

—If the high cam pulldown diaphragm needs replacement, proceed as follows:

- g. Unscrew diaphragm assembly.
 - h. While holding the throttle lightly in the closed position, rotate the fast idle cam so that the fast idle lever and the high cam choke lever rest on a cam step. The fast idle lever should now be resting at the bend in the high cam choke lever as shown in Reference I.
 - i. Still holding the throttle in the closed position, gently screw diaphragm assembly onto shaft until it bottoms. Then, rotate the diaphragm counterclockwise until the hole in the diaphragm is aligned with the vacuum passage.
- NOTE:** The high cam pulldown diaphragm can only be adjusted in increments of one full turn. The vacuum passage in the diaphragm must be aligned with the vacuum passage on the flange.
- j. Install diaphragm spring and cover assuring that the vacuum passages are aligned and that the mechanism works freely.
 - k. Using a 21-0014 hand vacuum pump or equivalent, apply a vacuum to the choke hot air inlet while blocking vacuum passage which enters choke housing from the underside of throttle body. The diaphragm should retract.
 - l. If the pulldown diaphragm fails to retract, plug the vacuum passage in the underside of throttle body near the choke housing, remove the choke cap, and apply a vacuum to the heat restrictor vacuum passage (raised boss) using the 21-0014 hand vacuum pump or equivalent. If the pulldown diaphragm retracts, inspect gasket and cap. Replace as required, then reassemble choke parts. If the diaphragm still fails to retract, repair or replace as required.
 - m. Reinstall carburetor on vehicle making necessary connections and check to make sure the repaired mechanism is functional on running vehicle by repeating Part C of Section II.

2. Choke Metering Rod Mechanism Fails to Move Downward Within the Specified Time

- a. Disconnect the stator lead at choke cap terminal and connect a test light in series between the stator lead and ground.
- b. The light should glow at all times while the engine is running.
- c. If the light does not glow either alternator or choke wire is defective and should be repaired as necessary.
- d. Place test light in series with choke terminal and stator lead. If light does not glow, replace choke cap assembly. If light glows, turn off engine.
- e. Check for damaged, missing, and/or misaligned parts. Check for dirt, grease, or any foreign material on moving parts. Repair or replace as required. If any linkage is repaired or replaced, check choke set and

cam set per procedures attached. Reset if necessary.

- f. If any corrective action is taken in Steps a-e above, perform Electric Choke Functional Check (Section II, Part C, Steps 1-5). If choke metering rod moves downward within the specified time, return to Step 7 of Section II, Part C; otherwise, proceed as follows.
- g. If no corrective action is taken in Steps a-e, remove carburetor from vehicle.
- h. Remove the retaining "E" ring which holds the choke operating rod to the cam lever and remove the linkage from the cam lever (see Fig. 3).
- i. Open the throttle slightly and check cam lever for freedom of movement. The choke cap spring should provide the only resistance and the cam lever should spring back to the original position (see Fig. 3).
- j. If cam movement is still not free, remove the throttle body from the carburetor. Remove the choke cap and disassemble the choke shaft, the cam lever, and the fast idle cam. Check the surfaces of all parts for grease, foreign material, bends, cracks, or distortion. Clean or replace parts as required. If a new fast idle cam is installed, adjust cam set per procedure attached. Install throttle body on carburetor and torque to specification.
- k. If cam movement is OK, check remaining parts of choke system for freedom of movement by manually moving choke operating rod up and down. The movement should be free. If movement is not free, remove the retaining "E" rings from the choke metering rod lever and the choke operating rod. Then remove the pin from choke metering rod lever. (See Fig. 3.) Carefully lift the choke metering rod lever up and out of the air horn as far as the choke operating rod will allow. Inspect the parts for foreign material, bends, distortion or breakage. Clean and/or repair as required. Reinstall parts in air horn making sure movement is free. If any repair was made, adjust choke set per procedure attached.
- l. If movement is OK, make sure the choke operating rod is connected to the cam lever with the retaining "E" ring.
- m. Install carburetor on vehicle making sure all parts operate freely. Connect all vacuum hoses and electrical wires.

2700 CARBURETOR CAM SET PROCEDURE

Special Tool: 120 degree Index Stator Choke Cap, No. T77L-9848-A

Specifications: See 1978 Ford Car Performance Specifications Book

1. Remove choke cap.
2. Hold throttle lightly closed with a rubber band to maintain cam position.
3. Place fast idle lever in the corner of the specified step on the fast idle cam with the high cam diaphragm in its retracted position.

4. Install 120 degree stator cap.
5. Turn the cam adjusting screw until the index mark on the stator cap lines up with the specified mark on the choke casting. Make sure the fast idle cam lever remains in position on the fast idle cam.
6. Remove the stator cap and re-install the choke cap at the specified setting on the choke housing. Make sure the tang is engaged in the choke bimetal lever.

MODEL 2700 CARBURETOR CHOKE SET PROCEDURE

Special Tools:

- Dial Indicator
- 120 degree Index Choke Cap, T77L-9848-A

1. Remove choke cap.
2. Install choke weight on the bimetal lever.
3. Install dial indicator with the tip on the top surface of the choke metering rod. With choke weight in place, adjust dial indicator to read zero. Move weight slightly then release—make sure the zero repeats.
4. Remove choke weight.
5. Install 120 degree index stator cap at index.
6. Turn the choke rod indexing nut to achieve a reading of .125 inch travel on the dial indicator.
7. Repeat Steps 2 through 6 to establish repeatability. Adjust if necessary.
8. Remove the stator cap and dial indicator.
9. Reinstall the choke cap assuring that the bimetal tang is properly inserted in the cam bimetal lever.

D-4: CARBURETOR AIR CLEANER ELEMENT AND CRANKCASE EMISSION FILTER

A. Carburetor Air Cleaner Element

1. Remove air cleaner assembly from engine before removing the filter element to prevent inadvertently dropping dirt into the carburetor. Remove any dust or dirt from carburetor flange area.
2. Inspect inside surfaces of cover and tray for traces of dirt leakage past element as a result of damaged element seals, wrong element usage, or inadequate torque on the wing nut or wing screw.
3. Inspect carburetor mounting gasket and replace if deformed or missing. Be sure red side (adhesive) is on carburetor flange.
4. Remove element and clean sealing surfaces on tray and cover. Install a new element after visual inspection for possible damage in handling (deformed seals or holes in paper).

5. Install air cleaner body on carburetor flange. The air cleaner should seat freely on the carburetor gasket. Visual observation will show if heater hoses or attaching components restrict a good seal to the gasket.
6. Install cover on element and air cleaner body and, when applicable, reinstall the rubber-backed wing nut washer.
7. Reconnect all vacuum or electrical lines. When reconnecting the crankcase closure lines on the air cleaner, be sure the joint between the elbow and filter pack is secure and fully engaged. The clip should engage the inner ring on the elbow and not be engaged between the rings.
8. Install wing nut or wing screw and tighten to specifications. On air cleaners using support brackets, always tighten carburetor wing nut before securing support bracket. This will assure air cleaner seal to carburetor and maximum protection against dust leakage to the engine.

B. Crankcase Emission Filter

1. Remove air cleaner cover.
2. Detach the retaining clip from the crankcase filter pack assembly and remove the filter pack assembly from the air cleaner tray.
3. Remove the filter media pad from the container and discard the pad. Wash the container with suitable solvent. Lightly oil a new filter media pad and install the pad in the container.
4. Reinstall the filter pack assembly in the air cleaner tray and secure the assembly with the retaining clip.
5. Reinstall the air cleaner cover and, when applicable, the rubber-backed wing nut washer. Install wing nut/screw and tighten to specification.

SPECIFICATIONS

Specifications not found in this Part can be found in the 1978 Ford Car Performance Specification book, or on the vehicle Engine Emission Control decal.

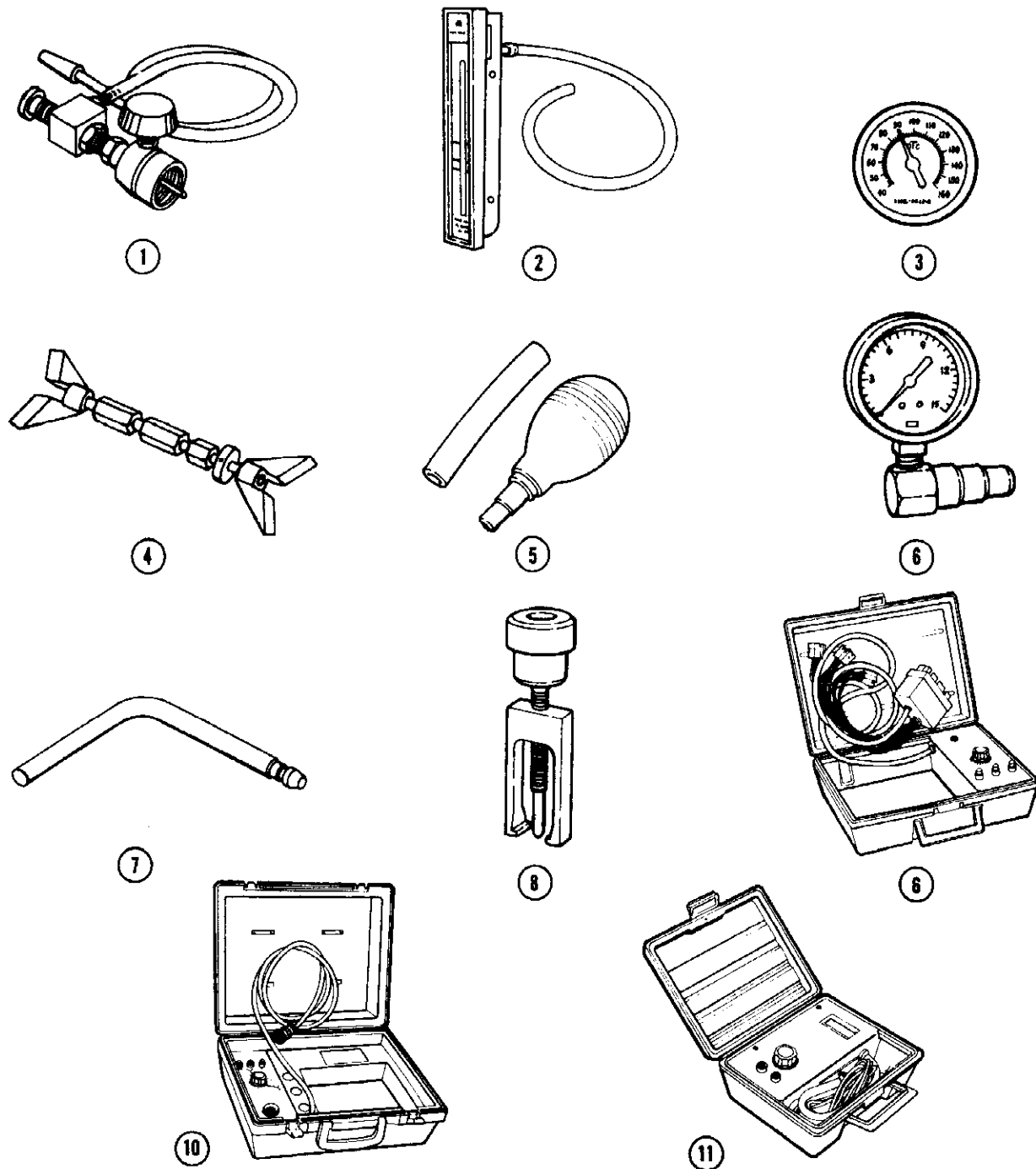
SPECIAL TOOLS

The tools illustrated here are required to perform the various tests and adjustments concerning emission systems components installed in 1978 vehicles. Emission system special service tools are available from:

Owatonna Tools, Inc.

Owatonna, Minnesota 55060

Attention: Ford Order Desk or call (507) 451-5310 and ask for the Ford Special Tool Coordinator.



ESSENTIAL TOOLS	PART NO.	ESSENTIAL TOOLS	PART NO.
1. PROPANE IDLE TESTER	T75L-9600-A	8. LIMITER CAP REMOVAL TOOL	T75L-9500-A
2. CHOKE FLOW METER	T75L-9850-A	9. FEEDBACK CARBURETOR TESTER	T78L-50-FBC-1
3. MAGNETIC BASE THERMOMETER	T75L-9601-A	10. ELECTRONIC ENGINE CONTROL (EEC) TESTER	T78L-50-EEC-1
4. THERMACTOR PUMP BELT TENSION TOOL	T75L-9480-A	11. DIGITAL VOLT OHM METER (DVOM)	T78L-50-DVOM
5. THERMACTOR CHECK VALVE TESTER	T75L-9487-A		
6. THERMACTOR PUMP PRESSURE GAUGE	T75L-9486-A		
7. SPARK PLUG BOOT ASSEMBLY TOOL	T75L-6666-A		

Charging System

PART
50-31

MAINTENANCE

EXCEPT MAINTENANCE—FREE BATTERY

CHECK BATTERY FLUID LEVEL

WARNING—Keep out of reach of children. Batteries contain SULFURIC ACID. Avoid contact with skin, eyes or clothing. Also, shield your eyes when working near the battery to protect against possible splashing of the acid solution. In case of acid contact with skin, eyes, or clothing, FLUSH IMMEDIATELY WITH WATER FOR A MINIMUM OF 15 MINUTES. If acid is swallowed, drink large quantities of milk or water, followed by milk of magnesia, a beaten egg or vegetable oil. CALL A PHYSICIAN IMMEDIATELY.

Hydrogen and oxygen gases are produced during normal battery operation. This gas mixture can explode

if flames, sparks or lighted tobacco are brought near the battery. When charging or using a battery in an enclosed space, always provide ventilation and shield your eyes.

Keep the fluid in each battery cell up to the level of the ring in the bottom of the filler well. Generally, tap water may be added unless it has a high mineral content or has been stored in a metal container. If the tap water is unsuitable for these reasons, distilled water should be used.

CHECK AND ADJUST DRIVE BELT TENSION

Refer to the Maintenance Section of Part 50-29.

SPECIFICATIONS

Refer to the Car Shop Manual Volume 3 for all Specifications not contained in this Section.

BATTERY CHARGE RATES (EXCEPT MAINTENANCE-FREE BATTERY)

Allowable Battery High Rate Charge Time Schedule ①						
Specific Gravity Reading	Charge Rate Amperes	36	Battery Capacity — Ampere Hours			
			41 & 45	53 & 54	77	80
1.125-1.150 ①	35	50 min.	65 min.	80 min.	115 min.	115 min.
1.150-1.175	35	40 min.	50 min.	65 min.	95 min.	95 min.
1.175-1.200	35	30 min.	40 min.	50 min.	70 min.	70 min.
1.200-1.225	35	25 min.	30 min.	35 min.	50 min.	50 min.
Above 1.225	5	②	②	②	②	②

① If the specific gravity is below 1.125, use the time indicated for the 1.125 specific gravity, then charge at 5 amperes until the specific gravity reaches 1.250 at 80°F.

② Charge at 5 ampere rate only until the specific gravity reaches 1.250 at 80°F.

③ At no time during the charging operation should the electrolyte temperature exceed 130°F.

BATTERY DISCHARGE RATES

Except Maintenance-Free Battery		Maintenance-Free Battery	
Battery Capacity (Ampere Hours)	Discharge Rate (Amperes)	Battery Capacity (Ampere Hours)	Discharge Rate (Amperes)
36	155	53	200
41	145	63	215
45	190	68	235
53	175		
54	225		
68	220		
77	228		

CJ1447-2F

Lamps, Instruments, Controls, Heating, A/C and Accessories

**PART
50-32**
All Models So Equipped

SUBJECT	PAGE	SUBJECT	PAGE
PRE-DELIVERY		MAINTENANCE	
Heater, Air Vents and Air Conditioner Operation	32-1	Illuminated Door Lock	32-2
Storage of Vehicles Equipped with Six Cylinder Compressor Systems	32-1	Windshield Wipers	32-2
		SPECIFICATIONS	32-3

CA-4237-2B

PRE-DELIVERY

HEATER, AIR VENTS AND AIR CONDITIONER OPERATION

Check for the following items: air leaks at vent openings, around door seals and windows, sufficient heat from floor outlets (approximately 140 degrees F at 32 degrees outside temperature and 50 percent relative humidity), blower operation in each switch position, temperature control and water valve operation, operation of open air ducts and vents, operation of air conditioner function controls for proper air discharge and air conditioning discharge temperatures at the center panel (A/C) register (approximately 68 degrees F at 100 degrees outside temperature and 50 percent relative humidity). Visually check for refrigerant leaks. **NOTE: Ambient temperature must be above 60°F for A/C operation.**

A refrigerant leak will usually appear as an oily residue at the leakage point in the system. The oily residue soon picks up dust or dirt particles from the surrounding air and appears greasy. Through time, this will build up and appear to be a heavy dirt impregnated grease.

Most common leaks are caused by damaged or missing O-ring seals at the various hose and component connections. When these O-rings are replaced, the new O-rings should be well lubricated with refrigerant oil and care should be taken to keep lint from shop towels or rags from contaminating the internal surfaces of the connection.

Missing Service Access Valve Caps (-19D702-) can also cause a refrigerant leak. If this important primary seal (the valve cap) is missing, dirt will enter the area of the A/C charging valve core. When the service hose is attached, the valve depressor in the end of the service hose forces the dirt into the valve seat area and the dirt will destroy the sealing surface of the A/C Charging Valve Core. If tightening the valve core doesn't stop the leak, it should be replaced with a new -19D701- A/C Charging Valve Core. When a Service Access Valve

Cap is missing, the protected area of the A/C Charging Valve Core should be cleaned and a new -19D702- Service Access Valve Cap should be installed.

CAUTION: Service access valve caps must be installed finger tight. If tightened with pliers, the sealing surface of the service access valve may be damaged.

STORAGE OF VEHICLES EQUIPPED WITH SIX CYLINDER COMPRESSOR SYSTEMS

A prolonged period (more than two weeks) of storage of vehicles equipped with a six cylinder A/C compressor may, in some instances, cause the compressor to seize and fail to rotate when the compressor clutch is engaged. It is recommended that all vehicles equipped with a six cylinder compressor be checked carefully during pre-delivery to insure the compressor is operating properly.

The compressor clutch rotates clockwise when viewed from the clutch end of the compressor. If the compressor clutch indicates evidence of compressor seizure, perform the following steps to free the seized condition:

1. Turn off the engine and disengage the clutch electrical connector.
2. Inspect the compressor drive belt(s) for damage. Replace if required.
3. Check for proper drive belt tension (110 to 140 ft-lbs).
4. Rotate the clutch counterclockwise three complete revolutions with a clutch spanner wrench (T70P-4067-A) to lubricate the surfaces between the pistons and the swash plate and free up the compressor.
5. Start the engine and turn ON A/C system (ambient temperature must be above 60°F). Connect the clutch electrical connector and check operation of compressor.

If the compressor does not operate properly, disengage the clutch electrical connector, turn off the engine and repeat step # 4. Restart the engine.

6. Increase engine speed to approximately 2000 rpm; connect the clutch electrical connector and check for proper compressor operation.

If the compressor still does not operate properly, replace the compressor.

MAINTENANCE

WINDSHIELD WIPER ARM AND BLADE ASSEMBLY ADJUSTMENT

Refer to Part 35-60 for adjustment procedures.

WINDSHIELD WIPER BLADE

For maximum wiper effectiveness the windshield and wiper blades must be kept clean. Foreign matter on the windshield or wiper blades may cause streaking or smearing. If blades do not clean properly, wash the windshield and wiper blades with undiluted Ford Ultra Clear or mild detergent. Rinse with water while rubbing with a clean cloth. For access to the blades, turn ignition to ACCESSORY with the wipers on. When wiper blades are approximately vertical, turn ignition OFF.

If you find cracks or breaks in the rubber, replace wiper blades with new elements.

Caution: Do not allow wiper blades to come in contact with gasoline, kerosene, paint thinner or similar solvents.

WINDSHIELD WIPER BLADE REPLACEMENT

Wiper blade replacement intervals will vary with the amount of use, type of weather, chemical reaction from road tars or salts and the age of the blades. Be sure that the windshield glass surface is not contaminated with oil, tree sap or other substance which cannot be easily rubbed off.

Generally, if the wiper pattern across the glass is uneven and streaks over clean glass, the blades should be replaced.

Refer to Volume 3 of the Manual for blade replacement.

RUBBER BLADE ELEMENT REFILL

"T" TYPE

To remove, squeeze latch lock release and pull the blade element out of the lever jaws (Fig. 1).

To install, insert the new element through each of the lever jaws. Be sure the element is engaged in all lever jaws.

"A" Type

To remove, depress the latch pin and slide the element out of the yoke jaws (Fig. 1).

To install, slide the element through the yoke jaws and insert the blade frame assembly into the slots of the yoke jaws.

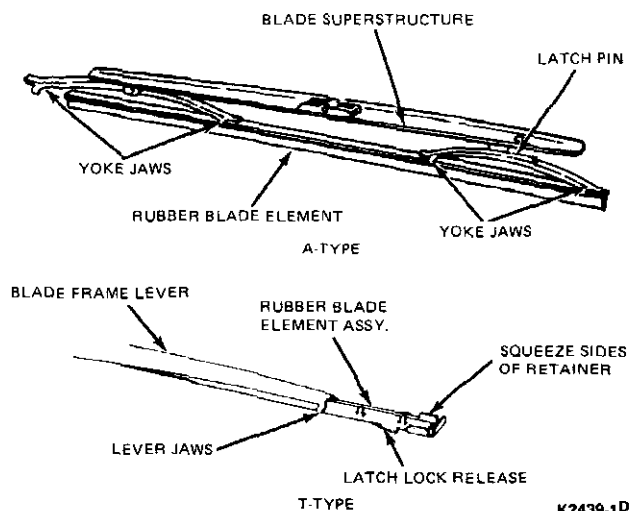


FIG. 1 Windshield Wiper Blade Element Refill

NOTE: If the arm or blade assembly is bent or distorted, replace the complete blade assembly.

ILLUMINATED DOOR LOCK

Lubrication:

To lubricate the lock cylinder, use Ford Lock Lubricant D2AZ-19587-A or similar lock lubricants.

Caution: Do not use reduced polyethylene or chloroform base lubricants.

Cleaning:

To clean the plastic lens, use Ford Multi-Purpose Cleaner Concentrate B8A-19523-A or mild soap or household ammonia and water solution. Should the lens become contaminated with oil or grease, clean with Ford Tar and Road Oil Remover B7A-19520-A or approved solvents such as Hexane, Dry-Cleaning Naptha, Kerosene or Methanol. Apply all solvents and solution sparingly with a soft absorbent cloth or cotton swab, followed by a clear water rinse. These solvents are toxic and flammable. Use with adequate ventilation and away from open flames.

Caution: Do not use abrasive cleaning preparations and other solvents such as benzene, gasoline, acetone, tetrachloride or denatured alcohol.

SPECIFICATIONS

Refer to Volume 3 of the Car Shop Manual for all Specifications not contained in this Section.

Body

**PART
50-41**

LUBRICATION

To eliminate any binding conditions on pivot and friction points, spray lubricant on luggage compartment hinge pivots, fuel filler door hinges, and on station wagon tailgates and Pinto, Bobcat and Mustang rear door support.

Lubricate lock cylinders, including the ignition lock, by applying lubricant sparingly in key slot and working key in lock.

Spray C4AZ-19584-B or equivalent polyethylene grease on hood and door hinges and hinge checks, and auxiliary hood catch.

To eliminate binding or sluggish mini-vent systems, make sure D3AZ-19553-A lubricant or equivalent is applied before delivery. (See "Windows, Vents and Mini-Vents.")

Work all pivot points several times to be certain lubricant has been worked in.

MAINTENANCE

BODY DRAIN HOLES INSPECTION

Make sure that the drain holes in the doors, rocker panels, and quarter panels are free from obstruction.

A small screwdriver can be used to open plugged or partially plugged drain holes.

SPECIFICATIONS

Refer to the Car Shop Manual, Volume 4, for the Body Specifications.

