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MANUAL PREVIEW

Fairbanks-Morse

Service Manual

**N Horizontal Gasoline
Engines**

Service Manual

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FM-S-N

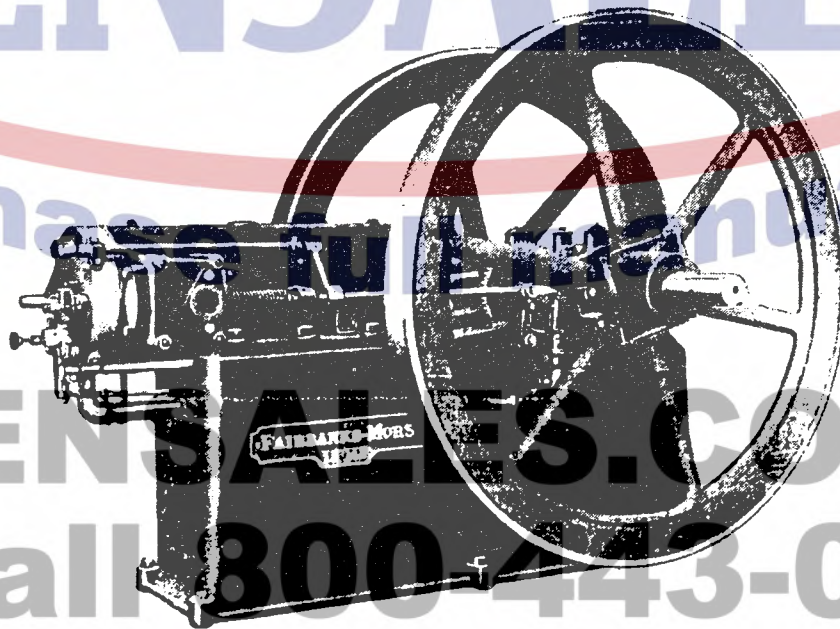
INSTRUCTIONS No. 2099K

FOR SETTING UP AND OPERATING

Fairbanks-Morse

Type "N" Horizontal Gasoline Engines
with Hit-and-Miss Governor

This book should be carefully read before
attempting to do anything with the engine



Fairbanks-Morse Standard Horizontal Engine (Fig. 1058G)

FAIRBANKS, MORSE & CO.
(INCORPORATED)

INSTRUCTIONS No. 2099K

For Setting Up and Operating Fairbanks-Morse Type "N" Horizontal Gasoline Engines

The Fairbanks-Morse Horizontal Gasoline Engine runs in the direction of arrow shown over fly wheel, on page 3. The end with crankshaft is the front of engine. In locating the engine, at least two feet of space should be left between the side of the engine having the starter pump and the wall; this for convenience in starting. A like amount of space must also be left between back end of engine and any wall, leaving sufficient room to get around the valves and connections.

Leave
Space

Have a thin bed of cement and fine sand to finish top of foundation, set the engine on its foundation, as per foundation plan, draw down bolts, keeping engine level.

Foundation

See that all pipes which are to be used have been carefully washed out, to remove all scale and foreign matter. All openings and attachments are tagged with directions how to connect and operate. Be careful to follow directions on each tag.

Read
All Tags

Water Tanks. (See below.)

The opening for water inlet pipe is in lower part of exhaust valve chamber. If cooling tank is used, the pipe (2) connecting this opening with opening near bottom of tank should be full size of this opening, and connected as shown. The water outlet pipe (3) is on top side of cylinder. If tank is used, connect this with upper opening in tank. Flexible couplings (9) are furnished and should be used in pipes (2) and (3). When tank used is of our standard dimensions, the temperature will regulate itself under ordinary conditions. If conditions should be such that all water in tank is heated above 180 degrees, the temperature should be lowered by adding cold water to tank. Tank should not be covered, as water should have exposure to atmosphere, and so arranged that the water can be drained from cylinder and connecting pipes, to prevent freezing and bursting in cold weather. Be sure to leave open end of pipe (5) over cylinder high enough to be above water in tank. In operation, the water must always be above the upper pipe in the tank, otherwise the water cannot circulate.

Full Size
Pipe

Freezing

To obviate the necessity of draining tank entirely in freezing weather when engine is shut down, the valves (6) and (7) may be placed inside the cooling tank.

Inside Valve

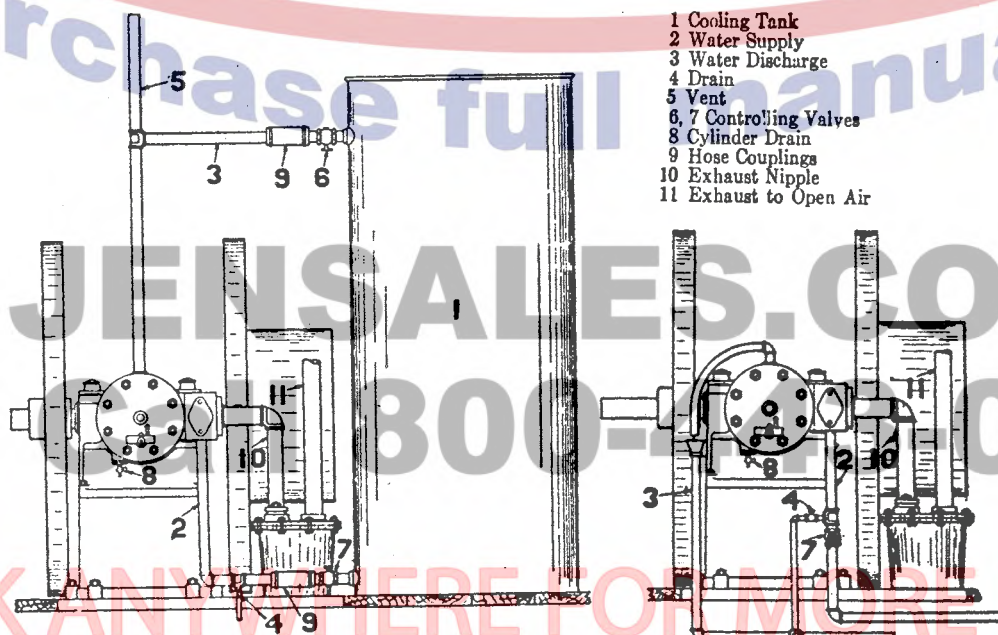


Chart 660GN1

Showing Water Connections Using Cooling Tank.

Chart 659GN1

Showing Water Connections Using Running Water.

This requires special nipples with sufficiently long thread to extend through bushing in tanks and allow two or three inches of water between valve and tank. These valves are then operated by key rod from top of tank. Special fittings are required for this arrangement.

Instructions—Fairbanks-Morse Engines

3
2099K

The fuel pump (E) of the horizontal engine is on the side of the engine, near the top of base, and the opening where the inlet or suction pipe should be connected is carefully tagged. To the bottom of pump is connected the suction pipe from fuel supply tank. The purpose of the valve on the fuel tank is to restrict the supply of fuel slightly, if the pump should deliver too freely to the reservoir. From the pump the fuel is delivered to the small reservoir (P) on the cylinder head, and the larger pipe leading from the bottom of this reservoir is the overflow or return pipe for fuel. This pipe projects upward and above the bottom of the reservoir inside, and **MUST NEVER BE DISTURBED**, as it holds the fuel at the proper height in the reservoir.

Fuel
Piping

Engine is shipped with the union attached to the lower end of this pipe, and to this union connect return pipe and carry down to floor or through floor as required and back to fuel tank with a gradual descent, to assist free flow of surplus fuel back to tank.

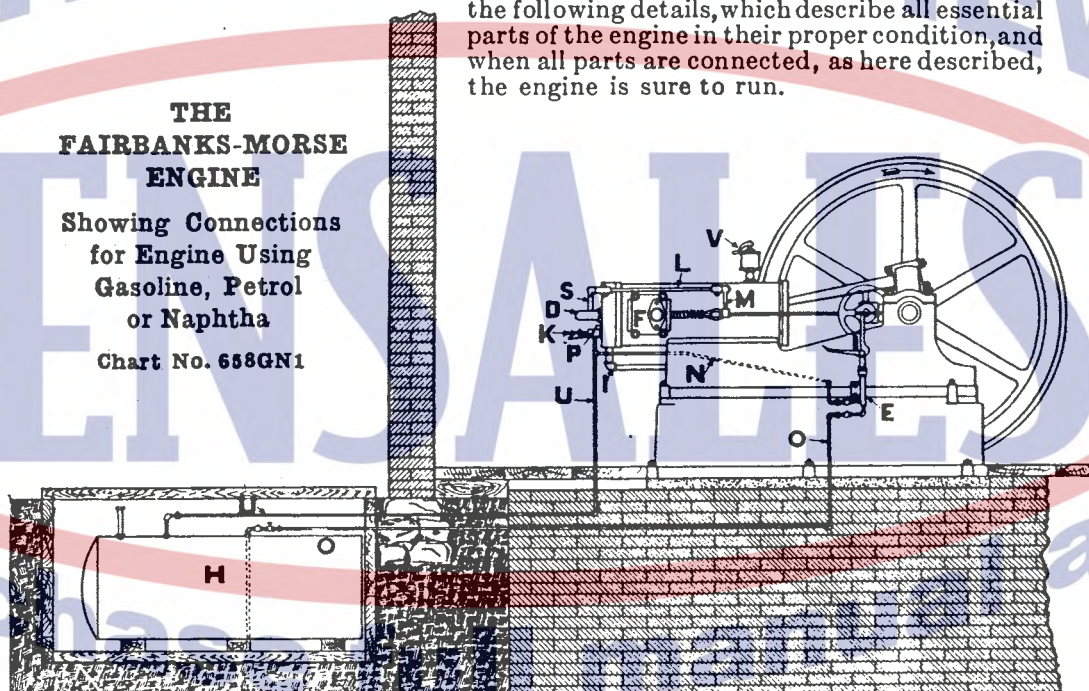
Avoid
Traps
in Pipe

Having all piping connected, it will be well to make yourself familiar with the following details, which describe all essential parts of the engine in their proper condition, and when all parts are connected, as here described, the engine is sure to run.

THE FAIRBANKS-MORSE ENGINE

Showing Connections
for Engine Using
Gasoline, Petrol
or Naphtha

Chart No. 658GN1



Description and Instruction as to the Action and Care of Parts of the Engine.

Fuel Inlet or Suction Valve (OD). (See page 8.)

This is an ordinary check valve, automatic in its action, and has a lift of about three-eighths of an inch. The lift is limited by means of a spring (OE) on the stem of the valve, and a cotter pin through the nut (CQ) on stem. Should this pin ever need renewing, care must be taken that the new pin is no longer than the original one, for if longer the ends will strike the side wall of shield (RG) and the working of the valve will be interfered with. The collar nut (RH) must be so set as to hold valve closed when the catch (CU) is down, as is the case when the engine is governing. Nut (CQ) should be set hard against collar nut (RH). Should the engine at any time, on starting, turn too easy, or have lost the usual compression, it is evident that a leak is taking place and this valve should be examined; it may not seat perfectly. This valve can be examined by taking out the screws and removing the shield. This will expose valve stem, when by working this valve you can tell whether it works free, and, by means of a wrench on the stem, the valve may be revolved backward and forward, in this way cleaning the seat. On again putting the parts together, care must be taken that they are not twisted, and that they do not bind the valve stem. Look at this very carefully; also see that the steel blade catch works free and locks valve, preventing all movement when the exhaust is held open. This valve lock is used for the purpose of preventing the waste of fuel by allowing it to enter the cylinder while the exhaust valve is open.

Cotter Pin

Lost
Compression

Valve
Lock

Exhaust Valve (NC).

This valve is constructed same as the inlet valve; also lies in a horizontal position, with the stem extending through the casing, with a spring over the stem

Exhaust
Valve

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Parts List for Fairbanks-Morse Type "N" Horizontal Gasoline Engines with Hit and Miss Governor