

1999 Toyota RAV4

1999 ACCESSORIES & EQUIPMENT Steering Column Switches - Trucks

1999 ACCESSORIES & EQUIPMENT

Steering Column Switches - Trucks

DESCRIPTION

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.

Headlight and turn signal switch (left side of column) and wiper/washer switch (right side of column) are part of the combination switch. Lever for tilt steering (if equipped) is on left side of column.

COMPONENT TESTS

NOTE: For information on cruise control switch (right side of column), see appropriate **CRUISE CONTROL SYSTEMS** article.

HEADLIGHT, DIMMER & PASSING SWITCHES

With headlight switch in specified position, check continuity between specified terminals of headlight switch connectors. See **HEADLIGHT SWITCH CONTINUITY TEST** table and/or **DIMMER & PASSING SWITCHES CONTINUITY TEST** table. For switch terminal locations, see **Fig. 1** . If continuity is not as specified, replace headlight switch.

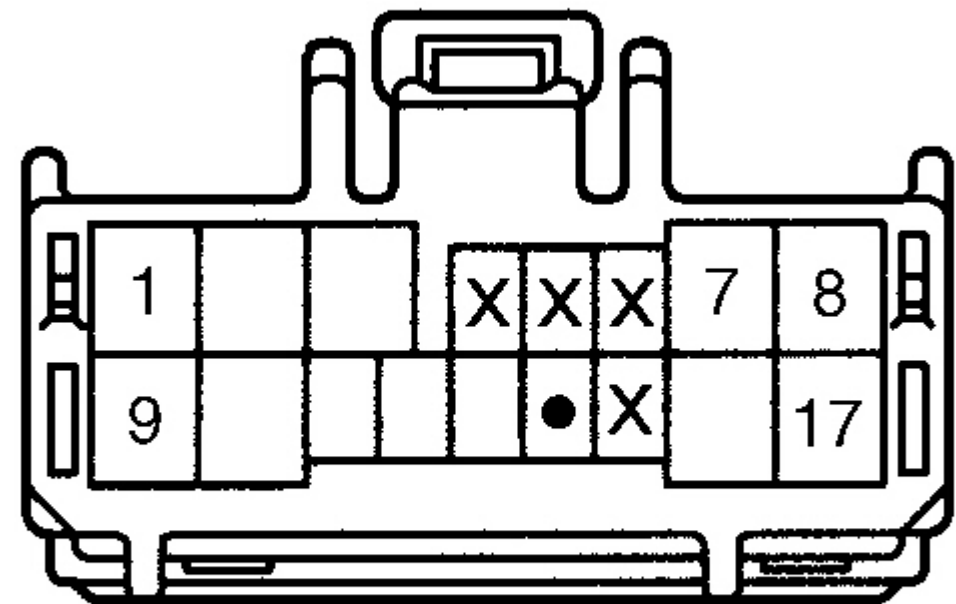
HEADLIGHT SWITCH CONTINUITY TEST

Application & Switch Position	(1) Terminals No.	Continuity
Land Cruiser, Sienna, RAV4, Tacoma & 4Runner		
OFF	None	No
TAIL	14 & 16	Yes
HEAD	13, 14 & 16	Yes
With AUTO (2)	12 & 16	Yes
(1) See Fig. 1 .		
(2) Land Cruiser and Sienna only.		

DIMMER & PASSING SWITCHES CONTINUITY TEST (ALL MODELS)

Switch Position	(1) Terminals No.	Continuity
High Beam	7 & 16	Yes
Low Beam	16 & 17	Yes
Passing	7, 8 & 16	Yes

(1) See **Fig. 1** .



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Fig. 1: Identifying Combination Switch Connector Terminals
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HEADLIGHT CONTROL RELAY

Remove headlight control relay. See **HEADLIGHT CONTROL RELAY LOCATION** table. Continuity should exist between relay terminals No. 3 and 4 at all times. See **Fig. 2** . Continuity should not exist between relay terminals No. 1 and 2. Apply battery voltage across relay terminals No. 3 and 4. Continuity should now exist between relay terminals No. 1 and 2. If continuity is not as specified, replace relay.

HEADLIGHT CONTROL RELAY LOCATION

Application	Location
Sienna	Left Side Of Engine Compartment, In Junction Block No. 2
Except Sienna	Left Side Of Engine Compartment, In Relay Block

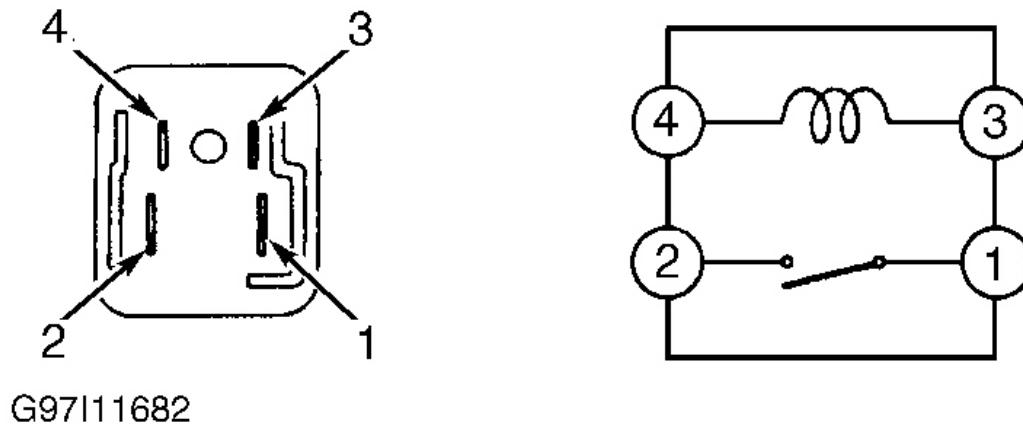


Fig. 2: Identifying Headlight Control Relay Terminals
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HEADLIGHT DIMMER RELAY

NOTE: For Land Cruiser, use testing procedure for headlight control relay. See HEADLIGHT CONTROL RELAY . Tundra without Daytime Running Lights (DRL) does not use headlight dimmer relay.

Except Land Cruiser & Tundra Without DRL

Remove dimmer relay located on left side of engine compartment, in relay block No. 2. Continuity should exist between relay terminals No. 1 and 4, and 2 and 4 at all times. For relay terminal locations, see Fig. 3 . Continuity should not exist between relay terminals No. 3 and 4. Apply battery voltage across relay terminals No. 2 and 4. Continuity should now exist between relay terminals No. 3 and 4. If continuity is not as specified, replace relay.

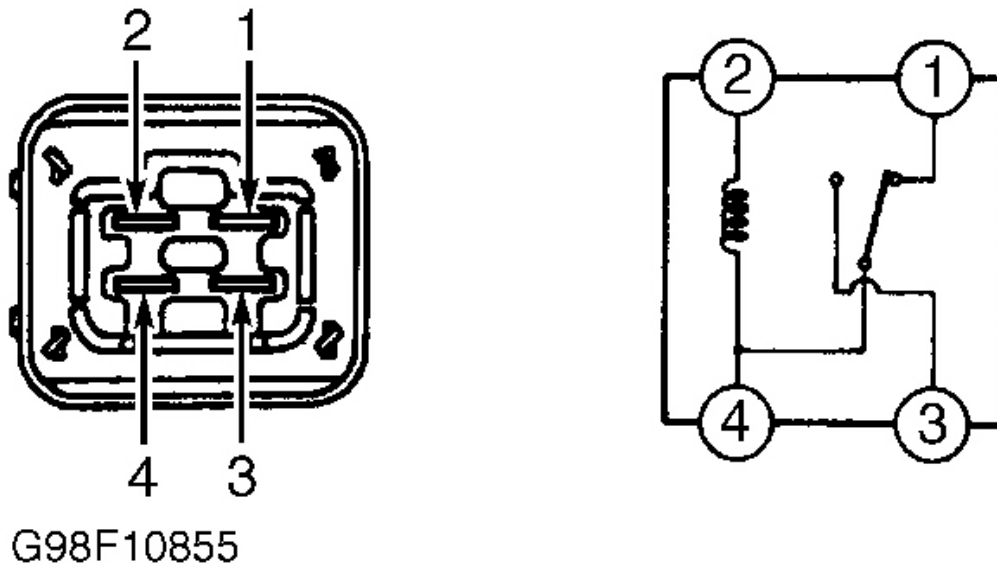


Fig. 3: Headlight Dimmer Relay Terminals (Except Land Cruiser & Tundra Without DRL)
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TAILLIGHT CONTROL RELAY

NOTE: Tundra uses an integration relay instead of taillight relay. Integration relay testing information is not available. 4Runner does not use a taillight relay.

Remove taillight control relay. See **TAILLIGHT CONTROL RELAY LOCATION** table. Continuity should exist between relay terminals No. 1 and 2 at all times. See **Fig. 4** or **Fig. 5**. Apply battery voltage across specified terminals of relay connector. See **TAILLIGHT CONTROL RELAY TEST** table. Check for continuity between other specified terminals. If there is no continuity, replace relay.

TAILLIGHT CONTROL RELAY LOCATION

Application	Location
Land Cruiser & RAV4	Behind Left Kick Panel, In Junction Block No. 1
Sienna	Under Left Side Of Dash, In Junction Block No. 1
Tacoma	Left Side Of Engine Compartment, In Relay Block No. 2

TAILLIGHT CONTROL RELAY TEST

Application	(1) Apply Voltage To Terminals No.	(1) Continuity Between Terminals No.

1999 Toyota RAV4

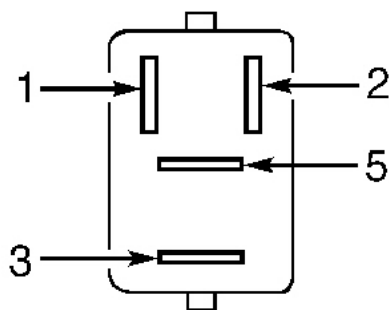
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All Models

1 & 2

3 & 5

(1) For relay terminal locations, see **Fig. 4** or **Fig. 5**.



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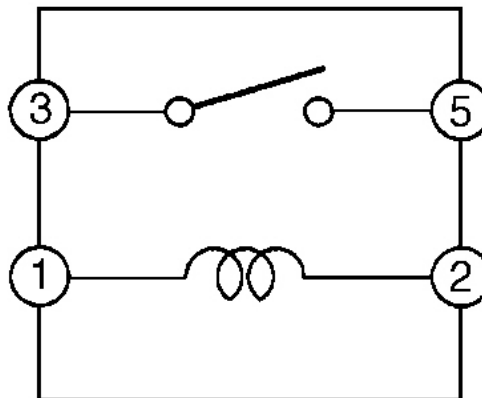
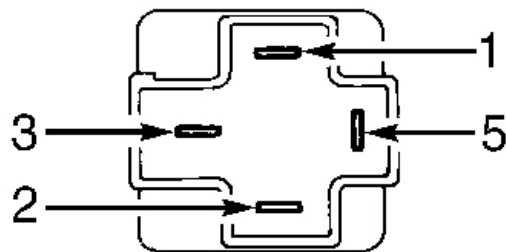


Fig. 4: Taillight Control Relay Terminals (Land Cruiser & Sienna)

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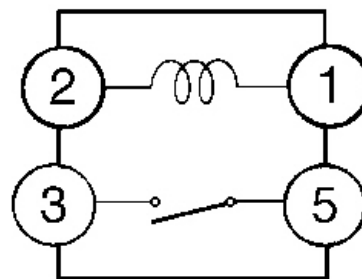


Fig. 5: Taillight Control Relay Terminals (RAV4 & Tacoma)

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HORN SWITCH

NOTE: On RAV4 and Tundra, integration relay operates horn. Testing is not available.

1999 Toyota RAV4

1999 ACCESSORIES & EQUIPMENT Steering Column Switches - Trucks

4Runner uses body ECU to control horn operation. See ANTI-THEFT SYSTEMS - 4RUNNER article.

1. Disconnect combination switch connector. With horn pad pressed and held down (horn ON), check continuity between appropriate wire terminal of combination switch connector. See **Fig. 1** . See appropriate wiring diagram in **WIRING DIAGRAMS** .
2. If there is no continuity, repair wiring or replace components as necessary. Components include horn pad and contact pin, slip ring and spiral cable. If there is continuity, check for open in horn circuit, faulty horn or faulty horn relay. See **HORN RELAY LOCATION** table.

HORN RELAY LOCATION (EXCEPT RAV4, TUNDRA & 4RUNNER)

Application	Location
Land Cruiser	Left Side Of Engine Compartment, In Junction Block
Sienna	Left Side Of Engine Compartment, In Junction Block No. 2
Tacoma	Behind Left Kick Panel, In Junction Block No. 1

IGNITION SWITCH

Disconnect ignition switch connector. With ignition switch in specified position, check continuity between specified terminals of ignition switch connector. For switch terminal locations, see **Fig. 6** . Also see **IGNITION SWITCH CONTINUITY TEST** table. If continuity is not as specified, replace ignition switch.

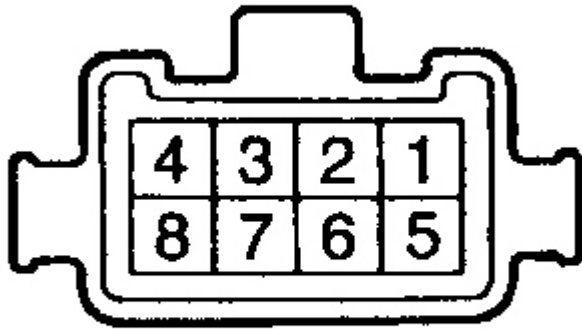
IGNITION SWITCH CONTINUITY TEST

Switch Position	(1) Terminals No.	Continuity
LOCK	None	No
ACC	2 & 3	Yes
ON	2, 3 & 4; 6 & 7	Yes
START	1, 2 & 4; 6, 7 & 8	Yes

(1) For switch terminal locations, see **Fig. 6** .

1999 Toyota RAV4

1999 ACCESSORIES & EQUIPMENT Steering Column Switches - Trucks



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Fig. 6: Identifying Ignition Switch Connector Terminals

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KEY UNLOCK WARNING SWITCH

Disconnect key unlock switch 2-pin connector. Check continuity between both terminals of connector. Continuity should be present with ignition switch in ON position. There should be no continuity with key removed from lock cylinder. If continuity is not as specified, replace key unlock switch.

TURN SIGNAL SWITCH

Disconnect combination switch connector. With turn signal switch in specified position, check continuity between specified terminals of combination switch connector. For switch terminal locations, see **Fig. 1** . Also see **TURN SIGNAL SWITCH CONTINUITY TEST** table. If continuity is not as specified, replace turn signal switch.

TURN SIGNAL SWITCH CONTINUITY TEST

Application & Switch Position	(1) Terminals No.	Continuity
Land Cruiser		
Left	7 & 8	Yes
Neutral	None	No
Right	6 & 7	Yes
RAV4, Sienna, Tacoma, Tundra & 4Runner		
Left	1 & 2	Yes
Neutral	None	No
Right	2 & 3	Yes

1999 Toyota RAV4

1999 ACCESSORIES & EQUIPMENT Steering Column Switches - Trucks

(1) For switch terminal locations, see **Fig. 1** .

TURN SIGNAL FLASHER

NOTE: Testing for Tundra is not available.

Except Land Cruiser & Tundra

Remove turn signal flasher. See **TURN SIGNAL FLASHER LOCATION** table. At turn signal flasher terminals, connect positive battery lead to terminal No. 2. See **Fig. 7** . Connect negative battery lead to terminal No. 3. Connect 2 turn signal bulbs in parallel between terminal No. 1 and negative battery terminal. Replace turn signal flasher if bulbs do not flash 60-120 times per minute.

TURN SIGNAL FLASHER LOCATION

Application	Location
Land Cruiser	Behind Dash Panel, Left Of Steering Column
RAV4	Behind Left Kick Panel In Relay Block No. 5
Sienna, Tacoma, Tundra & 4Runner	Driver-Side Junction Block No. 1

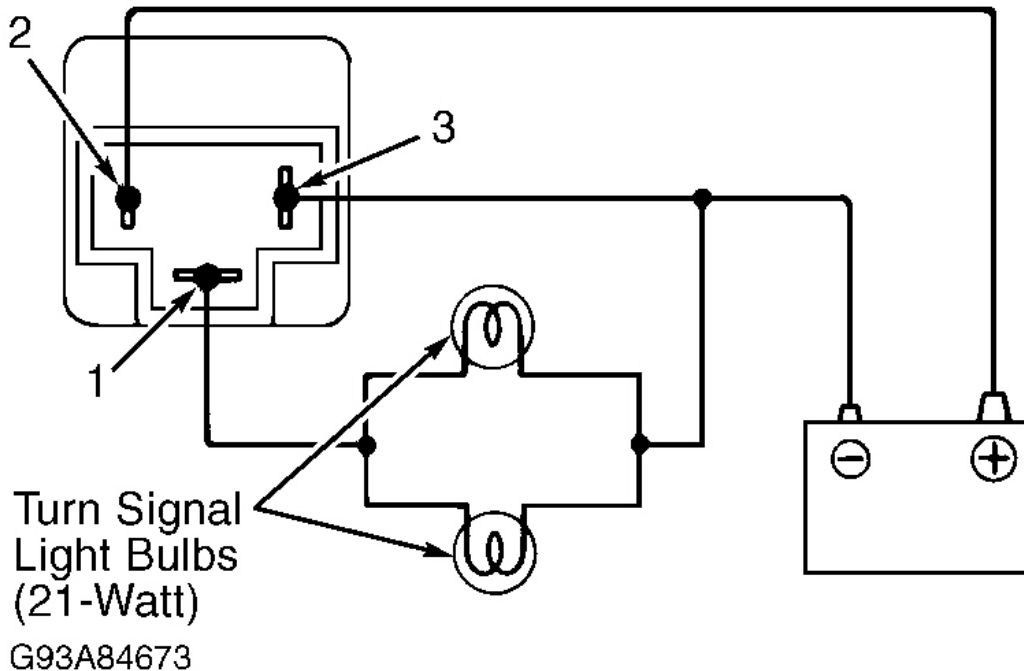


Fig. 7: Testing Turn Signal Flasher (Except Land Cruiser & Tundra)

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1999 Toyota RAV4

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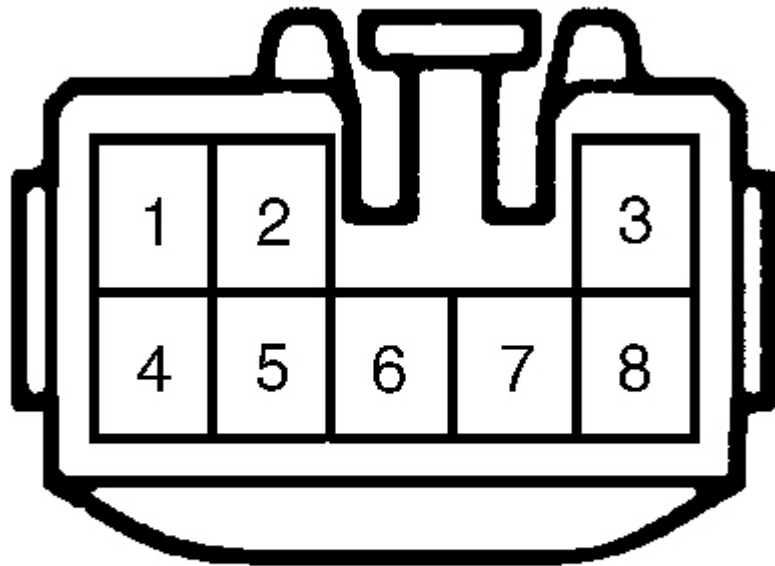
TURN SIGNAL FLASHER CIRCUIT

Land Cruiser & Tundra

Disconnect 8-pin connector from turn signal flasher. Using a DVOM, check continuity between terminal specified and ground. See **TURN SIGNAL FLASHER CIRCUIT TEST TABLE (LAND CRUISER & TUNDRA)** . If readings are as specified, replace relay. If circuits are not as specified, repair as necessary. See EXTERIOR LIGHTS article.

TURN SIGNAL FLASHER CIRCUIT TEST (LAND CRUISER & TUNDRA)

Terminal No. ⁽¹⁾	Switch Position	Reading
2	All	Continuity
3	All	Continuity
5	Right T/S Or Off	No Continuity
5	Left T/S	Continuity
6	Left T/S Or Off	No Continuity
6	Right T/S	Continuity
7	All	Continuity
8	Hazard OFF	No Continuity
8	Hazard ON	Continuity
1	Ignition Switch In LOCK/ACC Position	No Voltage
1	Ignition Switch In ON Position	Battery Voltage
4	All	Battery Voltage
(1) See Fig. 8 .		



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Fig. 8: Turn Signal Flasher Connector Terminals (Land Cruiser & Tundra)
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WIPER/WASHER SWITCH

NOTE: See appropriate WIPER/WASHER SYSTEMS article.

REMOVAL & INSTALLATION

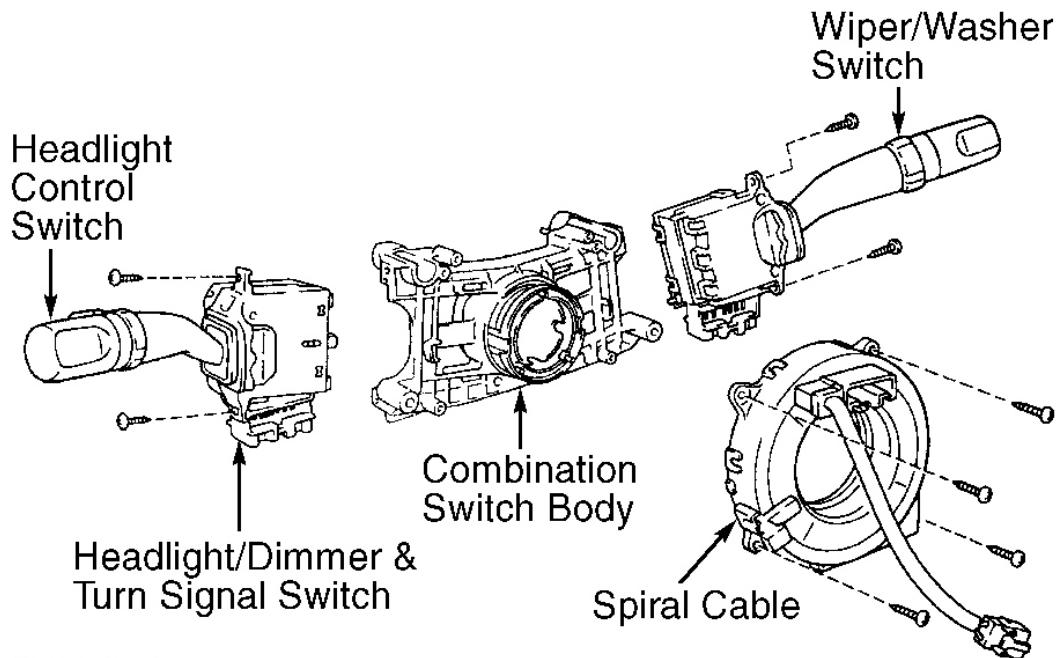
WARNING: Deactivate air bag system before performing any service operation. See AIR BAG RESTRAINT SYSTEMS article. DO NOT apply electrical power to any component on steering column without first deactivating air bag system. Air bag may deploy.

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. Before disconnecting battery, see appropriate COMPUTER RELEARN PROCEDURES article in GENERAL INFORMATION.

COMBINATION SWITCH

Removal & Installation

Disconnect negative battery cable. Remove steering column covers (it may be necessary to first remove lower finish panel from instrument panel). Disconnect headlight/dimmer and turn signal switch connector. Remove screws and headlight/dimmer and turn signal switch. See **Fig. 9** . To install, reverse removal procedure.



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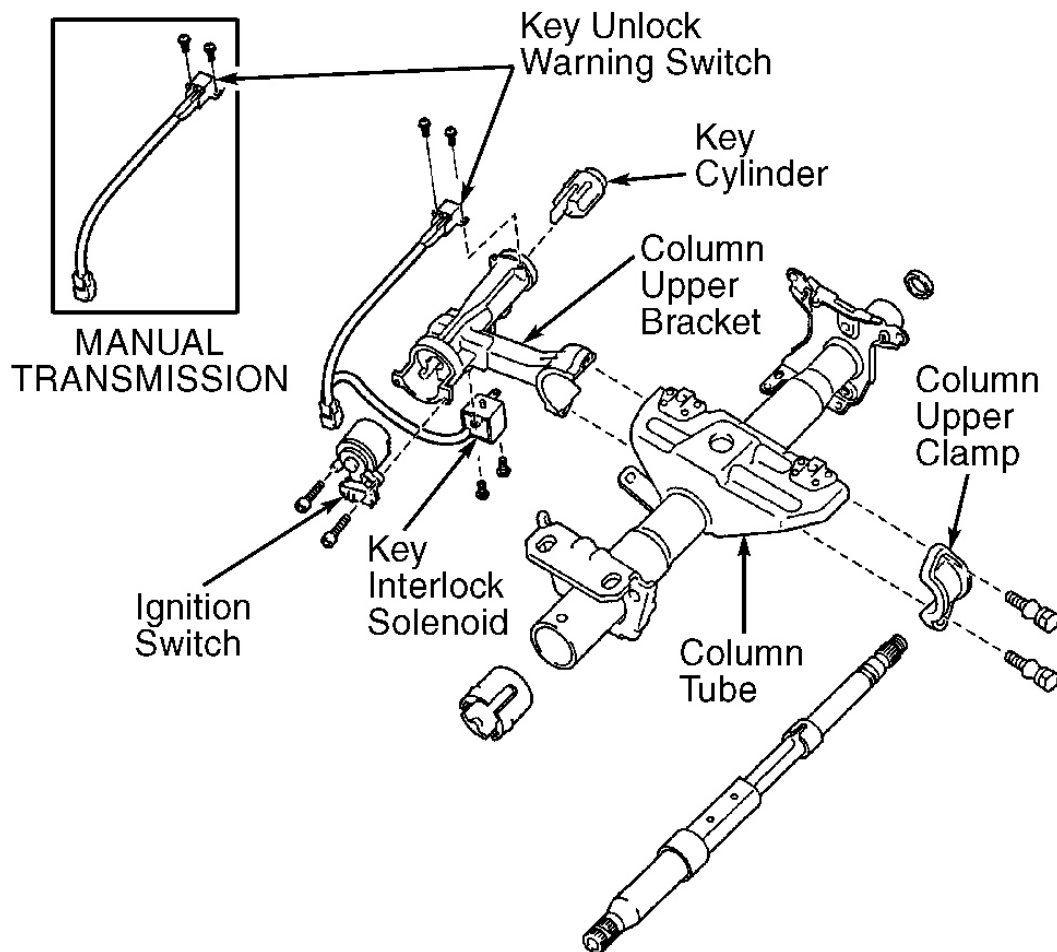
Fig. 9: Exploded View Of Combination Switch

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

IGNITION SWITCH

Removal & Installation

1. Disconnect negative battery cable. Remove upper and lower steering column covers (it may be necessary to first remove lower instrument panel trim panel). Remove outer plastic trim cover from lock cylinder assembly (if equipped).
2. Disconnect ignition switch electrical connector(s). Remove screw(s) retaining ignition switch to lock cylinder. See **Fig. 10** . Remove ignition switch from lock cylinder. To install, reverse removal procedure.



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Fig. 10: Exploded View Of Ignition Switch (Typical)
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STEERING WHEEL

Removal

1. Ensure front wheels are in straight-ahead position. Turn ignition switch to LOCK position. Remove key. Disconnect negative battery cable. Wait 90 seconds before servicing steering wheel. Remove 2 screw covers from outer sides of steering wheel. Using Torx Wrench (T30), loosen horn pad screws until screw head is snug against screw case. See **Fig. 11**.
2. Carefully pull steering wheel pad away from steering wheel enough to unlock and disconnect air bag electrical connector. DO NOT pull on electrical connector or wiring. Store air bag pad aside with pad facing upward.
3. Remove steering wheel lock nut and washer from steering shaft. Make alignment mark on steering shaft

and steering wheel for installation reference. Using appropriate steering wheel puller, pull steering wheel from shaft while guiding spiral cable wire through steering wheel opening.

Installation

1. Ensure front wheels are in straight-ahead position. Install spiral cable on combination switch body. Turn spiral cable counterclockwise by hand until it is hard to turn. Turn spiral cable clockwise about 2 1/2-3 turns, aligning marks on spiral cable.
2. Install steering wheel, guiding spiral cable through opening in steering wheel. Align reference marks on steering shaft and steering wheel. Tighten steering wheel nut to specification. See **TORQUE SPECIFICATIONS** table.
3. Connect air bag module electrical connector. Close connector lock. Ensure air bag module Torx screws are retracted and snug against screw case. See **Fig. 11** .
4. Install air bag module, ensuring wiring is not pinched and does not interfere with other moving parts. Tighten air bag module Torx screws to specification. See **TORQUE SPECIFICATIONS** table. Install screw covers. Connect negative battery cable.

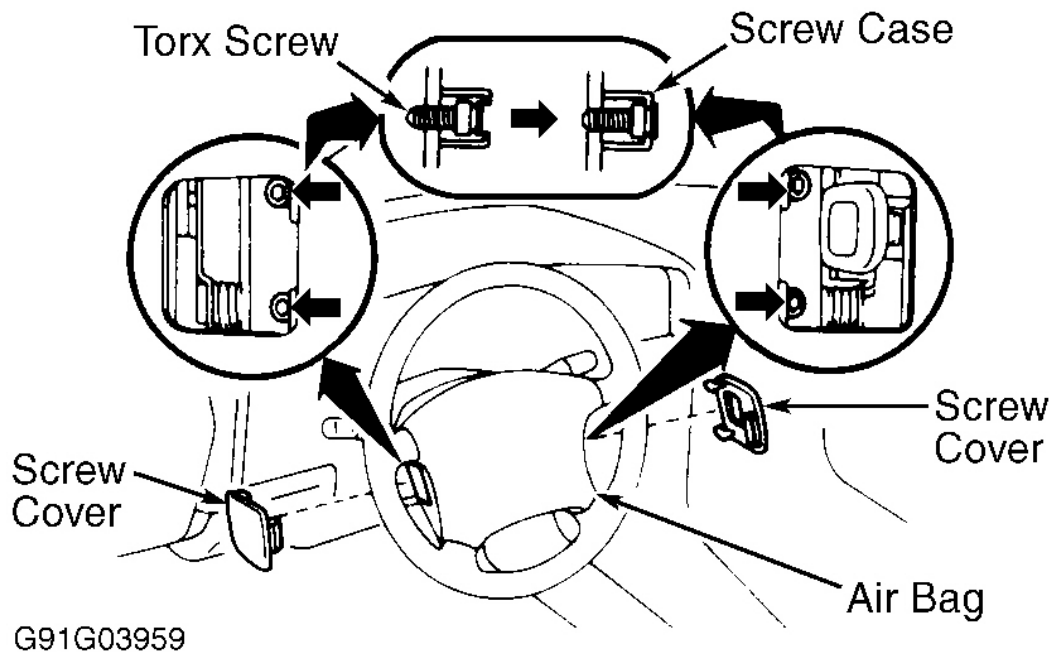


Fig. 11: Removing Air Bag From Steering Wheel (Typical)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HEADLIGHT/DIMMER & TURN SIGNAL SWITCH

Removal & Installation

See COMBINATION SWITCH .

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Steering Wheel Nut	26 (35)
	INCH Lbs. (N.m)
Air Bag Module Torx Screws	78 (8.8)

WIRING DIAGRAMS

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Fig. 12: Horn System Wiring Diagram (Land Cruiser)

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Fig. 13: Horn System Wiring Diagram (RAV4)

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Fig. 14: Horn System Wiring Diagram (Sienna)

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Fig. 15: Horn System Wiring Diagram (Tacoma)

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Fig. 16: Horn System Wiring Diagram (2000 Tundra)

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Fig. 17: Horn System Wiring Diagram (4Runner)