

## 1999-2000 ACCESSORIES &amp; EQUIPMENT

## Rear Window &amp; Mirror Defoggers

## DESCRIPTION &amp; OPERATION

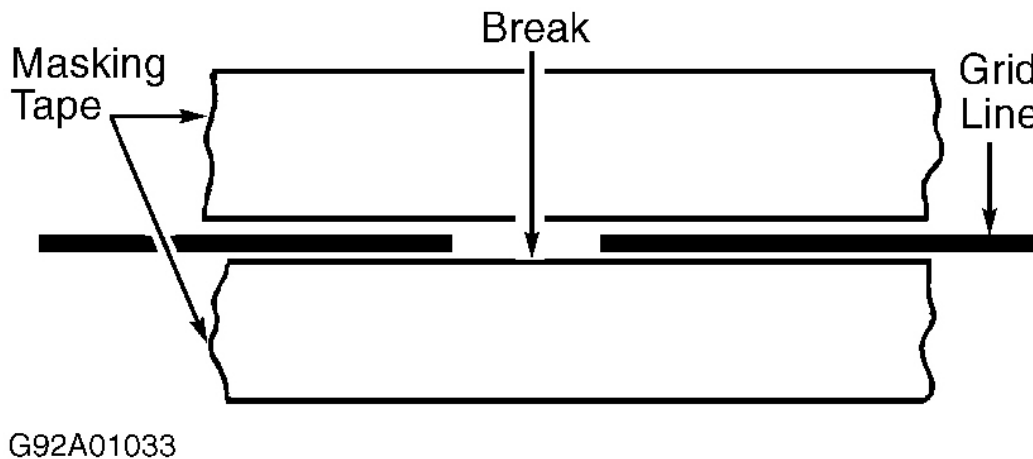
**NOTE:** This article also applies to Lexus LX470, refer to Land Cruiser, unless otherwise indicated.

Rear window defogger systems use a heating wire grid bonded to the inside of window. Electrical power to heating grid is supplied by defogger relay, which is controlled by defogger switch. Some switches have an integrated timer, which turns system off after 12-18 minutes of operation. Some models are equipped with outside rearview mirror defoggers.

## ON-VEHICLE SERVICE

## GRID FILAMENT REPAIR

Clean broken wire tips thoroughly. Place masking tape along both sides of broken wire. See **Fig. 1** . Apply Repair Paste (DuPont 4817) to broken section of grid. Remove masking tape after paste has dried. Wait 24 hours before using defogger.



**Fig. 1: Repairing Rear Defogger Grid Filament**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

## TROUBLE SHOOTING

## DEFOGGER DOES NOT WORK

## 1999 Toyota RAV4

### 1999-2000 ACCESSORIES & EQUIPMENT Rear Window & Mirror Defoggers

Blown fuse or poor contact. Defogger switch defective. Poor connections. Broken wire. Relay defective.

#### INDICATOR LIGHT DOES NOT WORK

Bulb burned out. Open wire or poor connection.

#### REAR WINDOW DEFOGGER SYSTEM CHECK

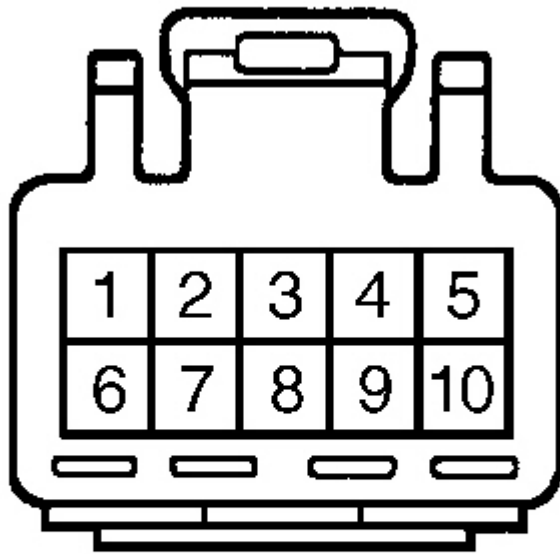
1. Ensure all in-line fuses or circuit breakers are okay. Turn ignition and control switches to ON position. Glass should feel warm after a few minutes.
2. If glass is not warm, use a test light or voltmeter to check for battery voltage at grid feed wire. If voltage is not correct, check wiring harness, control switch and timer/relay.

#### SYSTEM TESTS

##### DEFOGGER SWITCH CIRCUIT

###### 2000 Celica

1. Disconnect defogger switch 10-pin connector. Check continuity between ground and defogger switch harness connector terminal No. 3 (White/Black wire). See **Fig. 2** . If continuity exists, go to next step. If continuity does not exist, repair ground circuit as necessary. See **WIRING DIAGRAMS** .
2. Turn ignition on. Measure voltage between ground and defogger switch harness connector terminal No. 5 (Red/White wire). Battery voltage should exist. With ignition switch in LOCK or ACC position, no voltage should exist. If voltage is as specified, go to next step. If voltage is not as specified, repair appropriate circuit as necessary. See **WIRING DIAGRAMS** .
3. Connect defogger switch harness connector. Turn ignition on. Measure voltage between ground and defogger switch connector (backprobe) terminal No. 5 (Red/White wire). Battery voltage should exist. Turn defogger switch to ON position. No voltage should exist. If voltage is not as specified, replace defogger switch and retest system.



## WIRE HARNESS SIDE

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**Fig. 2: Identifying Defogger Switch Harness Connector Terminals (2000 Celica)**

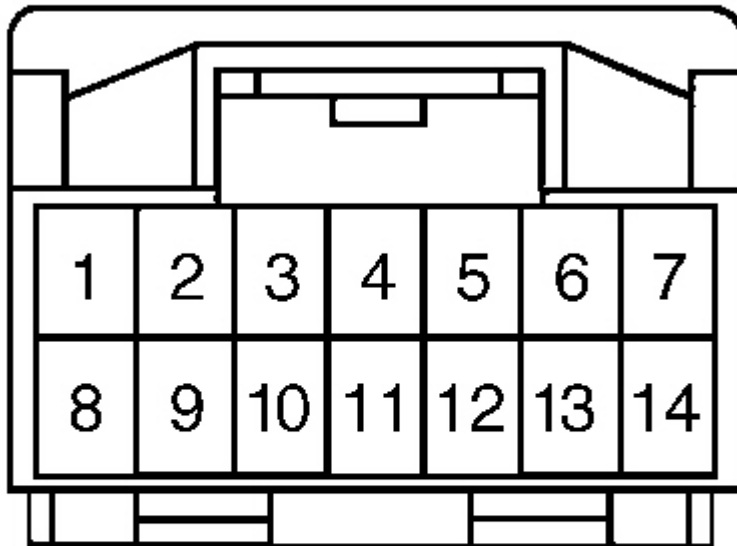
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

### MR2

1. Disconnect defogger switch 14-pin connector. Check continuity between ground and defogger switch harness connector terminal No. 4 (White/Black wire). See **Fig. 3** . If continuity exists, go to next step. If continuity does not exist, repair ground circuit as necessary. See **WIRING DIAGRAMS** .
2. Turn ignition on. Measure voltage between ground and defogger switch harness connector terminal No. 12 (Pink/Blue wire). Battery voltage should exist. With ignition switch in LOCK or ACC position, no voltage should exist. If voltage is as specified, go to next step. If voltage is not as specified, repair appropriate circuit as necessary. See **WIRING DIAGRAMS** .
3. Connect defogger switch harness connector. Turn ignition on. Measure voltage between ground and defogger switch connector (backprobe) terminal No. 12 (Pink/Blue wire). Battery voltage should exist. Turn defogger switch to ON position. No voltage should exist. If voltage is not as specified, replace defogger switch and retest system.

## 1999 Toyota RAV4

1999-2000 ACCESSORIES & EQUIPMENT Rear Window & Mirror Defoggers



WIRE HARNESS SIDE

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**Fig. 3: Identifying Defogger Switch Harness Connector Terminals (MR2)**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

### DEFOGGER SWITCH TIMER CIRCUIT

Camry & Camry Solara

Disconnect defogger switch 6-pin connector. Use DVOM to check circuits as specified. See **DEFOGGER TIMER CIRCUIT TEST (CAMRY & CAMRY SOLARA)** table. If readings are not as specified, repair circuit as necessary. If readings are as specified, replace defogger switch and retest system.

### DEFOGGER TIMER CIRCUIT TEST (CAMRY & CAMRY SOLARA)

Check Between Ground & Pin No. <sup>(1)</sup>	Condition	Specification
3	All	Continuity
4	IGN In LOCK/ACC	Zero Volts
4	IGN In ON	Battery Voltage

<b>1999 Toyota RAV4</b>
1999-2000 ACCESSORIES & EQUIPMENT Rear Window & Mirror Defoggers

5	IGN In LOCK/ACC	Zero Volts
5	IGN In ON	Battery Voltage
(1) See <b>Fig. 9</b> .		

**Corolla & Tercel**

Disconnect defogger switch 6-pin connector. Use DVOM to check circuits as specified. See **DEFOGGER TIMER CIRCUIT TEST (COROLLA & TERCEL)** table. If readings are not as specified, repair circuit as necessary. If readings are as specified, replace defogger switch and retest system.

**DEFOGGER TIMER CIRCUIT TEST (COROLLA & TERCEL)**

Check Between Ground & Pin No. <sup>(1)</sup>	Condition	Specification
3	All	Continuity
2	IGN In LOCK/ACC	Zero Volts
2	IGN In ON	Battery Voltage
6	IGN In LOCK/ACC	Zero Volts
6	IGN In ON	Battery Voltage
(1) See <b>Fig. 9</b> .		

**ECHO**

Disconnect defogger switch 4-pin connector. Use DVOM to check circuits as specified. See **DEFOGGER TIMER CIRCUIT TEST (ECHO)** table. If readings are not as specified, repair circuit as necessary. If readings are as specified, replace defogger switch and retest system.

**DEFOGGER TIMER CIRCUIT TEST (ECHO)**

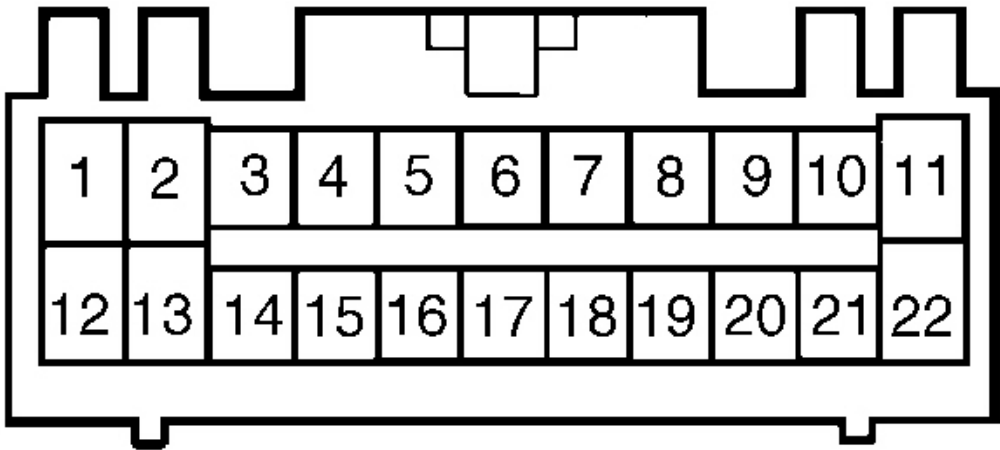
Check Between Ground & Pin No. <sup>(1)</sup>	Condition	Specification
2	All	Continuity
3	IGN In LOCK/ACC	Zero Volts
3	IGN In ON	Battery Voltage
4	Defogger Switch Off	No Continuity
4	Defogger Switch On	Continuity
(1) See <b>Fig. 11</b> .		

**Land Cruiser**

Disconnect control panel 22-pin connector C9. See **Fig. 4** and **Fig. 12** . Use DVOM to check circuits as specified. See **CONTROL PANEL SWITCH CIRCUIT TEST (LAND CRUISER)** table. If readings are as specified, replace switch and retest system. If readings are not as specified, repair circuit as necessary. If readings are as specified, replace defogger switch and retest system.

**CONTROL PANEL SWITCH CIRCUIT TEST (LAND CRUISER)**

Check Between Ground & Pin No. <sup>(1)</sup>	Condition	Specification
22	Constant	Continuity
12	Constant	Battery Voltage
1	Ignition In LOCK/ACC	Zero Volts
1	Ignition In ON	Battery Voltage
2	Ignition In LOCK	Zero Volts
2	Ignition In ACC/ON	Battery Voltage
(1) See <b>Fig. 4</b> .		



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**Fig. 4: Control Panel Connector C9 Terminals (Land Cruiser)**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**Sienna**

Disconnect defogger switch 6-pin connector. Use DVOM to check circuits as specified. See **DEFOGGER TIMER CIRCUIT TEST (SIENNA)** table. If readings are not as specified, repair circuit as necessary. If readings are as specified, replace defogger switch and retest system.

**DEFOGGER TIMER CIRCUIT TEST (SIENNA)**

Check Between Ground & Pin No. <sup>(1)</sup>	Condition	Specification

**1999 Toyota RAV4****1999-2000 ACCESSORIES & EQUIPMENT Rear Window & Mirror Defoggers**

3	All	Continuity
1	IGN In LOCK/ACC	Zero Volts
1	IGN In ON	Battery Voltage
2	IGN In LOCK/ACC	Zero Volts
2	IGN In ON	Battery Voltage
(1) See <b>Fig. 9</b> .		

**4Runner**

Disconnect defogger switch 6-pin connector. See **WIRING DIAGRAMS** . Use DVOM to check circuits as specified. See **DEFOGGER TIMER CIRCUIT TEST (4RUNNER)** table. If readings are not as specified, repair circuit as necessary. If readings are as specified, replace defogger switch and retest system.

**DEFOGGER TIMER CIRCUIT TEST (4RUNNER)**

Check Between Ground & Pin No. <sup>(1)</sup>	Condition	Specification
4	All	Continuity
2	IGN In LOCK/ACC	Zero Volts
2	IGN In ON	Battery Voltage
6	IGN In LOCK/ACC	Zero Volts
6	IGN In ON	Battery Voltage
(1) See <b>Fig. 14</b> .		

**INSTRUMENT PANEL JUNCTION BLOCK (REAR DEFOGGER)****Circuit Test (RAV4)**

Remove instrument panel junction block located under driver's side of instrument panel. Inspect 23-pin connector "A" terminals with DVOM by backprobing specified terminals. Disconnect junction block 15-pin connector "B". Test specified terminal. See **JUNCTION BLOCK CONNECTOR CIRCUIT TEST** table.

See **WIRING DIAGRAMS** . If circuit is okay, replace relay. If circuit is not okay, repair as necessary.

**JUNCTION BLOCK CONNECTOR CIRCUIT TEST**

Check Between Ground & Terminal No.	Switch Position	Specification
A5	ON	Continuity
A11	All Positions	Continuity
B4	All Positions	Continuity
B3	All Positions	Battery Voltage

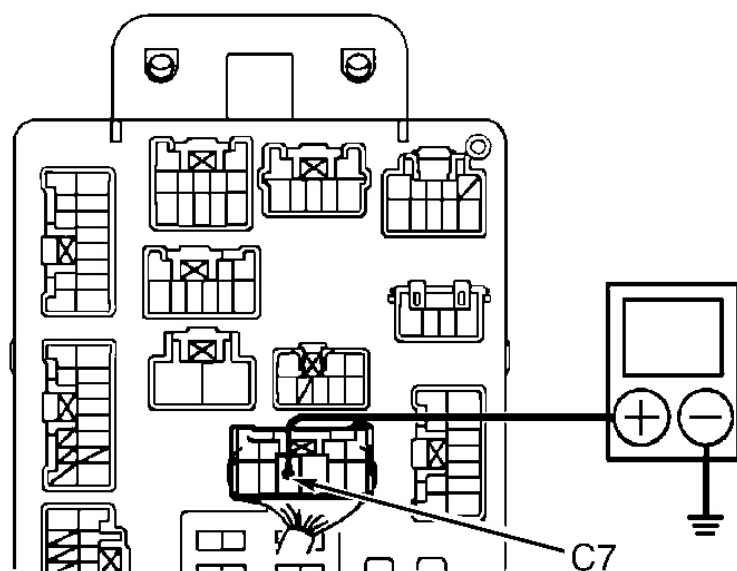
**Operational Check (RAV4)**

Disconnect 23-pin connector "A" from junction block. Connect positive lead of DVOM to junction block

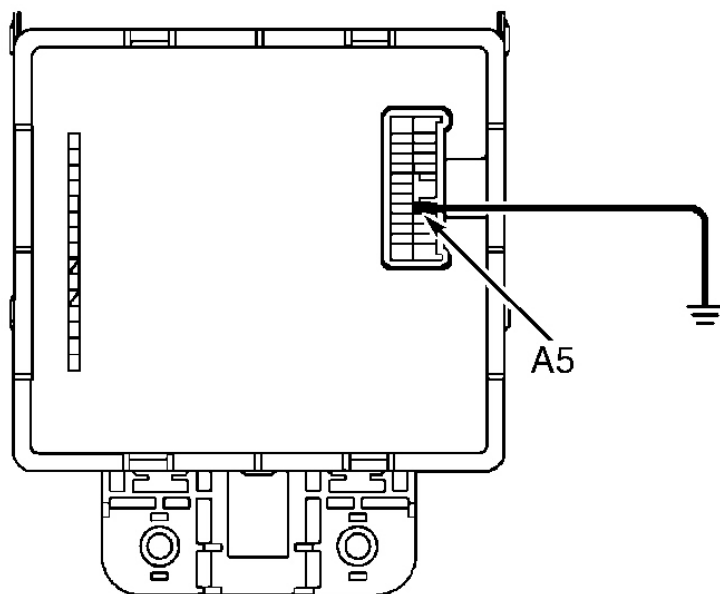
## 1999 Toyota RAV4

### 1999-2000 ACCESSORIES & EQUIPMENT Rear Window & Mirror Defoggers

terminal C7 and negative lead to ground. Connect jumper wire between 23-pin connector "A" cavity terminal A5 and ground. See **Fig. 5** . If continuity is not indicated, replace junction block.



FRONT SIDE



BACK SIDE

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**Fig. 5: Identifying Junction Block Connector Terminals (RAV4)**



Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

## REARVIEW MIRROR DEFOGGER TIMER OPERATION

### Land Cruiser

1. Remove climate control (A/C-heater control) panel. Connect (backprobe) DVOM negative lead to connector C9 terminal No. 22. Connect DVOM positive lead to connector C9 terminals No. 2 and 12, and connector C7 terminal No. 8. See **Fig. 12** . Turn ignition switch to ON position and measure voltage.
2. With defogger switch OFF, voltage should be about 12 volts. Turn defogger switch ON and ensure DEF switch indicator is illuminated. Voltage should be less than one volt for about 15 minutes. After 15 minutes, defogger switch should turn off and voltage should be about 12 volts. Replace defogger switch if voltage is not as specified is not as specified.

## COMPONENT TESTS

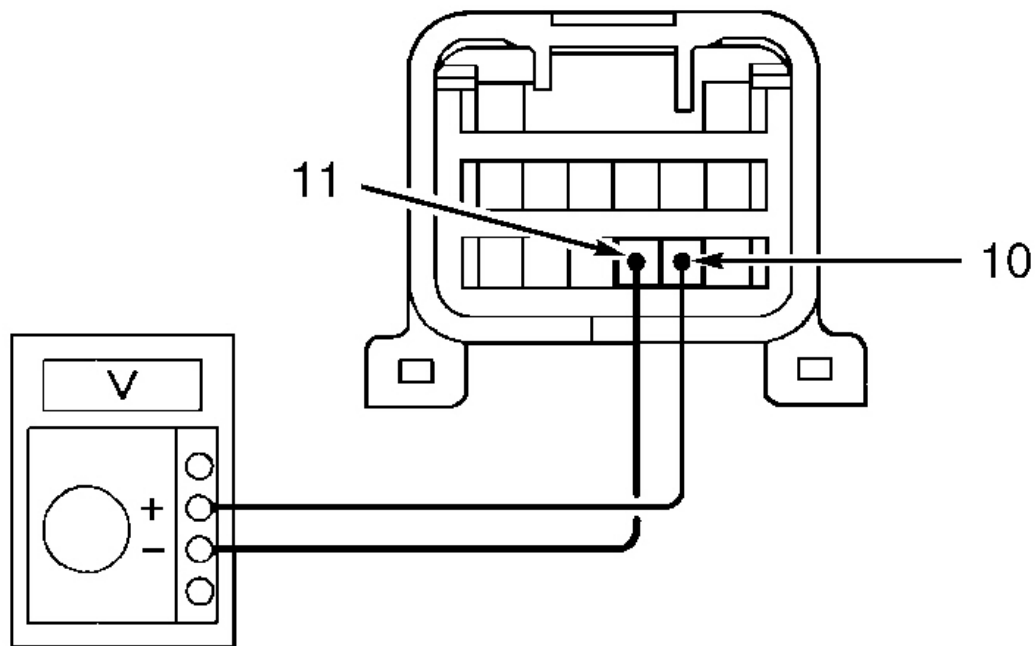
### DEFOGGER SWITCH TEST

#### 1999 Avalon

1. If equipped with automatic A/C-heater system, backprobe defogger switch terminal No. 10 (Blue/Yellow wire) with positive voltmeter lead and terminal No. 11 (White/Black wire) with negative lead. See **Fig. 6** . If equipped with manual A/C-heater system, backprobe defogger switch terminal No. 11 (Blue/Yellow wire) with positive voltmeter lead and terminal No. 5 (White/Black wire) with negative lead. See **Fig. 7** .
2. On all models, ensure battery voltage exists with defogger switch in OFF position. Turn defogger switch to ON position. Ensure indicator light is on and less than one volt exists. After 15 minutes, defogger switch should turn off and battery voltage should exist again. If defogger switch does not operate as specified, replace switch.

## 1999 Toyota RAV4

1999-2000 ACCESSORIES & EQUIPMENT Rear Window & Mirror Defoggers

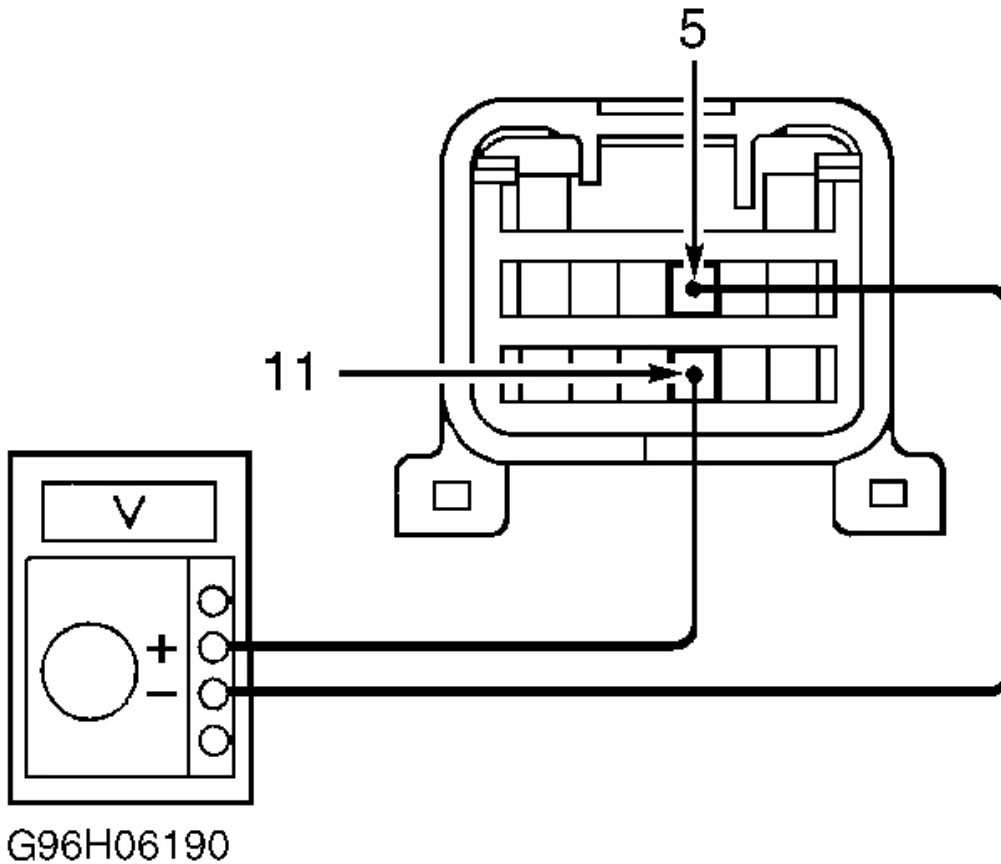


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**Fig. 6: Identifying Defogger Switch Terminals (1999 Avalon - With Automatic A/C-Heater System)**

## 1999 Toyota RAV4

1999-2000 ACCESSORIES & EQUIPMENT Rear Window & Mirror Defoggers



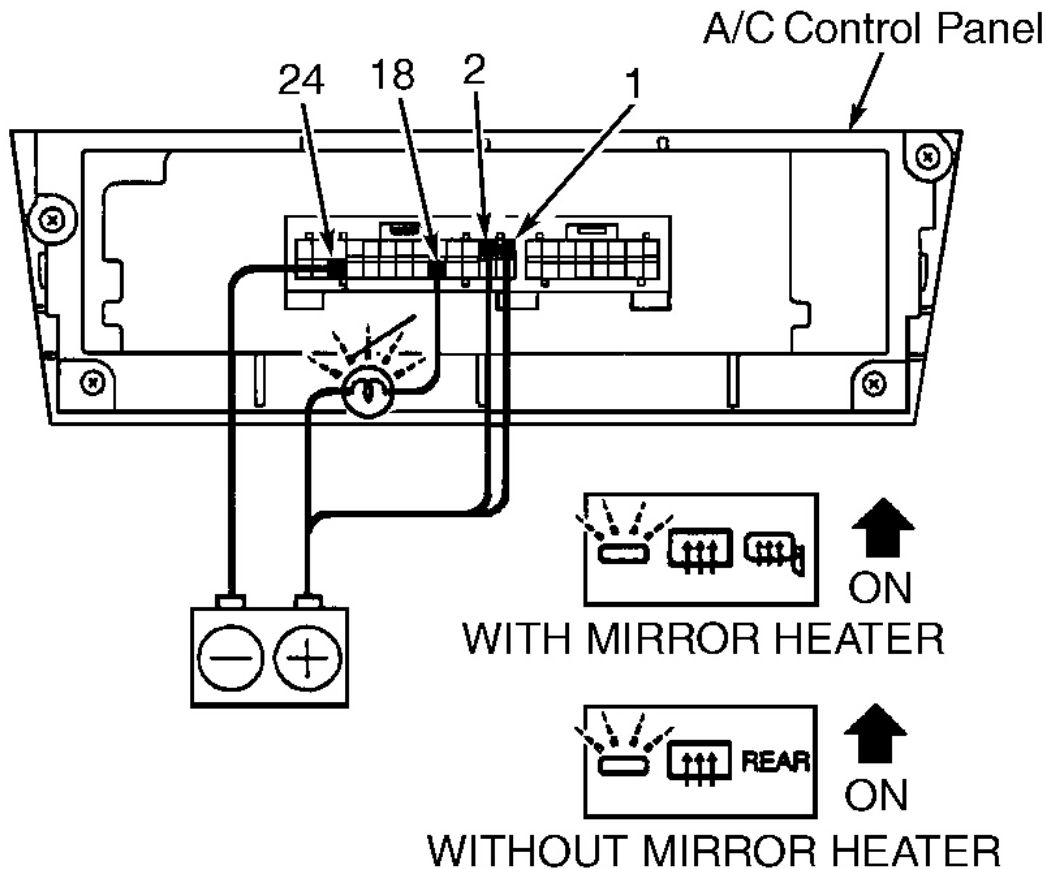
**Fig. 7: Identifying Defogger Switch Terminals (1999 Avalon - With Manual A/C-Heater System)**

**2000 Avalon (With Automatic A/C-Heater System)**

**NOTE:** Defogger switch testing information for 2000 Avalon with manual A/C-heater system is not available from manufacturer.

1. Disconnect A/C-heater control panel harness connectors. Connect jumper wires between battery positive and A/C-heater control panel 26-pin connector terminals No. 1 (White/Green wire) and No. 2 (Red/White wire). See **Fig. 8**.
2. Connect another jumper wire between ground and A/C-heater control panel 26-pin connector terminal No. 24 (White/Black wire). Connect a 1.4-watt test light between battery positive and A/C-heater control panel 26-pin connector terminal No. 18 (Red/Black wire).
3. Turn rear window defogger switch on. Test light, rear window defogger indicator and mirror heater indicator (if equipped) should illuminate, then turn off after about 15 minutes. Replace A/C-heater control

panel if operation is not as specified.

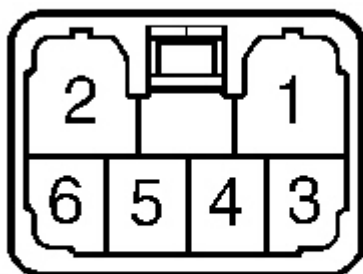


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**Fig. 8: Testing Rear Window Defogger Switch (2000 Avalon With Automatic A/C-Heater System)**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

#### Camry & Camry Solara

1. Remove rear defogger switch. Terminals No. 2 and 6 are for bulb illumination. Using an ohmmeter, check for continuity between terminals No. 2 and 6 of switch. See **Fig. 9** . Continuity should exist at all times. If continuity does not exist, check illumination bulb.
2. Connect battery positive lead to terminal No. 4, and battery negative lead to terminal No. 3. See **Fig. 9** . Connect a 3.4-watt test light between battery voltage and terminal No. 5. Turn defogger on. Ensure test light comes on for 12-18 minutes and then goes out. If switch does not operate as specified, replace switch.



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**Fig. 9: Identifying Defogger Switch Terminals (Camry, Camry Solara, 1999 Celica, Corolla, Sienna, Tercel & 4Runner)**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

#### 1999 Celica

1. Backprobe defogger switch terminal No. 5 with positive voltmeter lead and terminal No. 4 with negative lead. See **Fig. 9**. Ensure battery voltage exists with defogger switch in OFF position. Turn defogger switch to ON position. Ensure indicator light is on and less than one volt exists. If voltage is not as specified, replace switch.
2. Terminals No. 2 and 6 are for bulb illumination. Using an ohmmeter, check for continuity between switch terminals No. 2 and 6. See **Fig. 9**. Continuity should exist at all times.
3. If defogger switch is equipped with timer, ensure defogger switch turns off and battery voltage is again present after 12-18 minutes. If defogger switch does not operate as specified, replace switch.

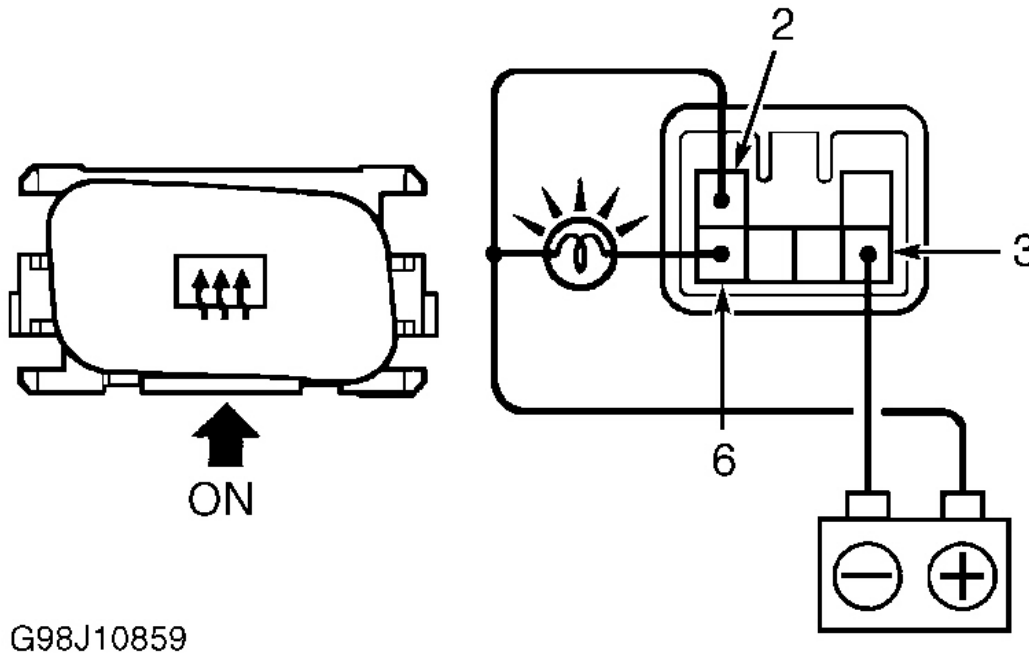
#### 2000 Celica

1. Disconnect defogger switch 10-pin connector. Connect a jumper wire between battery positive and defogger switch terminal No. 1. See **Fig. 2**. Connect another jumper wire between ground and terminal No. 3.
2. Connect a 3.4-watt test light between battery positive and defogger switch terminal No. 5. Turn defogger switch to ON position. Test light and indicator light should illuminate on for 12-18 seconds, then turn off. If operation is not as specified, replace defogger switch.

#### Corolla (With Timer)

Disconnect defogger switch 6-pin connector. Connect fused jumper between battery positive lead and terminal No. 2 and battery negative lead to terminal No. 3 (switch side). Connect a 3.4-watt test light between terminal No. 6 and battery voltage. See **Fig. 10**. Push defogger switch to ON position. Ensure test light and indicator

light come on for 12-18 minutes and then goes out. If switch does not operate as specified, replace switch.



**Fig. 10: Testing Defogger Switch With Timer (Corolla & Tercel)**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**Corolla (Without Timer)**

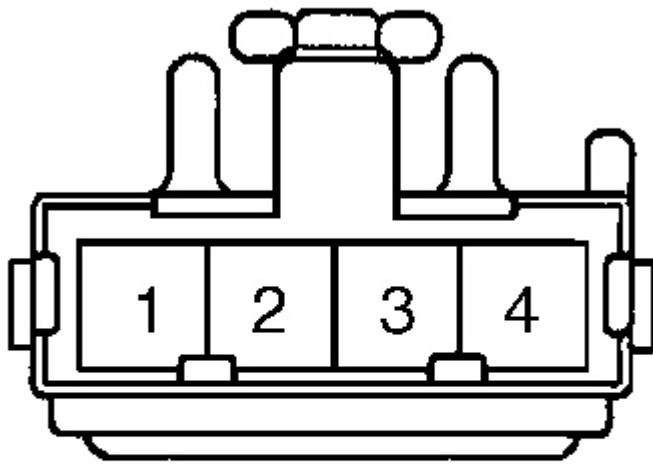
Disconnect defogger switch 6-pin connector. With defogger switch on, ensure continuity exists between terminals No. 3 and 6. See **Fig. 9** . With switch off, continuity should not exist between any terminals. Check continuity between terminals No. 1 and 4 (light bulb). Continuity should exist at all times. If continuity is not as specified, replace switch.

**ECHO (With Timer)**

1. Disconnect defogger switch 4-pin connector. Connect a jumper wire between battery positive terminal and defogger switch terminal No. 3. See **Fig. 11** . Connect another jumper wire between ground and terminal No. 4.
2. Connect a 3.4-watt test light between battery positive and terminal No. 2. Turn defogger switch to ON position. Indicator light and test light should come on, then turn off after 12-18 minutes. Replace switch if operation is not as specified.

**ECHO (Without Timer)**

1. Disconnect defogger switch 4-pin connector. Check continuity between defogger switch terminals No. 3 and 4. See **Fig. 11** . Continuity should exist with defogger switch in ON position.
2. Check continuity between terminals No. 2 and 3 (LED circuit). Continuity should exist. With defogger switch in OFF position, continuity should not exist between any terminals. Replace switch if continuity is not as specified.



WIRE HARNESS SIDE

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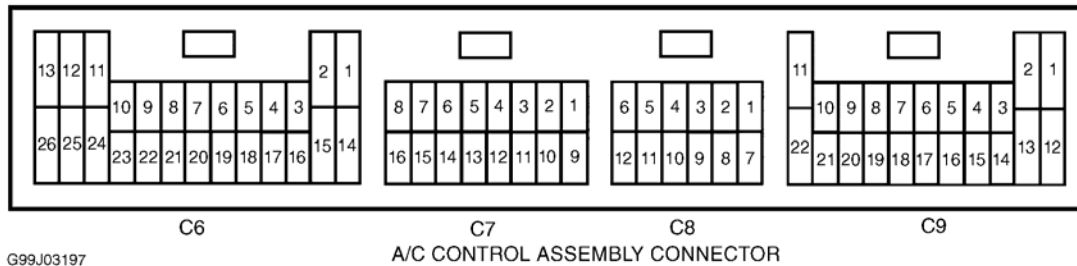
**Fig. 11: Identifying Defogger Switch Harness Connector Terminals (ECHO)**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

#### Land Cruiser

1. Remove climate control (A/C-heater control) panel. Connect (backprobe) DVOM negative lead to connector C9 terminal No. 22. Connect DVOM positive lead to connector C9 terminals No. 2 and 12, and connector C7 terminal No. 8. See **Fig. 12** . Turn ignition switch to ON position and measure voltage.
2. With defogger switch OFF, voltage should be about 12 volts. Turn defogger switch ON and ensure DEF switch indicator is illuminated. Voltage should be less than one volt for about 15 minutes. After 15 minutes, defogger switch should turn off and voltage should be about 12 volts. Replace defogger switch if voltage is not as specified.

## 1999 Toyota RAV4

### 1999-2000 ACCESSORIES & EQUIPMENT Rear Window & Mirror Defoggers



**Fig. 12: Identifying Front A/C-Heater Control Assembly Terminals (Land Cruiser)**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

#### MR2

1. Disconnect defogger switch 14-pin connector. Connect a jumper wire between battery positive and defogger switch terminal No. 1. See **Fig. 3** . Connect another jumper wire between ground and terminal No. 4.
2. Connect a 3.4-watt test light between battery positive and terminal No. 12. Turn defogger switch on. Indicator and test light should turn on, then turn off after 12-18 minutes. Replace defogger switch if operation is not as specified.

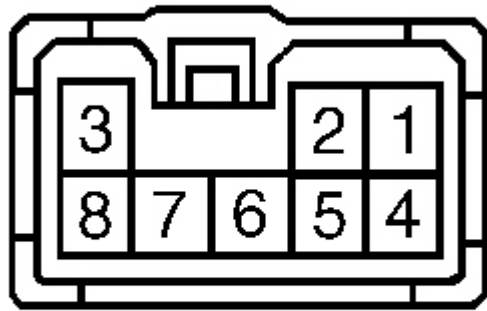
#### RAV4

1. Remove rear defogger switch. Check continuity between specified switch terminals. See **DEFOGGER SWITCH CONTINUITY TEST (RAV4)** table. See **Fig. 13** . If continuity is not as specified, replace switch.

#### DEFOGGER SWITCH CONTINUITY TEST (RAV4)

Switch Position	(1) Terminals No.	Continuity
OFF	None	No
ON	3, 5 & 8	Yes
ON (Illumination)	3 & 5	Yes
Illumination	2 & 6	Yes
(1) See <b>Fig. 13</b> .		





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**Fig. 13: Identifying Defogger Switch Terminals (RAV4)**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

#### Sienna

1. Remove defogger switch. Terminals No. 1 and 4 are for bulb illumination. Check continuity between defogger switch terminals No. 1 and 3. See **Fig. 9** . Continuity should exist at all times. If continuity does not exist, check illumination bulb.
2. Connect a jumper wire between battery positive and terminal No. 2. Connect another jumper wire between ground and terminal No. 4. Connect a 3.4-watt test light between battery positive and terminal No. 6. Turn defogger on. Ensure test light comes on for 12-18 minutes and then goes out. If switch does not operate as specified, replace switch.

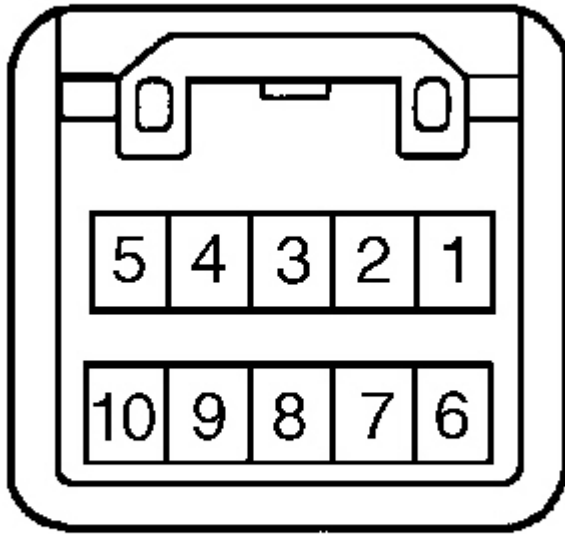
#### Terrel

1. Remove defogger switch. Terminals No. 1 and 4 are for bulb illumination. Check continuity between defogger switch terminals No. 1 and 4. See **Fig. 9** . If continuity exists, go to next step. If continuity does not exist, check illumination bulb.
2. On models without timer, check continuity between defogger switch terminals No. 2, 3 and 6 with switch in ON position. See **Fig. 9** . With defogger switch off, continuity should not exist between any terminals. If continuity is not as specified, replace defogger switch and retest system.
3. On models with timer, connect jumper wire between battery positive lead and defogger switch terminal No. 2. Connect another jumper wire between ground and terminal No. 3. Connect a 3.4-watt test light between battery positive and terminal No. 6. See **Fig. 10** . Turn defogger switch to ON position. Ensure indicator light and test light come on for 12-18 minutes and then go out. If defogger switch with timer does not operate as specified, replace switch.

## 1999 Toyota RAV4

### 1999-2000 ACCESSORIES & EQUIPMENT Rear Window & Mirror Defoggers

Disconnect defogger switch 10-pin connector. Check continuity between defogger switch terminals No. 7 and 10. See **Fig. 14** . With defogger switch in ON position, continuity should exist. If continuity is not as specified, replace integration control panel.



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**Fig. 14: Identifying Defogger Switch Terminals (4Runner)**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

### REARVIEW MIRROR DEFOGGER

#### 1999 Avalon

Locate and disconnect outside rearview mirror 6-pin connector. Connect a jumper wire between battery positive and terminal No. 6 (Black/Red wire). Connect another jumper wire between ground and terminal No. 4 (White/Black wire). After a short time, ensure mirror becomes warm. If mirror does not become warm, replace mirror assembly.

#### 2000 Avalon (With Memory)

Disconnect outside rearview mirror harness connector. Connect a jumper wire between battery positive and rearview mirror connector terminal No. 5 (Black wire). Connect another jumper wire between ground and rearview mirror connector terminal No. 10 (White/Black wire). After a short time, mirror should warm. If mirror does not warm, replace mirror assembly.

## 1999 Toyota RAV4

### 1999-2000 ACCESSORIES & EQUIPMENT Rear Window & Mirror Defoggers

#### 2000 Avalon (Without Memory)

Disconnect outside rearview mirror harness connector. Connect a jumper wire between battery positive and rearview mirror connector terminal No. 3 (Black wire). Connect another jumper wire between ground and rearview mirror connector terminal No. 6 (White/Black wire). After a short time, mirror should warm. If mirror does not warm, replace mirror assembly.

#### Camry & Camry Solara

Locate and disconnect outside rearview mirror 6-pin connector. Connect a jumper wire between battery positive and Black/Yellow wire at mirror connector. See **WIRING DIAGRAMS** . Connect another jumper wire between ground and White/Black wire at mirror connector. After a short time, ensure mirror becomes warm. If mirror does not become warm, replace mirror assembly.

#### Land Cruiser

Locate and disconnect outside rearview mirror 16-pin connector. Connect a jumper wire between battery positive and terminal No. 5 (Red/White wire). Connect another jumper wire between ground and terminal No. 12 (White/Black wire). After a short time, ensure mirror becomes warm. If mirror does not become warm, replace mirror assembly.

#### Sienna

Locate and disconnect outside rearview mirror 6-pin connector. Connect a jumper wire between battery positive and terminal No. 6 (Black/White wire). Connect another jumper wire between ground and terminal No. 4 (White/Black wire). See **WIRING DIAGRAMS** . After a short time, ensure mirror becomes warm. If mirror does not become warm, replace mirror assembly.

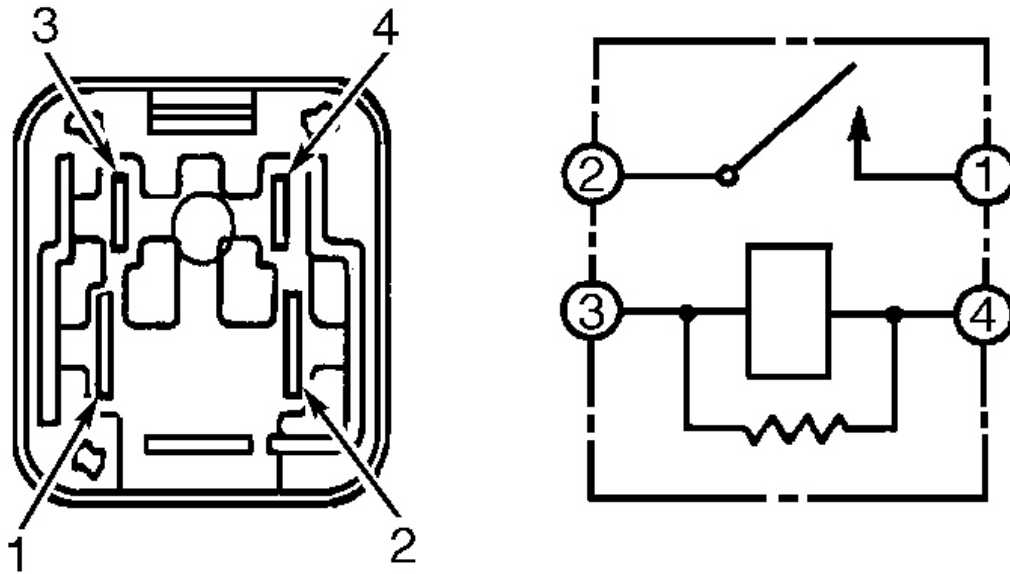
#### 4Runner

Locate and disconnect mirror 6-pin connector. Connect a jumper wire between battery positive and terminal No. 3 (Green/Black wire). Connect another jumper wire between ground and terminal No. 2 (White/Black wire). After a short time, ensure mirror becomes warm. If mirror does not become warm, replace mirror assembly.

## DEFOGGER RELAY

#### 2000 Avalon

Check continuity between terminals No. 3 and 4. See **Fig. 15** . Continuity should exist. Using jumper wires, apply battery voltage between terminals No. 3 and 4. Check continuity between terminals No. 1 and 2. Continuity should exist. Remove jumper wires. Continuity should not exist. Replace relay if continuity is not as specified.

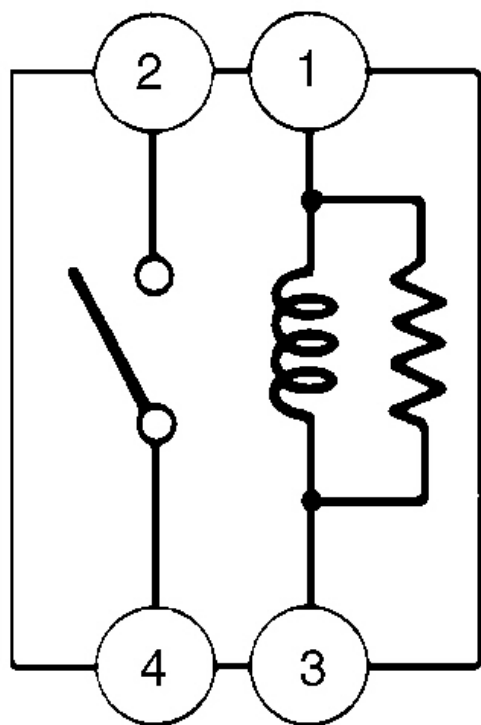


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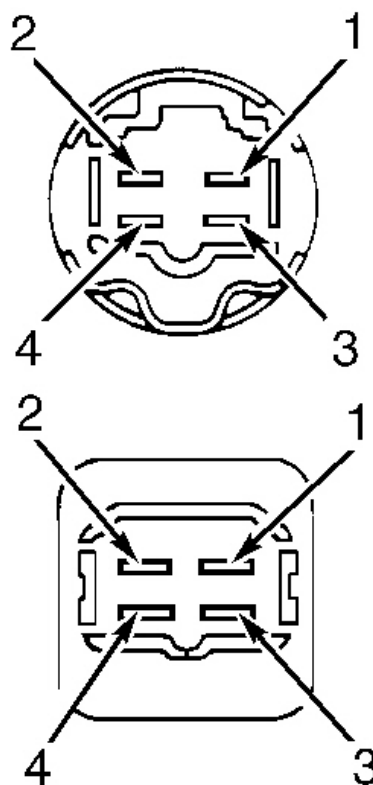
**Fig. 15: Testing Defogger Relay (2000 Avalon)**  
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

**Terrel**

1. Using an ohmmeter, ensure continuity exists between terminals No. 1 and 3. See **Fig. 16** . Continuity should not exist between terminals No. 2 and 4. If continuity is not as specified, replace relay.
2. Connect battery positive lead to terminal No. 1 and battery negative lead to terminal No. 3. Continuity should exist between terminals No. 2 and 4. If operation is not as specified, replace relay.



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**Fig. 16: Testing Defogger Relay (Tercel)**

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

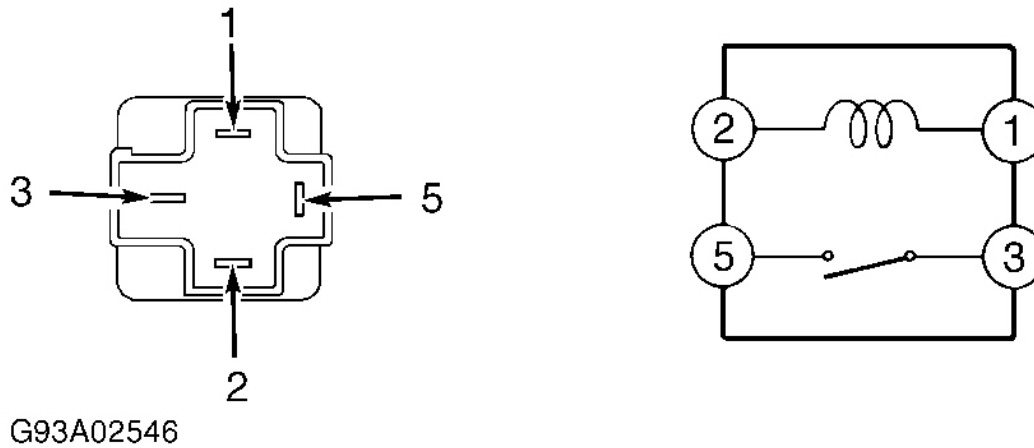
Except Tercel & 2000 Avalon

**NOTE:** Testing for Land Cruiser mirror heater relay is the same as testing for defogger relay.

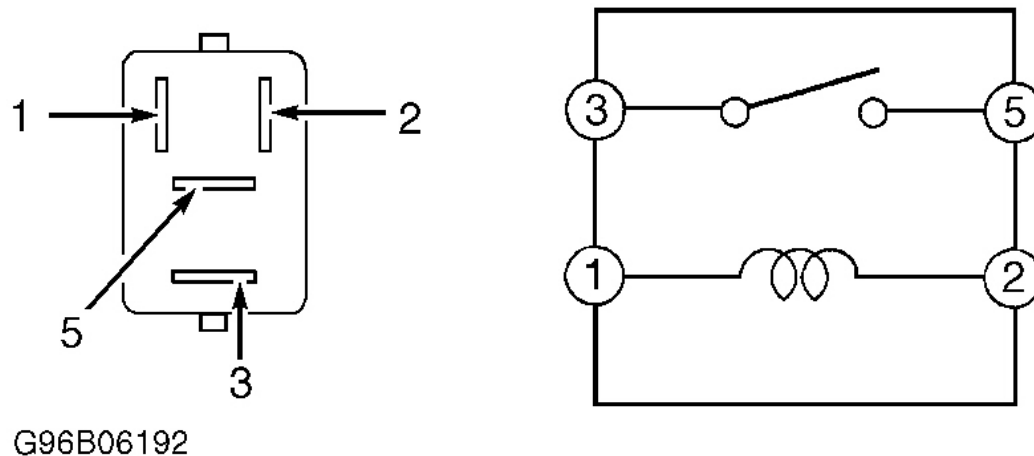
1. Using an ohmmeter, ensure continuity exists between terminals No. 1 and 2. See **Fig. 17** or **Fig. 18** . Continuity should not exist between terminals No. 3 and 5. If continuity is not as specified, replace relay.
2. Connect battery positive lead to terminal No. 1 and battery negative lead to terminal No. 2. Continuity should exist between terminals No. 3 and 5. If operation is not as specified, replace relay.

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**Fig. 17: Testing Defogger Relay (1999 Avalon & 1999 Celica)**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



**Fig. 18: Testing Defogger Relay (Camry, Camry Solara, 2000 Celica, Corolla, ECHO, Land Cruiser, MR2, Sienna & 4Runner)**  
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

### GRID FILAMENT TEST

**NOTE:** When testing grid wires with voltmeter, wrap aluminum foil around end of test probe, then press foil to grid wire. This will prevent probe from damaging grid

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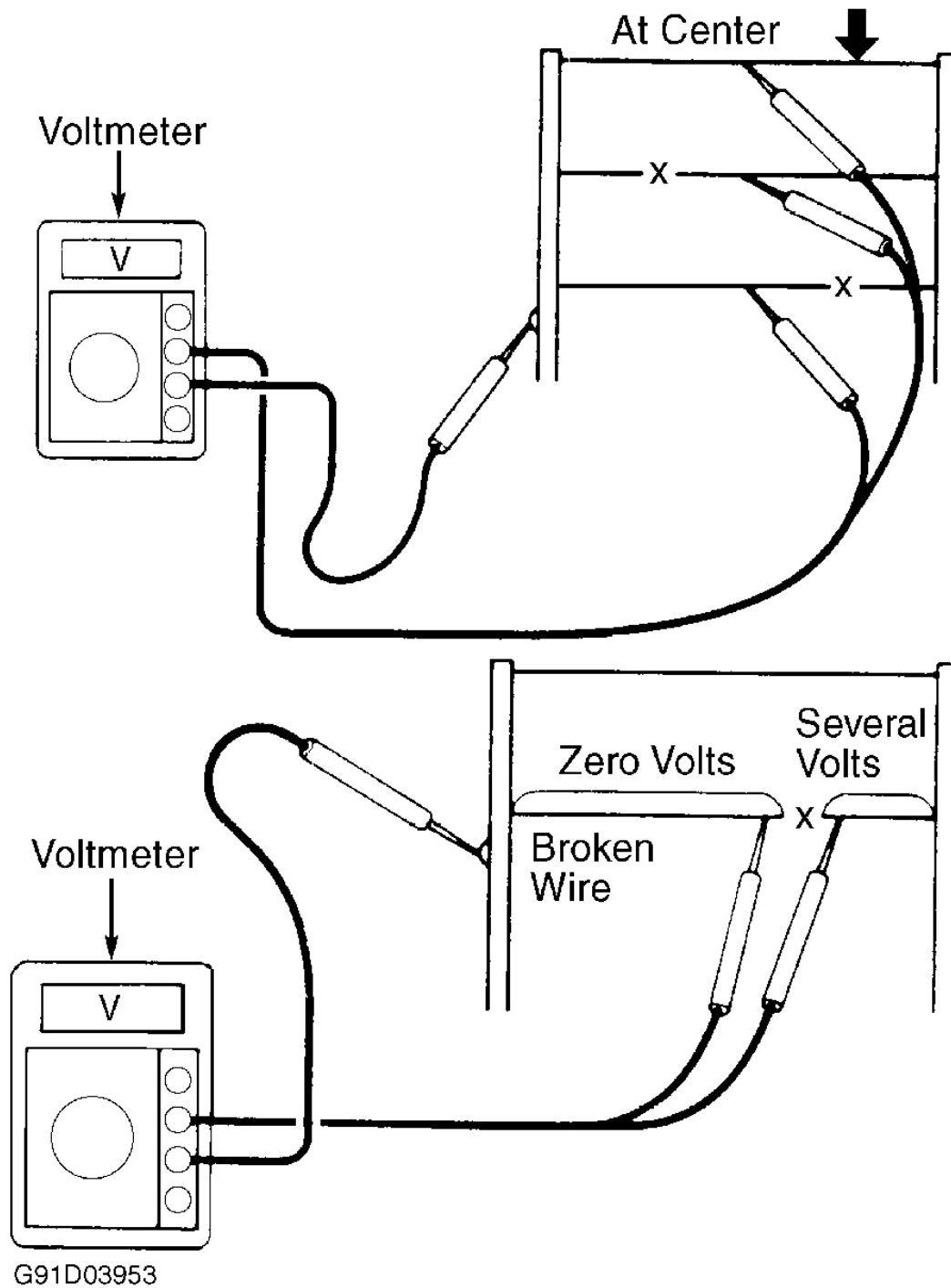
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#### **wire.**

1. To locate breaks in grid wire filaments, attach a voltmeter to middle portion of each filament. Attach other meter probe to vertical section of window grid. See **Fig. 19** .
2. If a grid is broken, meter will register zero volts or about 10 volts, depending on if grid is broken between or outside test leads. If wire is unbroken, meter will register about 5 volts. To locate break, move probe along wire until voltage changes abruptly.

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**Fig. 19: Testing Grid Filament**

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WIRING DIAGRAMS

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**Fig. 20: Rear Window Defogger System Wiring Diagram (1999 Avalon)**

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**Fig. 21: Rear Window Defogger System Wiring Diagram (1999 Camry)**

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**Fig. 22: Rear Window Defogger System Wiring Diagram (1999 Celica)**

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**Fig. 23: Rear Window Defogger System Wiring Diagram (1999-2000 Camry Solara)**

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**Fig. 24: Rear Window Defogger System Wiring Diagram (1999-2000 Corolla)**

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**Fig. 25: Rear Window Defogger System Wiring Diagram (1999-2000 Land Cruiser)**

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**Fig. 26: Mirror Defogger System Wiring Diagram (1999-2000 Land Cruiser)**

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**Fig. 27: Rear Window Defogger System Wiring Diagram (1999-2000 RAV4)**

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**Fig. 28: Rear Window Defogger System Wiring Diagram (1999-2000 Sienna)**

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**Fig. 29: Rear Window Defogger System Wiring Diagram (1999-2000 4Runner)**

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**Fig. 30: Rear Window Defogger System Wiring Diagram (2000 Avalon)**

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**Fig. 31: Rear Window Defogger System Wiring Diagram (2000 Camry 2.2L & 3.0L)**

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**Fig. 32: Rear Window Defogger System Wiring Diagram (2000 Camry 2.2L CNG)**

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**Fig. 33: Rear Window Defogger System Wiring Diagram (2000 Celica)**

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**Fig. 34: Rear Window Defogger System Wiring Diagram (2000 ECHO)**

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**Fig. 35: Rear Window Defogger System Wiring Diagram (2000 MR2)**