
MEASUREMENT OF HIGH ENGINE OIL CONSUMPTION (HEOC)

High Engine Oil Consumption (HEOC) may also lead to overhauling of the engine but before proceeding to overhauling, check following points:

- Make sure that there is absolutely no external oil leakage i.e. from, cylinder head cover gasket, turbocharger oil feeder and return lines etc.
- Leak proof engine to be confirmed as per oil leak proof check list.
- Ensure that the oil separator in the cylinder head cover is properly mounted.
- If no external leakage is found, determine the exact engine oil consumption, as per following procedure.

DETERMINING EXACT ENGINE OIL CONSUMPTION:

CAUTION

- Do not make a rough estimate of engine oil consumption by noting the kilometers covered by the vehicle at any random stage and finding oil consumed from the topped up position taking into consideration dipstick level and oil sump capacity.

PROCEDURE

1. Once it is doubted that engine oil consumption is higher, place the vehicle on a level ground.
2. Top up oil sump to its capacity 9.7 litres excluding oil in filter.
3. Warm up the engine so that oil temperature is 75°- 80° C.
4. Take a clean vessel; place it below the drain plug of oil sump.
5. Drain the hot oil into the clean vessel allowing 45 minutes cooling interval before draining oil.
6. Screw in oil sump drain plug and tighten it.
7. Weigh the vessel along with oil. Let this weight be 'w1' gms.
8. Refill the weighed oil into the oil sump. Do not spill any oil. The vessel used for draining should not be used for any other purposes.
9. Drive the vehicle approx. 200 - 300 km. This drive should include at least 30 - 40 kms. of highway or similar road, vehicle running at about 60 kmph.
10. Let this drive distance be 'D' kms.
11. Immediately after the test drive, place the vehicle at the same spot from where it started.

12. Place the same previously used vessel below the Oil sump.

13. Unscrew the drain plug and drain off oil into the vessel. Drain the sump fully.

14. Weigh the vessel along with oil, now for the second time. Let this weight be 'w2' gms.

Find out standard oil consumption as follows:

$$\begin{aligned} \text{Std. oil consumption} &= \frac{(w1 - w2) \text{ (wt. of oil consumed, gms)} \times 1000}{(\text{sp. wt of oil (gm/cm}^3) \times \text{"D" (drive dist. in km.)} \\ \text{"C" (liters/1000 km)} &= \frac{w1 - w2}{0.88 \times D} \text{ liters/1000 km} \end{aligned}$$

If the engine oil consumption is more than 0.2 litre per 1000 kilometers then it can be treated as high engine oil consumption and the engine can be taken for further investigation.
