



Why Chainsaws Leak Bar Oil

On all chainsaws the lubrication of the chain and bar takes place with special oil that is temporarily stored in the oil tank until such time as it is pumped, by the oil pump, onto the guide bar.

Of course once that the oil is pumped from the tank, it leaves space in the tank, which must then be replaced with air. For this reason, all chainsaw oil tanks must be vented to allow the air into the tank, so that a vacuum does not occur, reducing the flow of oil.

Premium saws are designed for professional, as well as general applications, so they need to be able to be used at any angle or position (even upside down) without leaking oil in operation. For this reason, oil tanks on these machines cannot simply vent to atmosphere or it could result in oil leaking onto the operator during use.

Manufacturers use a variety of oil tank breathing systems on their saws, (including one-way valves). All of them do the job that is required of them, which is to allow air into the tank whilst it is being used, without oil leaking onto the operator during use.

In some atmospheric conditions, however, the oil may be forced out of the tank through the oil pump while the machine is in storage.

This occurs because of the normal variations in air pressure that take place between day and night, especially times of large temperature range (warm days & cold nights).

The series of events is:

1. The temperature reduces at night, causing the air and oil in the tank, to contract and take up less space.
2. Air is drawn into the tank via the one-way valve breather to fill this space, thus equalizing the pressure.
3. As the temperature rises during the day, the air and oil in the tank expands.
4. Because of the vent being 'one-way', the only way that the pressure in the tank can equalize is for a small amount of oil to be forced out through the oil pump ports.
5. This process is repeated each night and day cycle until, in extreme cases, the tank may even pump itself dry.

As you can see, this situation is created by the use of the one-way valve, in the tank.

With other venting systems, which could cause less leakage during storage, we cannot be assured that no leakage will take place during use, which we consider to be, the most important time.

It may sound obvious, but the best solution is to store your saw without oil in the tank or if you need to leave oil in the tank, store the saw on its side and leave the oil filler cap slightly loosened to avoid build up of pressure in the tank (remember to tighten it prior to the next time it is used).