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# Yamaha G1 Solenoid Wiring Guide (1979–89) | Master Your Golf Cart Repairs

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# Introduction

Owning a **Yamaha G1 Golf Cart** offers both joy and the duty of upkeep. The heart of its reliability lies in the **electrical system**, specifically the Yamaha G1 **solenoid wiring**, which is essential for the cart's startup and smooth operation. This guide demystifies the solenoid wiring for Yamaha G1 models from 1979 to 1989, aiming to equip both experienced mechanics and new owners with the knowledge to prevent electrical issues and ensure ongoing cart performance.

The Yamaha G1, a pioneer in the late 70s and 80s, blends durability with an efficient electrical system. However, maintaining such vintage machinery requires specific insights, particularly in **solenoid wiring**. This area, crucial for the cart's functionality, demands attention to detail and an understanding of the wiring's intricacies. Through this guide, we'll

navigate the complexities of **solenoid wiring diagrams**, offering a pathway to keep your G1 as a dependable asset, whether on the golf course or within your community.

## Key Takeaways

- ✓ **Yamaha G1A** and **G1E** models require **wiring diagrams** for fixing electrical problems.
- ✓ These diagrams offer simple steps to find issues in G1A and G1E models.
- ✓ Using a **multimeter** can assist in spotting common wiring problems like corrosion or loose links. Changing any broken wires is also important.
- ✓ Detailed G1E wiring diagrams and views of controller parts help understand where and how key parts connect.

## Understanding Your Yamaha G1 Solenoid Wiring

How To Read, Understand, And Use A Wiring Diagram - Part 1 - The Basics



**Yamaha G1's distinctive features**, including its 2-stroke engine (for gas models) and simple yet effective electrical system (for electric models), **made it a favorite** for its ease of use and maintenance. The cart's design **focuses on reliability and straightforward repair**, characteristics that have kept it in use decades after its initial release.

**Maintaining the Yamaha G1's electrical system** is crucial for its operation. **The solenoid, acting as an electronic switch**, plays a pivotal role in this system. Proper care and troubleshooting of the solenoid wiring **ensure the cart starts and runs efficiently**, highlighting the importance of understanding and maintaining this component for the longevity of the cart.

**Solenoid wiring issues**, if not addressed, **can lead to performance degradation** or complete operational failure. This guide **aims to equip G1 owners with the knowledge to identify and resolve common wiring problems**, ensuring their carts continue to serve them well on and off the golf course.

## The Basics of Solenoid Wiring

**A solenoid in the Yamaha G1 Golf Cart** serves as an essential component, **acting as an electromagnetic switch**. This device **controls the flow of electricity** within the cart's electrical system, enabling the starting process and ensuring the motor receives power. Understanding the solenoid's function is the first step toward effective troubleshooting and maintenance.

**The solenoid's operation** relies on electromagnetic principles, **where an electrical current activates the switch**. This action **allows current to flow to the starter generator**, a critical process for the cart's ignition and operation. Familiarity with this process is crucial for diagnosing issues related to the cart not starting or experiencing electrical problems.

**Maintaining solenoid wiring integrity** is vital for the Yamaha G1's performance. **Proper wiring connections** ensure that the solenoid operates as intended, **preventing common electrical failures**. This section will guide you through identifying and resolving wiring issues, enhancing the reliability of your golf cart.

**Troubleshooting solenoid wiring** involves a systematic approach, **identifying signs of wear, corrosion, or incorrect connections**. Addressing these issues **restores the solenoid's functionality**, ensuring that your Yamaha G1 starts reliably and operates smoothly. This guide provides step-by-step instructions for inspecting and repairing solenoid wiring, tailored to the needs of Yamaha G1 owners.

# In-depth G1E Wiring Diagrams

Focusing on the **G1E wiring diagrams** provides a detailed view of the primary components. These include the **battery**, **solenoid relay**, **speed controller**, and **traction motor**. Each diagram is crafted with care. They give clear information for each part to ensure the right working of the G1E electric cart.

The battery, shown in the diagrams, is the main power source. The solenoid relay works as the big switch controlling power spread. The speed controller changes the cart's speed, and the traction motor drives it. Understanding these parts and their key settings is vital for top operation.

The diagrams also show exact settings for the **charge receptacle** and **resistor coil**. In addition, the diagrams stress the value of good **voltage** spread. When followed correctly, they make sure power flows well. This is needed for the G1E model to work smoothly.

Other parts detailed in the diagrams include the **back-up buzzer**, **stop switch**, and a **10-amp fuse**. The diagrams highlight the right placement and connection of these parts.

In the end, the diagrams stress the importance of the **wiper arm position** and key settings. They underline their value for top performance of the G1E.

## Common Wiring Issues and Fixes

### Tools and Materials Needed

Specific **tools and materials** are required for the successful maintenance of the Yamaha G1's solenoid wiring. **Having the right equipment** ensures that owners can **address wiring issues efficiently and safely**. This list outlines essential items for solenoid maintenance and repair.

- **Multimeter:** Essential for **testing electrical connections** and **diagnosing solenoid functionality**. A multimeter allows you to measure voltage, resistance, and current, crucial for troubleshooting electrical issues in the golf cart.
- **Wire strippers and crimpers:** Necessary for **preparing and connecting wires**. Proper wire preparation and connection are vital for establishing secure electrical contacts.
- **Assorted screwdrivers and wrenches:** Required for **accessing the solenoid and related components**. These tools allow you to disassemble parts of the golf cart to

reach the solenoid and perform necessary repairs.

- **Soldering iron and solder** (optional): Useful for **creating durable wire connections**. While not always required, soldering can provide a more permanent solution to wiring repairs.
- **Replacement wires and connectors**: Essential for **replacing damaged wiring**. Ensure you have the correct gauge and type of wire, along with suitable connectors, for your Yamaha G1.
- **Protective gear**: Includes gloves and safety glasses. **Protecting yourself** during maintenance tasks **prevents injuries** and ensures a safe working environment.

**Equipping yourself with these tools and materials** prepares you for **solenoid wiring maintenance and troubleshooting**. With the right preparation, you can ensure the electrical system of your Yamaha G1 Golf Cart remains in optimal condition, enhancing its reliability and performance.

In the realm of **Yamaha G1A and G1E models**, common problems often surface. These include issues like **corrosion, frayed wires, incorrect routing, loose connections, and overloaded circuits**. These problems can wreak havoc on the oil supply and injection system of the **G1A Model J10 Gas-powered vehicle**. So, understanding the G1E wiring becomes vital to solve these problems.

Using a **multimeter** is key for testing voltage and checking continuity in troubleshooting. Good upkeep, like tightening loose connections and replacing damaged wires, can prevent these problems from coming back.

Here’s a table explaining common wiring problems, their causes, and solutions:

Problem	Cause	Solution
Corrosion	Exposure to moisture	Clean and replace the corroded part
Frayed Wires	Aging or mechanical damage	Replace the frayed wire
Incorrect Routing	Incorrect installation	Refer to the wiring diagram and correct the routing
Loose connections	Vibrations, poor installation	Secure the connections

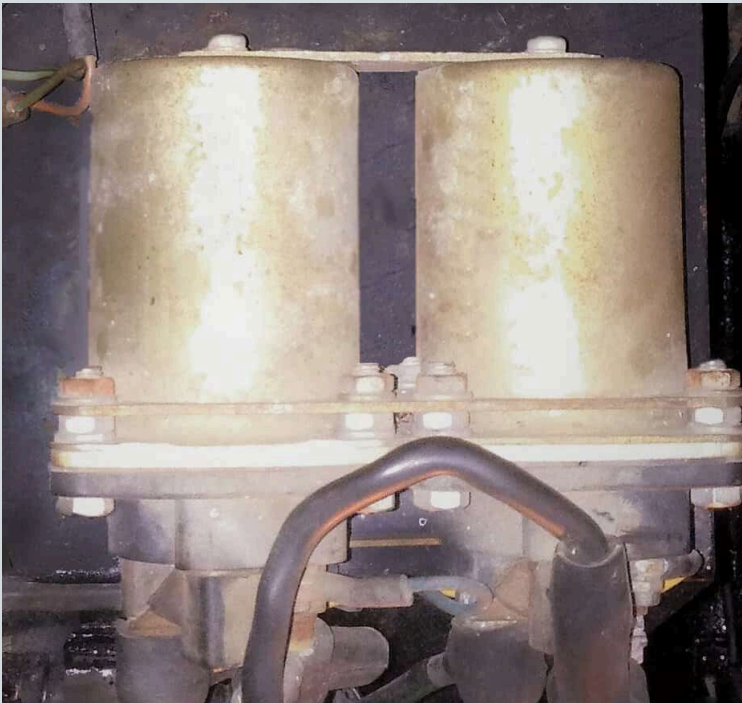
Problem	Cause	Solution
Overloaded circuits	Excessive power supply	Use components rated for the correct power

Knowing the wiring layout and connections of Yamaha G1A and G1E models is key to successful troubleshooting and repairs.

## G1 Gasoline Carts

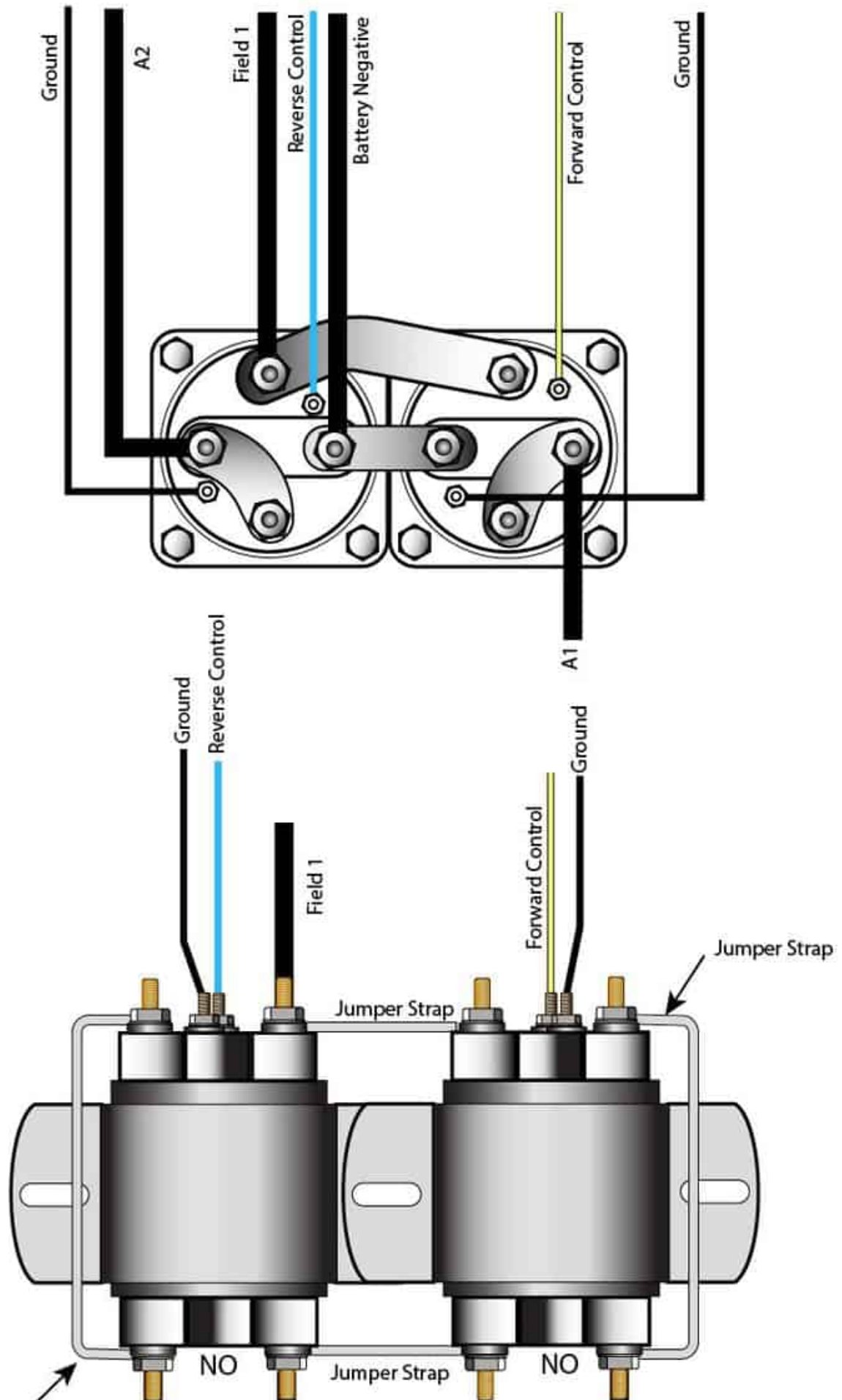
The first Generation Gas Carts had solenoids (or relays) that had all terminals on one end of the unit. These solenoids are no longer available and are replaced with a model with terminals on both ends. They are available at Vintage Golf Cart Parts. The replacement for the gas cart is a 12-volt model.

Retrofit for this solenoid is shown in the illustration below.



# Original Discontinued G1 Solenoids

OEM # J10-81951-00-00





Jumper Strap

A2

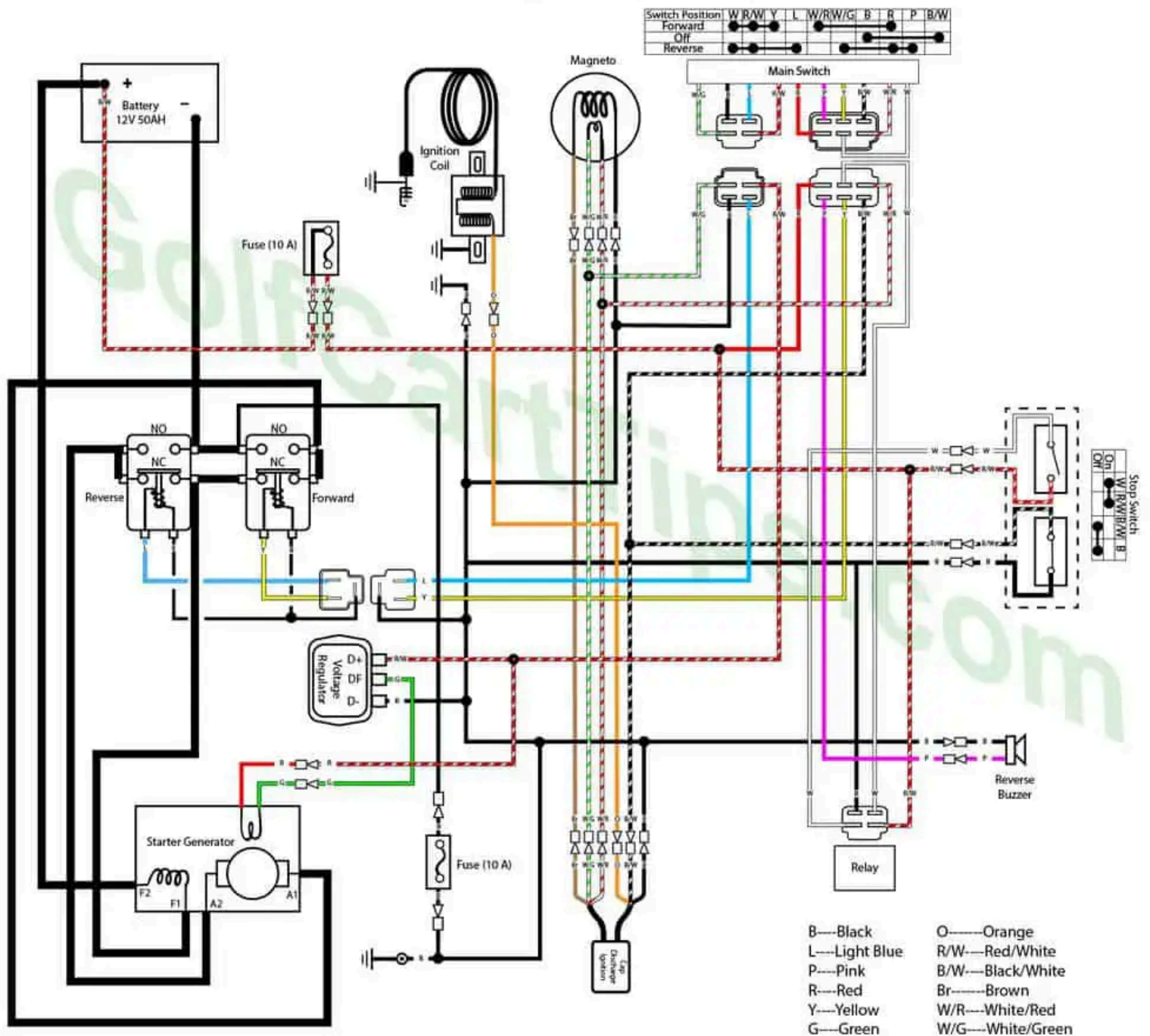
Battery Negative

A1

## Retrofit of SO66-050 Solenoid, 6 Terminal, 12 Volt

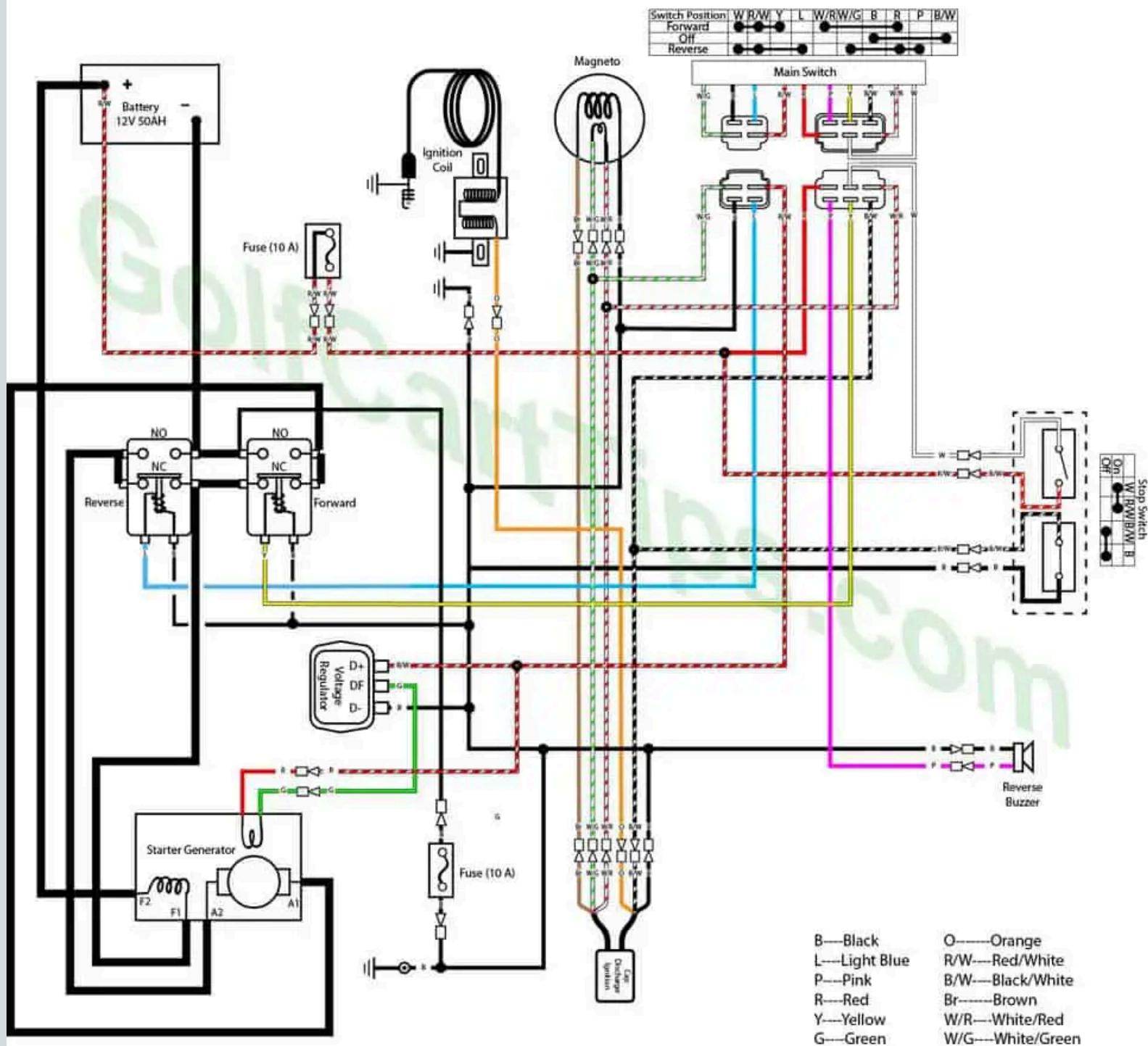
**G1A,A2,A4,A5 Gas 1979-81, 1983-89**

**Yamaha G1A, G1A2, G1A4, G1A5**



**G1A3 Gas 1982**

# Yamaha G1A3



SYMPTOM	POSSIBLE CAUSE	CORRECTIVE STEPS
Engine Will Not Turn Over	Battery is not charged	Test and recharge
	Poor terminal connection	Clean and tighten
	Bad starter motor	Test, repair or replace

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE STEPS
<b>Engine Turns Over, Will Not Start</b>	Moisture on ignition wires and spark plug cap	Wipe wires and cap clean and dry
	Faulty ignition cables	Replace any cracked or shorted cables
	Open or shorted primary ignition circuit	Trace primary ignition circuit and repair as necessary
	Faulty coil	Test and replace if necessary
	Dirt or water in fuel line or carburetor	Clean lines and carburetor. Replace filter
	Faulty fuel pump	Install new fuel pump
	Carburetor flooded or carburetor float setting incorrect	Adjust float level – check seats
<b>Loss of Power</b>	Dirt or water in fuel line, carburetor or filter.	Clean lines, carburetor and replace filter
	Incorrect ignition timing	Reset timing
	Dirty or incorrectly gapped spark plug	Clean plug and set gap – replace if neccessary
<b>Engine Stalls</b>	Incorrect choke adjustment	Adjust choke
	Idle speed set too low	Adjust idle speed on choke
	Incorrect carburetor float setting	Adjust float setting
	Faulty ignition wiring	Trace out and correct
	Dirty or incorrectly gapped spark	Clean plug and set gap
	Contaminates in fuel line or carburetor	Clean lines, carburetor and replace filter
	Faulty Coil	Check and replace

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# G1 Electric Carts

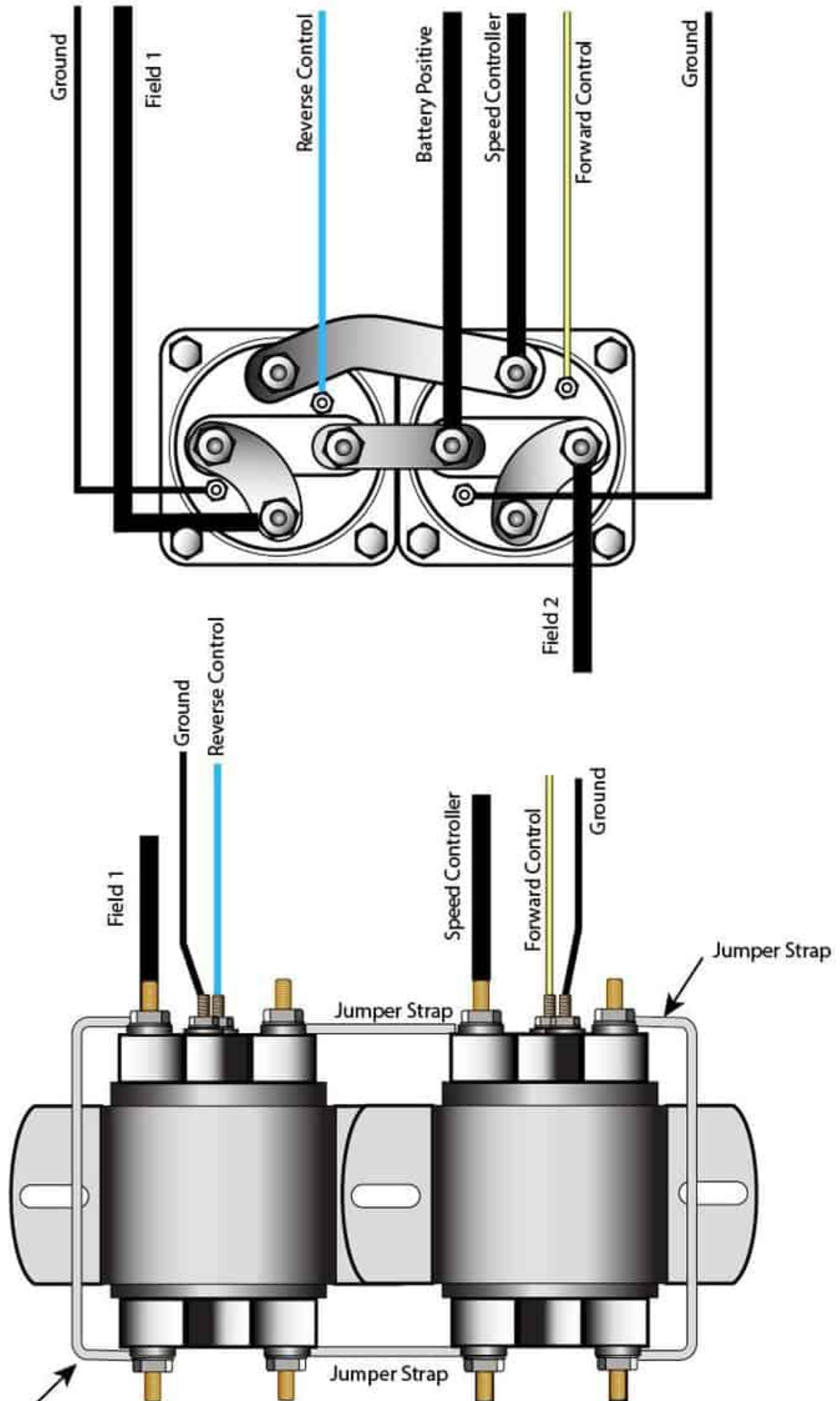
The first generation **electric carts** had solenoids (or relays) that had all terminals on one end of the unit. These solenoids are no longer available and are replaced with a model with terminals on both ends.

Below is the retrofit for replacing these with a contemporary solenoid.

## G1E 1980-86

# Original Discontinued G1 Solenoids

OEM # J14-81951-00-00



Jumper Strap

Battery Positive

Field 2

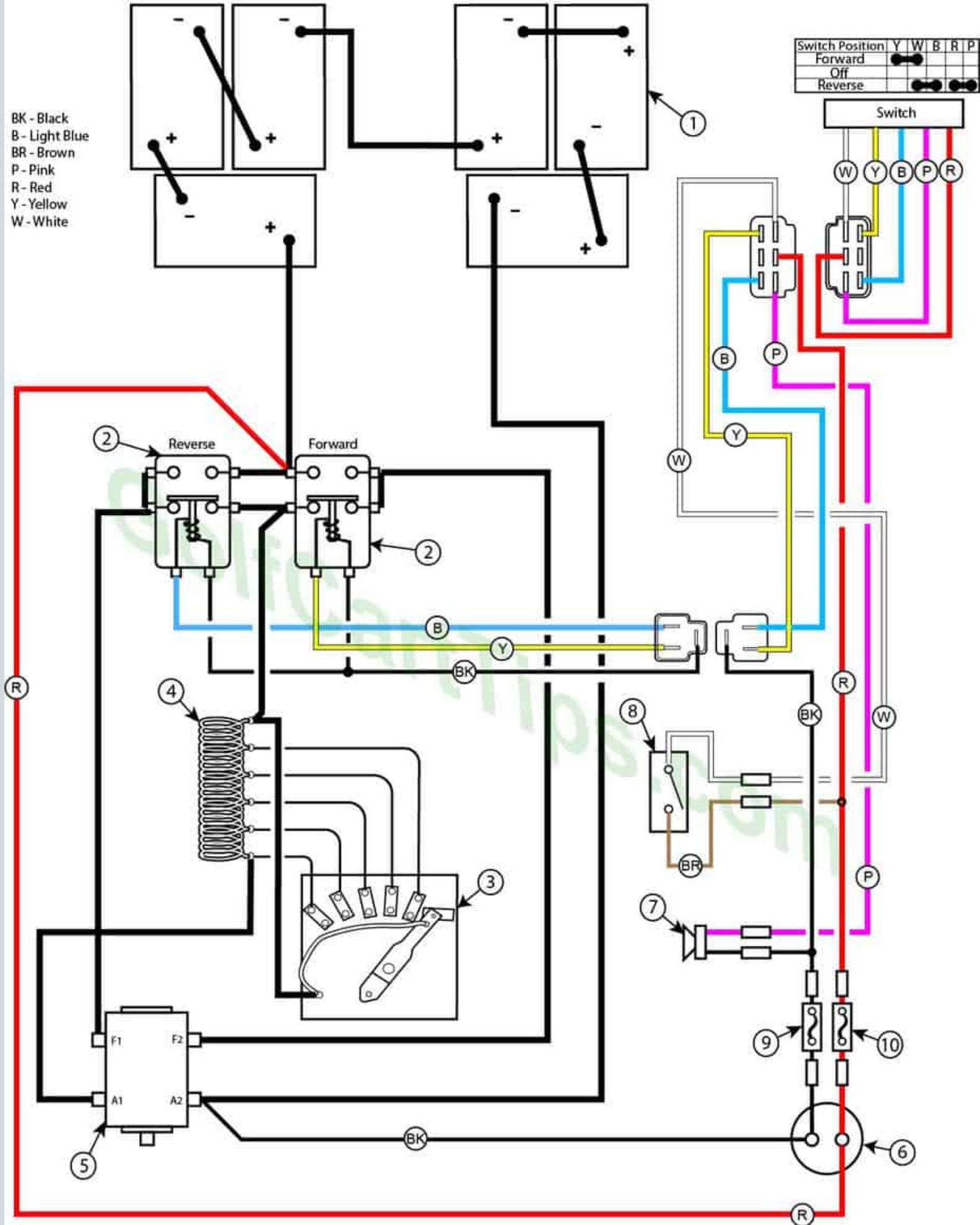
Retrofit of SO66-060 Solenoid, 6 Terminal, 36 Volt

**G1E 1980-86**



BK - Black  
 B - Light Blue  
 BR - Brown  
 P - Pink  
 R - Red  
 Y - Yellow  
 W - White

Switch Position	Y	W	B	R	P
Forward					
Off					
Reverse					



Yamaha G1E

## Item List

1. Batteries 6x6v
2. Solenoid Relay
3. Speed Controller
4. Resistor Coil
5. Traction Motor
6. Charge Receptacle
7. Back Up Buzzer
8. Stop Switch (at pedal)
9. 10 amp Fuse
10. 10 amp Fuse

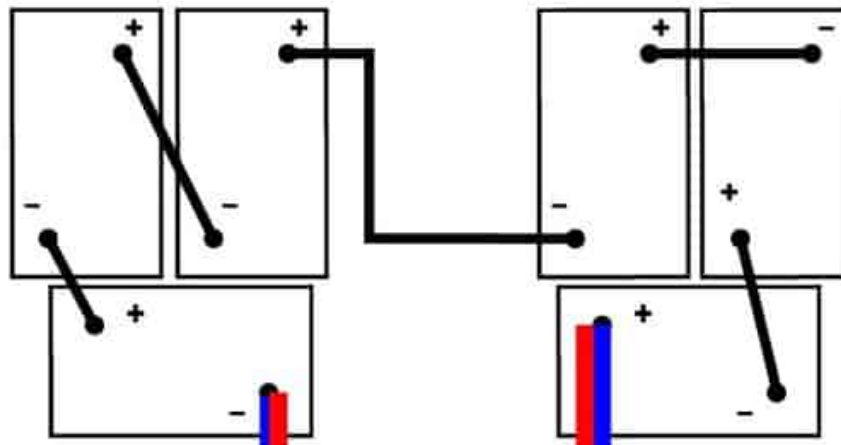
The wiper arm is at full rest and making contact with Contact Terminal #1.

- Key switch – Off
- Speed Controller – At Contact #1
- Forward Solenoid – Not Energized
- Reverse Solenoid – Not Energized
- Voltage to Motor – None
- Voltage across A1 and A2 – None
- Voltage across F1 and F2 – None
- Stop Switch – In Open state

# Power Flow Logic Diagram – Forward 1st Speed

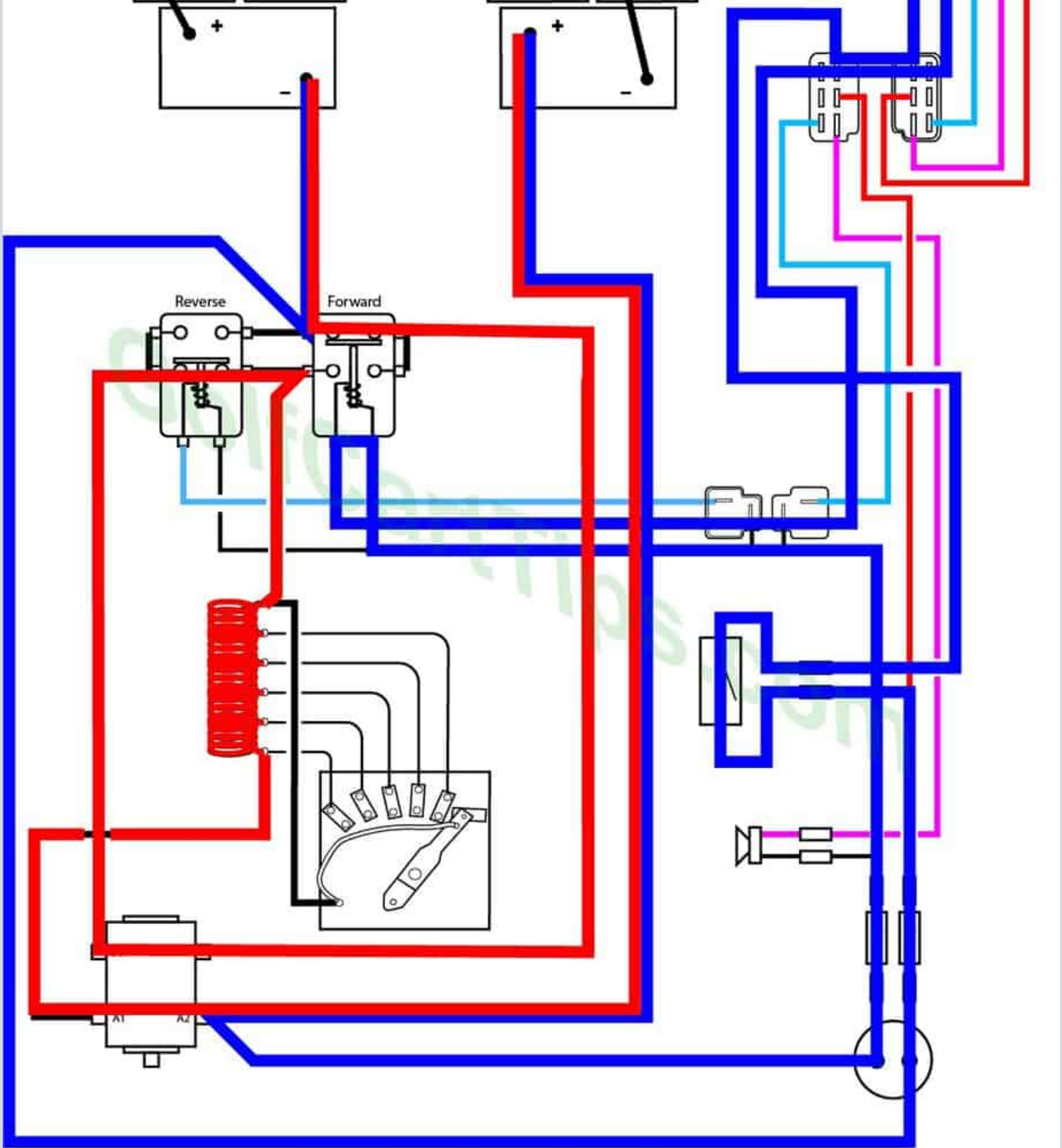


# Forward Logic Diagram



Switch Position	Y	W	B	R	P
Forward					
Off					
Reverse					

Switch



Solenoid Control Circuit



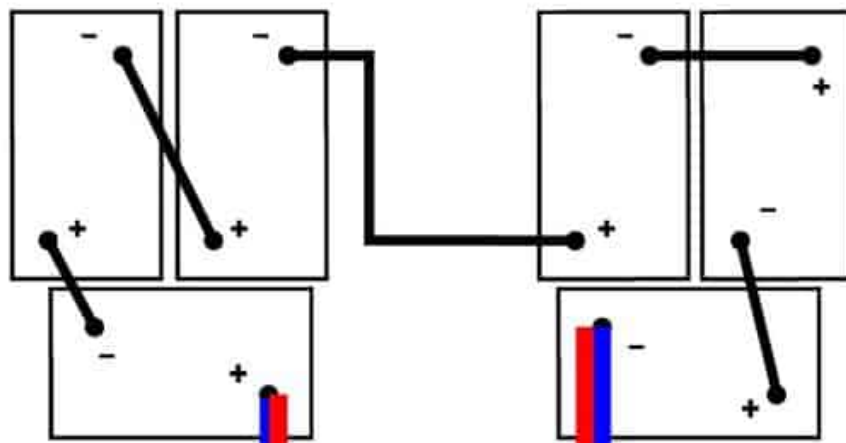
Solenoid Control Circuit  
Power Flow Circuit

First Speed –the wiper arm is making contact with Contact Terminal #1 and pedal is slightly pressed.

- Key switch – Forward
- Speed Controller – At Contact #1
- Forward Solenoid – Energized
- Reverse Solenoid – Not Energized
- Voltage to Motor – Present
- Voltage across full resistor
- Stop Switch – In closed state

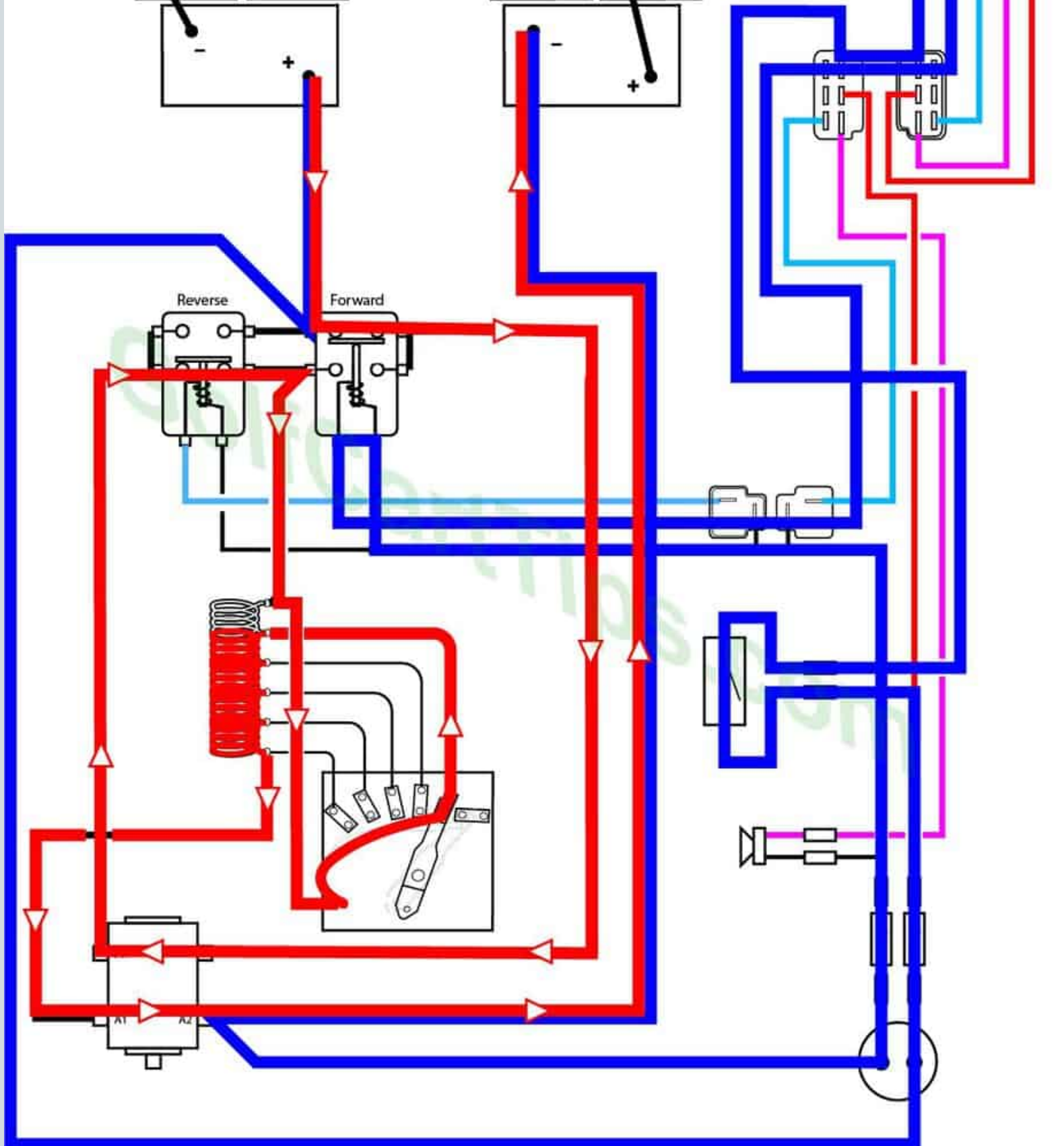
## Power Flow Logic Diagram – Forward 2nd Speed

# Forward Logic Diagram



Switch Position	Y	W	B	R	P
Forward	●	●			
Off			●	●	
Reverse			●	●	●

Switch



Solenoid Control Circuit



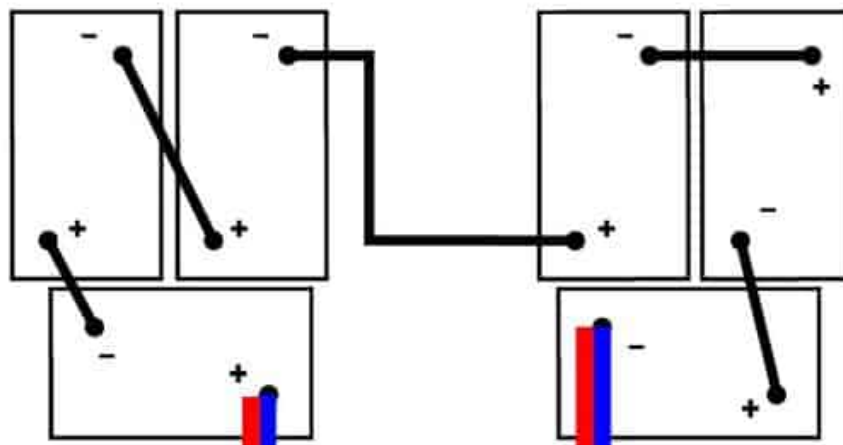
Solenoid Control Circuit  
Power Flow Circuit

Second Speed – the wiper arm is making contact with Contact Terminal #2.

- Key switch – Forward
- Speed Controller – At Contact #2
- Forward Solenoid – Energized
- Reverse Solenoid – Not Energized
- Voltage to Motor – Present
- Voltage across 4/5 of resistor
- Stop Switch – In closed state

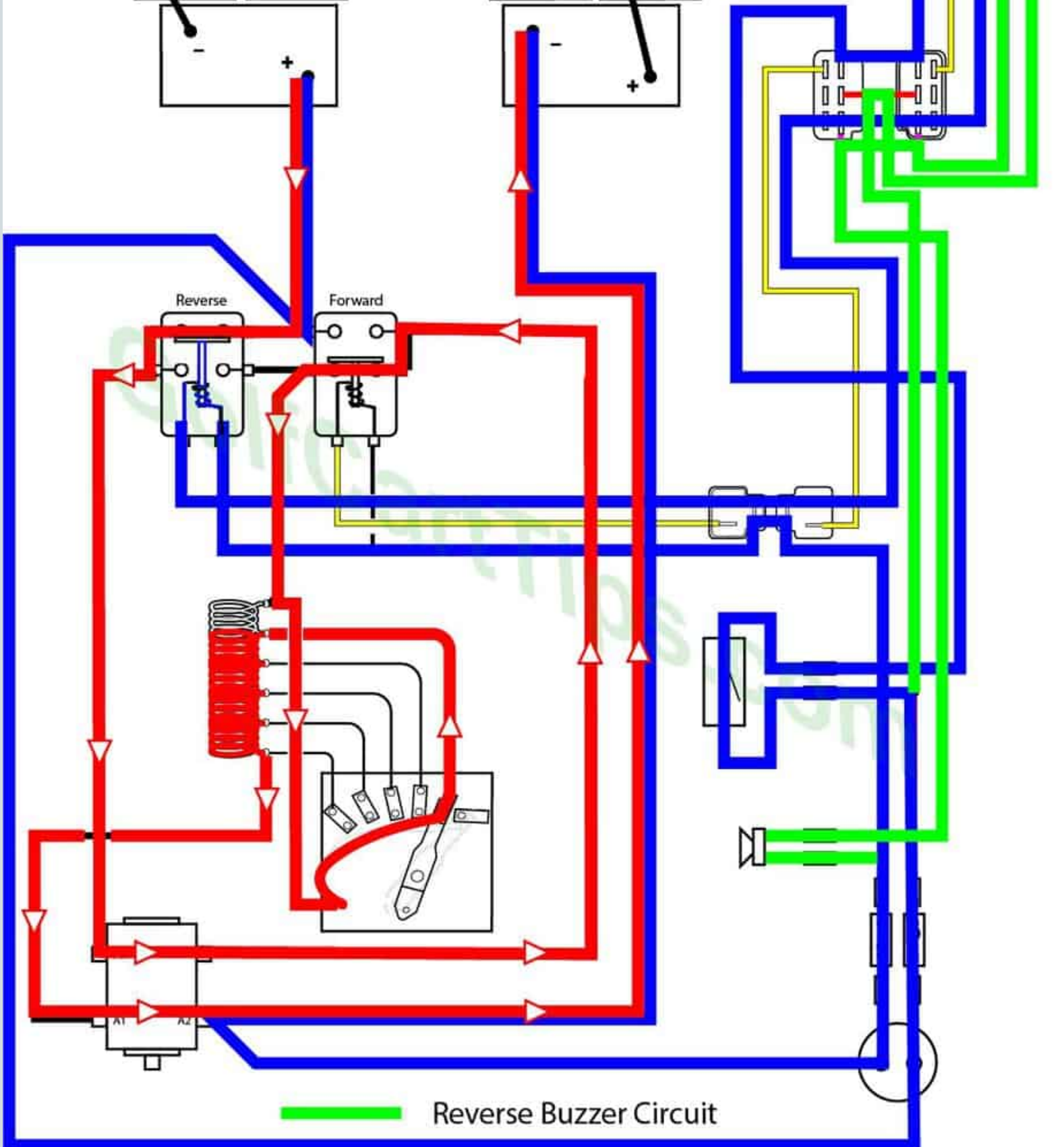
## Power Flow Logic Diagram – Reverse 2nd Speed

# Reverse Logic Diagram



Switch Position	Y	W	B	R	P
Forward					
Off					
Reverse					

Switch



Reverse Buzzer Circuit



Solenoid Control Circuit



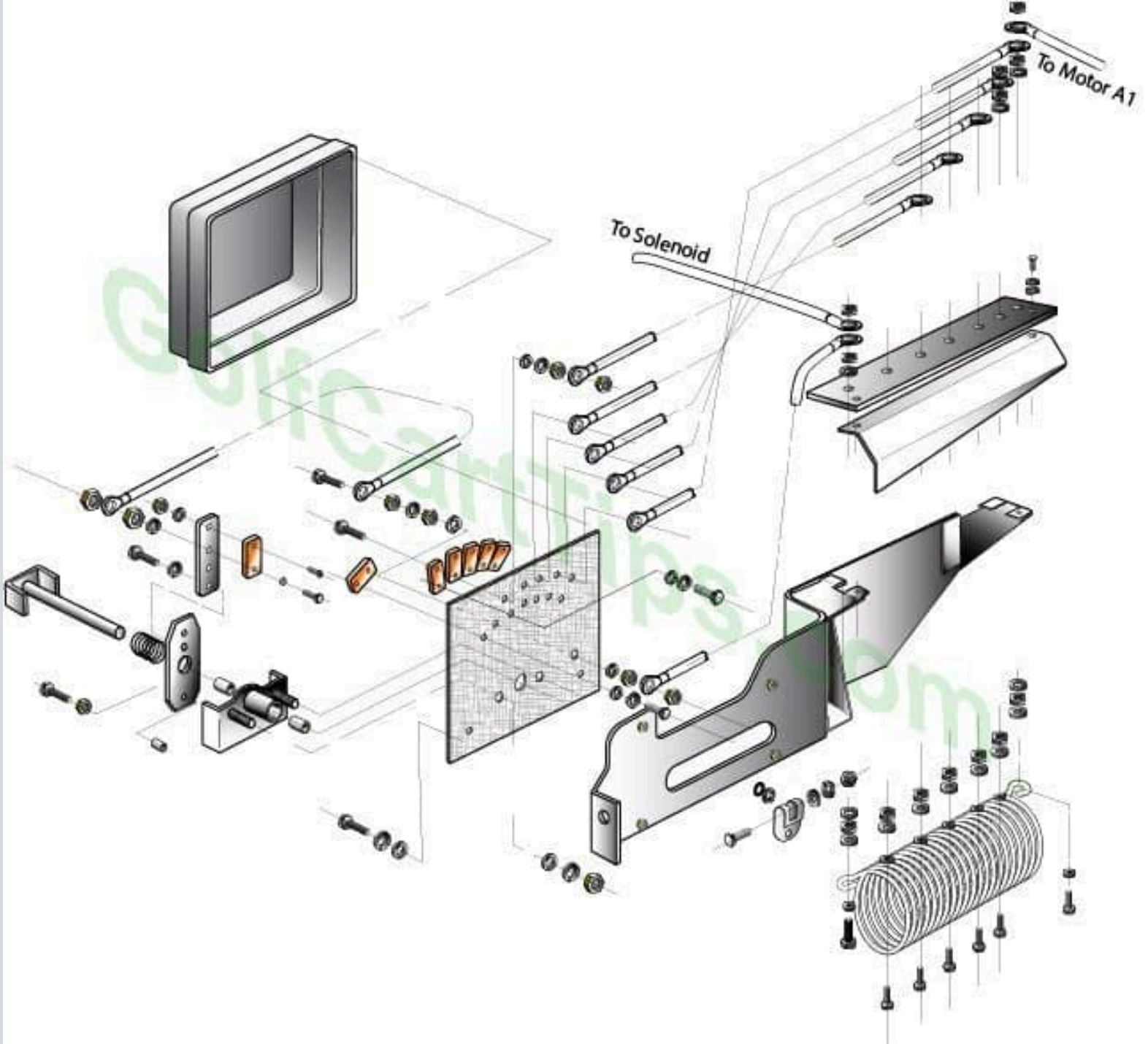
Solenoid Control Circuit  
Power Flow Circuit

Second Speed Reverse – the wiper arm is making contact with Contact Terminal #2.

- Key switch – Reverse
- Speed Controller – At Contact #2
- Forward Solenoid – Not Energized
- Reverse Solenoid – Energized
- Voltage to Motor – F1 and F2 flow reversed
- Voltage across 4/5 of resistor
- Stop Switch – In closed state
- Reverse buzzer – Energized

## G1E Controller Exploded View





# Troubleshooting Chart

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE STEPS
<b>Motor Will Not Turn</b>	Motor terminals are loose or corroded.	Tighten or clean tereminals
	Brushes not contacting the commutator	Adjust
	Lead wires faulty	Check continuity, test, repair or replace

Symptom	Possible Cause	Corrective Steps
Motor Turns Slowly	Field coil broken	Repair or replace
	Armature coil broken	Repair or replace
	Terminals loose and/or corroded	Check terminals, clean and tighten
	Accelerator arm movement restricted	Adjust linkage
Bearings Overheating Power	Leads partially broken or loose	Check for loose wire strands, replace if defective, tighten connection
	Bearings worn or low on grease	Replace
	Bearings not installed correctly	Adjust bearings
Noisy motor operation	Mounting bolts loose	Tighten mounting bolts
	Bearing failure	Replace
	Bearings dirty	Replace
	Bearings run out of grease	Replace
	Dirt or foreign material in motor case	Clean motor
Motor Vibration	Armature out of round	Replace
	Motor mounting bolts loose	Retighten

Edit

# Frequently Asked Questions



# How do I know if my Yamaha G1's solenoid is faulty?

Common signs include the golf cart failing to start, hearing a clicking sound without the engine turning over, or no sound at all when attempting to start. Testing the solenoid with a multimeter can confirm issues.

## Can I replace the solenoid on my Yamaha G1 myself?

Yes, with basic mechanical skills, the right tools, and a proper wiring diagram, you can replace the solenoid. Ensure you disconnect the battery before starting any work to avoid electrical hazards.

## What tools do I need for solenoid troubleshooting and replacement?

Essential tools include a multimeter for testing, wire strippers and crimpers for preparing and connecting wires, and basic hand tools like screwdrivers and wrenches for accessing and securing the solenoid.

## How do I test the solenoid on my Yamaha G1 Golf Cart?

Using a multimeter, check for continuity between the solenoid's terminals. A functioning solenoid should show continuity when activated (key turned or pedal pressed) and no continuity when inactive.

## What should I do if my solenoid tests okay, but my golf cart still won't start?

If the solenoid functions correctly, the issue may lie elsewhere in the electrical system. Check the battery, starter generator, and wiring connections for any signs of wear, damage, or loose connections.

### About the author

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