

**Ultralight engines - unexpected engine stops**

- PROBLEM:**
- Sudden r.p.m. drop
 - Engine stops abruptly in flight but starts and operates again on ground without troubles.

1) Introduction:

Problems of the above kind occur occasionally and create an insecurity. The causes are very complex and a solution can only be found by systematic proceeding. By no means operate your craft with these symptoms without looking for remedy except for testing.

2) Causes and remedy:

2.1. Check whether propeller and propeller-drive are correctly matched to the engine. The engine must reach its nominal max. r.p.m. (see engine characteristics data).

In case of doubt, ask for separate detailed information.

2.2) Check of fuel supply:

- a) Fuel pressure must be between 0,2 to 0,5 bar (3 to 7 psi, measured between fuel pump and carburettor).
- b) Check whether water is in the carburettor (water lenses on bottom of float chamber).
- c) The fuel pump must be fitted at a cool place. It must not be fitted rigidly on the engine (heat and vibration).
- d) Check whether fuel is foaming in float chamber (check by means of a plexiglass window in the float cap).

POSSIBLE CAUSES:

- unbalanced propeller
- inadequate engine suspension (carburettor vibrates too much)
- spring damping of float needle valve is not appropriate for vibration conditions

NOTE: This deficiency happens at a certain r.p.m. range.

e) Check float needle valve:

- tip of needle valve resp. tightness of valve
- float level



2.3) Intake system:

Check intake system between carburettor and engine for leaks (carburettor rubber flange, intake socket)! Leaking areas allow air infiltration and cause lean air/fuel mixture.

2.4) Carburettor icing:

a) Icing due to freezing water (condensed water) in fuel:

Icing of jets and fuel inlet at temperatures below zero degree Celsius (32 F) if water is in fuel.

ATTENTION: Use only trade mark fuels, avoid formation of condensed water, use water separator.

b) Icing during operation near the dew point:

Due to evaporative cooling in the carburettor during the air/fuel mixing procedure ice is built up from air humidity. Critical weather conditions are at 0 to 15 degrees Celsius (30 to 60 degrees F) with high air humidity.

2.5) Ignition unit:

- check ignition timing (see manual)
- check spark plug (compare with a new spark plug)
- check break-away gap (see Operator's Manual)
- check ignition coil (interchange magneto side with p.t.o. side ignition coil, or test with a new ignition coil)

ATTENTION: Misfiring may appear only after reaching a certain operational temperature or at higher performance ignition voltage requirement)

- Check mass cable and mass contact. Bad mass contact is very dangerous and may cause piston seizing or hole in piston.
- Check ignition cable (visual check for impeccable appearance and pin holes (disruptions)).
- Check spark plug cover for damages taking particular care whether isolation of the resistor spark plug cover is disrupted.
- Check ignition damping box for correct function (see manual).