

SECTION B

MAINTENANCE and LUBRICATION ALL SERIES

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DIVISION III

ADJUSTMENTS AND MINOR SERVICE

00-9 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 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 6041-M be used. 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 in subparagraph d.

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 "operating range" marks on the gage rod; the space between marks represents one quart. Do not fill above the upper mark.

c. 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.

d. Engine Oil Change and Viscosity Recommendations

| ANTICIPATED LOWEST TEMPERATURES | USE SAE VISCOSITY NO. | CHANGE YOUR OIL AT LEAST |
|--------------------------------------|---|--------------------------|
| ABOVE FREEZING (-32° F.) | SAE 10W-30 SAE 20W SAE 10W-40 SAE 20W-40 | EVERY 4 MONTHS* |
| BELOW FREEZING (-32° F. TO 0° F.) | SAE 10W SAE 10W-30 SAE 10W-40 SAE 5W-30 | EVERY 4 MONTHS* |
| BELOW 0° F. | SAE 5W-20 SAE 5W SAE 3W-30 | EVERY 4 MONTHS* |

*NEVER EXCEED 6,000 MILES BETWEEN OIL CHANGES. DURING EXTREME DRIVING CONDITIONS WHICH PRODUCE OIL CONTAMINATION BY DUST, WATER, OR OTHER FOREIGN MATERIAL, THE OIL SHOULD BE CHANGED MORE FREQUENTLY THAN EVERY 4 MONTHS. YOUR AUTHORIZED BUICK DEALER IS WELL QUALIFIED TO ADVISE YOU.

NOTE: WHEN CHANGING THE OIL, CONSIDER THE LOWEST ANTICIPATED TEMPERATURE FOR THE NEXT 4 MONTHS.

SAE 5W AND 5W-20 OILS ARE NOT RECOMMENDED FOR SUSTAINED HIGH SPEED DRIVING.

SAE 30 OILS MAY BE USED AT TEMPERATURES ABOVE 60° F.

00-85

e. 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 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. Engine Oil Supplement

Engine Oil Supplement or equivalent is a compound of the materials used by oil refiners to manufacture high detergent 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 are sticking valves, valve lifters and rings are noticed.

Although Engine Oil Supplement 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.

00-10 PERIODICALLY WHILE VEHICLE IS BEING REFUELED

1. Battery - Check Level

If necessary, add colorless, odorless drinking water to bring level to split ring at bottom of filler wells.

CAUTION: DO NOT OVERFILL.

2. Tires

For maximum tire life with corresponding good ride characteristics, maintain the tire pressure recommended in Group 100.

3. Engine Oil



Figure 00-15 - Engine Oil Gauge Rod

This check should be performed last to allow the oil to drain back into the pan. Always add oil if the level is below the lower mark on the dip stick. See Figure 00-15.

4. Windshield Washer Solvent

If necessary, add solvent using GM Optikleen or equivalent. Follow instructions on label for correct concentration of solvent and water.

00-11 MAINTENANCE RECOMMENDATIONS - EVERY 4 MONTHS

1. Engine Oil Change

Drain and refill engine crankcase every 4 months. If more

than 6,000 miles are driven in a 4 month period, change oil every 6,000 miles. See subparagraph d. for oil recommendations.

Certain driving conditions including prolonged operation in sub-zero temperatures, trailer hauling and extensive idling necessitates more frequent oil changes. Under these conditions oil change intervals should not exceed 2 months or 3,000 miles, whichever occurs first.

2. Engine Oil Filter Change

Replace engine oil filter at the first engine oil change and every second oil change thereafter.

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-24 filter (V-8), PF-25 (L-6) or equivalent. Lubricate the gasket and screw the filter on the nipple until the gasket just touches the base; tighten filter 2/3 of a turn more. Start engine. *Do not accelerate engine beyond the normal idle speed until oil pressure light goes out.* Check the filter area for leaks after the engine has run for five (5) minutes.

3. Emission Control

Check engine idle speed, ignition timing, idle fuel mixture and Positive Crankcase Ventilation System at first oil change (four months or 6,000 miles, whichever occurs first). Subsequent checks should be made every 12 months or 12,000 miles, whichever occurs first.

4. Positive Traction Differential (45-46-48-49000 Series only)

Change lube at first oil change only. Refill with SAE 90 lube, conforming to GM Specification 1051022.

00-12 MAINTENANCE RECOMMENDATIONS - EVERY FOUR MONTHS OR 6,000 MILES

1. Front Suspension and Steering Linkage

The front suspension and steering linkage should be lubricated with a water resistant extreme pressure EP No. 2 Multi-Purpose grease equivalent to GM Specification 6031-M every four months or 6,000 miles whichever occurs first.

NOTE: *If lubricants not meeting GM Specification 9985038 are used, the lubrication interval should be shortened and should not exceed 2,000 miles.*

Wipe dirt from the lubrication fittings and apply lubricant under pressure at the following points:

Upper Ball Joints (2 fittings)

Lower Ball Joints (2 fittings)

Steering Linkage (7 fittings)

2. Manifold Heat Valve (L-6)

Spray "Buick CRC 5-56" or equivalent on end of shaft, and free up if required. See Figure 00-16.

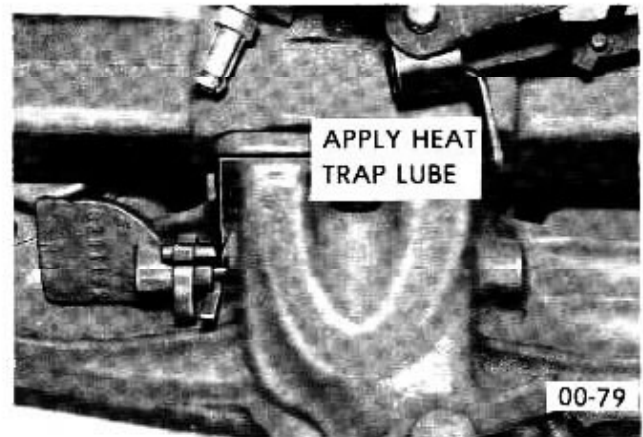


Figure 00-16 - Lubricating Points on Manifold Heat Control Valve - L-6 Engine

3. Clutch Lash

Should be adjusted every 6,000 miles. See Group 71 for procedures.

4. Tires

For best tire mileage, rotate tires every four months or 6,000 miles as shown in Figure 00-17. After tire rotation, adjust tire pressure to the recommended pressure listed in Group 100.

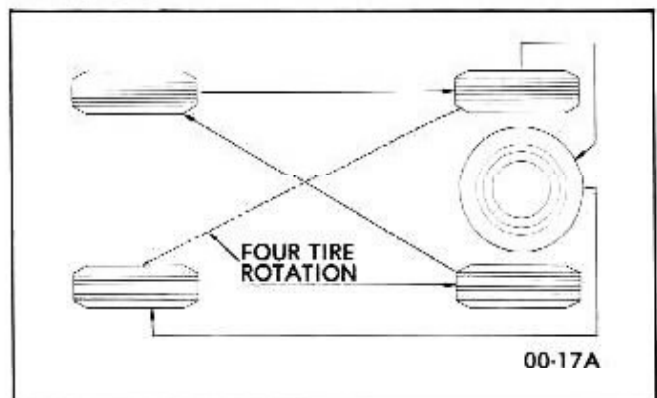


Figure 00-17 - Tire Rotation Method

A decrease in traction and anti-skid properties, as well as road hazard resistance, occurs as tires become worn out. The original equipment tires incorporate built-in tread wear indicators to assist in judging when tires should be replaced. These indicators are molded into the bottom of the tread grooves and will appear as 1/2 inch wide bands when tire tread depth becomes a 1/16 of an inch. When the indicators appears in two or more adjacent grooves, tire replacement is recommended. See Figure 00-18.



Figure 00-18 Tread Wear Indicators

5. Check Fluid Level

Brake Master Cylinder All models are equipped with dual master cylinders. Maintain fluid level 1/4 inch plus or minus 1/8 inch below top of each filler opening. When adding brake fluid, use Delco Supreme No. 11 hydraulic brake fluid or equivalent. Never use reclaimed fluid, mineral oil, or fluid inferior to SAE Standard J1703.

Manual 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/80 or 90 multi-purpose gear lubricant.

NOTE: Draining and flushing transmission is not recommended.

Automatic Transmission **IMPORTANT:** Refer to Group 75 or 76 for correct refill procedures.



Figure 00-19 - Automatic Transmission Oil Gauge Rod

Power Steering Reservoir Thoroughly clean any excessive amounts of dirt from reservoir cap before removing. Maintain level in accordance with fill marking on cap dipstick. Use *only* Power Steering Fluid meeting GM Specification 9985010.

Standard Differential Rear Axle Check lubricant level after allowing time for lube to settle. Clean surrounding area before removing filler plug. Level should be maintained not lower than 1/4" below filler plug opening by

adding SAE 80 or 80-90 Multi-Purpose Gear Lubricant meeting GL-5 specification.

NOTE: Draining and flushing are not recommended. When complete refilling is necessary, SAE 80 or 80-90 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 or equivalent.

Positive Traction Differential Rear Axle U.S. Built Axles Identified by a stainless steel plate attached by a rear cover bolt stating "Use positraction differential lube only" and by an X enclosed in a circle stamped on the bottom of the left axle tube. See Figure 00-20.

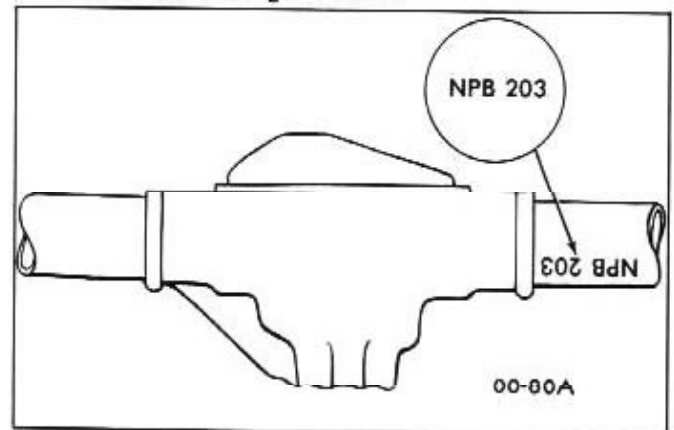


Figure 00-20 - Positive Traction Identification - U.S. Built Axles

Canadian Built Axles

Identified by a red plastic tag attached to the filler plug stating "USE POSITRACTION DIFF. LUBRICANT ONLY" and by an E stamped below the production month and date on the front face of right axle tube. See Figure 00-21.

Check lubricant level after allowing time for lubricant to settle.

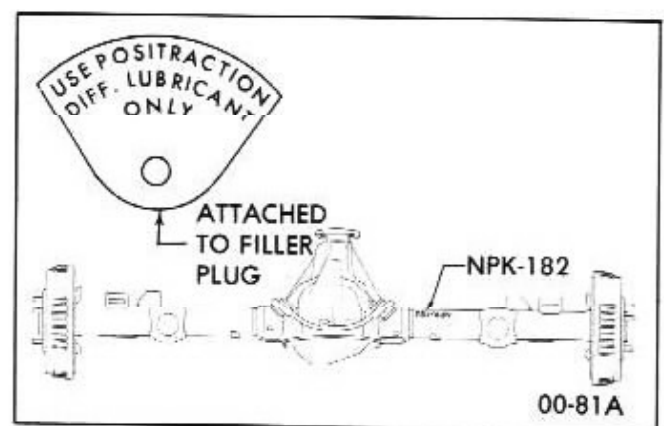


Figure 00-21 - Positive Traction Identification - Canadian Built Axles

Level should be maintained not lower than 1/4" below filler plug opening by adding SAE 90 gear lube meeting GM Specification 1051022. **NOTE:** *If Positive Traction Differential lube becomes contaminated, the axle assembly may be flushed with engine oil. Refer to Group 40 for complete flushing and refill procedures.*

6. Minor Lubrication

Occasionally lubricate the pivot points at the following locations with the recommended material.

Hood Hinge - Lubriplate or equivalent.

Door Hinges - Lubriplate or equivalent.

Door Lock Cylinders - powdered graphite. **DO NOT USE OIL.**

Gas Tank Door Hinge - Engine Oil.

Door Lock Fork Bolt - Stick type lubricant.

Rear Compartment lid lock - Lubriplate or equivalent.

Door Jam Switch - Lubriplate or equivalent.

Front Seat Adjuster Tracks - Lubriplate or equivalent.

Convertible Top Mechanism - Lubriplate or equivalent.

Station Wagon Folding Seat Linkage - Dripless Oil.

Tail Gate Lock Striker - Stick type lubricant.

Tail Gate Hinges - Dripless Oil.

Folding Top Lift Cylinder Piston - 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 act as a lubricant.

NOTE: *Do not allow brake fluid to come in contact with any painted or trimmed parts of the body.*

NOTE: *Do not lubricate carburetor or throttle linkage.*

7. Body Rubber Parts

Door, hood, and rear compartment rubber weatherstrips may be kept pliable and quiet by the application of a light coat of GM Part No. 1050110 Lubricant or suitable silicone lubricant equivalent.

00-13 MAINTENANCE RECOMMENDATIONS - EVERY 12,000 MILES

1. Ignition Points, Timing, Spark Plugs, Point Dwell and Idle Speed Mixture

It is recommended that the spark plugs be cleaned and

gapped or, if necessary replaced at 12,000 miles. Also the ignition points should be replaced and the engine timing, point dwell and idle speed mixture should be set to specifications as stated in Group 69.

NOTE: *More frequent service may be required depending on driving conditions.*

2. Fuel Filters

Replacement of fuel filter is recommended at 12,000 miles or 12 months whichever occurs first. Remove from carburetor inlet and replace with filter type GF-427 or equivalent for L-6 and 350 2 bbl. or GF-441 or equivalent for all V-8's with 4 bbls. More frequent servicing may be necessary if contaminants have entered the fuel system.

3. Distributor Cam Lubricator

It is recommended that the distributor cam lubricator be replaced every 12,000 miles. Remove from post on distributor plate and replace with a new wick. See Figure 00-22.

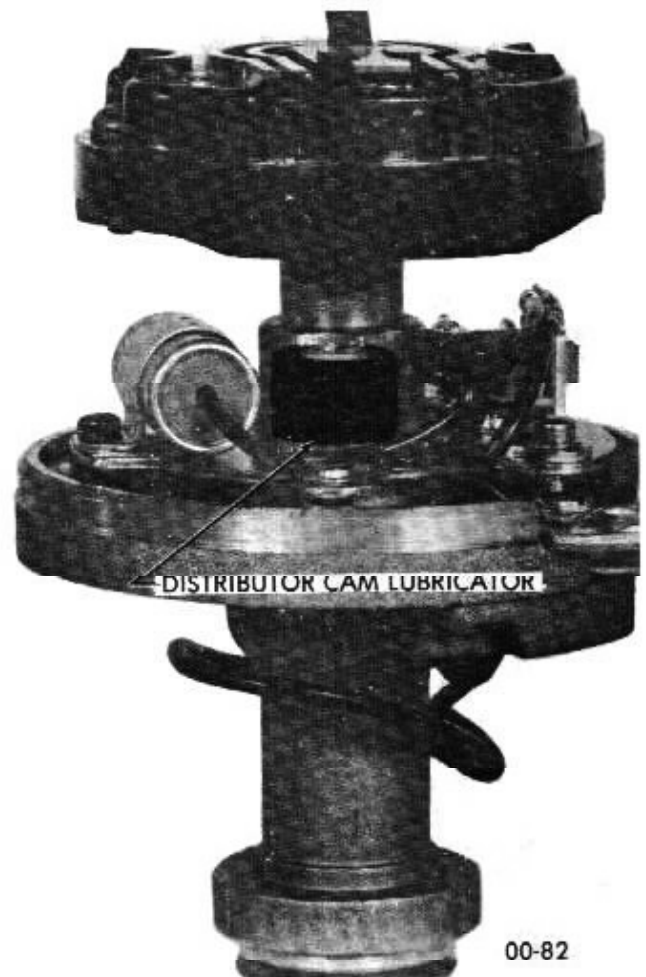


Figure 00-22 - Distributor Cam Lubricator

4. Belts

Inspect engine driven belts for condition and proper tension.

5. Wheel Alignment and Balance

Refer to Group 30.

6. Turbo Hydra-matic 350 and 400

If transmission is subjected to heavy duty usage, such as heavy city traffic during hot weather, or in commercial use, when engine is regularly idled for prolonged periods, the transmission recommendations listed under "24,000 Mile" should be performed at 12,000 miles.

7. Air Conditioner-Equipped Model

It is recommended that the system should be functionally checked by the dealer each spring.

Keep insects and dirt from accumulating on the air conditioner condenser.

8. Brakes

Examine brake linings for wear and the self adjusting mechanism for proper functioning. Although linings may not be excessively worn, this check will indicate when another inspection should be made.

If equipped with Disc brakes observe friction pad thickness through the inspection opening in the caliper. Refer to Group 50 for service procedure and specifications.

If required use Buick approved replacement linings and friction pads or equivalent. Lubricate self adjusting mechanism adjusting screw with Delco Moraine Special Brake Lubricant or equivalent.

00-14 MAINTENANCE RECOMMENDATIONS - EVERY 18,000 MILES**1. Front Wheel Bearings (Drum Type Brakes)**

Inspect and lubricate with a high melting point wheel bearing grease conforming to GM specifications 6031M when brakes are serviced. Always follow with correct bearing adjustment as outlined in Group 30.

2. Front Wheel Bearings (Disc Type Brakes)

Inspect and lubricate with a premium high melting point wheel bearing grease meeting GM Specification 9048-P when brakes are serviced. Always follow with correct bearing adjustment, as outlined in Group 30.

00-15 MAINTENANCE RECOMMENDATIONS - EVERY 24,000 MILES**1. Automatic Transmission Turbo Hydra-matic 350 and 400**

At this interval the automatic transmission should be drained, the oil pan and oil strainer cleaned (Turbo Hy-

dra-matic 350), and oil filter replaced (Turbo Hydra-matic 400) and new oil added as stated in Groups 75 or 76.

When adding transmission fluid use only DEXRON Automatic Transmission Fluid or Automatic Transmission Fluid identified with the mark DEXRON on the container.

2. Engine Air Cleaner Element

Replacement of element is required every 24,000 miles. If car is operated in dusty territory, check condition of air cleaner element more frequently and replace if necessary. Service with the following AC type air cleaner element or equivalent for maximum engine protection.

Air Cleaner Element Chart

| ELEMENT | | |
|----------------|---------|------------|
| USAGE | REGULAR | HEAVY DUTY |
| L-6 All | A169W* | A227C* |
| 350 2 & 4-8BL | A329C* | A368C* |
| 455 All | A212CW* | A279C* |
| *OR EQUIVALENT | | 00-86B |

3. Crankcase Ventilation Filter

Inspect at every oil change - replace if necessary with AC type FB-59 or equivalent. Replace at least every 24,000 miles - more often under dusty conditions. See Figure 00-23.

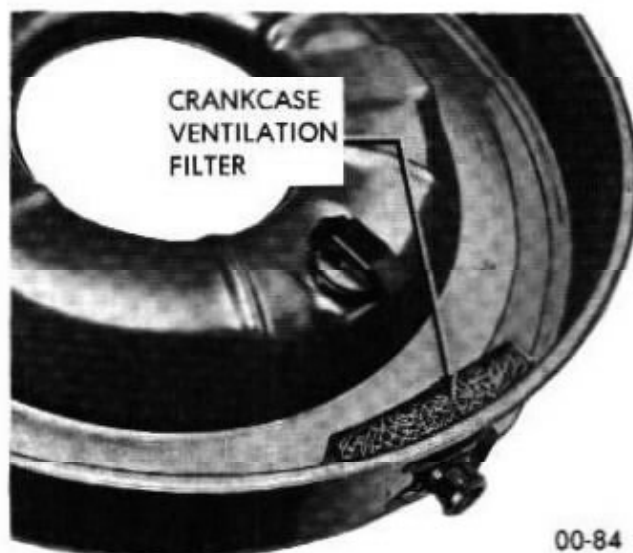


Figure 00-23 - Crankcase Ventilation Filter Location

4. Cooling System Inhibitor

It is required that GM cooling system inhibitor and sealer or equivalent be added every 24,000 miles.

5. Positive Crankcase Ventilator Valve

Replace PCV valve at 24,000 or 24 months, whichever occurs first. Remove positive crankcase ventilation valve and replace with a new AC-type CV- 679C, or equivalent, for V-8 engines; or AC-type CV- 723C, or equivalent, for L-6 engines.

Inspect PCV system hoses and fittings, clean and replace as necessary. Make certain all connections are tight.

00-16 MAINTENANCE RECOMMENDATIONS - SEASONAL (COOLING SYSTEM)**1. Anti-Freeze**

An ethylene glycol type anti-corrosive and anti-freeze cooling system protection solution developed for year around use (General Motors Specifications, GM 1899-M) has been installed in the cooling system of the vehicle at the factory for protection to -20 degrees F. (-32 degrees F. in Canada) to provide adequate cooling performance and corrosion protection.

Although this type coolant should be maintained to at least -20 degrees F. (-32 degrees F. in Canada) throughout the year, once every two years the cooling system should be drained, flushed and ethylene glycol type anti-freeze also conforming to General Motors Specification GM 1899-M installed. At this time, also add GM cooling system inhibitor and sealer or equivalent. *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 or equivalent be added to the cooling system as soon as possible. If any other cooling system protector is used, be sure it is

labeled to indicate that it meets General Motors Specification GM 1899-M.

00-17 VEHICLE OPERATION UNDER DUSTY CONDITIONS

When cars are operated in adverse dusty climates or conditions, the following precautions should be taken to prevent dirt and other foreign materials from entering the engine.

1. Change Engine Oil.

Change more often than is recommended in subparagraph C. The severity of the conditions should determine the frequency of oil changes.

2. Oil Filter.

Change each time that the oil is changed under these conditions.

3. Air Cleaner Element.

Inspect element. If dirty, replace as recommended under Paragraph 00-15.

4. Manual Steering Gear.

If gear is disassembled for inspection or repairs, refill with 14 ounces of calcium grease conforming to (General Motors Specifications, GM 4673M). *Do not use chassis lube because of adverse cold weather characteristics.*

DIVISION VI**SPECIFICATIONS****00-18 LUBRICATION AND CAPACITY CHARTS**

a. Refer to Lubrication Charts

b. Refer to U.S., Imperial and Metric Measure Chart.

1971 LUBRICATION CHART - ALL MODELS

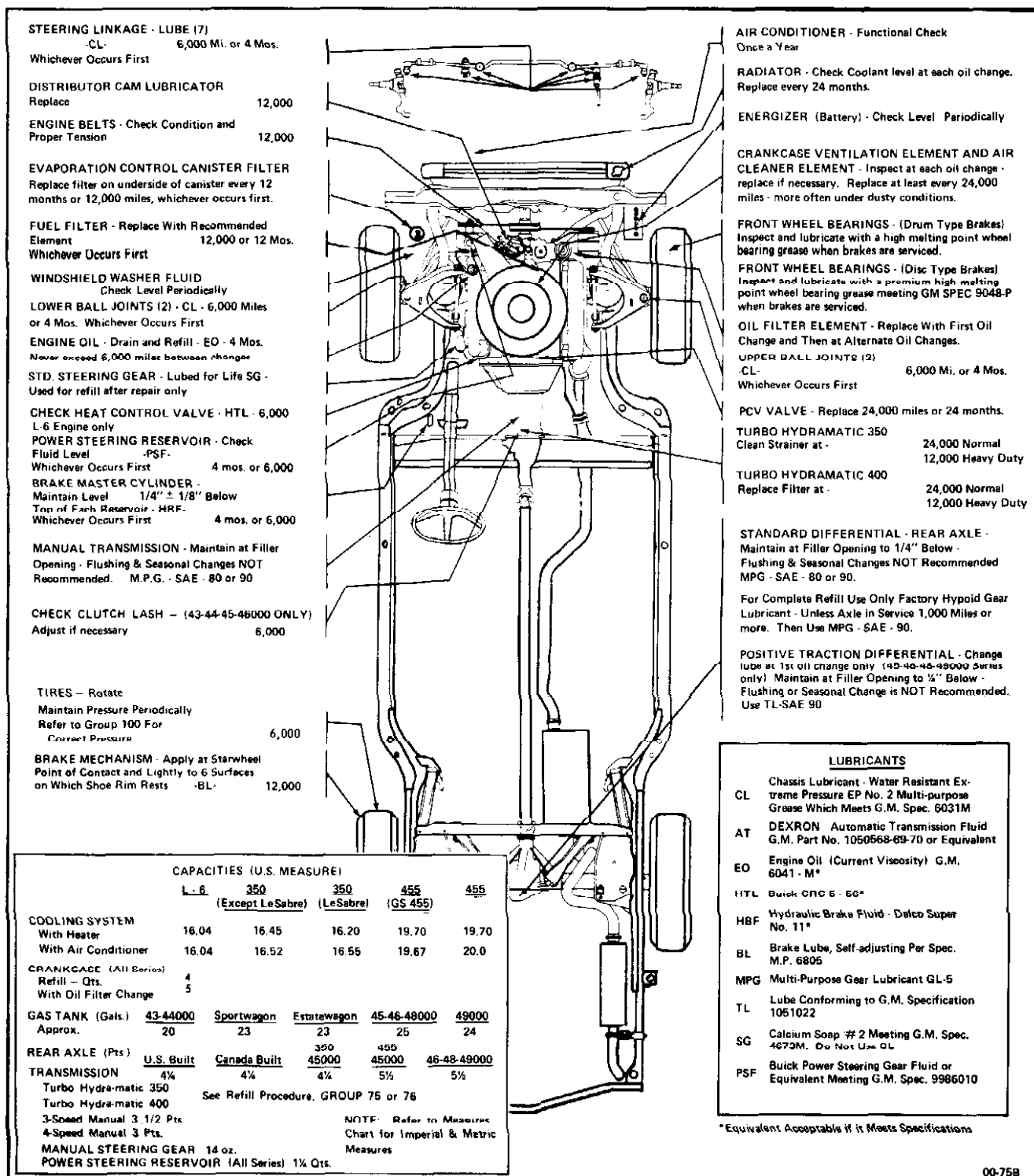


Figure 00-24 - Lubrication Chart - All Models

U.S., IMPERIAL AND METRIC MEASURE CHART

| | U.S. Measure | Imperial Measure | Metric Measure |
|---|---|--|--|
| Cooling System (L-6) 250 Cu. In. w/Heater w/Air Conditioner | 16.04 Qts. 16.04 Qts. | 13.37 Qts. 13.37 Qts. | 15.18 Liters 15.18 Liters |
| 350 Cu. In. (All Except LeSabre) w/Heater w/Air Conditioner | 16.45 Qts. 16.52 Qts. | 13.71 Qts. 13.77 Qts. | 15.57 Liters 15.63 Liters |
| 350 Cu. In. (LeSabre) w/Heater w/Air Conditioner | 16.20 Qts. 16.55 Qts. | 13.50 Qts. 13.79 Qts. | 15.33 Liters 15.66 Liters |
| 455 Cu. In. (GS) w/Heater w/Air Conditioner | 19.17 Qts. 19.67 Qts. | 15.97 Qts. 16.39 Qts. | 18.14 Liters 18.61 Liters |
| 455 Cu. In. w/Heater w/Air Conditioner | 19.70 Qts. 20.0 Qts. | 16.42 Qts. 16.67 Qts. | 18.64 Liters 18.93 Liters |
| Crankcase (All Series) Refill With Oil Filter Change | 4 Qts. 5 Qts. | 3.30 Qts. 4.20 Qts. | 3.78 Liters 4.73 Liters |
| Gasoline Tank 43-4400 Series Sportwagon Estatewagon 45-46-4800 Series 4900 Series | Approx. 20 Gal. Approx. 23 Gal. Approx. 23 Gal. Approx. 25 Gal. Approx. 24 Gal. | 16.67 Gal. 19.17 Gal. 19.17 Gal. 20.83 Gal. 19.99 Gal. | 75.60 Liters 86.94 Liters 86.94 Liters 94.50 Liters 90.72 Liters |
| Rear Axle 43-44000 Series (U.S. Built) 43-44000 Series (Canada Built) 45000 — 350 455 46-48-49000 Series | 4¼ Pts. 4¼ Pts. 4¼ Pts. 5½ Pts. 5½ Pts. | 3¾ Pts. 3¾ Pts. 3¾ Pts. 5 Pts. 5 Pts. | 2.25 Liters 2.25 Liters 2.25 Liters 2.91 Liters 2.91 Liters |
| Transmission T.H.M. 350 T.H.M. 400 3 Speed Manual 4-Speed Manual | See Group 75 See Group 76 3½ Pts. 3 Pts. | 3 Pts. 2½ Pts. | 1.66 Liters 1.43 Liters |
| Manual Steering Gear (All Series) | 11 Oz. | 11 Oz. | 311.85 Grams |
| Power Steering (All Series) Hydraulic System | 2½ Pts. | 2 Pts. | 1.10 Liters |