

ANTI-THEFT SYSTEM

1994 Mitsubishi 3000GT

1994 ACCESSORIES & EQUIPMENT
Chrysler Corp./Mitsubishi Anti-Theft System

Dodge; Stealth
Mitsubishi; 3000GT

DESCRIPTION

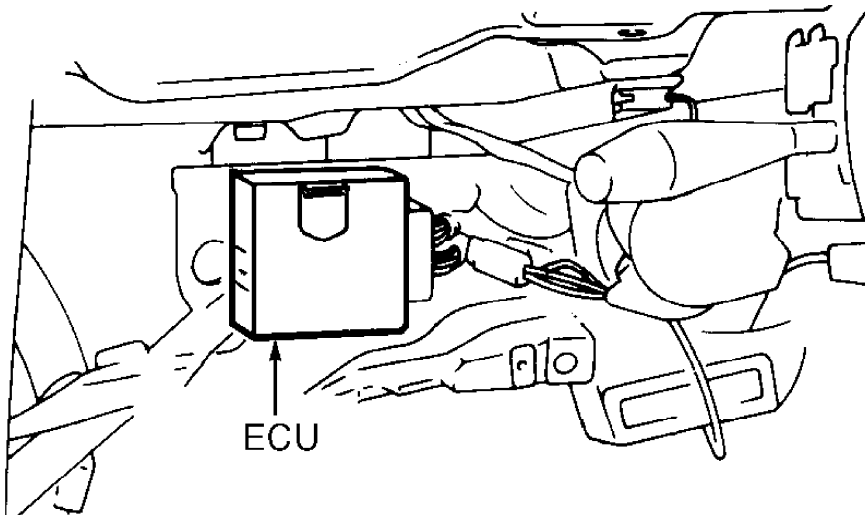
*** PLEASE READ THIS FIRST ***

CAUTION: All models are equipped with Supplemental Restraint System (SRS). SRS wiring harness is routed close to instrument cluster, steering wheel, and related components. DO NOT use electrical test equipment on these circuits. Before working on steering column components, disable air bag system. See AIR BAG RESTRAINT SYSTEM article in ACCESSORIES/SAFETY EQUIP section.

CAUTION: The anti-theft system electrically disables starter, flashes When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See COMPUTER RELEARN PROCEDURES article in this section before disconnecting battery.

The anti-theft system electrically disables the starter, flashes the lights and sounds an alarm if any doors, luggage compartment or hood is forcibly opened, or if battery cables are disconnected then reconnected when system is activated.

Anti-theft system is controlled by Electronic Timer Alarm Control System (ETACS). On Stealth and 3000GT, ECU is located behind driver's lower dash panel, to the left side of the steering column. See Fig. 1.



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Fig. 1: Locating ECU

Courtesy of Mitsubishi Motor Sales of America.

OPERATION

Setting Anti-Theft System

Close all doors, hood and luggage compartment. Remove ignition key from ignition switch. Lock vehicle using one of three methods listed. See the following list.

- * Using key, lock left or right front door (all doors are locked through key-interlinked lock operation).
- * Lock all doors using wireless door lock control system.
- * With rear doors locked and one of the front doors locked, lock other front door using keyless door lock (without key).

After performing one method listed above, indicator light on instrument panel will light continuously for approximately 30 seconds. After 30 seconds, indicator light will blink once per second. When anti-theft system is set, doors cannot be locked or unlocked using door lock control switch and luggage compartment cannot be opened with luggage compartment door opener switch.

Canceling Anti-Theft System (System Set, No Alarm)

Anti-theft system operation can be canceled performing one of four methods listed. See the following list.

- * Unlock left or right front door using key.
- * Unlock all doors using wireless door lock control system.
- * Insert key in ignition switch and turn to ACC or ON position (this is operative only when anti-theft system has never operated).
- * Using key, unlock luggage compartment. Anti-theft system is temporarily canceled only while luggage compartment door is open. Approximately 2 seconds after luggage compartment is closed, anti-theft system is reset.

Checking Anti-Theft System Operation

Ensure anti-theft system is activated and indicator light is blinking. When hood is opened or any door is unlocked without using key, vehicle horns and anti-theft horn will sound, and headlights and taillights will flash for approximately one minute. If doors are not locked when alarm is sounding, anti-theft system will repeat door locking operation every 2 seconds during the one minute alert time.

Canceling Anti-Theft System (System Set, Alarm Sounding)

Anti-theft system can be canceled by performing one of four methods listed. See the following list.

- * Unlock left or right front door with key.
- * Unlock doors with wireless door lock control system.
- * Insert key into ignition cylinder and turn to ACC or ON position.
- * Wait for approximately one minute to elapse after alarm has started. After one minute has elapsed, anti-theft system will automatically reset in about 2 seconds if all doors are closed.

TROUBLE SHOOTING

NOTE: Verify power door lock system is operating properly before trouble shooting anti-theft system. See KEYLESS ENTRY & POWER DOOR LOCKS under ACCESSORIES & EQUIPMENT. Ensure all component terminals and ground connections are clean and tight. Repair or replace components and circuits as necessary.

Trouble shooting the anti-theft system is accomplished using a diagnosis by symptom method. Locate the appropriate primary symptom under the appropriate SYMPTOM CHARTS. See Fig. 2 or 3. Also, refer to CIRCUIT TESTS under TESTING for diagnosing appropriate circuit.

SYMPTOM CHARTS

| Trouble symptom | Cause | Circuit Test | Remedy |
|--|---|--------------|---|
| The system is not armed (The SECURITY light doesn't illuminate, and the alarm doesn't function.) | Damaged or disconnected wiring of ECU power supply circuit | No. 1 | Replace the fusible link No. ⑥ or the fuse No. ⑲. Repair the harness. |
| | Damaged or disconnected wiring of door switch input circuit | No. 4 | Repair the harness or replace the door switch. |
| The arming procedures are followed, but the SECURITY light does not illuminate. (There is an alarm, however, when an alarm test is conducted after about 20 seconds have passed.) | Damaged or disconnected wiring of SECURITY light activation circuit | No. 8 | Replace the fusible link No. ⑥ or the fuse No. ⑲. Repair the harness. |
| | Blown SECURITY light bulb | | Replace the bulb. |
| | Malfunction of the ECU. | — | Replace the ECU. |
| The alarm sounds in error when, while the system is armed, a door or the liftgate is unlocked by using the key. | Damaged or disconnected wiring of a door key cylinder and the liftgate unlock switch input circuit. | No. 6 | Repair the harness or replace a door key cylinder and the liftgate unlock switch. |
| | Malfunction of a door key cylinder and the liftgate unlock switch. | | |
| | Malfunction of the ECU. | — | Replace the ECU. |

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Fig. 2: Symptom Chart (1 Of 3)

Courtesy of Mitsubishi Motor Sales of America.

| Trouble symptom | Cause | Circuit Test | Remedy |
|---|---|--------------|--|
| There is no alarm when, as an alarm test, a door is opened without using the key. (The arming and disarming are normal, and the alarm is activated when the liftgate or hood is opened.) | Damaged or disconnected wiring of door switch (all doors) input circuit | No. 4 | Repair the harness or replace the door switch. |
| | Malfunction of the door switch | | |
| | Malfunction of the ECU | — | Replace the ECU. |
| There is no alarm when, as an alarm test, the liftgate is opened without using the key. (The alarm is activated, however, by opening a door or the hood.) | Damaged or disconnected wiring of liftgate switch input circuit | No. 7 | Repair the harness or replace the liftgate switch. |
| | Malfunction of the liftgate switch. | | |
| | Malfunction of the ECU. | — | Replace the ECU. |

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Fig. 3: Symptom Chart (2 Of 3)

Courtesy of Mitsubishi Motor Sales of America.

| Trouble symptom | Cause | Circuit Test | Remedy |
|---|---|-----------------|--|
| There is no alarm when, as an alarm test, the hood is opened from within the vehicle. (The alarm is activated, however, by opening a door or the liftgate.) | Damaged or disconnected wiring of hood switch input circuit. | No. 3 | Repair the harness or replace the hood switch. |
| | Malfunction of the hood switch. | | |
| | Malfunction of the ECU. | — | Replace the ECU. |
| Engine would not start (Engine starting is possible when the starter relay is in the switched-off (normally closed) condition, with the clutch switch in the switch-off and the ECU harness connector disconnected.) | There is a short-circuit of the starter relay activation circuit | No. 15 | Repair the harness. |
| When, as a test of the alarm, a door or the liftgate is opened without using the key, or the hood is opened from within the vehicle, the horn and the theft-alarm horn sound but the headlights don't flash. (The headlights can, however, be switched ON by using the passing switch.) | Damaged or disconnected wiring of headlight power supply circuit or headlight activation circuit | Nos. 13 & 14 | Repair the harness or replace the diode D ₂ . Replace the headlight relay or the headlight. |
| | Malfunction of the ECU. | | Replace the ECU. |
| The headlights flash during an alarm test but the horn or the theft alarm horn does not sound. | Damaged or disconnected wiring of horn relay power supply circuit or horn activation circuit Damaged or disconnected wiring of the theft-alarm horn relay power supply circuit or the theft-alarm horn activation circuit. | Nos. 9, 10 & 11 | Repair the harness. Replace the horn. Replace dedicated fuse No. ⑥ or the fusible link No. ⑥. |
| | Malfunction of the ECU. | | Replace the ECU. |
| The system is not deactivated when, during an alarm test in which the alarm is intentionally activated, the door or liftgate is unlocked by using the key. (The system also cannot be disarmed.) | Damaged or disconnected wiring of door key cylinder and liftgate unlock switch input circuit | Nos. 6 & 7 | Repair the harness. Replace the key cylinder switch or the liftgate switch. |
| | Malfunction of door key cylinder and liftgate unlock switch. | | |
| | Malfunction of the ECU | | Replace the ECU. |

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Fig. 4: Symptom Chart (3 Of 3)

Courtesy of Mitsubishi Motor Sales of America.

TESTING

* PLEASE READ THIS FIRST *

CAUTION: All models are equipped with Supplemental Restraint System (SRS). SRS wiring harness is routed close to instrument cluster, steering wheel, and related components. DO NOT use

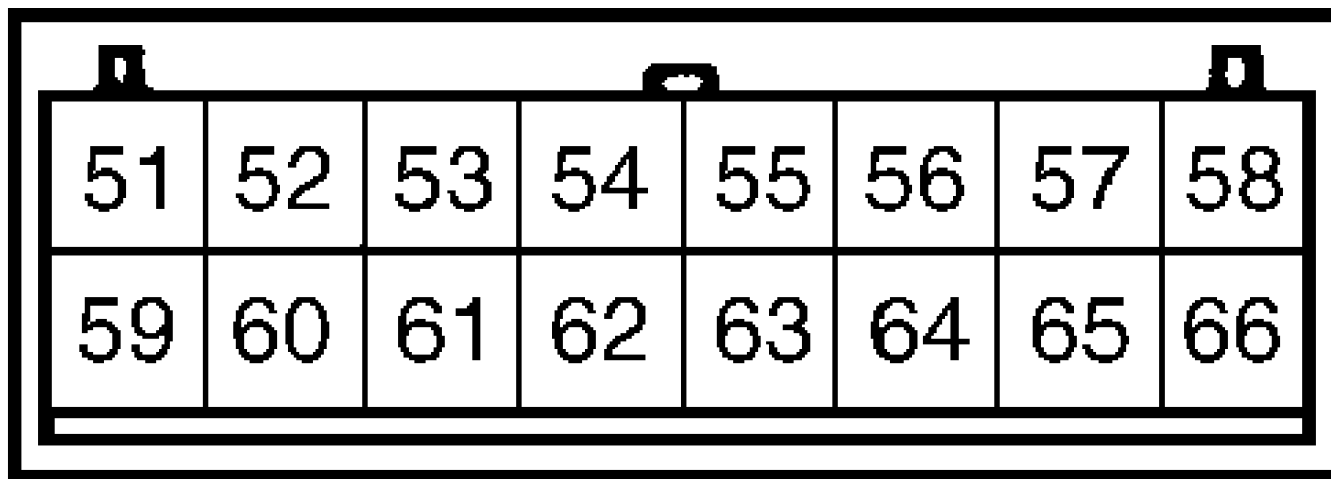
electrical test equipment on these circuits. Before working on steering column components, disable air bag system. See AIR BAG RESTRAINT SYSTEM article in ACCESSORIES/SAFETY EQUIP section.

CAUTION: When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See COMPUTER RELEARN PROCEDURES article in this section before disconnecting battery.

NOTE: If anti-theft system is not functioning properly after testing procedures are complete, substitute known-good ECU and repeat test. For ECU location, see ECU LOCATION table. For ECU connector terminal identification, see Fig. 5.

ECU LOCATION TABLE

| Application | (1) Location |
|-------------------|----------------------------------|
| Stealth & 3000GT | Behind Driver's Side Lower Dash, |
| " | To Left Side Of Steering Column |
| (1) - See Fig. 1. | |



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Fig. 5: Identifying ECU Connector Terminals
Courtesy of Mitsubishi Motor Sales of America.

SYSTEM INPUT TEST

1) Access Data Link Connector (DLC). DLC is located behind lower dash panel to right of steering column on Stealth and 3000GT. Using Special Tool (MB991529), connect positive lead of voltmeter to terminal No. 9 and negative lead to terminal No. 4 or No. 5. See Fig. 6. Check if input signals from system components are being received by ECU.

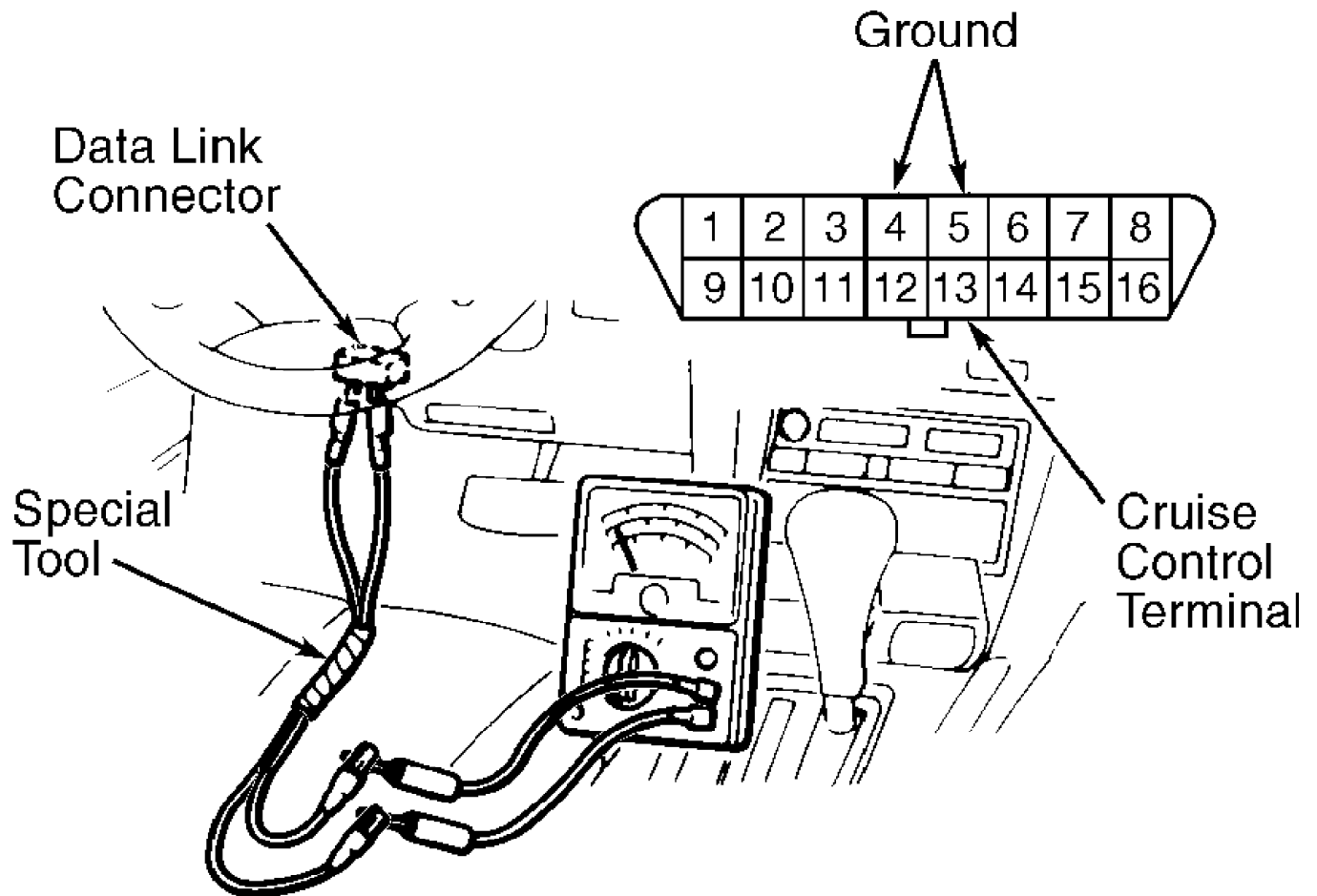
2) Voltmeter needle should sweep when each of the following switches is operated:

- * Driver and front passenger door switches.
- * Headlight switch.

- * Front passenger door lock switch.
- * Hood switch.
- * Luggage compartment light switch.
- * Front passenger door key cylinder switch.
- * Trunk lid key cylinder switch.

3) If switch or related components are not functioning, voltmeter will not operate when switch is activated. Replace appropriate component or repair circuit as necessary. Check following for possible cause:

- * Open fuse, circuit breaker or fusible link caused by short to body ground.
- * Wire connector or pin inside connector disengaged at any connector or component system.
- * Defective ETACS Control Unit (ECU).
- * Defective switch, relay or actuator.
- * Subfreezing weather conditions, mechanical failure or corroded or misaligned assemblies.



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Fig. 6: Identifying Data Link Connector Terminals
Courtesy of Mitsubishi Motor Sales of America.

CIRCUIT TESTS

CAUTION: Ensure ignition switch is in OFF position whenever

disconnecting component connectors.

NOTE: For ECU connector terminal identification, see Fig. 5. For appropriate wiring diagram, see WIRING DIAGRAMS.

Test No. 1 (Power & Ground Circuit)

1) With ECU connector connected, connect voltmeter positive lead to ECU connector terminal No. 51 (Red/Blue wire). Connect negative lead to ground. If battery voltage is present, go to next step. If voltage is not as specified, repair open circuit between ECU and fusible link No. 6 as necessary.

2) Turn ignition switch to OFF position. Disconnect ECU connector. Using an ohmmeter, check continuity between ECU wiring harness connector terminal No. 59 (Black wire) and ground. If continuity does not exist, repair open circuit.

Test No. 2 (Key Reminder Switch Input Circuit)

1) With ECU connector connected, connect voltmeter positive lead to ECU connector terminal No. 64 (Black/Blue wire). Connect negative lead to ground. Battery voltage should be present with ignition key removed. No voltage should exist with ignition key inserted. If voltage is as specified, go to next step. If voltage is not as specified, repair open circuit between ECU and fusible link No. 6.

2) Turn ignition switch to OFF position. Disconnect ECU connector. Using an ohmmeter, check continuity between ECU wiring harness connector terminal No. 64 (Black/Blue wire) and ground. If continuity does not exist, repair open circuit.

NOTE: Voltage measurement requires use of an oscilloscope in the following test. Follow oscilloscope manufacturer's operating instructions.

Test No. 3 (Hood Switch Input Circuit)

1) With ECU connector connected, check voltage on ECU connector terminal No. 18 (Blue/Black wire) using an oscilloscope. When hood is closed, 5 volts should exist. No voltage should exist when hood is open. If voltage is as specified, go to next step. If voltage is not as specified, repair open circuit between ECU and hood switch.

2) Turn ignition switch to OFF position. Disconnect ECU connector. Using an ohmmeter, check continuity between ECU wiring harness connector terminal No. 18 (Blue/Black wire) and ground. Continuity should exist when hood is open. No continuity should exist when hood is closed. If continuity is not as specified, repair circuit between ECU and hood switch as necessary.

NOTE: Voltage measurement requires use of an oscilloscope in the following test. Follow oscilloscope manufacturer's operating instructions.

Test No. 4 (Door Switch Input Circuit)

1) With ECU connector connected, check voltage on ECU connector terminal No. 10 (Red/Green wire) using an oscilloscope. Open and close each door in turn. Voltage should be 5 volts with both doors closed. Voltage should be zero volts with either door open. If voltage is as specified, go to next step. If voltage is not as specified, repair circuit between ECU and appropriate door switch as necessary.

2) Turn ignition switch to OFF position. Disconnect ECU connector. Using an ohmmeter, check continuity between ECU wiring harness connector terminal No. 10 (Red/Green wire) and ground. Continuity should exist when either door is open. No continuity should exist when both doors are closed. If continuity is not as specified,

repair open circuit between ECU and appropriate door switch.

NOTE: Voltage measurement requires use of an oscilloscope in the following test. Follow oscilloscope manufacturer's operating instructions.

Test No. 5 (Door Lock Actuator Switch Input Circuit)

1) With ECU connector connected, check voltage on ECU connector terminals No. 13 (Brown/Yellow wire) for left door, and No. 14 (Brown wire) for right door using an oscilloscope. Lock and unlock both doors in turn. With door(s) locked, voltage should be 5 volts. With door(s) unlocked, voltage should be zero volts. If voltage is as specified, go to next step. If voltage is not as specified, repair circuit between ECU and appropriate door lock actuator switch.

2) Turn ignition switch to OFF position. Disconnect ECU connector. Using an ohmmeter, check continuity between ground and ECU wiring harness connector terminals No. 13 (Brown/Yellow wire) for left door, and No. 14 (Brown wire) for right door. Lock and unlock each door in turn. With door(s) locked, continuity should not exist. With door(s) unlocked, continuity should exist. If continuity is not as specified, repair open circuit between ECU and appropriate door lock actuator switch.

NOTE: Voltage measurement requires use of an oscilloscope in the following test. Follow oscilloscope manufacturer's operating instructions.

Test No. 6 (Door & Liftgate Key Cylinder Switch Input Circuit)

1) With ECU connector connected, check voltage on ECU connector terminals No. 19 (Black wire) for both doors, and No. 20 (Blue/Red wire) for liftgate using an oscilloscope. Lock and unlock doors and liftgate in turn. With doors and liftgate locked, voltage should be 5 volts. With either door or liftgate unlocked, voltage should be zero volts. If voltage is as specified, go to next step. If voltage is not as specified, repair appropriate circuit between ECU and door cylinder switch or liftgate key cylinder switch.

2) Turn ignition switch to OFF position. Disconnect ECU connector. Using an ohmmeter, check continuity between ground and ECU wiring harness connector terminals No. 19 (Black wire) for both doors, and No. 20 (Blue/Red wire) for liftgate. Lock and unlock doors and liftgate in turn. With doors and liftgate locked, continuity should not exist. With either door or liftgate unlocked, continuity should exist. If continuity is not as specified, repair appropriate open circuit between ECU and door cylinder switch or liftgate switch.

NOTE: Voltage measurement requires use of an oscilloscope in the following test. Follow oscilloscope manufacturer's operating instructions.

Test No. 7 (Liftgate Light Switch Input Circuit)

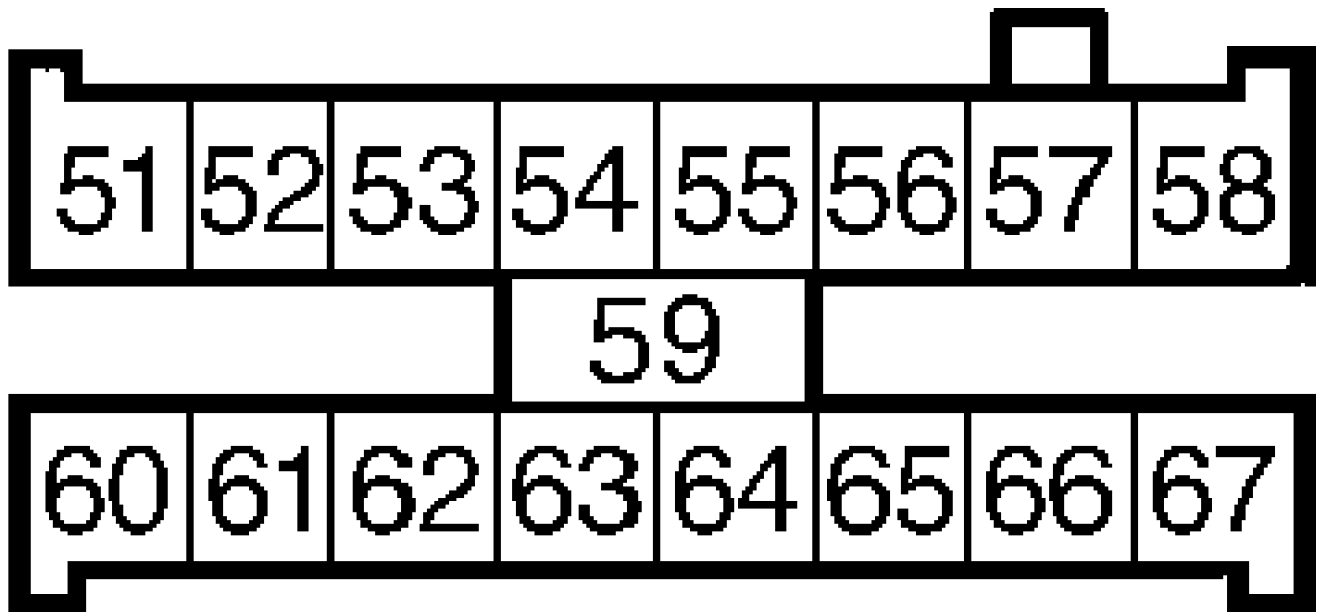
1) With ECU connector connected, check voltage on ECU connector terminal No. 17 (Blue/White wire) using an oscilloscope. When liftgate is closed, 5 volts should exist. No voltage should exist when liftgate is open. If voltage is as specified, go to next step. If voltage is not as specified, repair circuit between ECU and liftgate switch.

2) Turn ignition switch to OFF position. Disconnect ECU connector. Using an ohmmeter, check continuity between ECU wiring harness connector terminal No. 17 (Blue/White wire) and ground. No continuity should exist when liftgate lid is closed. Continuity should exist when liftgate is open. If continuity is not as specified, repair open circuit between ECU and liftgate switch.

Test No. 8 (Security Light Activation Circuit)

1) Turn ignition switch to OFF position. Disconnect ECU connector. Gain access to instrument panel combination meter connector. Using a voltmeter, check voltage on combination meter connector terminal No. 51 (Red/Black wire). See Fig. 7. Battery voltage should exist. If voltage is as specified, go to next step. If voltage is not as specified, check circuit between combination meter connector and fuse No. 19. Repair circuit as necessary.

2) Check voltage on combination meter terminal No. 52 (Green wire). Battery voltage should exist. If voltage is not as specified, check circuit between combination meter connector and ECU wiring connector terminal No. 57 (Green wire). Repair circuit as necessary.



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Fig. 7: Combination Meter Connector Terminal ID
Courtesy of Mitsubishi Motor Sales of America.

Test No. 9 (Horn Relay Power Supply Circuit)

Disconnect horn relay, located in right side of engine compartment. See Fig. 8. Using a voltmeter, check voltage on horn relay wiring connector terminal No. 5 (Red/Black wire). Battery voltage should exist. If voltage is not as specified, repair circuit between horn relay connector and fuse No. 6 as necessary.

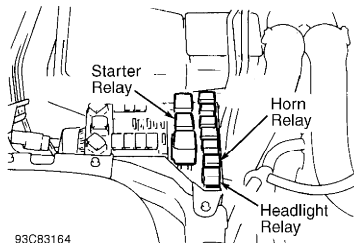


Fig. 8: Relays & Terminal ID
Courtesy of Mitsubishi Motor Sales of America.

Test No. 10 (Horn Activation Circuit)

1) Turn ignition switch to OFF position. Disconnect ECU connector. Ground ECU wiring connector terminal No. 58 (Blue/Green wire). Using a voltmeter, check voltage on horn relay terminal No. 4 (Green/Red wire). See Fig. 8. Battery voltage should exist. If voltage is as specified, go to next step. If voltage is not as specified, replace horn relay.

2) Check voltage at horn Black wire. Battery voltage should exist. If voltage is as specified and horn does not sound, replace horn. If voltage is not as specified, repair circuit between horn and horn relay as necessary.

Test No. 11 (Theft Alarm Horn Relay Power Circuit)

Disconnect theft alarm horn relay, located above fuse box. See Fig. 9. Using a voltmeter, check voltage on theft alarm horn relay wiring connector terminal No. 1 (White/Black wire). Battery voltage should exist. If voltage is not as specified, repair circuit between theft alarm horn relay connector and fusible link No. 6.

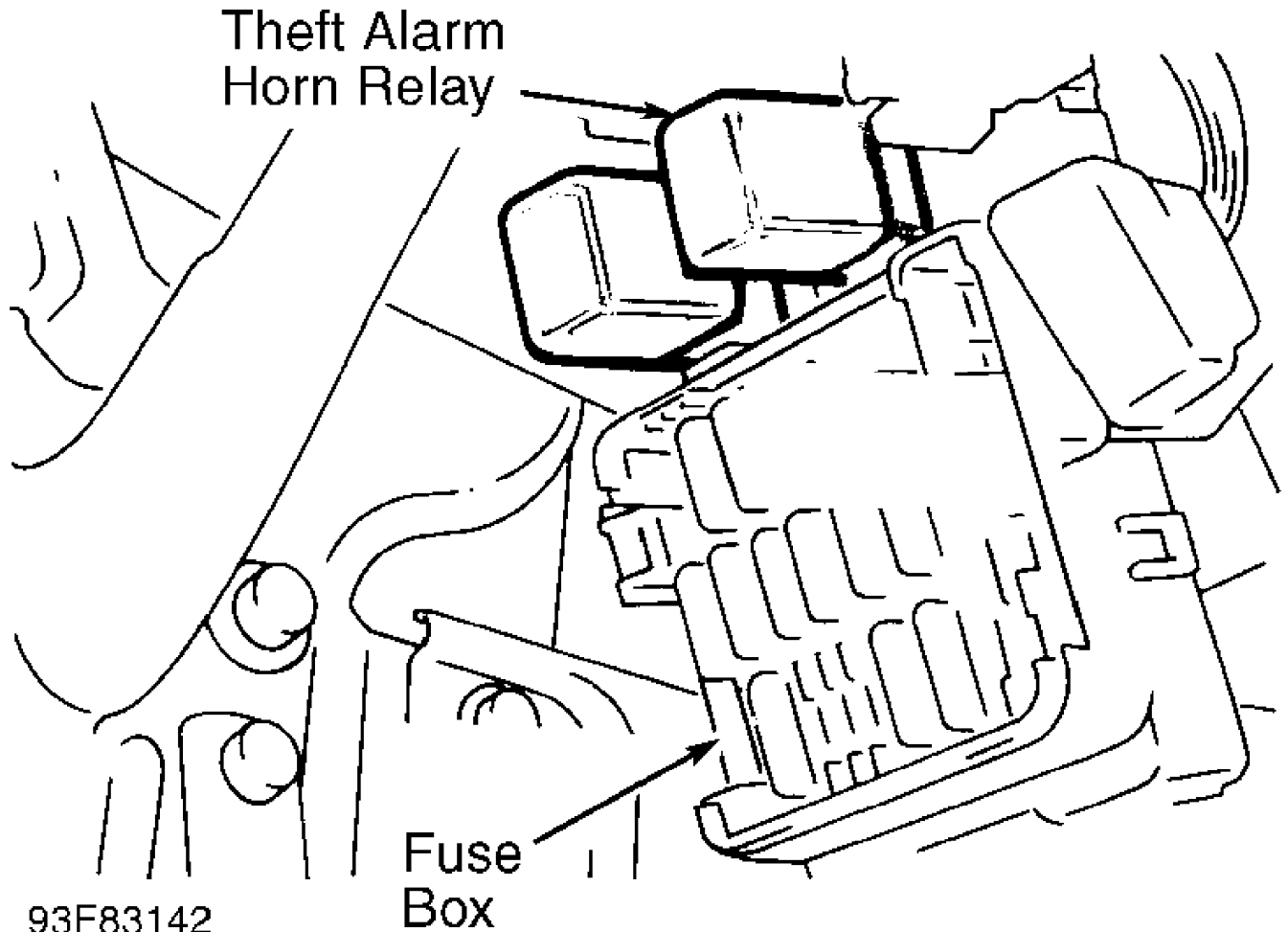


Fig. 9: Identifying Theft Alarm Horn Relay
Courtesy of Mitsubishi Motor Sales of America.

Test No. 12 (Theft Alarm Horn Activation Circuit)

1) Turn ignition switch to OFF position. Disconnect ECU connector. Ground ECU wiring harness connector terminal No. 58 (Blue/Green wire). Using a voltmeter, check voltage on theft alarm horn relay terminal No. 1 (White/Black wire). See Fig. 9. Battery

voltage should exist. If voltage is as specified, go to next step. If voltage is not as specified, replace horn relay.

2) Check voltage at theft alarm horn Red/Black wire. Battery voltage should exist. If voltage is as specified and horn does not sound, replace horn. If voltage is not as specified, repair circuit between horn and horn relay as necessary.

Test No. 13 (Headlight Power Supply Circuit)

Disconnect headlight relay. See Fig. 8. Using a voltmeter, check voltage on headlight relay wiring connector terminal No. 5 (Red/Black wire). If battery voltage does not exist, repair circuit between headlight relay wiring connector and fusible link No. 3.

Test No. 14 (Headlight Activation Relay)

1) Turn ignition switch to OFF position. Disconnect ECU connector. Ground ECU wiring connector terminal No. 2 (Red/Yellow wire). Using a voltmeter, check voltage on headlight relay connector terminal No. 4 (Red/Blue wire). See Fig. 8. Battery voltage should exist. If voltage is as specified, go to next step. If voltage is not as specified, replace headlight relay.

2) Check voltage on appropriate (left or right) headlight connector Red/Blue wire. Battery voltage should exist. If voltage is as specified, go to next step. If voltage is not as specified, repair circuit between headlight and headlight relay as necessary.

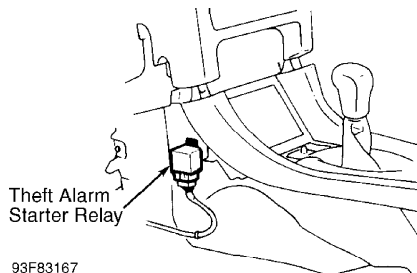
3) Check voltage on appropriate (left or right) headlight connector Red wire with light switch in LOW position and Red/White wire with light switch in HI position. No battery voltage should exist. If battery voltage does not exist and headlight does not glow, replace headlight or repair headlight switch as necessary. See appropriate STEERING COLUMN SWITCHES article in ACCESSORIES & EQUIPMENT. If battery voltage exists, repair circuit between headlight and headlight relay as necessary.

Test No. 15 (Starter Relay Activation Circuit)

1) Turn ignition switch to OFF position. Disconnect ECU connector. Using a voltmeter, check voltage on starter relay terminal No. 3 (Black/Yellow wire). See Fig. 10. If battery voltage exists, go to next step. If battery voltage does not exist, replace starter relay.

2) Check voltage on starter motor terminal No. 1 (Black/Yellow wire). If battery voltage exists, go to next step. If battery voltage does not exist, repair circuit between starter motor and starter relay.

3) Turn ignition switch to OFF position. Disconnect Brown/Red wire at starter motor. Using an ohmmeter, check continuity between Brown/Red wire and ground. If continuity exists, replace starter motor magnet switch.



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Fig. 10: Identifying Theft Alarm Starter Relay
Courtesy of Mitsubishi Motor Sales of America.

REMOVAL & INSTALLATION

*** PLEASE READ THIS FIRST ***

CAUTION: When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See COMPUTER RELEARN PROCEDURES article in this section before disconnecting battery.

Manufacturers do not provide a step by step procedure for removing and installing anti-theft system components.

WIRING DIAGRAMS

