

In the first years of the 20<sup>th</sup> century, only the wealthy could afford a reliable car. Henry Ford's big idea was to make a dependable car that was affordable to the average person. In order to achieve this goal, Ford designed the Model T and developed techniques of mass production to lower the car's cost even further. Manufactured from 1908 to 1927, the Model T became the first car for many millions of Americans. But maintaining and operating a Model T was very demanding, especially compared with cars today. The following selection contains 14 of the 141 questions and answers in the 1926 Ford Owner's Manual.

### **The Model T and Its Operation**

How are Spark and Throttle Levers used?

Under the steering wheel are two small levers. The right-hand (throttle) lever controls the amount of mixture (gasoline and air) that goes into the engine. When the engine is in operation, the farther this lever is moved downward toward the driver (referred to as "opening the throttle") the faster the engine runs and the greater the power furnished, the left-hand lever controls the spark, which explodes the gas in the cylinders of the engine. The advancing of this lever "advances the spark," and it should be moved down notch by notch until the motor seems to reach its maximum speed. If the lever is advanced beyond this point a dull knock will be noticed in the engine. (See chapter on Ignition.)

Where should these levers be when starting the Engine?

The spark lever should usually be fully retarded (all the way up on the quadrant, the notched half-circle on which the levers operate). The throttle should usually be placed in about the fifth or sixth notch. A little experience will soon teach you where these levers should be placed for proper starting. Care should be taken not to advance the spark lever too far, as the engine may "back kick."

What else is necessary before starting the Engine?

First: See that the hand lever, which extends through the floor of the car at the left of the driver, is pulled back as far as it will go. The lever in this position holds the clutch in neutral and engages the hub brake, thus preventing the car moving forward when the engine is started. Second: On cars without starters, insert the switch key into the switch and turn the key as far to the left (counterclockwise) as it will go. On cars equipped with starters the switch key may be turned either to the right or left. The engine cannot be started until the switch is turned on—the turning of the switch key to a vertical position stops the engine.

How is the Engine started?

If the car is not equipped with a starter the engine is started by the lifting of the starting crank at the front of the car. Take hold of the handle and push firmly toward the car till you feel the crank ratchet engage, then lift upward with a quick swing. With a little experience

this operation will become an easy matter. Don't, as a usual thing, crank downward against compression—for then an early explosion may drive the handle vigorously backward. This does not mean however, that it is not advisable, when the car is hard to start, to occasionally "spin" the engine by the use of the starting handle—but be sure the spark lever is retarded when spinning or cranking the engine against compression, otherwise a sudden back kick may injure the arm of the operator. When the engine is cool it is advisable to prime the carburetor by pulling on the small wire at the lower left corner of the radiator while giving the engine two or three quarter turns with the starting handle. If the car is equipped with a starter the throttle lever should be placed in the same position on the quadrant as when cranking by hand, and the spark lever should be fully retarded. The ignition switch may then be turned on. Current from either battery or magneto may be used for ignition. However, we recommend that the magneto be used at all times. The magneto was designed to furnish ignition for the Model T engine and better results will be obtained by operating in this way. Special attention must be paid to the position of the spark lever, as a too advanced spark will cause serious backfiring, which in turn will bend or break the shaft in the starter. The starting motor is operated by a push button, conveniently located in the floor of the car at the driver's feet. With the spark and throttle levers in the proper position, and the ignition switch turned on, press on the push button with the foot. This closes the circuit between the battery and starting motor, causing the pinion of the starter drive shaft to engage with the teeth on the flywheel, thus turning over the crankshaft. When the engine is cold it may be necessary to prime it by pulling out the carburetor priming rod, which is located on the instrument board. In order to avoid flooding the engine with an over rich mixture of gas, the priming rod should only be held out for a few seconds at a time.

How is the Engine best started in cold weather?

As gasoline does not vaporize readily in cold weather it is naturally more difficult to start the motor under such conditions. The usual method of starting the engine when cold is to turn the carburetor dash adjustment one-quarter turn to the left in order to allow a richer mixture of gasoline to be drawn into the cylinders; then hold out the priming rod, while you turn the crank from six to eight one-quarter turns in quick succession, or turn the motor over a few times with the starter. Another method of starting a troublesome cold engine is as follows: Before you turn on the switch, (1) close throttle lever; (2) hold out priming rod while you give crank several quick turns, or turn the motor over a few times with the starter, then let go of priming rod (being careful that it goes back all the way); (3) fully retard spark lever and advance throttle lever several notches; (4) turn on switch; (5) give crank one or two turns, or close the starting switch, and the motor should start. After starting the motor it is advisable to advance the spark eight or ten notches on the quadrant and let the motor run until thoroughly warmed. If you start out with a cold motor you will not have much power and are liable to "stall." The advantage of turning on the switch last, or after priming, is that when you throw on the switch and start the motor, you have plenty of gas in the cylinders, to keep the motor running, thereby eliminating the trouble of the motor starting and stopping. After motor is warmed up turn carburetor adjustment back one-quarter turn.

What function does the Hand Lever perform?

Its chief purpose is to hold the clutch in neutral position. If it were not for this lever the driver would have to stop the engine whenever he left the driver's seat. He would also be unable to crank the engine without the car starting forward with the first explosion. When pulled back as far as it will go, the hand lever acts as an emergency brake on the rear wheels, by expanding the brake shoes in the rear wheel drums. Therefore the hand lever should be back as far as it will go when cranking the engine or when the car is at rest. It should be in a vertical position, and not far enough backward to act as a brake on the rear wheels, when the car is to be reversed. When the car is operating in high or low speed the hand lever should be all the way forward.

How do the Foot Pedals operate?

The first one toward the left operates the clutch. When pressed forward the clutch pedal engages the low speed. When halfway forward the clutch is in neutral (i.e., disconnected from the driving mechanism of the rear wheels), and the releasing of this pedal engages the high-speed clutch. The center pedal operates the reverse. The right-hand pedal operates the transmission brake.

How is the Car started?

Slightly accelerate the engine by opening the throttle, press the clutch pedal half way forward, thereby holding the clutch in a neutral position while throwing the hand lever forward; then press the pedal forward into slow speed and when under sufficient headway (20 to 30 feet), allow the pedal to drop back slowly into high speed, at the same time partially closing the throttle, which will allow the engine to pick up its load easily. With a little practice, the change of speeds will be easily accomplished, and without any appreciable effect on the smooth running of the machine.

How is the Car stopped?

Partially close the throttle; release the high speed by pressing the clutch pedal forward into neutral; apply the foot brake slowly but firmly until the car comes to a dead stop. Do not remove foot from the clutch pedal without first pulling the hand lever back to neutral position, or the engine will stall. To stop the motor, turn off the switch. Endeavor to so familiarize yourself with the operation of the car that to disengage the clutch and apply the brake becomes practically automatic—the natural thing to do in case of emergency.

How is the Car reversed?

It must be brought to a dead stop. With the engine running, disengage the clutch with the hand lever and press the reverse pedal forward with the left foot, the right foot being free to use on the brake pedal if needed. Do not bring the hand lever back too far or you will set the brakes on the rear wheels. Experienced drivers ordinarily reverse the car by simply holding the clutch pedal in neutral with the left foot, and operating the reverse pedal with

the right.

How is the Spark controlled?

By the left-hand lever under the steering wheel. Good operators drive with the spark lever advanced just as far as the engine will permit. However, advancing the spark too far will cause a dull knock in the motor, due to the fact that the explosion occurs too early. The spark should only be retarded when the engine slows down on a heavy road or steep grade, but care should be exercised not to retard the spark too far as this will result in late ignition, which causes loss of power and overheating of the motor and may also result in warped, burned or cracked valves. Learn to operate the spark as the occasion demands. The greatest economy in gasoline consumption is obtained by driving with the spark advanced sufficiently to obtain the maximum speed.

How is speed of Car controlled?

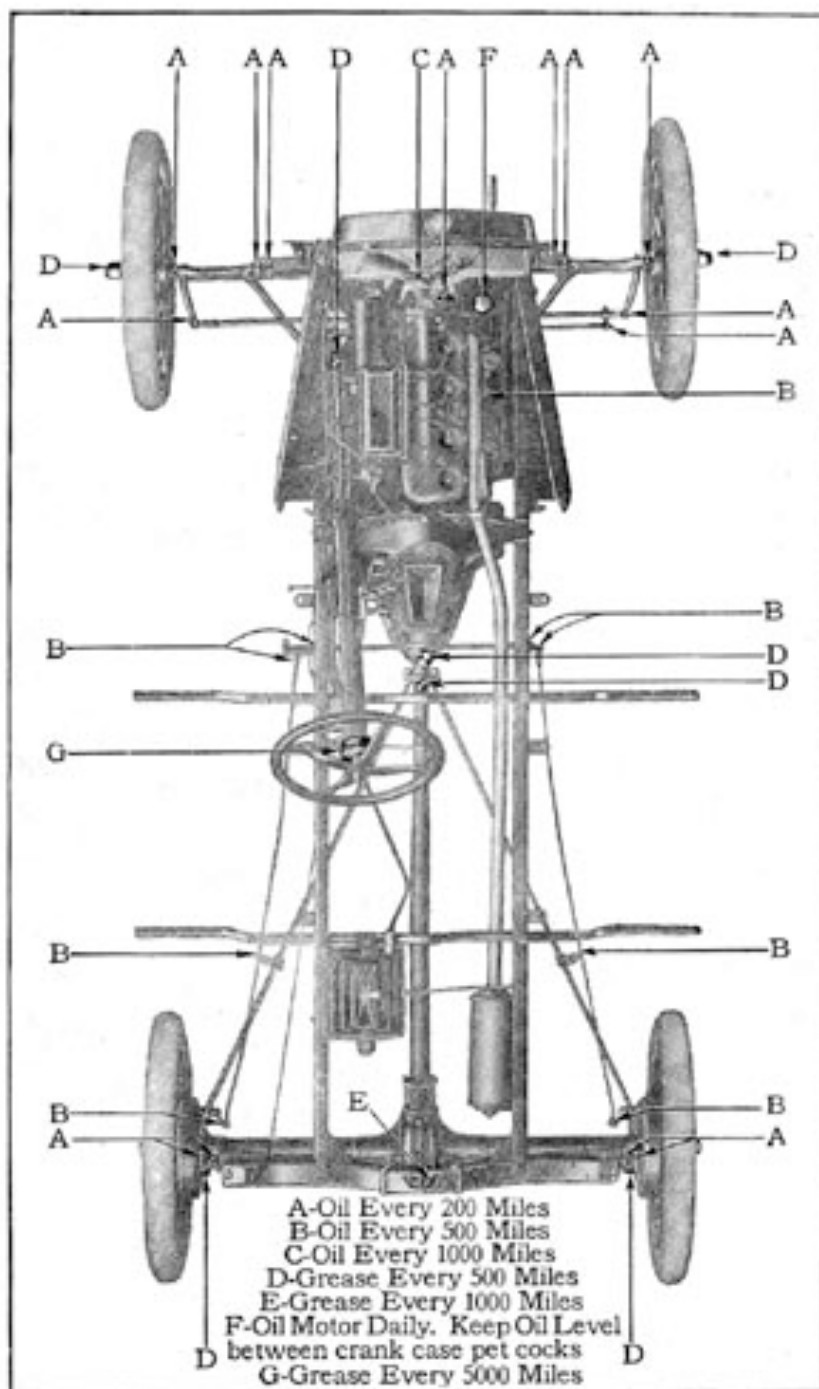
The different speeds required to meet road conditions are obtained by opening or closing the throttle. Practically all the running speeds needed for ordinary travel are obtained on high gear, and it is seldom necessary to use the low gear except to give the car momentum in starting. The speed of the car may be temporarily slackened in driving through crowded traffic, turning corners, etc., by "slipping the clutch," i.e., pressing the clutch pedal forward into neutral. When doing this the throttle lever should be nearly closed.

Is it advisable for owners to make their own Adjustments?

The Ford is the simplest of all cars. Most of the ordinary adjustments an owner will soon learn to make for himself. But we must strongly recommend that when it becomes necessary to employ the services of a mechanic, the car be taken to a Ford mechanic—one of our own representatives who thoroughly understands the car—and who will have no motive for running up useless repair bills. The entire Ford organization is interested in keeping every individual Ford car in constant operation, at the lowest possible cost. We have known of much damage done to many cars by unskilled repairmen.

What attention does the Car need?

Remember that a new machine requires more careful attention during the first few days it is being driven than after the parts have become thoroughly "worked in." The car which is driven slowly and carefully when new usually gives the most satisfactory service in the end. Never start out with your car until you are sure that it has plenty of oil, water and fuel. Frequently inspect the running gear. See that no unnecessary play exists in either front or rear wheels, and that all bolts and nuts are tight. Make a practice of taking care of every repair or adjustment as soon as its necessity is discovered. This attention requires but little time and may avoid delay or possible accident on the road. We aim to deliver the car in proper mechanical adjustment. Afterwards it is plainly the duty of the driver to keep it in that condition.



Lubrication Chart. (Cut No. 16)