

## JELBART ROAD ROLLER

AIR ADJUSTER: Immediately after the engine starts, turn on the Adjuster gradually to the position required for best economy and reliability.

The engine should be worked on benzine until sufficient heat is raised in the Vaporiser to permit the kerosene or crude oil to be turned on. Ten minutes or a quarter of an hour from a cold start is usually sufficient. After you become well acquainted with the machine you may find five minutes heating enough.

FUEL OIL: Fuel Oil is a very thick oil, and when first turned on is a bit sluggish in flowing. It is sometimes necessary to assist the flow by using a little priming at the moment of changing over. Don't have both taps turned on at the one time.

Carbon deposits must not be allowed to accumulate in the Vaporiser.

SPEED: The speed of the engine is regulated by the Governor. When the Governor Lever is set at a point which will allow the engine to work, an even speed will be maintained until the alteration of lever by operator. To increase the speed, draw the Governor Lever toward you; to decrease the speed, push the lever from you, that is, when you are standing at the air intake end of the engine.

AIR RESTRICTOR: Almost close air restrictor for starting. It may also be necessary to almost close when first turning on to Fuel oil. After starting, open restrictor gradually until correct adjustment is found to suit load. Adjustment should be about full open when working on full load.

### ENGINE NORMAL SPEEDS:

Hopper-cooled 4 h.p.	..	..	..	..	400-650 r.p.m.
No. 4 - 6 b.h.p.	..	..	..	..	350-550 r.p.m.
No. 6 - 10 b.h.p.	..	..	..	..	300-500 r.p.m.
-----No. 8 - 25 b.h.p.	..	..	..	..	250-500 r.p.m.-----
No.12 - 30 b.h.p.	..	..	..	..	200-400 r.p.m.
No.30 - 50 b.h.p.	..	..	..	..	200-350 r.p.m.

### SUMMARY:

- ( 1 ) Be sure you have plenty of - oil, fuel, and water.
- ( 2 ) Drain carburettor bowl of kerosene or crude oil, and turn on benzine.
- ( 3 ) See that the Governor Foot is in gear. Shut off air Adjustor to one notch.
- ( 4 ) See that the Spark Cable is connected.
- ( 5 ) Be sure that the Plug is sparking right.
- ( 6 ) Prime the engine in Priming Cock, follow up with priming in air intake (after the first explosion). Almost close Air Restrictor.
- ( 7 ) Turn the Fly-wheel until the engine starts.
- ( 8 ) Re-adjust the air Adjustor.
- ( 9 ) When the engine has been working for about ten minutes, turn off the benzine and turn on the kerosene or crude oil.
- (10) Don't have both taps turned on at the same time.
- (11) Draw up the Governor lever if more speed is required.

METHODS OF CORRECTION

SPARK PLUGS: Always keep two or more good heavy duty Spark Plugs. Always have one ready trimmed up while the other is in use.

ADJUSTMENT OF POINTS: The points of a plug should have a space between them of about the thickness of a threepenny piece. The points can be moved together or apart by prising them with a penknife.

CLEANING PLUGS: The points of a plug should be free from water, carbon, oil or dirt of any kind. The inside of the plug should be free from water, carbon or oil. Clean by filling the plug with benzine, scraping it inside with a pen-knife, or a piece of wire, or if the plug is designed for easy dissembling, take it apart and wash it. Scrape the points with a pen-knife and adjust if required.

TESTING THE SPARK PLUGS: Connect cable to plug, hold the body of the plug on some metal part of the engine, keep the cable end of the plug apart from any metal. With the Quick-starter Catch let down, turn the fly-wheel until the magneto trips; at the same time watch the plug points for a spark. If the plug sparks inside, and not on the points, it requires more cleaning, or a new plug.

Don't screw cold spark plug tightly into head when hot.

SPARK CABLE: The Spark Cable should be sound and free from abrasions and oil soakage. The wire inside the insulations must not be exposed anywhere between the terminals. The end attached to the spark plugs should have a brass terminal fitted to it. The end attached to the magneto should be firmly fixed well down in the magneto cable holder. Keep the cable in good order.

MAGNETO: Don't interfere with the magneto except to make the following adjustments, then only when definitely required:-

Tightening Chain...do not allow chain to become too loose. This can be tightened by lifting magneto bracket by loosening set screws and sliding the bracket up on one end where the slot is provided. Turn the engine slowly when making this adjustment to make sure that the chain is not so tight in any one spot as to strain the chain.

Magneto Points...uncover make-and-break of the magneto, by turning back nickel cap if the magneto is a "Dixie" or "splittdorf"; by removing the end cap if the magneto is a "Bosch Z.E.L.: E.I.C.: Thompson-Bennett, or Coventry".

Then examine the points to discover if dirt or oil is sticking to them. If so, scrape with a pen-knife or rub with a very thin ward file or emery cloth to remove the dirt. Be sure you do not leave filings or dust off emery cloth between the points after the operation.

Adjusting Magneto Points...this is seldom required. The space between the points when opened should be .4 of a mm., or the thickness of a playing card.

RE-TIMING WITH CHAIN DRIVE NOT MARKED: Turn the fly-wheel in working direction, and stop when the piston is  $\frac{1}{4}$ in. from being fully extended toward the cylinder head, that is  $\frac{1}{4}$ in. from dead-centre. Loosen the sprocket on the magneto spindle. Turn the magneto spindle till points open, then screw the nut up tight, at the same time being careful not to move any of the parts from their positions.

MARY OF IGNITION TIMING:

- 1 - Place piston in position by turning flywheel.
- 2 - Loosen sprocket on magneto spindle.
- 3 - Turn magneto spindle until points open.
- 4 - Push sprocket on to spindle and screw nut tight.

MAIN AIR VALVE; this valve should open according to engine size:

Hopper-cooled 4 h.p.	..	..	..	..	..	..	..	1/4 in.
No. 4	..	..	..	..	..	..	..	3/8 in.
No. 6	..	..	..	..	..	..	..	7/16 in.
-----No. 8	..	..	..	..	..	..	..	1/2 in.-----
No. 12	..	..	..	..	..	..	..	5/8 in.
No. 30	..	..	..	..	..	..	..	full 1/2 in.

TIMING: This is now fixed. Only in case of flywheel having been removed might it be necessary to adjust. The eccentric inside the flywheel is secured by a bolt through flywheel boss. Turn the engine in working direction, and when the piston is past dead centre at combustion end of cylinder the amount stated in the table below, fix the eccentric so that the point of the Governor Foot is just leaving the rocker groove and the tappett screw is lightly touching the end of valve stem. The valve should be previously adjusted to OPEN the correct amount.

TABLE ABOVE REFERRED TO:-

Hopper-cooled 4 h.p.	..	..	..	..	..	..	..	1/16 - 1/8 in.
No. 4	..	..	..	..	..	..	..	full 3/16 in.
No. 6	..	..	..	..	..	..	..	full 1/4 in.
-----No. 8	..	..	..	..	..	..	..	full 1/4 in.-----
No. 12	..	..	..	..	..	..	..	app. 5/16 in.
No. 30	..	..	..	..	..	..	..	app. 5/16 in.

The Fuel Valve end of the rod has two nuts on it, which can be moved for adjusting the extent of opening given to the valve.

RE-ADJUSTMENT OF VALVE OPENINGS: It is not necessary to make any adjustment before the pin or connections become worn.

GOVERNOR: Adjustment of foot for obtaining sensitive governing...in the foot bracket there is a set-screw upon which rests the governor foot. This is to prevent the point of the foot from dropping below the centre of the groove in the air valve rocker. The correct poise of the foot should be maintained by giving attention to the adjusting screw.

TIMING OF FUEL VALVE: timing is right when the air valve timing is rightly adjusted. This is usually fixed.

FUEL BOWL: The fuel bowl is fitted with a float. If it is necessary to remove the float at any time, unscrew the sets in the top of the bowl, and lift off the top.

CLEANING EXHAUST PORTS: In order to clean exhaust ports, remove silencer, turn fly-wheel till piston uncovers port, and then chip carbon out with point of file or screw-driver. This is not likely to be required before the engine has been in use for 12 months, unless a wrong oil is used.

UNDER HEAD:

end frequently to the nuts that hold the cylinder hot head. A little extra attention on this, if the engine is new, or a new packer has been put into position will prevent the packer from burning or blowing out. Watch all joints carefully until the engine becomes set.

Several spare hot head packers, asbestos cord, and spark plug cables should be kept on hand, as a few spares will prevent trifles becoming troubles.

LUBRICATION: The freedom from cylinder and bearing troubles, long life of the engine and the assurance that it will start the moment it is required depend almost wholly on its correct lubrication. It is for this reason that we have taken particular care to provide efficient lubricating appliances at all vital points. It is, however, necessary that the operator employ only that oil which is specially suited for kerosene or crude oil engines.

In the past we have experimented with a wide range of the cylinder oils on the market, seeking the compound most suited to our engines, and which we could safely recommend. This we found in a cylinder oil sold by the Vacuum Oil Co. for use in kerosene engines. Users will be well advised to be guided by our experience and so avoid any risk of involving costly repairs (besides loss of efficiency) which is liable to arise from the use of unsuitable lubricating oils. Hence the following directions:

CLASSES OF OIL TO BE USED:-

ENGINE - For cylinder and crankcase bearings : Gargoyle Vacme Oil Heavy Medium "X".

For rockers, etc. : Machine Oil, or Gargoyle Vacme Oil Heavy Medium "X".

CYLINDER LUBRICATION: A drop sight-feed lubricator is fitted for the application of cylinder oil and this should be kept filled with Gargoyle Vacme Heavy Medium "X". The rate of feed should be adjusted to give 40 drops per minute. Ball check valves are fitted at the engine end of the lubricating oil lead to prevent the compressed air or gasses in the cylinder from forcing oil back into the lubricator. These valves should be kept free from any obstructing impurities so that they will operate freely.

ECCENTRIC, ROCKERS, TUG ROD AND GOVERNOR: These parts should be oiled daily at the places provided with Gargoyle Vacme Oil Heavy Medium "X".

MAGNETO: A few drops of clean cylinder oil or separator oil should be applied to the bearings about once every month or so. Particular care must be taken to ensure that this part is not over oiled.

LUBRICATION OF JELBART PORTABLE AND STATIONARY ENGINE:

CENTRAL BEARINGS: An oil plug is fitted in the top of the crank case and this should be removed and about a wine glass full of Gargoyle Vacme Oil Heavy Medium "X" poured in twice per day. See that big end of connecting rod is directly under hole.

CRANKSHAFT BEARINGS: The plug should be removed twice daily and Gargoyle Vacme Oil Heavy Medium "X" applied from an oil can.