

# PONTIAC





# FIERO

This book provides introductory "enthusiasts" information and "do-it-yourself" service procedures for the 1984 Fiero 2M4. There is also a pocket in the inside back cover, designed for convenient storage of your Owner's Manual, Maintenance Schedule, and Warranty folder. We urge you to read these documents before driving your Fiero.

All information, illustrations, and specifications in this manual are based on the latest product information available at the time of printing. We reserve the right to make changes at any time without notice.

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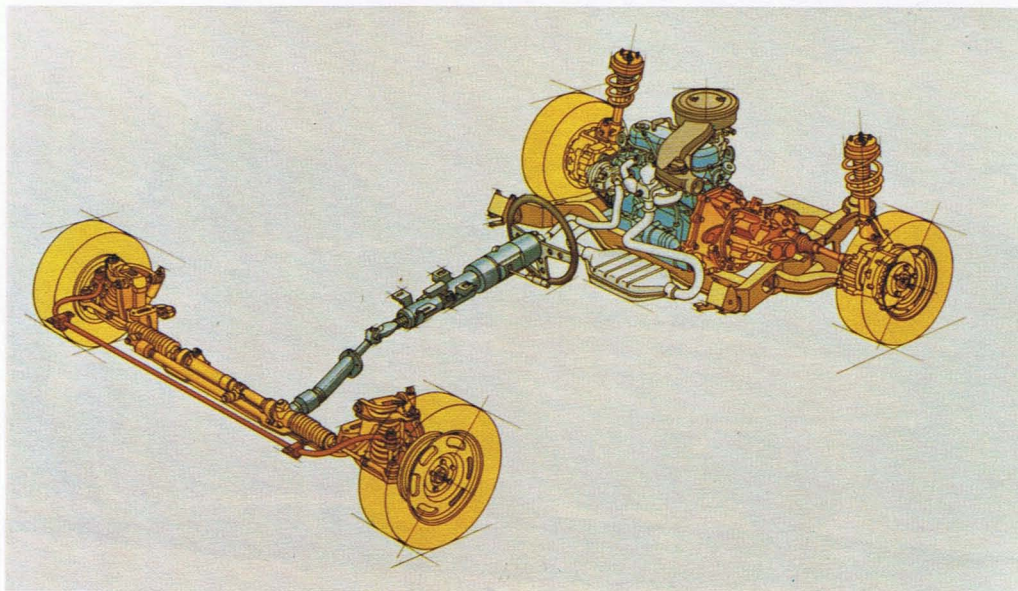


## **INTRODUCTION**

"Fiero." It means "Very Proud." This description applies, not only to your new Pontiac, but to individuals like yourself who have recognized an outstanding value in personal transportation.

Fiero is a world-class car, incorporating design features found in some of the world's most exotic offerings. Features like mid-car engine placement, 4 wheel independent suspension, 4-wheel disc brakes and electronic fuel injection are not commonplace in the automotive market. This kind of technology is reserved for an elite breed of automobile whose purpose in life is performance. Fiero is such an automobile.





### Mid-Engine Design - Weight Where It Works

Fiero is a true mid-engined vehicle. Its engine is transversely mounted behind the passenger compartment, above and slightly ahead of the rear wheels.

This design provides a substantial measure of traction competence, by putting the engine's weight over the drive wheels. It also allows for distinctive styling, as the front end need not be shaped to accommodate the engine.

While it is true that form should follow function, Pontiac believes that the form derived need be no less pleasing than the function it provides.

### Fully Independent Suspension Means Road Compliance

While nearly all rear-wheel drive cars have *front* wheels that are suspended independently of each other, very few have an independent *rear* suspension. Fiero's engine is coupled to a transaxle which drives the rear wheels through two half-shafts. This allows the rear wheels to



be independently suspended by means of McPherson struts and control arms. This offers two main benefits. First, the jounce, or up-and-down movement, of one rear wheel does not affect the location or attitude of the other. Second, because there is no heavy, live rear axle, unsprung weight is reduced. The result is a ride which, although responsive, is pleasantly supple over rough roads.

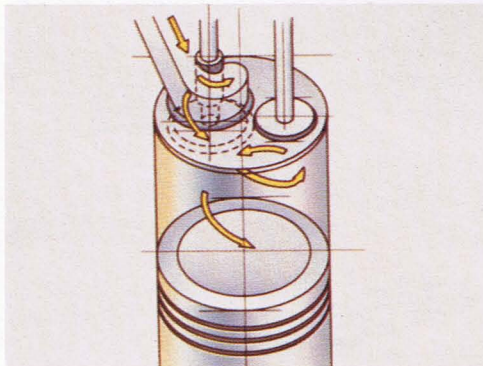
Up front, there is an "A" arm configuration with a 23mm anti-roll bar to enhance the flat cornering attitude already established by Fiero's low profile and wide stance.

## 2.5 Liter Fiero - Power on Tap

When asked to accelerate, Fiero responds with its 2.5 liter, 4-cylinder engine, equipped with Electronic Fuel Injection (EFI). The EFI system provides accurate and consistent fuel delivery over a wide range of operating conditions. The Electronic Control Module (ECM) - a small "on-board" microcomputer - is the heart of the system. Through a network of sensors, the ECM monitors throttle position, manifold vacuum, coolant temperature, exhaust oxygen content, RPMs and vehicle speed. The ECM uses this information to modify the amount of fuel delivered by the throttle body fuel injector. The object is to maintain an air/fuel ratio which is as close as possible to the Stoichiometric ideal of 14.7 to 1.

The ECM also uses sensor information to adjust spark timing as the vehicle is being operated. Thus, ignition occurs at just the right moment for conditions at hand.

The 2.5 liter engine incorporates a new swirl-port cylinder head, which is designed to force



the intake air/fuel charge to follow a spiral path into the combustion chamber. The resulting turbulence creates a homogeneous mixture, which burns smoothly and completely. In addition, the cylinder head cavities and piston domes have been designed to achieve a compression ratio of 9.0 to 1.

The product of all this technology is an octane-tolerant engine that provides low exhaust emissions, high efficiency - and sparkling performance.

## The Science of Economy

Fiero is a result of innovative technology. This is expressed, not just in terms of performance, but in terms of economy as well. You will find that, for all the exhilaration and sheer driving pleasure your new Pontiac offers, it is still a relatively inexpensive car to own and operate. For example, Fiero was designed for improved fuel efficiency.

Its fuel injected 4-cylinder engine is mated to your choice of an economical fully synchronized, 4-speed manual transaxle, or a sophisti-



cated 3-speed automatic transaxle. The latter is fitted with a locking torque converter, which provides a mechanical coupling between the engine and transaxle under cruising conditions. And there is more to Fiero's fuel efficiency story. Retractable headlights and an extremely low hood profile - an advantage afforded by mid-engine technology - help produce an aerodynamic drag coefficient of about .38.

While the drag coefficient's importance is not to be minimized, it is a car's aerodynamic *efficiency* that is the real measure of its wind-cheating ability. This number takes into account coefficient of drag *and* frontal area. Fiero has an aerodynamic efficiency of about .65, a very favorable rating.

Other contributors to Fiero's fuel efficiency include low rolling-resistance tires, advanced powertrain lubrication and, perhaps most

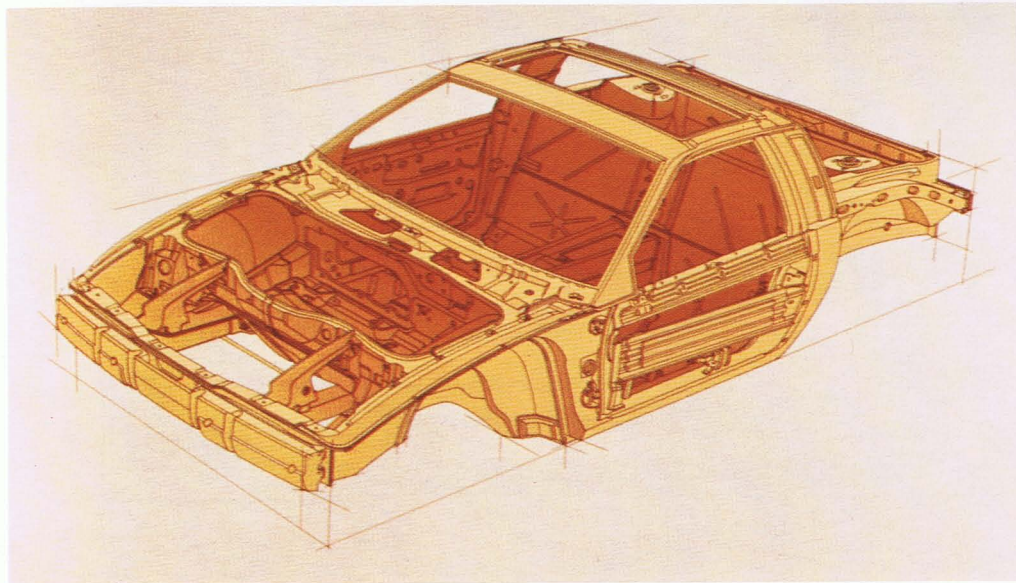
important, Fiero's contemporary size, which minimizes mileage-robbing weight.

Maintenance requirements also have a profound effect on how economical a car is. Here too, Fiero excels. For example, the Electronic Fuel Injection (EFI) system performs its fuel delivery and ignition timing functions without the bother of periodic adjustments. Moreover, maintenance items that *are* required have been made easy to perform. In fact, many tasks can, depending on your level of enthusiasm, be performed by you. These procedures are outlined in the "Do It Yourself" section of this manual.



Yet another measure of a car's ultimate economy is its durability. In addition to being built to Pontiac's standards of mechanical excellence, Fiero boasts a revolutionary concept in cosmetic durability with its use of ENDURAFLEX™ body panels. The front fascia and side body panels are flexible RIM (reaction injection molded) urethane reinforced with





glass flakes. This is a material similar to that used to manufacture the front and rear bumper fascias of many Pontiacs in recent years. As owners of these cars have found, this material is impervious to rust - a feature which will be appreciated year after year.

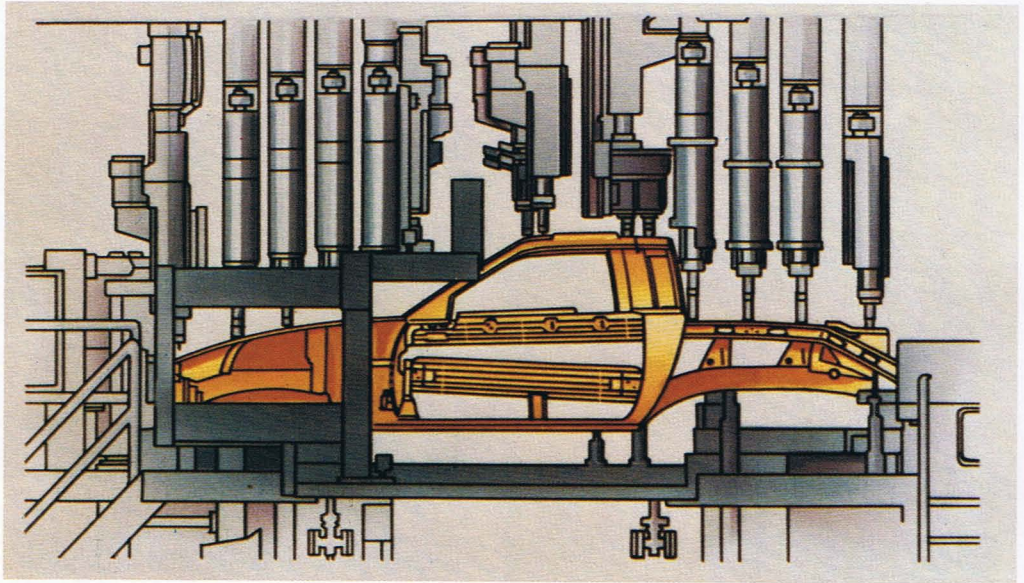
### **Fiero's Beauty - More than Skin Deep**

Fiero is constructed like no vehicle that has come before. It is, quite simply, a state-of-the-art achievement in structure and aesthetics. You see, beneath its resilient body panels is a steel "space frame" which supports the powertrain and suspension components, and lends outstanding structural integrity to Fiero's slippery shape.

During vehicle construction, the space frame is first assembled and welded. It is then placed on a "mill and drill" machine, where 39 separate, non-corroding, body mounting pads are drilled and machined from a master gage point. This process, an automobile manufacturing first, is designed to maximize dimensional accuracy, and assure a uniform fit of all exterior body "skins."

After the mill and drill process, the space frame proceeds to the CATHODIC ELPO (Electro-Deposition) dip area, where the latest GM Uniprime corrosion protection is applied.

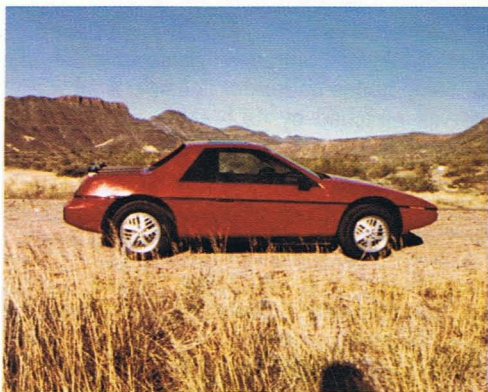
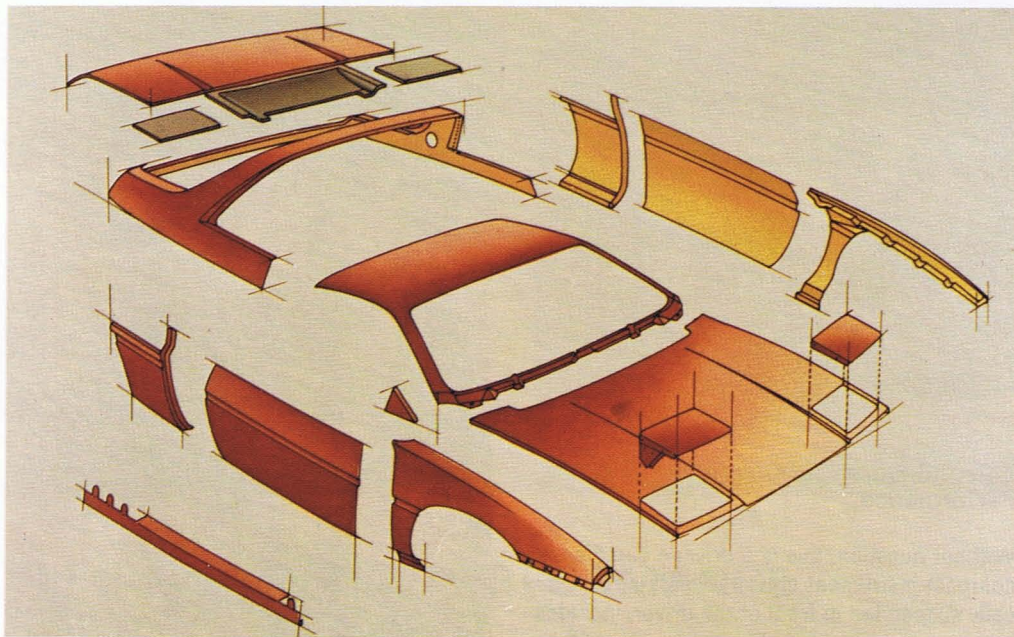
The space frame is then mated with the powertrain components, to become what Pontiac engineers refer to as a "driveable



chassis" - a mechanically complete "sub-car," so to speak. Since the driveable chassis lacks body panels and trim, engineers continue to have ready access to mechanical systems until late in the production cycle. This means that the car can be conveniently inspected, allowing for outstanding quality control.

Meanwhile, the body skins, which will be attached to the driveable chassis, are fabricated from two space-age materials. The fenders, front fascia, doors and lower quarter panels are high-grade, glass flake reinforced RIM urethane, while the front and rear compartment lids, roof panels and upper quarter panels are rigid SMC (sheet molded compound). These non-corroding materials afford excellent





dimensional control, while yielding a substantial weight saving over steel panels.

Before final assembly, the panels are painted, utilizing one of the most advanced paint-application systems in the world. In this process, a high-solid base coat and clear enamel gloss-coats are electrostatically applied, for a finish of striking beauty.

Finally, the body skins are *bolted* (for ease of removal and replacement) to the driveable chassis. Fiero is now complete - a visually pleasing package which, thanks to its unique construction, is as roadworthy as it is attractive.



### **You and Fiero - A Command Performance**

Without question, this is a driver's car. Fiero's compact instrument cluster, which is futuristically suspended in front of the driver, includes a temperature gage and voltmeter, as well as an electronic speedometer and tachometer. Warning lights tell of front or rear compartment lids or doors ajar. Controls are located within easy reach - even the front compartment lid and fuel filler door are released from the driver's seat.

But for all its utility, Fiero is not without creature comforts. From seats that cradle and support hour after hour, to an optional fingertip-controlled climate, to an available stereo sound system that includes two high fidelity speakers in each headrest, Fiero's interior is a delightful environment from which to control the surrounding machinery.

And the machinery begs to be controlled. As directional commands are transmitted to the road through rack and pinion steering, Fiero follows through with a minimum of body roll. Even in the tightest turns, its flat attitude never seems to deviate.



Fiero's fuel-injected power gives you a feeling of competence underfoot - competence which is well matched by its braking performance, thanks to power-assisted, discs at all four wheels. In all, the driving experience is reassuring, while providing a high level of enjoyment.

In summary, one could say that Fiero is a product of performance-oriented engineering and skilled workmanship. But it is also a state of mind. Enjoy it- you have a right to be proud.





## A WORD ABOUT ENGINES:

## ENGINE

Head Design ..... cast iron with swirlport  
combustion chamber  
Power (SAE net) ..... 91 hp @ 4400 RPM  
Torque (SAE net) ..... 132 ft. lbs. @ 2800  
RPM

## DRIVE TRAIN

4-Speed Fuel Economy	
Leader	
Final Drive Ratio .....	3.32
First Gear Ratio .....	3.53
Second Gear Ratio .....	1.95
Third Gear Ratio .....	1.24
Fourth Gear Ratio .....	0.73

**Standard 4-Speed**

Final Drive Ratio .....	4.10
First Gear Ratio .....	3.53
Second Gear Ratio .....	1.95
Third Gear Ratio .....	1.24
Fourth Gear Ratio .....	0.81

**Automatic**

Final Drive Ratio .....	3.18
First Gear Ratio .....	2.84
Second Gear Ratio .....	1.60
Third Gear Ratio .....	1.00

**DIMENSIONS**

Wheelbase .....	93.4 in
Track .....	F-57.8 in/R-58.7 in
Length .....	160.7 in
Width .....	68.9 in
Height .....	46.9 in
Weight distribution (F/R%) .....	44/56

**SUSPENSION**

Front .....	Ind A-arm 23mm stabilizer bar
Rear .....	Ind. strut.

**STEERING**

Type .....	rack and pinion
Turns lock-to-lock .....	3.10

**BRAKES**

Front .....	9.6" x .43" disc
Rear .....	9.6" x .50" disc
Power Assist .....	vacuum
Calipers .....	aluminum

**WHEELS**

Size & Type .....	(STD) 13" x 5.5" steel
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**TIRES**

Size & Type ....	(STD) 185/80R 13 steel radial
------------------	-------------------------------

**AERODYNAMICS**

Coefficient of drag (approx- imately) .....	.38
Aerodynamic efficiency (approximately) .....	.65



## FIERO FASHIONS



- BASEBALL JERSEY — \$8.50 each
- SPORT SHIRT — \$17.30 each
- T-SHIRT — \$4.90 each
- V-NECK SWEATER — \$26.50 each
- CARDIGAN SWEATER — \$26.70 each
- FASHION JACKET — \$32.00 each
- GOLF CAP — \$3.50 each
- GATSBY HAT — \$4.50 each

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# FIERO FASHION ORDER FORM

ITEM DESCRIPTION	QTY.	AMOUNT
<b>BASEBALL JERSEY</b> — Gray Body and Red Sleeves <b>\$8.50 each</b> Small _____ Medium _____ Large _____ X-Large _____		
<b>SPORTS SHIRT</b> — <b>\$17.30 each</b> White: Small _____ Medium _____ Large _____ X-Large _____ Black: Small _____ Medium _____ Large _____ X-Large _____		
<b>T-SHIRT</b> — Gray Only. <b>\$4.90 each.</b> Small _____ Medium _____ Large _____ X-Large _____		
<b>V-NECK SWEATER</b> — Gray Only. <b>\$26.50 each.</b> Small _____ Medium _____ Large _____ X-Large _____		
<b>CARDIGAN SWEATER</b> — White Only. <b>\$26.70 each.</b> Small _____ Medium _____ Large _____ X-Large _____		
<b>FASHION JACKET</b> — Black Only. <b>\$32.00 each.</b> Small _____ Medium _____ Large _____ X-Large _____		
<b>GOLF CAP</b> — Gold Only. <b>\$3.50 each.</b>		
<b>GATSBY HAT</b> — White Only. <b>\$4.50 each.</b>		

## SHIPPING CHART

Orders Under \$25.00 .....	\$2.60
\$25.00 - \$99.00 .....	\$3.50
\$100.00 - \$199.00 .....	\$4.50
\$200.00 or More .....	\$5.50

Item Total \$ \_\_\_\_\_

4% Sales Tax  
(Michigan Only) \$ \_\_\_\_\_

Shipping  
(See Chart) \$ \_\_\_\_\_

## PLEASE ALLOW 4-6 WEEKS FOR DELIVERY

### SHIP TO (Please Print)

NAME \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_  
 STATE \_\_\_\_\_ ZIP \_\_\_\_\_  
 TELEPHONE # \_\_\_\_\_

**TOTAL** \$ \_\_\_\_\_

**Check or Money Orders  
Payable to:**

**PVL, INC.**  
 1523 N. Main  
 Royal Oak, Mich. 48067  
 (313) 548-1550

## METHOD OF PAYMENT

- ☐ CHECK (ENCLOSED) ☐ MONEY ORDER (ENCLOSED)  
☐ MASTERCARD ☐ VISA

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Card No.

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

EXPIRATION DATE

Month	Day	Year





## DO IT YOURSELF

### SECTION 2

You have demonstrated your appreciation for styling and durability in your purchase of this vehicle. Another attribute of the Fiero, which you may not be aware of, is its ease of serviceability. In fact, a number of basic services can be performed by the owner who takes pride in working on his or her own vehicle.

The services listed in the index are described in the following pages. When you turn to a service procedure, you will see a small symbol, consisting of one, two, or three wrenches, next to the title. This symbol represents the degree of difficulty of that procedure, and is interpreted as follows:



Easy: Generally no tools required; easy access



More difficult: Common hand tools required; access may be more difficult, but it is generally not necessary to remove non-related components.



Most difficult: Common hand tools required; access difficult – it may be necessary to remove non-related components.

**CAUTION:** As with any machine, take care when making any check, doing any maintenance, or making any repair, to avoid being injured. Before beginning any procedure, make sure the parking brake has been firmly applied, and the transaxle has been shifted to "PARK" (automatic) or "NEUTRAL" (manual). Always wear

safety glasses when working on your car. Never get beneath the car when it is supported only by a jack. The jack provided with your car is designed for use only when changing wheels. Always use safety stands to support the car if it is necessary to get underneath.

Do not breathe exhaust gas because it contains carbon monoxide which by itself has no color or odor. Carbon monoxide is a dangerous gas. It can cause unconsciousness and can be lethal. Do not run engine in an enclosed area.

Some of the materials in the car may be hazardous if used, serviced, or handled improperly. Always observe recommended torque values when reassembling components. Improper or incomplete service could lead to the vehicle not working properly, which may result in personal injury or damage to the car or its equipment. If you have any questions about carrying out some service, have the service done by a skilled technician.

### FIERO OWNER'S MANUAL

Section 5 of your Fiero Owner's Manual, "Service and Maintenance," contains additional information on caring for your Fiero. It covers such topics as tire pressure, maintenance, and a selection of proper lubricants and fluids for your engine, transaxle, brakes, etc. We recommend that you review this section of your Owner's Manual. The information provided, in combination with the "Do It Yourself" procedures, will help make caring for

your Fiero a pleasant and rewarding experience.

### **GM MAINTENANCE SCHEDULE FOLDER**

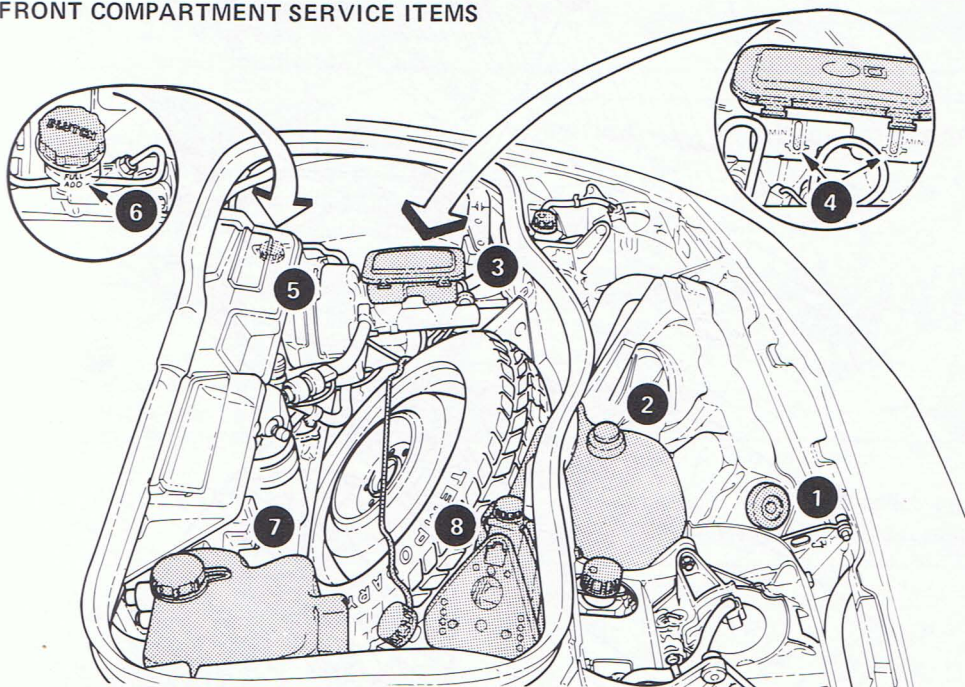
The General Motors Maintenance Schedule informs you of required maintenance intervals in time and miles. The required services are more comprehensive than the "Do It Yourself" procedures found in this manual. Therefore, we recommend that you follow the maintenance schedule to keep your Fiero in top operating condition.

### **REPLACEMENT PARTS AND CAPACITIES**

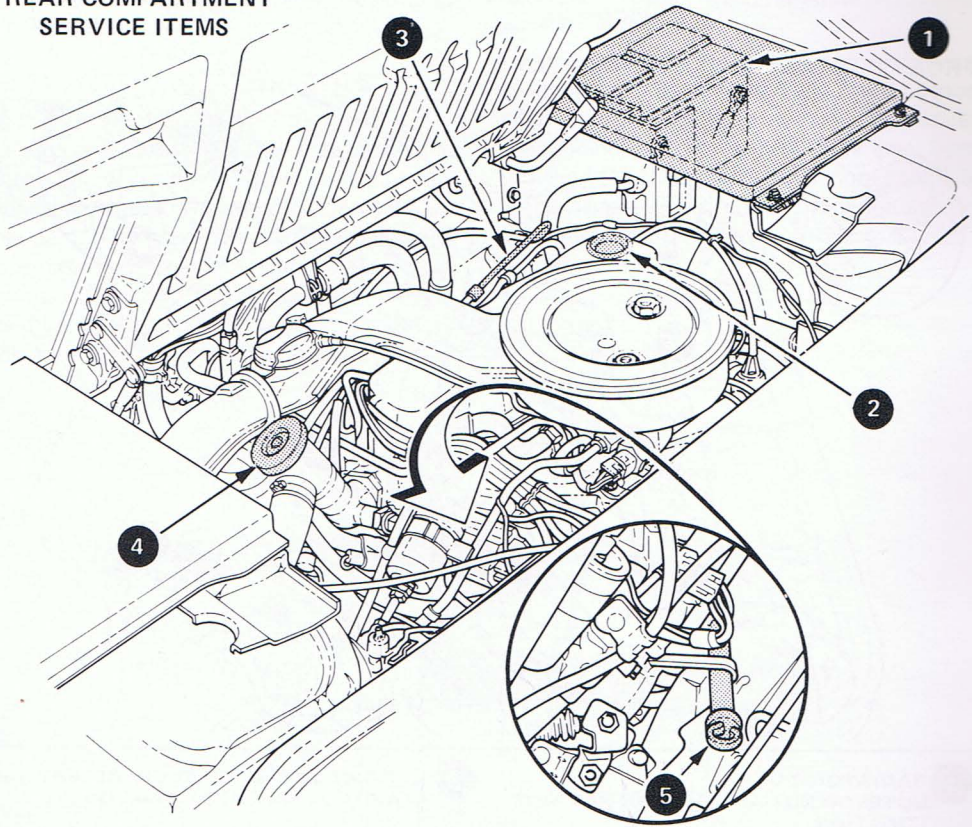
Following the "Do It Yourself" section is a list of service replacement parts which can be used when performing the procedure in this manual. Additionally, a list of capacities has been provided for your reference. A more complete list of parts and capacities is found in section 6, "Specifications," in the Fiero Owner's Manual.



## FRONT COMPARTMENT SERVICE ITEMS



- |  |  |
|--|--|
| 1 RADIATOR CAP<br>NOTE: DO NOT ADD COOLANT AT THIS LOCATION. | 5 HYDRAULIC CLUTCH FLUID RESERVOIR<br>(MANUAL TRANSAXLE CARS ONLY) |
| 2 ENGINE COOLANT RECOVERY TANK                               | 6 HYDRAULIC CLUTCH FLUID CHECK                                     |
| 3 BRAKE FLUID FILL CAP                                       | 7 WINDSHIELD WASHER BOTTLE   |
| 4 BRAKE FLUID LEVEL CHECK                                    | 8 VEHICLE JACK   |

REAR COMPARTMENT  
SERVICE ITEMS

1 FREEDOM BATTERY

2 ENGINE OIL FILL CAP

3 CHECKING ENGINE OIL (DIPSTICK)

4 THERMOSTAT HOUSING AND CAP  
COOLANT FILL LOCATION5 AUTOMATIC TRANSAXLE DIPSTICK  
AND FLUID FILL





## CHECKING/ADDING ENGINE OIL

### General Information

The engine oil must be kept at the right level to help ensure proper lubrication of your car's engine. It is the owner's responsibility to check the oil level at regular intervals (such as every fuel stop), according to the following instruction. (It is normal for an engine to use some oil, and engines may use more oil when they are new.)

To determine correct oil quality, viscosity, and change intervals, see "Service and Maintenance" (Section 5) in the Fiero Owner's Manual.

### Checking/Adding Oil

#### Tool Required

Oil Spout

1. The best time to check the engine oil level is when the oil is warm, such as during a fuel stop. Make sure the vehicle is parked on level ground. After stopping the engine, wait a few minutes for the oil to drain back to the oil pan. Then, pull out the dipstick on the front of the engine. See Figure 1. Wipe it clean, and push the dipstick back down all the way. (The dipstick has a special seal at the top. Make sure it is fully seated when checking the oil level to assure accurate readings.) Now, pull out the dipstick and look at the oil level on it.
2. Add oil if needed, to keep the oil level above the "ADD" line. See Figure 2. Avoid overfilling the engine since this may cause

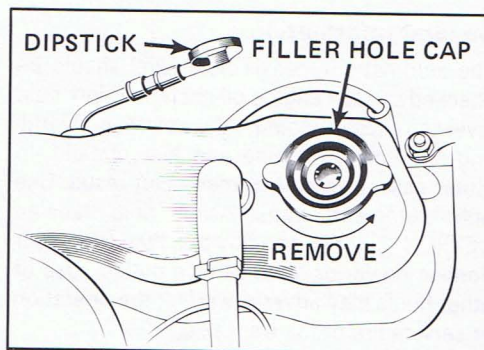


Figure 1 - Top of engine

engine damage. Push the dipstick back down all the way after taking the reading.

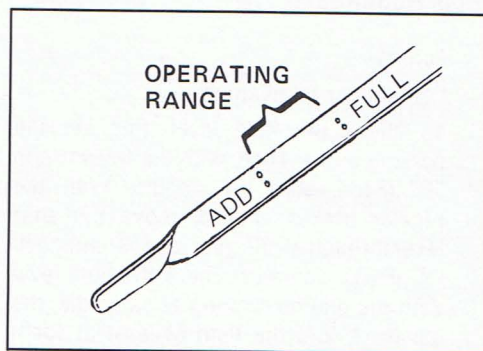


Figure 2 - Oil dipstick

3. If you check the oil level when the oil is cold, do not run the engine first. The cold oil will not drain back to the pan fast enough to give a true oil level.



## CHECKING/ADDING AUTOMATIC TRANSAXLE FLUID

### General Information

The automatic transaxle fluid level should be checked at each engine oil change. A low fluid level can cause slipping or loss of drive. Overfilling can cause foaming and loss of fluid. In either case, transaxle damage can result. Use only automatic transmission fluid labeled DEXRON® II. You can buy this fluid from your Pontiac dealer or other service outlets. Use of other fluids may adversely affect the operation or service life of the transaxle.

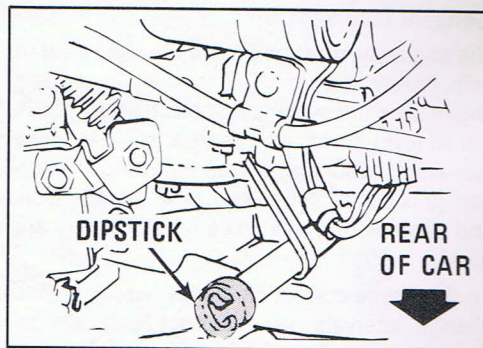


Figure 1 - Rear of engine (looking straight down)

### Checking/Adding Fluid Tools Required

Funnel

Can opener or oil spout

1. To check the fluid level, first set the parking brake. Then, with the transaxle in "P" (Park), start the engine. With the regular brakes applied, move the shift lever through all the gear ranges, ending in "P" (Park). You must check the fluid level with the engine running at slow idle, the car level, and the fluid at least at room temperature.

You cannot read the correct fluid level if you have just driven the car for a long time at high speed, in city traffic in hot weather,

or if the car has been pulling a trailer. Wait until the fluid had cooled down (about 30 minutes).

2. Remove the dipstick located at the rear of the engine compartment. See Figure 1. Carefully touch the wet end of the dipstick to find out if the fluid is at least room temperature. If it feels cold, replace the dipstick and drive the car for at least five miles before checking again. If the fluid is at room temperature or hotter, clean the dipstick and push it back in until the cap seats. Pull out the dipstick and read the fluid level. The level should be in the cross-hatched area on the dipstick.



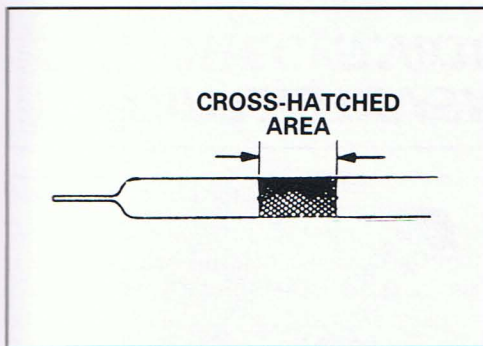


Figure 2 - Automatic transaxle dipstick

3. Using a long plastic funnel, add just enough DEXRON<sup>®</sup> II fluid (at the dipstick tube) to fill the transaxle to the proper level. It takes only 0.5 liter (one pint) to raise the level from "ADD" to "FULL" with a hot transaxle.



## CHECKING/ADDING MANUAL TRANSAXLE FLUID

### General Information

The manual transaxle fluid level seldom needs to be checked. Consult your Maintenance Schedule for proper intervals. Use only SAE 5W-30 SF, SF/CC or SF/CD engine oil. Use of other fluids may adversely affect the operation or service life of the transaxle.

### Checking/Adding Fluid

#### Tools Required

15mm wrench

Funnel

12" rubber tube to fit over small end of funnel

Can opener or oil spout

1. Check the fluid level only when the engine is off, the vehicle is level and the transaxle is cool enough to let you rest your fingers on the transaxle case. To check, carefully remove the filler hole plug above the axle shaft on the driver's side of the case. See Figure 1. If the transaxle is hot, fluid may flow from the filler hole when you remove the plug.
2. When the fluid is cool (about room temp-

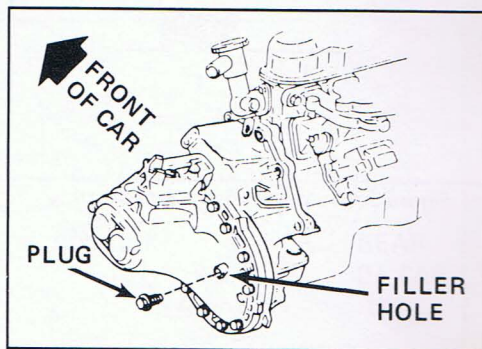


Figure 1 - Left hand side of transaxle

erature), the fluid should be level with the filler hole. If needed, add enough SAE 5W-30 SF, SF/CC or SF/CD engine oil to bring the fluid level up to the filler hole. This can be done by inserting the end of a funnel into one end of a rubber tube, and inserting the other end of the rubber tube into the filler hole.

3. After checking and/or filling, reinstall filler hole plug, and torque to 33 N·m (24 ft. lbs.).





## CHECKING/ADDING BRAKE FLUID

### General Information

The brake fluid reservoir is part of the brake master cylinder, located under the front compartment lid on the driver's side of the vehicle. See Figure 1. The fluid in the reservoir should be checked each time your engine oil is changed.

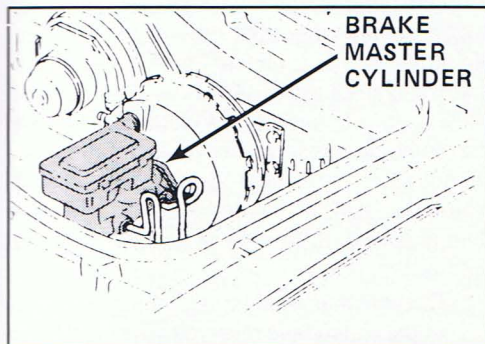


Figure 1 - Driver's side of front compartment

### Checking/Adding Fluid Tools Required

None

Use only Delco Supreme No. 11 or other DOT 3 specification brake fluid. Use of other fluids may adversely affect the operation or service life of the brake system. Before using brake fluid, read all cautions on the container. Do not allow anyone to depress the brake pedal while the brake fluid reservoir cover is not in place.

Do not allow brake fluid to come into contact with eyes, skin, or painted surfaces. If brake fluid is spilled, flush area of spill immediately with water.

1. Observe the brake fluid levels through the plastic wall of the reservoir. The levels in both the front and rear chambers of the reservoir must be above the "MIN" lines. See Figure 2.

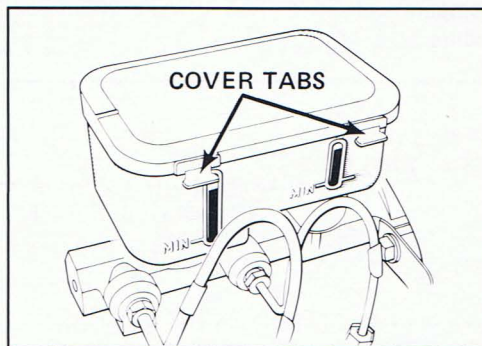


Figure 2 - Brake fluid reservoir

2. If it is necessary to add fluid, clean the cover and area around it to prevent foreign matter from entering the reservoir when the cover is removed. Grasp the tabs on the sides of the cover, and lift it off the reservoir. See Figure 2.
3. Add brake fluid as necessary.

4. Carefully compress the rubber diaphragm on the inside of the reservoir cover.
5. Snap the cover back into place.



## CHECKING/ADDING CLUTCH FLUID

### General Information

The hydraulic clutch takes the place of clutch cables and linkage in controlling the engagement of the clutch.

The clutch fluid reservoir is part of the clutch master cylinder, located under the front compartment lid on the driver's side. See Figure 1

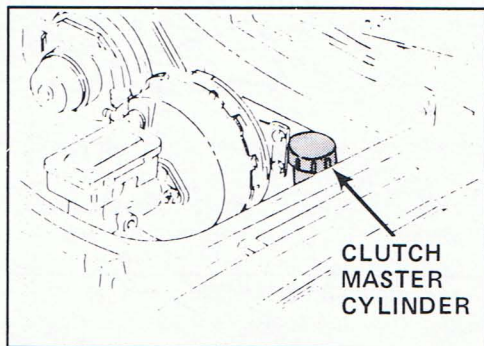


Figure 1 - Driver's side of front compartment

### Checking/Adding Fluid Tools Required

None

Use only Delco Supreme No. 11 or other DOT 3 specification brake fluid. Use of other fluids may adversely affect the operation or service life of the hydraulic clutch. Before using brake fluid, read all cautions on the container. Do not allow anyone to depress the clutch pedal while the clutch fluid reservoir cover is not in place. Do not allow brake fluid to come into contact with eyes, skin, or painted surfaces. If brake fluid is spilled, flush area of spill immediately with water.

1. Observe fluid level through the plastic wall of the clutch fluid reservoir. The level must be between the "ADD" and "FULL" lines.
2. If it is necessary to add fluid, clean the cover and area around it to prevent foreign matter from entering the reservoir when the cover is removed. Unscrew and remove the reservoir cover. See Figure 2.



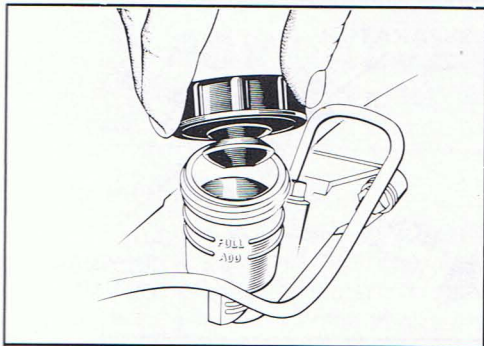


Figure 2 - Clutch fluid reservoir

3. Add brake fluid as necessary.
4. Screw the cover back into place.



## AIR FILTER / CRANKCASE SEPARATOR REPLACEMENT

### General Information

Your car's air cleaner traps small, airborne particles which would otherwise enter the engine. These particles, consisting of dust, grease, etc., build up on the filter inside the air cleaner. This build-up can eventually make it difficult for your engine to "breathe." It is therefore important that the filter be clean and unobstructed.

The crankcase separator serves as the air intake for the positive crankcase ventilation (PCV) system. The separator must remain unrestricted for this system to operate properly.

The air filter and crankcase separator should be periodically replaced together. See your Maintenance Schedule for replacement intervals. "See Replacement Parts" in this manual for part numbers.

### Removal/Replacement Tool Required

10MM Nut Driver

**CAUTION:** The air cleaner also functions as a flame arrestor in the event of engine backfire. The air cleaner should be installed at all times unless its removal is necessary for repair or maintenance. To help reduce the risk of personal injury and/or property damage, be sure that no one is near the engine compartment before starting the engine with the air cleaner removed. If engine backfire occurs with the air cleaner removed, there could be a burst of flame and possibly other fire in the engine compartment.

1. Remove the two nuts on top of the air cleaner. See Figure 1.

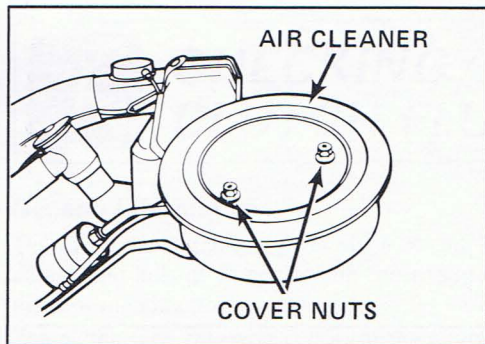


Figure 1 - Top of engine

2. Remove the air cleaner cover.
3. Remove the air filter from the air cleaner.
4. The crankcase separator is located between the air cleaner and valve cover. See Figure 2. With both hands, pull air cleaner up and away from the fuel injector unit and the separator. Do not disconnect any rubber tubing. Move the air cleaner off to the side.

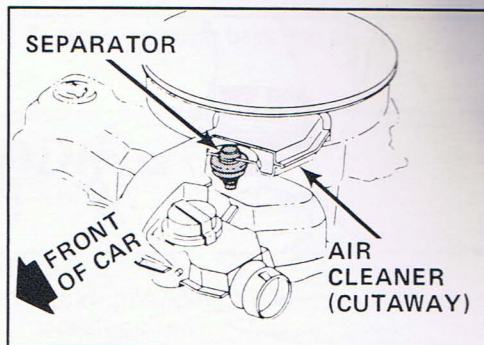


Figure 2 - Top of engine

5. Remove the separator from the valve cover by pulling straight up.
6. Install a new separator, making sure it is properly seated between the valve cover and air cleaner.
7. Remove any foreign material from inside the air cleaner. Do not allow any foreign material to enter the throttle body.
8. Install a new air filter with either side up.
9. Install the air cleaner cover. Tighten the cover nuts to 6 N·m (4 ft. lbs.).





## PCV VALVE SERVICE

### General Information

Your car's engine is equipped with a closed positive crankcase ventilation (PCV) system. In a closed PCV system, fresh air is drawn through the crankcase separator under the air cleaner, into the engine crankcase. The air mixes with crankcase vapors. This mixture is then drawn through the PCV valve, into the intake manifold, and into the cylinders where it is burned. The PCV valve regulates the flow of this mixture, and must be unobstructed for proper operation. Therefore, periodic replacement is necessary. Consult your Maintenance Schedule for replacement intervals.

The PCV valve is located inside the crankcase ventilation grommet on the valve cover, next to the oil filler cap. See Figure 1.

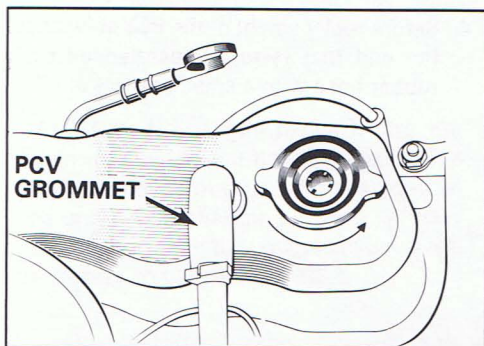


Figure 1 - Top of engine (PCV valve is inside grommet)

### Inspection/Diagnosis

**CAUTION:** Diagnosis of the PCV System requires the engine to be running. Keep hands, tools and clothing away from the engine belts and pulleys.

1. Shift the automatic transaxle to "PARK," or manual transaxle to "NEUTRAL." Firmly apply the parking brake. Start the engine and let it idle.
2. Remove the PCV valve from the crankcase ventilation grommet in the valve cover. (See "Removal/Replacement.") Leave the PCV Valve hose attached to the PCV Valve. See Figure 2.

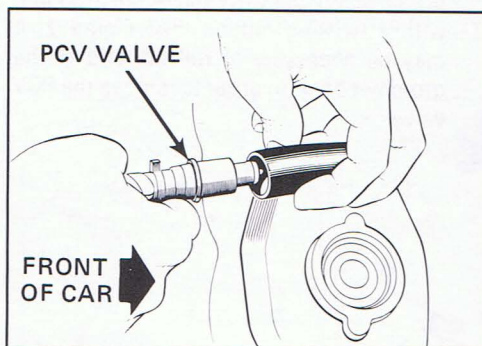
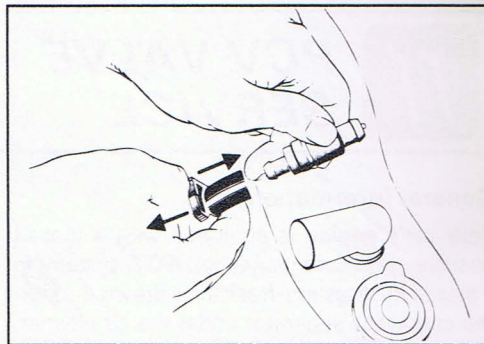


Figure 2 - Removing PCV valve from grommet

3. Check for vacuum by placing your thumb over the exposed end of the PCV valve. If no vacuum is felt, check for blockage in the PCV hose, or in the PCV valve itself. A plugged valve or hose must be replaced.
4. Shut off the engine. Check the PCV hose and grommet for cracking. A cracked hose or grommet must be replaced.
5. Remove the PCV valve from its hose. (See "Removal/Replacement.") Shake the valve and listen for a rattle. If the valve does not rattle, it must be replaced.



*Figure 3 - PCV valve removed from hose*

### **Removal/Replacement Tools Required**

Screwdriver

See "Replacement Parts" in this manual for PCV valve part number.

1. Firmly grasp the PCV valve (with hose attached) as close to the grommet as possible. Pull the valve out of the grommet with a twisting motion. See Figure 2. It may be necessary to roll the end of the grommet back, in order to remove the PCV valve.

2. To open the clip which holds the rubber hose in place, push the clip tabs in opposite directions.
3. Separate the PCV valve from its hose by holding the hose steady and pulling the PCV valve with a twisting motion. See Figure 3.
4. Before replacement of the PCV valve, coat the end that is to be inserted into the rubber hose with a small amount of oil.





## SUSPENSION LUBRICATION

### General Information

Regular lubrication of suspension and steering pivot points is recommended for maximum performance and long wear. Consult your Maintenance Schedule for service intervals.

**NOTE:** Ball joints should only be lubricated at temperatures of 10°F (-12°C), and higher. During cold weather, the vehicle should be allowed to warm up in a heated garage before the ball joints are lubricated. Lubricant must meet GM specifications 6031M. Use of other lubricants may adversely affect the operation or service life of the ball joints.

### Lubrication

#### Tools Required

- Shop cloth
- Grease gun
- Flexible hose for grease gun

**CAUTION:** Never get beneath the car when it is supported only by a jack. The jack provided with your car is designed for use only when changing wheels. Always use safety stands to support the car if it is necessary to get underneath.

### Front Suspension

1. Wipe the 6 grease fittings (3 on each side) clean with a cloth. See Figure 1.

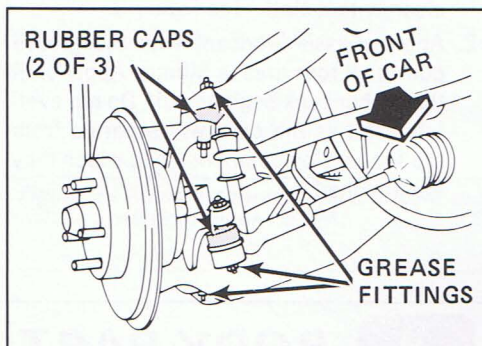


Figure 1 - Front suspension (passenger's side)

2. Apply chassis lubricant with the grease gun to all six grease fittings. Apply until the rubber caps begin to puff. Do not over-lubricate, as the caps will separate from the suspension components to which they are attached.

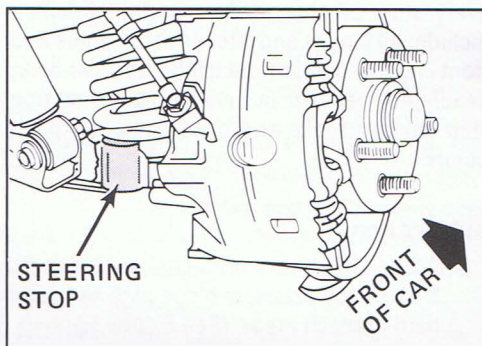


Figure 2 - Front suspension (passenger's side)

3. Apply a small quantity of lubricant to the metal steering stops. See Figure 2.

### Rear Suspension

1. Wipe the 4 grease fittings (2 on each side) clean with a cloth. See Figure 3.
2. Apply chassis lubricant with the grease gun to all four grease fittings. Apply until the rubber caps begin to puff. Do not over-lubricate, as the caps will separate from the suspension components to which they are attached.

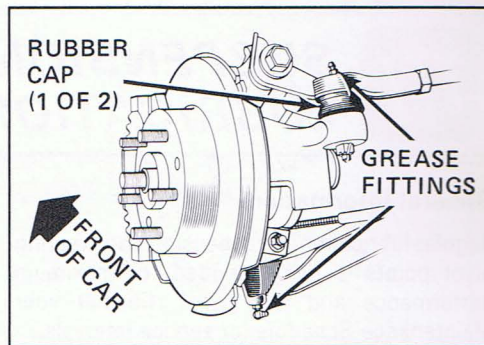


Figure 3 - Rear suspension (driver's side)



## BODY PART LUBRICATION

### General Information

The mechanical parts of the body with contacting surfaces should be lubricated at least every other oil change. Parts to be lubricated include: All hinges and latches at the doors and front and rear compartment lids; fuel filler door; headlight mechanism; manual transmission shift linkage; brake and/or clutch pedal pivot points.

### Lubrication

1. Apply a light, penetrating oil, such as CRC 5-56 or equivalent, to hinge pins and other hard-to-reach areas. (See Figure 1.)

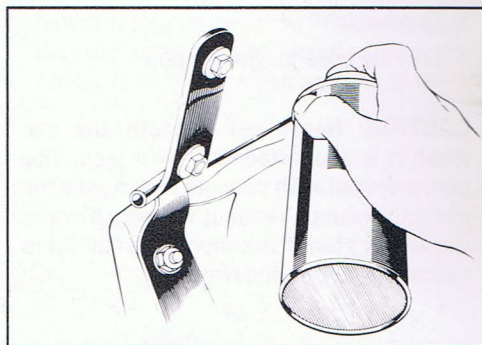
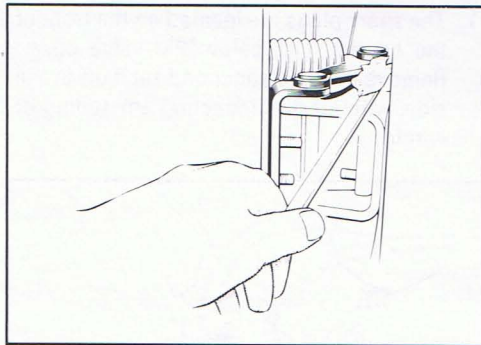


Figure 1 - Lubricating front compartment lid hinge



2. Apply a grease-type lubricant, such as Lubriplate or equivalent, to latches, strikers and other easily accessible surfaces. See Figure 2.



*Figure 2 - Applying grease-type lubricant to door hinge detent*



## SPARK PLUG SERVICE

### Diagnosis

Worn-out spark plugs may cause one or more of the following symptoms:

- Poor mileage
- Poor performance
- Stalling
- Hard starting
- Missing

If any of these symptoms are present, worn-out spark plugs could be the cause. In addition, spark plug replacement is recommended as part of regular emission control maintenance. See your Maintenance Schedule for replacement intervals.

### Removal/Replacement Tools Required

- 5/8" deep socket
- Universal joint socket extension
- Ratchet
- 8" ratchet extension
- Spark plug gapping tool
- 10mm nut driver

See "Replacement Parts" in this manual for replacement spark plug number.

It is advisable to remove and replace only one spark plug at a time. This will help prevent installing the spark plug wires in the wrong order.

**NOTICE:** *If spark plug wires are installed in the wrong order, engine damage can result.*

1. The spark plugs are located on the front of the engine, just below the valve cover. Remove the air cleaner and set it off to the side, without disconnecting any tubing or wiring.

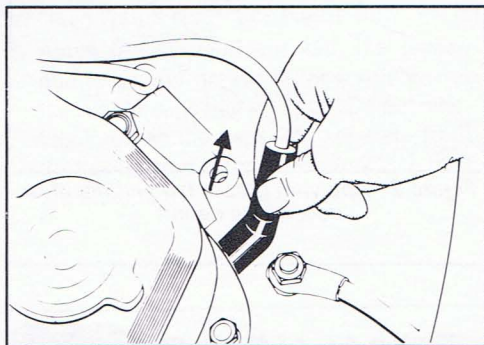


Figure 1 - Removing spark plug wire

2. Remove the first spark plug wire by pulling on the boot, not on the wire itself. (If the spark plug boot is stuck to the spark plug a slight twisting motion on the boot will assist in breaking loose the boot). See Figure 1. Pulling on the wire may separate the carbon center, causing the wire to fail, and the engine to misfire. This can happen with no evidence of damage on the outer insulation. In case of wire damage, it is necessary to replace the complete wire, since a satisfactory repair cannot be made. Also, pull the boot by hand only—never use pliers.
3. Wipe the spark plug wire with a cloth. Carefully bend the wire to check for brittle or cracked insulation. A wire with defective insulation should be replaced.

4. If the wire is in good condition, check the terminals. Clean the terminals if they are dirty. Replace the wire if the terminals are broken or distorted. Check the distributor nipple and spark plug boot. Replace if broken or deteriorated.
5. Remove the first spark plug using a 5/8" deep socket. (Turn counter-clockwise.) See Figure 2.

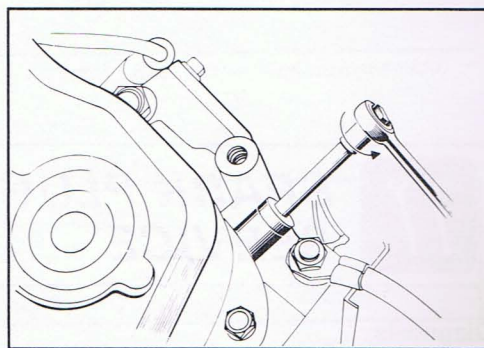


Figure 2 - Removing spark plug

6. Gap the new plug to 1.5mm (.060 in). See Figure 3.
7. Install the spark plug, screwing it in by hand until it seats correctly. This will help prevent cross-threading the spark plug and cylinder head. Using a 5/8" deep socket, tighten the spark plug to 15 N·m (11 ft. lbs.).
8. Reinstall the spark plug wire.
9. Repeat these steps for the remaining 3 spark plugs.
10. Reinstall the air cleaner assembly and tighten the cover nuts to 6 N·m (4 ft. lbs.).



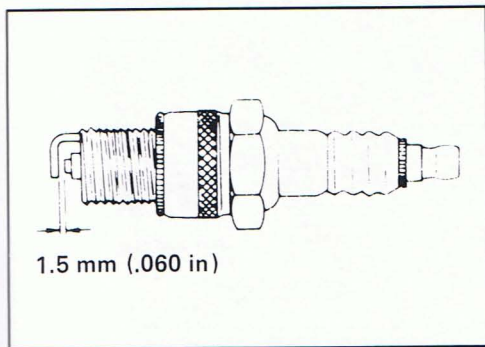
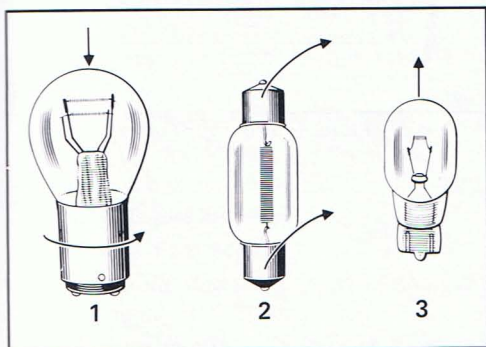


Figure 3 - Correct spark plug gap



## **BULB / LENS REPLACEMENT**



Most of the bulbs on the vehicle are one of three types.

To replace a bulb, remove the lens and proceed as follows:

Type 1 – Push bulb in and turn counter-clockwise to remove (clockwise to install).

Type 2 – Pull the bulb away from its retaining clips.

Type 3 – Pull the bulb straight out from its socket.

See "Replacement Parts" in this manual for bulb numbers.

The following Figures 1-5 indicate how to access and remove specific bulbs.

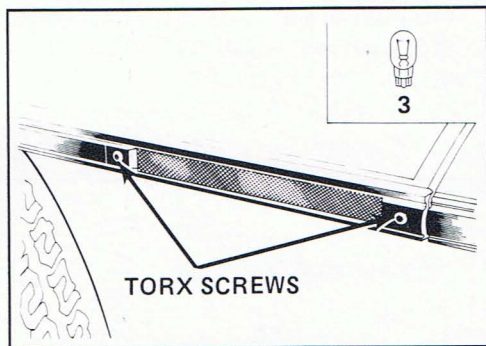


Figure 1 - Side marker light

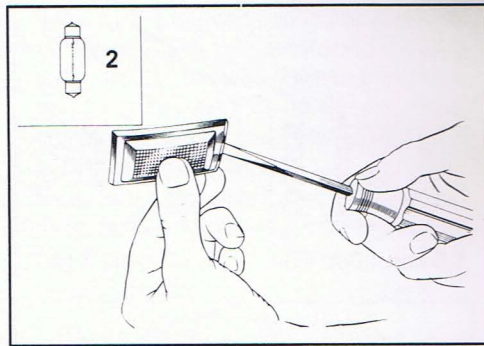


Figure 2 - Rear Compartment light (optional)

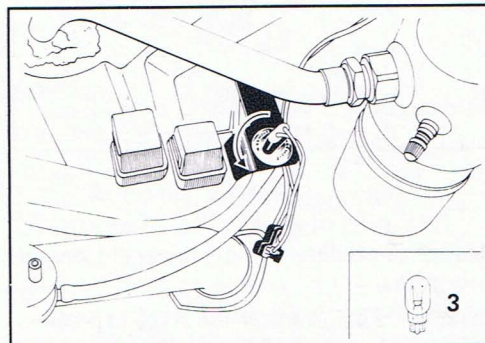


Figure 3 - Front compartment light (optional)

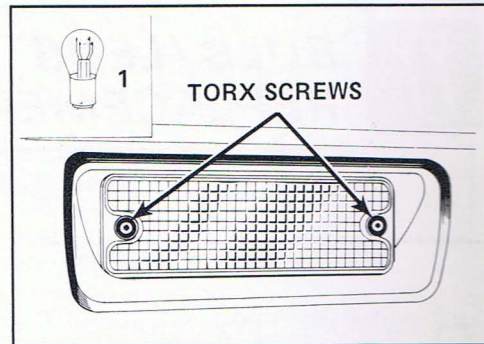


Figure 4 - Front turn light



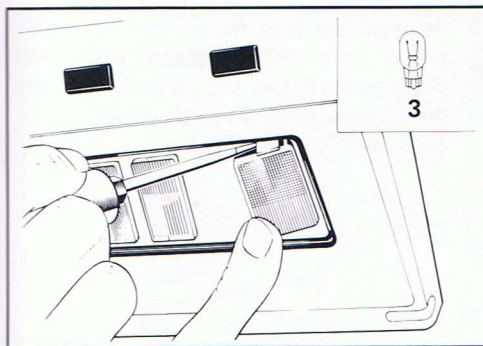


Figure 5 - Dome/map light(s)

NOTE: If necessary the entire dome/map light assembly may be removed by removing the 4 retaining screws. The rear retaining screws are located under the 2 outboard lenses.



## TAIL LIGHT BULB / LENS REPLACEMENT

### Tools Required

Phillips screwdriver

See "Replacement Parts" in this manual for bulb number.

1. Open the rear compartment lid.
2. Remove the black caps from the body panel above the lens fixture with a suitable flat tool. See Figure 1.
3. Remove all three screws.
4. Protect the rear bumper with a shop rag, and gently pull the entire fixture out.
5. To remove the bulb socket from the fixture, push the locking tab on the bulb socket and turn the socket counter-clockwise. See Figure 2.
6. Remove the bulb by pushing it in slightly and turning counter-clockwise about one

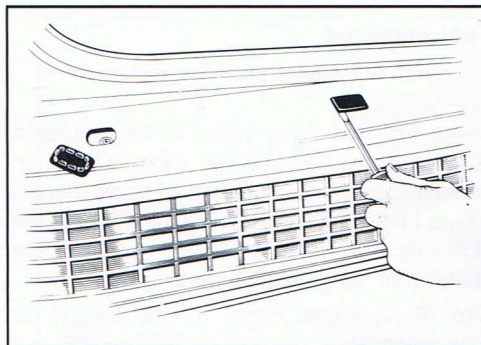


Figure 1 - Removing screw caps

quarter turn. Do not wipe away the corrosion-protective grease in the bulb sockets.

7. After replacing the bulb(s), insert the bulb socket into the lens fixture and turn the fixture clockwise.

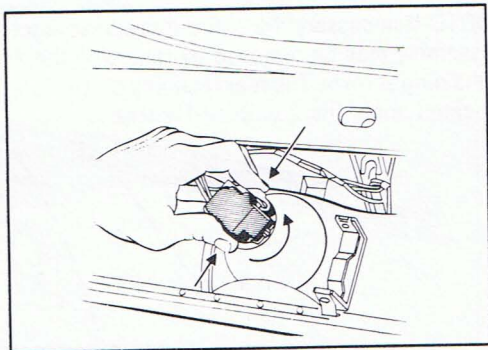


Figure 2 - Removing bulb socket from fixture

8. Reinstall the lens fixture into the body, taking care not to pinch any wires between the fixture and the body. Reinstall the three screws. Snap the black plastic caps back into place.



## CONSOLE/ASHTRAY BULB REPLACEMENT

### Tool Required

7mm nut driver

There are two light bulbs in the standard console assembly; one for each ashtray. In automatic transaxle-equipped vehicles, there is a third bulb which provides illumination for the shift indicator. The bulbs are located under the shifter trim plate. See Figure 2.

See "Replacement Parts" in this manual for bulb numbers.

1. Remove the two ashtrays.
2. Using the nut driver, remove the 7mm bolts under **each** ashtray. See Figure 1.
3. Carefully lift the shifter trim plate just high enough to access the bulbs. It is not necessary to remove the trim or shifter assembly. See Figure 2.

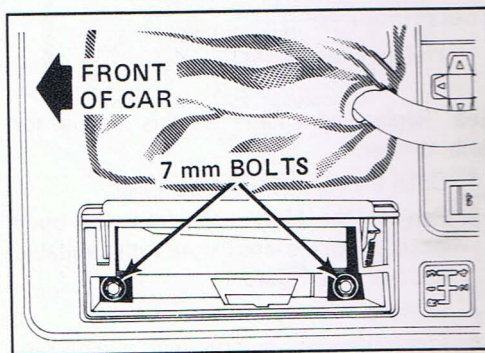


Figure 1 - Underneath ashtray (manual transaxle)

4. Remove the inoperative ashtray bulb(s) by pulling it straight out from the socket.
5. The shift indicator bulb socket is attached to the underside of the shifter trim plate.



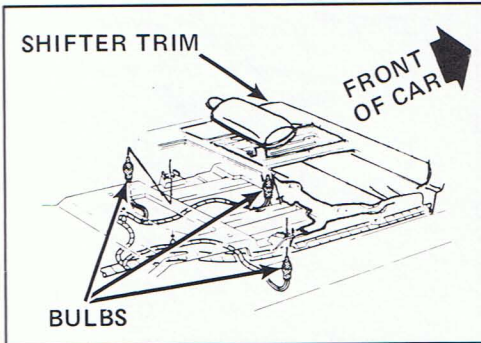


Figure 2 - Center console (automatic transaxle)

To remove the socket, twist it counter-clockwise and pull. To remove the bulb, pull it straight out.

6. After replacing the bulb(s), lower the shifter trim plate, reinstall the bolts under the ashtrays and torque to 1.5 N·m (1 ft. lbs.).
7. Reinstall the ashtrays.



## INSTRUMENT CLUSTER BULB REPLACEMENT

### Tool Required

T-15 Torx Driver

The instrument cluster bulbs are located under the instrument cluster cover.

See "Replacement Parts" in this manual for bulb number.

1. Remove the Torx screws from the instrument cluster cover. See Figure 1. Remove the cover.
2. Remove the socket which holds the bulb to be replaced. Twist the socket counter-clockwise, then pull it out. See Figure 2.
3. To remove the bulb from the socket, pull it straight out.
4. After replacing the bulb(s), reinstall the

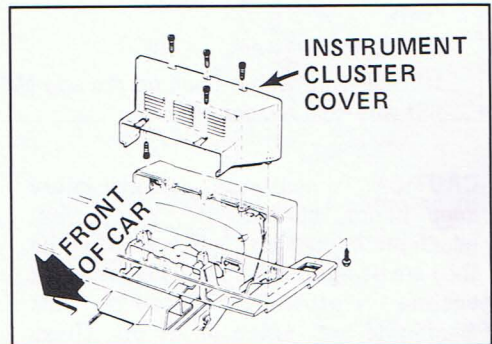


Figure 1 - Instrument cluster cover

instrument cluster cover. Torque the bolts to 1.5 N·m (1 ft. lbs.).

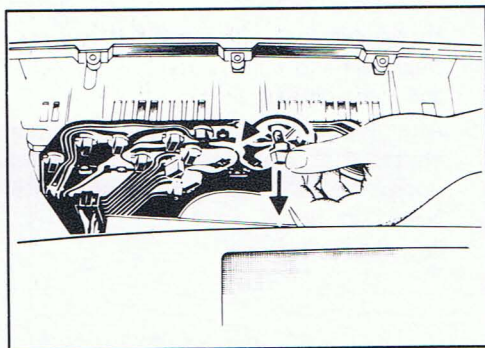


Figure 2 - Removing bulb socket



## HEADLIGHT REPLACEMENT

### Tools Required

#15 Torx driver

Pliers

Phillips screwdriver

10" stiff wire with a hook on the end (A stiff wire coat hanger will do.)

**CAUTION:** To help avoid personal injury keep hands, clothes, etc. away from headlight motors and mechanism while they are being operated. Headlight motors operate electrically whenever the headlights are turned on or off. These motors are very powerful.

See "Replacement Parts" in this manual for headlight number.

1. Open the front compartment lid.

2. Turn the headlights on. The headlights will pop up.
3. Separate the 1-cavity black connector at the blue wire near the headlight you are replacing. This deactivates the motor for that headlight. See Figure 1.

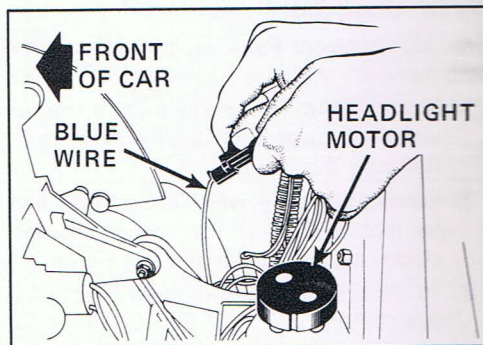


Figure 1 - Deactivating left hand headlight mechanism



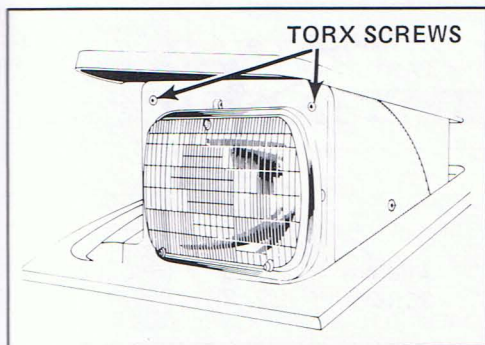


Figure 2 - Front of left hand headlight

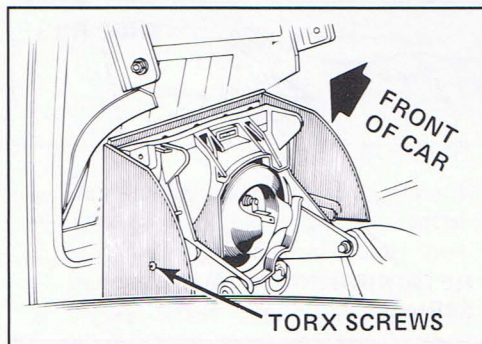


Figure 3 - Left side of left hand headlight

4. Turn the headlights off. The headlight you are replacing should remain up.
5. Remove the connector at the back of the headlight bulb.
6. Carefully lower the front compartment lid until it is all the way down. It is not necessary to latch the compartment lid.
7. Remove the Torx screws from the upper corners of the black plastic outer bezel. See Figure 2.
8. Raise the front compartment lid until it latches.
9. Remove the Torx screws from each side of the black plastic outer bezel. See Figure 3.
10. Hold the spring loaded headlight door open with one hand and remove the black plastic outer bezel by moving it up and then back over the headlight assembly (toward the passenger compartment). See Figure 4.
11. Carefully lower the front compartment lid. With the wire hook, pull the retaining spring away from the bottom corner of the

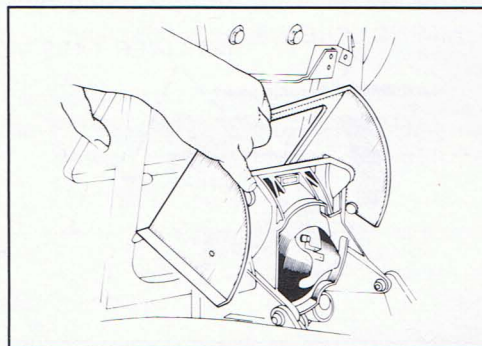


Figure 4 - Removing plastic bezel

- headlight assembly. Use a shop rag or towel to protect the finish in front of the headlight door. See Figure 5.
12. Rotate the headlight assembly slightly counter-clockwise until the retainer tabs are clear of the aiming screws. DO NOT remove or adjust these screws. See Figure 6.
13. Remove the 4 Phillips screws from the 2-piece retainer which surrounds the headlight. See Figure 6. Separate the

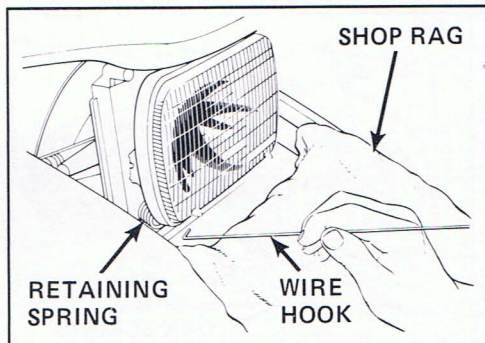


Figure 5 - Removing headlight retaining spring

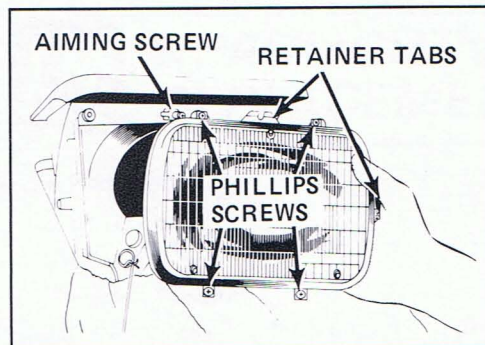


Figure 6 - Removing headlight with retainer

2-piece retainer and remove the headlight.

14. Install new headlight into the 2-piece retainer. Install the retainer/headlight assembly, making sure the retainer tabs are properly located in the aiming screw slots. See Figure 7.

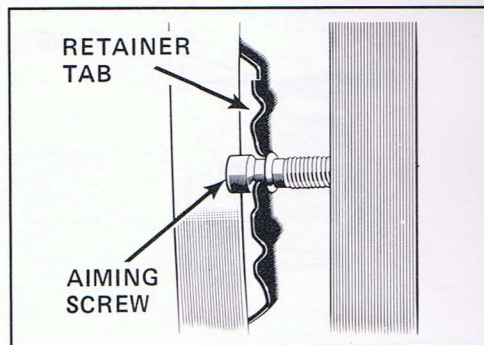


Figure 7 - Left side of left hand headlight (close-up)

15. Reinstall the headlight retaining spring. Reinstall the black plastic outer bezel and its two side retaining screws. Torque to 8 N·m (6 ft. lbs.). Close the front compartment lid and reinstall the two front bezel retaining screws. Torque to 8 N·m (6 ft. lbs.).
16. Open the front compartment lid and reconnect the headlight bulb. **Do not reconnect the single blue wire connector.**
17. Turn the headlights on. This will set the headlight motor relays in the open mode.
18. Reconnect the single blue wire connector.
19. Turn the headlights off. Both headlights should retract. Close the front compartment lid.





## BATTERY REPLACEMENT

### General Information

Your car is originally equipped with a long-life, maintenance-free Delco *FREEDOM* battery. It is located in the rear compartment, on the passenger's side of the vehicle. The battery should be replaced only if you are sure it will no longer hold a charge. Make sure the charging system is operating properly before faulting the battery.

For full power needs at replacement time, a Delco battery with the same catalog number as shown on the original battery's label is recommended.

### Removal/Replacement Tools Required

7mm nut driver

8mm & 13mm wrenches

**CAUTION:** Batteries produce explosive gases, contain corrosive acid, and supply levels of electrical current high enough to cause burns. Therefore, to lessen the chance of personal injury when working near a battery:

- Always shield your eyes, and avoid leaning over the battery whenever possible.
- Do not expose the battery to open flames or sparks.
- Be sure any batteries that have filler caps are properly filled with fluid.

- Do not allow battery acid to contact eyes or skin. Flush any contacted area with water immediately and thoroughly, and get medical help.
- Do not allow any metal object to come into contact with both battery terminals at once.
- Do not deviate from the following replacement procedure.

1. Open the rear compartment lid.
2. Remove the two thumb screws holding the battery cover panel to the body, and lift the panel out. See Figure 1.

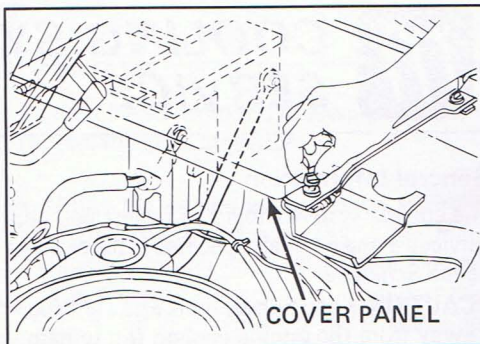


Figure 1 - RH side of rear compartment

3. Remove the negative cable from the battery. (This is the black cable leading to the side of the battery marked "-.")

4. Remove the positive cable from the battery. (This is the red cable leading to the side of the battery marked "+.")
5. Remove the battery retainer by unscrewing the retainer bolt. See Figure 2.

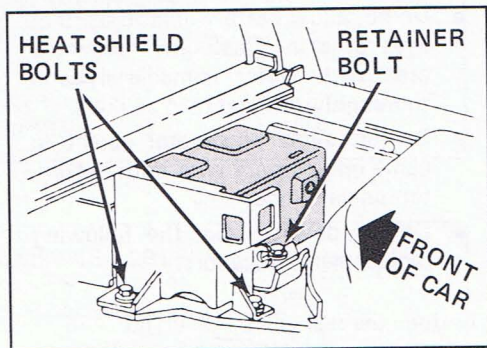


Figure 2 - Battery compartment

6. Loosen the bolts which retain the heat shield and push the shield out of the way.
7. Carefully remove the battery without tipping it.
8. Before installing the new battery, make sure the cables and terminals are in good condition and free from corrosion.
9. Install the battery retainer and retainer bolt. Torque the retainer bolt to 18 N·m (14 ft. lbs.).
10. Install the heat shield and heat shield bolts.
11. Reconnect the battery cables. Make the "+" connection first. Torque the battery cable bolts to 12 N·m (9 ft. lbs.).
12. Reinstall the battery cover panel and the two thumb screws.



## COOLING SYSTEM SERVICE

### General Information

The cooling system should be maintained and serviced at the intervals specified in the Maintenance Schedule.

**CAUTION:** Keep hands, tools and clothing away from the engine cooling fan to help prevent personal injury. This fan is electrical and can come on whether or not the engine is running. The fan can start automatically in response to a head sensor when the ignition is in "Run."

### Maintenance Tools Required

none

**CAUTION:** To help avoid the danger of being burned, do not remove the radiator cap, thermostat housing cap, or coolant recovery tank cap while the engine and radiator are still hot. Scalding fluid and steam can be blown out under pressure if any cap is taken off too soon.



1. Wash the radiator cap and filler neck with clean water. Wash the thermostat, the thermostat housing, and the cap. See Step 1 of "Coolant Replacement" for the proper procedure for removing the radiator cap, thermostat housing cap and thermostat. The "Coolant Replacement" procedure must be followed any time the radiator cap has been removed.
2. Check the coolant level in the recovery tank, and have it tested for freeze protection. Add ethylene glycol antifreeze, if needed, to maintain freeze protection to  $-37^{\circ}\text{C}$  ( $-34^{\circ}\text{F}$ ).
3. Have the cooling system and radiator cap tested for a pressure capacity of about 105 kPa (15 psi). The pressure can be anywhere from 95 kPa (14 psi) to 120 kPa

(18 psi). If a replacement cap is needed, use an AC cap or equivalent, designed for coolant recovery systems and specified for your car. See "Replacement Parts" in this manual for part numbers.

4. Tighten all radiator hose clamps and heater hose clamps, and inspect all hoses. Replace the hoses if they are swollen, "checked," or otherwise worn.

**NOTICE:** *Take care when tightening the hose clamps at the radiator. Overtightening could bend or collapse the radiator fittings.*

5. Clean the front of the radiator core and air conditioning condenser to remove dirt and other foreign material.



## COOLANT REPLACEMENT

### Tools Required

- Ratchet
- Ratchet extension
- 15mm socket
- 3/16" Allen wrench

**CAUTION:** To help avoid the danger of being burned, do not remove the radiator cap, thermostat housing cap, or coolant recovery tank cap while the engine and radiator are still hot. Scalding fluid and steam can be blown out under pressure if any cap is taken off too soon.

**Do not deviate from the following coolant fill/replacement procedure.**

1. When the engine is cool, open the rear compartment lid for access to the thermostat housing cap and the thermostat. The thermostat housing is located at the upper left hand portion of the engine. See Figure 1.
2. Turn the thermostat housing cap slowly counter-clockwise until it reaches a "stop." Do not press down while turning the cap.

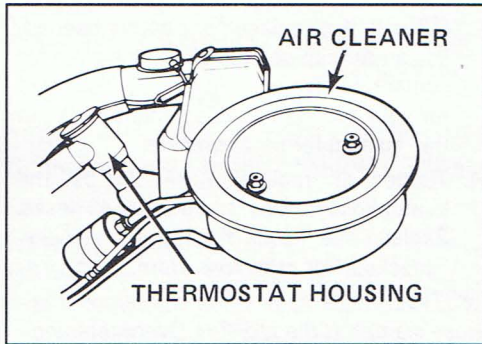


Figure 1 - Top of engine

3. Wait until any remaining pressure (indicated by a hissing sound) is relieved, then press down on the cap and continue turning it counter-clockwise. Remove the cap.
4. Pull the thermostat straight out. See Figure 2

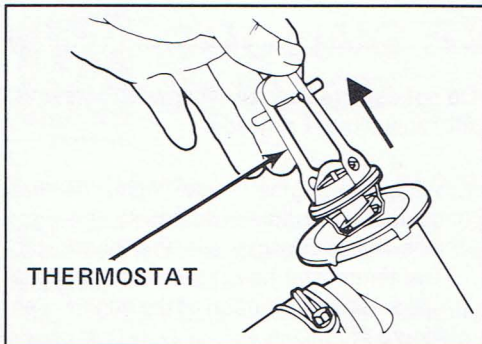


Figure 2 - Thermostat being removed

5. Install the thermostat housing cap and run the engine one minute (enough to circulate the coolant).

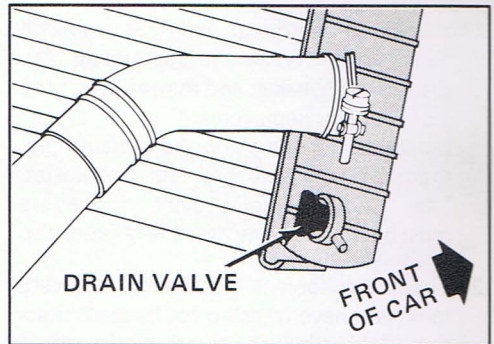


Figure 3 - Lower RH corner of radiator

6. Stop the engine. Open the radiator drain valve to drain the coolant. See Figure 3. Drainage may be speeded by removing the drain plugs in the engine block and in the left and right coolant pipes. The coolant pipes run underneath the car. The coolant pipe plugs are located at the rear of each pipe just ahead of the rear tires. See Figure 4. The engine block drain plug is located on the front of the engine, on the driver's side, just above the starter.
7. Run water through the thermostat opening until the drained liquid is nearly colorless.
8. Install the block drain plug and coolant pipe plugs, if removed, and close the radiator drain valve.
9. Remove the radiator cap and add water through the thermostat housing until the water reaches the level of the radiator neck.
10. Install the radiator and thermostat housing caps. (Do not install the thermostat at this time.) Tighten the thermostat housing cap to the first notch. At this point, there will be



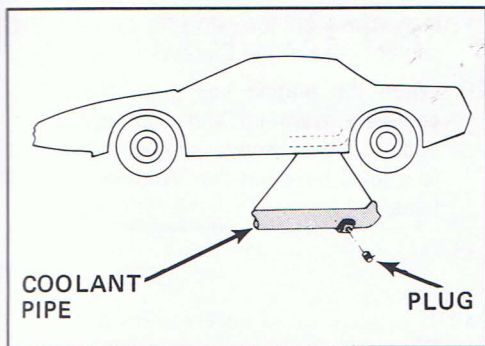


Figure 4 - One coolant pipe drain plug is on each side of the car

an audible click, and you will not be able to turn the cap counter-clockwise without pushing it down.

11. Run the engine until the hose connected to the thermostat housing becomes hot. Drain the system again as you did in Step 6.
12. Close the radiator drain valve tightly. Install the block drain plug and coolant pipe plugs, if removed. The block drain plug should be fully seated. The coolant pipe plugs should be torqued to 12 N·m (8 ft. lbs.)
13. Disconnect all hoses from the coolant recovery tank. Remove the recovery tank and pour out any fluid. Scrub and clean the inside of the recovery tank with soap and water. Flush it well with clean water, then drain it. Reinstall the recovery tank and hoses.

**CAUTION:** Under some conditions the ethylene glycol in engine coolant is combustible. To help avoid being burned

when adding coolant, **DO NOT** spill it on the exhaust system or engine parts that may be hot. If there is any question, have this service performed by a qualified technician.

**NOTICE:** Do not use methanol-base antifreeze, or alcohol, or plain water alone, in your car at any time. These will boil at a lower point than that at which the temperature gage will warn of overheating. Also, they do not provide proper protection against corrosion.

14. Add enough water and ethylene glycol antifreeze (meeting GM Specification 1825-M) to provide the required cooling, freezing and corrosion protection. Use a solution that is at least 50 percent antifreeze, but no more than 70 percent antifreeze. **With the engine off**, remove the radiator cap. Add coolant through the **thermostat housing** until the coolant reaches the spill point of the radiator neck.
15. Install the radiator and thermostat housing caps. (Do not install thermostat at this time.) Tighten the thermostat housing cap to the first notch. At this point, there will be an audible click, and you will not be able to turn the cap counter-clockwise without pushing it down.
16. Add 3 liters (3.2 quarts) of coolant to the coolant reservoir.

**NOTICE:** When running the engine, particularly after replacing coolant, check the coolant temperature gage periodically to make sure the engine is not overheating.

17. Run the engine at normal idle for 3 minutes, then at a fast idle for an additional 15-20 seconds. Turn the engine off.

18. Remove the thermostat housing cap. (See Step 1 of this procedure.) Add coolant to the thermostat housing until it reaches the housing cap seat.
19. Install the thermostat and cap, making sure that the thermostat is fully seated and the arrows on the cap line up with the coolant hose at the thermostat housing.
20. When the engine has gone through a complete warm-up and cool cycle, the coolant in the reservoir should be adjusted to a level between the "Add" and "Full" lines.



## REPLACEMENT PARTS

<b>Engine</b>		
Spark Plugs .....	R43TSX	
PCV Valve .....	CV864C	
<b>Cooling System</b>		
Radiator Cap .....	RC27	
Thermostat Housing Cap .....	RC40	
Thermostat Temp Spec .....	91°C (195°F)	
<b>Filters</b>		
Air .....	A913C	
Crankcase Separator .....	FB82	
Engine Oil .....	PF51	
Fuel .....	GF483	
<b>Light Bulbs (Exterior)</b>		
Back Up .....	1156	
Headlight .....	H6054	
License .....	194	
Park/Front Turn .....	2057	
Side Marker - Front & Rear .....	194	
Tail/Stop/Rear Turn .....	2057	
<b>Light Bulbs (Interior)</b>		
Air Conditioning Control .....	37	
Brake Warning .....	194	
Check Engine Warning .....	194	
Console (Ashtray) .....	70	
Clock (Part of Radio Display) .....		
Cluster (Speedometer & Tach.) .....	194	
Deck Ajar Light .....	194	
Turn Signal Indicator .....	194	
Dome Light .....	906	
Door Ajar Light .....	194	
Shift Indicator .....	70	
Headlight Hi-Beam Indicator .....	194	
Heater Control .....	37	
Instrument Panel Courtesy .....	168	
<b>Luggage Compartments</b>		
Front .....	168	
Rear .....	561	
Oil Pressure Telltale .....	194	
<b>Radio Illumination</b>		
AM .....	168	
All Others .....	LED	
Seat Belt Warning Indicator .....	194	

## CAPACITIES (APPROXIMATE)

Fuel Tank .....	38.6 liters (10.3 gal)	4- Speed Manual	
<b>Cooling System</b>		Transaxle .....	2.8 liters (5.9 pts)
Automatic Transaxle .....	13.3 liters (14 qts)	Automatic Transaxle	
Manual Transaxle ....	13.1 liters (13.8 qts)	Refill after draining .....	3.8 liters (8.0 pts)
Crankcase .....	2.8 liters (3.0 qts)	Refill after	
Approximate capacity with or		disassembly .....	5.7 liters (12.0 pts)
without oil filter change			
recheck oil level after refill			

