

Strange Oil Coming Out the Engine Breather

A friend said his T100 is producing lots of greenish, milky output (about 160 ml every 20 miles) from the breather pipe and wondered if it was a faulty breather valve.

The white to light green color of the oil is because of the presence of **water** in the oil. Water occurs naturally as a by-product of burning fuel. Most of the time 99% of the water leaves via the exhaust pipe and only rots out your mufflers. Therefore some milky color exiting the sump breather is to be expected on any engine.

First Observation: Piston rings are never able to seal all the products of combustion. As an engine gets older and clearances increase, a greater and greater percentage of the combustion material gets into the engine's sump. We call this errant pressure "blow-by". This blow-by contains burnt carbon, unburned fuel, and water. Again, this is totally normal behavior and a sign of normal engine aging.

Second Observation: Whenever the oil pump fails to fully scavenge the engine's sump due to an aging pump or blockage of the return-side oil pump, an excess of oil builds up in the sump. Whenever a sump has more oil than it was designed to run with, we call this situation "oil wet sumping" (as opposed to "fuel wet sumping"). This again is a normal behavior on Triumph motors due to their dependence on a piston type oil pump. In 99% of the cases it is merely a sign that there is some microscopic trash in the larger return-side pump which needs cleaning out. This reveals itself to the owner as excess oil being thrown out the engine breather. The reason is simple; there is excess oil in the sump which the pump is not removing, so the breather valve does the job. It is NOT the fault of the breather, it is in fact an indication that the breather is working quite nicely.

So, in my humble opinion it seems that you have a high mileage engine which merely needs the return-side oil pump scrubbed out.

Answers to related questions

- I personally would not rebuild the engine. All T100's due to their high revving nature show wear faster than the long stroke 650's. As long as the engine is running smoothly and not leaving a cloud of smoke large enough to choke all the drivers in the 6 lanes of traffic behind you then you're OK. It's just a simple 1939 Triumph engine design, not a million dollar F1 engine.
- What I **would** do is investigate a thicker engine oil. You should be running 20W50 motorcycle oil. If you already are running 20W50, maybe try 40W or a synthetic which is supposed to make a better piston ring seal. Under no circumstances add STP or other thick oil treatments to the oil.
- How do I clean the pump? See the GABMA article on *Triumph Oil Pumps*.
- Where did the debris in the pump come from? Normal engine wear over the years has deposited microscopic metallic debris all through the engine. A lot of it has settled in the bottom of the oil tank, but hot high-detergent oil will tend to move it around trying to take it to the oil filter. Read the GABMA article *Cranking Old Bikes* for more information.

- Should I wash out the bottom of the oil tank? Yes. Disconnect both oil lines and cover them with a plastic bag, remove the screw-in filter screen, and steam clean it with the tank on the bike. You won't believe what comes out. Sand, grit, gravel, a chicken bone, a beer can pop top and 37 cents.
- Should I fit an oil filter? There are a lot of bright and shiny accessories you can buy, but an oil filter is the **only** British bike accessory that actually pays for itself. So yes, fit an oil filter ASAP.
- Will an oil filter prevent this in the future? There are no 100% “sure things” but one thing is certain: “oil wet sumping” can't happen as often if you're circulating clean oil.
- So what about the water? Both the engine and oil tank are vented to let the water escape. The engine and the oil need to be run long enough to get the oil HOT so that the water can turn into steam and “cook off”. We know your engine breather is open and working, but is your oil tank breather open and working? Are you riding far enough to get your engine oil really hot? If not, you may need to change your oils more often, simply to rid the engine of water.
- The gearbox and front forks are especially bad about accumulating water in the oil. Don't forget to check them too.

Hope this helps! 🍷👍

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