

# DEFOGGER - REAR WINDOW & MIRROR

1996 Toyota Supra

1995-96 ACCESSORIES & EQUIPMENT  
Toyota Rear Window & Mirror Defoggers

Supra

## DESCRIPTION & OPERATION

**NOTE:** Some systems use an integrated or multipurpose relay as defogger relay. Some systems use a timer between switch and heating grid, and some use only a switch and heating grid.

Rear window defogger systems use a heating wire grid bonded to the inside of window. Heat is regulated by a control switch and a relay/timer. Most systems have an indicator light to show system is operating.

Power to the control switch is through a fuse in the fuse block. Timer relay will keep power to the grid for 12-18 minutes, or until the ignition is turned off. Supra models are also available with an outside rearview mirror heater/defogger.

## TROUBLE SHOOTING

### DEFOGGER DOES NOT WORK

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.

## TESTING (REAR WINDOW DEFOGGERS)

### SYSTEM TESTING

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.

### SWITCH TEST

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1) Defogger switch is part of heater control switch. Locate A/C-heater control switch Orange 14-pin "B" connector and ensure it is connected. See Fig. 1. Using voltmeter positive lead, backprobe connector terminal No. 7 (Pink/Black wire). Using voltmeter negative lead, backprobe "B" connector terminal No. 10 (Red/White wire). Ensure battery voltage exists with defogger switch in OFF position. Turn switch to ON position. Ensure indicator light is on and less than one volt exists between connector terminals No. 7 and 10. After 15 minutes, ensure defogger switch is off and battery voltage is again present. If voltage is not as specified, go to next step.

2) Disconnect A/C-heater control switch Orange 14-pin connector. Turn defogger switch to ON position. Ensure continuity

exists between switch terminals No. 7 and 10. If continuity is not present, repair or replace A/C-heater control switch.

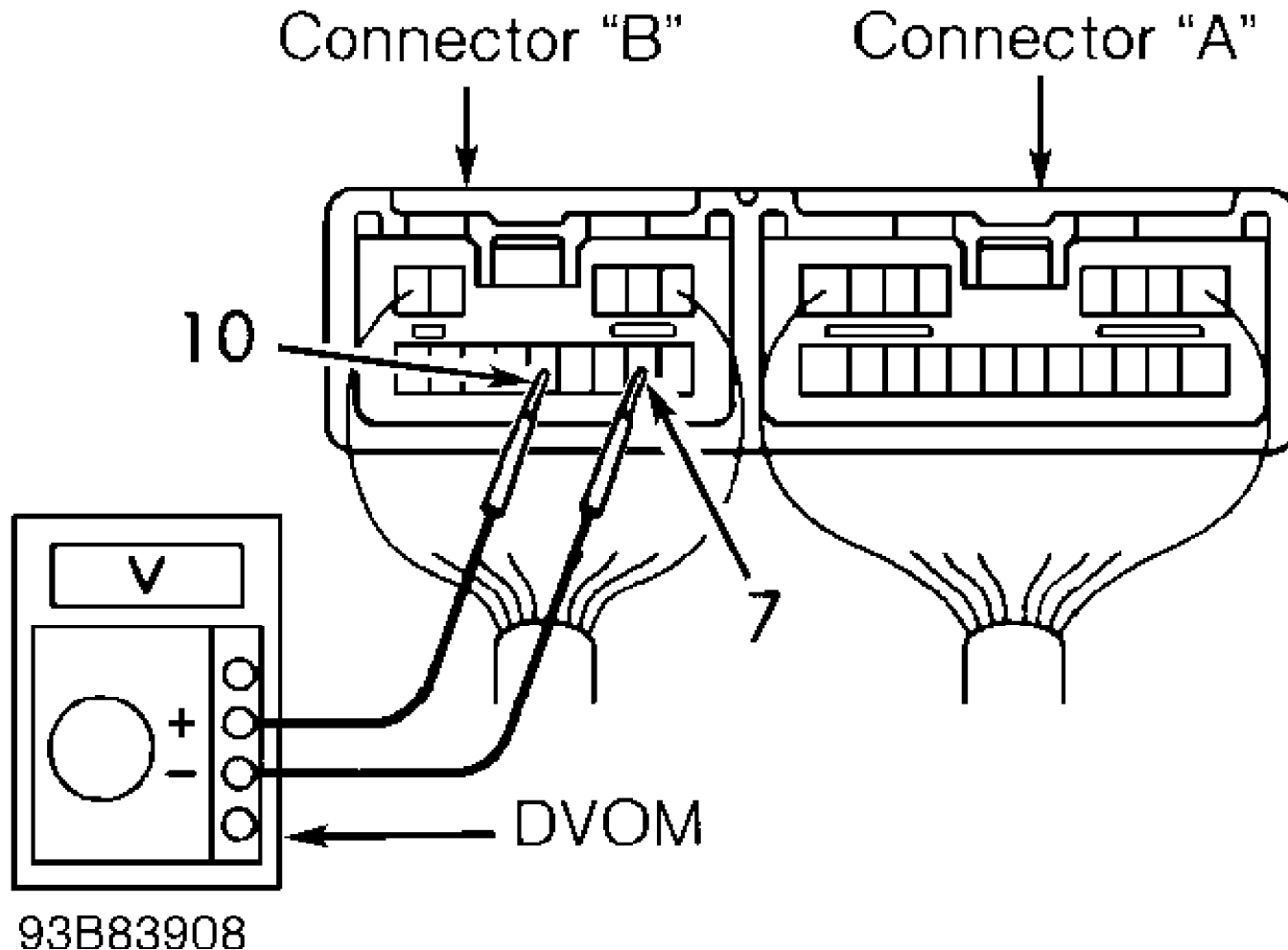


Fig. 1: Testing Defogger Switch  
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

### RELAY TEST

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1) Using an ohmmeter, ensure continuity exists between terminals No. 1 and 2. See Fig. 2. 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.

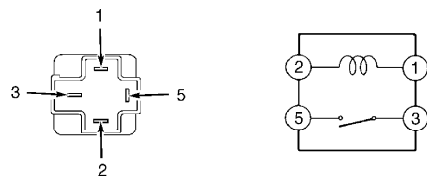


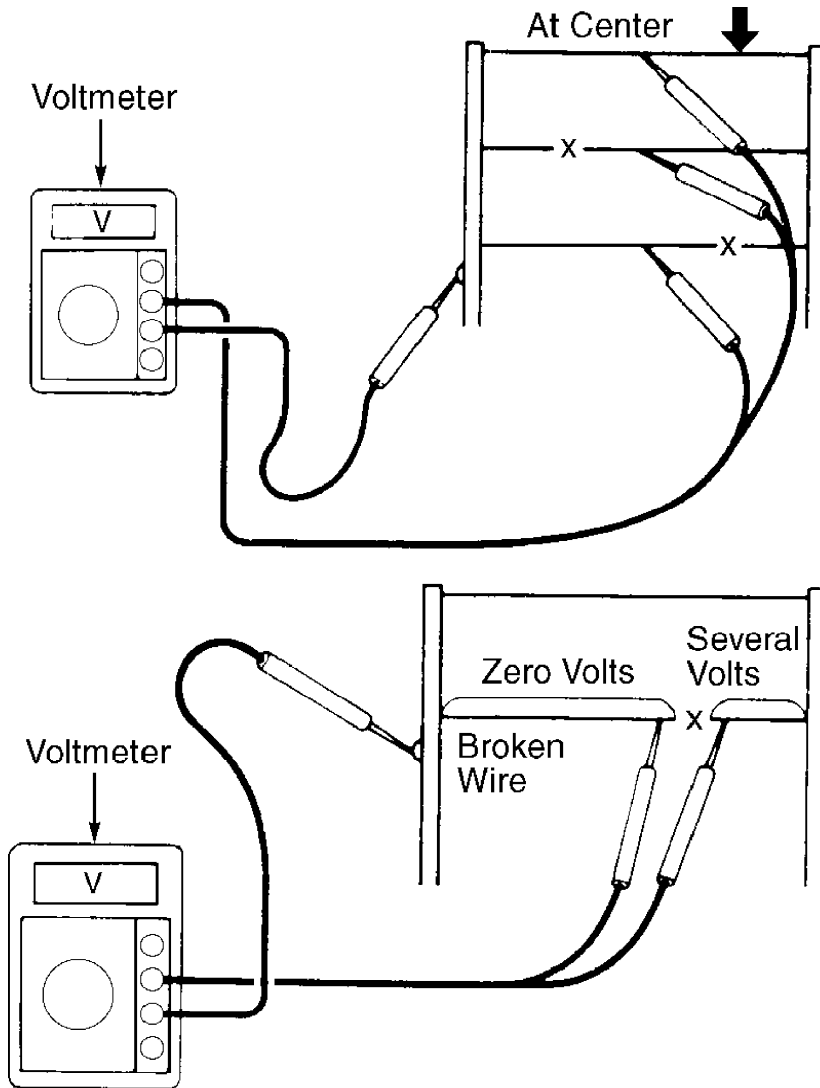
Fig. 2: Testing Defogger Relay  
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

## GRID FILAMENT TESTING

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 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. 3.

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. 3: Testing Grid Filament  
Courtesy of Toyota Motor Sales, U.S.A., Inc.

## TESTING (OUTSIDE REARVIEW MIRROR DEFOGGERS)

#### Rearview Mirror Defogger Operation

Locate and disconnect outside rearview mirror 5-pin connector. Connect battery positive lead to terminal No. 2 (Blue/Red wire), and battery negative lead to terminal No. 1 (White/Black wire). After a short time, ensure mirror becomes warm. If mirror does not become warm, replace mirror assembly.

#### Rearview Mirror Defogger Circuit

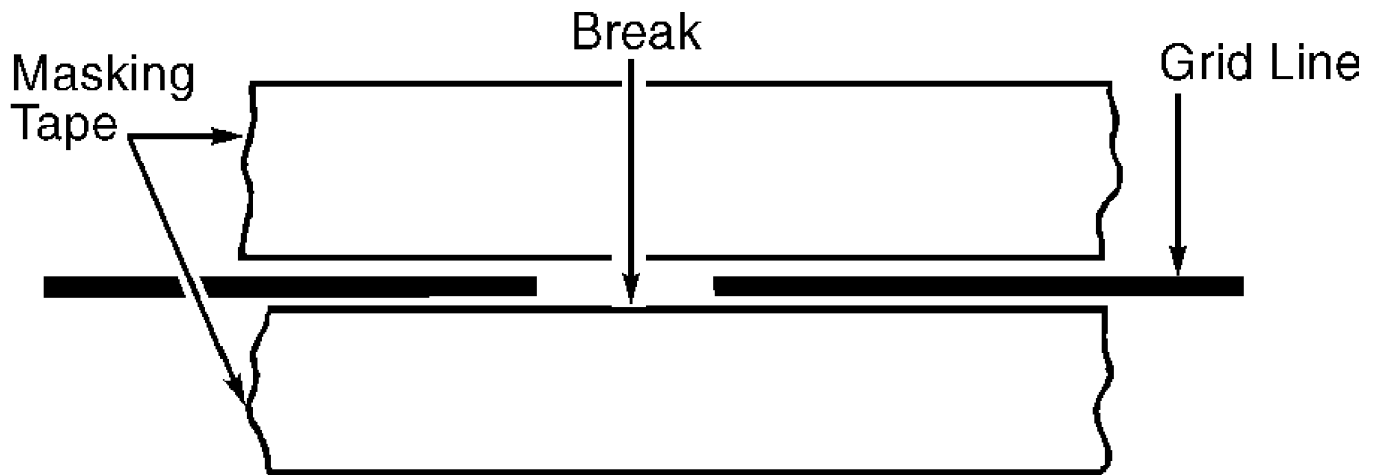
1) Locate and disconnect outside rearview mirror 5-pin connector. Ensure continuity exists between ground and 5-pin harness side connector terminal No. 1 (White/Black wire). If continuity is present, go to next step.

2) Turn ignition on and defogger switch off. Ensure no voltage exists between ground and 5-pin harness side connector terminal No. 2 (Blue/Red wire). Turn ignition switch on and defogger switch on. Ensure battery voltage exists between ground and 5-pin harness side connector terminal No. 2 (Blue/Red wire). If harness side circuit is not as specified, inspect other related components and/or harnesses.

## ON-VEHICLE SERVICE

### GRID FILAMENT REPAIR

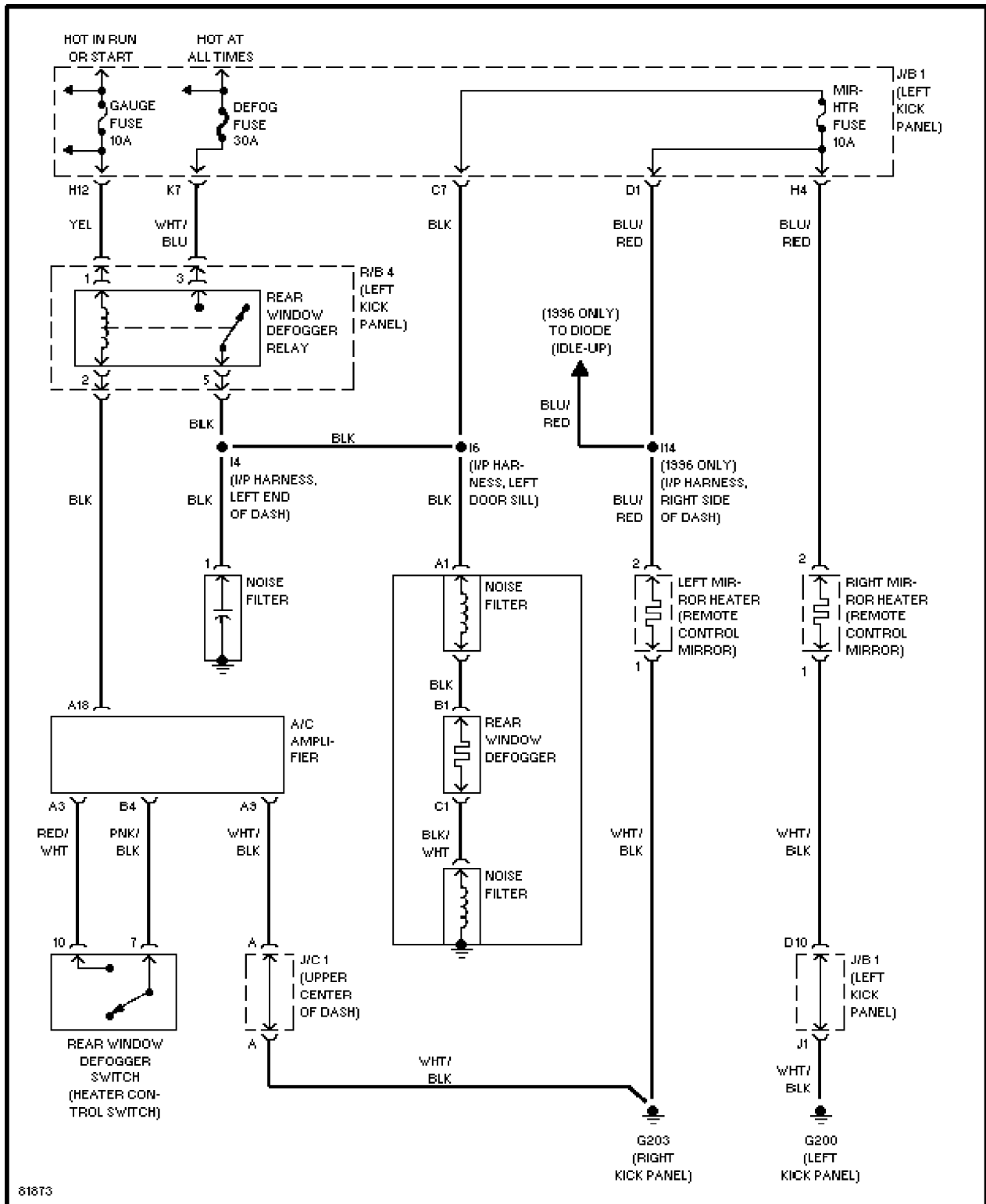
Clean broken wire tips thoroughly. Place masking tape along both sides of broken section. See Fig. 4. Apply Repair Paste (DuPont 4817) to broken section of grid. Remove masking tape after paste has dried. Wait 24 hours before using defogger.



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Fig. 4: Repairing Rear Defogger Grid Filament  
Courtesy of Toyota Motor Sales, U.S.A., Inc.

## WIRING DIAGRAMS



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Fig. 5: Rear Window & Mirror Defogger System Wiring Diagram (1995-96)