

It Is Smoking — Blue, White Or Black

Three colours, three quite different faults. And on a two-stroke, some smoke is meant to be there.

BEFORE YOU START

Petrol vapour ignites, batteries produce hydrogen, ignition coils carry thousands of volts and a machine on a stand can fall. Work outdoors or with the door open, disconnect the battery before probing wiring you are not deliberately measuring live, and never run an engine in a closed space. This sheet helps you observe and record. It is not a repair manual.

FIRST: IS IT A TWO-STROKE?

A two-stroke burns oil on purpose, either premixed with the fuel or injected from a separate tank. Blue-ish smoke on start-up and at idle is the engine working, not failing. What matters on a two-stroke is change — noticeably more than it used to make, or smoke that does not clear as it warms. If you are not sure which you have, the giveaway is a separate oil tank you have to fill.

THE THREE COLOURS, ON A FOUR-STROKE

Judge the colour in daylight, against a light background if you can

COLOUR	WHAT IS BURNING	WHERE TO LOOK
Blue	Engine oil	Valve stem seals, piston rings, bore wear, or an overfilled sump
White, and it does not clear	Coolant, on liquid-cooled engines only	Head gasket, or a crack. Check the coolant level and whether the oil looks milky
White, and it clears in a minute	Water vapour	Normal condensation on a cold or damp morning. Not a fault
Black	Unburnt fuel	Mixture, not mechanical. Air filter, choke stuck on, float level, jetting

WHEN IT SMOKES NARROWS IT FURTHER

The timing is as informative as the colour

WHEN	WHAT THAT SUGGESTS
On start-up only, then clears	Oil seeping past valve stem seals while it stood, then burning off
Under acceleration	Oil getting past the rings under load
On the overrun, coming off the throttle	Oil drawn down past valve guides under high vacuum
Constantly, at all speeds	More serious wear, or a mixture fault if it is black
Only after a long climb or hard use	Heat-related. Cross-check against the overheating sheet

COLOUR	WHEN IT APPEARS	DOES IT CLEAR?
TWO OR FOUR STROKE	COOLANT LEVEL, IF LIQUID COOLED	OIL LOOKS MILKY?

BLACK SMOKE IS A MIXTURE FAULT

The same engine gives four independent signals about its mixture. One of them can mislead; three pointing the same way is a finding.

WHAT YOU OBSERVE	POINTS RICH	POINTS LEAN
Sound when it bogs	Sputtering, blubbing, a flatter and lower note	A “buwahhh” as it picks up, and revs that hang after you close the throttle
Spark plug after a run	Dark, black, sooty or wet	Light, white or unusually clean
In cold or damp weather	Runs worse	Runs better
At altitude	Runs worse the higher you go	Runs better lower down
Engine temperature	Runs cooler	Runs hotter
Restrict the air intake briefly	Gets worse	Gets better

WHERE THIS COMES FROM, AND HOW FAR TO TRUST IT

This is the mixture diagnosis used by the long-running 49ccScoot FAQ, which is the most internally consistent single source we found for these engines. It is one author's experience rather than a manufacturer document, and it is a direction of travel rather than a measurement — it tells you which way the mixture is off, never by how much. Do not change jetting on the strength of one signal.

- ☐ Air filter clean, not clogged or oil-soaked
- ☐ Choke or enricher not stuck on once warm
- ☐ No fuel weeping from the carburettor or its overflow
- ☐ Fuel not obviously flooding when the engine is off

OIL CONSUMPTION — TURNING AN IMPRESSION INTO A NUMBER

Blue smoke means oil is being burnt, and how much matters. Check and record the level on the same route, at the same interval, and the consumption becomes a number you can watch rather than a worry you carry.

DATE	MILES	LEVEL BEFORE	OIL ADDED	SMOKE OBSERVED

WRITE DOWN WHAT YOU SAW, NOT WHAT YOU CONCLUDED

The observation is recoverable later and the conclusion is not. “Plug dry after six attempts” is still useful in a month. “Fuel problem” is not, because you will not remember what made you think so.

Need to work out what you actually own?

The Scooter Parts Registry is a free public record of the Chinese factories behind US-market scooters, ATVs and go-karts — brand, engine family, VIN prefix, factory and related machines. No account, no email.

thescooterparts.com/identify