



CLICK ANYWHERE FOR MORE DETAILS

MANUAL PREVIEW

Sears

Service Manual

Gasoline Engines

purchase full manual at

JENSALES.COM

or Call 800-443-0625

JENSALES

CLICK ANYWHERE FOR MORE DETAILS

THIS IS A MANUAL PRODUCED BY JENSALES INC. WITHOUT THE AUTHORIZATION OF SEARS OR IT'S SUCCESSORS. SEARS AND IT'S SUCCESSORS ARE NOT RESPONSIBLE FOR THE QUALITY OR ACCURACY OF THIS MANUAL.

TRADE MARKS AND TRADE NAMES CONTAINED AND USED HEREIN ARE THOSE OF OTHERS, AND ARE USED HERE IN A DESCRIPTIVE SENSE TO REFER TO THE PRODUCTS OF OTHERS.

SE-S-ALL

Service Manual

Gasoline Engine Instruction Book

To Start the Engine
See Page 4

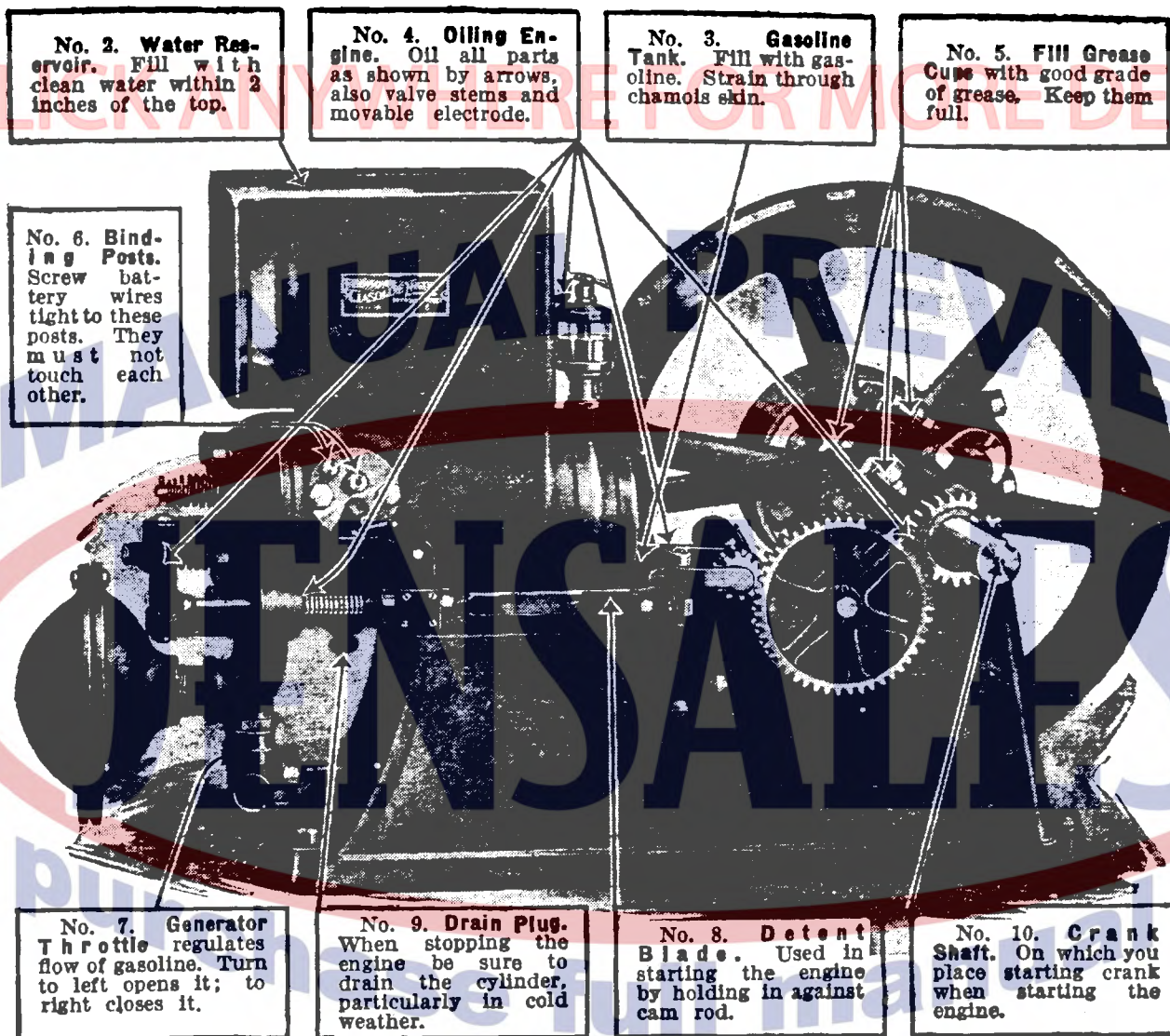
KEEP THIS BOOKLET FOR
FUTURE USE

When Ordering Parts for Your
Engine, Be Sure to Tell Us the
Horse Power and Give the Num-
ber of the Engine, Which You
Will Find on the Brass Plate
on End of Water Hopper.

*If You Have Any Trouble With the
Engine Read Pages 20 and 21.*

Sears, Roebuck and Co., Chicago, Ill.

HOW TO START THE ENGINE.



- 2 Fill the reservoir with clean water.
- 3 Fill the gasoline tank.
- 4 Oil all parts as shown by arrows, No. 4.
- 5 Fill grease cups, No. 5, with good grade of grease.
- 6 Attach battery to binding posts, No. 6.
- 7 Open dial to No. 7, push up on the stem and hold it until gasoline drips.
- 8 Turn fly wheels around by hand and push in on detent blade, No. 8, until it catches behind the block on cam rod.
- 9 Turn on the batteries by closing the switch.
- 10 Hold detent blade, No. 8, in against the cam rod, turn the fly wheels around rapidly five or six times, release the detent blade and keep on turning fly wheels. We furnish a crank on the 1, 2 and 4-horse power engines, the 6, 8 and 10-horse power engine fly wheels are turned over by grasping one of the spokes. When using crank, after engine has started, remove the crank, but do not let go of it, as it may fly off and hit you.
- 11 Close throttle to 4½ or 5. (See paragraphs 12 and 13 on page 8.)

TO STOP THE ENGINE.

Paragraph 5.

First—Shut off the gasoline at the generator.

Second—Shut off the spark by opening the switch.

Third—Shut off the lubricator.

Fourth—Drain the water from the cylinder and cylinder head in cold weather (the water cooled cylinder head is drained by removing the pipe plug at the bottom).

Fifth—If you have the engine outside or where it is liable to get wet, provide some covering that will protect it. It will be money well spent. Take good care of the engine and it will last a lifetime.

GASOLINE TANK.

Paragraph 6.

The gasoline tank is located in the base. It is made of galvanized iron. The 1-horse power engine tank holds $1\frac{1}{4}$ gallons; 2-horse power, $2\frac{1}{4}$ gallons; 4-horse power, $3\frac{1}{4}$ gallons; 6-horse power, $5\frac{1}{4}$ gallons; 8-horse power, $8\frac{1}{4}$ gallons, and the 10-horse power, $10\frac{3}{4}$ gallons.

To fill the tank, remove the cap from the pipe located at the mouth of the cylinder and use the funnel furnished with the engine. Be sure the gasoline is clean and of the best grade. Gasoline sometimes has water in it; water being heavier than gasoline will stay on the bottom, and when you try to start the engine you will get water instead of gasoline and the engine won't run. Dirt in the gasoline will clog the mixing valve and stop the engine.

Always strain the gasoline through a chamois skin, which will prevent any dirt or water entering the tank, and you will have absolutely no trouble in this respect. There is a small hole in top of tank about the size a nail would make. This is a vent hole put there to allow an easy flow of gasoline. This may leak if you tip the engine while tank is full, but the hole should not be stopped up, as the engine will not work properly if this is done.

To be sure the gasoline is feeding properly, open the needle dial on the generator and raise the valve by pushing up on the valve stem. If the gasoline drips the feed is all right; if it does not the tank is empty, or something has stopped the flow.

WATER RESERVOIR.

Paragraph 7.

Experience has shown that very little water is required to keep the temperature of a gasoline engine cylinder at the right point to give the best results. Ninety-nine per cent of the gasoline engines used for farm purposes are now being manufactured with an open jacket or reservoir cooler. It is not only cheaper to manufacture but is easier taken care of and gives better results.

Before starting the engine, fill the water reservoir with clean water to within 2 inches of the top. The cylinder is cooled by the water circulating around it. Always see that the reservoir is full of water. If it boils you need not be alarmed, as the temperature of the cylinder should be from 175 to 212 degrees Fahrenheit. Keep the

OILING THE ENGINE.

Paragraph 10.

Be sure to use the best grade of gas engine oil in the lubricator; nothing darker than a pale or golden color oil.

Be sure to oil all bearings as shown, No. 4 on page 4, also put a few drops of oil on the movable electrode of the igniter (a few drops are plenty, too much will cause trouble); also put a few drops on the valve stems. (See A and B, Figure 7 on page 13.)

Use a good grade of grease in cups and be sure it is clean.

If a dark oil is used, a carbon deposit will form on the inside of the cylinder and on the igniter points, causing trouble. **Never use steam engine oil.**

Be sure all bearings are properly lubricated, as it will not only increase the life of the bearings, but will enable the engine to give much better results.

We can furnish engine oil and grease from our Chicago store like the sample we send with the engine. See page 24 for prices.

HOW TO ADJUST THE LUBRICATOR.

Paragraph 11.

To turn on the oil in lubricator, lift the lever or stem so that it will stand straight up. Turning the stem down shuts off the oil. **Be sure to turn on the oil when starting and turn off when stopping the engine.**

When you first get the engine, fill the lubricator and feed about ten drops a minute for ten days or two weeks, then reduce to about five drops.

To change the number of drops per minute, screw the top adjusting screw up or down. When you have regulated the flow of oil and you are sure it is right, lock the adjusting screw by turning the thumbnut just below it.

TO CLEAN THE IGNITER.

Paragraph 19.

Take it apart carefully, being sure to see how each part is fitted so you can get it back together again. In cleaning the parts use kerosene or gasoline. It may be necessary for you to take the mica washers apart and clean between each one of them with gasoline or, better still, you can purchase extra washers. (See No. 47B66, page 29.)

After you have cleaned the igniter, put it back on according to the instructions given above. The spark that explodes the mixture inside the cylinder may not occur at just the right time and the engine will not run properly, or it may kick back when you try to start it. To see if the spark occurs at the right place or to reset it read paragraph 20.

When the Spark Should Take Place

Paragraph 20.

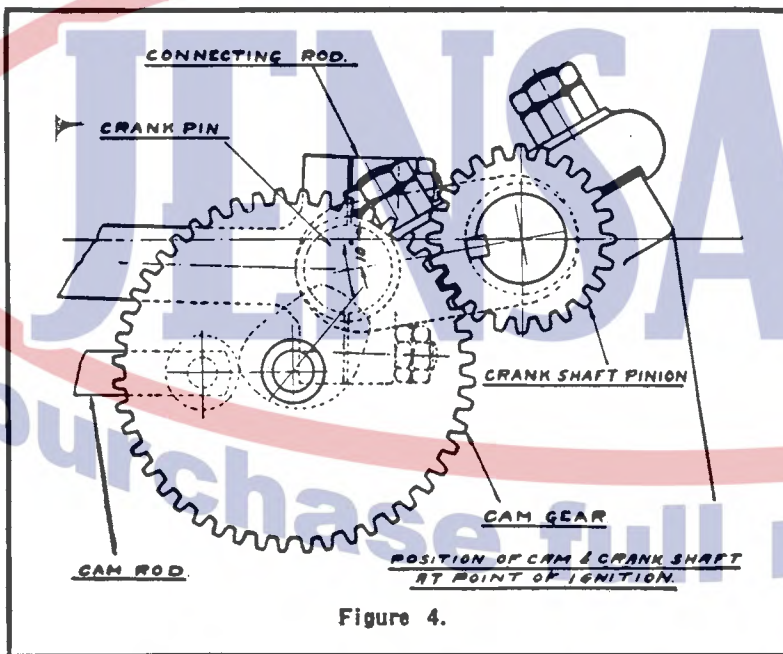


Figure 4.

The electric spark at the igniter points inside the engine explodes the gasoline and gives the engine its power. It is very important that this spark occurs at the right place, as in this way you will get the most power with the least consumption of gasoline.

If the spark does not occur at the right point the engine will not develop its full power.

The time of the snap at the igniter

is the time the spark takes place. If you turn the fly wheels over slowly by hand and stop instantly when you hear the igniter snap, you can tell just where the spark takes place.

Figure 4 shows the position the cam gear, crank shaft and connecting rod should be in when the spark occurs. If it occurs at any point different from this you will not be getting the best results.

The most of the trouble with a gasoline engine is caused by the spark. If you will watch this point carefully to be sure your engine always sparks as indicated above, and that you get a spark inside the cylinder as well as on the outside, you will have very little trouble with your engine.

TO ADJUST SPARK.

Paragraph 21.

If the spark occurs too soon, that is, before the crank shaft and connecting rod get to the exact position as shown in paragraph 20, it will be necessary to change the position of the hardened steel trip as shown in Figure 5.



Figure 5.

The spark takes place inside the cylinder when the igniter snaps. Turn the fly wheels in the direction they should run and if the igniter snaps when the cam gear and crank shaft are in the position as shown in Figure 4, the engine is sparking at the right time. If the igniter snaps after the cam gear and crank shaft have passed the position as shown in Figure 4, the igniter trips too late and the hardened steel trip should be pushed forward. If the igniter snaps before the cam gear and crank shaft reach the position as shown in Figure 4, it is tripping too soon and the hardened steel trip should be pulled back.

To advance the spark loosen the locknut on top of the trip bracket and turn the adjusting screw to the right; to retard the spark turn the screw to the left. After the trip is in the proper position tighten the locknut; then turn the fly wheels over again and see if the igniter snaps at the right place, as in tightening down the locknut it sometimes changes the time the spark takes place.

GOVERNOR.

Paragraph 22.

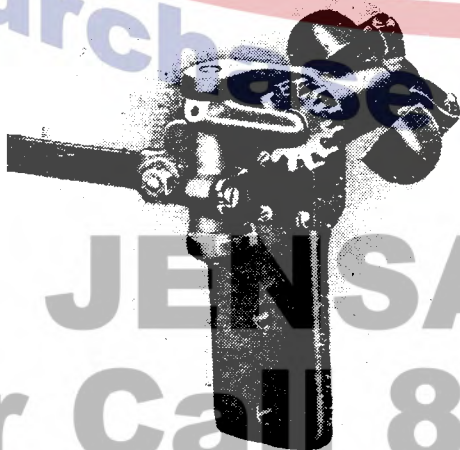


Fig 6. The Governor.

The governor of the engine consists of two balls, Figure 6, controlled by a spring inside the governor spindle and is operated by the three gears from the crank shaft. If the engine get to running above the regular speed, the balls on the governor are thrown out. They press in on a pin going through the governor spindle which works the detent so it catches behind the block on the cam rod and holds the exhaust valve open, at the same time stopping the spark, which prevents any suction of gasoline or explosion in the cylinder.

As soon as the speed of the fly wheels is reduced to normal, the cam rod is released. In this way the speed of the engine is controlled and you get the best results with the least consumption of fuel and batteries.

The governor is constructed of the best material, is properly adjusted and should never need any attention except to keep it clean and well oiled. The engine should never be run above its normal speed, so we do not provide a means of adjusting the speed.