

A Novel Approach of Waterjet Technology is interfaced along Piston Progression

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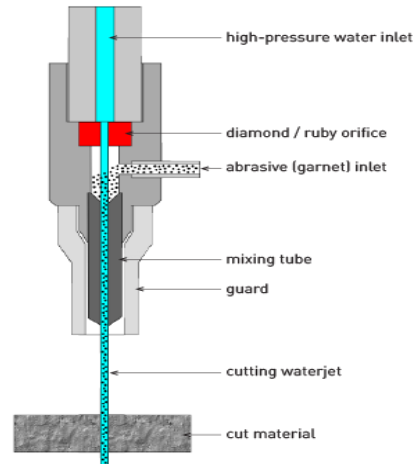
Abstract

The waterjet technology is used for the cutting purposes in the various sectors such as material applications for example metal & composite cutting and industrial applications essentially in the aerospace, robotics, defence and automotive region. Whereas this waterjet technology is mainly utilized for cutting purposes but in this paper we interfaced the technology to the piston progression movement by reducing the pressure of the waterjet and made to move the crankshaft of the engine and this will be efficient than the fuel sparking movement and the source is water which is renewable.

Keywords — Waterjet technology, aerospace, robotics, automotive.

I. INTRODUCTION

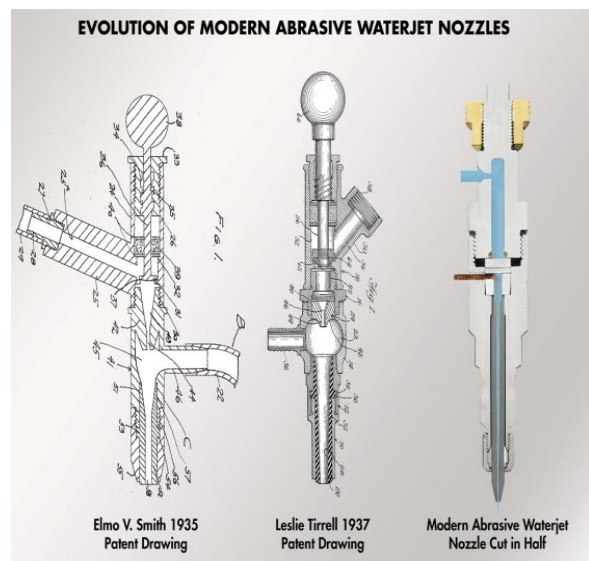
Waterjet technology is one of the major advanced cutting tool where the pressure of the system is made to raise high in nature for cutting instead of that our approach is made to reduce the pressure of the waterjet in order to modify the waterjet compressor to move the crankshaft of the piston this is the new technical approach of different way. By applying this technique the fuel energy of the engine is reduced and pollution is also controlled and simple mechanism is designed. Usually the waterjet works with the high pressure of water inlet is taken and this high pressure water is moved to the ruby/diamond orifice and then the abrasive garnet is added with the water and further it is mixed and made the water into cutting waterjet and further it will cut the materials. So in the case we reduce the pressure as well as abrasive components so there will be occasionally cutting to movement.



Waterjet Model

II. CONSTRUCTION

The construction of the system states the interface of waterjet with the piston is the new objective of the system. Where this model is going to be the proposed model and a new approach as well as it states that the intensifier pump is the initial stage of the waterjet and a nozzle is kept in the lower layer of the pump which is a stone cauterized and finally mixing tube is mix the water with the abrasive material.



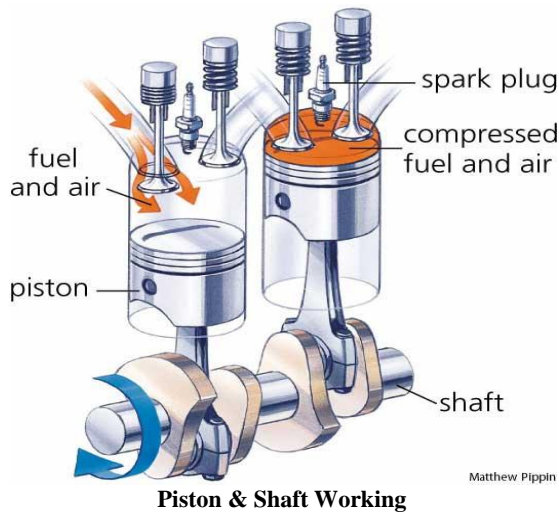
Evolutions

Where this construction is mainly focuses the cutting, concrete deck removal and paint removal & rivet removal. But in the purposed construction the non affect able abrasive are going to be used and also the pressure of the pump is also reduced according to this situation frequently the jet does not cut any part and made to move the crankshaft periodically this is the intention of the system.

III. WORKING

Working of waterjet mainly depends on the three main categories such that high pressure, abrasive mixer and waterjet control hence here in this case all power of the working conditions are going to be controlled just by reducing the capacity of the waterjet. While it is made to move the crankshaft of the piston progression it would get successful because moving the piston can be easily approached. As the result it will be the finalized working principle.

As in the normal piston system consists of spark plug which intake the fuel is ignition and further it is compressed after it would be exhausted through the outlet chamber and the piston becomes to move periodically but in our cases the water inlet will comes with high pressure and make the piston to move instead of cutting the materials inside the engine as while the crankshaft also gets operated as the source is water it is collected and also used as renewable sources.



IV. EXPERIMENTAL RESULTS

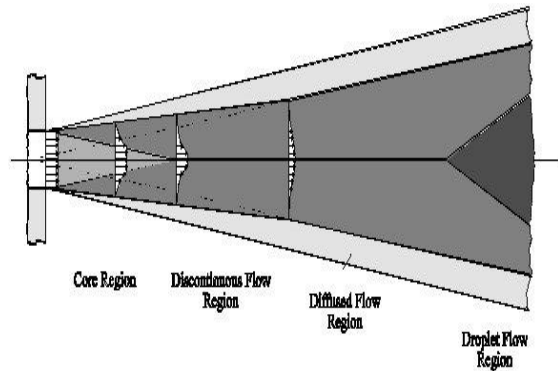
The experimental result of the system states that the intake of the fuel is modified into the water intake and the piston will be able to move without the ignition so there will be enamous energy is obtained and the piston will able to move accordingly in a position. So this would occur with some of the medium pressure and less abrasive garnet and it should make with non affect able particles.

Thus there will be the effective output will be shown by moving of the crankshaft and piston

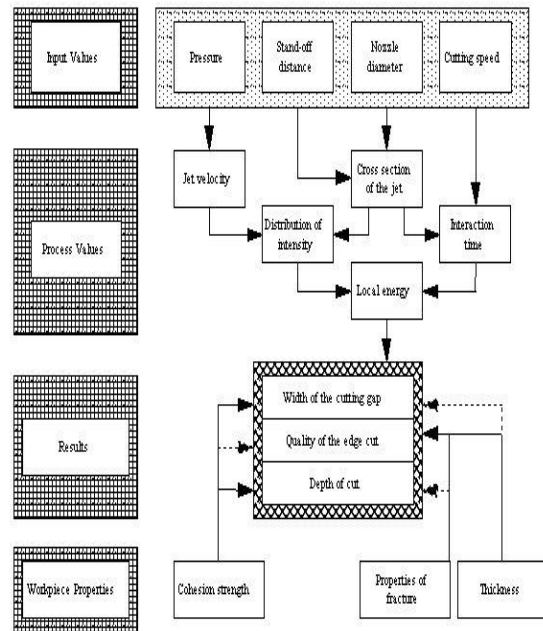
continuously and the important thing is to make the control the waterjet with the fulfil manner. This technique is possible at the any kind of the vehicle formation and main aim of this experiment is to reduce the pollution and the advantage of the paper is water as it is the renewable resources.

Velocity of the Jet

$$v_{th} = \sqrt{\frac{2p}{\rho}}$$



Operation of Waterjet



Connecting Parameters of Waterjet

V. CONCLUSION

Thus the waterjet technology is interfaced with the piston progression working and construction is discussed. The main aim of this model is to mingle the piston movement is achieved by the waterjet technology. So there will be less polluted from the vehicle is occurred and the water is renewable sources to the environment.

Future Works

The future works of the system is to reduce the cost of the waterjet technology and to produce the low cost system than the other system and to be eco-friendly product.

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