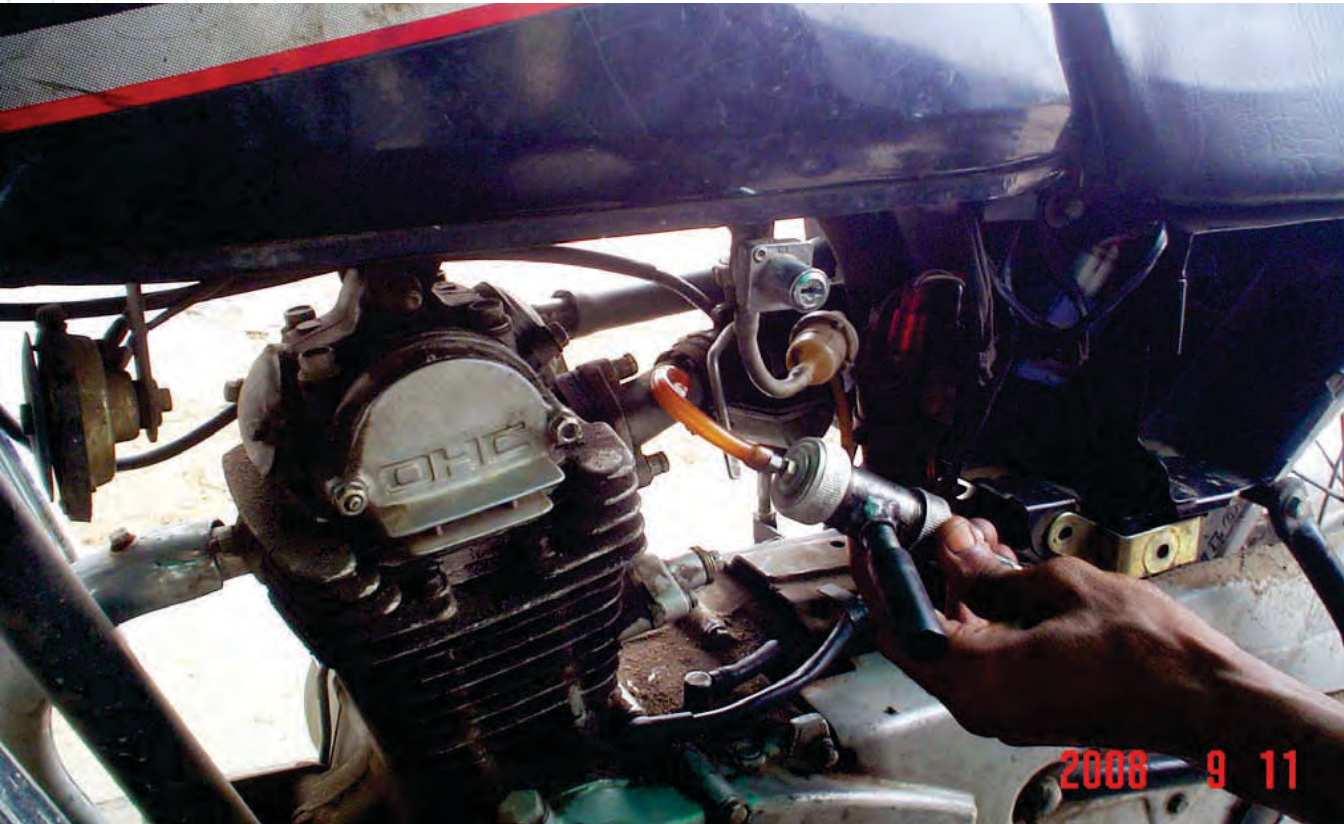


Hari Narayan Prajapat

Rajasthan

Hari Narayan (38), an automobile mechanic, has developed a small kit comprising a piston and calibrated nozzle, which can be fitted in the fuel line between the carburetor and the entry to the cylinder head. The attachment introduces additional air before the charge (mixture of air and atomized fuel) is compressed. This results in increased combustion efficiency and thereby the mileage of vehicle. It has been tried in four stroke engines.





Kit to increase mileage in vehicles

National Third Award – Transport, Scout: GIAN North, Jaipur

Son of a mason, Hari Narayan took liking to machines as a child. He liked them so much that he used to work in a garage along with studies to know more about vehicles. Dropping out of school after class eight, he started doing petty tasks mainly related to automobile repair. Later he opened his own workshop where he now repairs two wheelers. He lives with his family comprising his wife, four daughters and son. His younger brother, who is studying, also stays with him.

While working in his repairing shop, he came across so many people who had problems with the fuel efficiency of their vehicles and asked him if there a solution. He slowly began to think in this direction and conceived an idea to develop a motorcycle that would work on compressed air. Starting in 2005, he spent many years, making prototypes and trying the unsuccessfully. However, he tasted success after many failed attempts. His compressed air vehicle had an air tank where compressed air was stored. This was used to drive the motor cycle for which certain changes in the engine were also done. This was not too successful though proved the concept. He was felicitated along with other grassroots innovators, who had developed similar compressed air engines, during

the NIF's Fifth National Biennial Award Function in 2009. He also displayed his innovation at the Innovations' Exhibition at the President House in 2010. There after he did not do much in this regard as had to attend to certain family obligations.

The petrol prices kept on increasing and he kept on thinking what he could do next. He realised that if he could do something, which would not require any change in the vehicle except some minor modification or attachment, it would be of great help to the people. He worked on the idea and developed a kit, which could be easily attached to the fuel line of the vehicle.

The kit for improving mileage

This kit is an easily attachable device for 4 stroke engines, fitted in the inlet manifold line and has a small piston inside a cylinder. This small device introduces extra air ahead of fresh charge at the beginning of suction stroke, which forms a heterogeneous air fuel mixture in the cylinder. The upper charge (near the spark plug) is normal air-fuel mixture and charge at the lower end is lean. Combustion starts normally and flame propagates at normal pace towards the end fuel to produce sufficient power. Due to proper combustion the losses during scavenging are reduced and mileage increases to the tune of 12-15 per cent.

Prior Art discloses a number of techniques in art and market for increasing mileage but most methods seem to result in knocking. Some methods like magnetizing gives positive effect only for a few hours of running. The device has been tested at MNIT Jaipur and about 23 per cent increase in mileage at the speed of 35 km/h has been reported. Due to proper combustion of the fuel, reduction in CO, HC, CO₂ and NO_x to the tune of 53%, 48%, 42%, 25% respectively, has also been noted. NIF has extended support for trial marketing under its MVIF scheme. The trial results have shown promise and Hari Narayan Prajapat has sold over 1200 pieces of this device (Pat App No: 1410/DEL/2009) over the last few months.

