GROUP 1 LUBRICARE

LUBRICARE INSTRUCTIONS

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1-1 EVERY 1000 MILES-LUBRICARE

1. Engine. Check engine oil level only after engine has been stopped for at least one minute to allow oil to drain down.

The oil level should be maintained between the "FULL" and "ADD" marks on gauge rod; each space between marks represents 1 quart. Do not fill above the "FULL" mark. See Figure 1-4.

See paragraph 1-6 for engine oil recommendations and when to change oil.

2. Front Suspension, Steering Linkage and Clutch Lubrication Fittings. Wipe dirt from lubrication fittings, then apply a good grade of water resistant chassis lubricant, under pressure, at the following points (Fig. 1-2):

Upper Control Arm Shafts (4 fittings)
Lower Control Arm Shafts (4 fittings)
Upper Ball Joints (2 fittings)
Lower Ball Joints (2 fittings)
Tie Rod Ends (2), Intermediate Rod (2), and
Idler Arm Support (1)
Clutch Release Equalizer (1) Synchromesh
only

3. Oil Filter. Change original oil filter at first 1,000 miles, then change it each 4,000 mile interval thereafter.

Screw filter off filter base and discard. Wipe gasket area of base clean and install newgasket in groove of new AC type PF-5 filter.

Lubricate gasket and screw filter on stud till gasket just touches base; tighten filter 2/3 turn more. Start engine. Do not accelerate engine beyond normal idle until oil pressure is indicated. Check filter area for leaks after

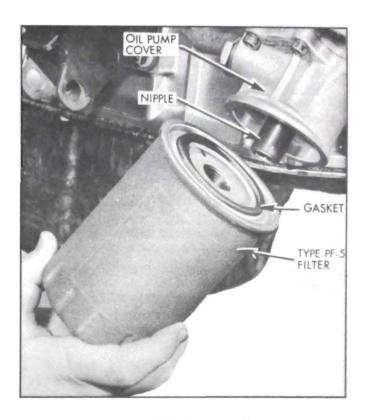


Figure 1-1-Oil Filter Installation

engine has run for five (5) minutes. See Figure 1-1.

- 4. 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 straight mineral oil gear lubricant or SAE 40 or 50 non-detergent engine oil. Do not use lubricants containing extreme pressure additives. NOTE: Draining and flushing transmission is not necessary unless the lubricant has become contaminated.
- 5. Rear Axle. Check lubricant level after allowing time for lube to settle. Clean the

1961 BUICK LUBRICATION CHART

4000 - 4100

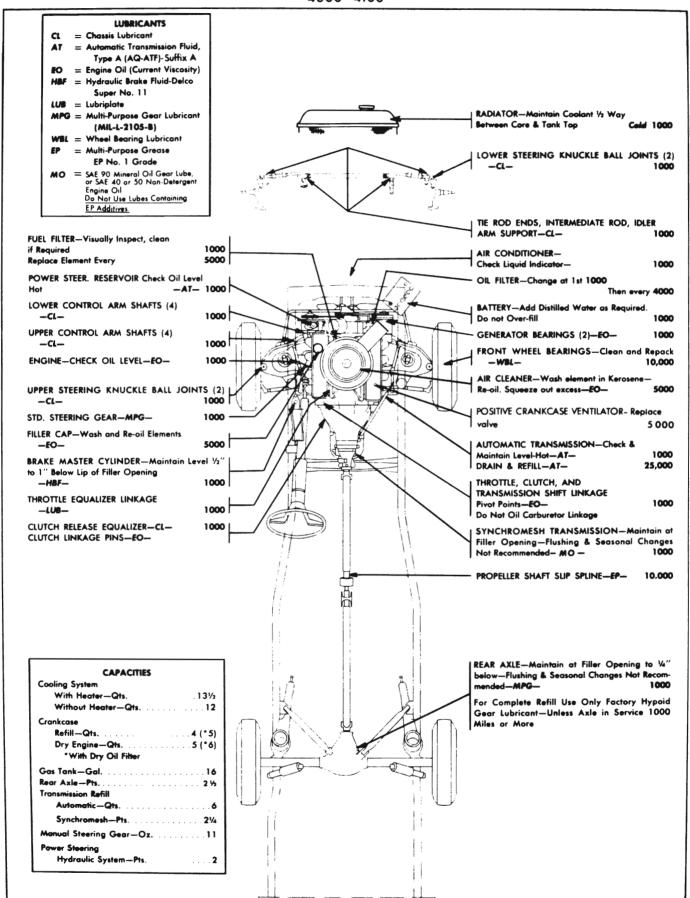


Figure 1-2-Lubrication Chart

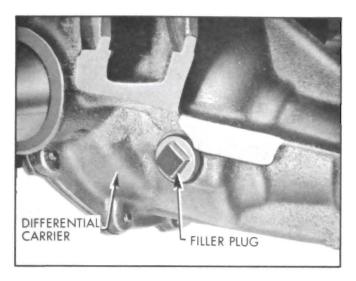


Figure 1-3-Differential Filler Plug

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 1-3.

NOTE: Draining and flushing is not reccommended, unless the lubricant has become contaminated. When complete refilling is necessary, SAE 90 Multi-Purpose Gear Lubricant may be used provided the axle has been in service for 1,000 miles or more. Axles with less than 1,000 miles must not be completely refilled with any lubricant other than Factory Hypoid Lubricant.

6. Automatic Transmission. Check transmission oil level, with transmission oil warm, transmission in Park, and engine idling. Re-

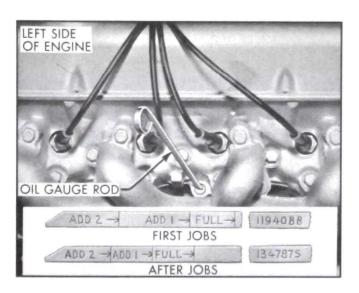


Figure 1-4-Engine Oil Gauge Rods

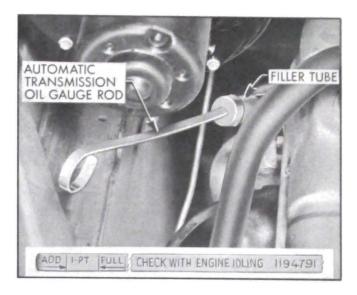


Figure 1-5—Automatic Transmission Oil Gauge Rod

move gauge rod located under right side of hood, see Figure 1-5, 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 in paragraph 1-4 but do not fill above the "FULL" mark. Distance between the "FULL" and "ADD" marks represents approximately one pint.

- 7. Air Cleaner. Normally serviced every 5,000 miles. If car is operating in dusty territory, check condition of air cleaner element and clean if dirty. See instructions in paragraph 1-2. (5,000 mile Lubricare.)
- 8. <u>Fuel Filter</u>. Inspect, clean bowl, and replace element if required. Element normally replaced each 5,000 miles; however, more frequent replacement may be necessary if contaminants have entered the fuel system.

See instructions in paragraph 1-2 (5,000 mile Lubricare).

9. Generator; Fan Belt. Add 8 to 10 drops light engine oil to front and rear generator oilers. Wipe off excess or spilled oil.

Inspect fan belt for cracks and for proper tension. See Figure 2-53.

10. Radiator. Check coolant level when engine is cold and add coolant to maintain level half way between core and tank top. CAUTION: Radiator cap should not be removed when engine is hot because relieving the pressure

1-4 LUBRICARE LUBRICARE

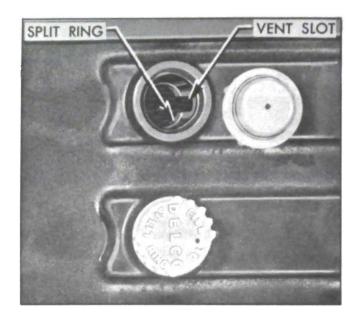


Figure 1-6-Battery Filler Well

may cause the cooling system to boil, with resultant loss of water or anti-freeze solution. Filling radiator above correct level may result in loss of water or anti-freeze solution through overflow pipe.

11. Battery. Add distilled water to bring level to split ring at bottom of filler well.

WARNING: Do not overfill. Clean top of battery; if wet with acid, neutralize with soda and wash clean. See Figure 1-6.

- 12. 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.
- 13. 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.
- 14. Throttle, Clutch and Transmission Shift Linkage Pivot Points. Wipe dirt from pivot points, then apply a good grade of light oil. CAUTION: Never oil linkage on carburetor.
- 15. Brake Master Cylinder. The master cylinder reservoir is under hood on left side. (On dash panel.)

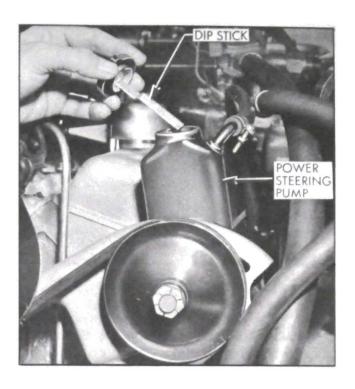


Figure 1-7—Power Steering Pump Reservoir

Thoroughly clean filler cap nut before removal to avoid getting dirt into reservoir. Add fluid as required to bring level to 1/2'' to 1'' below top of filler opening. Use GM or Delco Super No. 11 Hydraulic Brake Fluid. Never use reclaimed fluid or any mineral oil. See Figure 1-8.

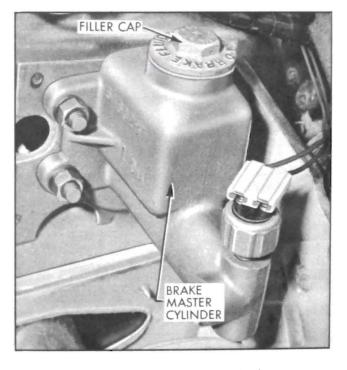


Figure 1-8-Brake Master Cylinder

- 16. Tires. Inflate all tires, as follows:
- 22 lbs. Starting Pressure after car has been standing for 3 hours or driven less than one mile.

WARNING: It is impossible to inflate tires correctly when HOT. Pressure normally increases as tires heat up when driving (as much as 7 pounds). Do not deflate tires to offset this increase in pressure.

1-2 EVERY 5000 MILES-LUBRICARE

- 1. Oil Filter. See paragraph 1-1, step 3. (1.000 Mile Lubricare).
- 2. Air Cleaner, Oil Filler Caps and Positive Crankcase Ventilator.



Figure 1-9-Air Cleaner Element and Support

- (a) Oil Filler Cap. Every 5000 miles (more often under dusty operating conditions) remove the oil filler cap and wash the filtering element in kerosene. Allow element to drain until dry. Oil the element and reinstall cap. CAUTION: Take precautions against the possibility of fire.
- (b) Air Cleaner. For normal operating conditions, remove air cleaner element to clean and reoil each 5,000 miles (more often under dusty operating conditions.)

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

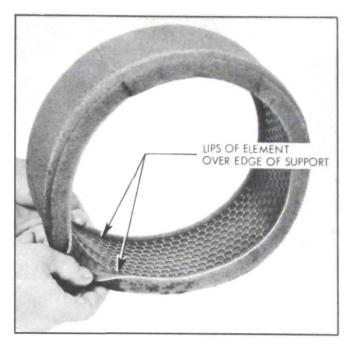


Figure 1-10—Installing Element on Support

Oil element liberally with 10W-30 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 element over support to affect a good seal. See Figure 1-10. Clean any oil or accumulated dirt out of air cleaner housing before installing element.

NOTE: If element becomes damaged replace with AC type A 96C.

- (c) Positive Crankcase Ventilator. Replace positive crankcase ventilator valve. The valve cannot be disassembled and deposits from crankcase vapors are difficult to remove with ordinary solvents. Replacement of the valve assembly at regular intervals is the only way of assuring crankcase ventilation on cars equipped with this device.
- 1. Expand hose to check valve clamp and move up on hose. Pull hose off valve and pull valve out of grommet in rocker arm cover. See Figure 1-11.
- 2. Install new valve by reversing removal procedure. Take care to install valve with arrow indicating air flow pointing "up".
- 3. Fuel Filter Element. Remove glass bowl and clean. Soak bowl in a good cleaning solvent

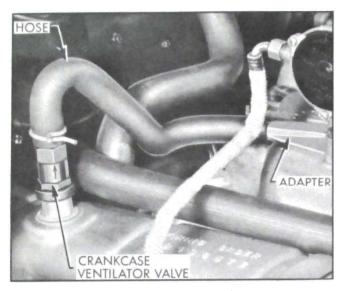


Figure 1-11—Positive Crankcase Ventilator Valve

to loosen any deposits. Replace element with AC type GF-124 element. Wipe bowl clean and reinstall, tightening bail finger tight. After assembling fuel filter, always start engine and observe filter carefully to make sure gasket is not leaking. See Figure 1-12.

- 4. Hood Latch and Hinges. Lightly coat hood guide, latch, lever, and dovetail bolt with Lubriplate. Apply engine oil to hood hinge pins.
- 5. Hood Lacing and Hood Bumpers. Lightly coat hood lacing and bumpers with silicone lube. Wipe off excess.
- 6. Windshield Wiper Cams. Apply a small amount of silicone lube to both sides of cams. Wipe off excess.
- 7. <u>Dome Lamp Door Switches</u>. Coat end of switch plunger and contact point on door with stick type lubricant.
- 8. Glove Box Door. Apply a few drops of light engine oil to door hinge and wipe off surplus. Sparingly coat lock striker with stick type lubricant.
- 9. Gas Tank Filler Door. Apply a few drops of light engine oil to hinge. Wipe off excess oil to prevent accumulation of dirt.
- 10. Lock Cylinders. If key operates roughly in any lock cylinder blow powdered graphite into key slot. DO NOT USE OIL.
- 11. Front Door Hinge Hold-Open Clips. Wipe off dirt and apply a light coat of Lubriplate or

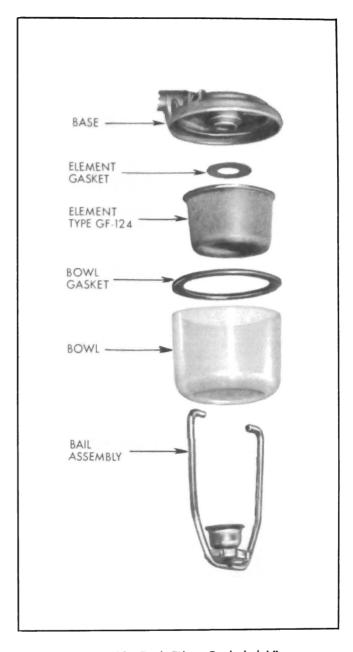


Figure 1-12—Fuel Filter Exploded View

its equivalent to hold-open clips as shown in Figure 1-13.

- 12. Rear Door Hinge and Hold-Open. Wipe off dirt and apply one or two drops of Lubriplate at points indicated by arrows in Figure 1-14.
- 13. 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 1-15. Oil rotary bolt shaft with engine oil. Wipe off excess. See Figure 1-15.
- 14. Door Lock Striker. Wipe off dirt and apply a thin coat of stick type lubricant to top

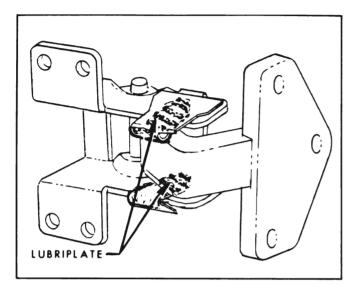


Figure 1-13—Lubrication of Front Door Hinge and Hold-Open Clips

surface of lock bolt striker teeth. After lubrication close door several times and remove excess lubricant along the side edge of teeth. See Figure 1-16.

- 15. Door Weatherstrips and Door Bumpers. A thin coat of silicone lubricant, such as Buick 4X compound, should be used on weatherstrips and door bumpers to prevent squeaking.
- 16. Rear Compartment Lid Hinges and Torque Rods. Apply lubriplate or equivalent to torque rods and hinge at friction points.
- 17. Rear Compartment Lid Lock Bolt. Wipe off dirt and apply lubriplate or equivalent sparingly to slot in catch. Wipe off excess. See Figure 1-17.

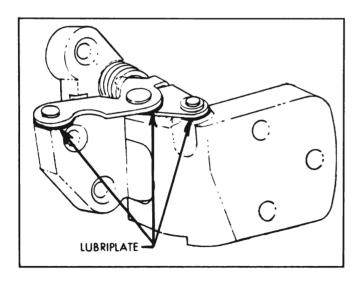


Figure 1-14—Lubrication of Rear Door Hinge and Hole-Open

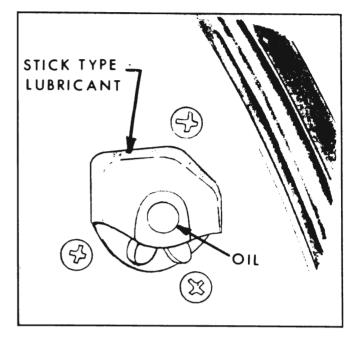


Figure 1-15—Lubrication of Door Lock
Bolt and Housing

18. Door Bottom Drain Hole Sealing Strip.

Apply sparing amount of silicone rubber lubricant to top surface of strip. This operation is

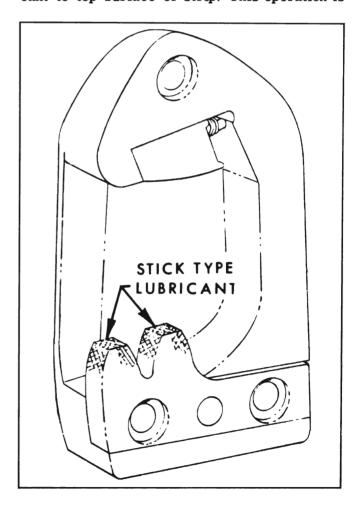


Figure 1-16—Lubrication of Door Lock Striker

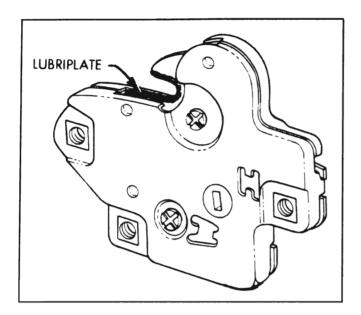


Figure 1-17—Lubrication of Rear Compartment Lid Lock Bolt

performed to prevent lip of sealing strip from adhering to inner panel and plugging drain holes in bottom of door.

1-3 EVERY 10,000 MILES-LUBRICARE

- 1. Front Wheel Bearings. At 10,000 mile intervals, the front wheel bearings should be removed, cleaned, repacked with new front wheel bearing grease, and installed as specified in Group 7.
- 2. Propeller Shaft Slip Spline. Remove plug in propeller shaft. Hold grease gun nozzle against opening to fill cavity with Multi-Purpose Grease EP No. 1 Grade. Replace plug.

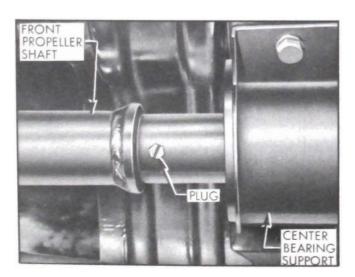


Figure 1-18—Propeller Shaft Spline Grease Plug

Do not use regular chassis lube! See Figure 1-18.

1-4 EVERY 25,000 MILES— AUTOMATIC TRANSMISSION

At 25,000 mile intervals, the transmission oil pan should be removed and cleaned. The oil strainer should be replaced and fresh oil added to the transmission.

a. Removal and Replacement of Oil Pan and Strainer

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.

- 1. Remove single bolt and bolt seal attaching oil pan to transmission case.
- 2. Remove oil pan and oil pan to transmission case seal.
- 3. Remove two oil strainer strap bolts to remove strainer and "O" ring seal.
- 4. Install new strainer and strainer "O" ring seal. Torque strainer strap bolts to 100 inch pounds exactly. Do not overtighten.
- 5. Clean oil pan. Install new seal on oil pan taking care not to stretch seal.
- 6. Install oil pan and seal, oil pan bolt and oil pan bolt seal. Torque oil pan to case bolt to 15 to 20 foot pounds. Do not overtighten.
- 7. Add 2 quarts of oil to transmission. Start engine and allow to idle in Park range. Add oil to bring level to "Full" mark on dip stick with transmission warmed up.

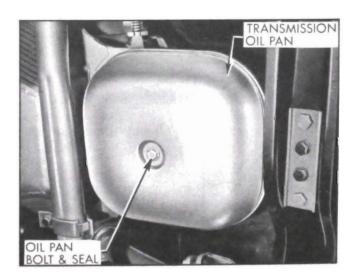


Figure 1-19—Automatic Transmission Oil Pan

b. 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.

1-5 LUBRICARE—AS REQUIRED OR WHEN ACCESSIBLE

a. Clutch Internal Lubricare

Lubrication of internal working parts of the clutch is usually required only at time clutch is assembled and installed; however, if lubrication becomes necessary to eliminate squeaks or correct excessive pedal pressure, follow instructions given in paragraph 4-5.

b. Brake Lubricare

Lubrication of all metal contact points at wheel brake assemblies is normally performed during the major brake adjustment or may be performed whenever a brake drum is removed.

Lubrication of parking brake cables is also performed during the major brake adjustment; however, operation under conditions where mud and water are frequently encountered may require more frequent lubrication. See paragraph 9-9.

c. Rear Wheel Bearing Lubricare

Rear wheel bearings are lubricated by gear lube splash from the differential housing and need no other lubrication. Whenever rear brakes are relined, or drums are removed for other work, it is advisable to inspect for evidence of leaking rear wheel bearing oil seals. Replace seals if leaking.

d. Speedometer Cable Lubricare

The speedometer cable is factory lubricated with special all-season grease and normally requires no further service unless it becomes noisy. In extremely hot climates or where considerable dirt and water are encountered, however, it may be necessary to lubricate the cable at intervals of approximately 20,000 miles or every two years. See Group 10.

e. Sunshade Lubricare

If the sunshade rod turns hard in the support as sunshade is moved up and down, remove retainer screw, pull rod from support and apply stick type lubricant. Do not use oil, which may soil body trim. Install rod in support and adjust retainer screw to proper tension. See Figure 1-20.

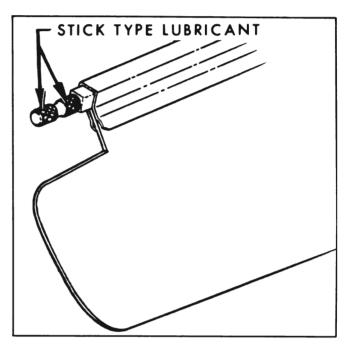


Figure 1-20—Lubrication of Sunshade Rod

f. Door Lock Outside Handle

Apply light coat of Lubriplate or its equivalent to surface of lock cylinder shaft contacting the bell crank indicated in Figure 1-21.

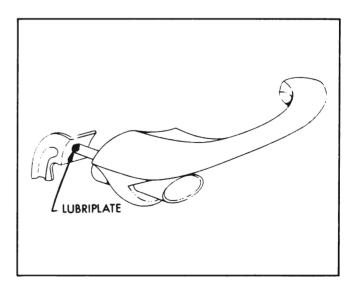


Figure 1-21-Lubrication of Door Outside Handle

1-10

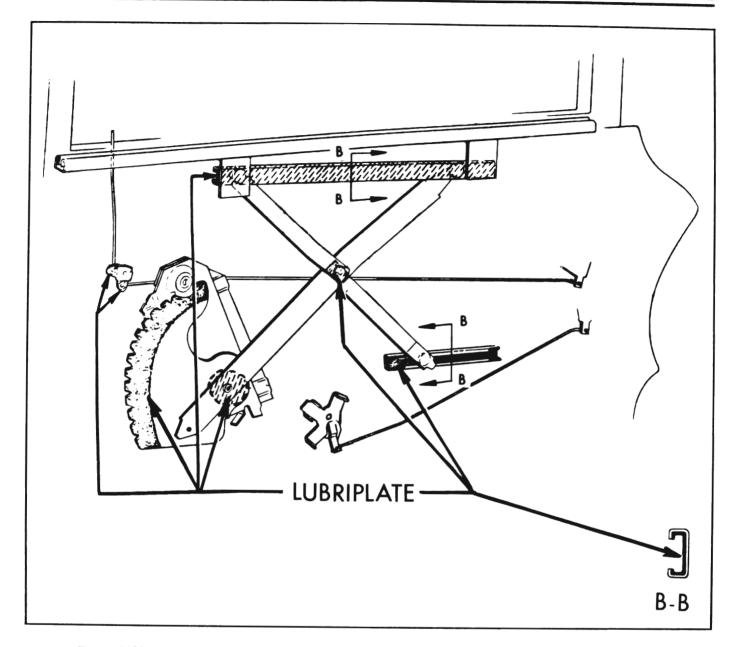


Figure 1-22—Lubrication of Front and Rear Door Window Regulator, Channels, and Door Lock

g. Door Lock Parts

Lubricate moving parts of door lock with Lubriplate or its equivalent. See Figure 1-22.

h. Front and Rear Door Window Regulator Sector and Channels

Apply a coat of Lubriplate or its equivalent to location of regulator sector indicated in Figure 1-22 and to sliding surface of window cam and guide channels indicated. Although the channel and guide assemblies are different on the rear doors, lubrication of the front door parts is typical of lubrication required on rear door parts.

i. Rear Compartment Gutter Weatherstrip

Carefully apply a coat of silicone rubber lubricant to surface of gutter weatherstrip and along length of weatherstrip. The weatherstrip should be lubricated whenever the action of the compartment lid is retarded due to friction with the weatherstrip.

1-6 ENGINE OIL RECOMMENDATIONS

a. Choice of Engine Oil

1. Brand of Oil. In the selection of the proper brand of oil it is essential to consider the reputation of the refiner or marketer. It is

recommended that the same brand of oil be used at all times.

- 2. Type of Oil. There are several types of oil manufactured for use in internal combustion engines. For use in the Buick engine we recommend that a heavy duty type oil marked "For Service MS" or "For Service DG" be used for maximum protection under all driving conditions. Oils marked "For Service MM" or "For Service ML" are not recommended for any Buick engine.
- 3. 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.
- 4. <u>Break-in Oils</u>. Break-in oils or compounds are not necessary in Buick engines and their use is not recommended. Some of these break-in oils contain certain materials which may be harmful. Buick HD Concentrate (subpar. d) is not a break-in oil.

b. When to Change Engine Oil

The crankcase should be completely drained and refilled with new oil of proper viscosity at the end of the first 1,000 miles and every 2,000 to 3,000 miles thereafter. 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 unusual dust conditions or short runs with a cold engine.

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.

Engine crankcase oils have a definite effect on ease of starting, oil economy, combustion chamber deposits and engine wear. Many commercial crankcase oils contain heavy non-volatile deposit forming components which make the type of combustion chamber deposits that greatly increase detonation and particularly pre-ignition, even though these oils may be designated "For Service MS" or "For Service DG." Some commercial crankcase oils are deficient in anti-wear characteristics and may contribute to rapid wear of camshafts, valve lifter assemblies and other highly stressed engine parts. Owners should be urged to use only crankcase oils that have been proven to produce ease of starting, satisfactory oil economy, minimum combustion chamber deposits and adequate protection against wear.

c. Crankcase Flushing

Flushing the crankcase with oils or solutions other than a good grade of 10-W engine oil is not recommended. When flushing to remove contamination appears advisable, use 3 quarts 10-W oil (4 quarts if filter is drained) and idle the engine at 1,000 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.

d. 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.

Temperature—Viscosity Chart

Temperature	Single Viscosity	Multi-Viscosity		
Not lower than +32°F	SAE 20 or 20W	SAE 10W-30 or SAE 10W-20		
Not lower than -10°F	SAE 10W	SAE 10W-30 or SAE 10W-20		
Below -10°F	SAE 5W	SAE 5W-10 or SAE 5W-20		

1-7 REAR AXLE LUBRICANT RECOMMENDATIONS

Buick 4000-4100 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 is 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 1,000 miles or more. Axles with less than 1,000 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.