

Insert crank and pull up quickly in a clockwise motion until the engine starts running—if it stops running after a few explosions push choke half way in and again hand crank until engine starts. Regulate choking mechanism until engine is running smoothly. When the engine is thoroughly warmed up the choke control button should be all the way in.

Set spark and throttle control levers at best running positions.

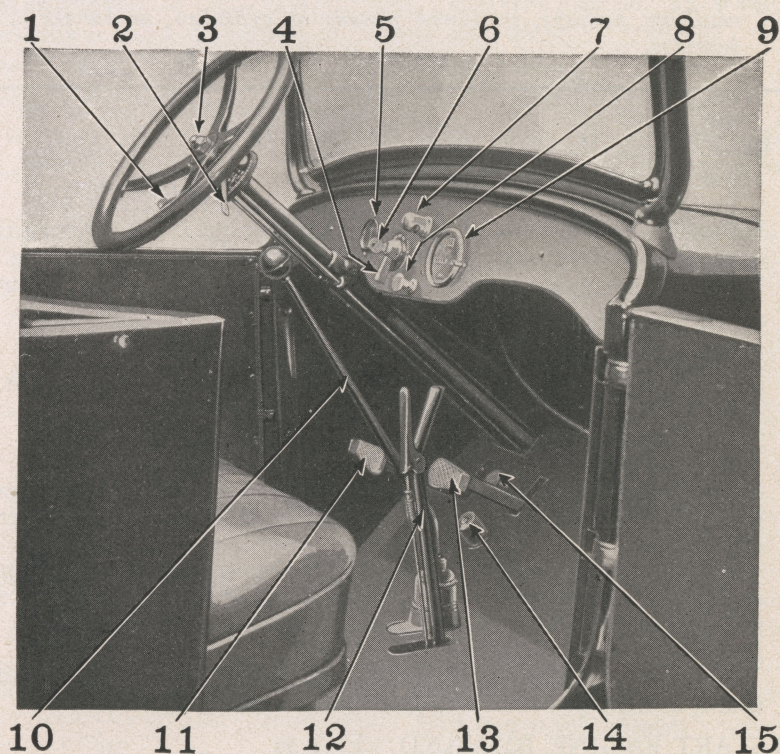


FIGURE 1—CONTROLS

- 1—Spark Control Lever
- 2—Throttle Control Lever
- 3—Horn Button
- 4—Light Switch Lever
- 5—Current Indicator
- 6—Ignition Switch Key
- 7—Dash Lamp
- 8—Choke Control Button

- 9—Speedometer
- 10—Gear Shift Lever
- 11—Clutch Pedal
- 12—Hand Brake Lever
- 13—Brake Pedal
- 14—Accelerator Foot Rest
- 15—Accelerator Button

TO START CAR

Release hand brake, if set.

Depress clutch pedal.

Move gear shift lever to first speed position.

Depress foot accelerator pedal gradually and at the same time slowly release clutch pedal.

Allow car to gain momentum, then release accelerator and depress clutch pedal at the same moment.

Shift gear lever rapidly to second speed position.

Depress foot accelerator pedal gradually and at the same time slowly release clutch pedal.

Shift to third or "high" speed in the same way, releasing accelerator and depressing clutch pedal before shifting lever.

It is recommended that the speed of the car be controlled by the foot accelerator, not only in the shifting gears but in driving.

TO CHANGE TO LOWER SPEED. FIG. 1.

Depress clutch pedal.

Speed up engine slightly, if traveling on level road.

Move gear shift lever quickly into next lower speed and release clutch pedal.

It will be found advisable to make this change when the engine is placed under a heavy pull, or when dropping down to very slow speed, as when traveling up a steep grade, in sand, or in congested traffic.

Never attempt to make the change with the car traveling at a high rate of speed.

TO STOP THE CAR. FIG. 1.

Close throttle.

Depress clutch pedal.

Apply foot brake.

With car at standstill, move gear shift lever into neutral.

Set hand brake.

Release clutch pedal.

TO REVERSE CAR. FIG. 1.

With car at a standstill, depress clutch pedal.

Shift gear lever into reverse position.

Slowly release clutch pedal.

TO STOP ENGINE. FIG. 1.

Switch off ignition.

USE OF SPARK CONTROL LEVER. FIG. 1.

The position of the spark lever should vary with the speed of the engine. For the driver operating his first car, it simplifies driving to

leave the lever in one position, about two-thirds of the way up the quadrant, or as far as it can be advanced without the engine developing a knock.

When the car is throttled to its lowest speed on high gear the spark should be retarded until the car runs smoothly. If advanced too far a sharp metallic click will be heard in the engine, and the spark should be retarded as the bearings will be damaged by having the spark occur too early. When the engine is idling, the spark lever should not be advanced more than one-half of the way up the quadrant.

KEY TO FIG. 2, ON OPPOSITE PAGE

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|--|---------------------------------|
| 1—Gear Shift Lever | 26—Oil Pipe Plugs |
| 2—Hand Brake Lever | 27—Camshaft |
| 3—Direct and Second Speed Sliding Gear | 28—Generator |
| 4—Transmission Shifter Shaft | 29—Generator Gear |
| 5—Gear Shifter Forks | 30—Timer |
| 6—Reverse and First Speed Sliding Gear | 31—Fan Belt |
| 7—Speedometer Gear | 32—Fan Shaft Nut |
| 8—Universal Joint | 33—Fan |
| 9—Propeller Shaft | 34—Fan Pulley |
| 10—Universal Joint Oil Level | 35—Fan Grease Cup |
| 11—Countershaft Gears | 36—Fan Belt Adjusting Screw |
| 12—Transmission Oil Level | 37—Cylinder Head |
| 13—Transmission Main Drive Gear | 38—Spark Plug |
| 14—Transmission Case Drain Plug | 39—Intake Manifold |
| 15—Clutch Adjusting Screw | 40—Valve Tappet Adjusting Screw |
| 16—Clutch Spring | 41—Valves |
| 17—Clutch Driving Discs | 42—Valve Springs |
| 18—Fly-wheel | 43—Valve Tappet |
| 19—Crankcase Drain Plug | 44—Piston |
| 20—Oil Level Float | 45—Connecting Rod |
| 21—Main Oil Feed Pipe | 46—Piston Pin |
| 22—Crankcase Oil Level | 47—Exhaust Manifold |
| 23—Connecting Rod Oil Scoop | 48—Oil Level Indicator |
| 24—Crankshaft | 49—Oil Strainer |
| 25—Oil Base | |

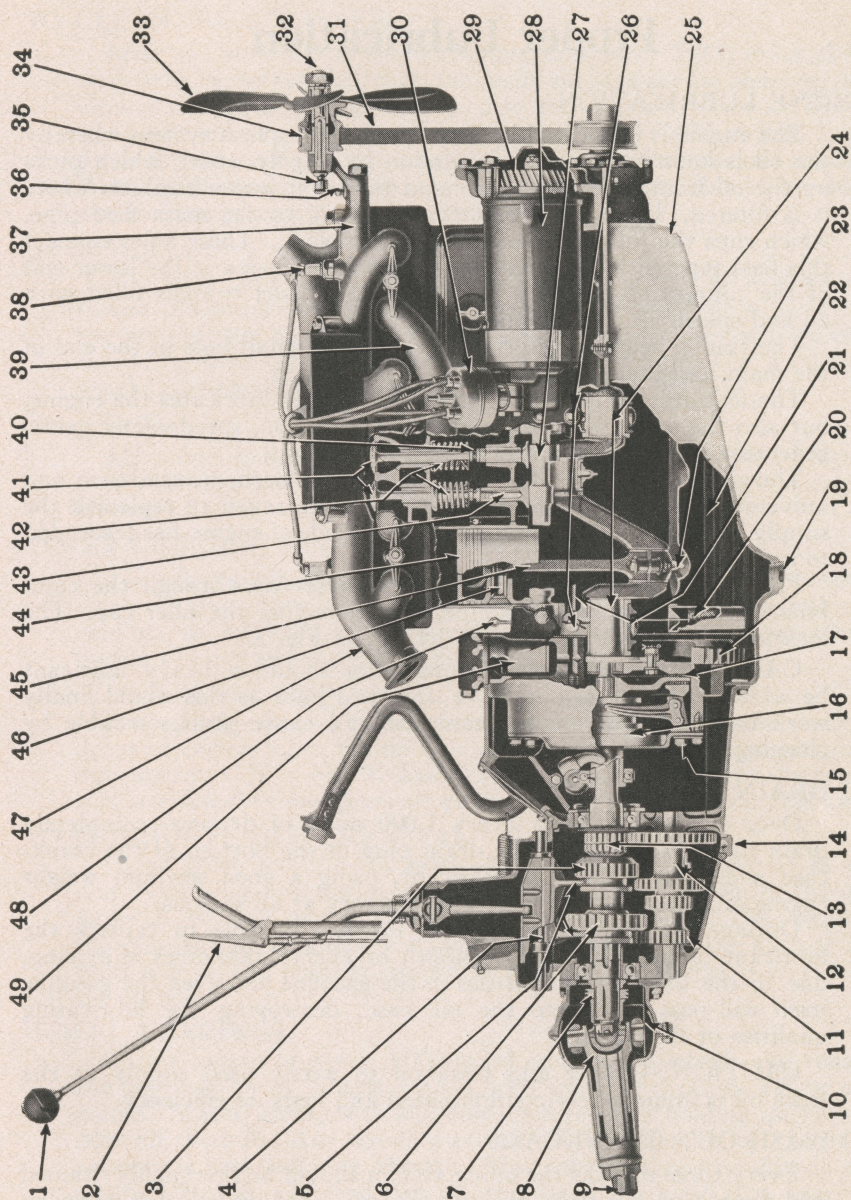


FIG. 2—CROSS SECTION OF ENGINE, CLUTCH AND TRANSMISSION

CHAPTER TWO

Proper Lubrication

ENGINE LUBRICATION

The engine is lubricated by a constant level splash system whereby the oil is kept in constant circulation by the fly-wheel, which picks up the oil from the oil reservoir and throws it into a strainer, where it is filtered. From this point the oil is led to the main feed pipe, which runs the full length of the cylinder block. Three holes connect this feed pipe with the crankshaft bearings. Scoops at the lower end of the connecting rods dip in the constant level troughs filled with oil and splash all parts requiring lubrication.

The timing gears are lubricated through a small hole in the end of the main feed line above the front main bearing.

The feature of this system is that it not only lubricates the engine, but also the universal joint, clutch, transmission, speedometer gears, generator and starting motor drive end bearings.

The capacity of the oil system, including clutch, transmission and universal joint is six quarts. Care should be taken to replenish the supply before the wire loop, located on left side of engine, has descended to its lowest point.

Fresh oil should be poured into the reservoir through the combination filler and breather pipe, first removing the filler cap. The location of this pipe is indicated by "1" in Fig. 3.

CAUTION:—Under no circumstances should a heavy lubricant be added to the transmission or universal joint as this would finally work back into the engine crankcase and cause serious trouble by clogging the oil leads.

TO DRAIN CRANKCASE

Once every month—or every 1,000 miles of driving—completely drain the oil by opening the drain plug in the bottom of the crankcase and refill with fresh lubricant, using a good medium weight engine oil, which will be found satisfactory at all seasons.

During cold weather it will be found advisable to replace the lubricant oftener than once a month or every 1,000 miles of driving, due to the fact that impurities in the gasoline and even the gasoline itself will pass down into the oil base, destroying the lubricating qualities of the oil.

CAUTION:—Never add fresh oil to partly used supply as the fresh oil is immediately contaminated and loses its efficiency.

TO WASH OUT CRANKCASE

Every three months the oiling system should be thoroughly drained and flushed with a light flushing oil (any light oil will do), allowing the engine to run for two or three minutes after the flushing oil has been poured into the engine through the filler pipe. Then remove

the drain plugs under *both crankcase and transmission case* and draw off the flushing oil. Refill with fresh lubricant.

TO CLEAN OIL STRAINER

After the first 500 miles of running and every 1,000 miles thereafter it is recommended that the mesh oil strainer be removed and cleaned, as sediment will collect on it and partially obstruct flow of the lubricant. To remove strainer, indicated by "49" in Fig. 2, unscrew the wing nuts on top of cover, lift off cover and take out strainer. Wash it thoroughly in kerosene or gasoline. Care should be taken not to damage cork gasket as a leak will result.

GREASE CUPS

All grease cups—indicated in Fig. 3 by the letter "G"—should be turned down once every week or every 250 miles of driving. When the grease cups have been turned down as far as they will go they should be removed and refilled with fresh lubricant. Use a medium weight cup grease that is entirely free from acid.

OIL CUPS

All oilers—indicated by the letter "O" in Fig. 3—should be gone over with an oil can and given a few drops of medium weight engine oil every day or every 100 miles of driving.

TIMER LUBRICATION—*This is Important*

The oil cup on the timer—indicated by "2" in Fig. 3—should receive a few drops of light oil once a week or every 250 miles of driving, as lubrication of this unit insures accurate and even distribution of electrical current to the spark plugs.

GENERATOR OIL CUP

Each week—or every 250 miles of driving—pour seven or eight drops of engine oil in the oil hole at the rear end of the generator—indicated by "2" in Fig. 3. Lubrication at this point keeps the grease soft in which the timer gears are packed and prevents their undue wear.

TO LUBRICATE DIFFERENTIAL

Every three months—or every 3,000 miles—drain the oil in the rear system by unscrewing the drain plug in the bottom of the differential housing and drawing off the old lubricant. Then replace the plug and pour in heavy steam engine oil through the filler at the right side of the housing, shown in Fig. 3, until the oil is level with the oil hole.

WHEEL BEARINGS

Once a season or every 3,000 miles remove the wheels and repack the bearings on all wheels with a good grade of medium weight cup grease. Spread grease with a paddle upon the cage holding the rollers. Also fill the hub. Any seeming excess will be taken up by the parts as soon as they begin to operate. Make sure there is no grit on the paddle. Should you find grit in the bearings, wash the bearings thoroughly with gasoline or kerosene and dry them. Then lubricate bearings and hub.