

KNOW YOUR TWO/THREE WHEELER

A two wheeler is generally operated by a 2- stroke spark ignition internal combustion engine which supplies power to the wheels. The efficiency of which depends mainly on the compression ratio and speed of rotation.

The Development of two wheeled scooters, motor cycles, mopeds and 3-wheelers equipped with-2 stroke cycle engine is the outcome of research for a low cost mode of travel. These vehicles are easy to drive and have good manoeuvrability.

There has been a steady growth in the population of the/ three wheelers in our country. In March, 1996 the total population of two/tree-wheelers in the country was estimated at 24 million vehicles.

Stroke Engine

The Indian two-wheelers are mostly fitted with conventional 2- stroke engines. However, a few manufacturers have introduced 4- stroke engine, the 4-strook engine has higher fuel efficiency, better volumetric efficiency, complete fuel combustion and minimum air pollution. The engine is provided with a separate oil tank to supply lubrication oil through the oil pump. At low speed and low load extra oil is not supplied to the engine. This minimizes oil consumption and maximizes the interval between de-carbonisation and thereby minimizes air pollution

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SUPERIOOR 2T OILS

The oil companies have developed superior 2T oils specially for use in 2 stroke engines as lubricating oil to be mixed with fuel in the recommended dosage at the time of filling.

The benefits of using superior 2T oils in the right proportion are: -

- a) Excellent lubrication of engines at all operating temperatures and under the most adverse conditions.
- b) Reduced spark plug fouling which also reduces maintenance cost.
- c) Deposits formation in combustion chamber, exhaust port and the muffler is reduced, thereby extending the periods between decarbonisation and leading to reduced power loss.
- d) Reduced wear of piston rings, cylinder, cylinder liners and associated components thereby lengthening of the life of the engine.
- e) Optimum performance of the engine.

GOOD DRIVING SKILLS AND MAINTENANCE PRACTICES

1. **Drive steadily and at the optimum speed :-** Drive at an optimum speed of 30-40 kmph. You will be surprised to find that your travel time does not increase significantly. Sudden starts and 'stop-and-go' driving waste fuel. Research shows that fast and rash driving can increase fuel consumption substantially.
2. **Use brakes sparingly :-** A good driver anticipates stops. When you slam on the brakes, you waste a lot of useful energy. Anticipate corner- you will be able to negotiate them without braking.
3. **Let go of your clutch: -** Unnecessary use of the clutch leads to loss of power.
4. **Clean air filter regularly:-** Dust leads to rapid wear of engine components and increases fuel combustion. Choked exhaust ports & Silencer make your engine struggle to breathe, causing poor combustion.
5. **Watch your tyre pressure: -** Under inflated tyres increase rolling resistance and petrol consumption. Tests show that under inflation of tyres by 25 % causes a 5 % increase in fuel consumption and a 25% decrease in tyre life.
6. **Stop fuel leaks :-** Check your fuel tank, carburetor, and fuel lines daily for signs of leaking fuel. Loss of one drop of fuel per second amounts to nearly 2000 litres per year.
7. **Stop the engine if you stop for more than 2 minutes :-** Idling can cost money- and fuel. Stop your engine at long waits, for example, at railway crossings.
8. **Keep your engine in good condition :-** Tests on a large number of vehicles show that you can save over 6% fuel by regular tuning. If your engine emits smoke or has poor pulling power, have it checked immediately at a reputed garage.
9. **Use superior 2T oils for lubrication :-** Mix superior 2T oil conforming to international API/TC specifications in recommended dosage to derive various benefits.

ECONOMICAL GEAR SHIFTING

Different gears are provided to use the power of the engine to suit the work it has to do. In a low gear, the engine revolution is faster, and so it consumes more fuel than it normally would at the same road speed in a higher gear. For maximum fuel economy, gear changes must be made at the right moment, that is when the speed you have reached in a low gear can be maintained without increase acceleration in the next higher gear, or when you change down without causing noisy, racing surge in the engine speed. Please follow the speed limits in the engine speed. Please follow the speed limits for economical gear shifting as recommended by the manufacturer.

FUEL EFFICIENCY NORMS

Developed by Ministry of Industry Government of Indian on the basis of trials carried out at Automotive Research Association of India (ARA) and Vehicle Research & Development establishment (VRDE).

Engine Capacity	Kms/ litre of gasoline (min)
Less than 35 C.C.	95
35 C.C. to 75 C.C. (Variable transmission)	87
35 C.C. to 75 C.C. (Fixed transmission)	83
75 C.C. to 200 C.C.	60
Greater than 200 cc	55

PROBABLE CASUES OF HIGHT FUEL CONSUMPTION AND REMEDIES

Cause	Remedy
1. Spark plug defects	- Adjust gap and clean the plug point, Replace if necessary
2. Fuel system Carburettor clogged/dirty	- Check for, fuel leaks & rectify - Clean fuel, tank fuel tube, jet & carburetor body.
3. Air cleaner choked/dirty	- Remove and clean it with air petrol and blow dry with air.
4. Choke value sticking in closed position	- Lubricate the choke control lever and keep it in open position.
5. Hard to start due to over flow of the engine	- Check points 1 to 4 given above while parking keep fuel value in closed position and park at a paper ground level.
6. Silencer outlet pipe choked	- Clean .
7. Vehicle drag on the road	- Check tyre pressure and fill air, if necessary.
8. Poor braking	- Adjust brake pedal lever free play.
9. Poor pick-up	- Check spark plug for correct fitment in the cylinder head. Check points 1 to 8 given above.
10. Lack of power	- Contact authorized service, station.

RECOMMENDED MAINTENANCE SCHEDULE FOR OPTIMU FUEL

CONSUMPTION

1. By owner	Clean	Adjust	Lubricate	Replace	Frequency
i) Spark Plug	TM	TM		TM	Monthly 8,000 kms
ii) Air filter	TM	-	-	-	Monthly
iii) Gear Oil	-	-	-	TM	As recommended by mfrs.
iv) Petrol strainer	TM	-	-	TM	Refill
v) Fuel lines	TM	TM	-	-	Monthly
vi) Carburettor	TM	TM	-	-	Monthly
vii) Tyre pressure	-	TM	-	-	Refill
II- By authorized mechanic					
i) Carburettor	TM	TM	-	-	4,000 Kms.
ii) Air filter	TM	-	-	-	5,000 Kms.
iii) Throttle Operation	-	TM	TM	-	2,000 Kms.
iv) Front & rear Brake controls	-	TM	TM	-	4,000 Kms.
v) Clutch & gear levers	-	TM	TM	-	-do-
vi) Flywheel magneto	TM	TM	-	-	-do-
vii) De- carbonizing cylinder, piston head & silencer	TM		-	-	-do-
viii) Other fitments	-	TM	TM		-do-