Generator Set Troubleshooting Guide

This document contains generator set and controller troubleshooting, diagnostic, and repair information.

Use the chart to diagnose and correct common problems. First check for simple causes such as a dead engine starting battery or an open circuit breaker. The chart includes a list of common problems, possible causes of the problem, and recommended corrective actions.

Maintain a record of repairs and adjustments performed on the equipment. If these procedures do not explain how to correct the problem, contact an authorized distributor/dealer. Use the record to help describe the problem and repairs or adjustments made to the equipment.

Problem	Possible Cause	Corrective Action
Does not crank	External circuit	If remotely controlled, try generator set controller switch (on/off).
	CR relay circuit	Check if relay CR operates. On automatic units, if CR does not operate, disconnect rectifier RE1.
	C contactor circuit	Check if cranking contactor C closes by holding finger on contactor and closing switch.
	Undercharged battery, defective battery, or poor cable connections	If C closes, check battery condition of charge and cable connections.
Cranks slowly	Undercharged battery, defective battery, or poor cable connections	Check battery condition of charge and cable connections.
	Short brushes, loose brush pigtails, or brushes sticking in holders	Check brushes.
	Rust in engine cylinder bore	Check for tight engine (2TS should trip).
Cranks but does not start	Fuel tank empty	Add fuel.
	Faulty ignition circuit, magneto, or distributor	Check ignition circuit and check for spark.
	Sticky or poorly-adjusted choke	Check choke operation.
Overcranking trips	Right hand normally closed contact not opening last	If relay CC has not closed, check contact adjustment.
	R1 resistor burned out or other open in field circuit	If no voltage, check for open exciter field resistor.
Continues to recrank	Insufficient load	Check for at least 60 watts starting load.
	R4 resistor not adjusted	Check that L relay closes at about 110 volts AC.
	Defective rectifier or poor L relay adjustment	If the above items are okay, replace rectifier RE1. Verify that L relay auxiliary contacts open before main contacts close.
Undervoltage occurs when applying load	Battery cables connected in reverse	If voltage stabilizer type, check for correct battery polarity.
	Shorted auxiliary field, open auxiliary field, or damaged rectifier RE	Check voltages at F1-F2 (should be 3-6 volts at full load). If no voltage, check for shorted auxiliary field. If voltage is high, check for open auxiliary field. Examine rectifier RE for burned cells.
Battery does not stay charged	Defective contact or resistor	Check battery charging circuit (contact on CC and resistor R2).
	Charging rate insufficient for application	If charging but not enough, add resistor in parallel with R2.
Battery loses water rapidly	Charging rate too high for application	Replace R2 with resistor of higher ohms.