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Study on Variable Flow using 4 – Stroke Petrol Pump

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ABSTRACT: Waste water treatment process need to treat the contaminates in source of water treated by facility. To make a detailed study on variable flow of water using 4 – stroke petrol pump. Ordinary raw water causes some problems in obtaining drinking water to be treated. The equipment used pressure gauge, flow regulator, stopwatch. In the water treatment process the pressure is varied by flow regulator and efficiency of engine is tested. The time taken for filling 1 litre water by engine is varying with respect to run time.

KEYWORDS: Engine efficiency test, 2D diagram, Graph, result.

I. INTRODUCTION

The investigation on the existing 4-stroke petrol pump reviews the following drawbacks such as high operating cost (petrol). Improvement of water treatment process. EC (Electrical conductivity) around 0 to 20 Ms/cm. The variable flow measurements will be observed

II. ENGINE EFFICIENCY TEST

The 4 – stroke petrol pump is tested at various pressure with help of flow control valve for a run time of 30 min and 1 hour. Finally, the efficiency of engine is tested by time taken to fill 1 litre water. Readings are noted & graph is plotted.

TABULATION

TABLE 1: 1ST SET OF READINGS AT 30 MIN RUN TIME OF ENGINE

SNO	PRESSURE (BAR)	LPH	TIME (SEC)
1	10	283	12.72
2	12.5	322	11.15
3	15	378	9.51
4	17.5	426	8.44
5	20	451	7.98

TABLE 2: 2ND SET OF READINGS AT 1 HOUR RUN TIME OF ENGINE

SNO	PRESSURE (BAR)	TDS	PH	TIME (SEC)
1	10	627	15	12.72
2	12.5	604	14	11.15
3	15	581	13	9.51
4	17.5	558	12	8.44
5	20	538	11	7.98



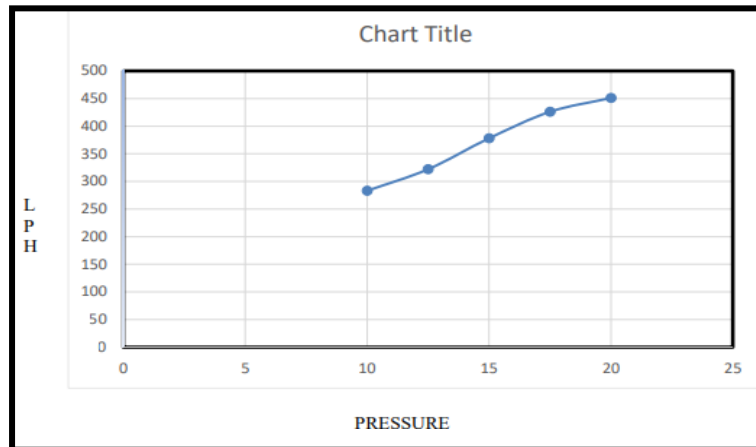
TOOLS

- 4 – stroke petrol pump
- Pressure gauge
- TDS meter
- Flow control valve
- Stop watch

III. METHODOLOGY

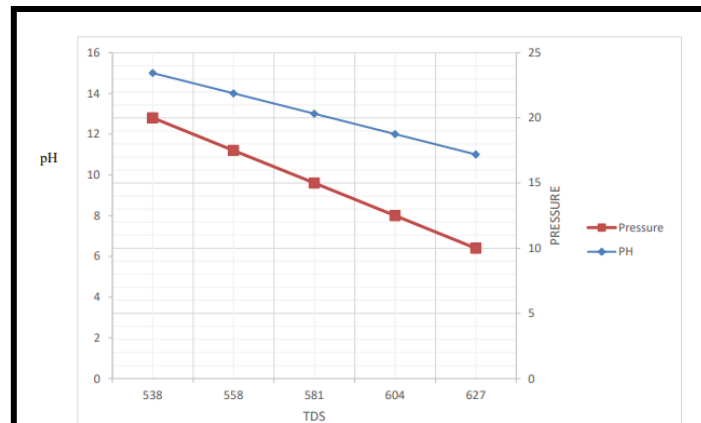
Frist the 4 – petrol pump inlet has been connected to the raw water tank with help of the hose is connected with the water filter and dipped into the raw water tank Outlet is connected with 20 bar pressure gauge and flow regulator is fixed to vary the flow to reduce the TDS of water Engine is started and starts run for 1 hour , pressure is varied by flow regulator The efficiency of the engine is test with filling the 1 litre cane and timing is noted The time taken to fill the 1 litre is taken at an interval of 30 min and 1 hour. Finally concluded the efficiency of the engine is varying and the EC(electrical conductivity) also decreases

**GRAPH
FIGURE 1:**

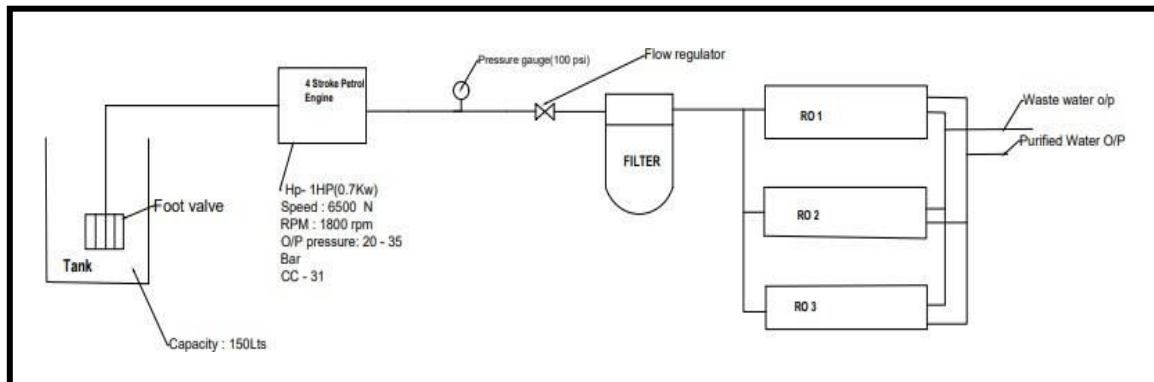


(a)PRESSURE VS LPH

FIGURE 2:



(b)PH VS TDS



(C) 2D DIAGRAM

IV. EXPERIMENTAL RESULTS

Frist the water is sucked from the tank by using 4 – stroke petrol pump and the output flow is regulated by flow control valve and the engine is run for 30 min. the reading is calculated by filling a 1litre water and the time taken is noted by using stop watch. Again, the engine is runned for 1 hour now mages show the results of work

V. CONCLUSION

On the analysis and experimental study, it has been found that 4 - stroke petrol pump efficiency is varying with respect to pressure. Hence it has been concluded that the time and EC (electrical conductivity) varies with respect to the run time of the engine.

Table 1 is the reading taken at 30 min run time of pump and the result is concluded in graph (a), the LPH increases as per the pressure increases. Table 2 is the reading taken at 1 hour run time of pump and the result is concluded that in graph (b) the PH and also the TDS varies with respect to the run time of the engine. Figure (c) represent the 2d diagram of our experimental setup.

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