

# **PART FOUR**

## **MISCELLANEOUS**

**LUBRICATION – MAINTENANCE**

**WIRING DIAGRAM**

**ALPHABETICAL INDEX**

**PLYMOUTH MILEAGE MAINTENANCE SCHEDULE\***

| MAINTENANCE RECOMMENDED  | MILEAGE INTERVALS IN THOUSANDS |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |   |
|--|--------------------------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|---|
|  | 1                              | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |   |
| Safety Inspection and Chassis Lubrication.....                               | *                              | * | * | * | * | * | * | * | * | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | * |
| Lubricate Body (Hinges, Locks, Latches, Door Striker Plates and Rotors)..... | *                              | * | * | * | * | * | * | * | * | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | * |
| Check Lubricant Level—Steering, Transmission, Overdrive, Rear Axle.....      | *                              | * | * | * | * | * | * | * | * | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | * |
| Inspect Oil Filler Cap and Outlet Pipe Air Cleaners.....                     | *                              | * | * | * | * | * | * | * | * | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | * |
| Check Brake Fluid Level.....   | *                              | * | * | * | * | * | * | * | * | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | * |
| Lubricate Generator and Distributor.....                                     | *                              | * | * | * | * | * | * | * | * | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | *  | * |
| Change Engine Oil—Miles.....   | As recommended—See Page 495    |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |   |
| Rotate Tires.....  | ⊕                              |   |   |   |   | ⊕ |   |   |   |    |    | ⊕  |    |    |    |    |    |    |    | ⊕  |   |
| Check Brake Adjustment.....  | ●                              |   |   |   |   | ● |   |   |   |    |    | ●  |    |    |    |    |    |    |    | ●  |   |
| Check Clutch Adjustment.....   | ●                              |   |   |   |   | ● |   |   |   |    |    | ●  |    |    |    |    |    |    |    | ●  |   |
| Engine Tune-up (Minor).....  | ●                              |   |   |   |   | ● |   |   |   |    |    | ■  |    |    |    |    |    |    |    | ●  |   |
| Engine Tune-up (Major).....  |                                |   |   |   | * |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |   |
| Clean Carburetor Air Cleaner Cartridge.....                                  |                                |   |   |   | * |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |   |
| Replace Oil Filter.....  |                                |   |   |   | * |   |   |   |   |    |    |    |    |    | *  |    |    |    |    |    | * |
| Repack Front Wheel Bearings.....   |                                |   |   |   |   |   |   |   |   | ○  |    |    |    |    |    |    |    |    |    |    | ○ |
| Lubricate Speedometer and Cable.....   |                                |   |   |   |   |   |   |   |   | ○  |    |    |    |    |    |    |    |    |    |    | ○ |
| Check Fan Belt Adjustment.....   |                                |   |   |   |   |   |   |   |   | ○  |    |    |    |    |    |    |    |    |    |    | ○ |
| Check Wheel Alignment.....   |                                |   |   |   |   |   |   |   |   | ○  |    |    |    |    |    |    |    |    |    |    | ○ |
| Check Headlight Aiming.....  |                                |   |   |   |   |   |   |   |   | ○  |    |    |    |    |    |    |    |    |    |    | ○ |
| Change Transmission Lubricant.....   |                                |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | ★ |
| Change PowerFlite or TorqueFlite Transmission Lubricant                      |                                |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | ★ |
| Change Overdrive Transmission Lubricant.....                                 |                                |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | ★ |
| Repack Universal Joints.....   |                                |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | ★ |
| Change Rear Axle Lubricant.....  |                                |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | ★ |
| Replace Carburetor Air Cleaner Cartridge.....                                |                                |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | ★ |

\*These maintenance recommendations are for the average driving conditions. Please read page 495, "OIL CHANGE"

# PART FOUR—MISCELLANEOUS

## SECTION I—LUBRICATION—MAINTENANCE

|   | Page |
|---|------|
| Recommended Lubricants . . . . .                  | 496  |
| Mileage Maintenance Schedule . . . . .            | 494  |
| 1. Lubrication . . . . .                          | 495  |
| 2. Engine Oil . . . . .                           | 495  |
| 3. Lubrication Intervals . . . . .                | 498  |
| 4. Seasonal Care and Preparation . . . . .        | 502  |
| 5. Storage Precautions . . . . .                  | 502  |
| 6. Oilite Bearings . . . . .                      | 503  |
| 7. Care of Paint, Chrome and Upholstery . . . . . | 503  |

### 1. LUBRICATION

Modern driving conditions—numerous stops and starts in city traffic and continuous high road speeds on country highways—place exacting performance demands upon the precision-fitted parts of the Plymouth car. Thus, timely lubrications, oil changes and seasonal maintenance are very important subjects for consideration by both service men and Plymouth owners.

Complete Plymouth lubrication recommendations appear in detail in the *Lubrication Chart*, on page 505. Information provided in this Chart includes: Types and grades of lubricants required; frequencies of application; lubrication points, and capacities of the units.

#### ENGINE OIL

**OIL LEVEL**—It is considered a good practice to check the oil level in the crankcase whenever the car is re-

fueled and while the engine is warm. When checking the oil level. Make sure the car is level. If the oil level is checked immediately after the car has been driven, some oil will remain in the oil passageways, and the level will not be as high as it will be after the car has been allowed to stand a short time.

**OIL LEVEL INDICATOR DIP STICK**—Two types of dipsticks are used, but both have the same markings. See Figure 1.

If the oil level on the dipstick is between the "add oil" mark and the "full mark," it is not necessary to add oil. If the oil level is at or slightly below the "add oil" mark, add only one quart of oil.

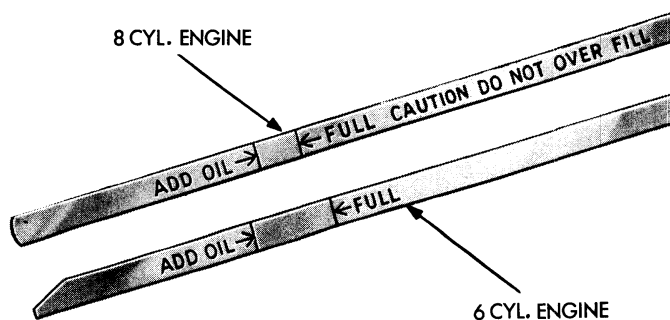
### 2. ENGINE OIL

#### OIL CHANGE

Under "normal" driving conditions, the engine oil should be changed at least every 3 months or 5000 miles.

Most cars are driven under normal conditions. When considering oil change recommendations, the conditions under which the car is operated should be taken into consideration.

In unusual operation, water and other undesirable compounds or some unburned fuel may collect in the oil. These tend to reduce the lubricating qualities of the engine oil. The Plymouth crankcase ventilating system expels (in vapor form) a large amount of these impurities. But, enough may remain to make it advisable to change the engine oil at more frequent intervals.



57P396

Figure 1—Oil Level Indicator Dip Stick

**TYPES OF LUBRICANTS RECOMMENDED**

| UNIT OR PART                                     | LUBRICANT REQUIRED  |
|--|---|
| Lubricant Fittings.....                          | Chassis Lubricant   |
| Door Latches and Hinges.....                     | Dripless Penetrating Oil  |
| Door Lock Cylinders.....                         | MoPar Lubriplate  |
| Door Strikers and Rotors.....                    | MoPar Door Ease   |
| Distributor Oil Cup.....                         | SAE 10W Engine Oil  |
| Generator.....                                   | SAE 10W Engine Oil  |
| Steering Gear—Conventional.....                  | Above — 10°F—SAE 90 Multi-Purpose Gear Lubricant<br>Below — 10°F—SAE 80 Multi-Purpose Gear Lubricant                              |
|  | Below — 30°F—SAE 75 Multi-Purpose Gear Lubricant  |
| Power Steering Gear and Reservoir.....           | Automatic Transmission Fluid, Type A  |
| Crankcase Outlet Air Cleaner (Spec. Equip.)..... | SAE 50 Engine Oil   |
| Oil Filler Pipe Cap Air Cleaner.....             | SAE 50 Engine Oil   |
| Speedometer Head.....                            | MoPar Speedometer Oil   |
| Speedometer Cable.....                           | MoPar Speedometer Cable Lubricant   |
| Front Wheel Bearings.....                        | Short Fiber Wheel Bearing Grease-Medium   |
| Transmission—Standard Three Speed.....           | SAE 80 Fluid Gear Lubricant   |
| PowerFlite or TorqueFlite Transmission.....      | Automatic Transmission Fluid, Type A  |
| Overdrive.....                                   | SAE 80 Fluid Gear Lubricant   |
| Rear Axle.....                                   | Above — 10°F—SAE 90 Hypoid Gear Lubricant<br>Below—10°F—SAE 80 Hypoid Gear Lubricant<br>Below — 30°F—SAE 75 Hypoid Gear Lubricant |
| Universal Joints.....                            | Heavy Fiber Universal Joint Grease  |

**EXTREMELY DUSTY OR SANDY AREAS**—When a car is driven principally on dirt or gravel roads, more frequent oil changes may be necessary. This practice will help protect vital engine parts against possible damage by sand or abrasive particles.

**COLD WEATHER OPERATION**—In cold weather, when the car is driven on short runs and at slow speeds, the oil may need to be changed more frequently. Under such operating conditions, the engine temperature does not rise high enough to prevent the formation of water in the crankcase resulting in the formation of sludge. To help offset this condition, a car should be driven occasionally at speeds above 35 miles per hour. This will raise the engine temperature and help the crankcase ventilating system expel undesirable elements.

**ENGINE OIL RECOMMENDATIONS**

| Temperature Anticipated | Recommended Viscosity No. | Multi-Grade Options      |
|-------------------------|---------------------------|--------------------------|
| Above +32° F.....       | SAE 30.....               | SAE 20W-40<br>SAE 10W-30 |
| Above +10° F.....       | SAE 20W.....              | SAE 20W-40<br>SAE 10W-30 |
| Above -10° F.....       | SAE 10W.....              | SAE 10W-30<br>SAE 5W-20  |
| Below -10° F.....       | SAE 5W.....               | SAE 5W-20                |

SAE 30 engine oil is recommended as a general summer oil. This oil may also be used during the winter months if temperatures do not fall below freezing (32° F.)

SAE 20-W engine oil is recommended for use in localities where only very mild weather conditions are encountered—such as where temperatures are not lower than 10 degrees above zero.

SAE 10-W engine oil is recommended as a general winter oil for temperatures as low as 10 degrees below zero.

**NOTE**

*When seasonal temperatures rise, or when a car is to be driven into an area where higher atmospheric temperatures will be encountered, always use the recommended grade of engine oil for the higher temperatures.*

SAE 5-W engine oil is recommended for sub-zero winter temperatures that remain lower than 10 degrees below zero.

**CAUTION**

**Do not dilute SAE 5-W engine oil. Dilution of SAE 5-W engine oil with kerosene or with trade name diluents, as is the practice with SAE 10-W engine oil in order to secure better starting in cold weather, will lower its viscosity below that required for adequate lubrication.**

**NEW CARS**—Engine oil installed in the car when manufactured should not be removed for first 1000 miles of initial car operation. If necessary to add oil, use a grade of oil in keeping with the temperatures to be encountered.

**TYPES OF ENGINE OIL**

The type of service for which an engine oil is intended is usually designated by the letters "MS, MM, or ML on the container. These are service classifications established by the American Petroleum Institute (A.P.I.). For best performance and engine protection of Plymouth cars, it is recommended that oil with an "MS" classification be used.

It is important to remember that this classification is to be used in addition to selecting the proper grade of oil for your car by the SAE grade numbers which indicates the viscosity of the oil. Refer to the chart at the left for correct selection of oils according to atmospheric temperatures.

It is also recommended that an oil be used which indicates both the A.P.I. service classification and SAE grade designation on the container.

**OIL FILLER PIPE CAP AIR CLEANER**

Engines require ventilation through the crankcase to remove combustion products. Air enters the engine through the oil filler pipe which is equipped with a combination cap and air cleaner to protect the engine from dust laden air. The cap should be washed in kerosene and reoiled with SAE 50 at each engine oil change. If SAE 50 is not available, SAE 40 may be used. Cars that are operated in extremely dusty areas should be serviced more frequently.

**CRANKCASE VENTILATION OUTLET PIPE AIR CLEANER**

Crankcase ventilation outlet air cleaners, if so equipped, should be washed in kerosene and reoiled with SAE 50 at each engine oil change. If SAE 50 is not available, SAE 40 may be used. Cars that are operated in extremely dusty areas should be serviced more frequently.

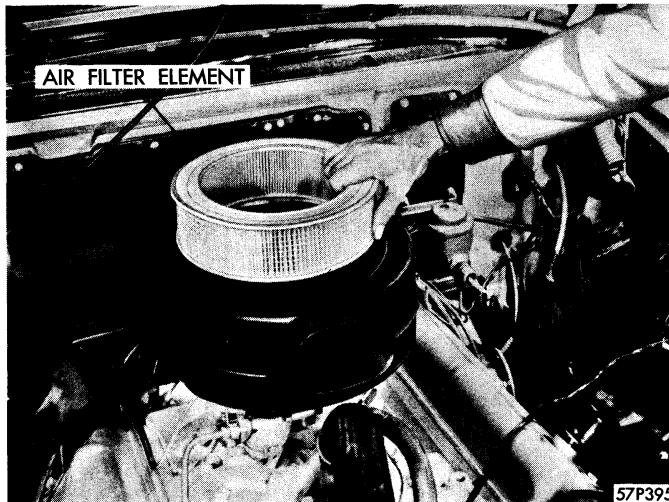


Figure 2—Carburetor Air Cleaner

### OIL PRESSURE

Oil pressure should be 40 to 60 pounds at speeds above 30 miles per hour. At engine idling speeds, the oil pressure will vary—depending upon temperature and the viscosity of the oil.

#### IMPORTANT

*Any pressure indicating oil flow at engine idle speed is satisfactory, providing the oil pressure rises to normal above 30 miles per hour, when the engine is at normal operating temperature.*

### 1000 MILE OIL CHANGE

When the first 1000 miles of new car operation ends, drain the crankcase when the engine is warm. Refill with oil of the proper viscosity (see "Engine Oil Recommendations"), according to the anticipated atmospheric temperature.

### OIL FILTER

Install a new oil filter or cartridge every 5,000 miles to coincide with an oil change.

In dusty areas it may be necessary to change the filter more frequently.

### CARBURETOR AIR CLEANER

The carburetor air cleaner is a special micronic paper element. To clean the element remove cover and lift out as shown in Figure 2. Tap gently to shake out dirt. The element should be cleaned every 5,000 miles as a rule, however, if the car is operated in dusty or sandy

areas, clean more often. Replace the element every 15,000 miles.

### "BREAKING-IN" A NEW ENGINE

There are many methods of "breaking-in" the engine of a new car, or a new or reconditioned engine. Any method is advantageous that assures the proper "running-in" of all vital engine parts and avoids sustained high speeds in all gears until sufficient "breaking-in" mileage has been covered.

Here is a suggested "breaking-in" plan:

**THE FIRST 300 MILES**—During this period, the car should be driven at moderate speeds when accelerating in first and second and while cruising in high. Watch the temperature and oil pressure gauges or lights closely. Speeds up to 50 miles an hour in high gear will give the engine and the other units a chance to "run-in" for smooth economical performance.

After 300 miles of driving, occasional bursts of higher speed are not only permissible but desirable, provided of course, you comply with local and state traffic laws. The car should not be operated at consistently high speeds until it has been driven at least 500 miles.

## 3. LUBRICATION INTERVALS

With a planned schedule of periodical lubrication, the Plymouth car will provide long satisfactory service. Precision-fitted parts will be assured proper lubrication and will be afforded better protection against the entry of dust, dirt and water.

The Plymouth Lubrication Recommendations are divided into three main groups: once a month, or every 1,000 miles; once a year, or every 10,000 miles, and every two years, or every 20,000 miles.

These frequencies are based on "normal" operation—more frequent lubrication is advisable if the car is operated on gravel or dusty roads.

#### ONCE A MONTH OR EVERY 1,000 MILES

**UPPER BALL JOINTS**—Chassis Lubricant—Two lubricant fittings, one on each side.

**LOWER BALL JOINTS**—Chassis Lubricant—Two lubricant fittings, one on each side.

**TIE ROD BALL JOINTS**—Chassis Lubricant—Four lubricant fittings, two on each tie rod.

**CLUTCH TORQUE SHAFT**—Chassis Lubricant—One lubricant fitting.

**NOTE**

*When equipped with either the PowerFlite or TorqueFlite transmission, all clutch linkage is omitted.*

**GEARSHIFT TUBE AND LOWER SUPPORT ASSEMBLY**—Chassis Lubricant—One lubricant fitting.

**NOTE**

*When equipped with either the PowerFlite or TorqueFlite Transmission, push-button controls are used.*

**STEERING GEAR—MANUAL**—Multi-Purpose Gear Lubricant: SAE 90 for summer and winter above  $-10^{\circ}\text{F}$ ; SAE 80 for temperatures below  $-10^{\circ}\text{F}$ ; SAE 75 for temperatures below  $-30^{\circ}\text{F}$ —Check lubricant level. Replenish when level is below the filler hole.

**NOTE**

*Do not use a pressure gun.*

**COAXIAL POWER STEERING**—Automatic Transmission Fluid—Type "A." For temperatures below  $-10^{\circ}\text{F}$  use SAE 5W-20 engine oil; replace with Type "A" when low temperature period is over. Check oil level in reservoir. Replenish to full mark.

**PARKING BRAKE LINKAGE, EXTERNAL CONTRACTING TYPE ONLY**—Engine Oil—Apply to pivot points directly.

**REAR AXLE**—Multi-Purpose Gear Oil: SAE 90 for temperatures above  $-10^{\circ}\text{F}$ ; SAE 80 for temperatures below  $-10^{\circ}\text{F}$ ; SAE 75 for temperatures below  $-30^{\circ}\text{F}$ . Remove filler plug and check level. Replenish to level of filler hole.

**NOTE**

*Do not overfill.*

**MANUAL 3-SPEED TRANSMISSION**—Multi-purpose Gear Oil: SAE 80 for temperatures above  $-10^{\circ}\text{F}$ ; SAE 75 for temperatures below  $-10^{\circ}\text{F}$ . Remove filler plug and check level. Replenish to level of filler hole.

**MANUAL 3-SPEED TRANSMISSION WITH OVERDRIVE**—Multi-Purpose Gear Oil: SAE 80 for temperatures above  $-10^{\circ}\text{F}$ ; SAE 75 for temperatures below  $-10^{\circ}\text{F}$ . Remove transmission and overdrive filler and check level at each hole. Replenish to level of filler holes.

**POWER-FLITE TRANSMISSION**—Automatic Transmission Fluid—Type "A"—Apply parking brake. Run engine at idle speed. Operate all push-buttons, pausing momentarily at each position and ending with the "N" (Neutral) button pushed in. Check oil level at transmission dip stick. When the engine and transmission are cold, such as after a car has been parked for a considerable length of time and then before it is driven for several miles:

- a. Do not add oil if the level checks between the "L" mark and  $\frac{1}{2}$  inch below the "L" mark.
- b. Remove oil until the level is between the "L" mark and  $\frac{1}{2}$  inch below the "L" mark if the level checks above the "L" mark.
- c. Add oil to bring the level between the "L" mark and  $\frac{1}{2}$  inch below the "L" mark if the level checks below  $\frac{1}{2}$  inch below the "L" mark.

**NOTE**

*It is preferable that the oil level of the PowerFlite transmission be checked during the "cold" condition as described above. However, if it should become necessary to check the oil level when the engine and transmission are hot, such as immediately after a car has been driven for several miles:*

- d. Do not add oil if the level checks between the "F" mark and  $\frac{1}{2}$  inch above the "L" mark.
- e. Remove oil until the level is between the "F" mark and  $\frac{1}{2}$  inch below the "F" mark if the level checks above the "F" mark.
- f. Add oil to bring the level between the "L" mark and  $\frac{1}{2}$  inch above the "L" mark if the level checks below the "L" mark.

**NOTE**

**SPECIAL LOW-TEMPERATURE RECOMMENDATION:**  
*If difficult starting is encountered when average temperatures range consistently below  $-10^{\circ}\text{F}$ , replace one (1) quart of fluid with refined kerosene. This service should be performed only once during the low-temperature season. Thereafter, necessary replenishment of PowerFlite should be with Automatic Transmission Fluid—Type "A".*

**CAUTION**

*To prevent dirt from entering the transmission, make sure the oil level indicator cap is seated properly on the filler tube.*

**CAUTION**

*To prevent dirt from entering the transmission, make sure the oil level indicator cap is seated properly on the filler tube.*

**TORQUE-FLITE TRANSMISSION** — Automatic Transmission Fluid—Type "A"—Apply parking brake. Run engine at idle speed. Operate all push-buttons, pausing momentarily at each position and ending with the "N" (Neutral) button pushed in. Check oil level at the transmission dip stick. When the engine and transmission are cold, such as after a car has been parked for a considerable length of time and then before it is driven for several miles:

- a. Do not add oil if the level checks at the "L" mark.
- b. Remove oil until the level is at the "L" mark if the level checks above the "L" mark.
- c. Add oil to bring the level to the "L" mark if the level is below the "L" mark.

**NOTE**

*It is preferable that the oil level of the TorqueFlite transmission be checked during the "cold" condition as described above. However, if it should become necessary to check the oil level when the engine and transmission are hot, such as immediately after the car has been driven for several miles:*

- d. Do not add oil if the level checks above the "L" mark.
- e. Remove oil until the level is at the "F" mark if the level checks above the "F" mark.
- f. Add oil to bring the level to the "L" mark if the level checks below the "L" mark.

**NOTE**

**SPECIAL LOW-TEMPERATURE RECOMMENDATION:** *If difficult starting is encountered when average temperatures range consistently below -10 F, replace one (1) quart of fluid with refined kerosene. This service should be performed only once during the low-temperature season. Thereafter, necessary replenishment of TorqueFlite should be with Automatic Transmission Fluid—Type "A".*

**DISTRIBUTOR**—Light Engine Oil—Five (5) to ten (10) drops in oil cup.

**GENERATOR**—Light Engine Oil—Two (2) oil cups. Put five (5) to ten (10) drops in each cup.

**DOOR HINGES, DOOR SPRINGS, HOOD CLAMPS, AND OTHER HARD-TO LUBRICATE PLACES** — MoPar Dripless Penetrating Oil—Apply directly.

**DOOR STRIKER PLATES, DOVETAILS, AND ROTOR WHEELS** — MoPar Stainless Stick Lubricant — Apply directly.

**EVERY 10,000 MILES OR ONCE A YEAR**

**FRONT WHEEL BEARINGS** — Short Fiber, Wheel Bearing Grease—Medium—Check quality and quantity. If the grease is emulsified or short in quantity, it should be replaced. **DO NOT ADD GREASE TO WHEEL BEARINGS BEFORE CLEANING.** All grease should be removed from the bearing and the hub and assembly cleaned and repacked with new grease. Add 1¼ oz. to inner surface of hub.

**SPEEDOMETER**—MoPar Speedometer Oil—Unscrew and remove the oil tube with wick from the speedometer housing. This is located above the speedometer cable flange. Saturate the wick with oil and replace.

**SPEEDOMETER CABLE**—MoPar All-Weather Speedometer Cable Lubricant—Disconnect the cable at the speedometer housing and remove shaft. Coat the shaft with the lubricant and reinstall.

**DISTRIBUTOR**—Light engine oil and MoPar Cam Lubricant—Remove distributor rotor and put in two (2) or three (3) drops of light engine oil in felt wicking in top of cam. When replacing contacts, apply MoPar Cam Lubricant to bumper block on distributor contact arm.

**CAUTION**

**KEEP LUBRICANTS AWAY FROM BREAKER POINTS.**

**DOOR LOCK CYLINDERS**—MoPar Lubriplate or a similar lubricant—Apply directly—Use sparingly.



**EVERY 20,000 MILES OR EVERY TWO YEARS**

**MANUAL 3-SPEED TRANSMISSION**—Multi-Purpose Gear Oil: SAE 80 for temperatures above  $-10$  F; SAE 75 for temperatures below  $-10$  F—Drain and refill. Keep level at bottom of filler hole.

**NOTE**

*In warm territories where SAE 80 is not available, SAE 90 Multi-purpose gear lubricant may be used.*

**MANUAL 3-SPEED TRANSMISSION WITH OVERDRIVE**—Multi-Purpose Gear Oil: SAE 80 for temperatures above  $-10$  F; SAE 75 for temperatures below  $-10$  F—Drain and refill—DRAIN: Remove both the transmission and overdrive drain plugs and allow units to drain.

**REFILL:** Fill the overdrive unit to the level of the filler hole with  $\frac{3}{4}$  pt. of lubricant. Fill the transmission to the level of its filler hole with  $2\frac{3}{4}$  pt. of lubricant. Check the level of each unit and add additional oil if necessary.

**NOTE**

*In warm territories where SAE 80 is not available, SAE 90 Multi-Purpose Gear Lubricant may be used.*

**UNIVERSAL JOINTS—BALL AND TRUNNION TYPE ONLY**—Heavy fiber universal joint grease—Disassemble, clean, and repack—Use  $\frac{1}{5}$  oz. grease per joint.

**PROPELLER SHAFT SPLINE JOINT**—Multi-Purpose Gear Lubricant—Disassemble, clean, and refill approximately half full.

**POWERFLITE TRANSMISSION**—Automatic Transmission Fluid—Type "A"—Drain and refill—Drain: Remove filler tube from transmission oil pan and allow transmission to drain. Remove flywheel access plate and remove the torque converter drain plug and allow torque converter to drain. Replace the torque converter drain plug and the transmission filler tube. Refill: Add five (5) quarts of fluid through the transmission filler tube. Start engine and add approximately four (4) quarts more while the engine is idling. Allow engine to idle for two (2) minutes. Operate all push-buttons, pausing momentarily in each position and ending with the "N" (Neutral) button pushed in. Add sufficient fluid to

bring the oil level to the "L" mark and  $\frac{1}{2}$  inch below the "L" mark, approximately 1 quart.

**CAUTION**

*To prevent dirt from entering the transmission, make sure the oil level indicator cap is seated properly on the filler tube.*

**TORQUE-FLITE TRANSMISSION**—Automatic Transmission Fluid—Type "A"—Drain and refill—Drain: Remove filler tube from transmission oil pan and allow transmission to drain. Remove flywheel access plate and remove the torque converter drain plug and allow torque converter to drain. Replace the torque converter drain plug and the transmission filler tube. Refill: Add five (5) quarts of fluid through the transmission filler tube. Start engine and add approximately three (3) quarts more while the engine is idling. Allow engine to idle for two (2) minutes. Operate all push-buttons, pausing momentarily in each position and ending with the "N" (Neutral) button pushed in. Add sufficient fluid to bring the oil level to the "L" mark, approximately  $\frac{1}{2}$  quart.

**CAUTION**

*To prevent dirt from entering the transmission, make sure the oil level indicator cap is seated properly on the filler tube.*

**REAR AXLE**—Multi-Purpose Gear Lubricant: SAE 90 for temperatures above  $-10$  F; SAE 80 for temperatures below  $-10$  F; SAE 75 for temperatures below  $-30$  F—Drain and refill to  $\frac{1}{2}$  inch below bottom of filler hole.

**CAUTION**

*Do not overfill.*

**PARTS NOT TO BE LUBRICATED**

Parts which do not require lubrication are as follows: Clutch release bearing, carburetor linkage, gearshift and selector linkage, rear springs, brake and clutch pedals and linkage, starter bearings, accelerator pedal, all rubber bushings, rear wheel bearings, upper and lower control arm bearings, steering gear arm pivot, idler arm pivots and water pump.

**NOTE**

*The rubber bushings used on these cars are designed to grip the contacting metal parts firmly and operate as a flexible medium between these parts. The use of any lubricant will destroy the necessary friction and cause premature failure of the rubber parts.*

#### 4. SEASONAL CARE AND PREPARATION

In the spring and fall, cars should be prepared for the approaching change in temperature conditions, to maintain maximum performance and to avoid unnecessary service.

A Safety Inspection of all parts of the car at Seasonal Preparation time may indicate the need for the adjustment of brakes, replacement of brake lining, adjustment of the steering mechanism or replacement of parts necessary for the safe operation of the car. A Safety Inspection carefully performed will promote safe car operation on the streets and highways.

**BATTERY**

The electrolyte level in the battery should be maintained above the plates. Add pure distilled water once or twice a month to bring the level up. See page 342.

**COOLING SYSTEM**

At the approach of freezing weather, use a suitable anti-freeze solution in the cooling system. When the cold season is past, drain the cooling system and add rust resistor when refilling cooling system with fresh water. This will protect the system against corrosion during warm weather driving.

**COOLANT LEVEL**—Do not add water or anti-freeze to the radiator when the system is over-heated. Fill to within approximately 1¼ to 1½ inches below bottom of filler neck. This will tend to prevent loss of coolant through the overflow pipe. Tighten hose connections periodically and maintain the proper amount of coolant in the system at all times.

**DRAINING**—Drain and flush cooling system twice a year, in spring and fall. There is one drain cock on radiator. There are two drain cocks on V-8 cylinder blocks, and one drain plug on PowerFlow 6 cylinder block. The heater inlet hose must be disconnected to completely drain the system.

**ANTI-FREEZE SOLUTIONS**—If the temperature drops below 32° F., protect the cooling system with a good quality anti-freeze.

**CAUTION**

*Anti-freeze solutions containing sodium chloride (common table salt), calcium chloride, or any inorganic salt, should never be used. Water soluble organic products such as sugar, honey, glucose, or any inorganic crystalline compounds, are not recommended. Mineral oils, such as kerosene or engine oil, may damage hose connections and other parts.*

#### 5. STORAGE PRECAUTIONS

##### PROTECTING ENGINES OF NEW CARS IN STORAGE

The following precautions are recommended in the handling of new Plymouth cars which will not be delivered immediately to customers. These practices will help prevent the rusting of valve guides and thus avoid "sticking" valves.

**INTERMITTENT DRIVING**—When new cars are to be driven infrequently from storage to sales locations, or for short demonstrations, the oil around the valve stems is removed. Corrosion may result due to the condensation of water in the valve guides. To provide continuous protection against such corrosion, add one quart of Rust Preventive Oil to each five gallons of gasoline.

**NOTE**

*Consult any reputable refiner who will be able to supply a Rust Preventive Oil suitable for use as recommended here for the protection of new cars against the formation of rust on engine internal parts.*

**STORAGE OF CARS**—If a car is to be stored for more than two weeks, the following precautions should be taken:

Remove the carburetor air cleaner and run the engine at a fast idle until normal operating temperature (as indicated by the temperature indicator on the instrument panel) is reached. Then, while the engine is running slowly, pour one pint of Rust Preventive Oil through the carburetor air intake. Pour this liquid fast enough to slow down the speed of the engine without causing it to stall. This operation should take about one minute.

Provide adequate ventilation while pouring the Rust Preventive Oil into the carburetor air intake because considerable smoke will issue from the tail pipe. Stop the engine after the oil has been added.

## 6. OILITE BEARINGS

"Oilite" bearings are "self-lubricating" and are used in locations where lubrication is difficult to maintain. When "Oilite" bearings are subjected to heat or pressure, oil comes to the bearing surfaces, giving them a thin coating of lubricant which is adequate for lubrication.

In certain places where bearing loads are greater and more constant, additional oil is required and may be supplied through an oil cup or other suitable fitting. This oil is absorbed by the "Oilite" bearing material.

**REPLACEMENT** — If bearing replacement is necessary, a new "Oilite" bearing of the same size should be installed. An "Oilite" bearing should not be reamed, filed, or otherwise cut to size. Cutting tends to seal up the pores of the "Oilite" metal. This prevents the seepage of oil to the surface. However, bearings may be burnished to a final "running" fit.

**MACHINING** — If machining is necessary, use the same method as that for cast bronze and apply no coolant. For finishing surfaces where lubrication is necessary, use a sharp, tungsten-carbide tool bit (any shape except "dead-sharp"). Take a very light cut—.002 to .004 inch on the diameter—with fine feed and high speed. After machining, soak the bearing for 20 minutes in a good grade of engine oil.

## 7. CARE OF PAINT, CHROME AND UPHOLSTERY

### CARE OF BODY FINISH

**WASHING**—The metal surface is finished in high gloss, baked enamel. Wash this surface regularly with plenty of cold water—with the car away from direct sunlight. "Dry washing" with a cloth or duster will cause hairline scratches on finish.

Before washing, flood the finish with water to loosen surface dirt. Wash with a soft cloth or sponge and dry with towel or chamois. Use long sweeping strokes to avoid streaks and water spots.

### CAUTION

*Tar and road oil should be removed with a tar remover. The use of gasoline containing anti-knock compounds is not recommended. Any accidental chipping of the painted surface should be repaired to prevent possible spread of rust.*

**POLISHING** — If the finish has become oxidized through neglect or exposure to severe climatic conditions, it may be difficult to restore the original luster by washing. Removal of natural oxidation and accumulated surface film may require the use of a high-quality body polish.

### UPHOLSTERY

**TO CLEAN VINYL**—Work up a thick suds from lukewarm water and neutral soap and apply to surface with a clean cloth or sponge. Clean off suds with a damp soft cloth and wipe surface dry. Do not clean with volatile-type fabric cleaners or solvents, since they may cause the material to harden and crack.

**TO CLEAN UPHOLSTERY**—A firm whisk broom and vacuum cleaner used on the soiled area followed by the use of a foam-type cleaner applied with a soft bristled brush will remove most normal soil. The cleaner should be applied according to the directions of the manufacturer.

If volatile-type cleaner is used to remove spots, be sure that it is not used in excessive amounts which might reach the foam rubber on cars so equipped causing damage to the rubber.

### FLOOR COVERING

**RUBBER MATS**—Rubber composition carpeting can be effectively cleaned with a whisk broom and soapy water.

**WOOL CARPETING** — Brush often with a whisk broom, or use a vacuum cleaner. The carpet will shed some when new. Use any reputable carpet cleaning material to remove stains.

### REMOVAL OF STAINS FROM FABRICS

Some stains cannot be removed by ordinary cleaning methods. In fact, some stains can be "set" by the wrong cleaning method, making it impossible to remove them. If the source of the stain is not known, try cold water first. If that is not effective, try warm water, followed by the use of a good fabric cleaner.

Blood, nausea or urine should be sponged as quickly as possible with clear cold water, followed by washing with luke-warm soapy water. Rinse with cold water.

Candy, fruit, ice cream or beverage stains can usually be removed with very hot water. (On chocolate stains use lukewarm water.) Follow with the use of fabric cleaner. In using hot water on a stain, exercise care to prevent discoloration or shrinkage of the fabric.

Lipstick, chewing gum, tar, grease and oil can best be removed with a fabric cleaner, using a dull knife to scrape off any excess quantities. (For lipstick stains, use a blotter until the spot is removed.)

#### **CARE OF METAL TRIM**

**CHROME-PLATED PARTS**—Discoloration and rust on

chrome-plated parts can be removed with a chrome cleaner. After cleaning car, wipe the bumpers occasionally with a cloth to which a little oil has been added.

**STAINLESS-STEEL PARTS**—Under certain conditions, stainless steel surfaces may become discolored or tarnished. Original luster can be restored and maintained with the use of a chrome cleaner and an occasional application of a paste wax.

