

2002 ACCESSORIES & EQUIPMENT**Wiper/Washer Systems - MDX****DESCRIPTION & OPERATION**

Wiper/washer switch is part of combination switch on steering column. Front wiper motor has 2 speeds and intermittent feature. Some models are also equipped with a rear wiper/washer system.

Intermittent wiper speed is controlled by driver's multiplex control unit. MDX has speed controlled intermittent feature. Driver's multiplex control unit receives vehicle speed signal from Powertrain Control Module (PCM) and adjusts wiper speed relative to vehicle speed.

COMPONENT LOCATIONS**COMPONENT LOCATIONS**

Component	Location
Door Multiplex Control Unit	On Back Of Driver's Door Switch Plate
Driver's Multiplex Control Unit	On Driver's Underdash Fuse/Relay Block
Driver's Underdash Fuse/Relay Block	Below Left Side Of Instrument panel
Intermittent Relay	In Multi-Relay Box
Multi-Relay Box	In Right Front Of Engine Compartment
Passenger's Multiplex Unit	Behind Passenger's Underdash Fuse/Relay Block
Passenger's Underdash Fuse/Relay Block	Behind Right Kick Panel
Windshield Washer Reservoir	Lower Front Passenger Side Of Engine Compartment
Windshield Washer Motor (Front)	On Passenger Side Of Windshield Washer Reservoir
Windshield Washer Motor (Rear)	On Driver Side Of Windshield Washer Reservoir
Windshield Washer Fluid Level Switch	On Front Of Windshield Washer Reservoir
Windshield Wiper Motor	Under Cowl Cover

SYSTEM TESTS

NOTE: Before diagnosing wiper/washer system, ensure multiplex control system is operating properly. See **MULTIPLEX CONTROL SYSTEMS - MDX** article.

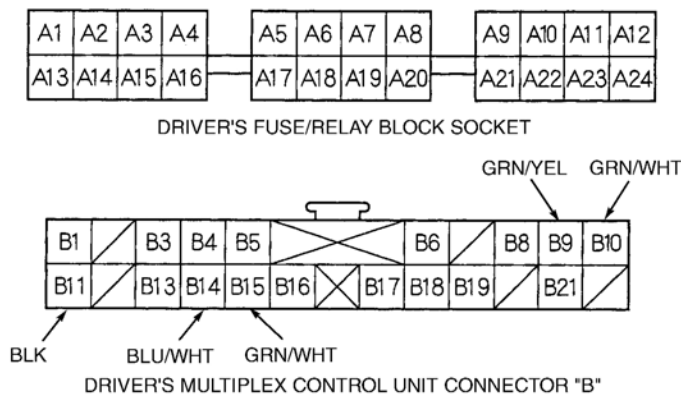
WARNING: Deactivate air bag system before performing any service operation. See **DISABLING & ACTIVATING AIR BAG SYSTEM** in **RESTRAINTS**. DO NOT apply electrical power to any component on steering column without first deactivating air bag system. Air bag may deploy.

DRIVER'S MULTIPLEX CONTROL UNIT INPUT TEST

2002 Acura MDX

2002 ACCESSORIES & EQUIPMENT Wiper/Washer Systems - MDX

1. Remove driver's side kick panel. Unplug and remove driver's multiplex control unit from underdash fuse/relay block. Inspect connector and terminals for damage or corrosion. Repair as necessary and retest system. If connector and terminals are okay, go to next step.
2. Using DVOM, perform control unit input test. See **Fig. 1** . If an input test indicates a problem, find and correct cause and retest system. If all input test results are okay, replace faulty multiplex control unit.



Cavity	Wire	Test condition	Test: Desired result	Possible cause if result is not obtained
B11	BLK	Under all conditions	Check for continuity to ground: There should be continuity.	• Poor ground (G501) • An open in the wire
A24	Fuse/relay block socket	Ignition switch ON (II)	Check for voltage to ground: There should be battery voltage.	• Blown No. 9 (10A) fuse in the driver's underdash fuse/relay block • Faulty driver's underdash fuse/relay block
A3		Shift lever in P	Check for continuity to ground: There should be continuity.	• Faulty transmission range switch • An open in the wire
A8		Brake pedal pressed	Check for voltage to ground: There should be battery voltage.	• Blown No. 47 (20A) fuse in the underhood fuse/relay block • Faulty brake pedal position switch • An open in the wire
B14	BLU/WHT	Under all conditions	Check for continuity between the B 14 terminal and No. 9 terminal of the PCM 32P connector A: There should be continuity.	• An open in the wire
B15	GRN/WHT	Parking brake pedal pressed	Check for continuity to ground: There should be continuity.	• Faulty parking brake switch • An open in the wire
B9	GRN/YEL	Intermittent dwell time control ring turned	Check resistance between the terminals: It should vary from 0 to approx. 30 k Ω as the ring is turned.	• Faulty intermittent dwell time controller • An open in the wire
B10	GRN/WHT			
A9	Fuse/relay block socket	Ignition switch ON (II) and wiper switch at INT	Check for voltage to ground: There should be battery voltage.	• Blown No. 12 (30A) fuse in the driver's underdash fuse/relay block • Faulty wiper switch • Faulty driver's underdash fuse/relay block • An open in the wire
A11		Ignition switch ON (II) and INT switch OFF	Check for voltage to ground: There should be battery voltage.	• Blown No. 12 (30A) fuse in the driver's underdash fuse/relay block • Faulty intermittent wiper relay • Faulty driver's underdash fuse/relay block • An open in the wire
A21		Ignition switch ON (II) and washer switch ON	Check for voltage to ground: There should be battery voltage.	• Blown No. 12 (30A) fuse in the driver's underdash fuse/relay block • Faulty washer switch • Faulty driver's underdash fuse/relay block • An open in the wire
A23		Ignition switch ON (II) and wiper switch OFF	Check for voltage to ground: There should be battery voltage.	• Blown No. 12 (30A) fuse in the driver's underdash fuse/relay block • Faulty wiper motor • Faulty driver's underdash fuse/relay block • An open in the wire

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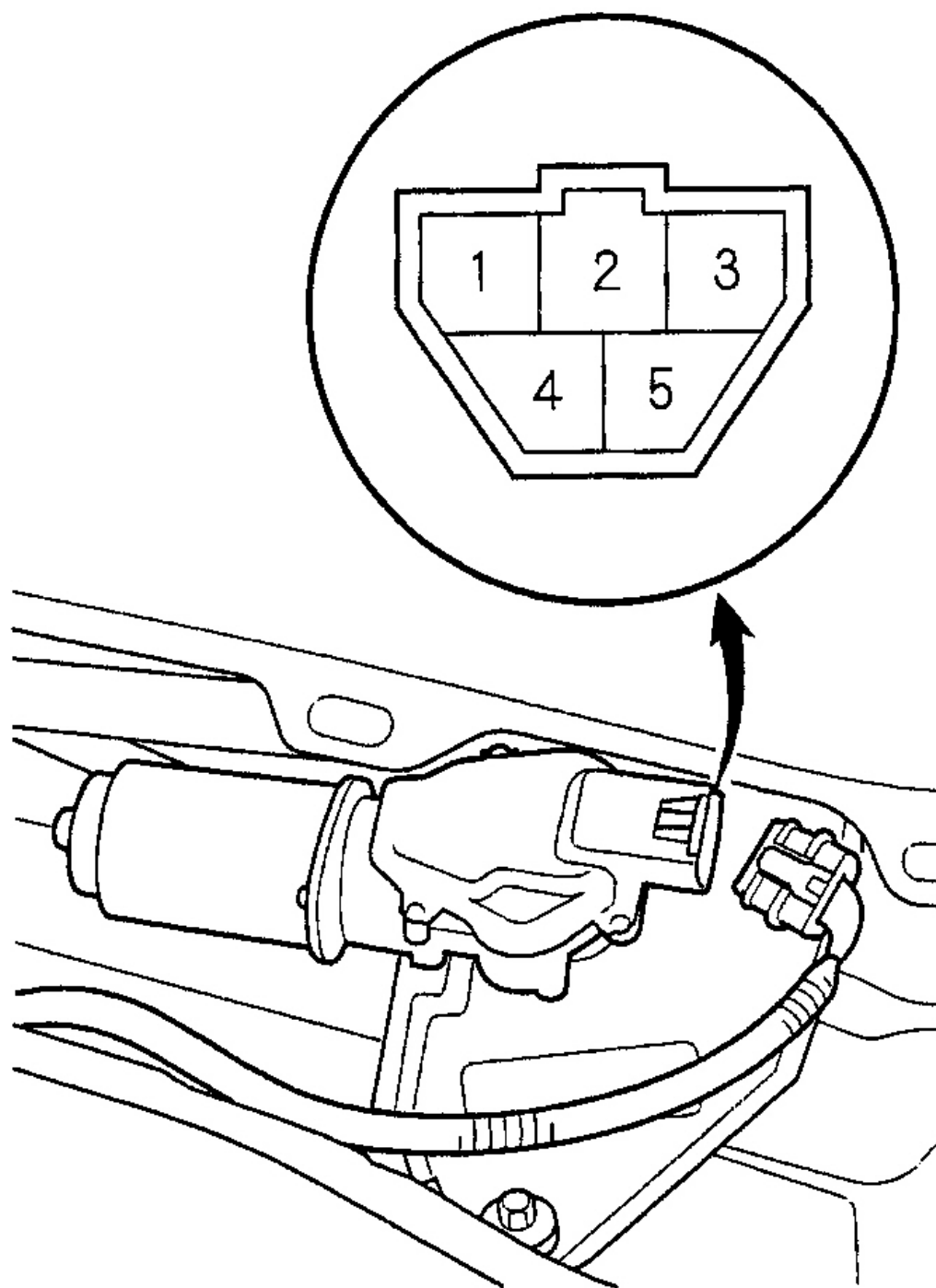
Fig. 1: Driver's Multiplex Control Unit Input Test
Courtesy of AMERICAN HONDA MOTOR CO., INC.

COMPONENT TESTS

WARNING: Deactivate air bag system before performing any service operation. See DISABLING & ACTIVATING AIR BAG SYSTEM in RESTRAINTS. DO NOT apply electrical power to any component on steering column without first deactivating air bag system. Air bag may deploy.

FRONT WIPER MOTOR TEST

1. Open hood. Remove wiper arms. Remove snap retainers and cowl cover. Disconnect front wiper motor 5-pin connector. Using jumper wires, apply battery voltage to wiper motor terminal No. 4 (Green/Black wire) and ground terminal No. 2 (Blue wire). Ensure wiper motor operates on low speed. See **Fig. 2** . Go to next step.
2. Using jumper wires, apply battery voltage to motor terminal No. 4 (Green/Black wire) and ground terminal No. 1 (Blue/Yellow wire). Wiper motor should operate on high speed. Replace wiper motor if it fails to run smoothly. See **Fig. 2** . If wiper motor operates as specified, go to next step.
3. Connect analog voltmeter positive lead to terminal No. 5 (Blue/White wire), and negative lead to terminal No. 3 (Black wire). With wiper motor running at low or high speed, voltage should pulse between zero volts and 4 volts or less. Replace wiper motor if voltage does not pulse as specified.



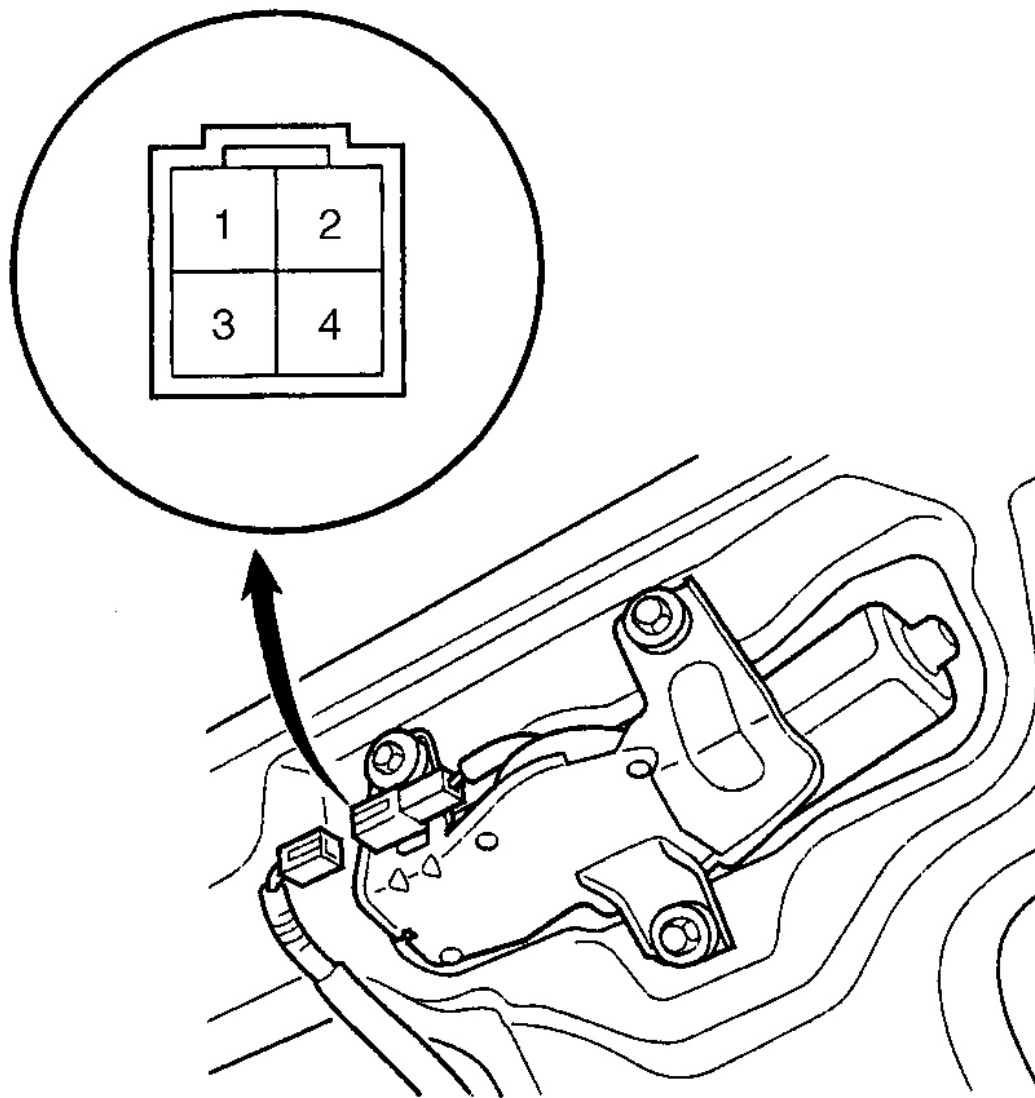
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Fig. 2: Identifying Front Wiper Motor & Connector Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

REAR WIPER MOTOR TEST

1. Remove tailgate lower trim panel. Disconnect rear wiper motor 4-pin connector. Apply battery voltage to terminal No. 1 (Green/Black wire) and ground terminal No. 3 (Green wire). See **Fig. 3** . Wiper motor should operate smoothly. Replace rear wiper motor if it fails to operate. If wiper motor operates as specified, go to next step.
2. Reconnect 4-pin connector. Turn rear wiper switch on. Connect analog voltmeter positive lead to terminal No. 4 (Light Green/Black wire), and negative lead to terminal No. 2 (Black wire). While motor is running, voltage should alternate from zero volts to 4 volts or less. If voltage is not as specified, replace rear wiper motor.



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Fig. 3: Identifying Rear Wiper Motor & Connector Terminals
Courtesy of AMERICAN HONDA MOTOR CO., INC.

WASHER MOTOR TEST

Front

Remove right front inner fender. Disconnect washer motor 2-pin connector. See **COMPONENT LOCATIONS** . Using jumper wires, apply battery voltage to washer motor terminal No. 1 (Black/Yellow wire) and ground washer motor terminal No. 2 (Black wire). Washer motor should operate smoothly. If motor runs

smoothly but little or no washer fluid is pumped, check for disconnected or blocked washer fluid hose or a clogged pump outlet in motor.

Rear

Remove right front inner fender. Disconnect washer motor 2-pin connector. See **COMPONENT LOCATIONS** . Using jumper wires, apply battery voltage to washer motor terminal No. 1 (Green/Yellow wire) and ground terminal No. 2 (Black wire). Washer motor should operate smoothly. If motor runs smoothly but little or no washer fluid is pumped, check for disconnected or blocked washer fluid hose or a clogged pump outlet in motor.

WASHER FLUID LEVEL SWITCH TEST

Remove right front inner fender. Disconnect fluid level switch 2-pin connector. See **COMPONENT LOCATIONS** . Using DVOM, check for continuity between fluid level switch terminals. Continuity should exist when float is down. Continuity should not exist when float is raised. If continuity is not as specified, replace fluid level switch.

WIPER/WASHER SWITCH TEST

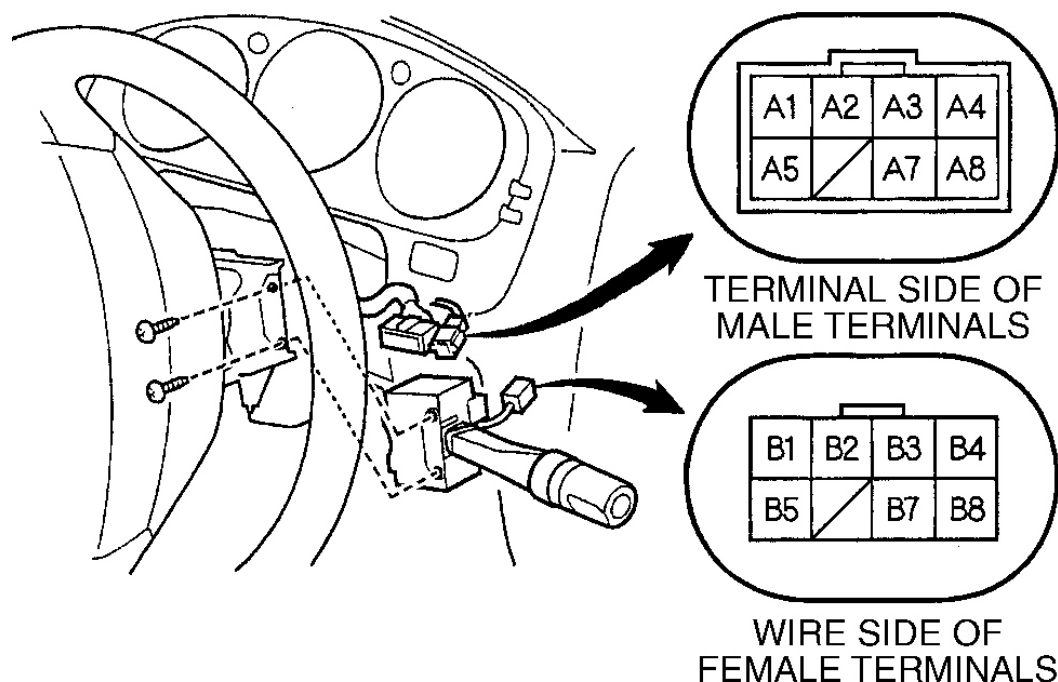
Remove instrument panel lower cover and steering column covers. Disconnect both 8-pin connectors from wiper/washer switch. Remove 2 screws, then remove switch. Check continuity between specified terminals with switch in indicated positions. See **FRONT WIPER/WASHER SWITCH CONTINUITY TEST** or **REAR WIPER/WASHER SWITCH CONTINUITY TEST** table. See **Fig. 4** . If continuity is not as specified, replace wiper/washer switch.

FRONT WIPER/WASHER SWITCH CONTINUITY TEST

Switch Position	Check Continuity Between Terminals
OFF	A3 & A5
INT	A2 & A7; A3 & A5
LO	A3 & A8
HI	A4 & A8
MIST (On)	A4 & A8
WASHER (On)	A1 & A7
Intermittent Dwell Time ⁽¹⁾	B4 & B8
(1) Controller turned. Resistance varies between 0-30 k/ohms.	

REAR WIPER/WASHER SWITCH CONTINUITY TEST

Switch Position	Check Continuity Between Terminals
OFF	B2 & B3
ON	B1 & B3
WASHER (On, Wiper ON)	B1 & B3; B5 & B7



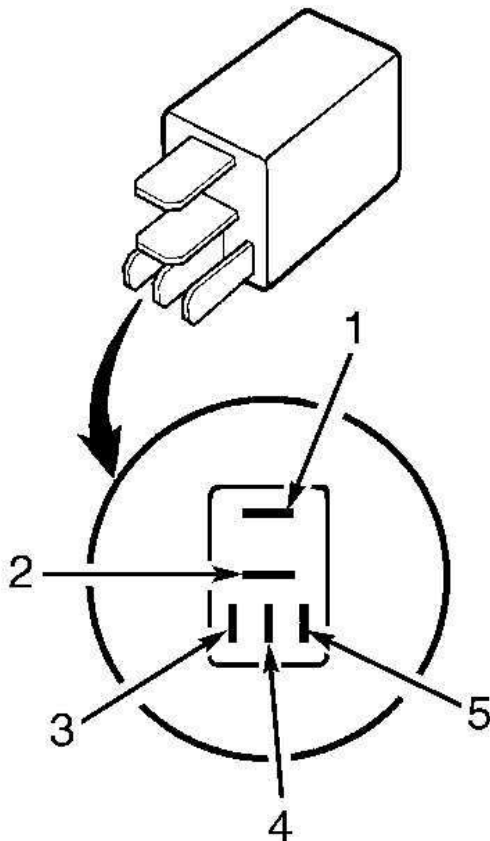
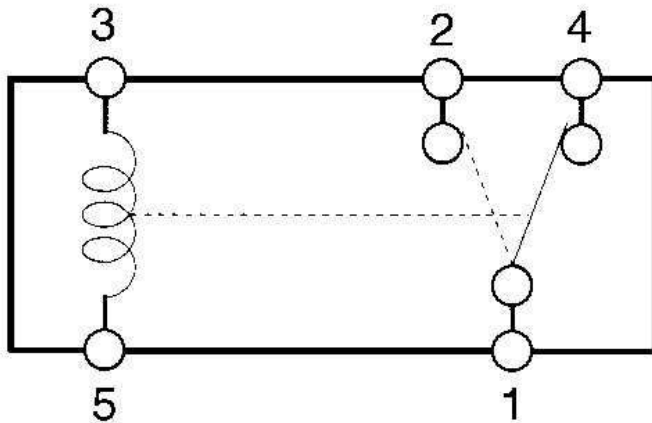
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Fig. 4: Identifying Wiper/Washer Switch Connectors & Terminals

Courtesy of AMERICAN HONDA MOTOR CO., INC.

INTERMITTENT WIPER RELAY TEST

1. Remove intermittent wiper relay. See **COMPONENT LOCATIONS** . Go to next step.
2. Use jumper wires to apply battery voltage to terminal No. 3 and ground terminal No. 5. Continuity should exist between terminals No. 1 and 2. See **Fig. 5** . Go to next step.
3. Disconnect jumper wires. Continuity should exist between terminals No. 1 and 4. If continuity does not exist as indicated, replace relay.



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Fig. 5: Identifying Intermittent Wiper Relay Terminals
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

REMOVAL & INSTALLATION

WARNING: Deactivate air bag system before performing any service operation. See **DISABLING & ACTIVATING AIR BAG SYSTEM** in RESTRAINTS. DO NOT apply electrical power to any component on steering column without first deactivating air bag system. Air bag may deploy.

FRONT WIPER MOTOR

Removal & Installation

1. Open hood. Remove cap nuts from wiper arms. Carefully remove wiper arms. Remove hood seal and cowl cover by prying off trim clips and removing screws.
2. Disconnect wiper motor 5-pin connector. Remove 4 wiper linkage assembly bolts. Remove wiper linkage and motor assembly. Turn assembly over and remove 3 bolts, nut and wiper linkage assembly. Scribe a line across link and wiper linkage for installation reference. Separate wiper linkage from wiper motor. Remove wiper motor assembly.
3. To install, reverse removal procedure. Lubricate all moving parts. Before installing wiper arms, return wiper shafts to park position by turning wiper switch on, then off.

REAR WIPER MOTOR

Removal & Installation

Remove wiper arm cover, nut and wiper arm. Remove outer seal rubber from wiper motor shaft. Remove lower tailgate trim panel. Disconnect rear wiper motor 4-pin connector. Remove 3 bolts and rear wiper motor. To install, reverse removal procedure.

WASHER FLUID RESERVOIR & NOZZLE

Removal & Installation

Remove right inner fender liner. Remove bolts and washer fluid reservoir. Disconnect hose(s) and 2-pin connector(s) from washer motor(s). Disconnect washer fluid hoses as necessary. To install, reverse removal procedure.

WIPER/WASHER SWITCH

Removal & Installation

Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** in RESTRAINTS. Disconnect negative battery cable. Remove driver's side instrument panel lower trim cover. Remove steering column covers. Disconnect wiper/washer switch connectors. Remove 2 screws and wiper/washer switch. To install, reverse removal procedure.

WIRING DIAGRAMS

For wiring, see **WIPER/WASHER** in SYSTEM WIRING DIAGRAMS in ELECTRICAL