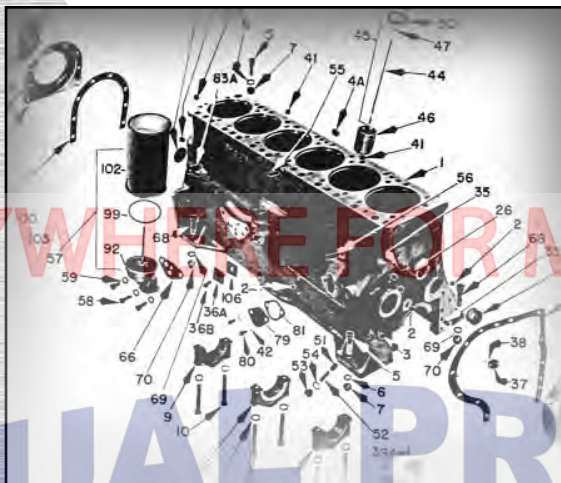




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MANUAL PREVIEW

Reid

Parts Manual

6 To 40 HP

Type A Gas
Engines

Parts Manual

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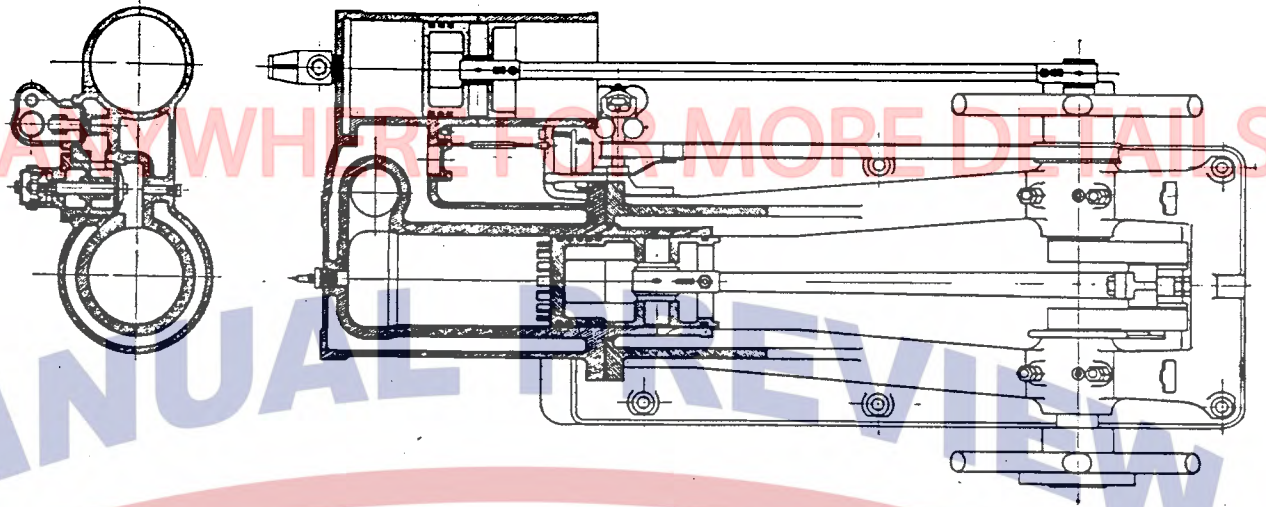
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DESCRIPTION OF REID TYPE A TWO CYCLE GAS ENGINES



Sectional View
Diagram No. 1

The Type A Two Cycle Gas Engine has been used successfully in the oil fields for over thirty-four years. This type engine has an auxiliary air cylinder which provides a clean charge of fuel each revolution, thus securing both flexibility and economy for the engine. The main and air cylinders are cast in one piece.

Reference to the Sectional view (Dia. 1) will show the simplicity of their operation. The charging piston, moving forward, draws in through a cylindrical valve a properly proportioned charge of air and gas. A check valve prevents this charge from pressing back on the main stroke. When the charging piston is on its return stroke, the main piston is on its forward stroke, and, near the end of the stroke, uncovers the exhaust ports, releasing the then spent gasses. The pressure in the main cylinder being thus relieved, the pressure of the incoming charge, which has been compressed by the charging piston, opens the main valve and the remainder of the exhaust gas is forced out through the ports before they are covered by the main piston on its return stroke. This action results in securing a clean mixture and perfect combustion. When the charging piston has completed its return stroke and the charge has been delivered to the main cylinder, the pressure holding the main valve open is removed and the spring (shown in the end elevation on the extension of the valve stem) draws the valve to its seat, the smaller plunger on the end of the valve stem preventing the forcible seating of the valve by the compression in the main cylinder. Wearing of the valve face and seat is thus prevented. The action of the valve can be inspected while the engine is running by removing the cap. After the main valve has closed, the return movement of the main piston compresses the charge and forces the combustible mix-

two-thirds of a revolution, which will produce the compression necessary to cause ignition of a mixture of right proportions of gas and air. Bring the wheel back with a jerk, so it can be let go of before the explosion occurs.

Gas Required:

It is necessary to turn on more gas as soon as an impulse is obtained. If too much gas has been turned on to start, the contents of the cylinder must be forced out by repeating the starting motion with gas turned off. Never get up entirely on the wheel.

Water and Oil:

Turn on sufficient water to keep the engine at the proper temperature. Adjust lubricators to feed properly, and run the engine some time without a load, to determine if any bearings heat. If they do, the cause must be found and the trouble remedied before throwing in the load. If everything has been properly inspected and found in good order, throw in the clutch carefully and steadily.

REGULATING REID GAS ENGINES

Regulating Valve Adjustments:

The adjustment of the regulating valves and governor of each engine when shipped is made for load at normal speed with Oil City gas. If regulations of the gas supply at the gas-cock will not give satisfactory results when the clutch is thrown in, a new adjustment may be required for the load. First try to get regulation desired with the gas-cock. Do not try to run with it wide open.

For additional information see directions for setting governor valves on pages 12 and 13.

Additional Power:

If more power is needed, loosen the thumb-screw on the adjuster and increase the openings of the regulating valves by lengthening the adjuster trying different adjustments of the gas-cock for each slight change of the adjuster until the impulses are regular at the desired speed with the full load. Then set the tension of the governor springs so that the governor balls will spread if the speed increases.

Curtailing Power:

If less power is required and reducing the supply of gas at the gas-cock makes the action irregular, decrease the openings of the regulating valves by shortening the adjuster a little and try each adjustment carefully with different quantities of gas. Be sure that the igniter tube, if used, is properly heated while adjusting.

Gas Variations:

If the quality of the gas supplied is poor or the pressure too light, it may be desirable to close the air regulating valve a very little, while, if the

gas is richer than ordinary natural gas, a slightly larger opening for air may be required. The gas regulating valve is set to close slightly in advance of the air regulating valve, and when so adjusted, the proper opening for starting may be secured by turning the adjuster until a hook of wire, flattened to a sixteenth of an inch in thickness, can be inserted in opening of air regulating valve. This is explained fully below.

Governor Adjustments for Speed:

Test the action of the governor by holding the balls slightly open, which should decrease the speed of the engine. If it does not do so, the faulty adjustment must be corrected by shortening the adjuster and adjusting the supply of gas at the gas-cock until proper motion is obtained. By pressing hard against the governor pulley, the governor can be stopped and the capscrew on the end that controls the tension of the governor springs adjusted for proper speed without stopping the engine.

It is best to have a slight excess of air in order to secure clean combustion.

Governor Spring Breakage:

Undue breakage of governor springs and spring clips usually occurs on engines which are on beam wells, operating very slowly for most of the time, but having the air and gas valves set for a higher speed such as required for pulling rods or tubing. With this setting of the air and gas valves, it is necessary to have very low spring tension on the governor balls in order to secure steady running. Being under low tension, the governor balls move violently with the quick fluctuation in speed when the beam goes over the top, and cause spring breakage. The remedy is to close up the turnbuckle on the gas and air valves so the governor balls will not come to a violent stop when the speed fluctuates.

SETTING GOVERNOR VALVES ON REID GAS ENGINES

To set the governor valves on Reid Engines proceed as follows: Examine the stem of the air valve. A small nick will be found in it. This nick should be one inch from the head that screws on the air valve stem and should stand up. If it is not in the proper position it should be so placed, the one inch being measured at the joint between the head and the lock nut. The nick being placed in the proper position, a piece of wire should be secured and a right angle bend made in it one-half inch from the end. This end of the wire should be about 1-16 inch thick. (If the wire is too large it can be flattened down to the correct size). The wire should be long enough to allow its being pushed into the air opening so the point will drop into the port. If an air pipe is used, it must be removed while doing this work. Reference to Diagram No. 3 on Page 11 will aid in making this adjustment.

Loosen the wing screw on the adjuster and by turning the adjusting nut, move the adjuster so the valve will close up until it touches the wire which has been inserted previously in the port. The adjusting nut should then be turned back slightly until the wire can be moved not more than 1-16 of an inch backward and forward. This makes the total opening of the air valve $\frac{1}{8}$ inch. Lock the valve in this position by tightening up the wing