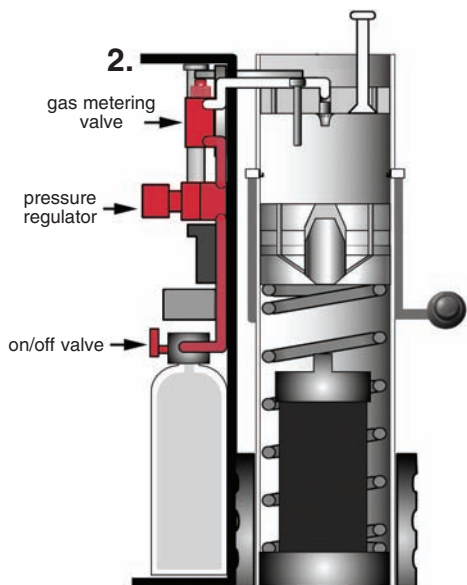
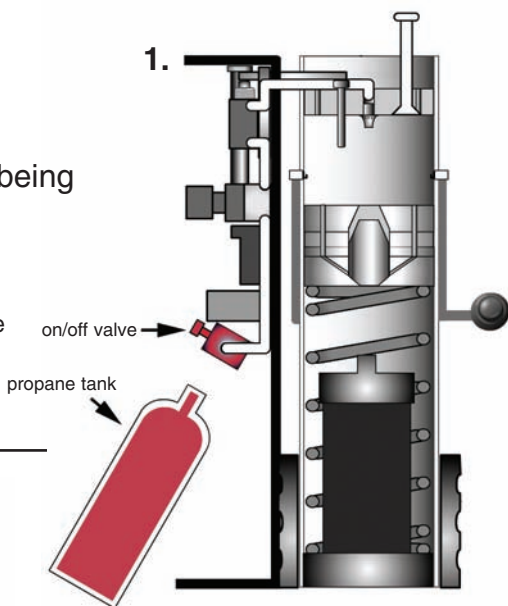


How The Propane Hammer Works

We have highlighted the areas being discussed in each step.

1. Tank installation:

Propane gas fuels the hammer. When the propane tank is connected propane gas will flow to the on/off valve.

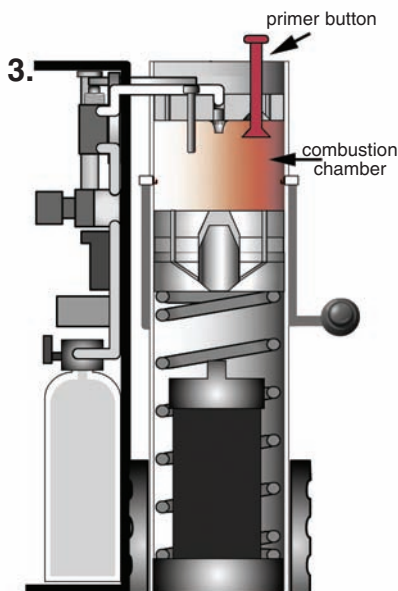


2. Pressure regulator:

Once the on/off valve has been turned to the on position (pointing up), gas flows to the pressure regulator. The pressure regulator is adjustable to help the hammer fire consistently in different climates and at different altitudes. After being regulated, propane flows into the gas metering valve.

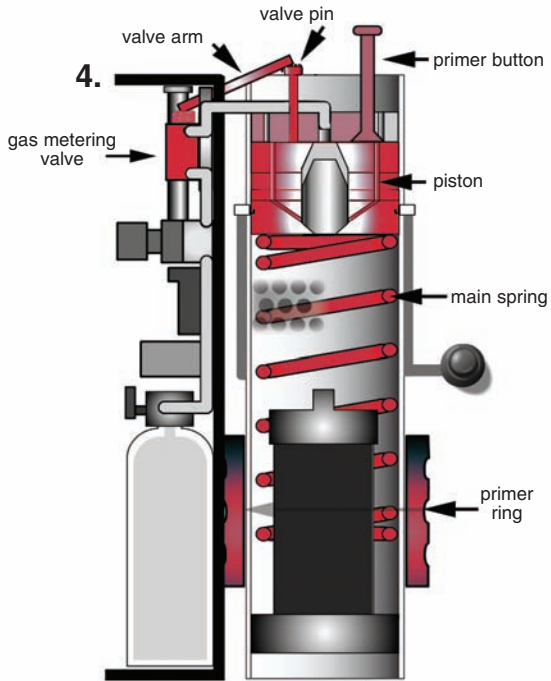
3. Opening the primer valve:

When the primer button is depressed a valve inside the head is opened, exposing the combustion chamber to the atmosphere. This allows the combustion chamber to be exhausted during the priming cycle.



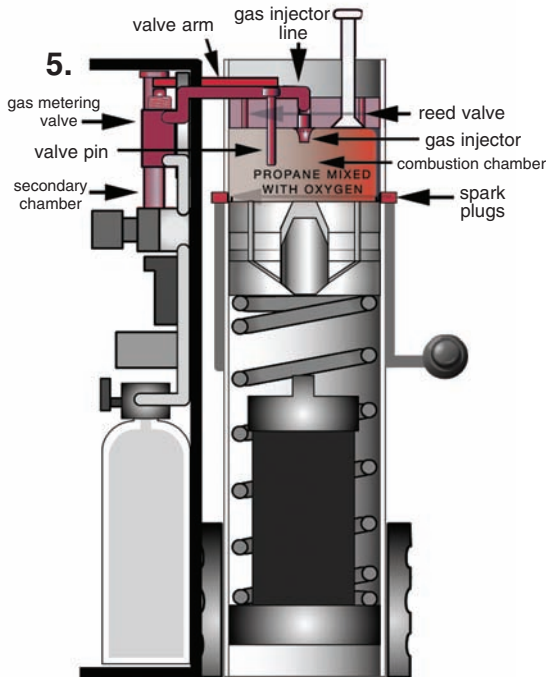
4. Priming the hammer:

In order to prime the hammer, the priming ring must be raised until it stops and is then returned to its starting position. This cycle will raise the piston to the top of the combustion chamber until it comes into contact with the cylinder head. When the piston reaches the top, the primer button will be closed and the gas metering valve will be activated. This will start the process for the new gas air mixture during the intake stroke.



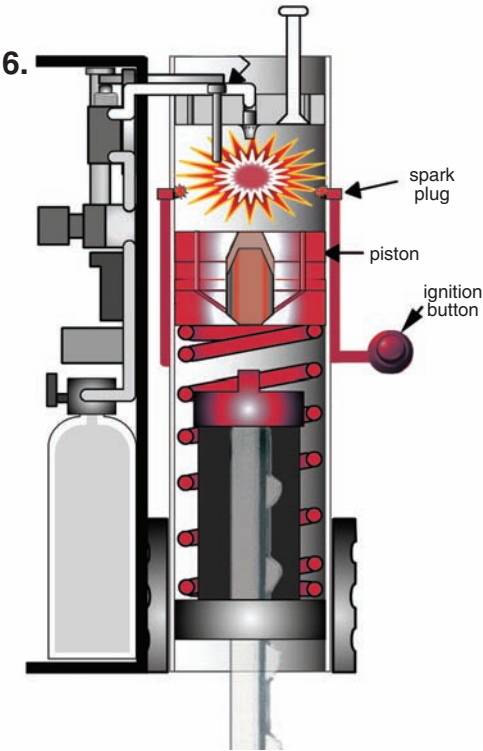
5. Intake stroke:

During the intake stroke, gas and air are mixed into the combustion chamber. Before the piston reaches the top on the priming stroke, it comes into contact with the valve pin that activates the gas metering valve. When the gas metering valve is activated a secondary chamber is filled with a volume of propane gas. When the piston starts downward on the intake stroke, fresh air is drawn into the combustion through a reed valve in the cylinder head. Once the piston reaches a set distance from the cylinder head, the gas valve pin is released and propane is injected into the combustion chamber through the gas injector. During the rest of the downward stroke, air is drawn in through the reed valve and continues to mix with the propane in the combustion chamber until the spark plugs are exposed.



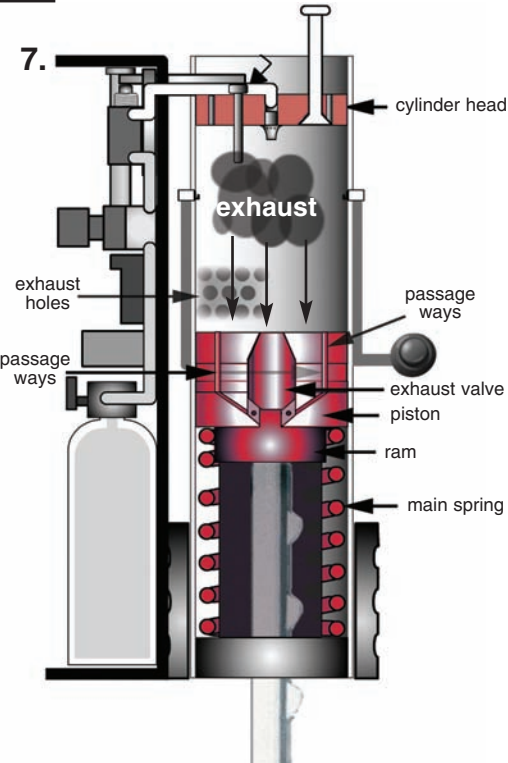
6. Igniting the gas mixture:

The propane hammer runs on a manual direct ignition system (igniter). After the spark plugs have been exposed to the combustion chamber on the intake stroke the igniter button can be held to initiate the spark. The ignition circuit will spark as long as the button is depressed. (For automatic mode, continue to hold the ignition button down.) The spark ignites the gas air mixture and forces the piston down compressing the main spring until th piston comes into contact with the ram and opens the exhaust valve.



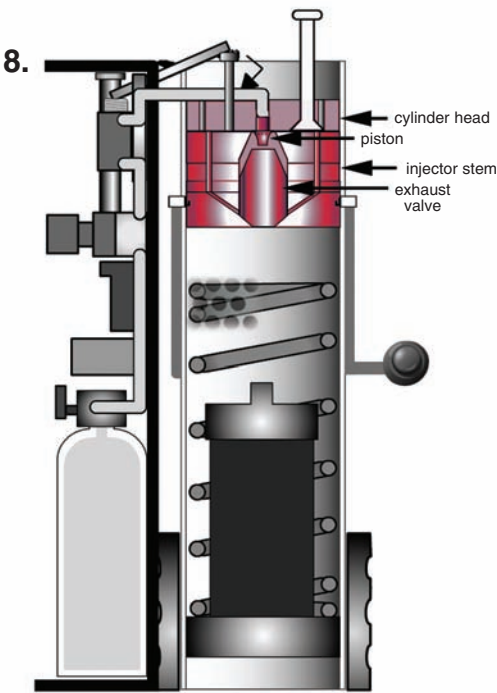
7. Exhaust Stroke:

When the piston comes into contact with the ram, the combustion pressure vents to the atmosphere through holes in the cylinder, the ram forces the object to be driven downward and opens an exhaust valve in the piston. The exhaust valve opens passage ways in the piston. The passage ways allow the remaining exhaust to flow through, while the spring returns the piston to the cylinder head. This removes the remaining exhaust from the combustion chamber, closing the piston valve.



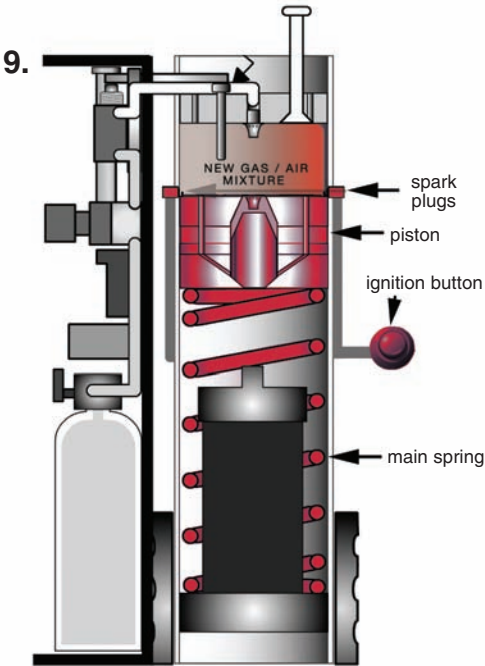
8. Closing the piston valve:

The exhaust valve in the piston is closed when it comes into contact with the injector stem on the cylinder head. At this point, all of the combusted gas has been exhausted through the center of the piston and gravity starts the intake stroke again.



9. Automatic cycling:

If the ignition button remains depressed, gravity returns the piston to the firing position and exposes the spark plugs to the new gas/air mixture. The sparking plugs ignite the new mixture, driving the piston down into the ram and starting the cycle over.



If you have any questions on this product, please call:
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