



Electrical Troubleshooting Z-Series & X-treme Series Riders

- 1) Check for fully charged battery.
- 2) Check that fuses are not blown.
- 3) Check starter relay:
 - A) Unplug yellow wire from prong on relay.
 - B) Ground prong to negative post on battery.
 - 1) If starter turns over (cranks), then relay is functional (problem in harness).
 - 2) If no crank, then relay not functioning.
- 4) If starter relay is good, but starter will not turn over, then starter relay is not getting ground.

** Relay gets its ground from yellow wire. Must find reason why ground not getting to the yellow wire. Trace circuit to find break in continuity.

** The ground begins at the ground post on the battery. It travels through the ignition switch and on to the safety module. At the safety module, it crosses over to the black w/ white wire and travels to the seat switch. It crosses the seat switch to the green wire and travels to the PTO switch. It crosses the PTO switch to the purple wire and travels to the brake switch. It crosses the brake switch to the yellow wire and travels to the safety module where it junctions with another yellow wire and travels to the starter relay.

Diagram on following page will illustrate how ground gets to yellow wire at the starter relay.

- 5) If starter is turning over, but not getting fire . . .
 - A) Unplug Red w/ Black engine kill wire to isolate problem to engine or safety circuit.
 - B) If engine kill wire unplugged and still no fire at spark plug, then engine problem.

Z-RIDERS & FRONT CUT W/MODULE SAFETY CIRCUIT FUNCTION

SWITCH FUNCTIONS:

Seat Switch -----	On Seat	Closed	
	Off Seat	Open	
Control Lever ----	In Neutral (Swung-Out)	Closed	
	Out of Neutral (Swung-In)	Open	
Park Switch -----	Park Brake On	Neutral Side	Open
		Module Side	Closed
	Park Brake Off	Neutral Side	Closed
		Module Side	Open
Blade Switch ----	Blade Off	Clutch Circuit	Open
		Module Circuit	Closed
	Blade On	Clutch Circuit	Closed
		Module Circuit	Open

MODULE FUNCTION

The module has control of two circuits

1. The engine kill (does this by connecting the mag to ground)
2. The engine start solenoid (it controls this by switching the ground to the solenoid)

The module senses the status of the safety switches and decides how to switch these two circuits.

TO START ENGINE:

The module will *unground* the mag and *ground* the solenoid when it senses:

- The seat switch closed
- The blade switch off
- The park brake on
- * The control lever in neutral

To Operate the Mower (The Engine Will Run):

The module will keep the engine mag *ungrounded* as long as it senses the *seat switch* closed and as long as the control lever is *in neutral* when the park brake is applied.

* The control lever out of neutral will allow the engine to turn-over, but the mag will still be grounded.

ENCORE PART# 423351
 WIRE HARNESS FOR 42K17Z ; 17 HP KAWASAKI
 WIRE HARNESS FOR 48K19Z ; 19 HP KAWASAKI
 WIRE HARNESS FOR 52K21Z ; 21 HP KAWASAKI
 WIRE HARNESS FOR 60K25Z ; 25 HP KAWASAKI

