltage applied to terminal "A", battery ground applied to terminal "C" and a 50-ohm resistor connected between battery ground and terminal "B", needle should be about 1/4 position on gauge.

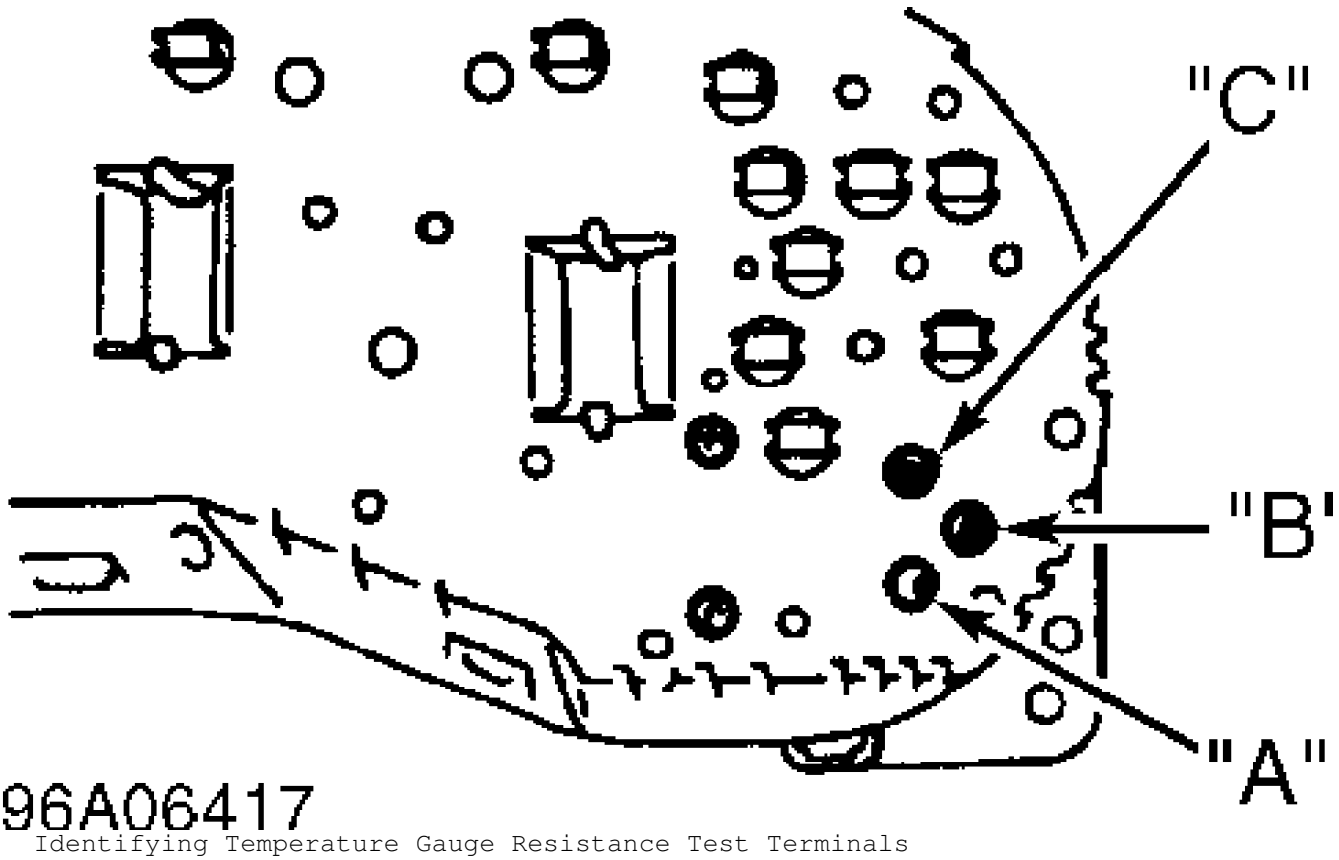

Fig. 21: Identifying Temperature Gauge Resistance Test Terminals (Eclipse 2.0L Non-Turbo & 2.4L)
Courtesy of Mitsubishi Motor Sales of America

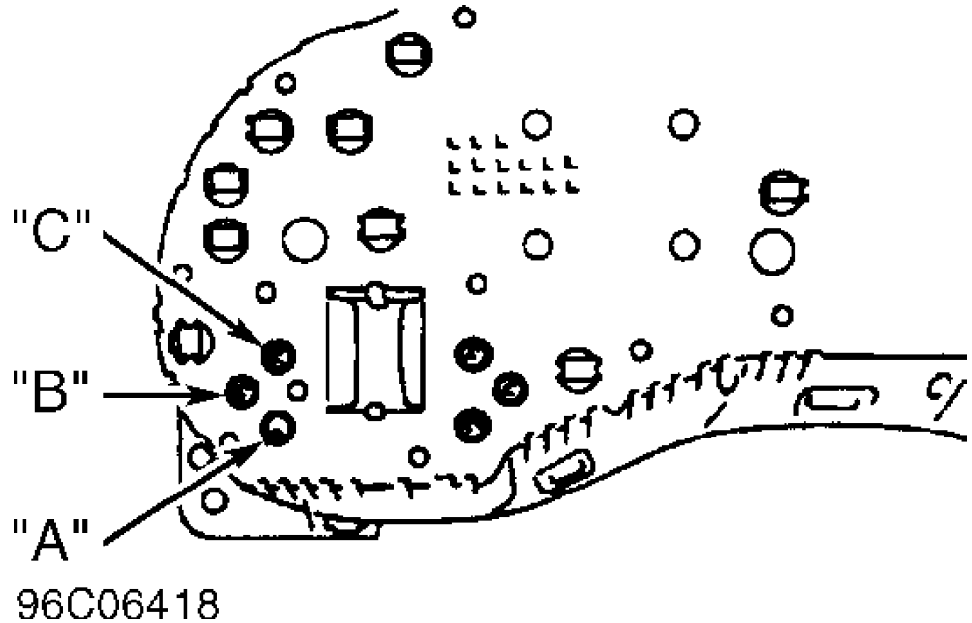

Fig. 22: Identifying Temperature Gauge Resistance Test Terminals (Eclipse 2.0L Turbo)
Courtesy of Mitsubishi Motor Sales of America

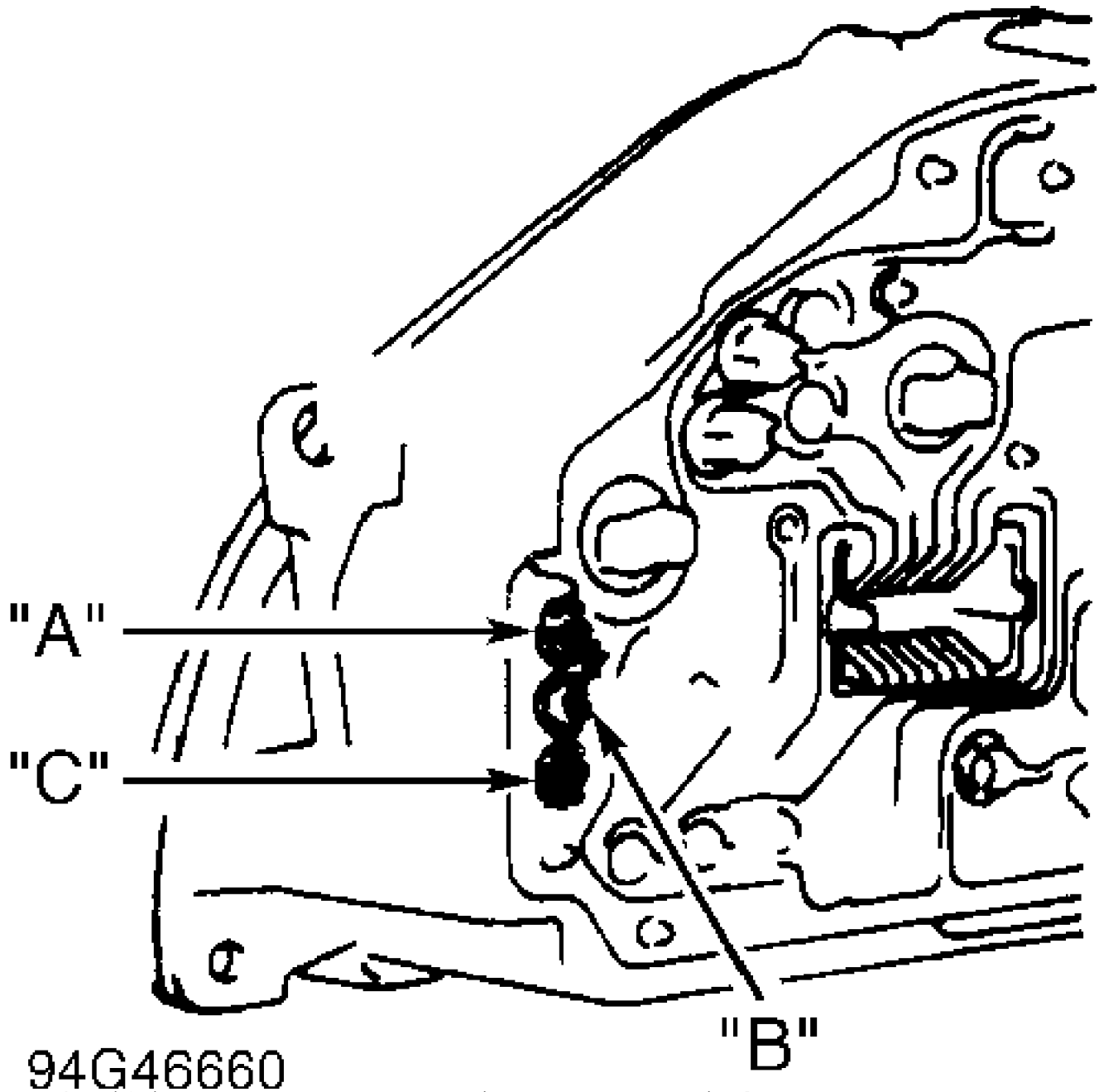

Fig. 23: Identifying Temperature Gauge Resistance Test Terminals (Galant)
Courtesy of Mitsubishi Motor Sales of America

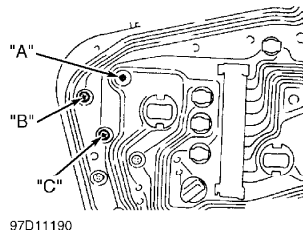

Fig. 24: Identifying Temperature Gauge Resistance Test Terminals (Mirage - With Tachometer)

Courtesy of Mitsubishi Motor Sales of America

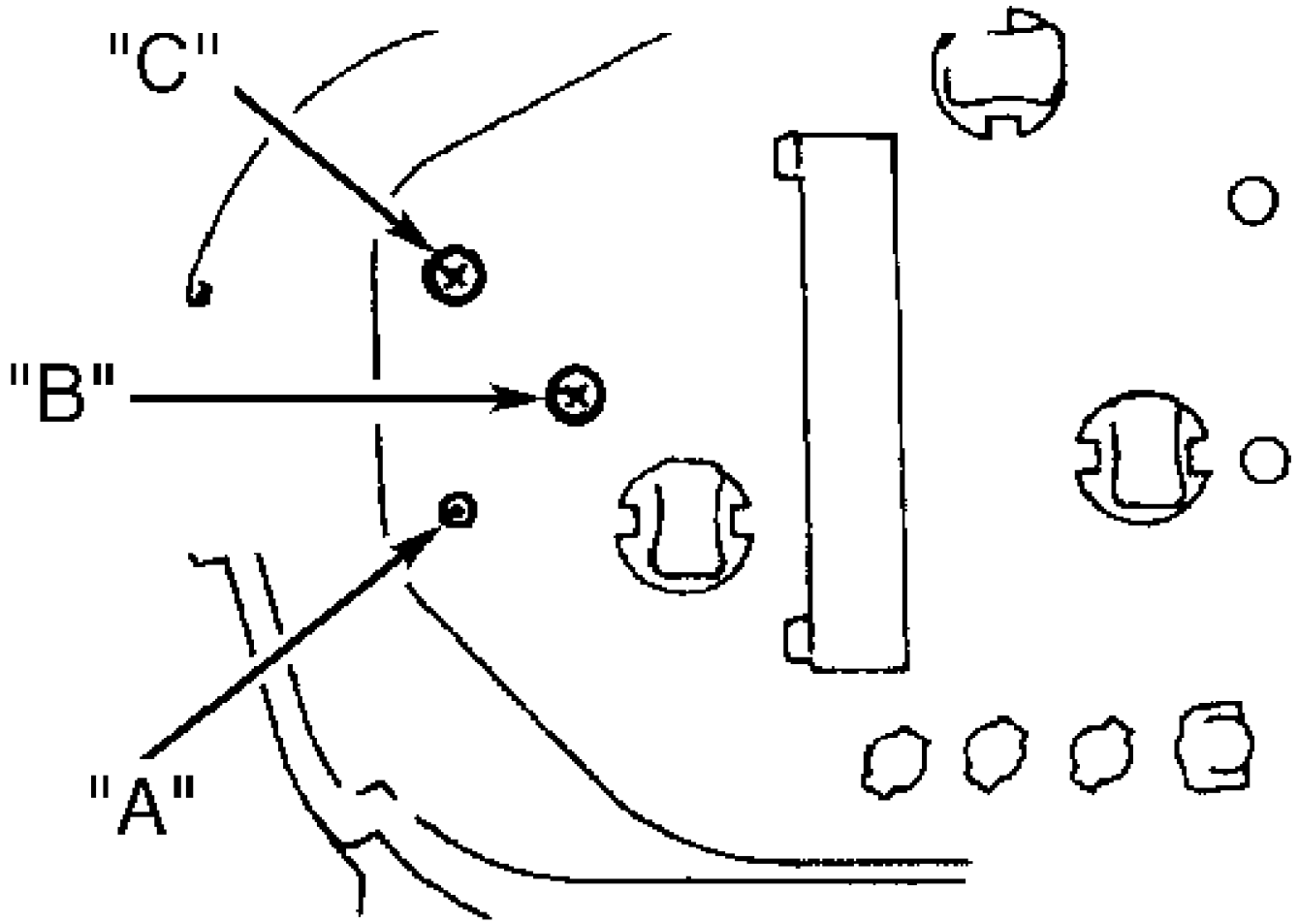

Fig. 25: Identifying Temperature Gauge Resistance Test Terminals (Mirage - Without Tachometer)
Courtesy of Mitsubishi Motor Sales of America

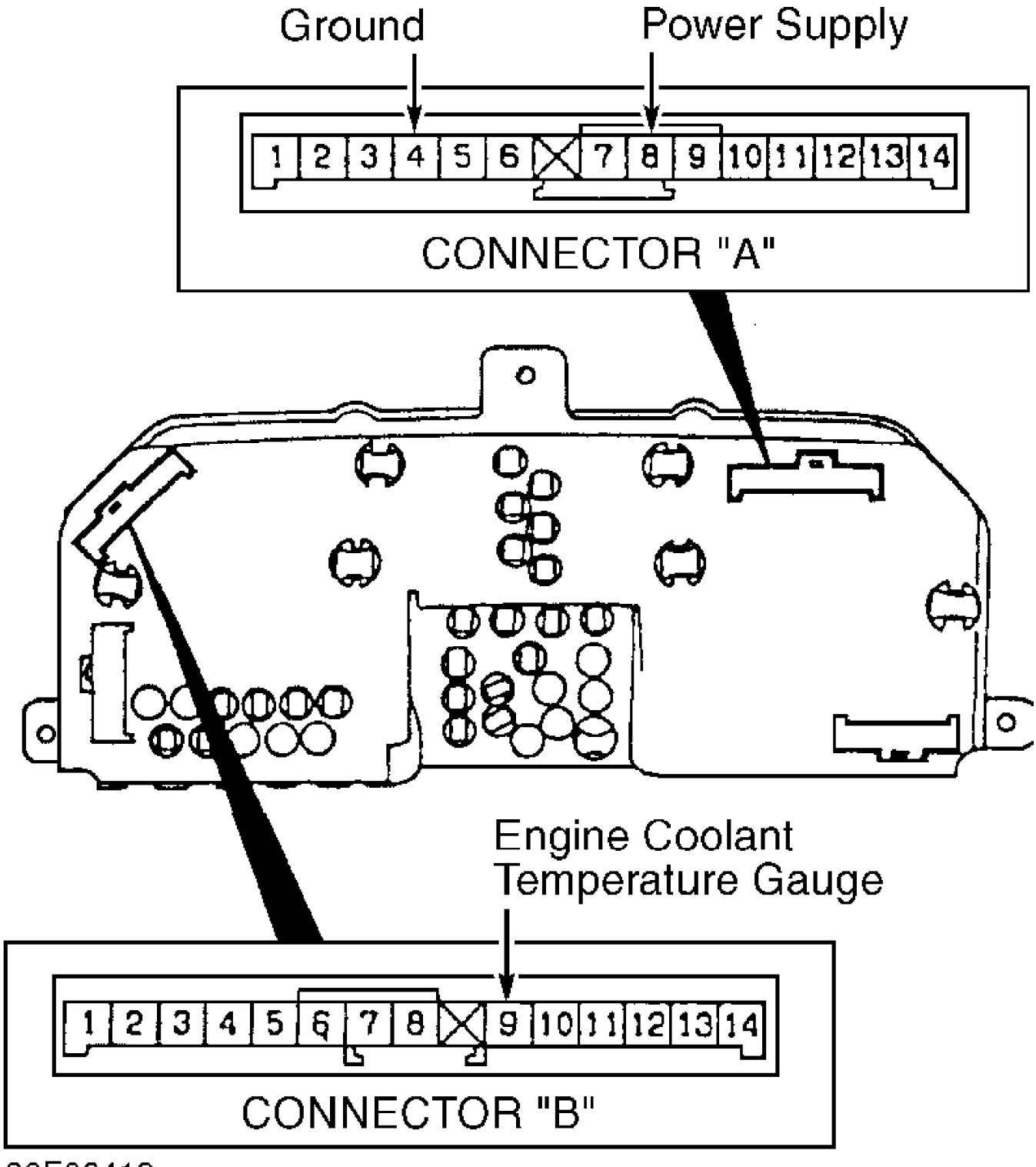

Fig. 26: Identifying Temperature Gauge Resistance Test Terminals (Montero)
Courtesy of Mitsubishi Motor Sales of America

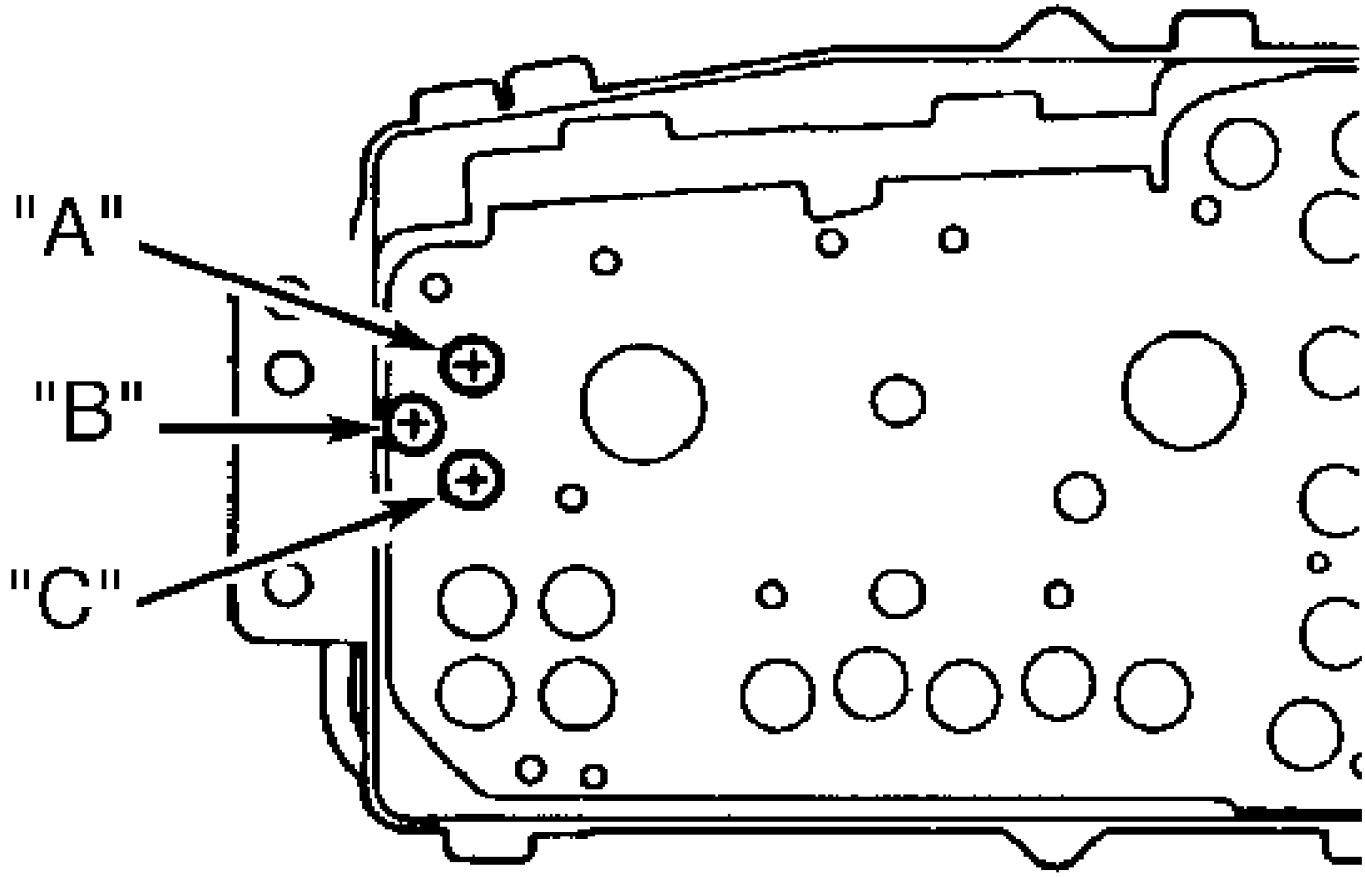

Fig. 27: Identifying Temperature Gauge Resistance Test Terminals (Montero Sport)
Courtesy of Mitsubishi Motor Sales of America

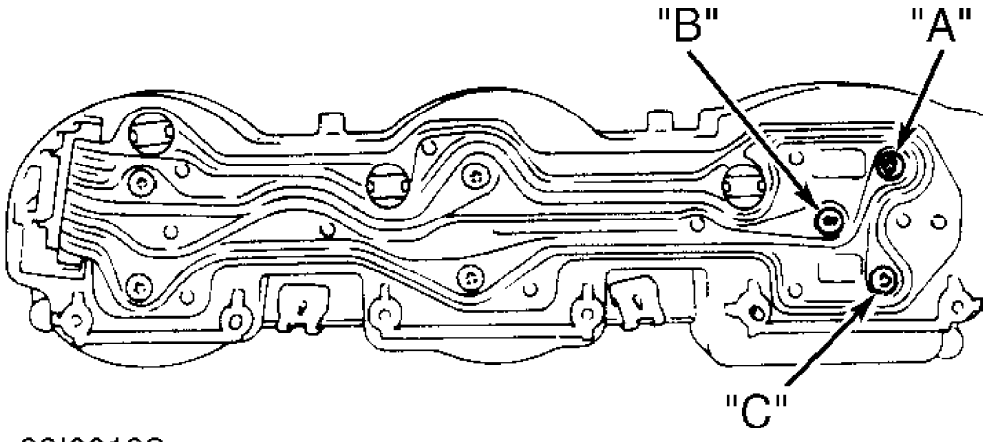

Fig. 28: Identifying Temperature Gauge Resistance Test Terminals (3000GT)
Courtesy of Mitsubishi Motor Sales of America

VEHICLE SPEED SENSOR

NOTE: Vehicle speed sensor circuit test for Montero and 3000GT is not available from manufacturer at time of publication.

Circuit Test (Eclipse, Galant & Mirage)

1) Disconnect vehicle speed sensor harness connector. Turn ignition on. Check voltage between ground and vehicle speed sensor harness-side connector terminal No. 3 (Yellow/White wire on Eclipse 2.0L Non-Turbo models and Galant, or Yellow wire on Eclipse 2.0L Turbo and 2.4L models and Mirage). Voltmeter should read 4.5 volts or greater. If voltage is as specified, go to step 4). If voltage is not as specified, go to step 5).

2) Check voltage between ground and vehicle speed sensor harness-side connector terminal No. 1 (Yellow wire on Eclipse 2.0L Non-Turbo models, Black/White wire on Eclipse 2.0L Turbo and 2.4L models and Mirage, or Yellow/White wire on Galant). Voltmeter should read battery voltage. If voltage is as specified, go to step 4). If voltage is not as specified, go to step 5).

3) Check continuity between ground and vehicle speed sensor harness-side connector terminal No. 2 (Black/Green wire on Eclipse 2.0L Non-Turbo models, or Black wire on Eclipse 2.0L Turbo and 2.4L models, Galant and Mirage). If continuity is present, go to next step. If continuity is not present, go to step 5).

4) Check harness connector to instrument cluster. Repair as necessary. If connector is okay, check circuit between vehicle speed sensor and power supply. See WIRING DIAGRAMS. Repair as necessary.

5) Check harness connectors to instrument cluster and vehicle speed sensor. Repair as necessary. If connectors are okay, check circuit between vehicle speed sensor and instrument cluster. See WIRING DIAGRAMS. Repair as necessary.

Circuit Test (Montero Sport)

1) Disconnect vehicle speed sensor harness connector. Check circuit between instrument cluster harness connector and ignition switch. See WIRING DIAGRAMS. Repair as necessary. If circuit is okay, go to next step.

2) Remove instrument cluster. See INSTRUMENT CLUSTER under REMOVAL & INSTALLATION. Check continuity between ground and instrument cluster harness-side connector terminal No. 31 (Black wire). See WIRING DIAGRAMS. If continuity is present, problem is intermittent. If continuity is not present, go to next step.

3) Check circuit between instrument cluster and ignition switch. See WIRING DIAGRAMS. Repair as necessary. If circuit is okay, replace speedometer assembly.

Sensor Test (All Models)

1) Remove vehicle speed sensor from transaxle. Jumper a 3000-10,000 ohm resistor between sensor terminals No. 1 and 3. Connect battery positive to sensor terminal No. 1 and battery negative to sensor terminal No. 2. See Fig. 29.

2) Connect a voltmeter between sensor terminals No. 2 and 3. Manually turn speed sensor shaft. Voltage should pulse 4 times each revolution. Replace vehicle speed sensor if operation is not correct.

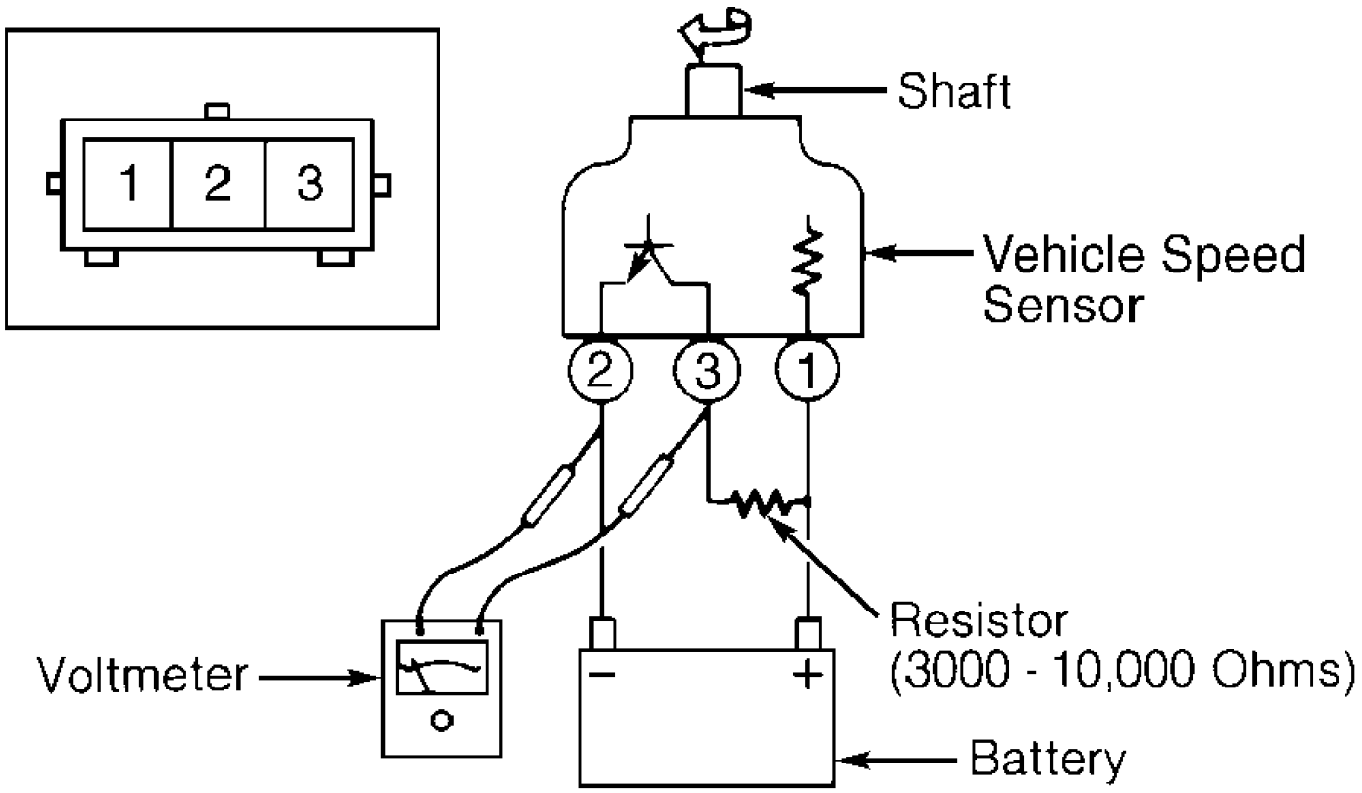

Fig. 29: Testing Vehicle Speed Sensor
Courtesy of Mitsubishi Motor Sales of America

VOLTMETER

Circuit Test (Montero Sport Only)

1) Remove multi-meter assembly from top of dashboard. Check voltage between ground and multi-meter harness-side connector terminal No. 10 (Red/Black wire). If voltage reading is about 12 volts, go to step 4). If voltage reading is not about 12 volts, go to next step.

2) Check harness connector to multi-meter assembly. Repair as necessary. If connector is okay, check circuit between multi-meter harness connector and fusible link No. 6. See WIRING DIAGRAMS. Repair as necessary. If circuit is okay, go to next step.

3) Turn ignition on. Check voltage between ground and multi-meter harness-side connector terminal No. 11 (Black/White wire). See WIRING DIAGRAMS. If voltage reading is about 12 volts, problem is intermittent. If voltage reading is not about 12 volts, go to next step.

4) Check harness connector to multi-meter assembly. Repair as necessary. If connector is okay, check circuit between multi-meter assembly harness connector and ignition switch. See WIRING DIAGRAMS. Repair as necessary. If circuit is okay, go to next step.

5) Turn ignition off. Check continuity between ground and multi-meter assembly harness-side connector terminal No. 3 (Black wire). If continuity is present, problem is intermittent. If continuity is not present, go to next step.

6) Check harness connector to multi-meter assembly. Repair as necessary. If connector is okay, check multi-meter assembly harness connector ground circuit. See WIRING DIAGRAMS. Repair as necessary. If circuit is okay, replace multi-meter assembly.

Resistance Test (Montero Only)

Using an ohmmeter, check resistance between voltmeter terminals. See Fig. 30. Resistance should be 380-460 ohms.

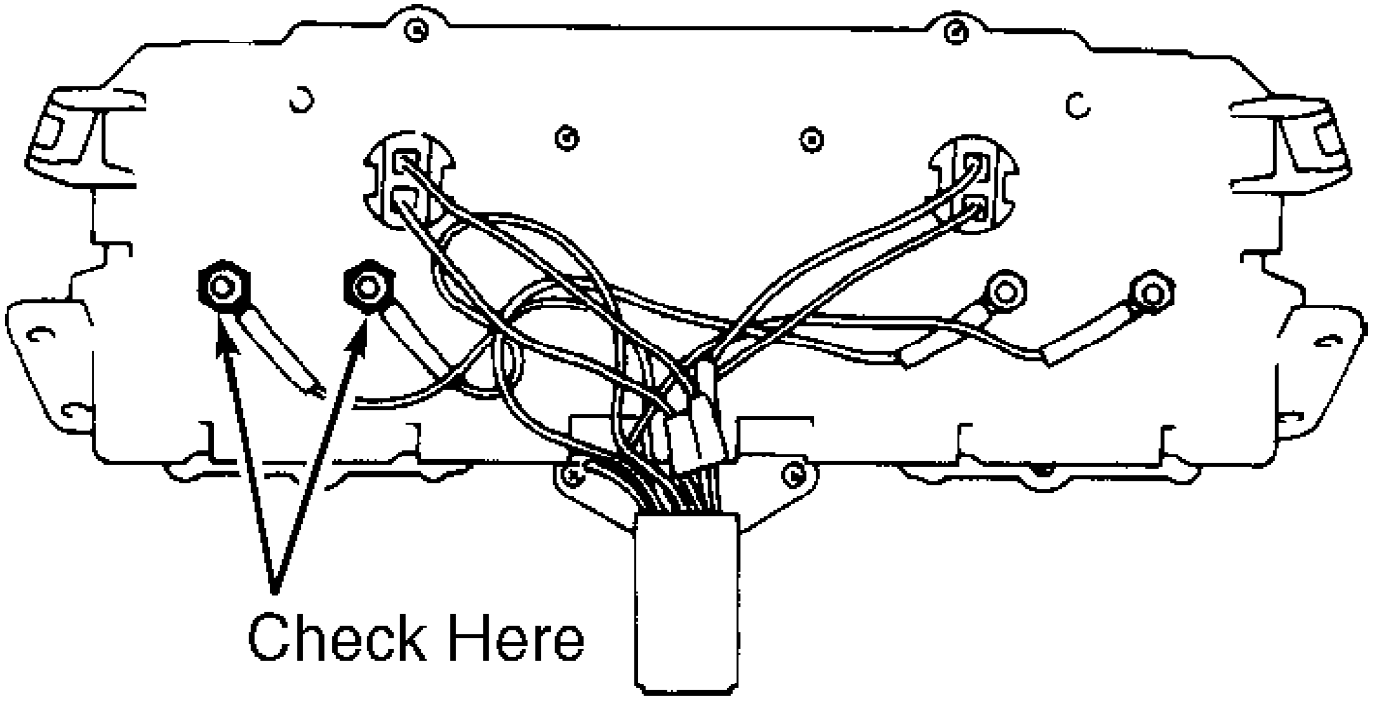

Fig. 30: Identifying Voltmeter Resistance Test Terminals (Montero)
Courtesy of Mitsubishi Motor Sales of America

Voltage Test (3000GT Only)

Start engine, and let it idle. Connect voltmeter to battery. Compare voltage reading of test voltmeter to voltage reading of vehicle voltmeter. Voltage variation should not exceed 0.5 volt (plus or minus). Replace instrument cluster voltmeter if voltage reading is not as specified.

FOGLIGHT SWITCH TEST

NOTE: Montero Sport is not equipped with foglights.

Eclipse

Remove foglight switch from instrument panel. Disconnect switch connector. Using an ohmmeter, check switch continuity. With switch in OFF position, continuity should exist between terminals No. 1 and 3. With switch in ON position, continuity should exist between terminals No. 1 and 3, and between terminals No. 4 and 5. See Fig. 31. If continuity is not as specified, replace switch.

Galant & Mirage

Remove foglight switch from instrument panel. Disconnect switch connector. Using an ohmmeter, check switch continuity. With switch in OFF position, continuity should exist between terminals No. 1 and 2. With switch in ON position, continuity should exist between terminals No. 1 and 2, terminals No. 3 and 4, and terminals No. 5 and 6. See Fig. 31. If continuity is not as specified, replace switch.

Montero

Remove foglight switch from instrument panel. Disconnect switch connector. Using an ohmmeter, check switch continuity. With switch in OFF position, continuity should exist between terminals No. 2 and 5. With switch in ON position, continuity should exist between terminals No. 1 and 4, terminals No. 2 and 5, and terminals No. 3 and 6. See Fig. 32. If continuity is not as specified, replace switch.

3000GT

Remove foglight switch from instrument panel. Disconnect switch connector. Using an ohmmeter, check switch continuity. With switch in OFF position, continuity should exist between terminals No. 3 and 4. With switch in ON position, continuity should exist between terminals No. 1 and 5. See Fig. 34. If continuity is not as specified, replace switch.

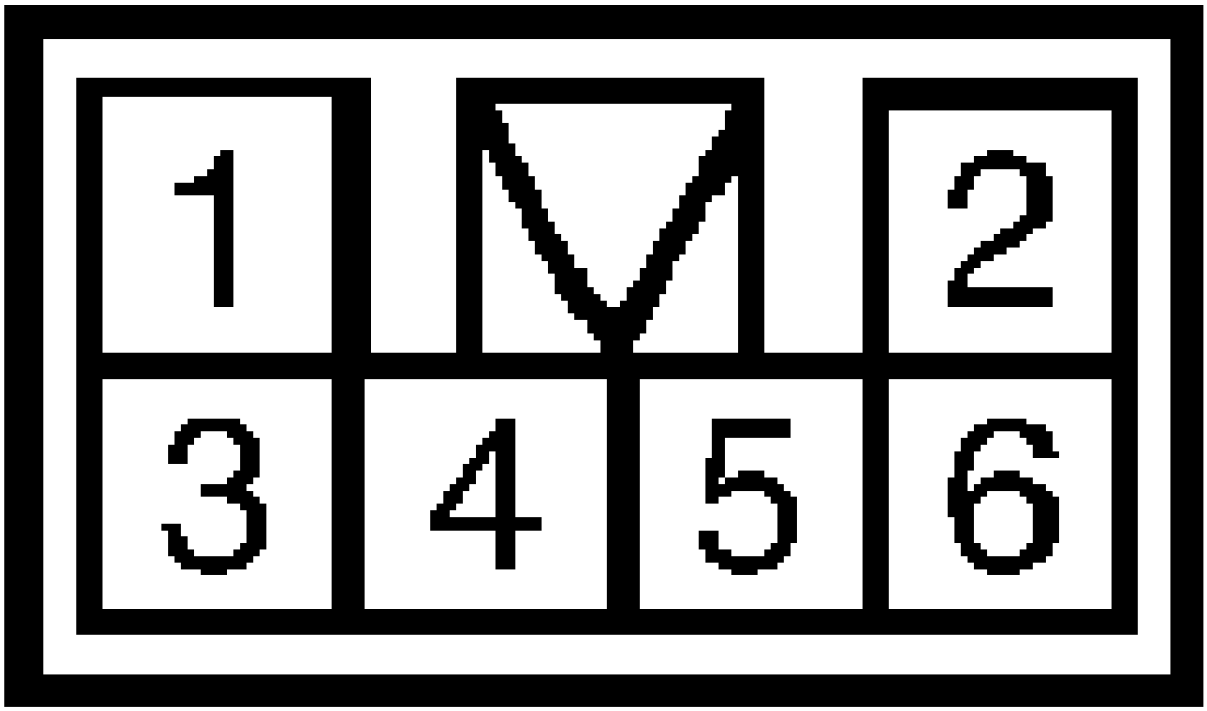

Fig. 31: Identifying Foglight Switch Connector Terminals (Eclipse, Galant & Mirage)
Courtesy of Mitsubishi Motor Sales of America

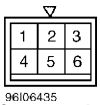

Fig. 32: Identifying Foglight Switch Connector Terminals (Montero)
Courtesy of Mitsubishi Motor Sales of America

FOGLIGHT RELAY TEST

Remove relay from engine compartment fuse/relay box. Using an ohmmeter, check relay continuity. With battery voltage not supplied to relay, continuity should exist between terminals No. 1 and 3. With positive battery terminal connected to relay terminal No. 1 and negative battery terminal connected to relay terminal No. 3, continuity should exist between terminals No. 4 and 5. See Fig. 33. If continuity is not as specified, replace relay.

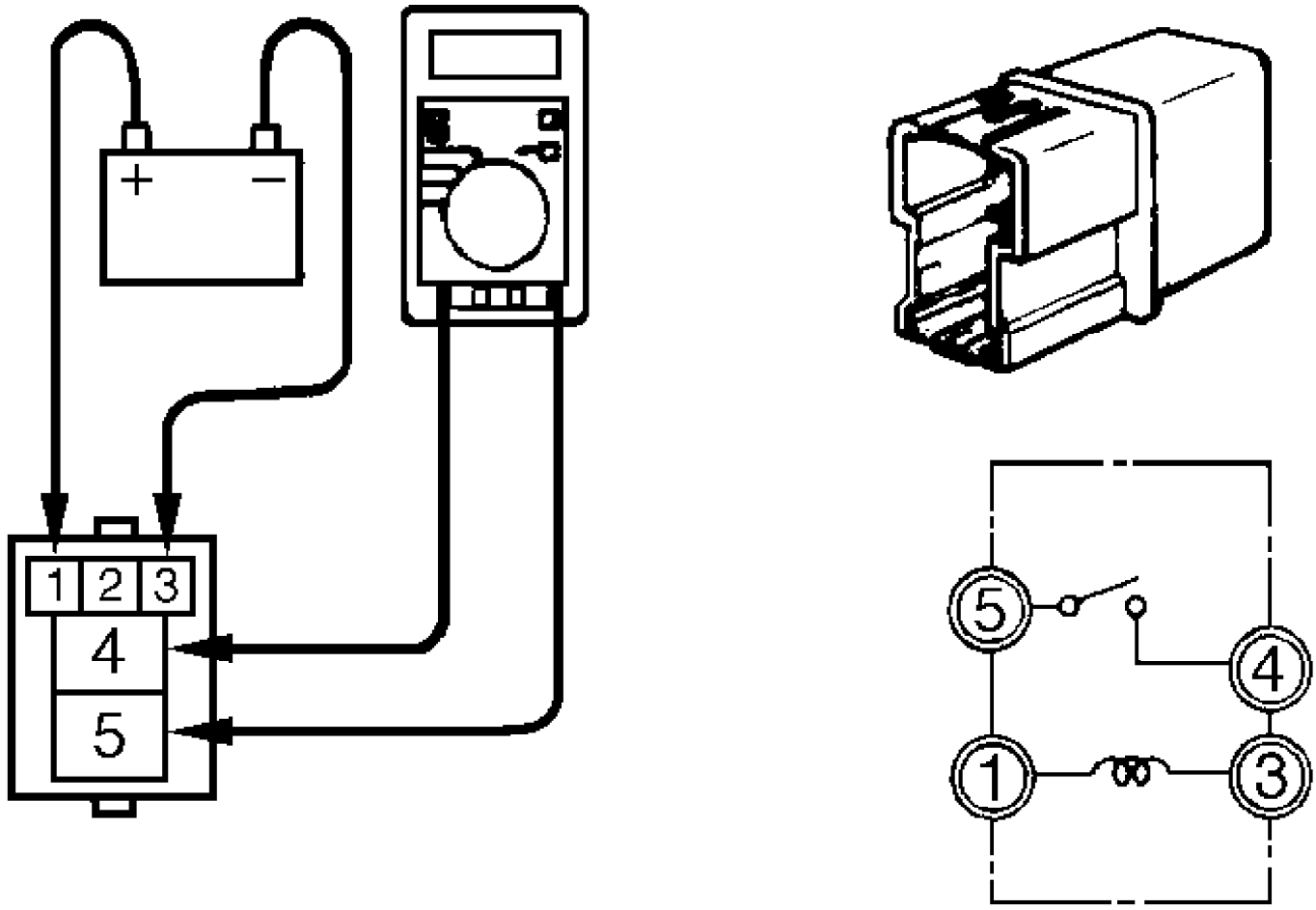

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Fig. 33: Identifying Foglight Relay Connector Terminals
Courtesy of Mitsubishi Motor Sales of America

HAZARD LIGHT SWITCH TEST

Eclipse, Mirage & Montero Sport

Remove hazard light switch from instrument panel. Disconnect switch connector. Using an ohmmeter, check switch continuity. With switch in OFF position, continuity should exist between terminals No. 5 and 7, and between terminals No. 9 and 10. With switch in ON position, continuity should exist between terminals No. 1, 2 and 4, between terminals No. 5 and 6, and between terminals No. 9 and 10. See Fig. 34. If continuity is not as specified, replace switch.

Galant

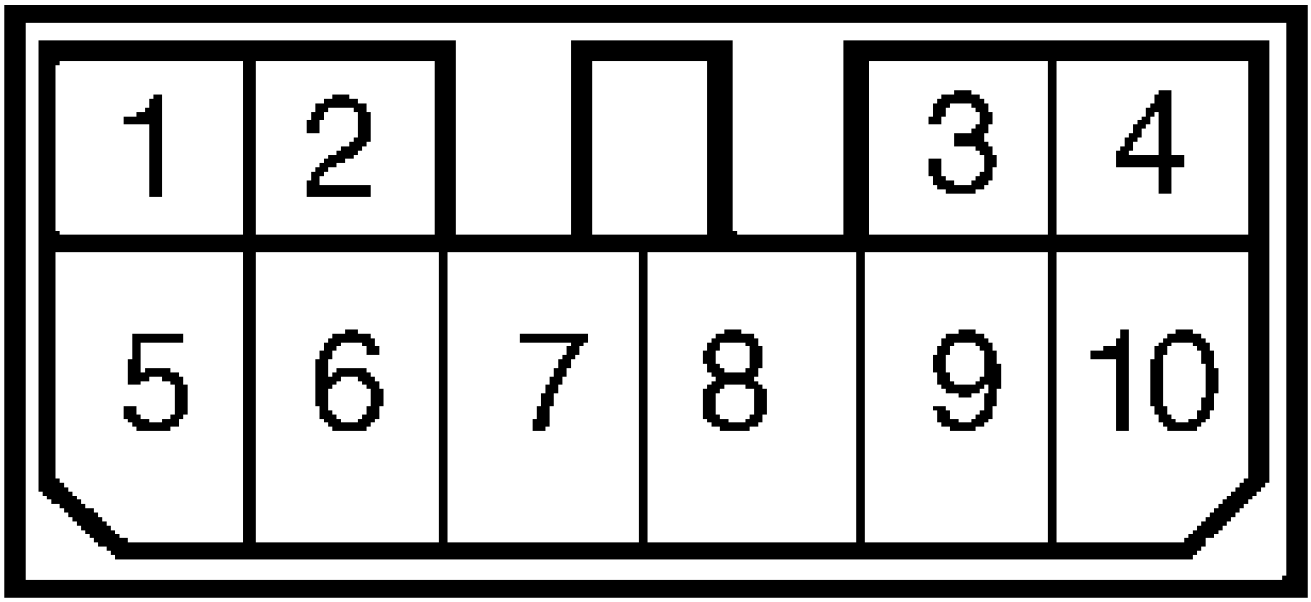
Remove hazard light switch from instrument panel. Disconnect switch connector. Using an ohmmeter, check switch continuity. With switch in OFF position, continuity should exist between terminals No. 5 and 7, and between terminals No. 8, 9 and 10. With switch in ON position, continuity should exist between terminals No. 1-4, between terminals No. 5 and 6, and between terminals No. 9 and 10. See Fig. 34 . If continuity is not as specified, replace switch.

Montero

Remove hazard light switch from instrument panel. Disconnect switch connector. Using an ohmmeter, check switch continuity. With switch in OFF position, continuity should exist between terminals No. 5 and 7, and between terminals No. 8, 9 and 10. With switch in ON position, continuity should exist between terminals No. 1-6, and between terminals No. 9 and 10. See Fig. 34. If continuity is not as specified, replace switch.

3000GT

Remove hazard light switch from instrument panel. Disconnect switch connector. Using an ohmmeter, check switch continuity. With switch in OFF position, continuity should exist between terminals No. 2 and 3, and between terminals No. 5 and 8. With switch in ON position, continuity should exist between terminals No. 2 and 3, between terminals No. 6, 9 and 10, and between terminals No. 7 and 8. See Fig. 34. If continuity is not as specified, replace switch.



96F06368

Fig. 34: Identifying Hazard Light Switch Connector Terminals & Foglight Switch Connector Terminals (3000GT)
Courtesy of Mitsubishi Motor Sales of America

INSTRUMENT PANEL RHEOSTAT TEST

Remove driver-side knee protector. Remove rheostat from instrument panel. Connect battery and 40-watt test light to rheostat. See Figs. 35-38. Operate rheostat. If brightness changes smoothly without switching off, rheostat function is normal. If brightness does

not change smoothly or switches off, replace rheostat.

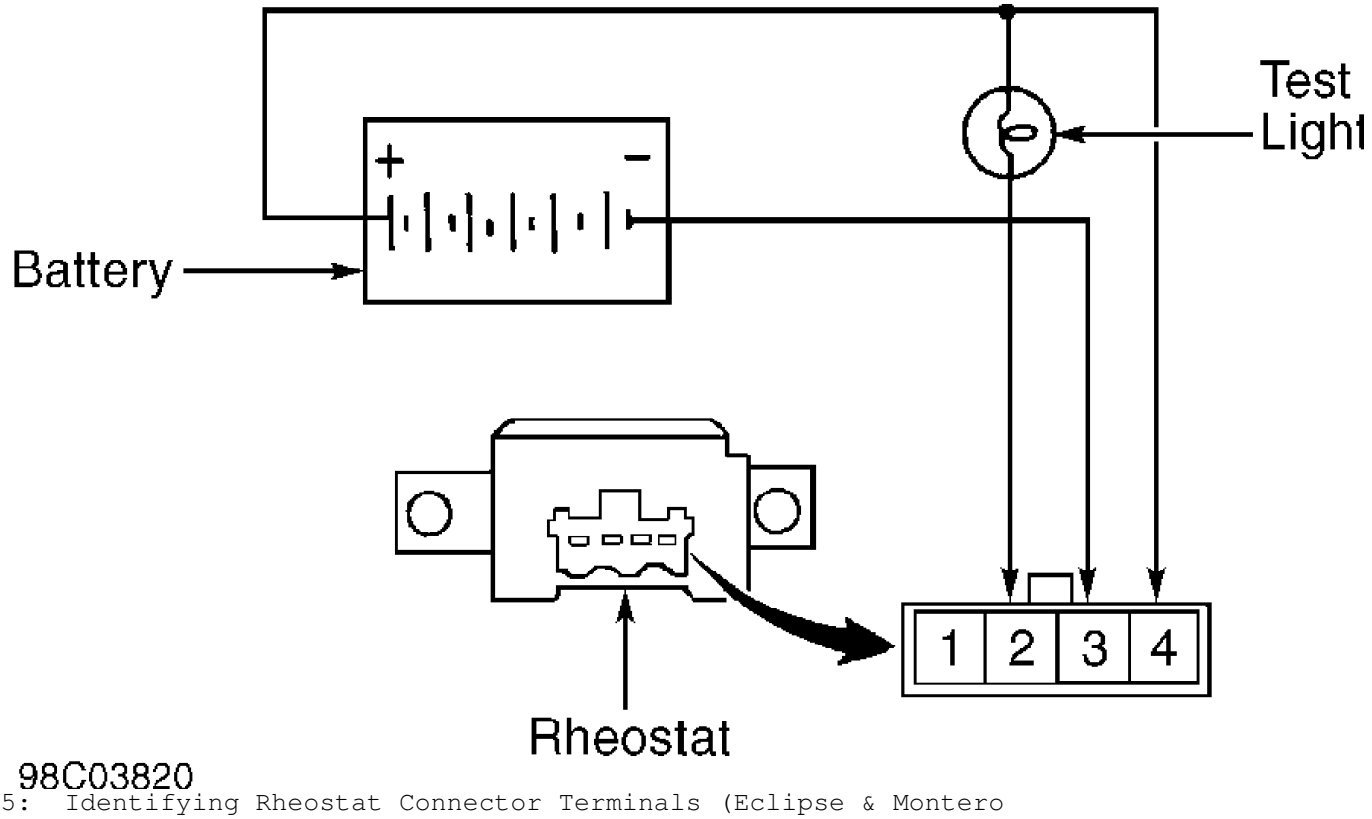


Fig. 35: Identifying Rheostat Connector Terminals (Eclipse & Montero Sport)
Courtesy of Mitsubishi Motor Sales of America

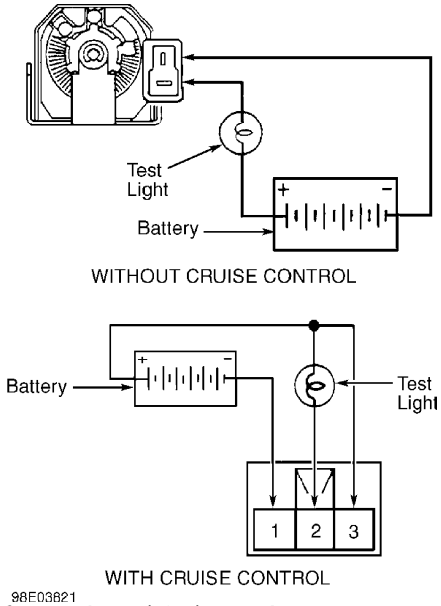


Fig. 36: Identifying Rheostat Connector Terminals (Galant & Mirage)
Courtesy of Mitsubishi Motor Sales of America

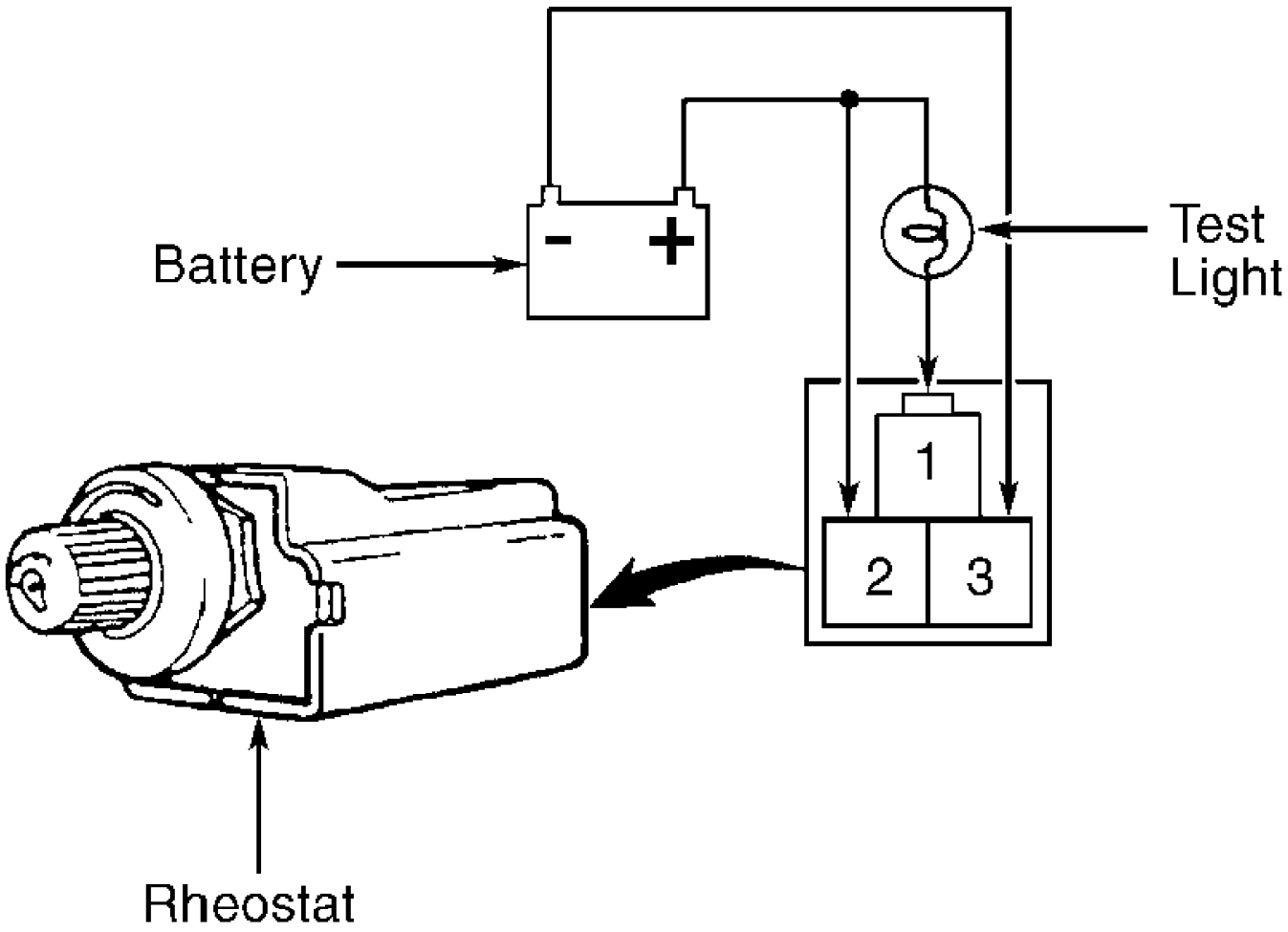


Fig. 37: Identifying Rheostat Connector Terminals (Montero)
Courtesy of Mitsubishi Motor Sales of America

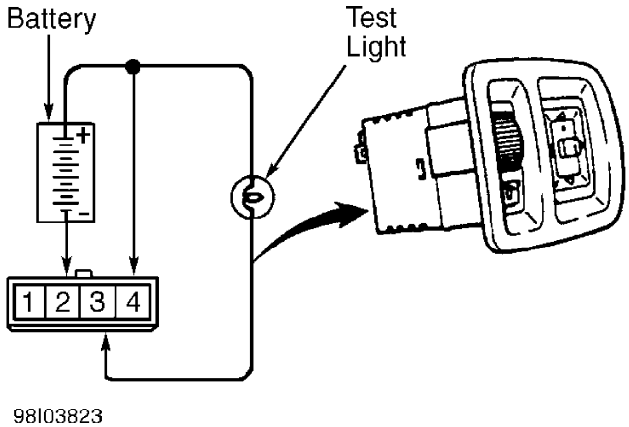


Fig. 38: Identifying Rheostat Connector Terminals (3000GT)
Courtesy of Mitsubishi Motor Sales of America

REMOVAL & INSTALLATION

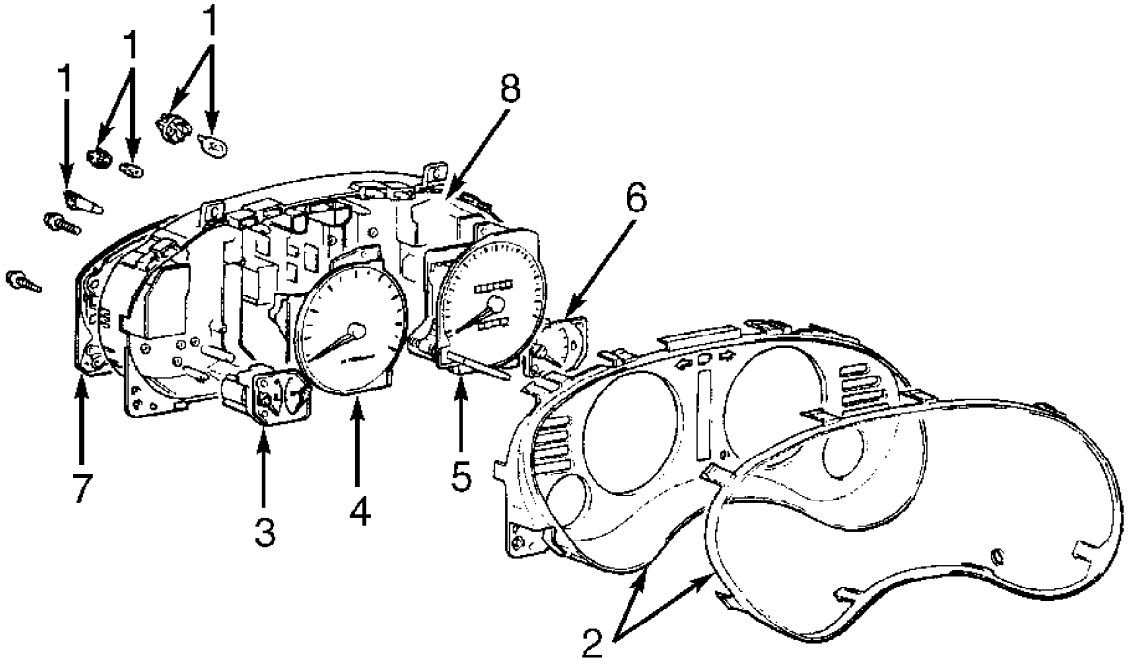
* PLEASE READ THIS FIRST *

WARNING: Deactivate air bag system before performing any service operation. See AIR BAG RESTRAINT SYSTEMS article. Do not apply electrical power to any component on steering column without first deactivating air bag system. Air bag may deploy.

INSTRUMENT CLUSTER

Removal & Installation (Eclipse, Galant & Mirage)

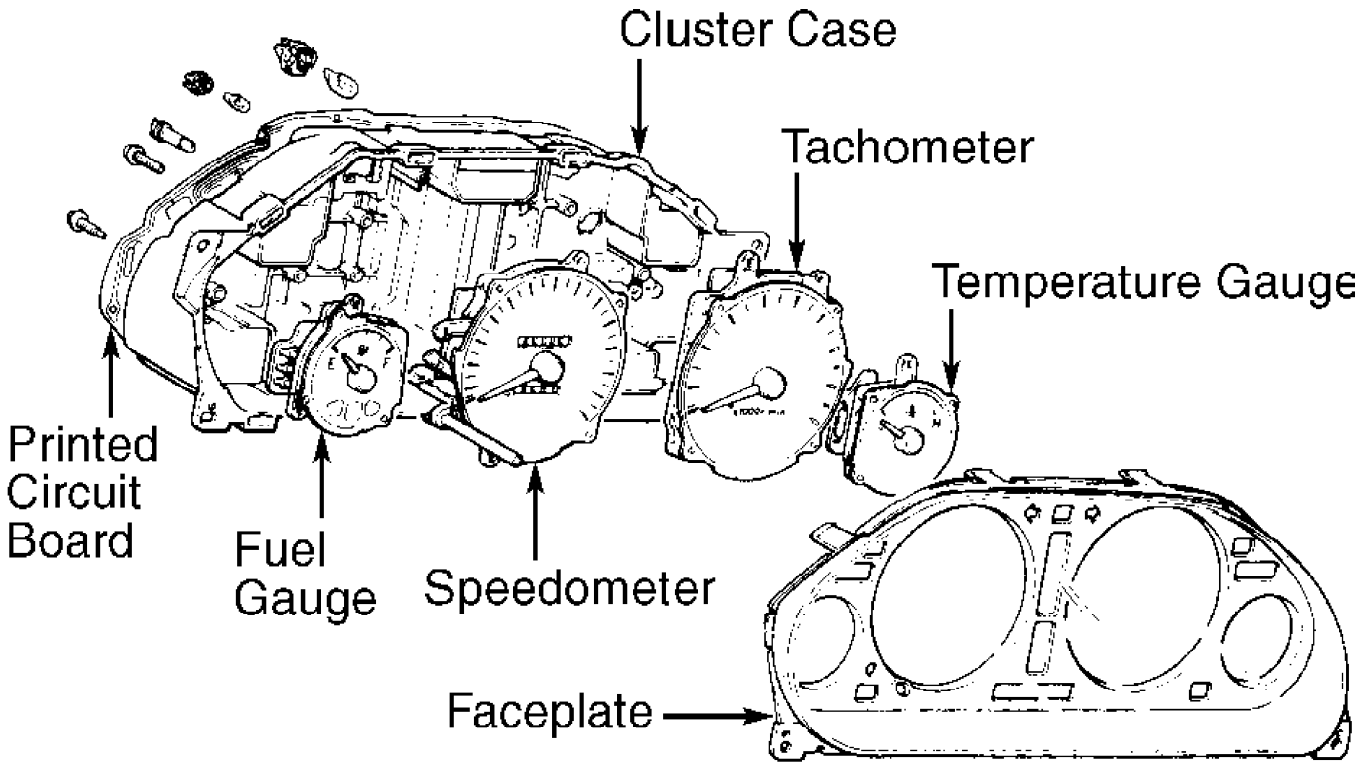
Disconnect negative battery cable. Remove cluster cover. Remove cluster mounting screws. Remove cluster by turning upper part toward front. Disconnect all necessary electrical connectors. Remove instrument cluster. To install, reverse removal procedure. See Fig. 39 , 40 or 42.



1. Bulb & Socket
2. Meter Glass & Window Plate
3. Boost Gauge/Oil Pressure Gauge
   2.0L Turbo
   Temperature Gauge
   2.0L Non-Turbo & 2.4L
4. Tachometer
5. Speedometer
6. Fuel Gauge/Temperature Gauge
   2.0L Turbo
   Fuel Gauge
   2.0L Non-Turbo & 2.4L
7. Printed Circuit Board
8. Meter Case

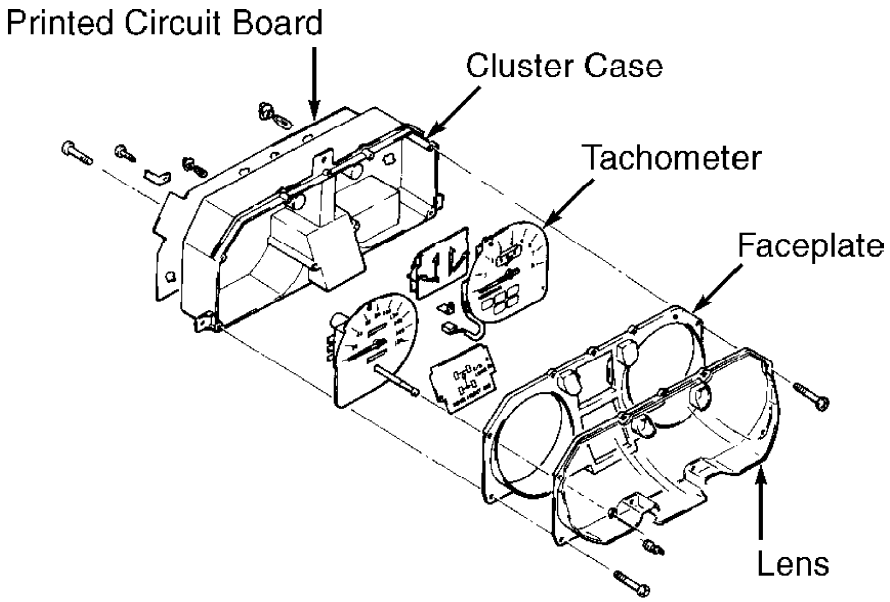
96I06421

Fig. 39: Identifying Instrument Cluster Components (Eclipse)
Courtesy of Mitsubishi Motor Sales of America



94D46642

Fig. 40: Identifying Instrument Cluster Components (Galant)
Courtesy of Mitsubishi Motor Sales of America



93J01099

Fig. 41: Identifying Instrument Cluster Components (Montero)
Courtesy of Mitsubishi Motor Sales of America

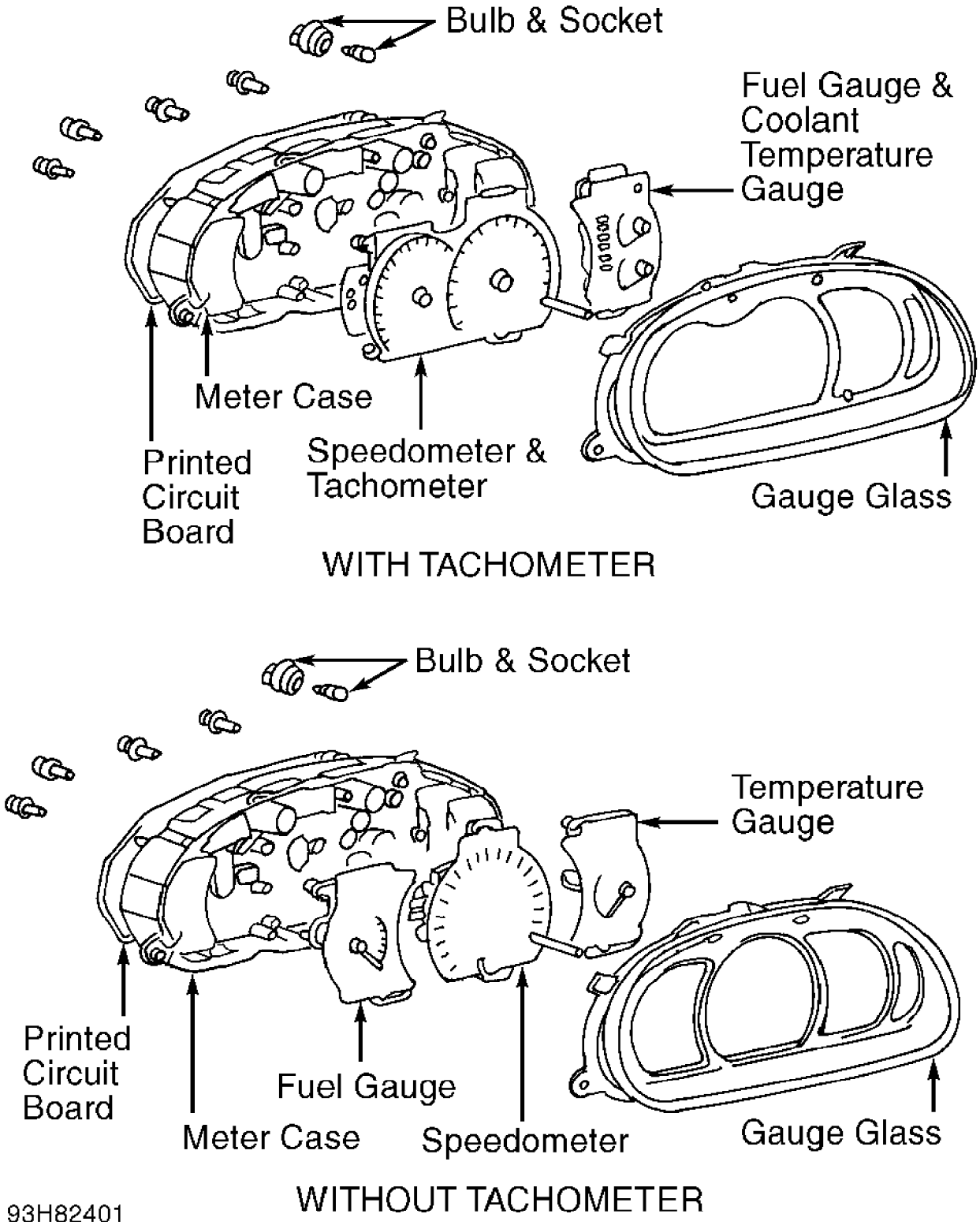


Fig. 42: Identifying Instrument Cluster Components (Mirage)
Courtesy of Mitsubishi Motor Sales of America

Removal & Installation (Montero)
Disconnect negative battery cable. Remove instrument cluster

cover plug. Remove cluster cover. Remove screws from instrument cluster. Disconnect all connectors from back of instrument cluster. Remove cluster. To install, reverse removal procedure. See Fig. 41.

Removal & Installation (Montero Sport)

Disconnect negative battery cable. Remove instrument cluster cover. Remove screws from instrument cluster. Disconnect all connectors attaching cluster. Remove cluster. To install, reverse removal procedure. See Fig. 43.

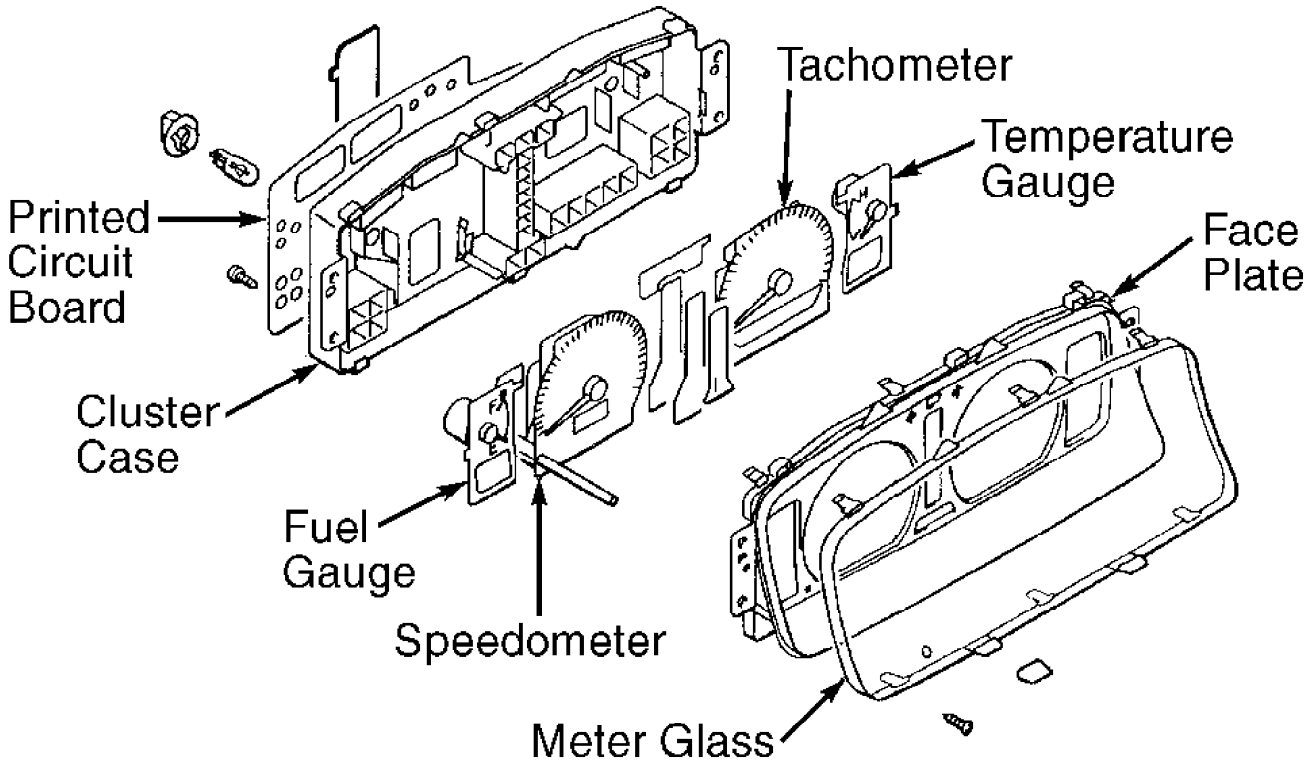


Fig. 43: Identifying Instrument Cluster Components (Montero Sport)
Courtesy of Mitsubishi Motor Sales of America

Removal & Installation (3000GT)

Disconnect negative battery cable. Remove driver-side knee protector. Remove lower and upper column covers. Remove meter bezel and instrument cluster. Disconnect connectors from back of instrument cluster. Remove cluster. To install, reverse removal procedure. See Fig. 44.

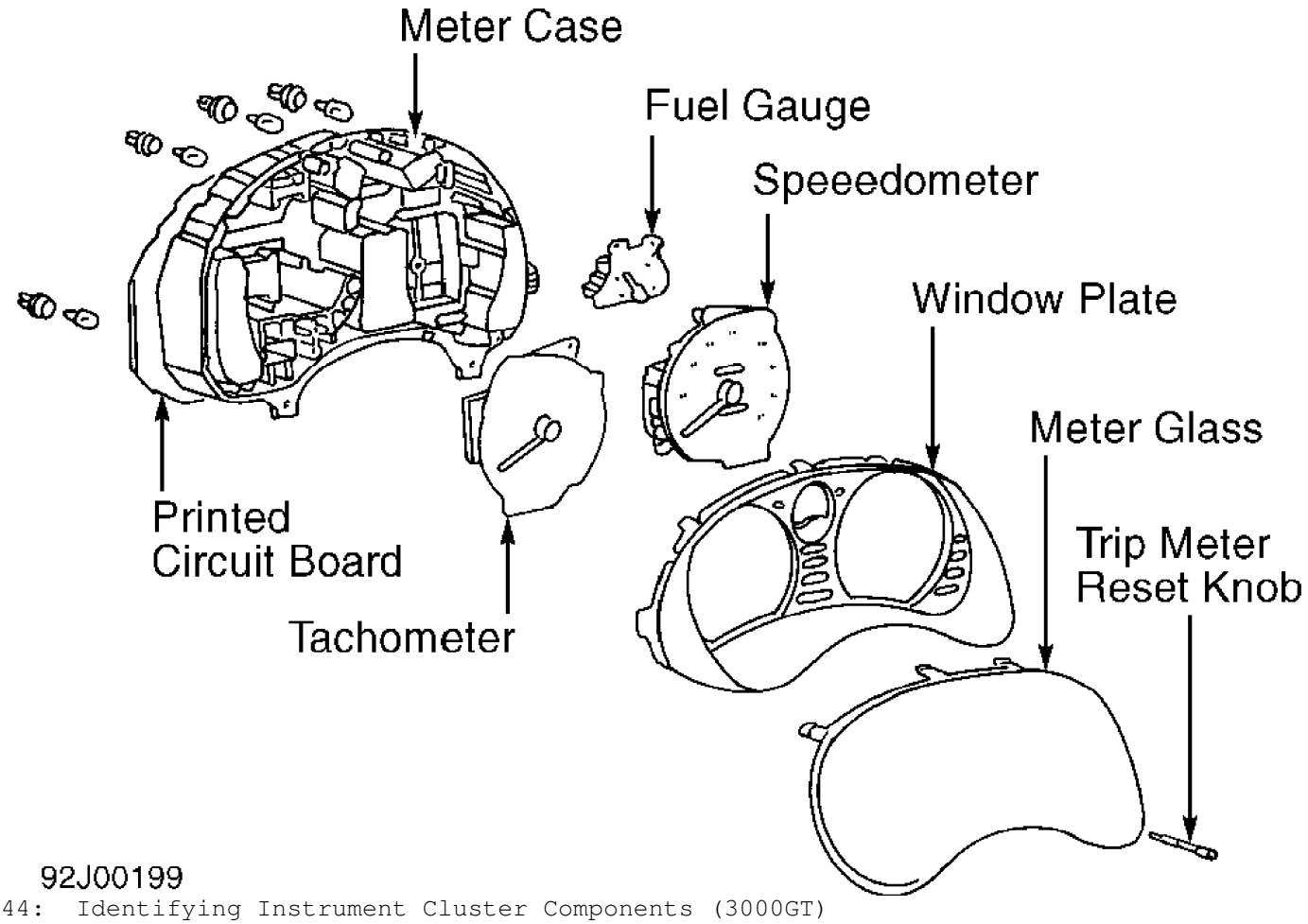


Fig. 44: Identifying Instrument Cluster Components (3000GT)
Courtesy of Mitsubishi Motor Sales of America

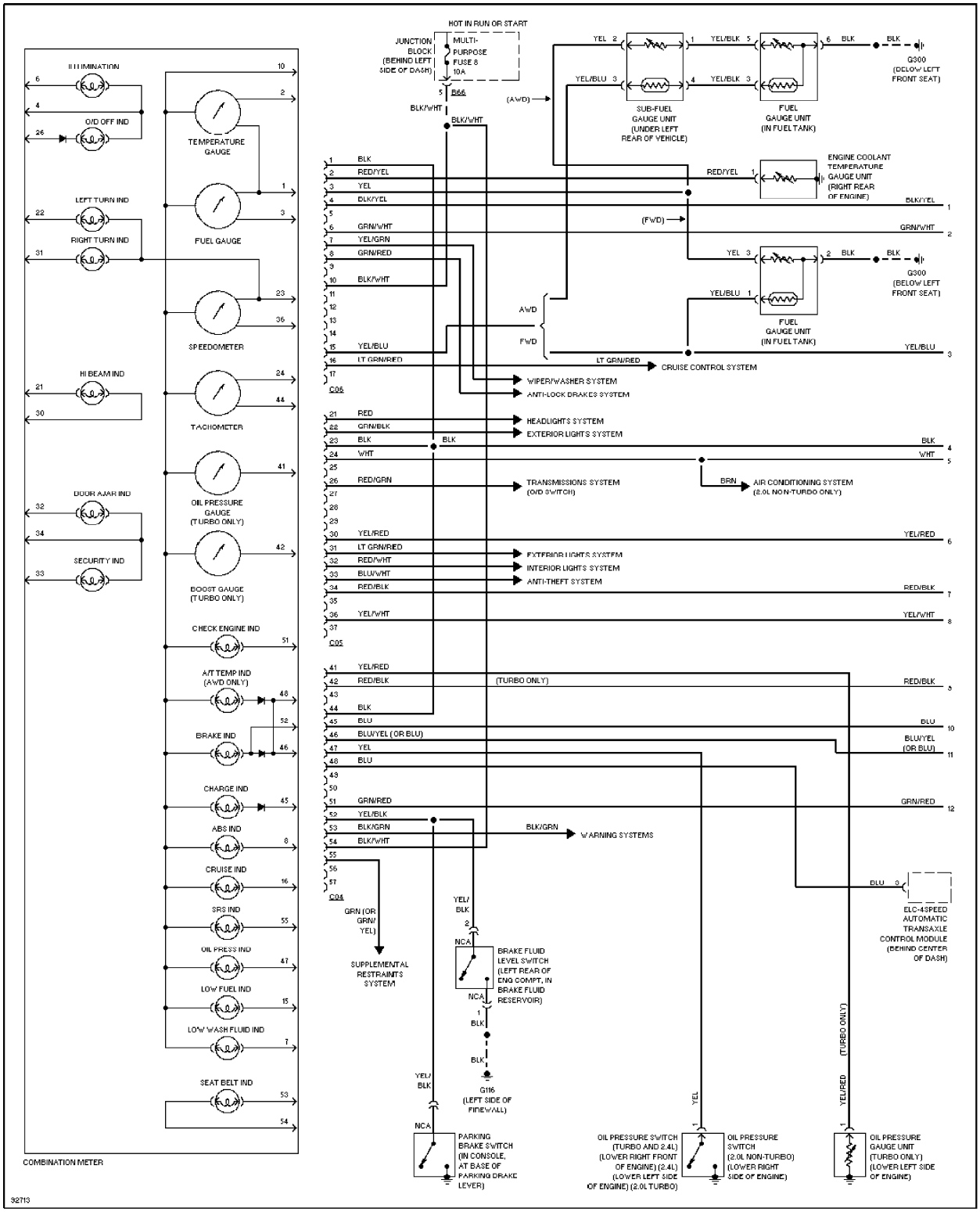


Fig. 45: Instrument Cluster Wiring Diagram (Eclipse - 1 Of 2)

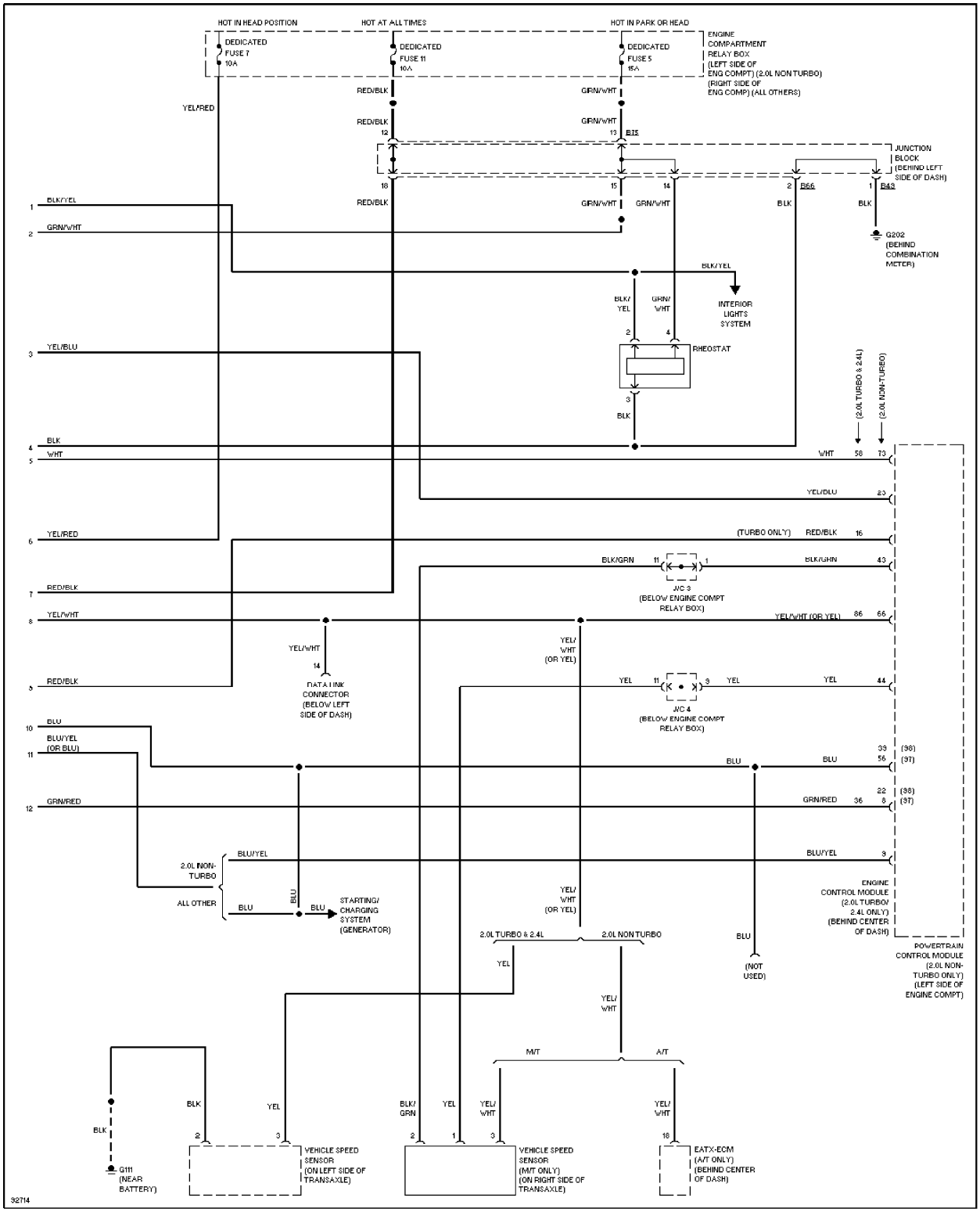


Fig. 46: Instrument Cluster Wiring Diagram (Eclipse - 2 Of 2)

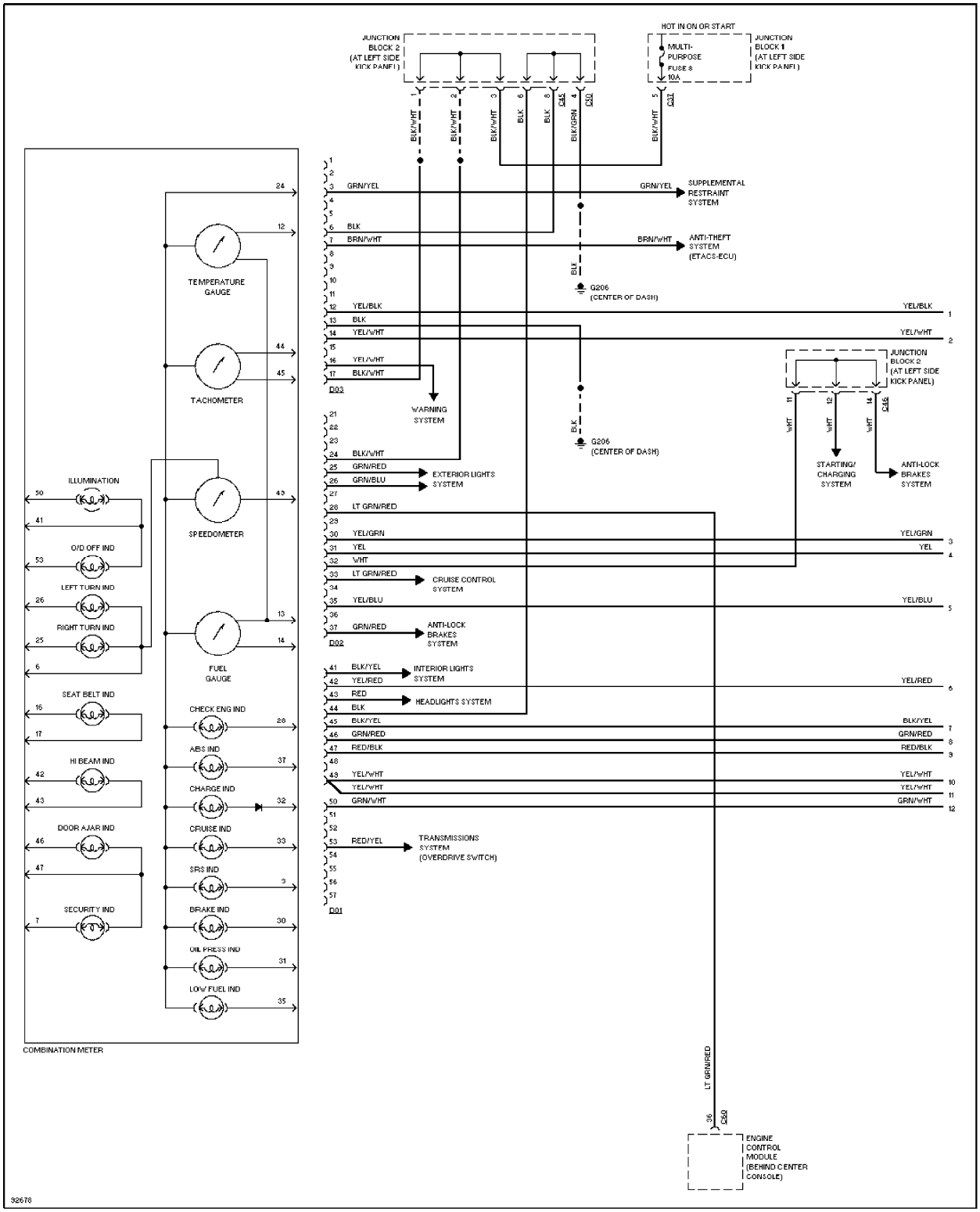


Fig. 47: Instrument Cluster Wiring Diagram (Galant - 1 Of 2)

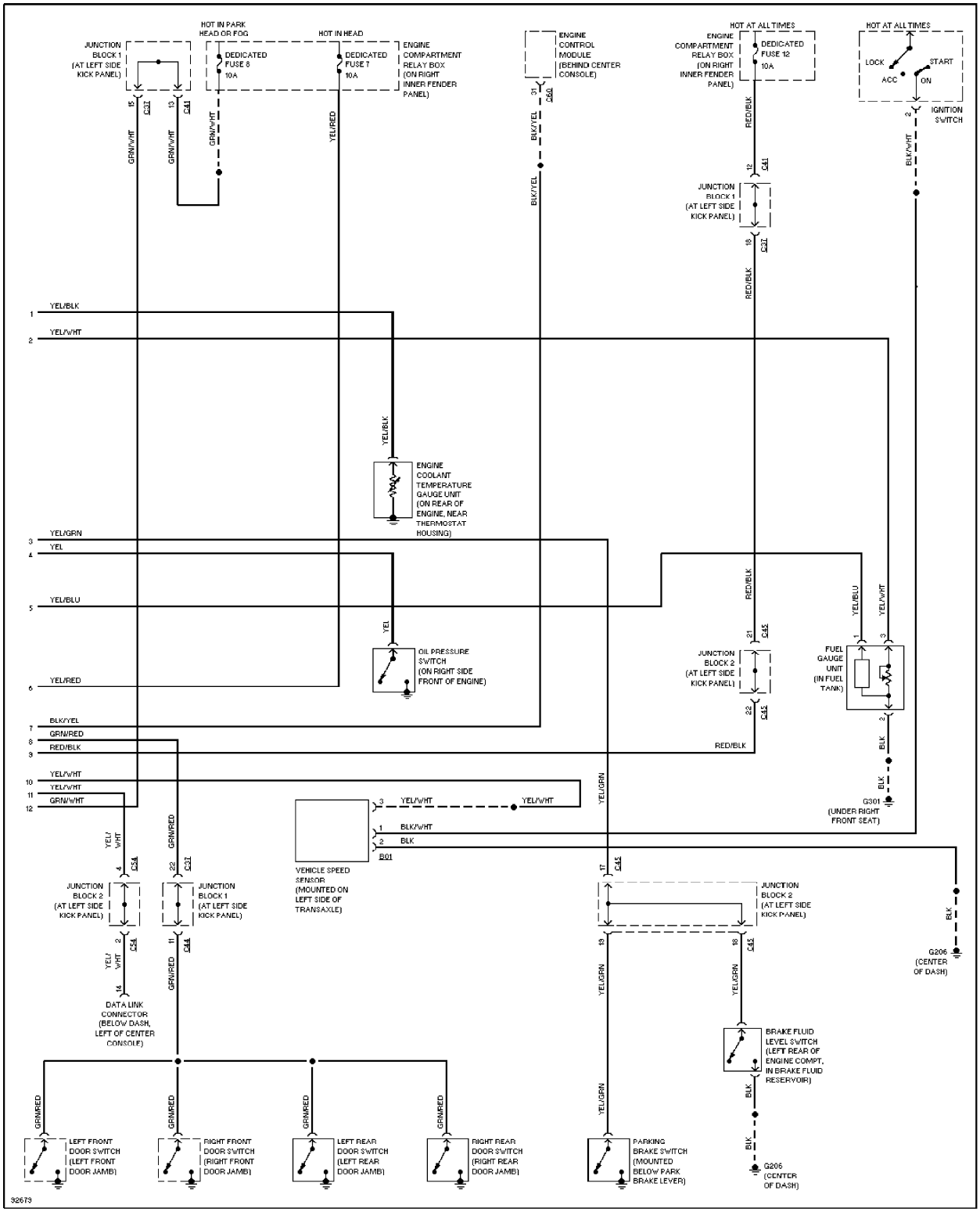


Fig. 48: Instrument Cluster Wiring Diagram (Galant - 2 Of 2)

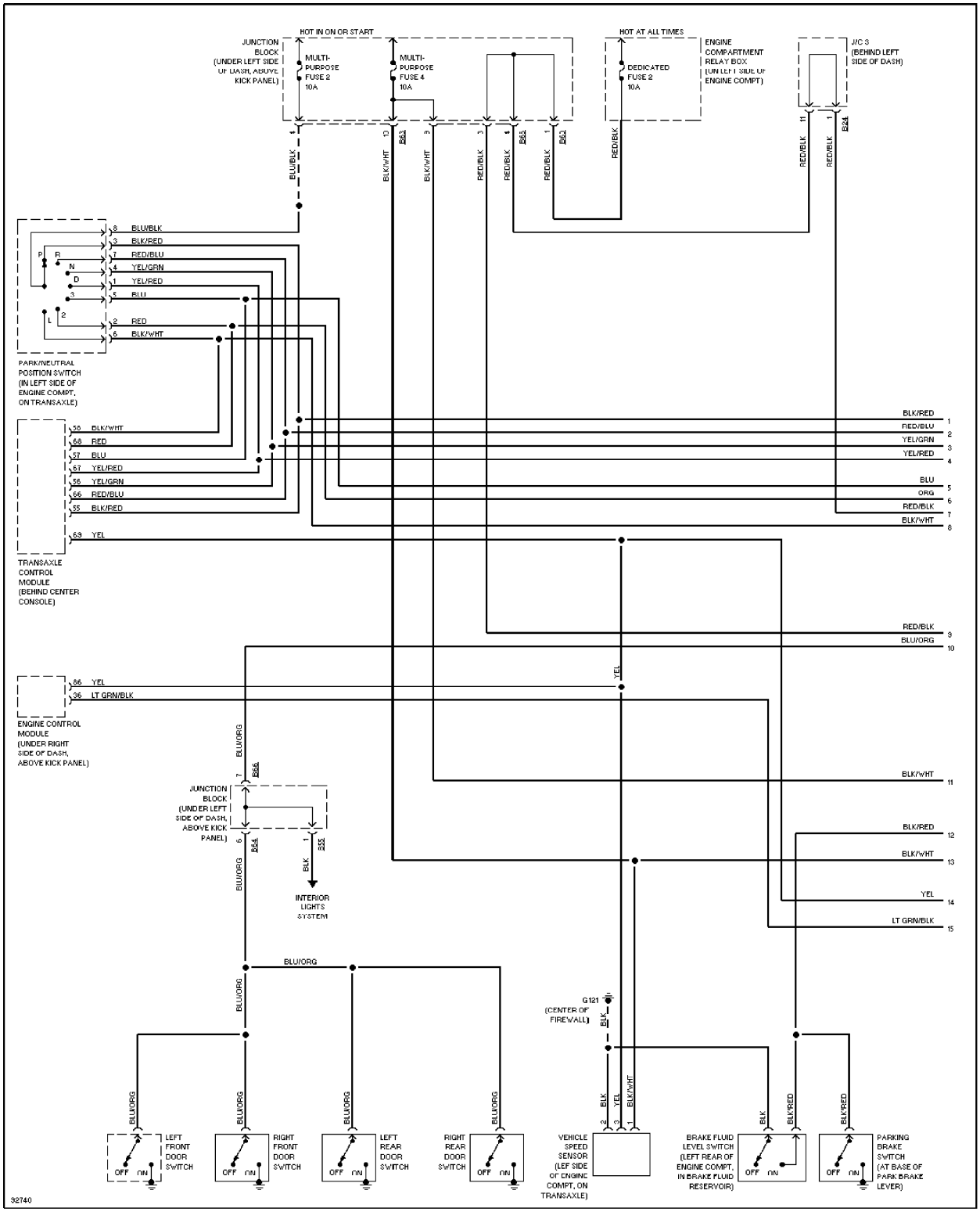


Fig. 49: Instrument Cluster Wiring Diagram (Mirage - 1 Of 3)

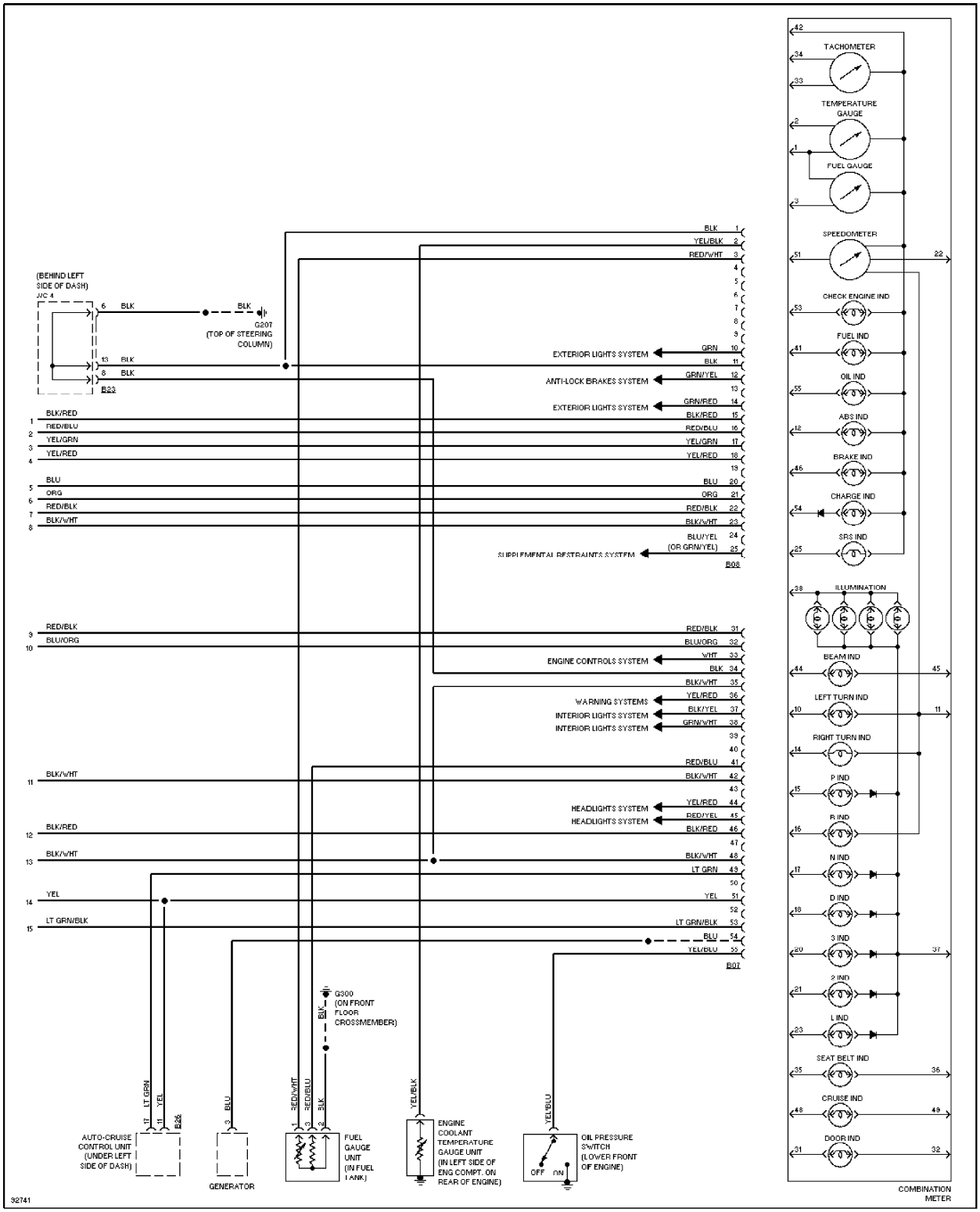


Fig. 50: Instrument Cluster Wiring Diagram (Mirage - 2 Of 3)

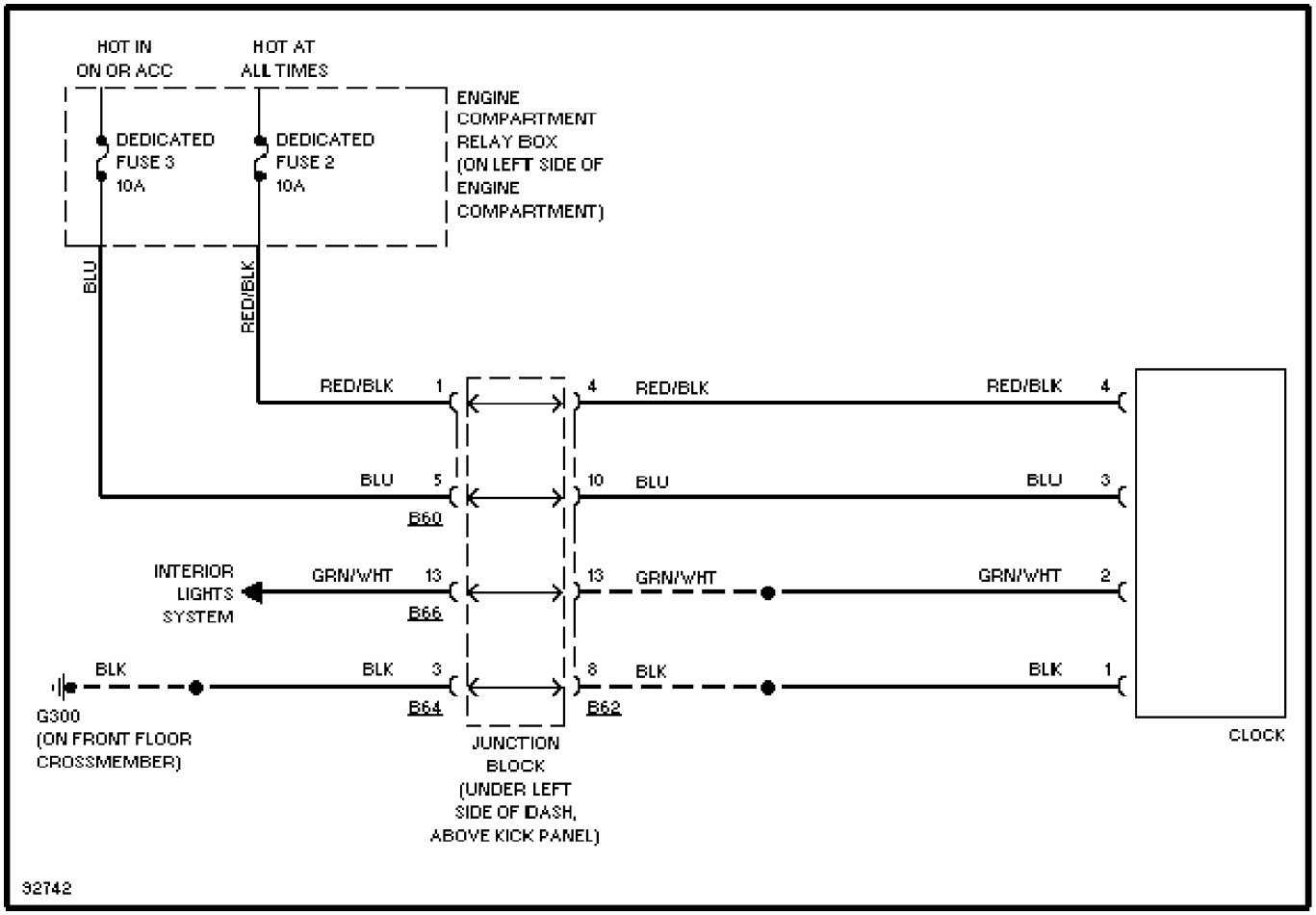


Fig. 51: Instrument Cluster Wiring Diagram (Mirage - 3 Of 3)

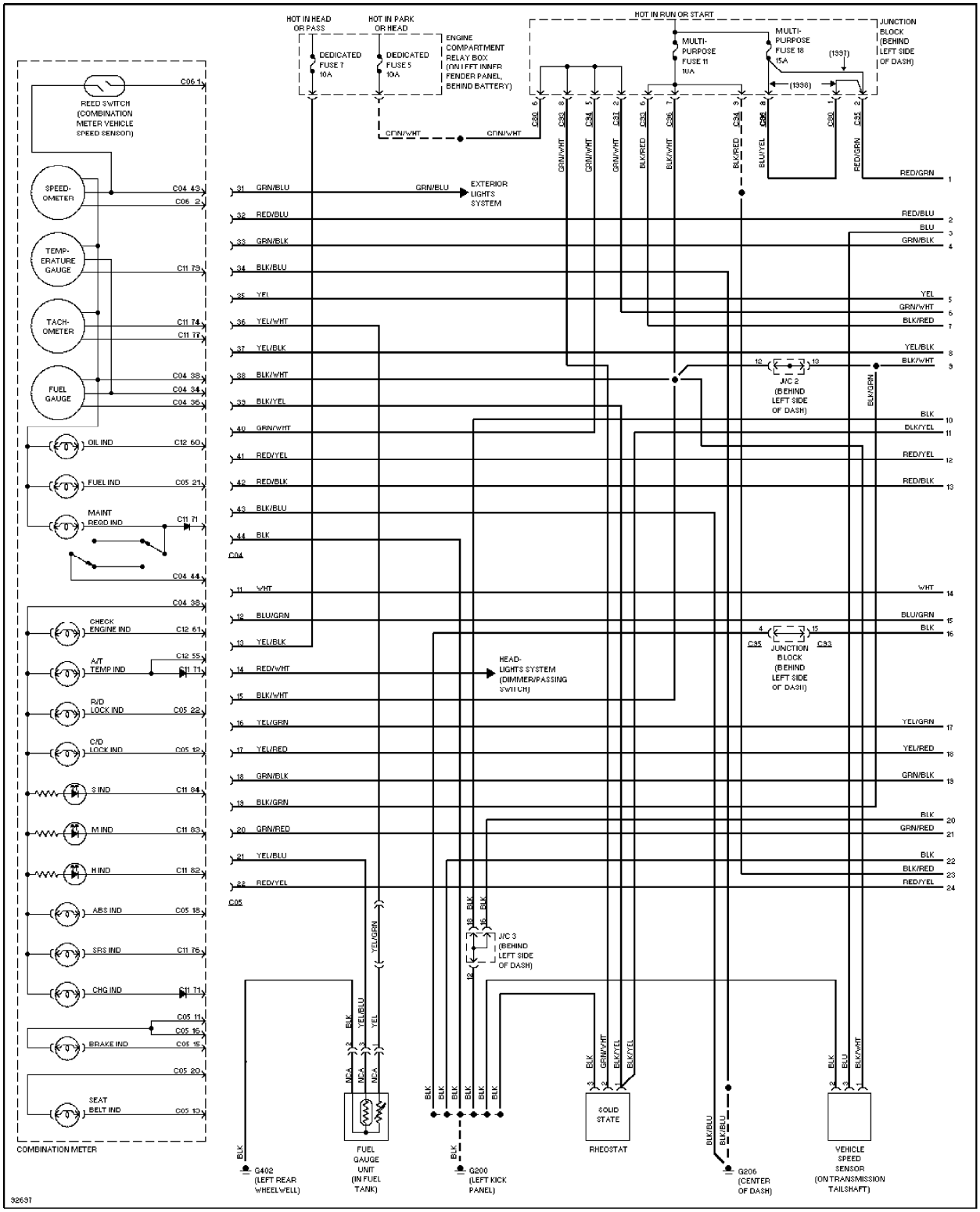


Fig. 52: Instrument Cluster Wiring Diagram (Montero - 1 Of 3)

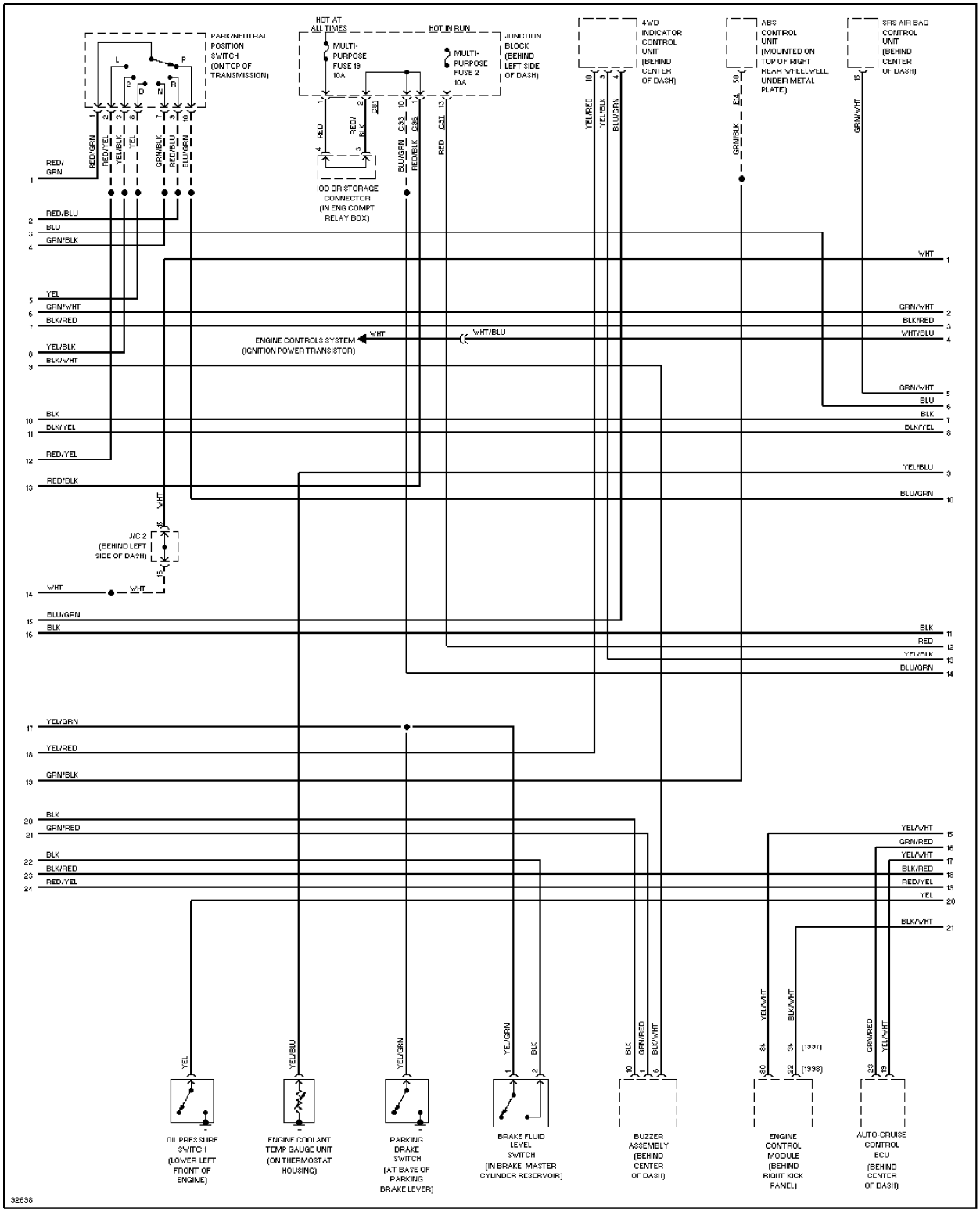


Fig. 53: Instrument Cluster Wiring Diagram (Montero - 2 Of 3)

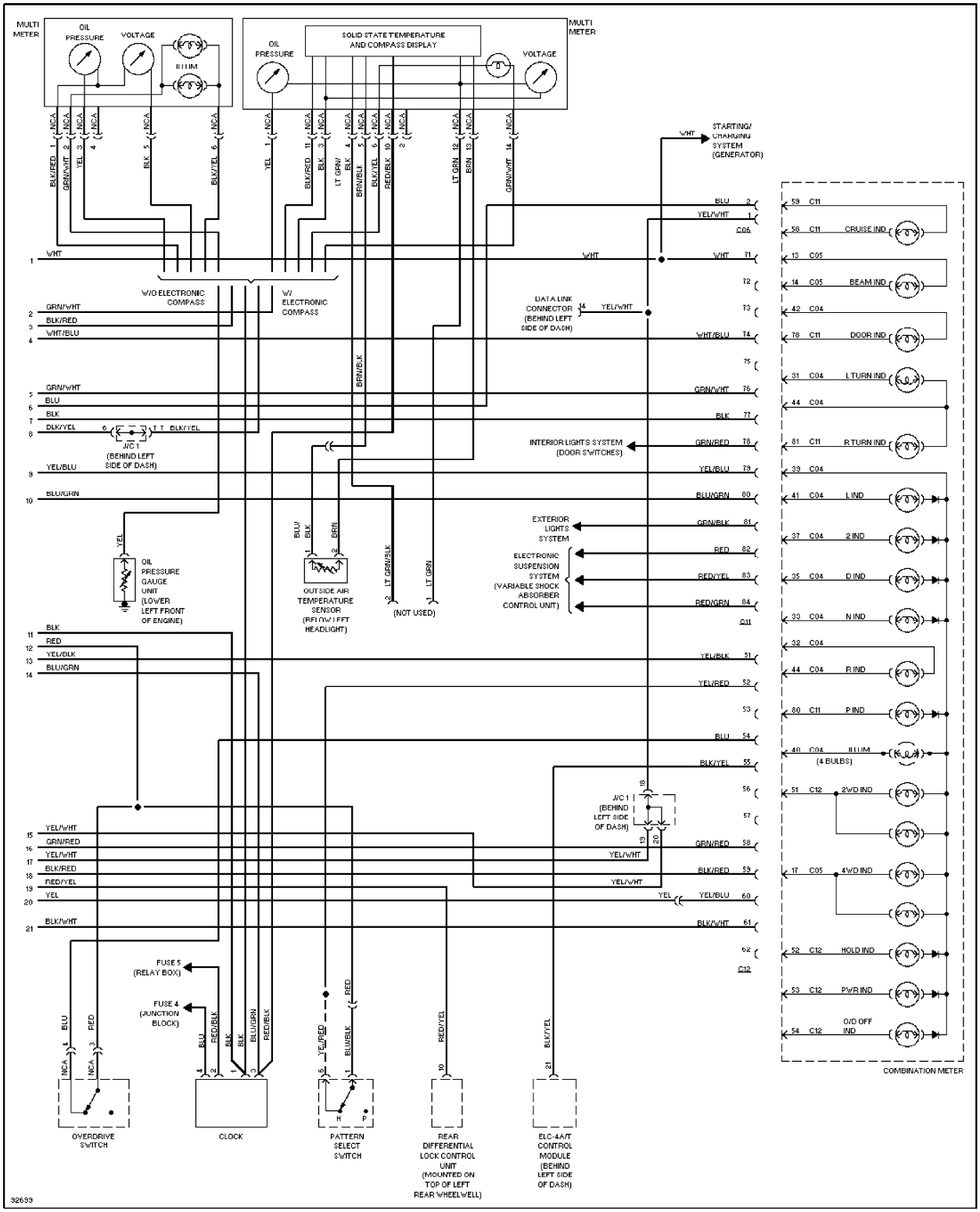


Fig. 54: Instrument Cluster Wiring Diagram (Montero - 3 Of 3)

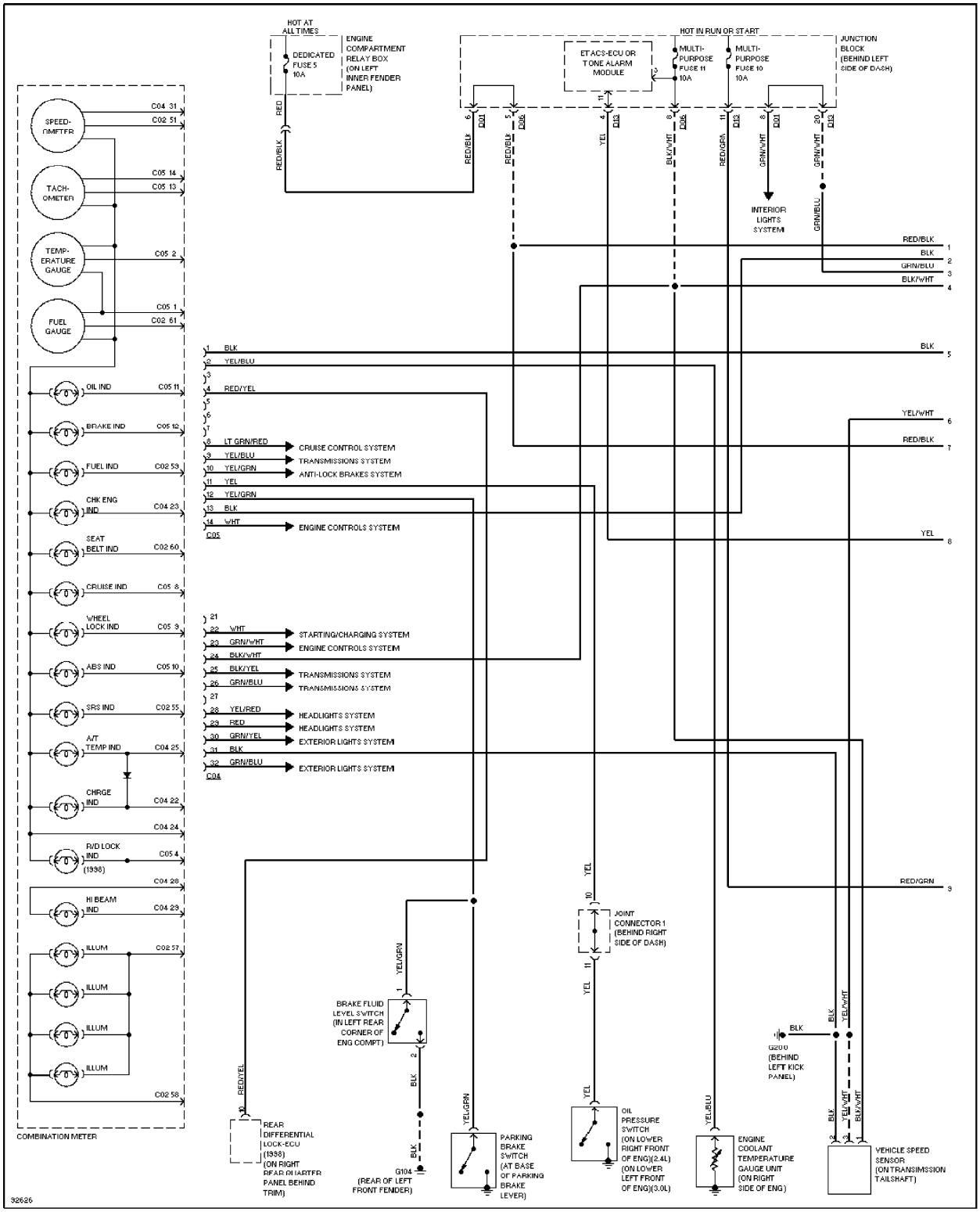


Fig. 55: Instrument Cluster Wiring Diagram (Montero Sport - 1 Of 2)

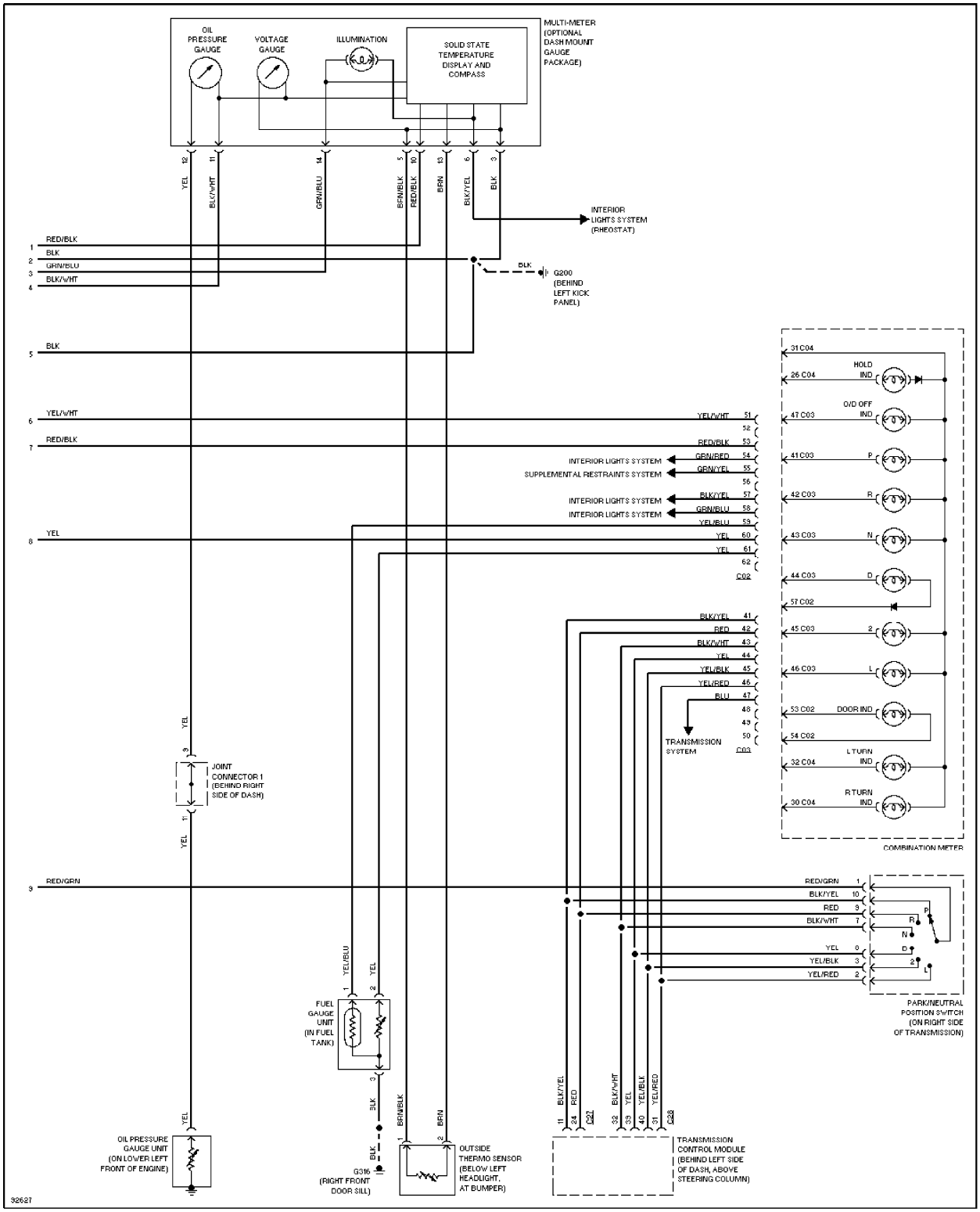


Fig. 56: Instrument Cluster Wiring Diagram (Montero Sport - 2 Of 2)

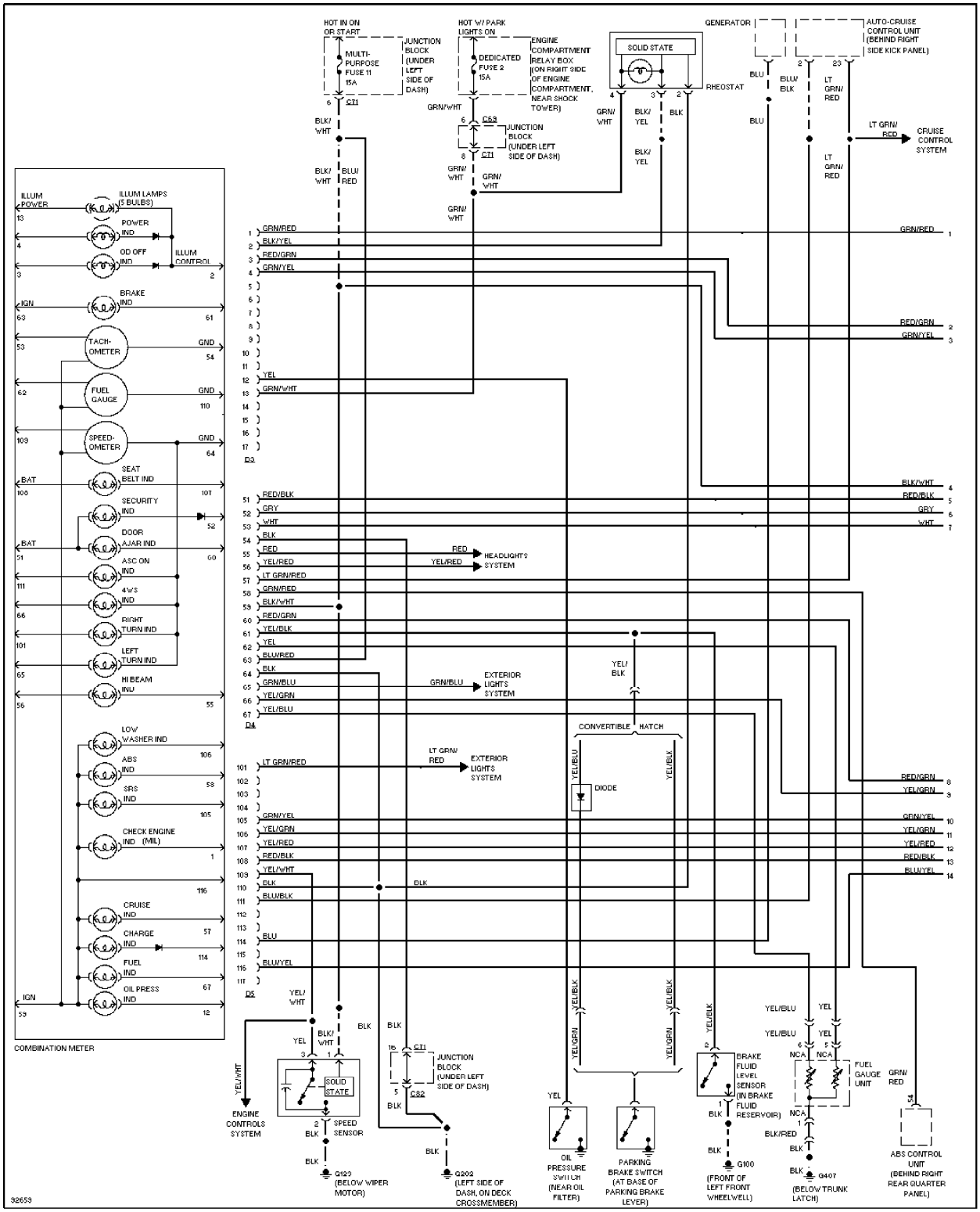


Fig. 57: Instrument Cluster Wiring Diagram (3000GT - 1 Of 3)

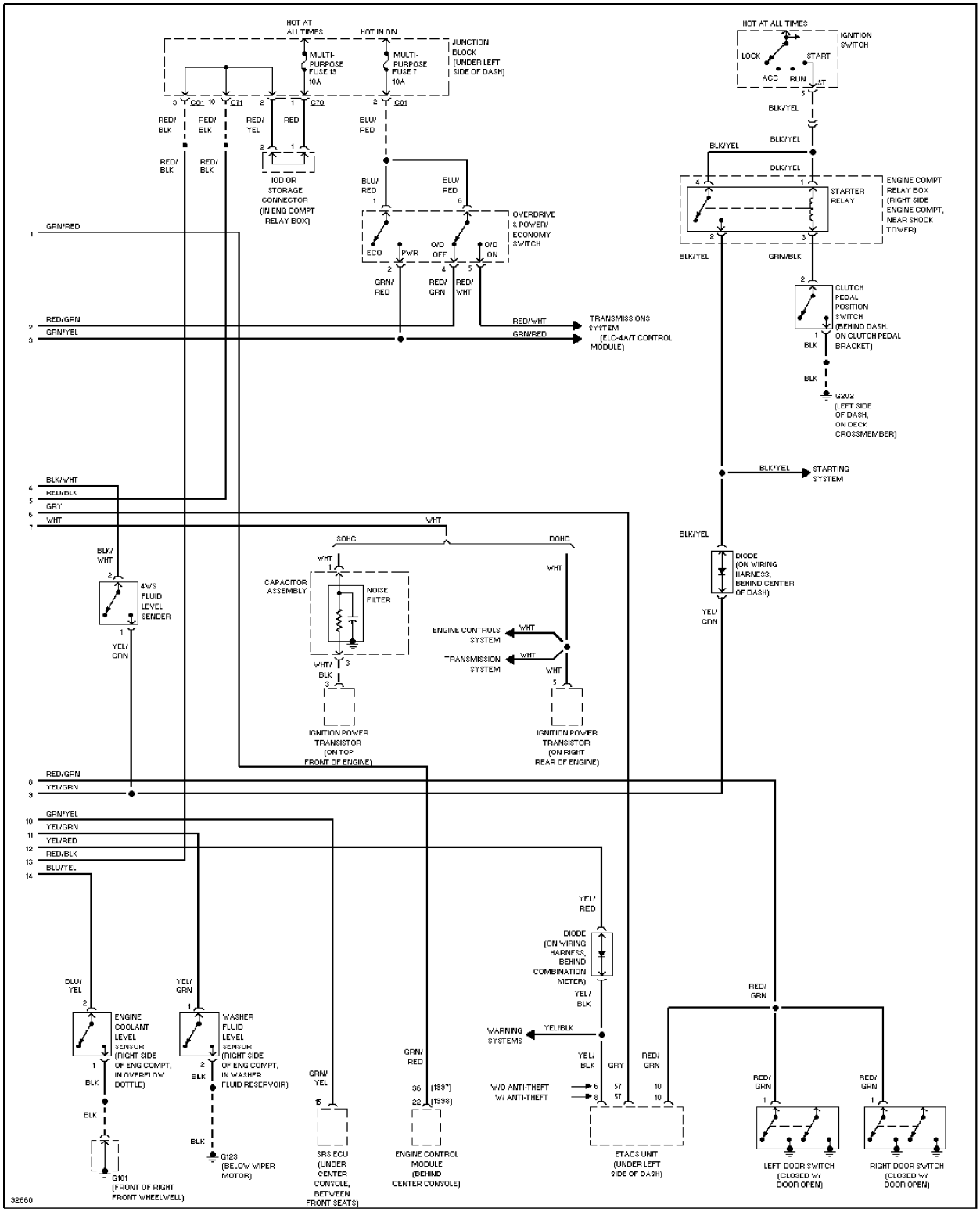


Fig. 58: Instrument Cluster Wiring Diagram (3000GT - 2 Of 3)

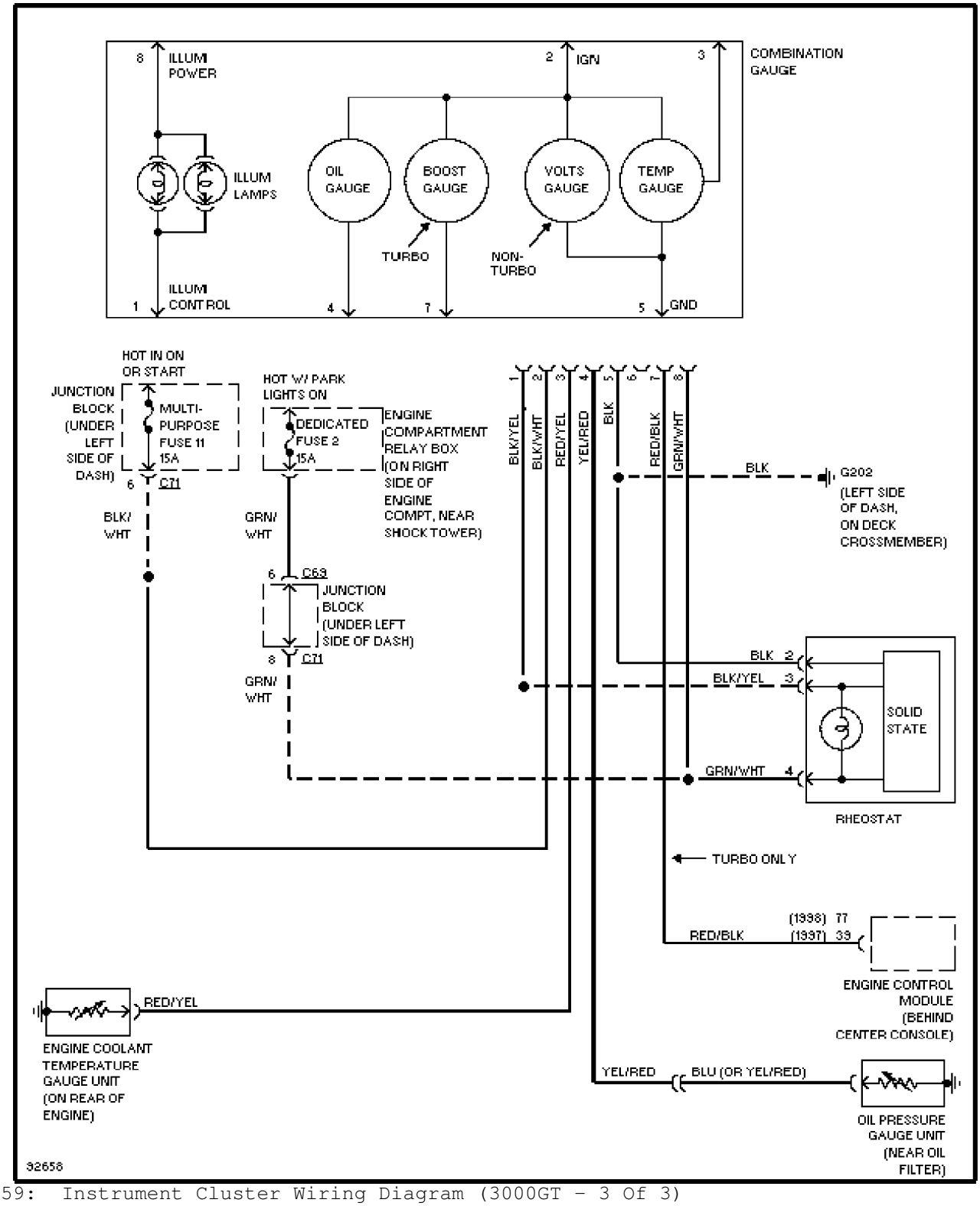


Fig. 59: Instrument Cluster Wiring Diagram (3000GT - 3 Of 3)