

CVT Slipping, Judder And Squeal

Three different noises from the same case, and they mean different things. What to look at with the cover off, in order.

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 and it does not know your machine.

FIRST — WHAT EXACTLY IS IT DOING?

Three symptoms from one case, and they do not mean the same thing

WHAT YOU NOTICE

WHAT THAT POINTS AT

Judder pulsing in time with engine speed as you pull away

The clutch grabbing and releasing rather than taking up smoothly

Revs flare from a standstill without the machine moving

Slip at the clutch, or a belt too worn to grip the pulley faces

Revs climb at speed while the machine does not

Belt slipping in the pulleys rather than clutch slip

Steady squeal, especially under load or uphill from a stop

Friction where there should be grip — record when exactly it happens

A rattle at low speed that disappears as you accelerate

Rollers moving in their track rather than being held out

FROM STANDSTILL, AT SPEED, OR BOTH?

ONLY UNDER LOAD OR UPHILL?

MILES SINCE THE CVT WAS LAST OPENED

WITH THE COVER OFF — IN THIS ORDER

LOOK BEFORE YOU TOUCH ANYTHING

☐ Loose black dust coating the inside of the case
A light film is normal, a coating is not

☐ Any oil or grease at all inside the case

THE BELT

☐ Cracks running across the cogs on the inner face

☐ Sides glazed and shiny rather than matt

☐ Edges worn to a sharp taper instead of a square shoulder

☐ Frayed or missing cogs anywhere along its length

☐ At rest, does the belt sit level with the outer edge of the pulley, or below it?

THE CLUTCH

- ☐ Friction faces shiny and glazed rather than matt
- ☐ Friction material remaining, and even across all shoes
- ☐ Spring holes in the shoes round, or worn oval
- ☐ Clutch bell scored, blued from heat, or worn oval

THE VARIATOR SIDE

- ☐ Rollers: any flat facet rather than a full circle
- ☐ Rollers all the same diameter as each other
- ☐ Ramp plate and sliders present, unworn, not notched
- ☐ Pulley faces scored, stepped or grooved where the belt runs

OIL IN A DRY CASE IS THE FINDING, NOT THE MESS**DO NOT FIT A NEW BELT INTO A CONTAMINATED CASE**

The transmission runs dry by design. Oil or grease inside it means a crankshaft seal, a gearbox seal or an over-greased bearing is leaking into it. A belt that has been contaminated will keep slipping however new it is, and a replacement fitted before the leak is found will be glazed within weeks. Find the source first — the sheet below records where you found it.

OIL FOUND? WHERE IN THE CASE?

WHICH SIDE IS IT COMING FROM?

BELT CONTAMINATED?

CLEANING, IF YOU DO IT

1. Take the glaze off the friction faces with abrasive paper — the community's own remedy for glazed shoes.
2. Clean everything thoroughly afterwards to remove the dust you have just created, because that dust is what caused the glaze in the first place.
3. Use nothing oily. A residue-leaving cleaner on a friction face undoes the whole job.
4. Do not clean a belt and refit it if it is cracked, frayed or worn narrow. Cleaning does not restore width.

FINDINGS

DATE	MILES	WHAT YOU FOUND	WHAT YOU DID

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WRITE DOWN WHAT YOU SAW, NOT WHAT YOU CONCLUDED
Every box on this sheet asks for an observation. That is deliberate: 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