LUBRICATION • • • • • • SECTION 17

CONTENTS

GENERAL INFORMATION

This section contains complete information on lubrication for Henry J models. The lubrication chart included in this section specifies chassis lubrication points, established lubrication intervals, recommended lubricants and concise instructions. Additional information, including a brief description of recommended lubricants and their proper application, is provided in the text.

It is important that all working parts of the vehicle be properly lubricated at prescribed intervals as indicated on the lubrication chart. Attention is called particularly to the types of lubricants recommended. Failure to lubricate, or the use of improper lubricants, will result in premature wear, noisy operation and ultimate failure of parts. The use of too much lubricant may also cause trouble, in addition to being wasteful.

It is recommended that specified lubricants be obtained only from recognized, reliable oil companies. Their reputation is a dependable guarantee of quality. The lubricant dealer will give assistance in selecting lubricants that will meet the recommended specifications. Lubricants as recommended in this text are generally recognized by the specifications and descriptions provided herein and are widely available.

VISCOSITY

Viscosity of a fluid lubricant is an indication of its resistance to flow at a given temperature. A system established by the Society of Automotive Engineers (S.A.E.) uses numbers to classify oil type lubricants in terms of viscosity but with no reference to other characteristics or properties. Recommended viscosities for the various lubricants are indicated on the lubrication chart. Note that where more than one viscosity is specified for a lubricant, the proper viscosity to be used is dependent on temperature. The National Lubricating Grease Institute (NLGI) numbers on the chart are an indication of the consistency of semi-fluid or grease type lubricants and, like S.A.E. numbers, if more than one number is specified, the proper grade to use is dependent on temperature.

TYPES OF LUBRICANTS AND RECOMMENDED USAGE

Various types of lubricants have been developed to meet special lubrication requirements of automotive vehicles. The lubricants described in the following paragraphs have been recommended after considerable research, testing and experience. Therefore, it is important that only these recommended lubricants be used.

ENGINE OIL

Engine or crankcase oil is used not only to lubricate the moving parts of the engine but at various other locations on the vehicle also. The following paragraphs explain the types of engine oil, the locations that require lubrication with engine oil and the methods of application.

a. Types of Engine Oil

To supply the type of oil best suited to different operating conditions, the oil industries produce and

market several types of engine oils. For standardization, The American Petroleum Institute (A.P.I.) has classified these types as "Regular", "Premium", and "Heavy Duty". A later classification by the A.P.I. designates them as "Service ML", "Service MM", and "Service MS". A general definition of these oils is given in items 1, 2 and 3 which follow, together with information on suggested usage.

1. REGULAR MOTOR OIL. Regular or Service ML motor oil is a straight mineral oil generally suitable for use in internal combustion gasoline engines in passenger cars under moderate operating conditions. This type of oil is acceptable for use.

2. PREMIUM MOTOR OIL. Premium or Service MM motor oil is an oil having proved oxidation stability and bearing corrosion preventive properties for use in internal combustion gasoline engines where operating conditions are such that regular oils do not give satisfactory service. This type of oil is more desirable than regular oil.

3. HEAVY DUTY MOTOR OIL. Heavy duty or Service MS motor oil is an oil having proved oxidation stability, bearing corrosion preventive properties and detergent-dispersant characteristics which tend to hold in suspension foreign particles which would normally deposit on engine parts. Oils of this type, in addition to having the qualities of premium type oils will keep the interior of the engine cleaner and, for extensive sustained high speed driving, will not have to be changed as frequently as would regular type oils.

WARNING: Do not change to heavy duty type oil after prolonged usage of other types of oil in the engine, unless the engine is thoroughly cleaned. If the engine interior is dirty or badly coated with sludge, complete disassembly and thorough cleaning may be advisable. Otherwise, oil of this type may loosen dirt already accumulated in the engine and carry it to bearings or other parts of the engine where extensive damage may result.

If the engine is reasonably clean and it is desired to change to a heavy duty oil or to a premium oil having detergent-dispersant characteristics, special precautions may not be necessary. However more frequent oil changes may be required at first until loosened dirt particles in the engine are eliminated.

b. Adding Engine Oil in the Crankcase

Check the engine oil level frequently; that is, each time gasoline is purchased. The oil level gauge or dipstick which is combined with the oil filler tube cap on the right side of the engine, will indicate the oil level. Make sure filler tube cap is screwed down tight when checking oil level. The six cylinder engine has a dipstick with a mark indicating full. The four cylinder engine dipstick has two markings, the lower one marked "empty" and the upper marked "full." The oil level in both engines should never be permitted to drop more than 3/4 inch below the "full" mark which would be approximately two quarts low. Do not fill above the "full" mark as overfilling will waste oil.

c. Changing Engine Oil

Oil in a new vehicle should be changed after the first 500 miles and again after the first 2,000 miles of operation, refilling with S.A.E. 10W oil. The oil should be changed thereafter, using the proper seasonal grade, at 2,000 mile intervals, or more or less frequently depending on the type and quality of oil used, the severity of operating conditions and the condition of the engine.

At temperatures below freezing, vehicles operating on short runs, such as city driving, do not warm the engine sufficiently. This causes condensation of water and fuel vapors in the engine and dilutation and contamination of the engine oil, necessitating more frequent oil changes. Regular motor oil in an engine operated at sustained high speeds, with resultant high engine temperature, may become contaminated with sludge and varnish. When used under these conditions the engine oil should be changed more frequently. If the oil becomes discolored, dirty or thinned in less than 2,000 miles of operation need for more frequent changing is indicated. Always be sure the crankcase ventilation system, described in Section 1-B, "Engine Repair," is functioning properly.

Oil changing is also closely related to cleaning of the air cleaner and the oil filter, if so equipped. Oil in the engine must not be permitted to become abrasive or corrosive before it is changed or the engine parts will be damaged. Drain the oil from the crankcase only when the engine is at operating temperature and the oil is hot. Five quarts of oil are required to fill the 6-cylinder engine crankcase after draining and four quarts are required for the 4-cylinder engine. When equipped with an oil filter, another quart must be added if the element is replaced.

d. Oil Filter

An oil filter (Fig. 310), available as an accessory on all Henry J engines, removes particles of dust, carbon and foreign material from the crankcase oil. A portion of the oil is continually circulated through the filter. Under normal operating conditions, the replaceable filter element should be changed every 10,000 miles or whenever oil becomes dirty as seen on the dipstick. Replace it at the time of an oil change.

e. Crankcase Ventilation

The Henry J engine crankcase is ventilated by a

positive, sealed type ventilating system described in Section 1-B, "Engine Repair." The ventilator valve and tube should be removed and cleaned periodically at the time of seasonal engine tune-ups or more frequently if necessary.

f. Carburetor Air Cleaner

The carburetor air cleaner filters the air before it enters the carburetor. Dust and dirt removed from the air accumulates inside the air cleaner. The filter should be cleaned and serviced every 2,000 miles or more frequently if the vehicle is operated on dusty or sandy roads. An oil wetted air cleaner was used on some early Henry J vehicles while an oil bath type cleaner is used on later styles. The procedure for cleaning is detailed in Section 2, "Fuel."

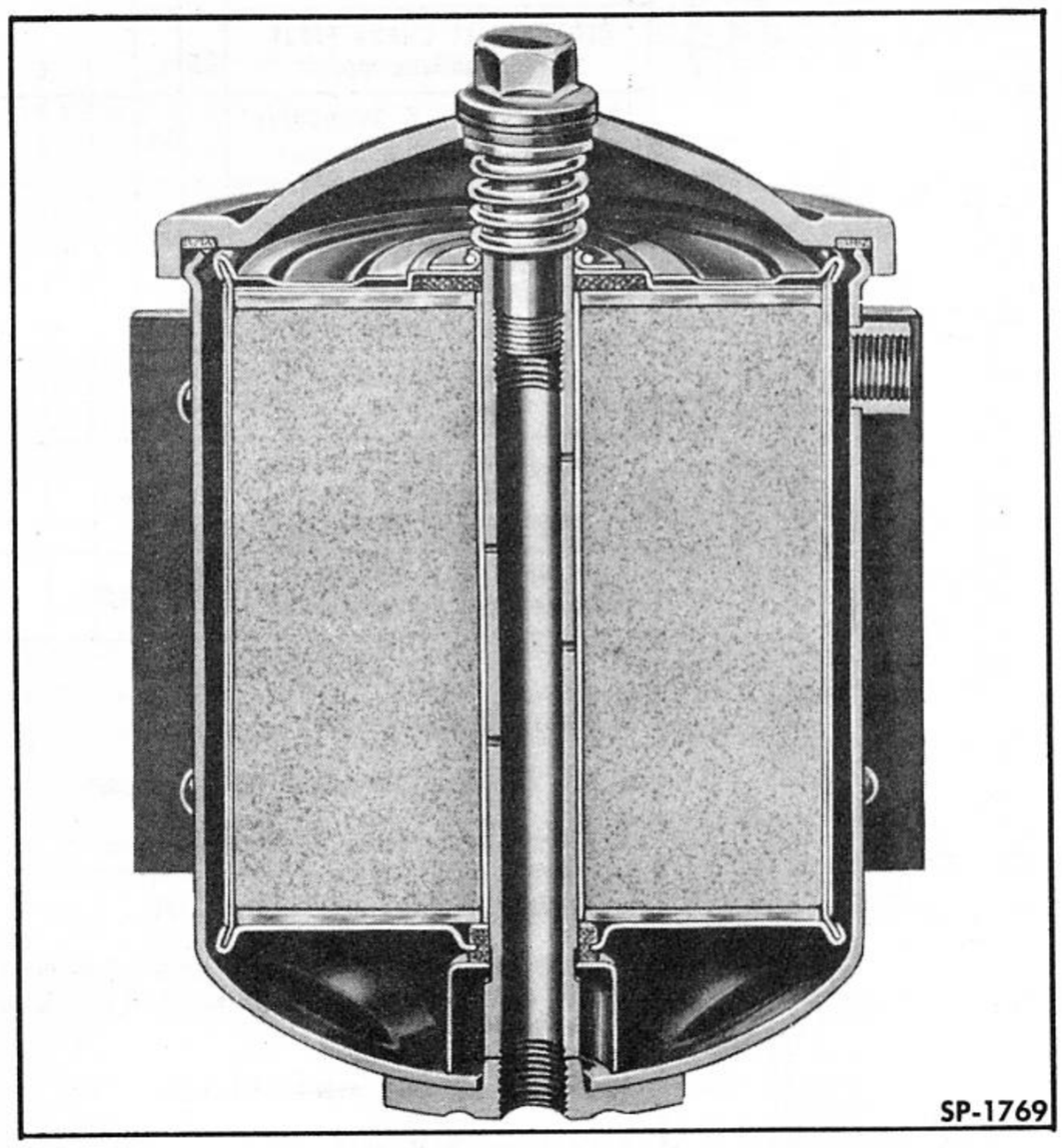

Fig. 310—Engine Oil Filter (Accessory)

g. Distributor

The two distributors (Delco-Remy and Auto-Lite) used on Henry J vehicles require different lubrication. Proceed as follows on the Delco-Remy distributor:

1. Every 20,000 miles, remove the pipe plug from the distributor shaft bushing oil reservoir. Add S.A.E. 20 engine oil to fill the reservoir to the level of the filler hole. Install pipe plug, sealing it with sealing compound.

2. At 2,000 mile intervals, the wick in the distributor cam shaft under the rotor and the breaker lever pivot each require one drop of S.A.E. 10W engine oil.

3. Add one or two drops of S.A.E. 10W engine oil to the felt wick below the breaker plate every 2,000 miles. A hole marked "OIL" is provided in the breaker plate for this purpose.

The following lubrication is required on Auto-Lite distributors at 2,000 mile intervals:

1. Apply three to five drops of S.A.E. 20 engine oil in the distributor shaft oil cup.

2. Apply four or five drops of S.A.E. 20 engine oil on the wick in the camshaft under the rotor.

3. Apply one drop of S.A.E. 20 engine oil to the breaker lever pivot.

Do not over lubricate the distributor as the excessive lubrication may cause burning of the contact points. In addition to the above lubrication specifications, apply a small amount of grease to the breaker cam as described under "Points Requiring Miscellaneous Lubrication" in this section.

h. Other Points Using Engine Oil

Apply four or five drops of S.A.E. 10W engine oil on Delco-Remy generators or two drops of S.A.E. 20 engine oil on Auto-Lite generators in each of two oil cups at 2,000 mile intervals as indicated on the lubrication chart.

Other points which should be lubricated with engine oil, using an oil can, are the windshield wiper arm bodies, clutch and brake linkage (points not lubricated with a pressure gun) accelerator pedal linkage, hand brake linkage, hood hinges, hood latch, and door and deck lid hinges.

TRANSMISSION LUBRICANT

Transmission lubricant is used in the transmission and the overdrive. Use of the best quality well refined mineral gear oil is recommended as quality oil is more resistant to oxidation, which results from chemical changes at high temperature. The instability and resulting oxidation of inferior grades may produce oil that is too thick and dirty for proper lubrication.

Use of extreme pressure lubricant is unnecessary and can sometimes be detrimental. Likewise, use of lubricants known variously as "Multi-Purpose", "All-Purpose" or "Universal" types is not necessary.

In addition to the use of quality gear oil, it is important that the oil level in the transmission and the overdrive (if vehicle is so equipped) be checked periodically (see chart) and lubricant added as required. Use S.A.E. 80 lubricant for all temperatures except when driving extensively where consistently high temperatures are encountered — then change to S.A.E. 90. The transmission requires 1-1/2 pounds

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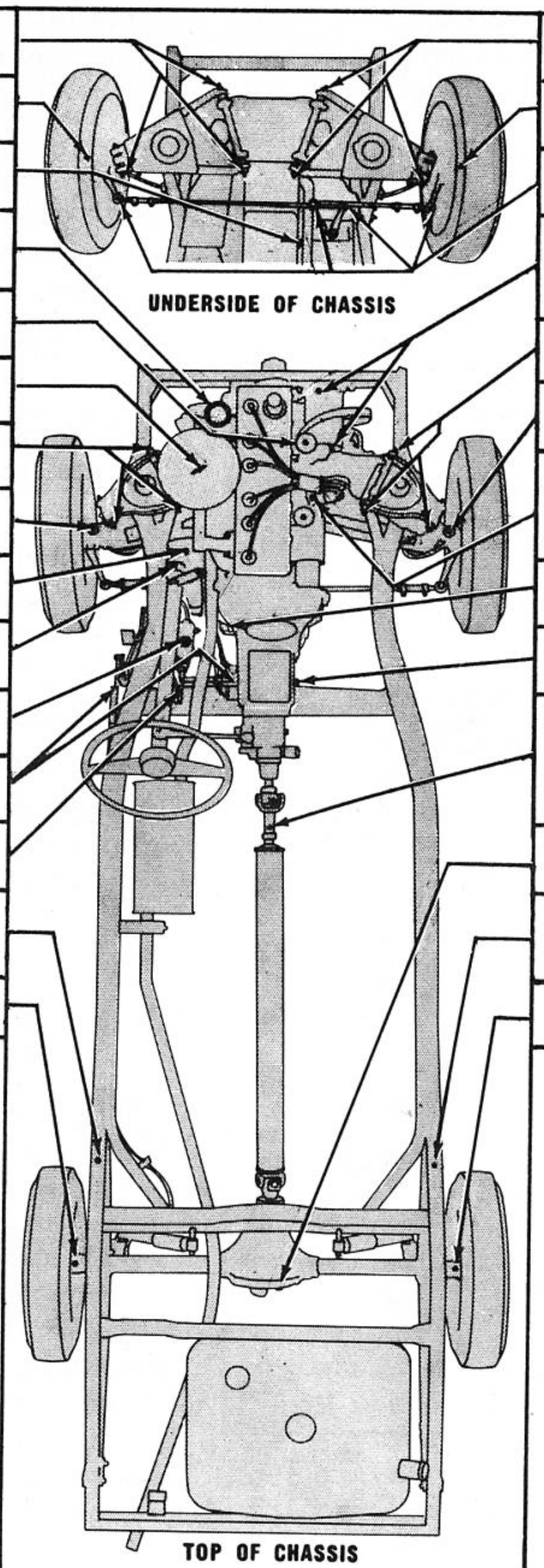
1951 1952 1953 HENRY J LUBRICATION CHART MODELS K-513 K-514 K-523 K-524 K-533 K-534

Note	20,000	10,000	2,000	1,000	
1				CG	SUSPENSION BUSHINGS 3 Fittings
2		WB			FRONT WHEEL BEARINGS Remove, Clean, Repack
3					CRANKCASE DRAIN PLUG
12		EO			OIL FILTER Replace Element
3			EO		OIL DIP STICK AND CRANKCASE FILLER TUBE
4			EO		AIR CLEANER Remove, Clean, Refill
1				CG	SUSPENSION BUSHINGS 3 Fittings
1				CG	STEERING KNUCKLE 2 Fittings
5			SG		STEERING GEAR Check, Refill
6				CG	GEARSHIFT HOUSING Check, Refill
7			BF		BRAKE MASTER CYLINDER Check, Refill
1				CG	CLUTCH CROSS SHAFT 2 Fittings on later models
1				CG	BRAKE PEDAL PIVOT 1 Fitting on later models
8		CG	EO		REAR SPRING Covered Type Type Without Covers
9		WB			REAR WHEEL BEARING Remove Plug, Install Fitting



UNDERSIDE OF CHASSIS

TOP OF CHASSIS

Note	1,000	2,000	10,000	20,000	
1	CG				SUSPENSION BUSHINGS 3 Fittings
2			WB		FRONT WHEEL BEARINGS Remove, Clean, Repack
1	CG				TIE ROD JOINTS 4 Fittings
		EO EO			AUTO-LITE GENERATOR 2 Oil Cups, 2 Drops Ea. DELCO-REMY GENERATOR 2 Oil Cups, 4 or 5 Drops Ea.
1	CG				SUSPENSION BUSHINGS 3 Fittings
1	CG				STEERING KNUCKLE 2 Fittings
10 11		EO WB EO WB			AUTO-LITE DISTRIBUTOR 4 Points—3 Oil, 1 Grease DELCO-REMY DISTRIBUTOR 5 Points—4 Oil, 1 Grease
1	CG				CLUTCH BELL CRANK PIVOT 1 Fitting on later models
5		GL			TRANSMISSION & OVERDRIVE Check, Refill both units
	CG			UJ	PROP. SHAFT BALL & TRUNNION TYPE Disassemble, Clean, Repack CROSS & YOKE TYPE—3 Fittings 2 "U" Joints & Slip Joint
5		HP			REAR AXLE Check, Refill
8		EO	CG		REAR SPRING Covered Type Type Without Covers
9			WB		REAR WHEEL BEARING Remove Plug, Install Fitting

RECOMMENDED SEASONAL GRADES

EO ENGINE OIL

Engine - Above 32° F. use S.A.E. 20 or 20W
+32° F. to +10° F. use S.A.E. 20W
+10° F. to −10° F. use S.A.E. 10W
Below − 10° F. use S.A.E. 5W
Select oil for lowest expected temperature

Auto-Lite Generator—S.A.E. 20
Delco-Remy Generator—S.A.E. 10W

Auto-Lite Distributor—S.A.E. 20

Delco-Remy Distributor—Reservoir S.A.E. 20
Cam Wick, Breaker Lever Pivot and Felt Wick Below Breaker Plate - S.A.E. 10W
Air Cleaner - Above + 32° F. use S.A.E. 40 or 50
Below + 32° F. use S.A.E. 20

CG CHASSIS LUBRICANT
Use NLGI No. 1 - Below + 32° F. use No. 0

GL TRANSMISSION GEAR LUBRICANT
Use S.A.E. 80, except when high temperatures prevail, then use S.A.E. 90

HP HYPOID GEAR LUBRICANT
Use S.A.E. 90, except when extremely low temperatures prevail, then use S.A.E. 80

SG STEERING GEAR LUBRICANT
If Multi-Purpose, use S.A.E. 90

WB WHEEL BEARING GREASE
Use NLGI No. 2

LUBRICANT SYMBOLS

EO - Engine Oil
CG - Chassis Lubricant
GL - Transmission Gear Lubricant
HP - Hypoid Gear Lubricant
SG - Steering Gear Lubricant
BF - Hydraulic Brake Fluid
WB - Wheel Bearing Grease
UJ - Universal Joint Grease

NOTES

1. Apply with pressure gun.
2. Use 2½ ounces per wheel - do not fill hub.
3. Check when refueling - add oil when near ¾ inch low on dip stick. Drain and refill every 2,000 miles. Capacity: 6 cyl., 5 qts. - 4 cyl., 4 qts.
4. Refill sump to indicated level. Do not dry element with compressed air. If cleaner is not oil bath type, wet element with EO.
5. Maintain lubricant level to filler hole.
6. Check and fill if shift is sticky.
7. Maintain fluid level to ¼" below filler hole.
8. Spray or paint uncovered springs with EO. For covered springs use special tool C-408 and pressure gun to apply CG. May be lubricated oftener if squeaks develop.
9. Apply ½ ounce per wheel using low pressure gun. Keep vent in housing open.
10. EO—Shaft bushing oil cup, 3-5 drops; cam shaft wick, 4-5 drops; breaker lever pivot, 1 drop. WB—Wipe cam lightly.
11. EO—Shaft bushing reservoir at 20,000 miles—cam shaft wick, 1 drop; breaker pivot, 1 drop; breaker plate felt wick, 1 or 2 drops; all at 2,000 miles. WB—Wipe cam lightly at 2,000 miles.
12. Engine oil refill 1 quart extra when filter element is replaced.

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Fig. 311—Lubrication Chart—1951, 1952, 1953 Henry J

of transmission lubricant to fill it to the proper level after draining. The overdrive unit requires 3/4 pound of lubricant for a refill. Do not mix different types of lubricant in the transmission or overdrive.

HYPOID GEAR LUBRICANT

The recommended rear axle lubricant must be a passenger car type hypoid gear lubricant. This lubricant is a well refined mineral oil with lead soap and sulphur compound added to provide proper lubrication under the most severe conditions at high speed. This differs from truck type hypoid lubricant which is compounded to provide lubrication under severe conditions in low gear under heavy load. Do not use truck type hypoid lubricant.

Lubricants that meet the S.A.E. and A.P.I. standards for multi-purpose gear lubricant may also be used in the rear axle if desired.

Rear axle lubricant should be checked periodically (see chart) and lubricant added as required. Use S.A.E. 90 lubricant for all temperatures except where extremely low temperatures are consistently encountered — then change to S.A.E. 80. Rear axle lubricant capacity is 2-1/2 pounds.

STEERING GEAR LUBRICANT

The lubrication for use in the steering gear housing should be a special all-season gear lubricant which does not require seasonal changing. It must be fluid at low temperatures and should not "channel" or cause hard steering. It must also provide satisfactory lubrication at summer temperatures. Quality "Multi-Purpose" lubricants of S.A.E. 90 viscosity, or special "Steering Gear Lubricant" marketed by reputable companies, are satisfactory for use in steering gears.

As directed on the lubrication chart, add lubricant in the steering gear housing only to maintain the proper level — it is not necessary to change the lubricant periodically. Steering gear housing lubricant capacity is 5-1/2 ounces.

CHASSIS LUBRICANT

Chassis lubricant is used for steering linkage, steering knuckle, front suspension, gear shift linkage and clutch and brake pedal linkage lubrication at points called for on the lubrication chart. Cross-type propeller shaft universal joints and slip joint should also be lubricated with chassis lubricant. The recommended lubricant is a semi-fluid high grade calcium or equivalent soap pressure gun lubricant with a mineral oil base. This type lubricant is insoluble in water.

Refer to the lubrication chart for all the various lubrication points which require chassis lubricant to be applied with a pressure gun and the correct seasonal grade to use.

Chassis lubricant is also used for lubricating the covered rear springs (on styles so equipped) not oftener than every 10,000 miles unless the springs develop squeaks. The use of a special tool in accordance with the following procedure is required, since the lubricant must be applied so that it is forced between the spring leaves and not between the canvas liners and the metal spring covers. Springs which do not have covers may be sprayed with engine oil every 2,000 miles to prevent squeaks.

1. Jack up the frame to remove the load and allow the spring leaves to separate.

2. If the spring cover has no hole, drill a 3/16 inch hole in the center of the bottom, one-third of the way from the spring eye.

3. Set the adjustment screw of the Rear Spring Cover Lubricating Tool C-408 (Fig. 312) until the width of the clamp is a little more than the spring thickness.

4. Push the threaded end of the plunger into the drilled hole to force the canvas against the plate.

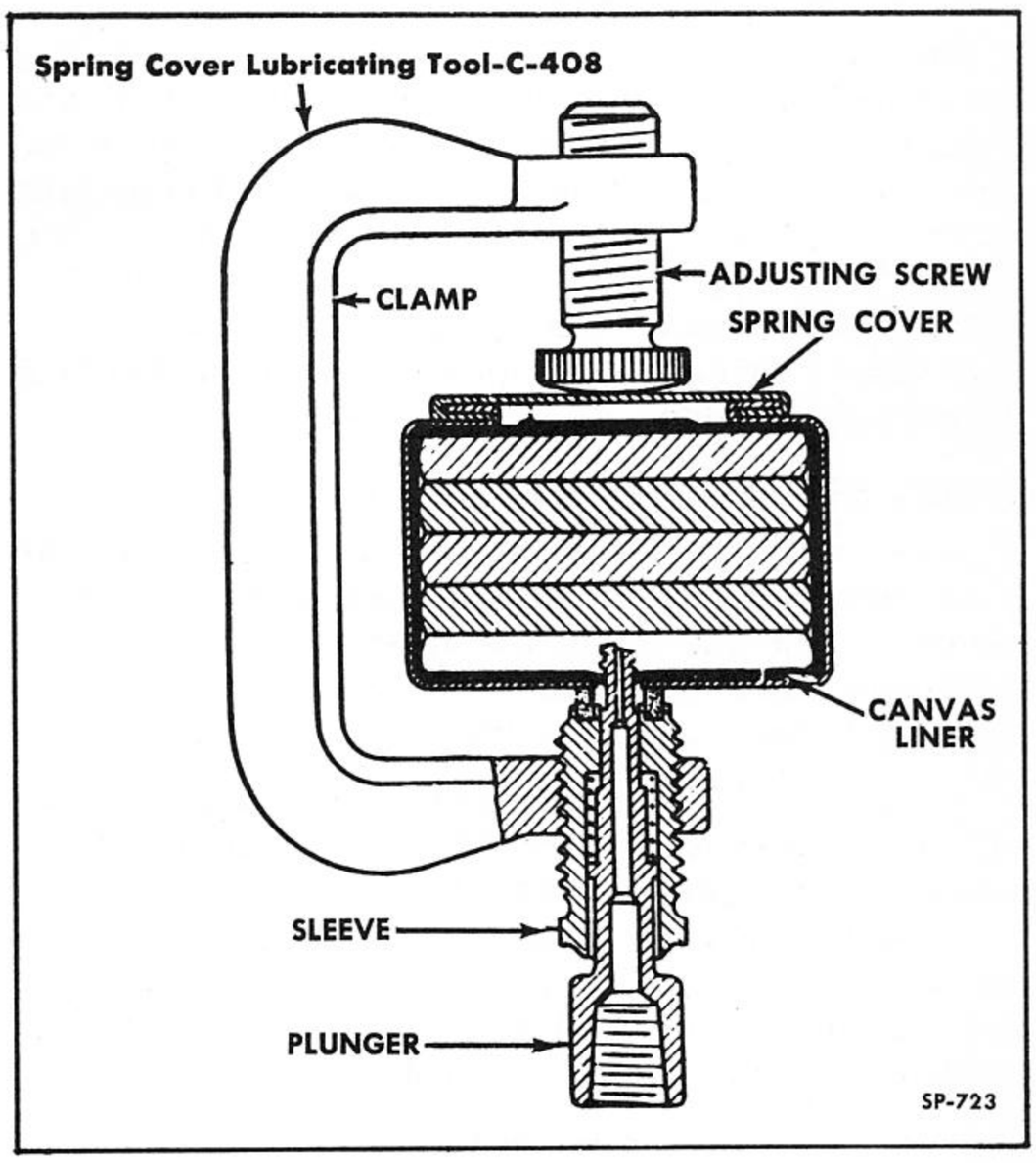

Fig. 312—Lubrication Tool for Rear Spring Covers

5. Screw the plunger several times to the right to thread the end through the canvas (Fig. 313).

6. Screw the sleeve against the bottom of the spring cover by hand. Do not use pliers.

7. Attach the pressure gun hose to the fitting and apply pressure slowly.

8. Separate the main and second spring leaves with a screwdriver so the lubricant can go between.

9. Remove the screwdriver and attach a C-clamp at the outer end of the spring cover. Continued pressure lubrication will force the lubricant toward the opposite end of the spring. After removing the lubricating tool, seal the holes in the cover with plugs which are furnished with the lubricating tool.

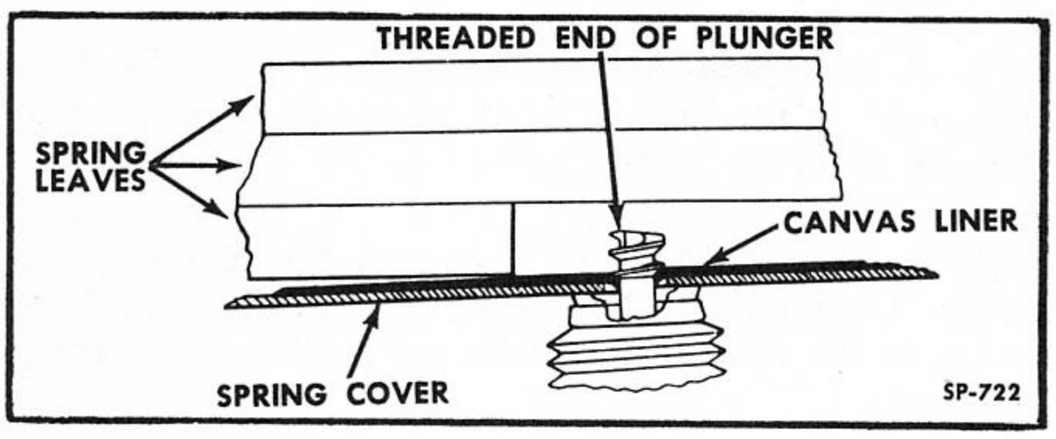

Fig. 313—Plunger Threaded through Spring Cover

UNIVERSAL JOINT LUBRICANT

Universal joint lubricant is used for lubricating the propeller shaft universal joints of the ball and trunnion type used in some models. These universal joints require disassembling, cleaning and repacking periodically at 20,000 mile intervals. A sodium, lithium or barium soap fiber grease is recommended. Soft greases such as chassis lubricant and calcium soap base lubricants should not be used for packing the universal joints.

WHEEL BEARING GREASE

Wheel bearing grease is used for front and rear wheel bearings, the distributor cam and for packing the bearing at the top of the steering column at installation. The recommended lubricant is a high melting, sodium, lithium or barium soap, fiber grease.

Front wheel bearings require periodic packing with wheel bearing grease. Use approximately 2-1/2 ounces of lubricant per wheel — do not fill the hub. Be sure the lubricant is packed into all spaces in the bearings, either by hand or using a bearing lubricator. Apply a thin coat of lubricant on the spindles and the inside of the hubs to prevent rusting.

Lubricate rear wheel bearings periodically with approximately 1/2 ounce of lubricant for each wheel, using a low pressure gun. The plug near each end of the axle housing must be removed and a suitable lubrication fitting installed temporarily in order to lubricate the bearing. Keep vent hole at top of bearing housing open. After lubrication, remove the fittings and install the plugs.

Refer to the lubrication chart for the proper grade of wheel bearing lubricant and the correct interval between lubrications.

POINTS REQUIRING MISCELLANEOUS LUBRICATION

The following is a list of items which require either infrequent lubrication or lubrication only at assembly or installation.

a. Door Latch and Striker

Apply pencil or stick type lubricant to the door latches and the striker plate pins at intervals to prevent binding. Pencil lubricant should also be used on the rear compartment lid latch and striker plate as necessary.

b. Door Lock Cylinders

Ordinarily door lock cylinders do not require any lubrication. In extreme cases, it may become necessary to work a small amount of Lubriplate #105 into the key slot with the key. Carefully wipe all excess lubricant from the lock cylinder until the key can be used to operate the lock without becoming dirty.

c. Battery Terminals

With battery cables installed on battery terminals, coat generously with petrolatum to prevent corrosion. Cables and battery terminals must be clean before applying petrolatum.

d. Speedometer Cable

Before installing the speedometer cable in the cable housing, apply Lubriplate No. 105 or equivalent sparingly to the cable. If properly lubricated at installation, no further lubrication is necessary.

e. Distributor Cam

When lubricating the distributor at 2,000 mile intervals as indicated in the lubrication charts, wipe the distributor cam lightly with a good quality non-bleeding, high melting point grease such as wheel bearing grease.

BRAKE MASTER CYLINDER

Check the fluid level in the brake master cylinder every 2,000 miles and add fluid as required to main-

tain the level to within 1/4 inch of the filler hole. Fill with Lockheed No. 21, or equivalent, hydraulic brake fluid. The brake master cylinder is accessible by turning back the front compartment floor mat below the brake and clutch pedals and removing the access covers.

POINTS REQUIRING NO LUBRICATION

The following items for various reasons, require no lubrication:

a. Clutch Release Bearing

This is a prelubricated sealed bearing which requires no further attention for the life of the bearing.

b. Transmission Pinion Shaft Pilot Bushing

This bushing, located in the center of the flywheel, is used to pilot the forward end of the transmission drive pinion. It is oil impregnated and does not require additional lubrication after installation.

c. Water Pump Bearing

This is also a prelubricated sealed bearing located inside the water pump and it requires no lubrication, during the life of the bearing.

d. Starting Motor

The bushings in both the Delco-Remy and the Auto-Lite starting motors are oil impregnated and do not require lubrication after installation.

e. Rear Spring Bushings

Rubber bushings are used in rear spring hangers and shackles and these points must not be lubricated with a petroleum base lubricant. Special lubricants available for use on rubber may be used on the rear spring bushings if desired but lubrication is normally unnecessary.

f. Shock Absorbers

Front and rear shock absorbers do not require filling. They are filled at original assembly and sealed, the initial filling lasting the life of the unit. Rubber bushings are used at the mountings and these points, like the rear spring bushings must not be lubricated with a petroleum base lubricant. Special lubricants for use on rubber may be used but lubrication is normally unnecessary.

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