GROUP 1

MAINTENANCE

CONTENTS OF GROUP 1

1-1 ENGINE OIL RECOMMENDATIONS

a. Engine Oil

Engine crankcase oils have a definite effect on ease of starting, oil economy, combustion chamber deposits and engine wear. It is recommended that you use an oil which, according to the label on the can, is: (1) intended for service MS and (2) passes car makers' tests or meets General Motors Standard GM 4745-M. Oils conforming to these types contain detergent additives.

b. Grade or Viscosity

The grade or viscosity (SAE number) of engine oil should be selected for the lowest anticipated temperature at which cold engine starting will be required as recommended in the temperature-viscosity chart below.

c. Engine Oil Change and Viscosity Recommendations

Anticipated Lowest Temperatures	Use S.A.E. Viscosity Number	Change Your Oil At Least
Above Freezing (+32°F.)	S.A.E. 10W-30 S.A.E. 20W S.A.E. 20	Every 60 days or 6,000* miles, whichever occurs first.
Below Freezing (+32°F.) (to 0°F.)	S.A.E. 5W-20 S.A.E. 10W	Every 60 days or 6,000* miles, whichever occurs first.
Below 0°F.	S.A.E. 5W-20 S.A.E. 5W	Every 60 days or 6,000* miles, whichever occurs first.

*If there is danger of oil contamination by dust, water or other foreign material during very extreme driving conditions, then the oil should be changed more frequently than shown in the table. Your authorized Buick dealer is well qualified to advise you.

Oil level should be checked more frequently during the break-in period since somewhat higher oil consumption is normal until piston rings become seated.

The oil level should be maintained between the "Full" and "Add" marks on the gauge rod; each space between marks represents one quart. Do not fill above "Full" mark.

d. Oil Color

The color of "Service MS"-type oil does not indicate its condition since it normally becomes dark (black or gray) after only a few hundred miles of driving. This is because the detergent content envelopes and holds in suspension extremely fine but harmless soot (soft carbon) and lead particles. The oil filter element does not remove this harmless material but it does remove harmful particles such as road dust, metal chips and hard carbon.

e. Crankcase Flushing

Flushing the crankcase with oils or solutions other than a good grade of 10W engine oil is not recommended. When flushing to remove contamination appears advisable, use 3 quarts 10W oil (4 quarts if filter is drained) and

1963 BUICK LUBRICATION CHART

(4000-4100 & 4300 SERIES)

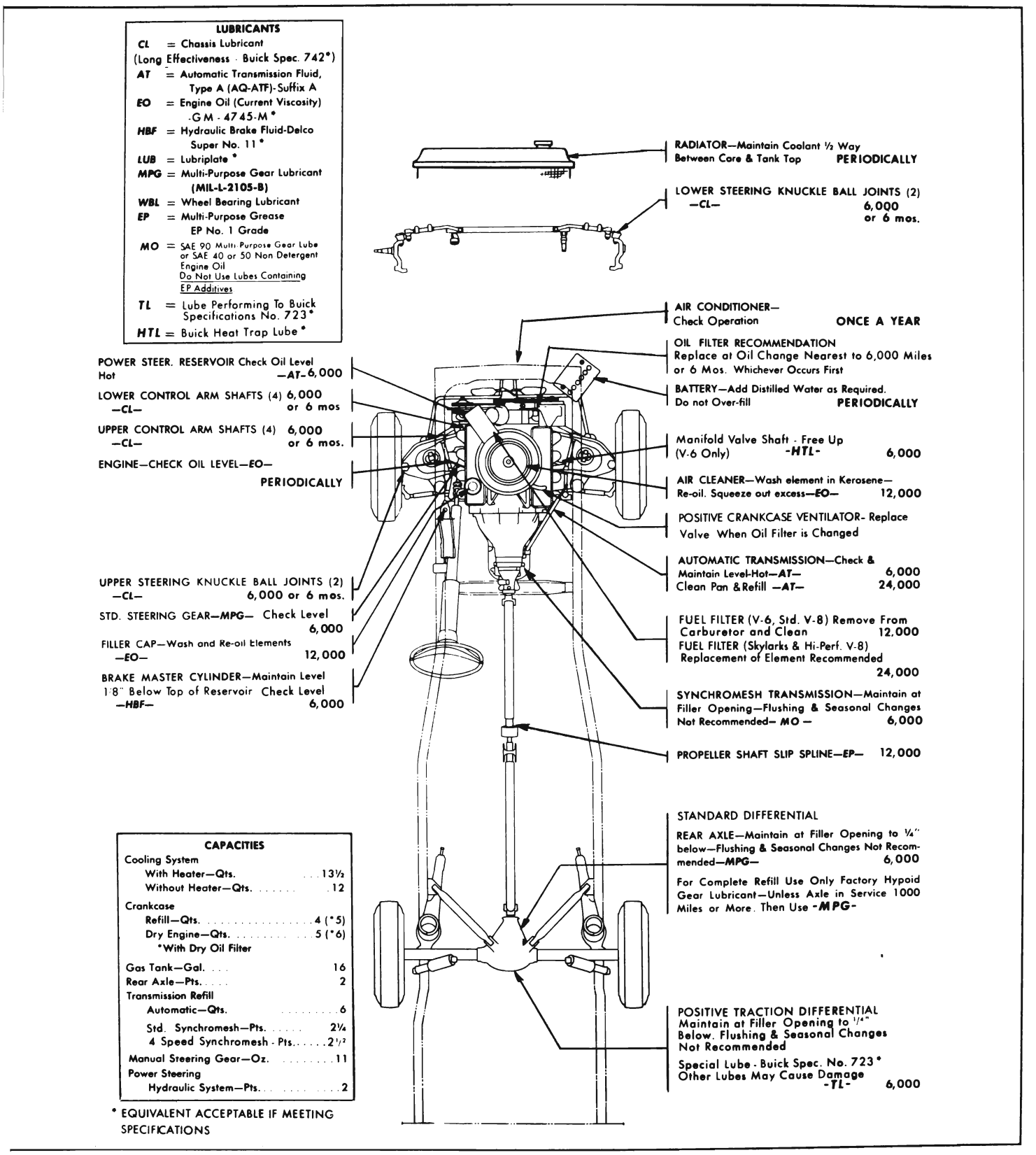

Figure 1-1—Chassis Lubrication Chart

idle the engine at 1000 RPM (equivalent to 20 MPH) until the oil is hot, then drain crankcase and oil filter immediately after stopping engine. Fill crankcase with correct quantity and seasonal grade of oil. Install new oil filter element.

f. Use of Buick HD Concentrate

Buick HD Concentrate, available through Buick Parts Department under Group 1.850, is a compound of the materials used by oil refiners to manufacture high detergency motor oils. It is intended for use in engines operating under aggravated conditions where engine deposits, rust and corrosion cannot be adequately retarded by motor oils readily available to the average motorist. It is especially recommended for engines operated under restricted conditions, such as frequent stops, short trips and slow speeds where such symptoms as sticking valves, valve lifters and rings are noticed.

Although HD Concentrate may be used continually, it is normally unnecessary to use it with every crankcase refill. When used, the instructions on the container should be carefully observed.

Adverse driving conditions require more frequent draining and refilling. Adverse driving conditions are those which may cause early contamination of engine oil, such as operation under severe dust conditions or short runs with a cold engine.

1-2 MAINTENANCE-PERIODICALLY, WHILE VEHICLE IS BEING REFUELED

a. Battery - Check Level.

If necessary add distilled water to bring level to split ring at bottom of filler wells.

NOTE: Do not overfill. Clean top of battery; if wet with acid, neutralize with soda and wash clean. See Figure 1-2.

b. Tires

For maximum tire life, maintain correct tire pressure. Since tire pressure increases when they are warm and decreases when cold, inflate as follows: 22 lbs. pressure - after car has been standing for at least 3 hours or driven less than one mile. Rear tires on station wagons should be 26 lbs. pressure. This is important since tires can increase in pressure as much as 7 lbs. when warm, and attempting to compensate for this increase can result in inaccurate pressures.

To avoid overloading rear tires when carrying trunk loads of 200 lbs. or more for long distances, inflate rear tires of coupes and sedans to 26 lbs. when cold.

When tires are inflated when temperature is below 32°F. and tires are cold, pressure should be increased 2 lbs. over normal recommended pressures.

See 6000 Mile Maintenance for switching tires.

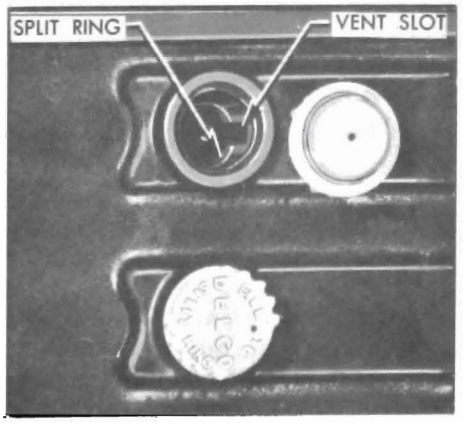

Figure 1-2—Battery Filler Well

c. Radiator Coolant

Radiator coolant level should be checked when the engine is cold if at all possible. If the radiator cap is removed when the system is at normal operating temperature the coolant will boil and spurt out due to the release of pressure. Coolant lost in this manner must of course be replaced. If coolant should be needed, fill radiator to approximately 1" below filler neck when cold. Do not overfill as loss of coolant due to expansion will result.

d. Engine Oil

This check should be performed last to allow the oil to drain back into the pan. Adding oil between changes may be necessary but only if the level is below the "add oil" mark on the dip stick. See Figure 1-3.

NOTE: Oil level should only be checked when the engine is warm as cold oil drains back to the oil pan very slowly.

1-3 MAINTENANCE-EVERY 6,000 MILES

a. Engine Oil Change Recommendations

Drain and refill engine crankcase every 60 days or 6,000 miles,

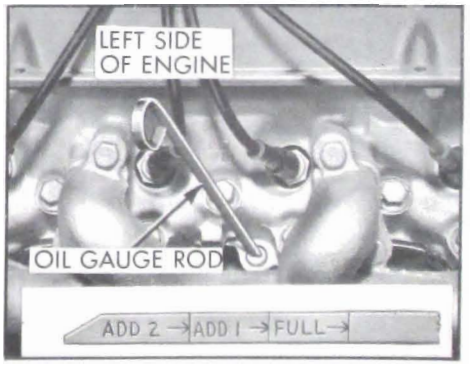

Figure 1-3—Engine Oil Gauge Rod

whichever occurs first. See Page 1-1 for oil recommendations.

b. Engine Oil Filter Change Recommendations

Replace engine oil filter with the engine oil change which comes nearest 6,000 miles or 6 months - whichever occurs first.

To change, screw filter off the filter base and discard. Wipe the gasket area of the base clean and install a new gasket in the groove of a new AC-type PF-7 filter or equivalent. Lubricate the gasket and screw the filter on the nipple until the gasket just touches the base; tighten filter 2/3 turn more. Start engine. Do not accelerate engine beyond the normal idle until oil pressure is indicated. Check the filter area for leaks after the engine has run for five (5) minutes. See Figure 1-4.

c. Positive Crankcase Ventilator Valve

At each oil filter change it is recommended that the positive crankcase ventilator valve be replaced with the correctly calibrated valve. The correctly calibrated valve for the 4000, 4100 and 4300 Series is listed under Group 1.745, Part 6418524, see Figure 3-15.

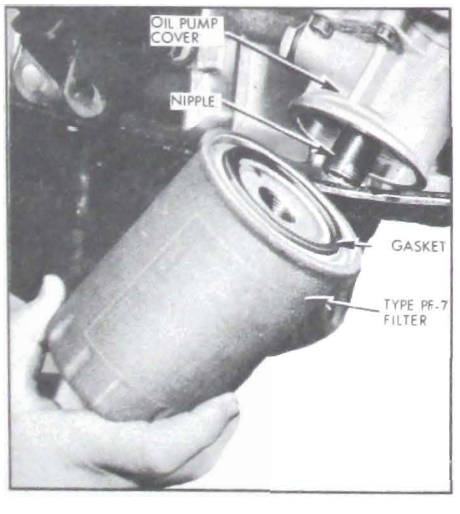

Figure 1-4—Oil Filter Installation

d. Front Suspension and Steering Linkage

The Buick front suspension has been lubricated with a long-effectiveness lubricant at the factory and should be re-lubricated with a long-effectiveness lubricant equivalent to Buick Spec. #742 every 6,000 miles or six months whichever occurs first.

NOTE: If lubricants not intended for long-effectiveness application are used, the lubrication interval should be shortened and should not exceed 2,000 miles.

Wipe dirt from the lubrication fittings and apply the lubricant under pressure at the following points (Figure 1-1):

Upper Control Arm Shafts (4 fittings)
Lower Control Arm Shafts (4 fittings)
Upper Ball Joints (2 fittings)
Lower Ball Joints (2 fittings)

The steering linkage is a permanent lubricated design and normally requires no periodic lubrication. However, if a squeak develops in a linkage ball stud after an extended period of operation, a 1/4"-28 grease fitting can be substituted for the removable plug in the linkage and periodic lubrication performed thereafter.

e. Manifold Heat Valve (V-6 Engine)

Place a few drops of "Buick Heat Trap Lube" or equivalent on shaft at each end, and free up if necessary. This can be found in the Buick Parts Book under Gr. 8.800, Part 980108. See Figure 1-5.

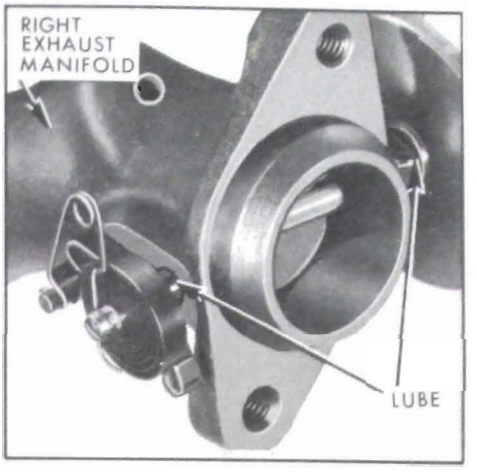

Figure 1-5—Exhaust Manifold Valve V-6 Engine

f. Check Fluid Level

1. Master Brake Cylinder - Maintain fluid level 1/8" below top of filler opening. When adding brake fluid, use only Delco Super #11 hydraulic brake fluid or equivalent. Never use reclaimed fluid, mineral oil or fluid inferior to SAE Standard 70-R-1.

2. Synchromesh Transmission. Check oil level, after allowing time for oil to settle. Clean the surrounding area before removing filler plug. Level should be maintained at filler plug opening by adding SAE 90 multi-purpose gear lubricant or SAE 40 or 50 non-detergent engine oil. Do not use lubricants containing extreme pressure additives. NOTE: Draining and flushing transmission are not necessary unless the lubricant has become contaminated. However, whenever a complete transmission overhaul is required Special Lubricant Group 4.101, Part #582840 or equivalent is recommended for use.

3. Automatic Transmission. Check transmission oil level, with transmission oil at operating temperature (180° approximate), transmission in park and engine idling.

Remove gauge rod located under right side of hood, see Figure 1-6,

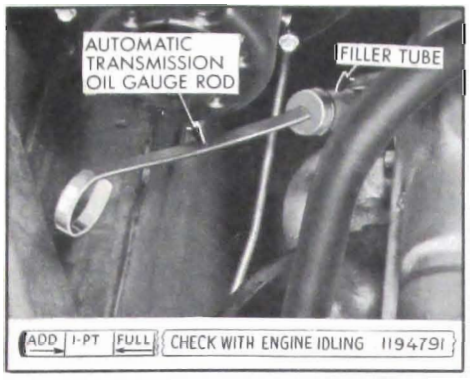

Figure 1-6—Automatic Transmission Oil Gauge Rod

wipe dry with clean cloth, then reinstall to full depth. Remove rod and note oil level.

If oil level is below the "ADD" mark on gauge rod, add oil specified under "every 24,000 miles" but do not fill above the "FULL" mark. Distance between the "FULL" and "ADD" marks represents approximately one pint.

4. Manual Steering Gear. Clean adjacent area, then remove gear housing filler plug. Add lubricant only as required to bring level to bottom of filler opening, using SAE 90 Multi-Purpose Gear Lubricant. Seasonal or periodic change of lubricant is unnecessary.

5. Power Steering Gear. Thoroughly clean dirt from reservoir cap on top of oil pump, then remove cap. Wipe dip stick and reinstall cap to check oil level. Add oil to maintain level between "FULL" and "ADD" marks on dip stick with system warmed up. See Figure 1-7.

6. Rear Axle. Check lubricant level after allowing time for lube to settle. Clean the surrounding area before removing filler plug. Level should be maintained at filler plug opening to 1/4" below by adding SAE 90 Multi-Purpose Gear Lubricant (MIL-L-2105-B). See Figure 1-8. When car is operated in temperatures continuously below - 10°F., use SAE 80 Multi-Purpose Gear Lubricant.

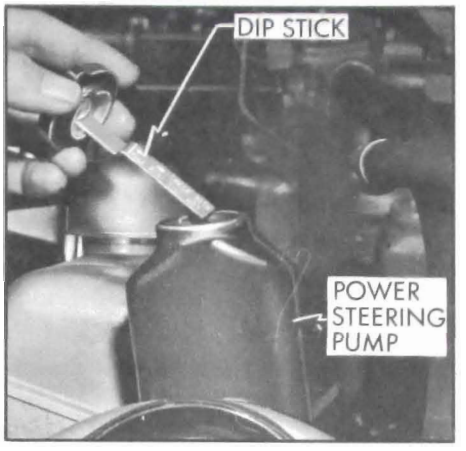

Figure 1-7—Power Steering Pump Reservoir

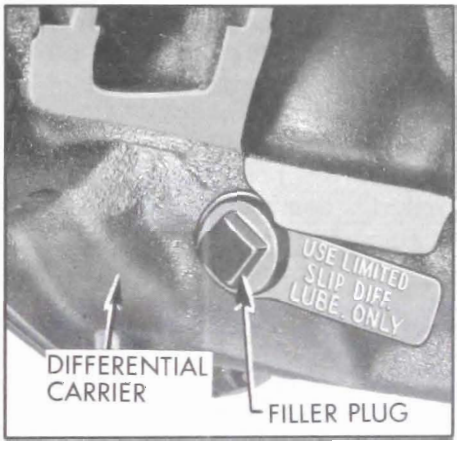

Figure 1-8—Differential Filler Plug (Positive Traction Shown)

NOTE: Draining and flushing are not recommended, unless the lubricant has become contaminated. When complete refilling is necessary, SAE 80 or 90 Multi-Purpose Gear Lubricant may be used, provided the axle has been in service for 1000 miles or more. Axles with less than 1000 miles must not be completely refilled with any lubricant other than Factory Hypoid Lubricant.

7. Positive Traction Differential Rear Axle. Identified by embossed tag around the differential filler plug, "Use limited slip differential lube only." Check lubrication level after allowing time for lubricant to settle. Clean the surrounding area before removing filler plug. Level should be maintained at filler plug opening to 1/4" below by adding lubricant conforming to Buick Specification #723 only, as specified in paragraph 1-9. See Figure 1-8.

NOTE: If Positive Traction Differential lube becomes contaminated, the axle assembly may be flushed with light engine oil and then refilled with Positive Traction Lube.

g. Minor Lubrication

Occasionally lubricate the pivot points of moving parts such as door and hood hinges and latches, door hold open, clutch, transmission, parking brake and folding top linkages with Lubriplate, or equivalent, or engine oil where applicable. A small quantity of lock lubricant occasionally applied to lock cylinders will prevent sticking. See details under "Maintenance - As Required".

NOTE: Do not lubricate carburetor or throttle linkage.

h. Body Rubber Parts

Door, hood, and rear compartment rubber weatherstrips and bumpers may be kept pliable and quiet by the application of a light coat of Buick 4-X Compound or suitable silicone lubricant equivalent.

i. Tires

For best tire mileage switch tires as recommended in Group 7 on tires.

1-4 MAINTENANCE-EVERY 12,000 MILES OR ONCE A YEAR (Suggested in addition to the 6,000 mile recommendation)

a. Tune-Care

Tune-Care includes: Clean and/or replace spark plugs and ignition

points, check compression, battery, cranking system, charging system, fuel pump, choke, hose connections, belts, carburetor, set engine timing and adjust idle speed.

b. Air Cleaner

Recommendation is to normally service every 12,000 miles. If car is operated in dusty territory, check condition of air cleaner element more frequently and clean if dirty.

To clean the element, carefully remove from the mesh support, wash in kerosene and squeeze out. CAUTION: Take precautions against the possibility of fire. Do not wring the element or it may be torn. Wrap the element in a dry cloth and squeeze to remove all possible solvent.

Oil the element liberally with engine oil and squeeze to evenly distribute the oil through the element and remove excess.

NOTE: The element should be only damp with oil not dripping.

Reinstall the element on mesh support, taking care to have edges of the element over the support to effect a good seal. See Figure 1-10. Clean any oil or accumulated dirt out of air cleaner housing before installing element. If the element becomes damaged, replace with AC-type A 96C or equivalent on V-8 engines and AC-type A 132C or equivalent on V-6 engines.

c. Crankcase Ventilator-Filler Cap

Every 12,000 miles (more often under dusty operating conditions) remove the oil filler cap and wash the filtering element in kerosene. Allow the element to drain until dry. Oil the element with a light engine oil and reinstall cap.

CAUTION: Take precautions against the possibility of fire by making certain that the cap is drained dry of cleaner.

d. Fuel Filter (V-6 and Standard V-8) (See 24,000 Mile Recommendation For Hi-Performance V-8 and Skylark Fuel Filter)

Remove from carburetor fuel inlet, inspect, clean, or replace, if necessary. More frequent servicing may be necessary if contaminants have entered the fuel system. See Figure 3-13.

e. Belts

Inspect engine driven belts for cracks and proper tension.

f. Propeller Shaft Slip Spline

Remove plug on propeller shaft. Propeller shaft may have to be rotated so that plug is accessible. See Figure 1-11. Install 1/4-28 thread grease fitting or adapter as these may be needed to build up sufficient pressure to force the grease through the splines to the lubricant cavity due to the spline location when car is raised on some types of hoists. USE ONLY multi-purpose grease EP#1 grade available through many oil companies. All major lubrication equipment manufacturers have suitable adapters available.

1-5 MAINTENANCE-EVERY 18,000 MILES

a. Brakes

Examine brake linings for wear and the self-adjusting mechanism for proper functioning. Although linings may not be excessively

Figure 1-9—Air Cleaner Element and Support

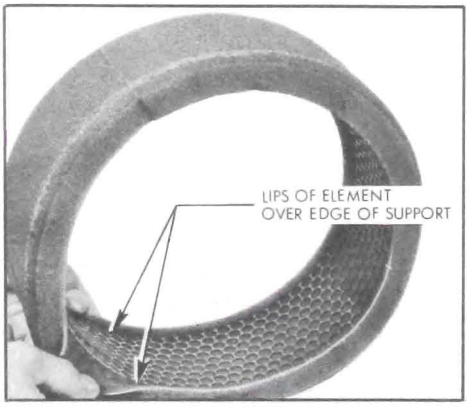

Figure 1-10—Installing Element on Support

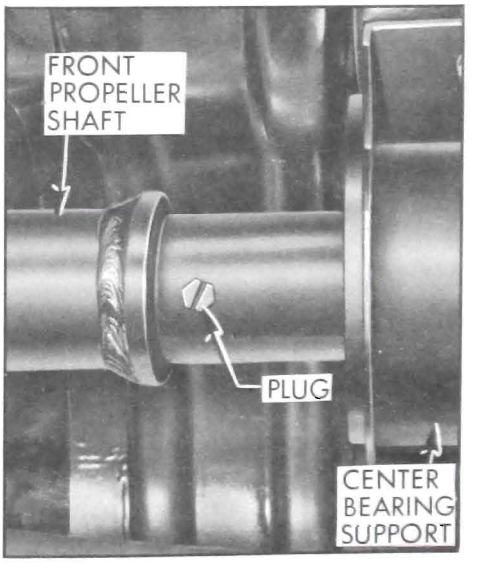

Figure 1-11—Propeller Shaft Spline Grease Plug

worn, this check will indicate when another inspection should be made. If required, use Buick Factory Engineered replacement linings or equivalent. Lubricate the self-adjusting mechanism adjusting screw with Delco Moraine Special Brake Lubricant or equivalent.

b. Front Wheel Bearings

There is no periodic lubrication schedule for front wheel bearings. They may be relubricated whenever brake drums are removed. Always follow with the correct bearing adjustment as outlined in paragraph 7-11.

1-6 MAINTENANCE-EVERY 24,000 MILES (Suggested in addition to the 6,000 & 12,000 mile Recommendations)

a. Fuel Filter (Skylarks and Hi-Performance V-8s)

Replacement of the disposable filter is recommended. More frequent replacement may be necessary if contaminants have entered the fuel system. Replace with filter type GF-94 or equivalent on non-air conditioned cars and type GF-96 or equivalent for air conditioned cars.

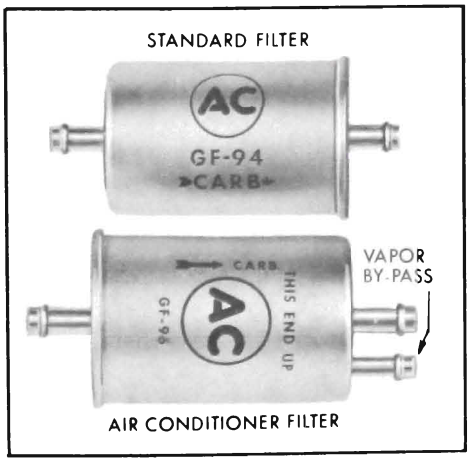

Figure 1-12—Fuel Filters - Skylarks and Hi-Performance V-8s.

b. Dual Path Transmission

At 24,000 mile intervals the transmission oil pan should be removed and cleaned. If the transmission is equipped with an oil strainer, the strainer should be replaced. If the transmission is equipped with a screen, the screen should be cleaned.

1. Removal and Replacement of Oil Pan and Strainer or Screen.

NOTE: This operation should not be attempted unless accurate foot pound and inch pound torque wrenches are available and the operator is fully qualified in their use.

a. Remove single bolt and seal attaching oil pan to case.

b. Remove oil pan and oil pan to transmission case seal.

c. If transmission is equipped with an oil strainer:

1. Remove two oil strainer strap bolts to remove strainer and "O" ring seal.

2. Install new strainer and strainer "O" ring seal. Torque strainer strap bolts to 100 inch pounds exactly. DO NOT OVERTIGHTEN.

d. If transmission is equipped with an oil screen:

1. Remove two screen attaching bolts. Remove screen and "O" ring.

2. Wash screen thoroughly.

3. Install screen and bolts. Torque bolts to 100 inch pounds exactly. DO NOT OVERTIGHTEN.

e. Clean oil pan. Install new seal on oil pan taking care not to stretch the seal.

f. Install oil pan and seal, oil pan bolt and oil pan bolt seal. Torque oil pan to case bolt to 15-20 ft. lbs. DO NOT OVERTORQUE.

2. Add 5 pints of oil prior to first engine start. Start engine in Neutral range. DO NOT RACE ENGINE. Immediately add oil to bring level to 1/2" below full mark. (Approximately 8 pints if converter was empty - none if converter was full). When engine and transmission are thoroughly warmed up, adjust oil level to full mark on dip stick.

3. Approved Oils for Buick Automatic Transmission

The following oils are approved for Buick Automatic Transmission and no other fluid should be used.

1. Special Buick Oil available through Buick Parts Warehouses under Group 4.101.

2. Automatic Transmission Fluid, Type A, available through petroleum suppliers. This fluid must have an AQ-ATF mark, identification number, and Suffix "A" embossed in lid of the container for identification.

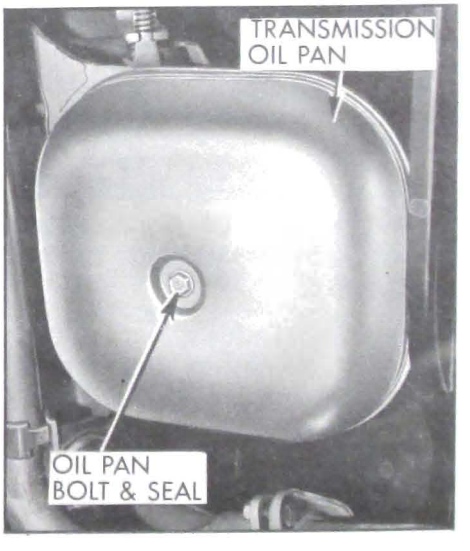

Figure 1-13—Automatic Transmission Oil Pan

1-7 MAINTENANCE-SEASONAL-COOLING SYSTEM & AIR CONDITIONER SERVICES

a. Anti-Freeze

A permanent glycol type corrosion and anti-freeze cooling system protection solution developed for year around use (General Motors Specification, GM 1899-M) has been installed in the cooling system of the Buick Special or Skylark at the factory.

Although this type coolant should be used continuously throughout the year, once a year the cooling system should be drained, flushed and permanent type anti-freeze also conforming to General Motors Specification GM 1899-M installed. Water alone, Methanol, or alcohol type anti-freeze is definitely not recommended.

If water alone must be used as coolant in an emergency, it is extremely important that Buick Heavy Duty Cooling System Protector and Water Pump Lubricant be added to the cooling system as soon as possible. This material is supplied under Buick Part #980504. If any other cooling system protector is used, be sure it is labeled to indicate that it meets General Motors Specification GM 1894-M.

b. Air-Conditioner-Equipped Models

It is recommended that the air conditioner be checked each Spring in preparation for Summer operation.

It is good practice to occasionally remove insects and dirt from the air conditioner condenser.

1-8 MAINTENANCE—AS REQUIRED

a. Body Lubrication

The movable mechanical parts of the body are lubricated at the factory to insure proper and quiet operation. If additional lubrication is required, the following specified materials should be used at the locations listed.

1. Front Door Hinge Hold-Open Clips. Wipe off dirt and apply a light coat of Lubriplate or its equivalent to hold-open clips as shown in Figure 1-14. The hinge pins should be lubricated with engine oil.

2. Instrument Panel Compartment Door Hinge. Wipe off dirt and apply a sparing amount of dripless oil to the hinge frictional points. Operate door and wipe off excess lubricant.

3. Door Lock Striker. Wipe off dirt and apply a thin coat of stick-type lubricant to top surface of lock bolt striker teeth. After lubrication, close door several times and remove excess lubricant along the side edge of teeth. See Figure 1-15.

4. Lock Cylinders. If key operates roughly in any lock cylinder, blow powdered graphite into key slot. DO NOT USE OIL.

5. Gas Tank Filler Door. Apply a few drops of light engine oil to hinge. Wipe off excess oil to prevent accumulation of dirt.

6. Door Lock Bolt. Wipe off dirt and apply a thin coat of stick-type lubricant on top surface of lock bolt housing indicated in Figure 1-16. Oil rotary bolt shaft with engine oil. Wipe off excess.

7. Rear Door Hinge and Hold-Open. Wipe off dirt and apply Lubriplate at points indicated by arrows in Figure 1-17. Wipe off excess.

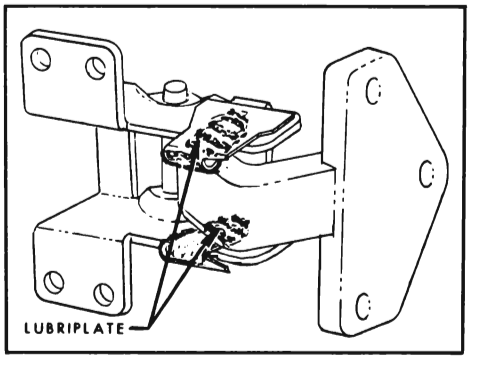

Figure 1-14—Lubrication of Front Door Hinge and Hold-Open Clips

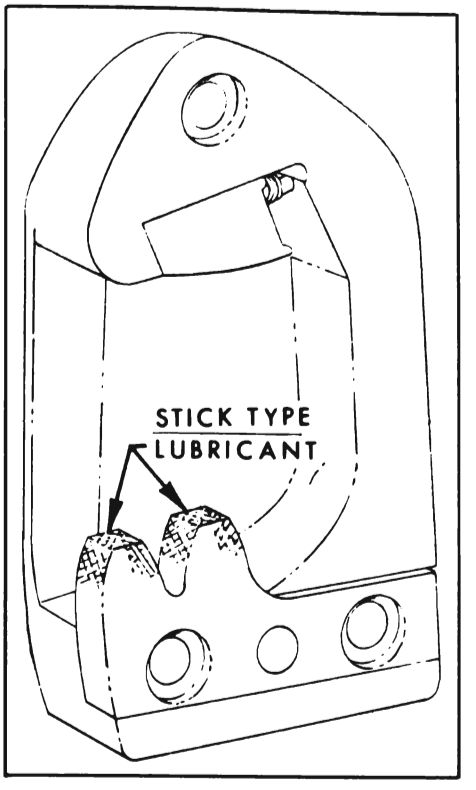

Figure 1-15—Lubrication of Door Lock Striker

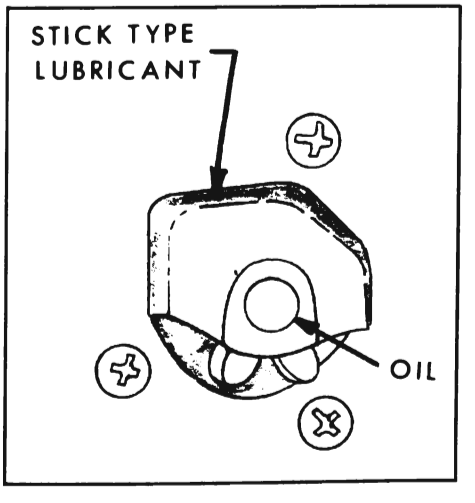

Figure 1-16—Lubrication of Door Lock Bolt and Housing

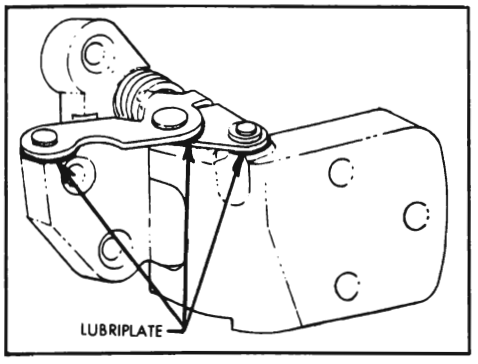

Figure 1-17—Lubrication of Rear Door Hinge and Hold-Open

8. Rear Compartment Lid and Back Door Locks. On rear compartment lid locks, apply a thin film of Lubriplate or its equivalent. On back door locks, apply a thin film of Lubriplate or its equivalent to the bolt at the striker contact areas. See Figure 1-18.

9. Door Jam Switch. Wipe off dirt and apply a thin coat of Lubriplate or its equivalent to end surface of switch plunger. Wipe off excess.

10. Gas Tank Filler Door Hinge. Apply a few drops of dripless oil to friction points of door hinge. Wipe off excess.

11. Spare Tire Cover Hinge Assembly. Wipe off dirt and apply a few drops of dripless oil to friction areas. Wipe off excess.

12. Sunshade Rod. Remove sunshade from support and apply a thin film of stick type lubricant to end of sunshade rod. See Figure 1-19.

13. Back Door Hinges and Torque Rods (Station Wagons). Wipe off dirt and apply light engine oil to frictional points. Wipe off excess.

14. Front Seat Adjuster Mechanism. A thin film of lubriplate or its equivalent should be applied to the seat tracks as needed or during repairs.

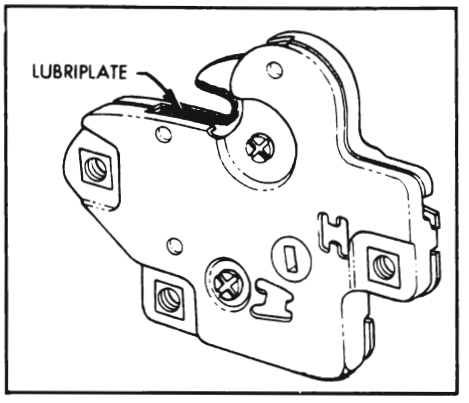

Figure 1-18—Lubrication of Rear Compartment Lid Lock Bolt

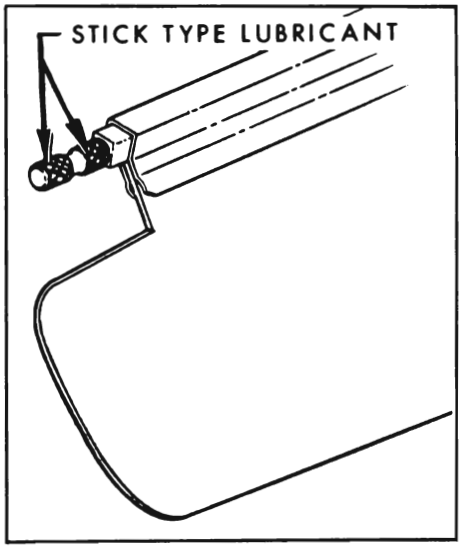

Figure 1-19—Lubrication of Sunshade Rod

15. Convertible Top Linkage. Apply a sparing amount of light engine oil to areas shown in Figure 1-20. Wipe off excess.

16. Station Wagon Folding Seat Linkage and Lock. Apply a sparing amount of light engine oil to all frictional points. Wipe off excess.

17. Folding Top Lift Cylinder Piston Rods. With folding top in raised position, wipe exposed portion of each top lift cylinder piston rod with a cloth dampened with brake fluid to remove any oxidation or accumulated grime. With another clean cloth, apply a light film of brake fluid to the piston rods to act as a lubricant.

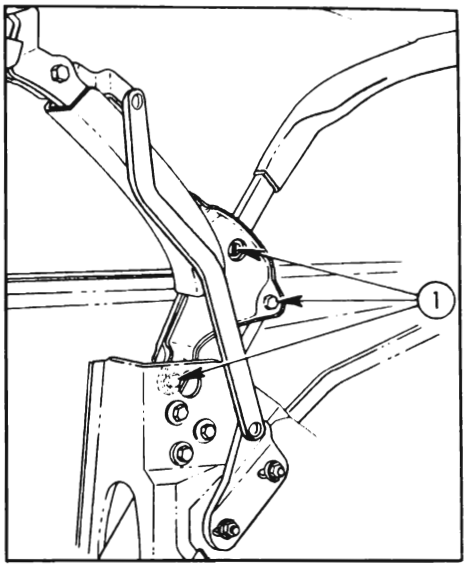

Figure 1-20—Folding Top Linkage Lubrication

NOTE: Use caution so that brake fluid does not come in contact with any painted or trimmed parts of the body.

b. Chassis Lubrication

1. Hood Latch and Hinges. Apply Lubriplate to hood latch as shown in Figure 1-21. Apply engine oil to hood hinge pins.

2. Hood Lacing and Hood Bumpers. Lightly coat hood lacing and bumpers with silicone lube. Wipe off excess.

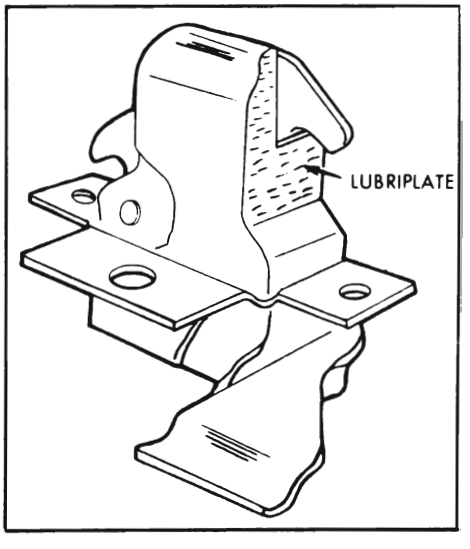

Figure 1-21—Hood Latch Lubrication

1-9 REAR AXLE LUBRICANT RECOMMENDATIONS

a. Standard Differential Axle

Buick 4000 - 4100 & 4300 rear axles are filled at the factory with a special hypoid gear lubricant. It is not necessary to remove the original lubricant at any time except when it has become contaminated, or when it is required for inspection of parts or for repairs. Therefore there is no drain hole in the rear axle housing.

Draining and flushing are not recommended unless the lubricant has become contaminated. When complete refilling is necessary, Multi - Purpose Gear Lubricant (conforming to specification MIL-L-2105B) may be used, provided the axle has been in service for 1000 miles or more. Axles with less than 1000 miles service must not be completely refilled with any lubricant other than Factory Hypoid Lubricant.

The lube is packaged with Replacement Ring and pinion gear sets and is also available through the Buick Parts Department under Group 5.535.

b. Positive Traction Differential Axle

Buick Positive Traction Differential Axles are filled at the Factory with a special lubricant conforming to Buick Specification No. 723. It is not necessary to remove the lubricant at any time except when it has become contaminated or when it is required for inspection of parts or for repairs. There is no drain hole in the rear axle housing.

In all cases of adding lubricant to bring to proper level or complete refilling of Positive Traction Rear Axle, only lubricant conforming to Buick Specification No. 723 may be used. Lubricant conforming to this specification may be obtained from any Buick Parts Warehouse under Group 5.535.

Positive Traction Differential Rear Axles can be identified by an embossed tag around the filler plug which reads, "Use Limited Slip Differential Lube Only." Also, a letter "X" inside a letter "O" is stamped on the bottom of the differential carrier casting just forward of the rear axle housing and is visible from beneath the car. See Figure 1-8.