




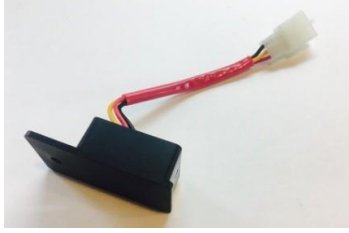








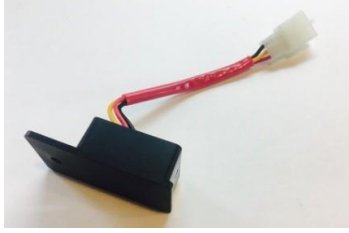








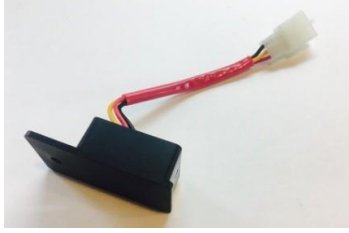











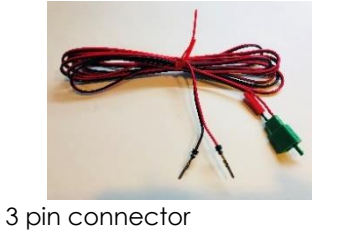







Turn Signal/Horn Kit 2105

<p>Before you begin</p>	<p>STOP! THIS KIT IS DESIGNED SPECIFICALLY FOR</p> <ul style="list-style-type: none"> • YAMAHA WOLVERINE X2, all years • YAMAHA WOLVERINE X4, all years <p>IF YOUR VEHICLE IS NOT ONE OF THESE MODELS, DO NOT PROCEED. Contact Ryco Motorsports or your local dealer for the correct kit.</p>											
<p>Where do I start?</p>	<p>Please read and follow the instructions.</p> <p>If you are a guy and, like most of us, feel you can install this without taking the time to read the instructions, then you should ask your significant other to read them to you. I put a lot of effort into creating the instructions, and I feel bad when no one reads them. Answers to all your questions should be covered in the installation instructions. We've included a lot of photos for those of you who are visual and don't enjoy words.</p>											
<p>What tools do I need?</p>	<ul style="list-style-type: none"> • 10 mm or 5/16" socket/nut driver or flat blade screwdriver • Small flat blade screw driver or terminal kit • 9/32", 1/2", 3/4" and 7/8" diameter drill bit • Pliers or flat blade screwdriver • 3/4" stepped drill bit • Phillips screwdriver • 10 mm wrench • Center punch • Electrical tape • Drill motor • Scissors <div style="display: flex; justify-content: space-around;">    </div>											
<p>What's in the box?</p>	<p>Let's become familiar with the items you will be installing on your vehicle, in order of use.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td data-bbox="310 892 716 1249"> <p style="text-align: center;">TURN SIGNAL/HORN SWITCH</p>  <p>The connectors interface with the various kit components.</p> </td> <td data-bbox="716 892 1122 1249"> <p style="text-align: center;">EXPANDABLE NUT</p>  </td> <td data-bbox="1122 892 1528 1249"> <p style="text-align: center;">SELF-CANCELING FLASHER RELAY</p>  <p>- 3 pin connector - No marking tape</p> </td> </tr> <tr> <td data-bbox="310 1249 716 1606"> <p style="text-align: center;">RYCO POWER, GROUND & HORN HARNESS</p>  <p>- 4 pin connector - GREEN marking tape</p> </td> <td data-bbox="716 1249 1122 1606"> <p style="text-align: center;">DASH MOUNTED INDICATOR HARNESS</p>  <p>- 3 pin connector - BLUE marking tape</p> </td> <td data-bbox="1122 1249 1528 1606"> <p style="text-align: center;">BRAKE STROBE INTERFACE</p>  <p>- 2 pin connector - No marking tape</p> </td> </tr> <tr> <td data-bbox="310 1606 716 1879"> <p style="text-align: center;">CABLE TIE</p>  </td> <td data-bbox="716 1606 1122 1879"> <p style="text-align: center;">PARALLEL TAP</p>  </td> <td data-bbox="1122 1606 1528 1879"> <p style="text-align: center;">HORN</p>  </td> </tr> </table>			<p style="text-align: center;">TURN SIGNAL/HORN SWITCH</p>  <p>The connectors interface with the various kit components.</p>	<p style="text-align: center;">EXPANDABLE NUT</p> 	<p style="text-align: center;">SELF-CANCELING FLASHER RELAY</p>  <p>- 3 pin connector - No marking tape</p>	<p style="text-align: center;">RYCO POWER, GROUND & HORN HARNESS</p>  <p>- 4 pin connector - GREEN marking tape</p>	<p style="text-align: center;">DASH MOUNTED INDICATOR HARNESS</p>  <p>- 3 pin connector - BLUE marking tape</p>	<p style="text-align: center;">BRAKE STROBE INTERFACE</p>  <p>- 2 pin connector - No marking tape</p>	<p style="text-align: center;">CABLE TIE</p> 	<p style="text-align: center;">PARALLEL TAP</p> 	<p style="text-align: center;">HORN</p> 
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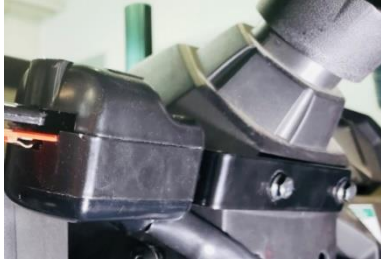

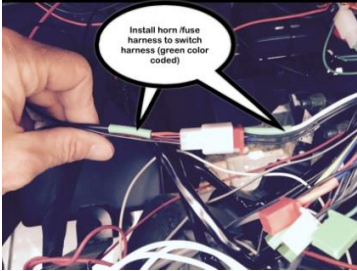




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	<p>PLASTIC SPACER</p> 	<p>FASTENER and LOCK NUT</p> 	<p>FRONT TURN SIGNAL HARNESS</p>  <p>- 4 pin connector - RED marking tape</p>
	<p>REAR TURN SIGNAL HARNESS - X2</p>  <p>- 3 pin connector - RED marking tape - 2 male pins</p>	<p>REAR TURN SIGNAL HARNESS - X4</p>  <p>- 3 pin connector - RED marking tape - 2 female pins</p>	<p>LICENSE PLATE LIGHT and FLANGE NUT</p> 
	<p>PLATE HOLDER</p> 	<p>TWO HOLE ADAPTER</p> 	
<p>Installation Steps</p>	<p>NOTE: Where possible run new cables alongside the existing wires, and use existing cable ties/anchors where practical.</p> <p>IMPORTANT: Ensure that the wiring and installed hardware do not contact moving components or hot surfaces.</p>		
<p>1. Mount the TURN SIGNAL/HORN SWITCH</p>	<p>NOTE: The TURN SIGNAL/HORN SWITCH should NOT have any of the components installed on the harness until after the switch is installed, and the switch harness is routed behind the dash.</p> <ul style="list-style-type: none"> • Ensure the ignition key is in the "OFF" position, and the key is removed. • Remove the push pins and fasteners to allow the front cover to be opened. • Complete the installation of the TURN SIGNAL/HORN SWITCH mounting bracket onto the TURN SIGNAL/HORN SWITCH by removing the screw positioning the bracket on the TURN SIGNAL/HORN SWITCH, replace the screw, and then tighten both screws. 		



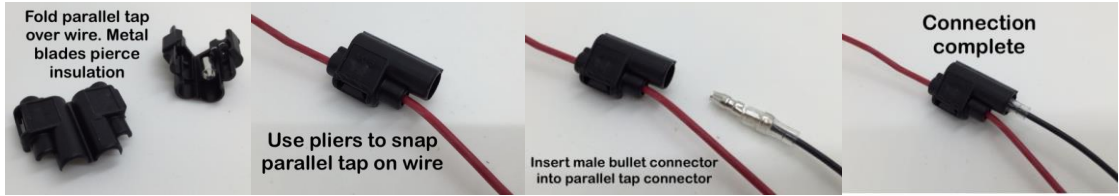
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	<ul style="list-style-type: none"> • Position the TURN SIGNAL/HORN SWITCH with the switch bracket on the <u>bottom</u> side of the steering wheel housing. • Center the switch bracket on the steering wheel housing, and mark the location for the two mounting holes. • Drill two ½" diameter holes. • Install the two EXPANDABLE NUTS in the holes. • Temporarily mount the TURN SIGNAL/HORN SWITCH, and mark the required location for the access hole for the TURN SIGNAL/HORN SWITCH harness. • Remove the TURN SIGNAL/HORN SWITCH, and drill 7/8" diameter hole in the plastic on the side of the housing where the cabling will enter the housing. • Insert the TURN SIGNAL/HORN SWITCH wire harness connectors through the hole, one at a time. • Reinstall the TURN SIGNAL/HORN SWITCH and switch bracket on the steering wheel housing. • Route the wires towards the center of the vehicle. 
<p>2. Connect the Components to the TURN SIGNAL/HORN SWITCH Harness</p>	<p>IMPORTANT: Match the colors of the <u>marking tape</u> on the wires when you install the components (e.g., RED to RED, GREEN to GREEN, BLUE to BLUE), rather than match the color of the connectors or the wires.</p> <p>Connect the following to the TURN SIGNAL/HORN SWITCH harness:</p> <ul style="list-style-type: none"> • SELF-CANCELING FLASHER RELAY (3 pin connector with NO marking tape), • RYCO POWER, GROUND & HORN HARNESS (4 pin GREEN marking), • DASH MOUNTED INDICATOR HARNESS (3 pin BLUE marking), and • BRAKE STROBE INTERFACE (2 pin NO marking).    <p>NOTE: Do NOT connect the front or rear turn signal harness to the TURN SIGNAL/HORN SWITCH at this time.</p> <ul style="list-style-type: none"> • Secure the TURN SIGNAL/HORN SWITCH harness to a cross member using a CABLE TIE. <p>NOTE: The SELF-CANCELING FLASHER RELAY can be bundled and secured with a CABLE TIE to the TURN SIGNAL/HORN SWITCH harness.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Self-Canceling Flasher Relay Feature: The SELF-CANCELING FLASHER RELAY has a timing circuit that will cancel the turn signals after a few minutes. The timer is reset whenever the turn signal switch is returned to the center/off position.</p> </div>
<p>3. Install the BRAKE STROBE INTERFACE</p>	<p>Brake Strobe Feature: Whenever the service brake is applied, the brake lights strobe six times in the first second, and then remain on at full intensity until the brake pedal is released.</p> <p><u>If you wish to disable the strobe feature:</u></p> <ul style="list-style-type: none"> ○ On the BRAKE STROBE INTERFACE cut the BLACK ground wire, or remove the BLACK ground wire from the 2 pin connector. ○ Cut the two RED wires going into the BLACK cylindrical component. ○ Splice the two RED wires together. 



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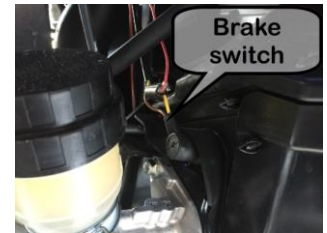
How to Install a PARALLEL TAP: The wire colors may not match your application but are for illustration.



- Locate the wires leading to the vehicle brake switch.
- Trace the wires from the brake switch to the 2 pin connector.
- Install a **PARALLEL TAP** on the vehicle **YELLOW** wire or **YELLOW/BLUE** wire coming from the vehicle brake switch.

NOTE: Check the orientation of the PARALLEL TAP connectors to ensure access for the male connectors, prior to seating the terminal with pliers.

- Route the **BRAKE STROBE INTERFACE** wire from the **TURN SIGNAL/HORN SWITCH** harness.
- Connect the **BRAKE STROBE INTERFACE** wire to the **PARALLEL TAP** installed on the vehicle brake switch **YELLOW** or **YELLOW/BLUE** wire.



4. Install the DASH MOUNTED INDICATOR HARNESS

- Mark the desired locations in the dash for the two **DASH MOUNTED INDICATOR HARNESS** LED lights, where they are visible to the driver, taking into account the length of the LED wires.
- Drill two 9/32" mounting holes in the dash for the indicator lights.

HINT: A little warmth and moisture help when installing the grommets, and then the LEDs into the grommets.

NOTE: Carefully insert the DASH MOUNTED INDICATOR HARNESS LEDs into the grommets to prevent damage to the wires and resistor.

- Seat the rubber grommets into the drilled holes, and then carefully push the LEDs into the grommets from the rear, until the LED is flush or slightly protruding.



5. Install the HORN

IMPORTANT: Do not attempt to adjust the HORN or remove the center mounting nut that attaches the HORN to the horn mounting bracket.

- Position the **HORN** using an existing mounting hole above the radiator.
- Using the **PLASTIC SPACER** mount the **HORN** using the provided **FASTENER** and **LOCK NUT**.
- Route the **RYCO POWER, GROUND & HORN HARNESS** from the **TURN SIGNAL/HORN SWITCH** harness to the **HORN**.
- Install the two flat spade connectors to the **HORN** terminals.

NOTE: Either connector can be installed on either HORN terminal.





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6. Install the FRONT TURN SIGNAL HARNESS

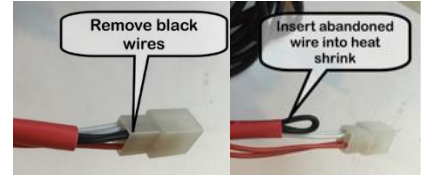
Front Running Lights Feature: The front turn signal LEDs are running lights, and illuminate at 60% intensity when the vehicle ignition is on, and then flash at full intensity when the turn signals are activated.

If you wish to disable the running light feature,

- On the FRONT TURN SIGNAL HARNESS remove the BLACK wire in the 4 position connector.

NOTE: Use a very fine flat blade screwdriver or similar tool to depress the metal tab on the pin joining the two black wires.

- Push the pin out of the 4 position connector, and tuck the pin into the red heat shrink or tape it out of the way.



- Determine the locations of the front LEDs on the outboard side OR above the headlights.

HINT: 1¼" - 1½" spacing between the holes works well.

NOTE: Note the location of the headlight support on the back side of the body plastic on the outboard side of the headlight.

NOTE: A stepped drill works best to drill the holes in the plastic body work.

- Mark the locations using a center punch.
- Remove or loosen the headlight support to avoid drilling through it.
- Drill three ¾" diameter holes for the front turn signal LEDs.
- Connect the **FRONT TURN SIGNAL HARNESS** to the 4 pin connector on the **TURN SIGNAL/HORN SWITCH** harness with the **RED** marking tape.

NOTE: The tags on the FRONT TURN SIGNAL HARNESS are marked "L" for the driver's side, and "R" for the passenger side.

HINT: A little warmth and moisture helps to slip everything together.

- Route the **FRONT TURN SIGNAL HARNESS** triple LEDs to the front corners of the vehicle.
- Slide the rubber flange gaskets that are on the LEDs back onto the wires.
- Slip each LED through the applicable ¾" diameter hole, fold the flange gasket and push it through the hole.
- Install the flange gasket into the hole, with the flange of the gasket towards the front of the vehicle.
- Insert the LED into the flange gasket with a gentle pulling and rocking motion, to seat the LED into the gasket.
- Rotate the LEDs within the gasket to orient them in the same relative position.



7. Install the REAR TURN SIGNAL HARNESS

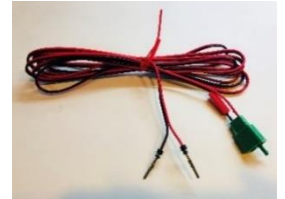
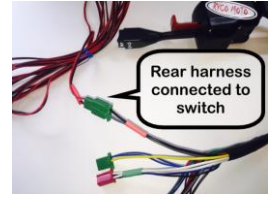
If you are installing on a Wolverine model...,	Use the...,	And then go to..
X2	REAR TURN SIGNAL HARNESS – X2 (which has 2 male pins)	Step 8.
X4	REAR TURN SIGNAL HARNESS – X4 (which has 2 female pins)	Step 9.



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8.
Install the REAR TURN SIGNAL HARNESS on an X2

- At the front of the vehicle connect the **REAR TURN SIGNAL HARNESS – X2** to the 3 pin connector on the **TURN SIGNAL/HORN SWITCH** harness, matching the **RED** marking tape.
- Remove the seats and the center tunnel cover.
- Remove the two side bed covers to provide access to the taillight assembly connectors.
- Route the **REAR TURN SIGNAL HARNESS –X2** cable from the front of the vehicle to the rear of the vehicle, routing the **REAR TURN SIGNAL HARNESS – X2 RED** wire to the driver's side, and the **REAR TURN SIGNAL HARNESS – X2 BLACK** wire to the passenger's side.
- Secure with **CABLE TIES**.

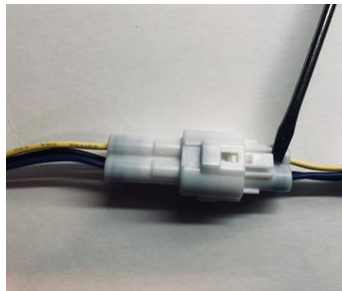


NOTE: Ensure the wiring does not contact moving components or hot surfaces.



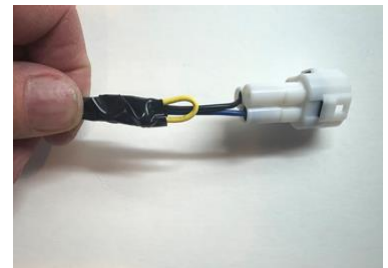
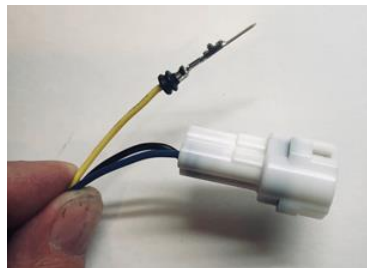
- Unplug the 3 pin connectors on the taillight harness that lead to the two taillight assemblies by depressing the locking tab with your fingernail or a small screwdriver and pulling the connectors apart.

NOTE: The 2 pin connectors are for the backup lights. Use the 3 pin connectors for these steps.



- Remove the vehicle **YELLOW** or **YELLOW/ BLUE** wire from the female connector on the vehicle harness coming from the front of the vehicle (male pin).

HINT: The pin is easily removed from the connector by depressing the plastic locking feature on the connector and pulling the wire/pin from the connector.



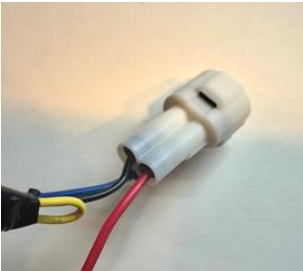


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- Fold the vehicle **YELLOW** or **YELLOW/ BLUE** wire back on itself and cover the pin with electrical tape.

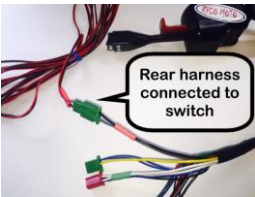
EXPLANATION: The vehicle **YELLOW** wire is hot (12VDC) whenever the brake is applied.

- Insert the **REAR TURN SIGNAL HARNESS – X2** pins into the positions previously occupied by the vehicle **YELLOW** or **YELLOW/ BLUE** wires, **RED** to driver's side and **BLACK** to passenger's side.
- Reconnect the 3 pin taillight connectors.

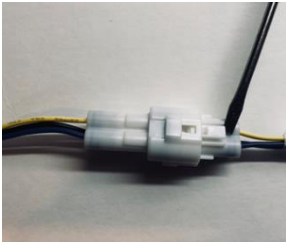


9.
Install the REAR TURN SIGNAL HARNESS on an X4

- At the front of the vehicle connect the **REAR TURN SIGNAL HARNESS – X4** to the 3 pin connector on the **TURN SIGNAL/HORN SWITCH** harness, matching the **RED** marking tape.
- Remove the seats and the center tunnel cover.
- Route the **REAR TURN SIGNAL HARNESS – X4** cable from the front of the vehicle to the rear of the vehicle, routing the **REAR TURN SIGNAL HARNESS – X4 RED** wire to the driver's side, and the **REAR TURN SIGNAL HARNESS – X4 BLACK** wire to the passenger's side.
- Secure with **CABLE TIES**.



NOTE: Ensure the wiring does not contact moving components or hot surfaces.



- Unplug the 3 pin connectors on the taillight harness that lead to the two taillight assemblies by depressing the locking tab with your fingernail or a small screwdriver and pulling the connectors apart.

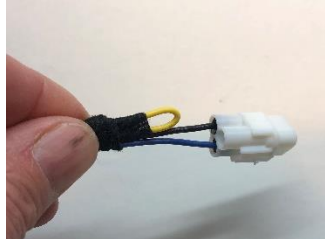
NOTE: The 2 pin connectors are for the backup lights. Use the 3 pin connectors for these steps.

- Remove the vehicle **YELLOW** wire from the male connector on the vehicle harness coming from the front of the vehicle (female pin).

HINT: The pin is easily removed from the connector by depressing the plastic locking feature on the connector and pulling the wire/pin from the connector.

- Fold the vehicle **YELLOW** wire back on itself and cover the pin with electrical tape.



EXPLANATION: The vehicle **YELLOW** wire is hot (12VDC) whenever the brake is applied.



- Fold the vehicle **YELLOW** wire back on itself and cover the pin with electrical tape.



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	<p>EXPLANATION: The vehicle YELLOW wire is hot (12VDC) whenever the brake is applied.</p> <ul style="list-style-type: none"> Insert the REAR TURN SIGNAL HARNESS – X4 pins into the positions previously occupied by the vehicle YELLOW wires, RED to driver's side and BLACK to passenger's side. Reconnect the 3 pin taillight connectors. 	
<p>10. Install the PLATE HOLDER and LICENSE PLATE LIGHT</p>	<p>NOTE: Check the orientation of the PARALLEL TAP connectors to ensure access for the male connectors, prior to seating the terminal with pliers.</p> <ul style="list-style-type: none"> Locate the BLACK (ground) and BLUE (12 V DC) wires leading to the rear taillight assembly, and install a PARALLEL TAP on each. Connect the RED wire from the LICENSE PLATE LIGHT LED into the PARALLEL TAP on the BLUE (12 V DC) wire. Connect the BLACK wire from the LICENSE PLATE LIGHT LED into the PARALLEL TAP on the BLACK wire. <div data-bbox="435 688 1404 871" data-label="Diagram"> </div> <p>IMPORTANT: DO NOT overtighten the nut on the LICENSE PLATE LIGHT. The LICENSE PLATE LIGHT body is aluminum, and the threads can be stripped quite easily.</p> <p>EXPLANATION: The LICENSE PLATE LIGHT can be installed either:</p> <ul style="list-style-type: none"> as one of the four license plate bolts, or in the TWO HOLE ADAPTER where the light will shine on the license plate. <p>Use the FLANGE BOLT provided with the LICENSE PLATE LIGHT. DO NOT OVERTIGHTEN.</p> <div data-bbox="461 1125 779 1367" data-label="Image"> </div> <div data-bbox="1073 1125 1352 1367" data-label="Image"> </div>	
<p>11. Connect to the Main Power</p>	<ul style="list-style-type: none"> Ensure that the ignition key is in the "OFF" position. Locate the wires leading to the auxiliary power outlet. <p>NOTE: Check the orientation of the PARALLEL TAP connectors to ensure access for the male connectors on the power and ground wires, when the wires are reconnected to the auxiliary power outlet terminals, prior to seating the terminal with pliers.</p> <ul style="list-style-type: none"> Install a PARALLEL TAP connector on both the WHITE/BLACK power wire, and the GREEN ground wire going to the auxiliary power outlet. <p>IMPORTANT: The LEDs and SELF-CANCELING FLASHER RELAY are polarity sensitive. The RYCO POWER,GROUND & HORN HARNESS RED fused wire MUST be connected to the 12 volt DC (positive side), and the BLACK ground wire must be connected to the vehicle ground wire. If this is not done correctly, the horn will work, but the turn signals will not function.</p>	 <p>Add parallel taps to power and ground wires</p>



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	<p>WARNING: Damage to the SELF-CANCELING FLASHER RELAY may occur if the wires are installed backwards.</p> <p>Connect the RYCO POWER, GROUND & HORN HARNESS to the PARALLEL TAP connectors on the auxiliary power outlet wires:</p> <ul style="list-style-type: none"> • Connect the RYCO POWER, GROUND & HORN HARNESS RED wire to the vehicle WHITE/BLACK power wire. • Connect the RYCO POWER, GROUND & HORN HARNESS BLACK wire to the vehicle GREEN ground wire.
12. Test	<ul style="list-style-type: none"> • Double check all the connectors. • Turn the ignition key to the "ON" position. • Turn the headlight switch on. • Verify that the turn signals, four-way flasher, horn, brake, and license plate light work correctly. • Refer to the Troubleshooting Guide at the end of this document.
13. Done	<p>IMPORTANT: Ensure that the wiring and installed hardware do not contact moving components or hot surfaces.</p> <ul style="list-style-type: none"> • Once all the cabling is in place and functionality is verified, double check the routing, and secure with CABLE TIES. • Bundle any extra cable length and secure with the CABLE TIES. • Reinstall covers and seats.

Troubleshooting Guide

Does It Work Correctly?	Front Turn Signals	Indicator Lights	Horn	Brake Lights	Rear Turn Signals	License Plate Light	Resolution	
Scenario 1	✓	✓	✓	✓	✓	✓	Go riding!	
Scenario 2	✓	✓	✓	No	No	✓	BRAKE STROBE INTERFACE not installed correctly. Refer to Step 3.	
							The REAR TURN SIGNAL HARNESS RED and BLACK wires were connected incorrectly. Refer to Step 7.	
Scenario 3	✓	✓	✓	✓	✓	No	Ensure that the LICENSE PLATE LIGHT RED power and BLACK ground wires are connected correctly (i.e. cables are not reversed). Refer to Step 10.	
Scenario 4	No	No	✓	No	No	No	Ensure that the RYCO POWER, GROUND & HORN HARNESS RED main power and BLACK ground wires are connected correctly (i.e., the cables are not reversed).	Refer to Step 11.
Scenario 5	No	No	No	✓	✓	No	Ensure that the RYCO POWER, GROUND & HORN HARNESS BLACK ground wire is connected to a good ground.	
Scenario 6	No	No	✓	✓	No	✓	If the turn signal lights illuminate but do not flash, then the SELF-CANCELING FLASHER RELAY is damaged or defective. Contact Ryco Motorsports by email or phone, provide your shipping address, and we will send you a replacement SELF-CANCELING FLASHER RELAY , at no charge, to correct the problem.	