INSTRUCTIONS

for

SERVICING MAGNETO AND IGNITER

on

JOHN DEERE ENGINES

JOHN DEERE TRACTOR COMPANY
WATERLOO, IOWA
U. S. A.

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INSTRUCTIONS FOR SERVICING MAGNETO AND IGNITER ON JOHN DEERE ENGINES

John Deere engines are equipped with a simple and efficient means of producing a spark in the combustion chamber of the engine. The low tension magneto generates electricity for the spark—the igniter provides the mechanism for releasing the spark.

The magneto and igniter are properly timed when the engine is shipped from the factory. If through accident or from long use the magneto or igniter require attention, they may be easily corrected by following these simple directions.

MAGNETO

To test magneto for spark, clean a bright spot on igniter main spring and scratch igniter end of wire across it, at the same time rotating the flywheel. If no spark shows, remove terminal brush holder from magneto and examine brush holder for cracks and leaks. Examine end of carbon brush, clean and scrape end if glazed. See that brush works freely in socket and has sufficient spring tension to insure good contact with collector ring.

While brush holder is removed, the copper collector ring inside of magneto should be wiped clean by inserting a pencil with clean rag attached and holding it against collector ring while flywheels are rotated slowly. See Fig. 1.

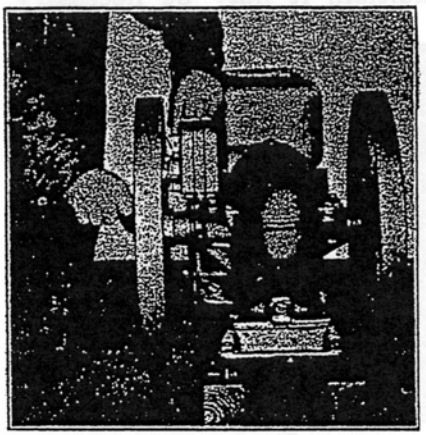


Fig. 1

Fig. 2

IGNITER

To test igniter for spark, remove igniter and place on engine as shown in Figure 2 using one cap screw. (Do not tighten enough to break flange of igniter.) Move igniter back or forth until it trips when mark "Spark" on flywheel is in line with exhaust rod, see Figure 13, turn engine over at cranking speed and watch for spark at breaker points.

If no spark occurs, examine stationary electrode which must be insulated from igniter body. Examine igniter mainspring and torsion spring and see that tension is in proper direction. Remember that points are always closed except when the igniter trips which causes the points to open, thus releasing the spark. See that points match evenly and seat together squarely. If points are pitted they should be dressed with fine sandpaper. If points are worn badly they should be replaced.

TO OVERHAUL IGNITER

Remove igniter from engine and disassemble completely. Wash all parts thoroughly in gasoline and regrind movable electrode into seat as shown in Figure 3. Place a small amount of valve grinding compound on the seat of movable electrode and grind the seat with an oscillating motion. Do not grind in a continuous rotating motion but lift the electrode from the body occasionally and change to a different position to prevent cutting a groove in the seat. Grind with a firm but not heavy pressure.

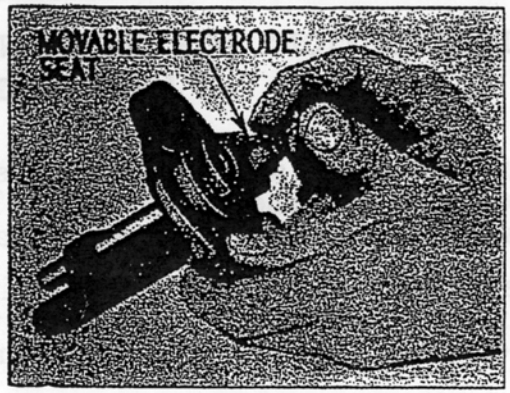


Fig. 3

If the seat in the igniter body is in extremely bad condition, it may be necessary to cut a new seat, in which event cut the new seat only deep enough to remove rough spots. After regrinding movable electrode seat, wash both electrode and igniter body with gasoline to remove valve grinding compound.

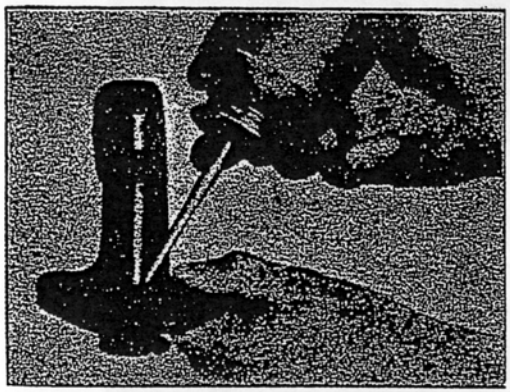


Fig. 4

After regrinding the seat between movable electrode and igniter, the seat may be tested for leaks by holding in a vertical position and squirting a little gasoline in igniter recess as shown in Figure 4.

To reassemble the igniter, place the igniter anvil, mainspring, and hammer, in position in igniter body and fit them over the movable electrode as shown by their respective positions in Figure 5.

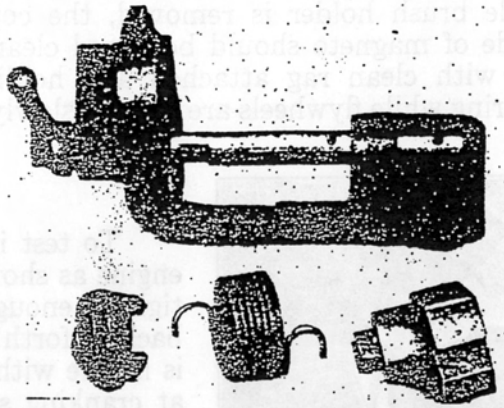


Fig. 5

Hook the end of igniter mainspring around anvil taper pin and turn movable electrode so that flat of taper pin will seat against the milled slot in the shaft of movable electrode. Push taper pin in place, put on lock washer and nut, then tighten securely with a wrench.

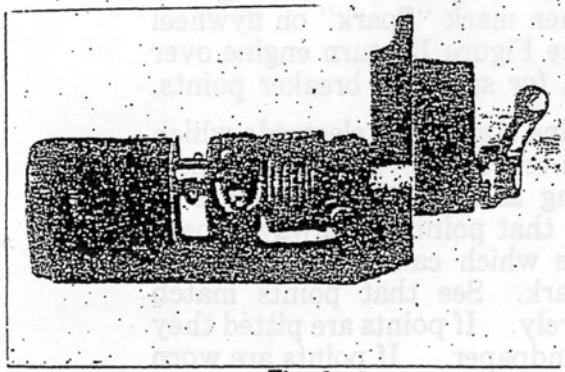


Fig. 6

Hook up other end of igniter mainspring over the knob on igniter hammer, then put cotter key in hole in shaft next to igniter hammer and spread ends of cotter. All of these parts should now be in position as shown in Figure 6.

Next, place the igniter torsion spring on end of movable electrode shaft. Twist the spring and force cotter key through the loop of spring as shown in Figure 7. The direction and action of the spring must be to keep the electrode points closed.

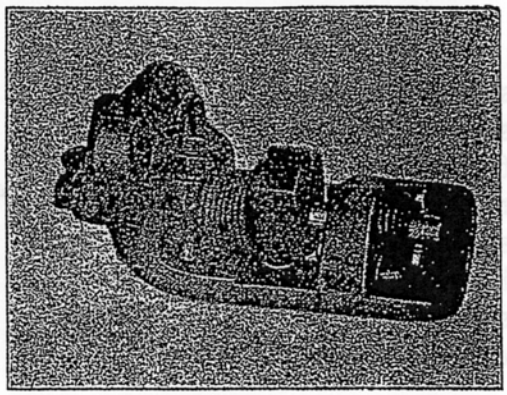


Fig. 7

Next, assemble the stationary electrode which must be kept insulated from the igniter body by means of mica washers. There should be approximately 5/8-inch of mica washers on each end of the stationary electrode. See Figure 8. Examine the mica washers before assembling and if they are broken, coated with oil or dirty, they should be replaced with new, clean micas. Do not put on any broken or half pieces of micas. Be sure to put the steel washer on threaded end of stationary electrode between the mica washers and the shaft nut.

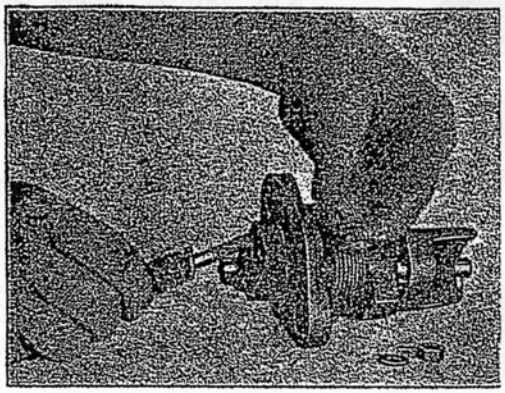


Fig. 8

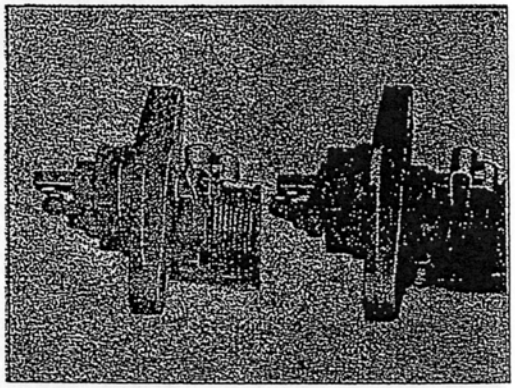


Fig. 9 Fig. 10

It is important to use a like amount of mica washers on each end of the stationary electrode to prevent mismatching of points as shown in Figures 9 and 10. The points must seat squarely and evenly. If points do not fit flat against each other, they may be flattened by pressing lightly together in a vise. There must be 1/32-inch gap or opening between points when igniter hammer is moved with the fingers as shown in Figure 11. Less than this gap is insufficient to give a good spark. Igniter action must be free so that it operates easily with the hand. After overhauling the igniter as outlined, it should be put back on engine being sure that gasket between igniter and engine is in place and in good condition.

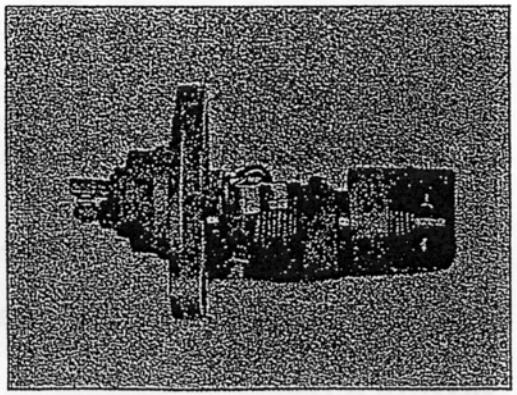


Fig. 11

Examine igniter trip as shown in Figure 12 and make sure that face of igniter trip sets flat against igniter hammer. Igniter trip must work freely so spring holds it against igniter hammer. Examine exhaust lever spring and make sure it returns exhaust rod clear back.

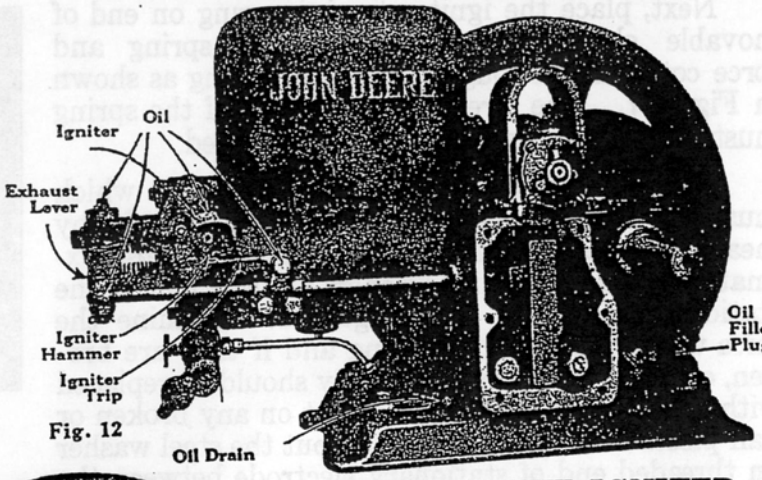


Fig. 12

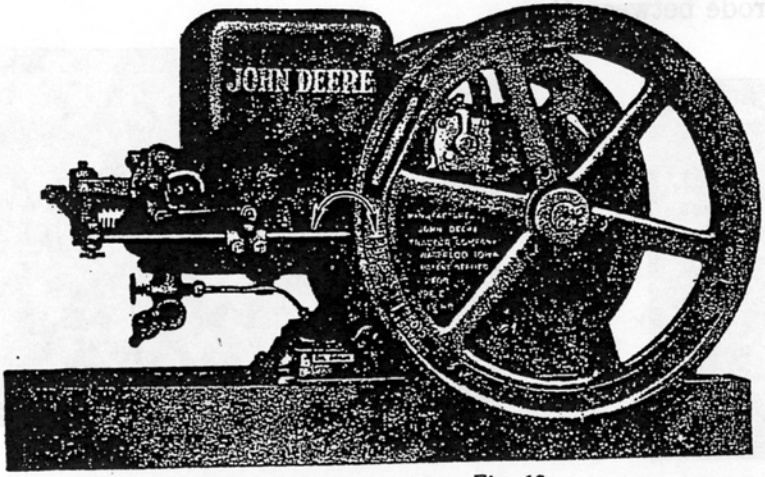


Fig. 13

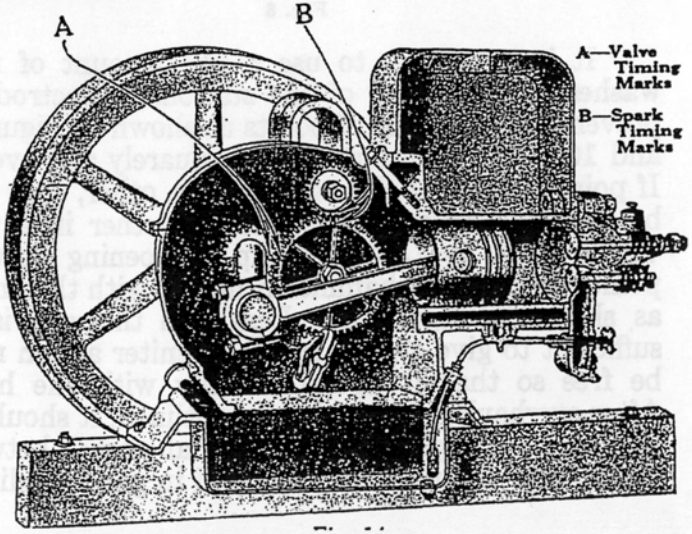
TIMING THE IGNITER

The igniter must trip when the mark "spark" on flywheel is level with or slightly above exhaust rod and exhaust rod is clear back toward flywheel just starting ahead. See Fig. 13. If igniter trips before this point, loosen clamp bolts on trip bracket and adjust bracket back toward flywheel. If it trips later than this, adjust bracket ahead. The face of igniter trip must fit flat against igniter hammer when bolts are tightened.

TIMING THE MAGNETO

To time magneto, mark on magneto gear must line up with mark on cam gear, B Figure 14 at the same time mark on crankshaft gear lines up with another mark on cam gear. A Figure 14. In case the gear marks become obliterated, the magneto can be timed, as follows:

Make sure that igniter trip is properly timed, then press in the timing rivet marked "L" (in the magneto end bearing) while the flywheel is turned slowly in the direction it runs. The rivet should drop into the notch and start out just as the igniter trips.



GENERAL

Never attach a battery or coil to engine without first disconnecting magneto wires.

Examine working parts of igniter frequently and wash dirt away with kerosene or gasoline. Lubricate with light oil as shown in Figure 12 until all parts work freely.

Instructions for Ordering Parts

FIRST. Always give serial number of engine when ordering repairs.

Second. Give number and name of each part ordered. If in doubt as to correct name and number, send dimensioned sketch or return broken parts, charges prepaid.

Third. Orders for parts should be written separately from correspondence.

Fourth. State whether shipments are to be forwarded by Freight, Express or Parcel Post. Telegraph orders will be shipped Express or Parcel Post unless otherwise instructed.

JOHN DEERE TRACTOR COMPANY

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