

D. Tables

D.1 Troubleshooting

GENERATOR OUTPUT VOLTAGE TOO LOW

For 60Hz versions: less than 100V

Cause	Solution
Generator is overloaded.	Reduce the electrical load. (Switch off load)
Motor is not reaching the rated rpm.	Refer to "motor faults" section.
Defective capacitor(s).	Check capacitors and replace if necessary.

GENERATOR VOLTAGE TOO HIGH (MORE THAN 135V-60Hz)

If the generator is providing excessively high voltage, the following potential causes should be investigated:

Cause	Solution
Over-energizing due to wrong capacitors.	Check capacitors type and replace if necessary.
Measuring voltage on the VCS circuit board is missing.	Check VCS System, check cable connections.

GENERATOR VOLTAGE FLUCTUATES

Cause	Solution
1. Disturbances on the electrical system/user side. 2. Motor disturbances.	1. Check if electrical load is fluctuating. 2. Refer to section: "Motor runs irregular".

GENERATOR NOT ABLE TO START ELECTRIC MOTOR

Cause	Solution
If the generator is unable supply enough power to start an electric motor (120V-60Hz), it is usually because the motor draws too much current during starting process.	Check the motor's current draw required for starting (switch to 380V if possible). This could be remedied by providing stronger capacitors or installing an optional "Easy Start Booster Set". (See App. G) Enquire at your nearest Panda dealer or directly at the manufacturer.

DIESEL MOTOR FAILS TO START	
Cause	Solution
Starter battery switched "OFF".	Check position of battery switch and switch "ON" (if installed).
Starter battery voltage insufficient (battery too weak).	Inspect battery terminals and cables for a good electrical connection (Inspect against corrosion, tattered wires, etc.).
Starting current disrupted.	During the normal starting process, the battery voltage drops to 11V with a fully charged battery. If the voltage does not drop during starting, the electrical connection is faulty. If the battery voltage drops lower than 11V, then the battery has been discharged.

STARTER IS TURNING MOTOR, BUT FAILS TO START	
Cause	Solution
Fuel inlet solenoid valve not opening.	Check wire connections and circuitry to solenoid valve. (ref. DC wiring diagram: Relay K2, Fuse)
Fuel pump not working.	Check fuel-filter and pump: clean if necessary.
Lack of fuel.	Check fuel supply.
Glow-plugs not working correctly.	Check glow plugs and heating time.
Too much air in fuel lines.	Test fuel system for leakage. Bleed air from fuel system (refer to section B.3, "Ventilating the fuel system," on page 72).
Fuel-filter blocked.	Replace fuel filter.

MOTOR RUNS IRREGULARLY	
Cause	Solution
Faulty centrifugal injector governor.	Have the centrifugal governor inspected by a Farymann-Service technician.
Too much air in fuel lines.	Bleed air from fuel system.

MOTOR DOES NOT ACHIEVE ENOUGH SPEED DURING STARTING PROCESS	
Cause	Solution
Starter battery voltage insufficient.	Check battery.
Damaged bearing(s) piston (seized).	Repairs need to be carried out by Farymann-Service. (refer to Farymann motor-manual)
Cooling water in combustion chamber.	<ol style="list-style-type: none"> 1. Turn generator "OFF" at control panel. 2. Remove the glow plug (see Farymann-manual). 3. Rotate the motor by hand carefully. 4. Check if there is water in the oil and change both oil and filter if necessary. 5. Determine cause for excess water in the combustion chamber. The excess water can be caused by a defective air vent in the cooling water system, which should be checked and cleaned, or replaced if faulty.

MOTOR SPEED DROPS	
Cause	Solution
Lack of fuel	Check fuel supply system: <ul style="list-style-type: none"> - fuel filter, renew if necessary - check fuel pump - check fuel lines (bleed if necessary)
Lack of intake air.	Check air intake paths. Check and clean air filter (and intake muffler if installed).
Generator overloaded by too many load.	Reduce the electrical load (switch off load).
Generator overloaded by over-energizing.	Check that the proper capacitor type is installed and that they are connected correctly.
Defective generator (windings, bearings, or other).	Generator must be sent to manufacturer for repair of damaged bearings or winding.
Damaged engine.	Repair of bearing damage, etc., by Farymann-Service.

MOTOR RUNS IN OFF POSITION	
Cause	Solution
Fuel inlet solenoid valve or throttle shut solenoid is not switching off.	Check wire connections to solenoid. Check valve functions as in the "Fuel Solenoid Valve" or in the throttle shut off solenoid sections. Replace if necessary.

MOTOR STOPS BY ITSELF	
Cause	Solution
Lack of fuel.	Check fuel supply system.
Excess heat in cooling system (thermo switch tripped)-lack of cooling water. Is indicated on the remote control panel.	Check cooling water system flow: water pump, inlet water filter, extra heat exchanger coolant flow.
Lack of oil (oil pressure sensor tripped). Is indicated on the remote control panel.	Check oil-level and if necessary top up. Check motor's oil-pressure and have repaired by Farymann-Service if necessary.

SOOTY, BLACK EXHAUST	
Cause	Solution
Generator is overloaded.	Check electrical load and switch off unnecessary load.
Insufficient intake air.	Check intake air filter; clean if necessary.
Fuel injector faulty.	Replace injector.
Valve clearance incorrect.	Readjust valve clearance to correct value (refer to Farymann-manual).
Poor fuel quality.	Use better quality diesel (recommended: 2-D Diesel).
Poor combustion.	Incorrect AFR (air/fuel ratio) due to motor timing adjustment. Have motor serviced by Farymann.

GENERATOR MUST BE SHUT OFF IMMEDIATELY IF:	
Cause	Solution
<ul style="list-style-type: none"> - motor rpm suddenly rises or drops - unusual noise comes from genset - exhaust colour suddenly becomes dark - leakage in the cooling water system. 	Refer to respective section of manual and if necessary, have repaired by Farymann-Service, or Panda representative.