DEVELOPMENT OF WOOD GASIFIER

(PROTOTYPE) USING TIMBER WOOD AS FUEL

GURUDUTT SAHNI[1], TAJINDER SINGH[2] & JASPREET SINGH[3]

[1]HOD & DGM, Department of Design, Drawing & Development, Leader Valves Ltd Jalandhar, Punjab, India

& C Eng (Institution of Engineers India) & QMS Lead Auditor

[2]Research Scholar, Department of Mechanical Engineer, Dav Institute of Engineers &

Technology, Jalandhar, Punjab, India

[3]Research Scholar, Department of Mechanical Engineer, Dav Institute of Engineers &

Technology, Jalandhar, Punjab, India

ABSTRACT

The energy is the major concern in every engine which made it affordable and fit for commercial exploitation but every engine has difficulties in attaining efficiency level due to many reasons includes input cost, output power in comparison to input cost, etc. A wood gasifier is a gasification unit which converts timber or charcoal into wood gas, a syngas consisting of carbon monoxide, hydrogen, traces of methane, and other gases, which after cooling and filtering can then be used to power an internal combustion engine or for other purposes.

Objective

After the double fuel crises of 1973 and 1979, the harmful effect of high and rising oil prices on the economies and development efforts of oil-importing developing countries have become apparent. There has, as a result been increased interest in indigenous, renewable energy sources, of which biomass in the form of wood or agricultural residues are the most readily available in many developing countries. Experience from the Second World War shows, however, that properly designed wood gasifiers, operated within their design range and using fuels within the fuel specifications (which may differ between designs), can provide a sufficiently tar free gas for trouble-free operation. One of the objectives of this project is to make decision makers more aware of the possibilities of using wood gasification as a substitute for gasoline and diesel oil, without unreasonable increase of the demand on the natural resource.

KEYWORDS: Timber Wood, Gasifier