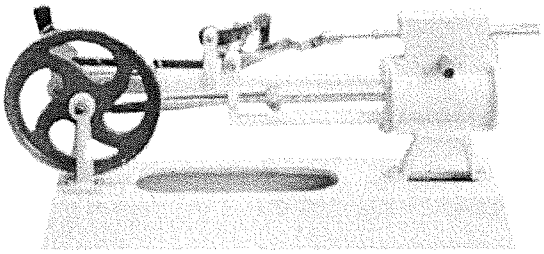
INSTRUCTION MANUAL

MODEL OF STEAM ENGINE



INCLUDED:

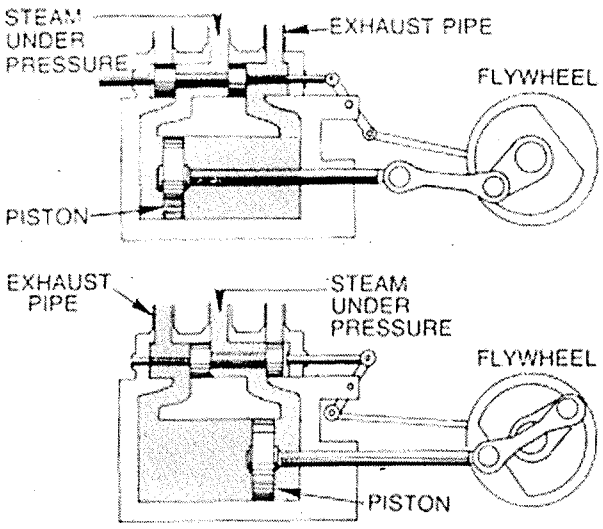
1. STEAM ENGINE EXTERNAL
2. INSTRUCTIONS

INTRODUCTION:

The steam engine has been a real breakthrough in the history of a human kind. It presented a beginning of industry development even if the first steam engine was made in the 1st century AD.

A steam engine is a heat engine that performs mechanical work using steam as its working fluid. Steam engines are external combustion engines where the working fluid is separate from the combustion products. Non-combustion heat sources such as solar power, nuclear power or geothermal energy may be used. Water turns to steam in a boiler and reaches a high pressure. When expanded through pistons or turbines, mechanical work is done. The reduced-pressure steam is then condensed, and it is pumped back into the boiler. The ideal thermodynamic cycle used to analyze this process is called the Rankine cycle. Some practical steam engines discard the low-pressure steam instead of condensing it for reuse.

MAIN PARTS OF THE ENGINE:



WORKING:

When the hot and compressed steam is introduced into a cylinder with movable pistons, it expands and exerts a push on the pistons. As a result, the piston moves forward.

When the steam condenses to water due to loss of heat energy, it causes the piston to fall back to its original position. Therefore, the pistons can be made to move forward and backward repeatedly by introducing fresh stream and taking out the cooked steam. The motion of the piston can be used to turn the wheels of an engine.

When the piston moves out then the piston rod pushes the crankshaft. The crankshaft then rotates the wheel. In this way heat energy is converted into mechanical energy.