2002 ACCESSORIES & EQUIPMENT Steering Column Switches - MDX, 3.2TL & 3.5RL

### 2002 ACCESSORIES & EQUIPMENT

Steering Column Switches - MDX, 3.2TL & 3.5RL

# **DESCRIPTION & OPERATION**

WARNING: Vehicle is equipped with Supplemental Inflatable Restraint (SIR) system. When servicing vehicle, use care to avoid accidental air bag deployment. SIR system-related components are located in various locations throughout interior of vehicle, depending on application. Do not use electrical test equipment on or near these circuits. If necessary, deactivate SIR system before servicing components. See AIR BAG SAFETY PRECAUTIONS and DISABLING & ACTIVATING AIR BAG SYSTEM in AIR BAG RESTRAINT SYSTEMS article.

CAUTION: Before disconnecting battery, obtain anti-theft code for radio. After battery is reconnected, the word CODE will appear on radio display. Enter 5-digit anti-theft code using select buttons and radio will begin working. If code is entered wrong too many times, leave radio on at least one hour and enter code correctly. Any time radio power is lost, pre-selected radio stations will have to be set.

Steering column mounted switches consist of a combination headlight/turn signal switch on the left lever, and a combination windshield wiper/washer switch on the right lever. Horn and cruise control switches are mounted on the steering wheel.

# **COMPONENT TESTS**

WARNING: Vehicle is equipped with Supplemental Inflatable Restraint (SIR) system. When servicing vehicle, use care to avoid accidental air bag deployment. SIR system-related components are located in various locations throughout interior of vehicle, depending on application. Do not use electrical test equipment on or near these circuits. If necessary, deactivate SIR system before servicing components. See AIR BAG SAFETY PRECAUTIONS and DISABLING & ACTIVATING AIR BAG SYSTEM in AIR BAG RESTRAINT SYSTEMS article.

### COMBINATION LIGHT SWITCH

- 1. On MDX and 3.2TL, remove combination light switch. See <u>COMBINATION LIGHT SWITCH</u> under REMOVAL & INSTALLATION. On 3.5RL, remove lower instrument panel cover. Disconnect 20-pin (22-pin for Canadian models) connector located under instrument panel, on left side of steering column, left of brake switch. Disconnect 14-pin harness connector located behind left kick panel, above driver's multiplex control unit.
- 2. On all models, ensure connectors and terminals are okay. If terminals are bent, loose or corroded, repair

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as necessary. Use DVOM and check continuity between specified terminals in each switch position. See appropriate COMBINATION LIGHT SWITCH CONTINUITY table. See  $\underline{Fig.~1}$  - $\underline{Fig.~2}$ . If continuity does not exist, replace combination light switch.

# **COMBINATION LIGHT SWITCH CONTINUITY (MDX)**

Switch Position	Continuity Between Terminals No.
Headlight Switch	
Off	No Continuity
Parking Lights On	6 & 7
Headlights On	
Low Beam	2 & 5; 3, 4 & 11; 6 & 7; 9 & 11
High Beam	2 & 5; 3, 4 & 11; 6 & 7; 10 &
Passing Switch	
Off	No Continuity
On	3, 4, 10 & 11
Turn Signal Switch	
Left	12 & 13
Right	13 & 14

# **COMBINATION LIGHT SWITCH CONTINUITY (3.2TL)**

Switch Position	Continuity Between Terminals No.
Headlight Switch	
Off	No Continuity
Parking Lights On	6 & 7
Headlights On	
Low Beam	3, 4 & 11; 6 & 7 3, 4 & 11; 10 & 11; 6 & 7
High Beam	3, 4 & 11; 10 & 11; 6 & 7
Passing Switch	
Off	No Continuity
On	3, 4, 10 & 11
Turn Signal Switch	
Left	12 & 13
Right	13 & 14

# COMBINATION LIGHT SWITCH CONTINUITY (3.5RL - USA WITHOUT AUTOMATIC LIGHTING SYSTEM)

Switch Position	<b>Continuity Between Terminals</b>
Headlight Switch	
Off	No Continuity
Parking Lights	A4 & A6
Headlights	

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Low Beam	A3, A4 & A6
High Beam	A2, A3, A4 & A6
Passing Switch	
Off	No Continuity
On	A2, A3 & A4
Turn Signal Switch (1)	
Left	A8 & A9
Right	A7 & A9
(1) Check for continuity by connecting positive DVOM probe to combination light switch connector terminal A9 and negative DVOM probe to combination light switch connector terminal A7 or A8.	

# COMBINATION LIGHT SWITCH CONTINUITY (3.5RL - USA WITH AUTOMATIC LIGHTING SYSTEM)

Switch Position	Continuity Between Terminals
Headlight Switch	
Off	A4 & A5
Parking Lights	A4, A5 & A6
Headlights (Auto)	
Low	A3, A4, A5 & A6
High	A2, A3, A4, A5 & A6
Passing Switch	
Off	No Continuity
On	A2, A3 & A4
Turn Signal Switch (1)	
Left	A8 & A9
Right	A7 & A9
(1) Check for continuity by connecting positive DVO	M probe to combination light switch connector

terminal A9 and negative DVOM probe to combination light switch connector terminal A7 or A8.

# **COMBINATION LIGHT SWITCH CONTINUITY (3.5RL - CANADA)**

Continuity Between Terminals
No Continuity
A2 & A7
A2, A4 & A7; A1 & A6
A3, A4 & A7; A1 & A6
No Continuity
A2, A3 & A4

Turn Signal Switch (1)	
Left	A9 & A10
Right	A8 & A10
(1) Check for continuity by connecting positive DVOM probe to combination light switch connector terminal A10 and negative DVOM probe to combination light switch connector terminal A8 or A9.	

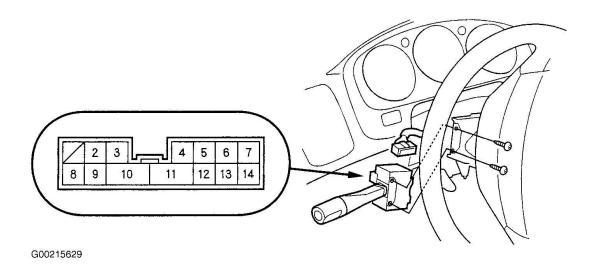


Fig. 1: Identifying Combination Light Switch Terminals (MDX & 3.2TL) Courtesy of AMERICAN HONDA MOTOR CO., INC.

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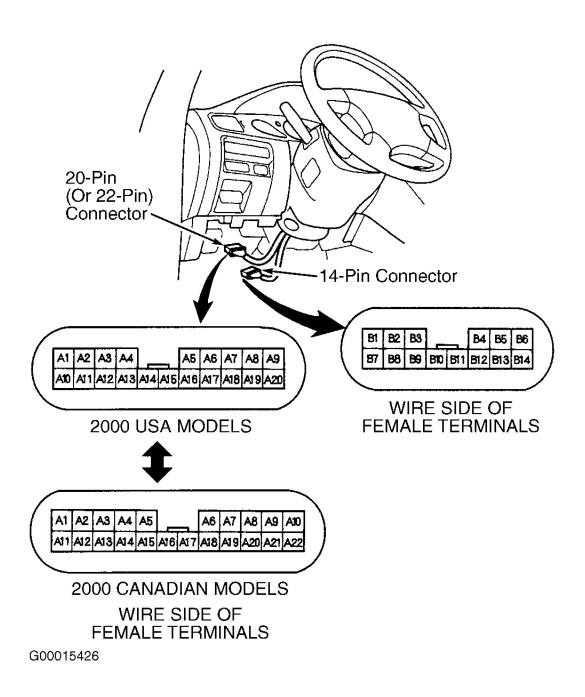


Fig. 2: Identifying Harness Connector Terminals (3.5RL) Courtesy of AMERICAN HONDA MOTOR CO., INC.

# **HORN SWITCH**

### MDX & 3.2TL

1. Disable air bag system. See appropriate AIR BAG RESTRAINT SYSTEMS article. Remove dashboard

- lower cover. Remove steering column upper and lower covers. Disconnect 4-pin connector from cable reel. See **Fig. 3**. Using DVOM, check for continuity between cable reel connector terminal No. 2 and ground. With horn button pressed, continuity should exist. With horn button released, continuity should not exist. If continuity is as specified, go to next step.
- 2. Remove driver's side air bag module. Using DVOM, check for continuity between cable reel connector terminal No. 2 and horn switch positive terminal. If continuity exists, replace driver's side air bag module. See appropriate AIR BAG RESTRAINT SYSTEMS article. If continuity does not exist, check cruise control SET/RESUME/CANCEL switch. See <u>SET/RESUME/CANCEL SWITCH TEST</u>. If switch is okay, replace cable reel.

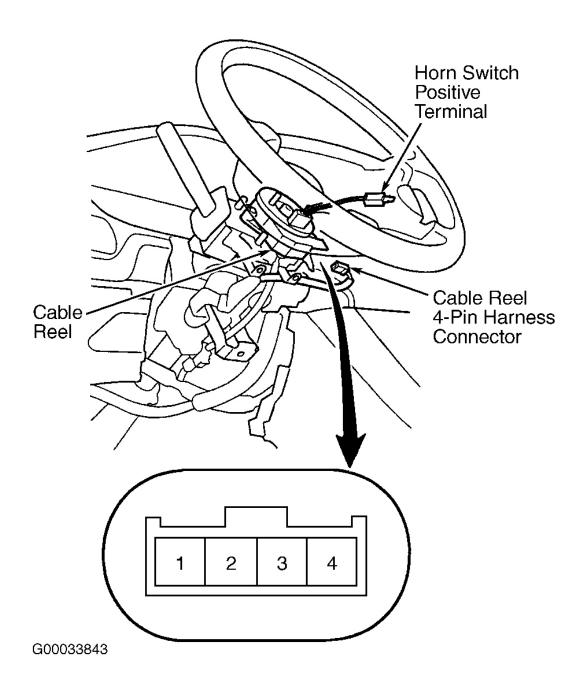


Fig. 3: Identifying Cable Reel & Horn Switch Connectors (3.2TL Shown; MDX Is Similar) Courtesy of AMERICAN HONDA MOTOR CO., INC.

# 3.5RL

1. Remove dashboard lower cover and knee bolster. Disconnect Gray 20-pin (22-pin for Canadian models) harness connector located under instrument panel, on left side of steering column, left of brake switch. Using DVOM, check for continuity between Gray 20-pin (22-pin for Canadian models) harness connector

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- terminal No. 17 (No. 19 for Canadian models) and ground with horn button depressed. See <u>Fig. 2</u>. If continuity exists, horn switch is okay. If continuity does not exist, go to next step.
- 2. Remove steering column upper and lower covers. Disconnect 4-pin connector from cable reel. Using DVOM, check for continuity in Light Green/Black wire between 4-pin harness connector terminal No. 2 and Gray 20-pin (22-pin for Canadian models) harness connector terminal No. 17 (No. 19 for Canadian models). If continuity exists, go to next step. If continuity does not exist, check for open in Light Green/Black wire between cable reel 4-pin connector and Gray 20-pin (22-pin for Canadian models) harness connector.
- 3. Remove driver's side air bag. See appropriate DISABLING & ACTIVATING AIR BAG SYSTEM article in RESTRAINTS. Disconnect horn switch positive connector. Using DVOM, check for continuity between ground and positive connector coming from horn switch (with horn button depressed). If continuity does not exist, replace horn switch. If continuity exists, test SET/RESUME/CANCEL switch. See <a href="SET/RESUME/CANCEL SWITCH TEST">SET/RESUME/CANCEL SWITCH TEST</a>. If SET/RESUME/CANCEL switch is okay, replace cable reel. See appropriate AIR BAG RESTRAINT SYSTEMS article.

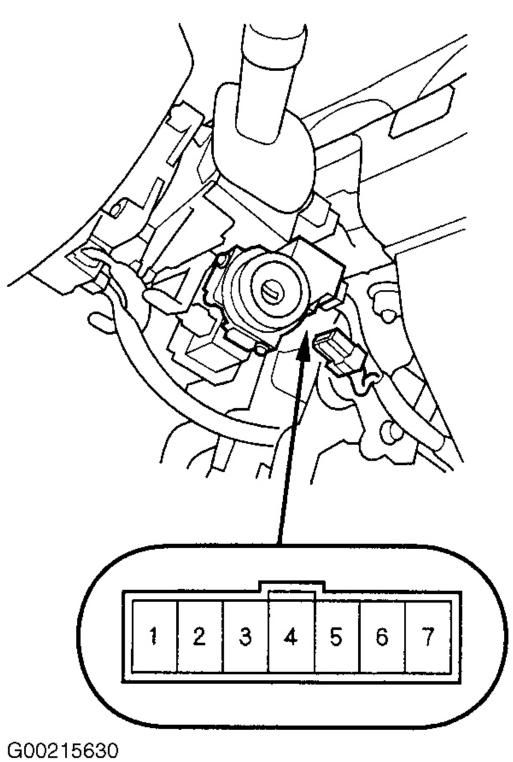
### **IGNITION SWITCH**

#### MDX & 3.2TL

Disable air bag system. See appropriate AIR BAG RESTRAINT SYSTEMS article. Remove instrument panel lower cover and knee bolster. Remove left kick panel. Disconnect ignition switch 6-pin connector, located in underdash fuse/relay box. Using DVOM, check for continuity between specified terminals in each switch position. See <u>IGNITION SWITCH CONTINUITY (3.2TL)</u> table. See <u>Fig. 5</u>. If continuity is not as specified, replace ignition switch. See <u>IGNITION SWITCH</u> under REMOVAL & INSTALLATION.

## **IGNITION SWITCH CONTINUITY (3.2TL)**

Switch Position	Continuity Between Terminals No.
0 (LOCK)	No Continuity
I (ACC)	2 (BATT) & 3 (ACC)
II (ON)	2 (BATT), 3 (ACC), 4 (IG2) & 5 (IG1)
III (START)	2 (BATT), 5 (IG1) & 6 (ST)



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Fig. 4: Identifying Ignition Switch Terminals (MDX) Courtesy of AMERICAN HONDA MOTOR CO., INC.

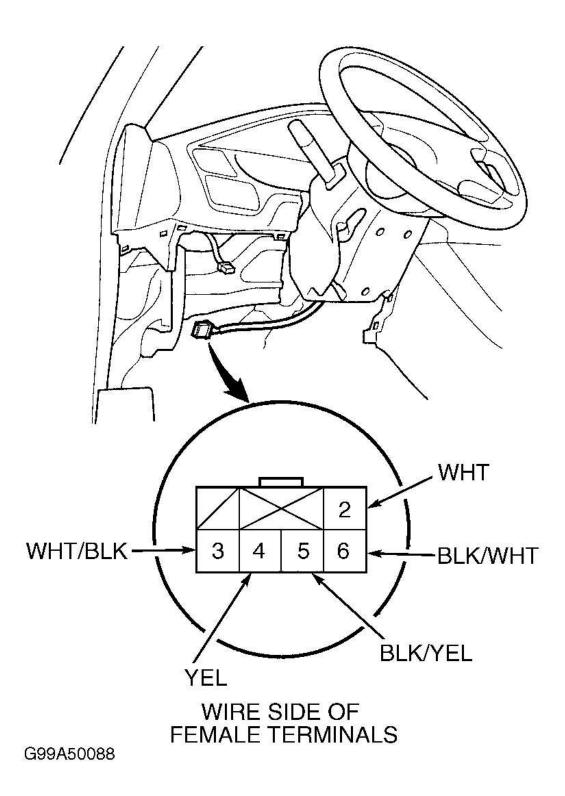


Fig. 5: Identifying Ignition Switch Terminals (3.2TL)

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# Courtesy of AMERICAN HONDA MOTOR CO. INC.

#### SET/RESUME/CANCEL SWITCH TEST

#### MDX & 3.2TL

- 1. Disable air bag system. See appropriate AIR BAG RESTRAINT SYSTEMS article. On MDX, go to step 5. On 3.2TL, remove steering column covers. Disconnect SET/RESUME/CANCEL switch 4-pin connector. See **Fig. 3**.
- 2. With SET button in ON position, continuity should exist between SET/RESUME/CANCEL switch 4-pin connector terminals No. 2 and 4. See **Fig. 3**. With RESUME button in ON position, continuity should exist between SET/RESUME/CANCEL switch 4-pin connector terminals No. 2 and 3. With CANCEL button in ON position, check for continuity by probing SET/RESUME/CANCEL switch 4-pin connector terminal No. 2 with positive terminal of DVOM, and terminals No. 3 and 4 with negative terminal of DVOM. With CANCEL button in ON position, continuity should exist between SET/RESUME/CANCEL switch 4-pin connector terminals No. 2 and 3 and between terminals No. 2 and 4. If continuity exists as specified, go to next step. If continuity does not exist, go to step 5.
- 3. Remove instrument panel lower cover and knee bolster. Disconnect in-line 14-pin harness connector, located under left side of instrument panel, above driver's underdash fuse/relay box. Using DVOM, check for continuity in Light Green/Black wire between SET/RESUME/CANCEL switch 4-pin harness connector terminal No. 3 and in-line Blue 14-pin harness connector terminal No. 8. Also check for continuity in Light Green/Red wire between SET/RESUME/CANCEL switch 4-pin harness connector terminal No. 4 and in-line Blue 14-pin harness connector terminal No. 7. If continuity exists, go to next step. If continuity does not exist, replace wiring harness.
- 4. Disconnect in-line Blue 16-pin harness connector, located behind glove box. Using DVOM, check for continuity in Light Green/Blue wire between SET/RESUME/CANCEL switch 4-pin harness connector terminal No. 2 and in-line Blue 16-pin harness connector terminal No. 9. See <u>Fig. 6</u>. If continuity exists, go to next step. If continuity does not exist, replace wiring harness.
- 5. Remove SET/RESUME/CANCEL switch. See <u>SET/RESUME/CANCEL SWITCH</u> under REMOVAL & INSTALLATION. With SET button in ON position, continuity should exist between SET/RESUME/CANCEL switch connector terminals No. 1 and 3. See <u>Fig. 7</u>. With RESUME button in ON position, continuity should exist between SET/RESUME/CANCEL switch connector terminals No. 1 and 2. Go to next step.
- 6. With CANCEL button in ON position, check for continuity by probing SET/RESUME/CANCEL switch 4-pin connector terminal No. 1 with positive terminal of DVOM, and terminals No. 2 and 3 with negative terminal of DVOM. With SET button in ON position, continuity should exist between SET/RESUME/CANCEL switch 4-pin connector terminals No. 1 and 3. With RESUME button in ON position, continuity should exist between SET/RESUME/CANCEL switch 4-pin connector terminals No. 1 and 2. If continuity does not exist as specified, replace switch. If continuity does exist as specified, replace cable reel. See appropriate AIR BAG RESTRAINT SYSTEMS article.

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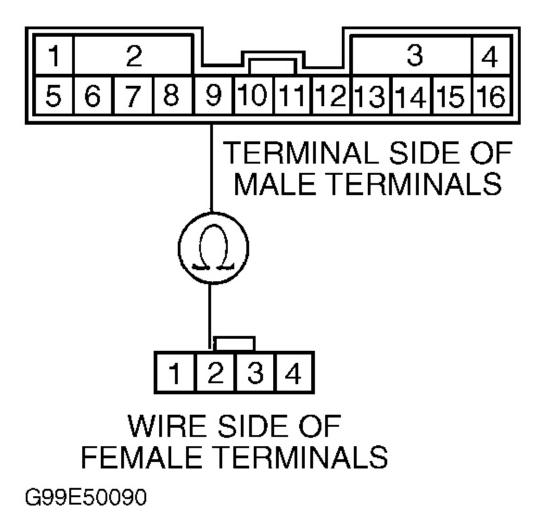


Fig. 6: Identifying Combination Light Switch & Right Engine Compartment Wiring Harness Connector Terminals (3.2TL)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

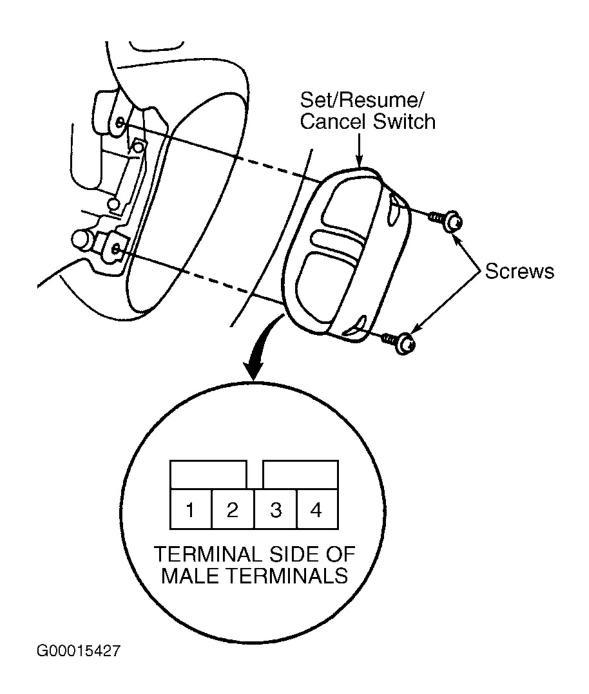


Fig. 7: Identifying SET/RESUME/CANCEL Switch Connector Terminals (3.5RL Shown; MDX & 3.2TL Are Similar)

Courtesy of AMERICAN HONDA MOTOR CO., INC.

### 3.5RL

1. Disable air bag system. See appropriate DISABLING & ACTIVATING AIR BAG SYSTEM article in

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RESTRAINTS. Remove instrument panel lower cover. Disconnect 20-pin (22-pin for Canadian models) harness connector located under instrument panel, on left side of steering column, left of brake switch. Using DVOM, check switch continuity between specified 20-pin (22-pin for Canadian models) harness connector terminals.

- 2. With SET button in ON position, continuity should exist between 20-pin (22-pin for Canadian models) harness connector terminals No. 17 (No. 19 for Canadian models) and No. 19 (No. 21 for Canadian models). See <u>Fig. 2</u>. With RESUME button in ON position, continuity should exist between 20-pin (22-pin for Canadian models) harness connector terminals No. 17 (No. 19 for Canadian models) and No. 20 (No. 22 for Canadian models). Go to next step.
- 3. With CANCEL button in ON position, check for continuity by probing 20-pin (22-pin for Canadian models) harness connector terminals No. 17 (No. 19 for Canadian models) with positive terminal of DVOM, and terminals No. 19 (No. 21 for Canadian models) and No. 20 (No. 22 for Canadian models) with negative terminal of DVOM. If continuity does not exist, go to next step. If continuity exists as specified, switch and cable reel are okay.
- 4. Remove SET/RESUME/CANCEL switch. See <u>SET/RESUME/CANCEL SWITCH</u> under REMOVAL & INSTALLATION. With SET button in ON position, continuity should exist between SET/RESUME/CANCEL switch 4-pin connector terminals No. 1 and 3. See <u>Fig. 7</u>. With RESUME button in ON position, continuity should exist between SET/RESUME/CANCEL switch 4-pin connector terminals No. 1 and 2. Go to next step.
- 5. With CANCEL button in ON position, check for continuity by probing SET/RESUME/CANCEL switch 4-pin connector terminal No. 1 with positive terminal of DVOM, and terminals No. 2 and 3 with negative terminal of DVOM. With CANCEL button in ON position, continuity should exist between SET/RESUME/CANCEL switch 4-pin connector terminals No. 1 and 2, and between terminals No. 1 and 3. If continuity does not exist, replace switch. If continuity exists, replace cable reel. See appropriate DISABLING & ACTIVATING AIR BAG SYSTEM article in RESTRAINTS.

#### WIPER/WASHER SWITCH

#### MDX & 3.2TL

Turn ignition switch to OFF position. Remove wiper/washer switch. See <u>WIPER/WASHER SWITCH</u> under REMOVAL & INSTALLATION. Using DVOM, check for continuity between wiper/washer connector terminals with switch in specified positions. See <u>Fig. 8</u> -<u>Fig. 9</u>. See <u>WIPER/WASHER SWITCH</u> <u>CONTINUITY (3.2TL)</u> table. Replace wiper/washer switch if it does not test as specified.

# WIPER/WASHER SWITCH CONTINUITY (MDX & 3.2TL)

Switch Position	Continuity Between Terminals No.
OFF	A3 & A5
INT	A2 & A7; A3 & A5
LO	A3 & A8
HI	A4 & A8
Mist ON	A4 & A8
Washer ON	A1 & A7
Intermittent ON	
MDX	

	(1) B4 & B8
3.2TL	(1) B1 & B2
Rear Wiper OFF	
MDX	B2 & B3
Rear Wiper ON	
MDX	B1 & B3
Wiper/Washer Switch ON	
MDX	B1 & B3; B5 & B7
(1) Resistance varies between zero and 30 k	ohms as delay time controller is turned.

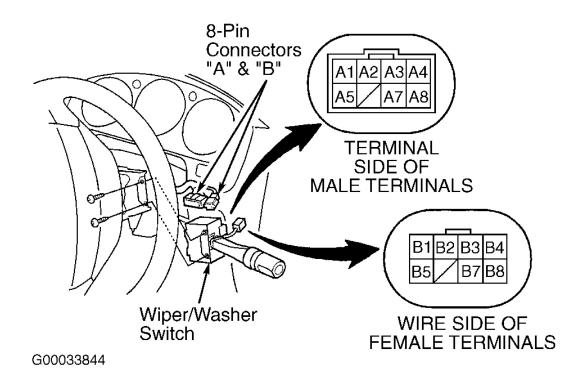


Fig. 8: Identifying Windshield Wiper/Washer Switch Terminals (MDX) Courtesy of AMERICAN HONDA MOTOR CO., INC.

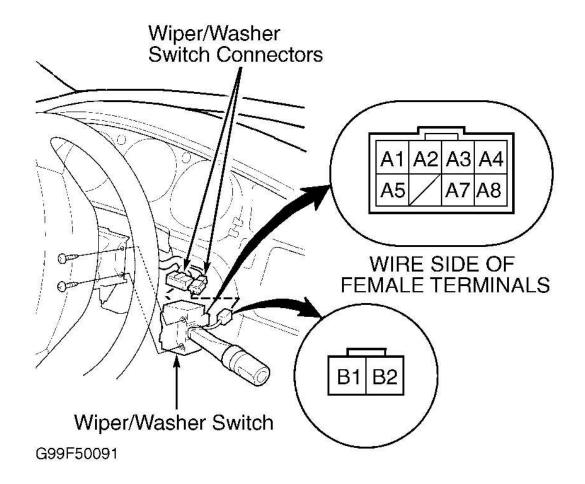


Fig. 9: Identifying Windshield Wiper/Washer Switch Terminals (3.5RL Shown; 3.2TL Is Similar) Courtesy of AMERICAN HONDA MOTOR CO., INC.

#### 3.5RL

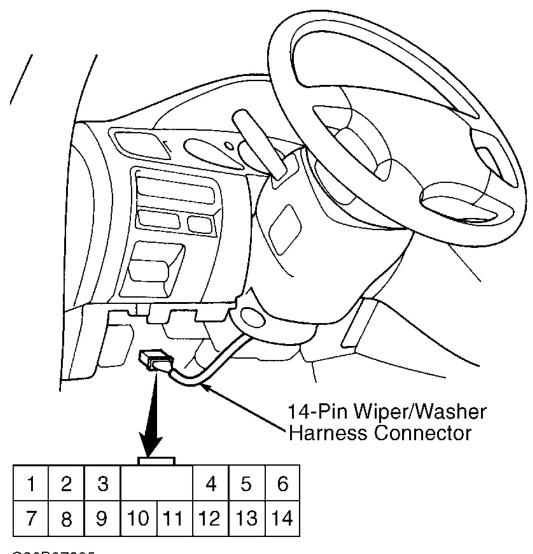
Turn ignition switch to OFF position. Remove lower instrument panel cover. Disconnect 14-pin combination light switch harness connector located under instrument panel, left side of steering column, above and right of parking brake pedal spring. Use a DVOM to check continuity between wiper/washer connector terminals with switch in specified positions. See <u>Fig. 10</u>. See <u>WIPER/WASHER SWITCH CONTINUITY (3.5RL)</u> table. Replace wiper/washer switch if it does not test as specified.

# WIPER/WASHER SWITCH CONTINUITY (3.5RL)

Switch Position	Continuity Between Terminals No.
OFF	4 & 12
INT	3 & 11; 4 & 12
LO	4 & 10
НІ	5 & 10

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Mist ON	5 & 10
Washer ON	3 & 13
Intermittent ON	<sup>(1)</sup> 2 & 8
(1) Resistance varies between zero a	and 30 k/ohms as delay time controller is turned.



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Fig. 10: Testing Windshield Wiper/Washer Switch (3.5RL) Courtesy of AMERICAN HONDA MOTOR CO., INC.

# **REMOVAL & INSTALLATION**

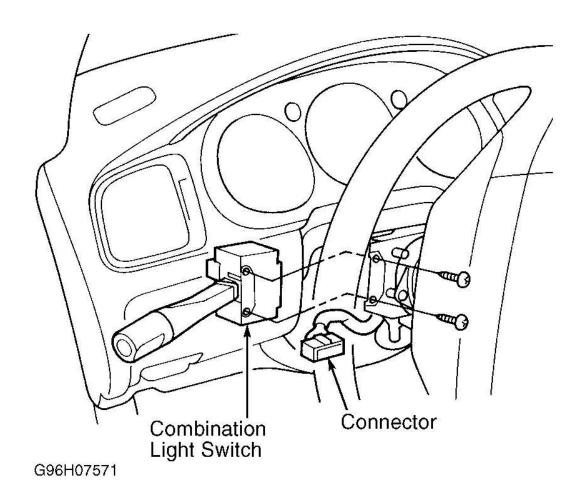
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WARNING: Vehicle is equipped with Supplemental Inflatable Restraint (SIR) system. When servicing vehicle, use care to avoid accidental air bag deployment. SIR system-related components are located in various locations throughout interior of vehicle, depending on application. Do not use electrical test equipment on or near these circuits. If necessary, deactivate SIR system before servicing components. See AIR BAG SAFETY PRECAUTIONS and DISABLING & ACTIVATING AIR BAG SYSTEM in AIR BAG RESTRAINT SYSTEMS article.

#### COMBINATION LIGHT SWITCH

#### **Removal & Installation**

Remove instrument panel lower cover. Remove upper and lower steering column covers. Disconnect combination light switch connector and remove switch. See  $\underline{Fig. 11}$ . To install combination light switch, reverse removal procedure.



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# Fig. 11: Locating Combination Light Switch (3.5RL Shown; 3.2TL Is Similar) Courtesy of AMERICAN HONDA MOTOR CO. INC.

#### **IGNITION SWITCH**

#### Removal & Installation (MDX & 3.2TL)

Disable air bag system. See appropriate AIR BAG RESTRAINT SYSTEMS article. Disconnect negative battery cable and then positive battery cable. Remove steering column covers. Insert ignition key into ignition switch and turn to "0" (LOCK) position. Remove mounting screws. Remove ignition switch. To install, reverse removal procedure.

### SET/RESUME/CANCEL SWITCH

### **Removal & Installation**

Carefully pry cover from side of SET/RESUME/CANCEL switch. Remove retaining screws, disconnect electrical connectors and remove SET/RESUME/CANCEL switch. To install, reverse removal procedure.

#### WIPER/WASHER SWITCH

#### Removal & Installation

Turn ignition switch to OFF position. Remove lower instrument panel cover and knee bolster. Remove upper and lower steering column covers. Disconnect 2-pin and 8-pin harness connectors from wiper/washer switch. Remove 2 retaining screws and wiper/washer switch. To install, reverse removal procedure.

# WIRING DIAGRAMS

For MDX wiring, see **SYSTEM WIRING DIAGRAMS** in SYSTEM WIRING DIAGRAMS article in ELECTRICAL.

For 3.2TL wiring, see **SYSTEM WIRING DIAGRAMS** in SYSTEM WIRING DIAGRAMS article in ELECTRICAL.

For 3.5RL wiring, see **SYSTEM WIRING DIAGRAMS** in SYSTEM WIRING DIAGRAMS article in ELECTRICAL.