WIPER AND WASHER SYSTEMS

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GENERAL INFORMATION

INTRODUCTION
Following are general descriptions of the major components in the wiper and washer systems. Refer to 8W-53 - Wipers in Group 8W - Wiring Diagrams for complete circuit descriptions and diagrams.

DESCRIPTION AND OPERATION

WINDSHIELD WIPER SYSTEM
A two-speed windshield wiper system is standard equipment on this model. An intermittent windshield wiper system is optional. The standard system lets the driver select from two wiper speeds, low or high. The intermittent wiper system adds an intermittent wipe delay feature.

On models equipped with the intermittent wiper system, the intermittent wipe mode delay times are driver adjustable from about one second to about fifteen seconds. The intermittent wipe mode is provided by delay logic and relay control circuitry contained within the intermittent wiper/washer switch. The intermittent wipe relay is also contained within the switch.

The windshield wipers will operate only when the ignition switch is in the Accessory or On positions. A fuse located in the fuseblock module protects the circuitry of the windshield wiper system. Refer to the owner’s manual for more information on the windshield wiper system controls and operation.

WINDSHIELD WASHER SYSTEM
An electrically operated windshield washer system is standard equipment. A washer reservoir in the engine compartment holds the washer fluid, which is pressurized by a pump when the windshield washer switch lever is actuated. The windshield washer pump feeds the pressurized washer fluid through the washer system plumbing to the windshield washer nozzles.

If the vehicle is equipped with the two-speed wiper system and the wipers are not already turned on when the washers are activated, the wiper switch will be turned on to the low speed position automatically. The wipers must be turned off manually following a washer switch activation. If the vehicle is equipped with the intermittent wipe system and the wipers are not turned on when the washers are activated, the wipers will be automatically cycled for one or two wipes, then be turned off.

The washers will operate only when the ignition switch is in the Accessory or On positions. A fuse located in the fuseblock module protects the circuitry of the washer system. Refer to the owner’s manual for more information on the windshield washer system controls and operation.

REAR WIPER AND WASHER SYSTEM
A rear wiper and washer system is standard equipment on models equipped with the optional hardtop. The rear wiper system provides the following operating modes:
- Continuous fixed-cycle wipe.
- A rear washer mode.
DESCRIPTION AND OPERATION (Continued)

- A park mode that operates the wiper motor until the blade reaches its park position when the rear wiper switch is placed in the Off position.

  A single switch in the instrument panel accessory switch bezel controls both the rear wiper and washer functions. The rear washer system shares the reservoir of the windshield washer system, but has its own dedicated washer pump and plumbing.

  The rear wiper and washer systems will operate only when the ignition switch is in the On position. A fuse in the fuseblock module protects the circuitry of both the rear wiper and washer systems.

  Refer to the owner’s manual for more information on the rear wiper and washer system controls and operation.

WIPER ARM AND BLADE

All models have two 33.02-centimeter (13-inch) windshield wiper blades with non-replaceable rubber elements (squeegees). The rear wiper uses a single 45.72-centimeter (18-inch) wiper blade with a non-replaceable rubber element (squeegee).

  Caution should be exercised to protect the rubber squeegees from any petroleum-based cleaners or contaminants, which will rapidly deteriorate the rubber. If the squeegees are damaged, worn, or contaminated, the entire wiper blade assembly must be replaced.

  Wiper squeegees exposed to the elements for a long time tend to lose their wiping effectiveness. Periodic cleaning of the squeegees is suggested to remove deposits of salt and road film. The wiper blades, arms, and windshield or rear liftglass should be cleaned with a sponge or cloth and windshield washer fluid, a mild detergent, or a non-abrasive cleaner. If the squeegees continue to streak or smear, the wiper blades should be replaced.

  The blades are mounted to spring-loaded wiper arms. The spring tension of the wiper arms controls the pressure applied to the blades on the glass. The windshield wiper arms are secured by an integral latch to the two wiper pivots on the cowl plenum cover/grille panel at the base of the windshield. The rear wiper arm is secured directly to the rear wiper motor output shaft on the liftglass.

  The wiper arms and blades cannot be adjusted or repaired. If faulty or damaged, they must be replaced.

WIPER LINKAGE AND PIVOT

  The wiper linkage and pivot module is secured with screws to the cowl plenum panel beneath the cowl plenum cover/grille panel. The wiper motor is secured with screws to the center of the linkage and pivot module bracket. The wiper pivots are secured to the ends of the module bracket.

  The driver side wiper pivot crank arm and the wiper motor crank arm each have ball studs on their ends. The passenger side crank arm has two ball studs. A drive link is connected from the motor crank arm ball stud to one ball stud on the passenger side pivot crank arm. A connecting link is connected from the other ball stud on the passenger side pivot crank arm to the driver side pivot crank arm ball stud.

  Both the drive link and the connector link have a plastic socket-type bushing on each end. Each of the socket-type bushings are snap-fit over their respective ball studs.

  The wiper linkage, pivots, bushings, motor, crank arm, and mounting bracket are only serviced as a complete unit. If any part of this assembly except the motor is faulty or damaged, the entire unit must be replaced. The wiper motor is also available as a separate service item.

WIPER MOTOR

FRONT

  The two-speed permanent magnet wiper motor has an integral transmission and park switch. The motor also contains an internal automatic resetting circuit breaker to protect the motor from overloads. The motor is secured to the wiper linkage and pivot module bracket with three screws and is protected by a rubber boot. The wiper motor output shaft passes through a hole in the module bracket, where a nut secures the wiper motor crank arm to the motor output shaft.

  Wiper speed is controlled by current flow to the proper set of brushes. The wiper motor completes its wipe cycle when the windshield wiper switch stalk is moved to the Off position, and parks the blades in the lowest portion of the wipe pattern.

  The windshield wiper motor cannot be repaired. If faulty or damaged, the entire wiper motor and boot assembly must be replaced. The wiper linkage and pivots module, which includes the wiper motor, is also available for service.

REAR

  The rear wiper motor is secured on the inside of the liftglass with a slotted bracket that fits onto a grommet under the right liftglass hinge mounting nut. The motor output shaft passes through the liftglass, where a rubber gasket and a plastic bezel and nut unit seal and secure the output shaft to the outside of the liftglass. The rear wiper arm is secured directly to the motor output shaft.

  The rear wiper motor unit contains an internal park switch. The motor also contains an automatic resetting thermal switch for overload protection.
DESCRIPTION AND OPERATION (Continued)

The rear wiper motor cannot be repaired. If faulty or damaged, the entire rear wiper motor assembly must be replaced.

WIPER SWITCH AND WASHER SWITCH

FRONT

The windshield wiper and washer switches are mounted on the right side of the steering column (Fig. 1). The switch stalk is moved up or down to select the wiper switch mode, and pulled towards the steering wheel to activate the washer system. Models with the intermittent wiper system also have a knob on the end of the switch stalk, which is rotated to select the desired delay interval. The windshield wiper and washer switch contains circuitry for the following functions:

- Windshield wipers
- Intermittent wiper delay relay control and logic (if the vehicle is so equipped)
- Intermittent wipe relay (if the vehicle is so equipped)
- Windshield washers.

The windshield wiper and washer switch cannot be repaired. If any function of the switch is faulty, or if the switch is damaged, the entire switch unit must be replaced.

REAR

The single two-function rear wiper and washer switch is installed in the instrument panel accessory switch bezel, which is located near the bottom of the instrument panel center bezel area, next to the ash receiver. The rear wiper and washer switch controls the rear wiper and washer functions.

The toggle-type switch features a detent in the On position, and a momentary Wash position. The rear wiper and washer switch also has an integral illumination lamp with a serviceable bulb. The switch knob is pushed down to its detent to activate the rear wiper system, and down again to the momentary position to activate the rear washer system. Both the rear wiper and rear washer motors will operate continuously for as long as the switch is held in the momentary Wash position.

The rear wiper and washer switch cannot be repaired and, if faulty or damaged, the entire switch unit must be replaced.

WASHER RESERVOIR

A single washer fluid reservoir is used for both the front and rear washer systems. The washer fluid reservoir is secured to the inner fender shield, over the left front wheel house in the engine compartment.

Each washer pump and motor unit has a barbed nipple, which is installed through a rubber grommet seal inserted in a hole near the bottom of the reservoir. The washer pumps are retained by an interference fit between the barbed nipple and the grommet seal, which is a light press fit.

The washer reservoir has a snap-fit filler cap with a rubber gasket. The cap hinges on and is secured to a molded-in hook formation on the reservoir behind the filler neck.

The washer reservoir and filler cap are each available for service.

WASHER PUMP

The washer pumps and motors are mounted near the bottom of the washer reservoir. A barbed nipple on the pump housing passes through a rubber grommet seal installed in a hole near the bottom of the reservoir. The washer pump is retained by an interference fit between the barbed pump nipple and the grommet seal, which is a light press fit.

A permanently lubricated and sealed motor is coupled to a rotor-type pump. Washer fluid is gravity-fed from the reservoir to the pump. When the motor is energized, the pump pressurizes the washer fluid and forces it through the plumbing to the nozzles.

The washer pump and motor unit cannot be repaired. If faulty, the entire washer pump and motor unit must be replaced.

WASHER NOZZLE AND PLUMBING

FRONT

Pressurized washer fluid is fed through a single hose, attached to a barbed nipple on the front washer pump. The hose is routed to a tee fitting located near the rear inner hood panel reinforcement. Hoses from the tee fitting are routed to the two nozzles.

A check valve is located in the washer supply line near each of the two front nozzles, which prevents washer fluid drain-back or siphoning from occurring.
DESCRIPTION AND OPERATION (Continued)

The nozzles are snapped into openings in the hood panel below the windshield.

The two washer nozzles each emit two streams of washer fluid into the wipe pattern (Fig. 2). If the aim of the washer fluid streams is unacceptable, each stream can be adjusted using a pin inserted in the nozzle orifice to rotate the nozzle ball.

From the check valve, another single hose is routed through the rear liftglass opening reinforcements of the hardtop to the rear wiper motor cover. Behind the rear wiper motor cover, the hose attaches to the rear washer nozzle nipple.

The fluidic rear washer nozzle and a seal are installed from the outside through a hole in the liftglass near the rear wiper motor output shaft. The nozzle is secured on the inside of the glass by a plastic hex nut.

The rear washer nozzle cannot be adjusted. The nozzle, check valve, and hose fittings cannot be repaired and, if faulty or damaged, they must be replaced.

DIAGNOSIS AND TESTING

WIPER SYSTEM

FRONT

For circuit descriptions and diagrams, refer to 8W-53 - Wipers in Group 8W - Wiring Diagrams.

WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

(1) Check the fuse in the fuseblock module. If OK, go to Step 2. If not OK, repair the shorted circuit or component as required and replace the faulty fuse.

(2) Disconnect and isolate the battery negative cable. Unplug the windshield wiper switch wire harness connector. Connect the battery negative cable. Turn the ignition switch to the On position. Check for battery voltage at the fused ignition switch output (run/acc) circuit cavity of the wiper switch wire harness connector. If OK, go to Step 3. If not OK, repair the open circuit to the fuseblock module as required.

(3) If the vehicle is equipped with the optional intermittent wiper system and the problem being diagnosed involves only the pulse wipe, wipe-after-wash, or intermittent wipe modes, go to Step 4. If not, go to Step 5.

(4) Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable. Check for continuity between the ground circuit cavity of the wiper switch wire harness connector and a good ground. There should be continuity. If OK,
DIAGNOSIS AND TESTING (Continued)

replace the faulty switch. If not OK, repair the open circuit to ground as required.

(5) Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable. Remove the windshield wiper and washer switch and check the switch continuity. See Wiper Switch and Washer Switch in the Diagnosis and Testing section of this group for the procedures. If OK, go to Step 6. If not OK, replace the faulty switch.

(6) Unplug the windshield wiper motor wire harness connector. Check for continuity between the ground circuit cavity in the body half of the wiper motor wire harness connector and a good ground. There should be continuity. If OK, go to Step 7. If not OK, repair the open circuit to ground as required.

(7) Connect the battery negative cable. Turn the ignition switch to the On position. Check for battery voltage at the fused ignition switch output (run/acc) circuit cavity in the body half of the wiper motor wire harness connector. If OK, go to Step 8. If not OK, repair the open circuit to the fuseblock module as required.

(8) Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable. With the windshield wiper and washer switch wire harness connector still unplugged, check the cavities for each of the following circuits in the body half of the wiper motor wire harness connector for continuity to ground. In each case, there should be no continuity. If OK, go to Step 9. If not OK, repair the short circuit as required.

- Wiper park switch sense
- Wiper switch low speed output
- Wiper switch high speed output

(9) Check for continuity between the cavities in the body half of the wiper motor wire harness connector and the cavities in the windshield wiper and washer switch wire harness connector for each of the following circuits. In each case, there should be continuity. If OK, replace the faulty wiper motor. If not OK, repair the open circuit as required.

- Wiper park switch sense
- Wiper switch low speed output
- Wiper switch high speed output

REAR

For circuit descriptions and diagrams, refer to 8W-53 - Wipers in Group 8W - Wiring Diagrams.

WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

(1) Check the fuse in the fuseblock module. If OK, go to Step 2. If not OK, repair the shorted circuit or component as required and replace the faulty fuse.

(2) Disconnect and isolate the battery negative cable. Remove the accessory switch bezel and unplug the wire harness connector from the rear wiper and washer switch. Connect the battery negative cable. Turn the ignition switch to the On position. Check for battery voltage at the rear washer switch output circuit cavity of the rear wiper and washer switch wire harness connector. If OK, go to Step 3. If not OK, repair the open circuit to the fuseblock module as required.

(3) Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable. Check for continuity between the ground circuit cavity of the rear wiper and washer switch wire harness connector and a good ground. There should be continuity. If OK, go to Step 4. If not OK, repair the open circuit to ground as required.

(4) Test the rear wiper and washer switch continuity. See Wiper Switch and Washer Switch in the Diagnosis and Testing section of this group for the procedures. If OK, go to Step 5. If not OK, replace the faulty switch.

(5) Remove the rear wiper motor cover and unplug the rear wiper motor wire harness connector. Connect the battery negative cable. Turn the ignition switch to the On position. Check for battery voltage at the fused ignition switch output (run) circuit cavity of the rear wiper motor wire harness connector. If OK, go to Step 6. If not OK, repair the open circuit to the fuseblock module as required.

(6) Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable. Check for continuity between the ground circuit cavity of the rear wiper motor wire harness connector and a good ground. There should be continuity. If OK, go to Step 7. If not OK, repair the open circuit to ground as required.

(7) Check for continuity between the rear wiper motor control circuit cavity of the rear wiper motor wire harness connector and a good ground. There should be no continuity. If OK, go to Step 8. If not OK, repair the short circuit as required.

(8) Check for continuity between the rear wiper motor control circuit cavities of the rear wiper motor wire harness connector and the rear wiper and washer switch wire harness connector. There should be continuity. If OK, replace the faulty rear wiper motor. If not OK, repair the open circuit as required.
WASHER SYSTEM

FRONT
The diagnosis found here addresses an inoperative front washer pump. If the washer pump operates, but no washer fluid is emitted from the washer nozzles, be certain to check the fluid level in the reservoir. Check for ice or other foreign material in the reservoir, and for pinched, disconnected, broken, or incorrectly routed washer system plumbing. For circuit descriptions and diagrams, refer to 8W-53 - Wipers in Group 8W - Wiring Diagrams.

WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

(1) Turn the ignition switch to the On position. Turn the wiper switch to the Low or High speed position. Check whether the wipers operate. If OK, go to Step 2. If not OK, see the Wiper System diagnosis in this group.

(2) Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable. Unplug the front washer pump wire harness connector. Check for continuity between the ground circuit cavity of the front washer pump wire harness connector and a good ground. There should be continuity. If OK, go to Step 3. If not OK, repair the open circuit to ground as required.

(3) Connect the battery negative cable. Turn the ignition switch to the On position. Check for battery voltage at the front washer switch output circuit cavity of the front washer pump wire harness connector while actuating the washer switch. If OK, replace the faulty washer pump. If not OK, go to Step 4.

(4) Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable. Unplug the windshield wiper/washer switch wire harness connector. Check for continuity between the front washer switch output circuit cavity of the front washer pump wire harness connector and a good ground. There should be no continuity. If OK, go to Step 5. If not OK, repair the short circuit as required.

(5) Check for continuity between the front washer switch output circuit cavities of the front washer pump wire harness connector and the wiper/washer switch wire harness connector. There should be continuity. If OK, replace the faulty switch. If not OK, repair the open circuit as required.

REAR
The diagnosis found here addresses an inoperative rear washer pump. If the washer pump operates, but no washer fluid is emitted from the washer nozzle, be certain to check the fluid level in the reservoir. Check for ice or other foreign material in the reservoir, and for pinched, disconnected, broken, or incorrectly routed washer system plumbing. For circuit descriptions and diagrams, refer to 8W-53 - Wipers in Group 8W - Wiring Diagrams.

WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

(1) Turn the ignition switch to the On position. Place the rear wiper/washer switch in the Wipe position. Check whether the rear wiper is operating. If OK, go to Step 2. If not OK, see the Wiper System diagnosis in this group.

(2) Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable. Unplug the rear washer pump wire harness connector. Check for continuity between the ground circuit cavity of the rear washer pump wire harness connector and a good ground. There should be continuity. If OK, go to Step 3. If not OK, repair the open circuit to ground as required.

(3) Connect the battery negative cable. Turn the ignition switch to the On position. Check for battery voltage at the rear washer motor control circuit cavity of the rear washer pump wire harness connector while the rear washer switch is actuated. If OK, replace the faulty pump. If not OK, go to Step 4.

(4) Turn the ignition switch to the Off position. Disconnect and isolate the battery negative cable. Unplug the rear wiper/washer switch wire harness connector. Check for continuity between the rear washer motor control circuit cavity of the rear washer pump wire harness connector and a good ground. There should be no continuity. If OK, go to Step 5. If not OK, repair the short circuit as required.

(5) Check for continuity between the rear washer motor control circuit cavities of the rear washer pump wire harness connector and the rear wiper/washer switch wire harness connector. There should be continuity. If OK, replace the faulty switch. If not OK, repair the open circuit as required.
WIPER SWITCH AND WASHER SWITCH

FRONT
Perform the diagnosis for the front wiper system and/or washer system as described in this group before testing the front wiper and washer switch. For circuit descriptions and diagrams, see 8W-53 - Wipers in Group 8W - Wiring Diagrams.

WARNING: ON VEHICLES EQUIPPED WITH AIR-BAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIR-BAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

(1) Disconnect and isolate the battery negative cable.
(2) Remove the front wiper and washer switch from the steering column and unplug the wire harness connector from the switch.
(3) Using an ohmmeter, perform the switch continuity checks at the switch terminals as shown in the Windshield Wiper Switch and Washer Switch Continuity chart (Fig. 4).

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REAR
Perform the diagnosis for the rear wiper system and/or washer system as described in this group before testing the rear wiper and washer switch. For circuit descriptions and diagrams, see 8W-53 - Wipers in Group 8W - Wiring Diagrams.

WARNING: ON VEHICLES EQUIPPED WITH AIR-BAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIR-BAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

(1) Remove the accessory switch bezel from the instrument panel and unplug the rear wiper and washer switch wire harness connector.
(2) Using an ohmmeter, check the rear wiper and washer switch continuity at the switch terminals as shown in the Rear Wiper Switch and Washer Switch Continuity chart (Fig. 5).

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Fig. 4 Windshield Wiper Switch and Washer Switch Continuity

(4) If the switch fails any of the continuity checks, replace the faulty switch. If the switch is OK, repair the wiper system and/or washer system wire harness circuits as required.
REMOVAL AND INSTALLATION

WIPER BLADE

FRONT

NOTE: The notched retainer end of the wiper element should always be oriented towards the end of the wiper blade that is nearest to the wiper pivot.

(1) Lift the wiper arm to raise the wiper blade and element off of the windshield glass.

(2) To remove the wiper blade from the wiper arm, push the release tab under the arm tip and slide the blade away from the tip towards the pivot end of the arm (Fig. 6).

(3) To install the wiper blade on the wiper arm, slide the blade retainer into the U-shaped formation on the tip of the wiper arm until the release tab snaps into its locked position. Be certain that the notched retainer for the wiper element is oriented towards the end of the wiper blade that is nearest to the wiper pivot.

REAR

NOTE: The notched retainer end of the wiper element should always be oriented towards the end of the wiper blade that is nearest to the wiper pivot.

(1) Lift the rear wiper arm to raise the wiper blade and element off of the rear liftglass.

(2) To remove the wiper blade from the wiper arm, push the release tab under the arm tip and slide the blade away from the tip towards the rear wiper motor output shaft end of the arm (Fig. 6).

(3) To install the wiper blade on the wiper arm, slide the blade retainer into the U-shaped formation on the tip of the wiper arm until the release tab snaps into its locked position. Be certain that the notched retainer for the wiper element is oriented towards the end of the wiper blade that is nearest to the rear wiper motor output shaft.

WIPER ARM

CAUTION: The use of a screwdriver or other prying tool to remove a wiper arm may distort it. This distortion could allow the arm to come off of the pivot shaft, regardless of how carefully it is installed.

FRONT

(1) Lift the wiper arm to permit the latch to be pulled out to its holding position, then release the arm (Fig. 7). The arm will remain off the windshield with the latch in this position.

(2) Remove the arm from the pivot using a rocking motion.

(3) Install the arm and blade with the wiper motor in the Park position. See the Front Wiper Arm Installation illustration (Fig. 8).

(4) Mount the arms on the pivot shafts so that the tip of the wiper blade is on the upper edge of the lower windshield blackout area, +15 mm/-0 mm (+0.59 in./-0 in.).

(5) Lift the wiper arm away from the windshield slightly to relieve the spring tension on the latch.
REMOVAL AND INSTALLATION (Continued)

Push the latch into the locked position and slowly release the arm until the wiper blade rests on the windshield.

(6) Operate the wipers with the windshield glass wet, then turn the wiper switch to the Off position. Check for the correct wiper arm positioning and readjust if required.

REAR

(1) Lift the wiper arm to permit the latch to be pulled out to its holding position, then release the arm (Fig. 7). The arm will remain off the liftglass with the latch in this position.

(2) Remove the wiper arm from the motor output shaft using a rocking motion.

(3) Install the rear wiper arm with the wiper motor in the Park position. Place the rear wiper blade on the liftglass so that it is parallel to or tipped down from the upper edge of the liftglass a maximum of 80 mm (3.14 in.) (Fig. 9).

(4) Lift the wiper arm away from the liftglass slightly to relieve the spring tension on the latch. Push the latch into the locked position and slowly release the arm until the wiper blade rests on the liftglass.

(5) Operate the wiper with the liftglass wet, then turn the wiper switch to the Off position. Check for the correct wiper arm positioning and readjust if required.

WIPER LINKAGE AND PIVOT

The wiper linkage and pivots can only be removed from or installed in the vehicle as a unit with the wiper motor. See Wiper Motor in this group for the service procedures.

WIPER MOTOR

FRONT

(1) Disconnect and isolate the battery negative cable.

(2) Remove the wiper arms from the wiper pivots. See Wiper Arm in this group for the procedures.

(3) Remove the one screw that secures the center of the cowl plenum cover/grille panel to the cowl plenum panel.

(4) Remove the four screws that secure the cowl plenum cover/grille panel to the cowl panel near the base of the windshield.

(5) Open and support the hood

(6) Pull each end of the cowl to hood seal away from the metal flange where the dash panel and cowl plenum panel meet far enough to access the one screw that secures each outboard end of the cowl plenum cover/grille panel to the cowl plenum panel (Fig. 10).

Fig. 9 Rear Wiper Arm Installation

(4) Lift the wiper arm away from the liftglass slightly to relieve the spring tension on the latch. Push the latch into the locked position and slowly release the arm until the wiper blade rests on the liftglass.

Fig. 10 Cowl Plenum Cover/Grille Panel Remove/Install

(7) Remove the one screw that secures each outboard end of the cowl plenum cover/grille panel to the cowl plenum panel.

(8) Carefully remove the cowl plenum cover/grille panel from the vehicle, so as not to damage the paint around the pivot openings of the panel.

(9) Reach into the cowl plenum and unplug the wiper motor wire harness connector.

(10) Remove the three screws that secure the wiper module mounting bracket to the cowl plenum panel (Fig. 11).

(11) Remove the wiper module from the cowl plenum as a unit.

(12) Release the retainer that secures the wiper motor wire harness connector to the wiper module bracket.
(13) Turn the wiper module over and remove the nut that secures the wiper linkage crank arm to the wiper motor output shaft.
(14) Remove the three screws that secure the wiper motor to the wiper module mounting bracket.
(15) Remove the wiper motor from the wiper module bracket.
(16) Reverse the removal procedures to install. Tighten the mounting hardware as follows:
   † Wiper motor screws - 6 N·m (53 in. lbs.)
   † Crank arm nut - 11.5 N·m (101 in. lbs.)
   † Wiper module bracket screws - 7.9 N·m (70 in. lbs.)
   † Cowl plenum cover/grille panel screws - 1.7 N·m (15 in. lbs.).

**REAR**

(1) Disconnect and isolate the battery negative cable.
(2) From the outside of the liftglass, remove the rear wiper arm from the rear wiper motor output shaft. See Wiper Arm in this group for the procedures.
(3) From the outside of the liftglass, remove the rear wiper motor output shaft nut and bezel unit (Fig. 12).
(4) From the outside of the liftglass, remove the rear wiper motor output shaft rubber gasket.
(5) From the inside of the liftglass, remove the three screws that secure the rear wiper motor cover to the motor.
(6) Unplug the rear wiper motor wire harness connector.

**Fig. 11 Wiper Module Assembly Remove/Install**

(7) Loosen, but do not remove, the right liftglass hinge nut.
(8) From the inside of the liftglass, gently pull the rear wiper motor away from the liftglass until the output shaft clears the hole in the liftglass.
(9) Move the motor towards the right side of the vehicle until the slotted hole in the motor mounting bracket clears the grommet under the right liftglass hinge nut.
(10) Remove the rear wiper motor from the vehicle.
(11) Reverse the removal procedures to install. Tighten the mounting hardware as follows:
   † Wiper motor output shaft nut - 3.3 N·m (30 in. lbs.)
   † Liftglass hinge nut - 6 N·m (53 in. lbs.)
   † Wiper motor cover screws - 1.1 N·m (10 in. lbs.).

**WIPER SWITCH AND WASHER SWITCH**

**FRONT**

**WARNING:** ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

(1) Disconnect and isolate the battery negative cable.
(2) Remove the knee blocker from the instrument panel. See Knee Blocker in Group 8E - Instrument Panel Systems for the procedures.
(3) Remove the three screws that secure the lower steering column shroud to the upper shroud (Fig. 13).
(4) If the vehicle is equipped with a standard non-tilt steering column, loosen the two upper steering column mounting nuts. If the vehicle is equipped with the optional tilt steering column, move the tilt steering column to the fully lowered position.

(5) Remove both the upper and lower shrouds from the steering column.

(6) Remove the two screws that secure the switch water shield and bracket to the top of the steering column (Fig. 14).

(7) Remove the one screw located below the multi-function switch lever that secures the switch water shield and bracket to the steering column (Fig. 15).

(8) Gently pull the lower mounting tab of the switch water shield bracket away from the steering column far enough to clear the screw boss below the multi-function switch lever.

(9) Lift the water shield and bracket with the multi-function switch off of the left side of the steering column as a unit and move it out of the way. If the vehicle is equipped with the optional tilt steering column, lifting gently upward on the tilt release lever will provide additional clearance to ease multi-function switch removal.

(10) Gently pull the windshield wiper and washer switch up and away from the right side of the steering column far enough to access the wire harness connector.

(11) Unplug the wire harness connector from the windshield wiper and washer switch.

(12) Remove the windshield wiper and washer switch from the steering column.

(13) Reverse the removal procedures to install. Tighten the upper switch mounting screws to 2.2 N·m (20 in. lbs.). Tighten the lower switch water shield and bracket screw to 1.1 N·m (10 in. lbs.). Tighten the non-tilt steering column mounting nuts to 22 N·m (200 in. lbs.) and the steering column shroud mounting screws to 2 N·m (18 in. lbs.).
REAR WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO GROUP 8M - PASSIVE RESTRAINT SYSTEMS BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.

(1) Disconnect and isolate the battery negative cable.

(2) Remove the center bezel from the instrument panel. See Instrument Panel Center Bezel in Group 8E - Instrument Panel Systems for the procedures.

(3) Remove the four screws that secure the accessory switch bezel to the instrument panel (Fig. 16).

(4) Pull the accessory switch bezel out from the instrument panel far enough to access the wire harness connectors.

(5) Unplug the wire harness connectors from the rear of the accessory switches and the cigar lighter/power outlet.

(6) Remove the accessory switch bezel from the instrument panel.

(7) With a small thin-bladed screwdriver, gently pry the snap clips at the top and bottom of the rear wiper and washer switch receptacle on the back of the accessory switch bezel and pull the switch out of the bezel.

(8) Reverse the removal procedures to install. Be certain that both of the switch snap clip retainers in the receptacle on the back of the accessory switch bezel are fully engaged. Tighten the mounting screws to 2.2 N·m (20 in. lbs.).

WASHER SYSTEM WASHER RESERVOIR

(1) Disconnect and isolate the battery negative cable.

(2) Remove the three screws that secure the washer reservoir to the inner fender (Fig. 17).

(3) Lift the reservoir far enough to access the washer pump(s).

(4) Remove the washer supply hose(s) from the washer pump(s) and drain the washer fluid from the reservoir into a clean container for reuse.

(5) Unplug the wire harness connector(s) from the washer pump(s).

(6) Remove the washer reservoir from the vehicle.

(7) Reverse the removal procedures to install. Tighten the reservoir mounting screws to 4 N·m (35 in. lbs.).

WASHER PUMP

(1) Disconnect and isolate the battery negative cable.

(2) Remove the washer supply hose(s) from the barbed outlet nipple of the washer pump(s) and drain the washer fluid from the reservoir into a clean container for reuse.

(3) Unplug the wire harness connector(s) from the washer pump(s).

(4) Using a trim stick or another suitable wide flat-bladed tool, gently pry the barbed inlet nipple of
REMOVAL AND INSTALLATION (Continued)

the washer pump out of the rubber grommet seal in the reservoir. Care must be taken not to damage the reservoir.

(5) Remove the rubber grommet seal from the reservoir and discard.

(6) Reverse the removal procedures to install. Always use a new rubber grommet seal on the reservoir.

WASHER NOZZLE

FRONT

(1) Open and support the hood.

(2) From under the rear of the hood, disconnect the washer supply hose from the barbed nipple of the washer nozzle (Fig. 18).

(3) From under the rear of the hood, gently squeeze the nozzle retainers and push the nozzle out through the top of the hood panel.

(4) Reverse the removal procedures to install. See Washer Nozzles and Plumbing in this group for the nozzle adjustment procedures.

REAR

(1) Disconnect and isolate the battery negative cable.

(2) From the inside of the liftglass, remove the three screws that secure the rear wiper motor cover to the motor (Fig. 19).

(3) Remove the rear wiper motor cover.

(4) Disconnect the washer supply hose from the barbed rear washer nozzle nipple.

(5) While holding the nozzle securely from the outside of the liftglass, remove the plastic nut that secures the threaded nozzle nipple from the inside of the liftglass.

(6) Push the nozzle and seal out through the liftglass from the inside.

(7) Reverse the removal procedures to install. Tighten the washer nozzle nut to 0.9 N·m (8 in. lbs.).

CHECK VALVE

A check valve is located under the hood in the washer supply line near each of the front washer nozzles. Models with the optional rear washer system also have a check valve in the washer supply line in the left rear pillar of the hardtop, near where the hardtop joins the vehicle body.

(1) Disconnect the washer supply hoses from the barbed nipples on each end of the front or rear washer system check valve.

(2) Remove the check valve from the vehicle.

(3) When reinstalling the check valve, be certain the valve is properly oriented within the system flow (Fig. 20).

(4) Reverse the remaining removal procedures to complete the installation.