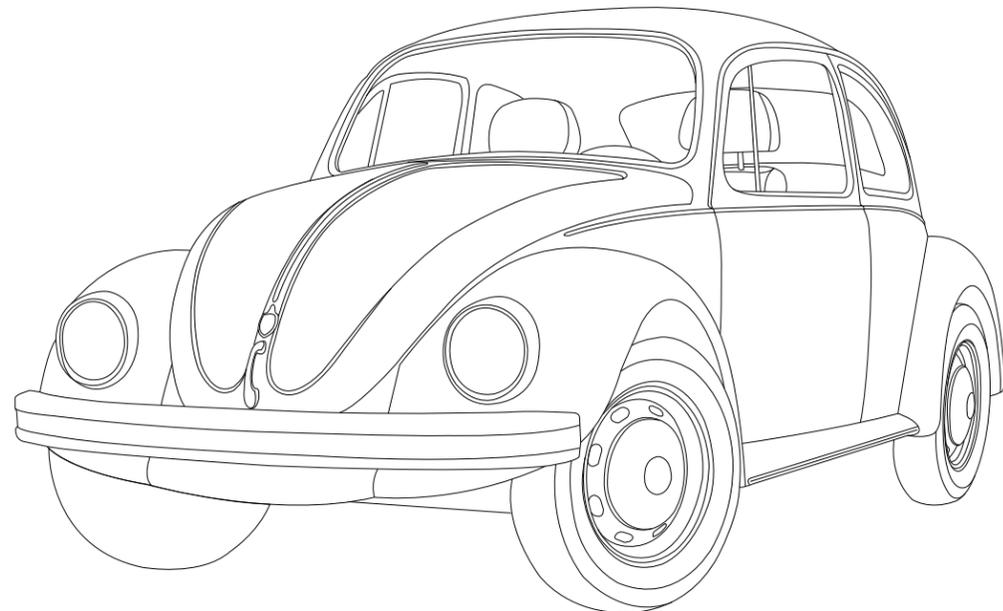




WARNING:

Validate the kit contents with the component list before proceeding. This kit is intended to be used in a modified vehicle. Please read this sheet thoroughly and be sure that you understand everything explained on it prior to opening any of the enclosed packages, or before attempting to install any of the components. Once this kit has been opened or a component installed, the kit is not returnable.

1. This kit should typically be used in a MODIFIED application only.
2. **This kit and all accessories that connect to this kit must be rated at 12 volts. The kit will not support 6 volt accessories.**
3. This kit supports the use of a high current self-exciting 1-wire alternator or other style internally regulated alternators. An adapter may be necessary in some applications.
4. This kit **WILL NOT** support the wiring for:
 - a. the optional automatic stick shift.
 - b. the optional rear window defogger.
 - c. The ignition key warning buzzer from 1970-1974.
5. This kit **DOES NOT INCLUDE** battery cables.



This kit contains the following components:

<u>Part Number</u>	<u>Description</u>	<u>Quantity</u>
510500	Highway 15 PLUS fuse panel	1
510420	Volkswagen Headlight, running light instructions kit	1
510421	Volkswagen Starter, Ignition, Engine kit	1
510422	Volkswagen Turn Signal / Emergency Flasher kit	1
510423	Volkswagen Gauge Connection kit	1
510424	Volkswagen Accessory kit	1
510425	Volkswagen Wiper motor kit	1
510429	1962-74 Volkswagen Loose Piece Terminal Kit	1
92973472	Main Vehicle Instruction set (these sheets)	1

Validate the kit contents with this component list. If there are any discrepancies with incorrect or missing parts, stop your installation and notify the supplier you purchased the kit from before proceeding.

510419 1962-74 VW Beetle **Instructions**

Classic Update Series



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START HERE !

PLEASE READ THIS BEFORE STARTING INSTALLATION !

This wiring kit is designed for ease of installation. Please read the guidelines below, BEFORE STARTING your installation, to guarantee a successful job. Use an appropriate crimping tool, which folds the wings of the open barrel terminals down into the wire, as shown on this page. If you use our crimping tools and correctly crimp the included terminals, soldering is not necessary. If you are unsure about a particular crimp, soldering is recommended. Our factory crimped terminations are installed by GM approved five ton presses, and soldering these terminations is not necessary.



AAW offers a great terminal crimping video entitled "Proper Crimping Video". It can be viewed by visiting YouTube.

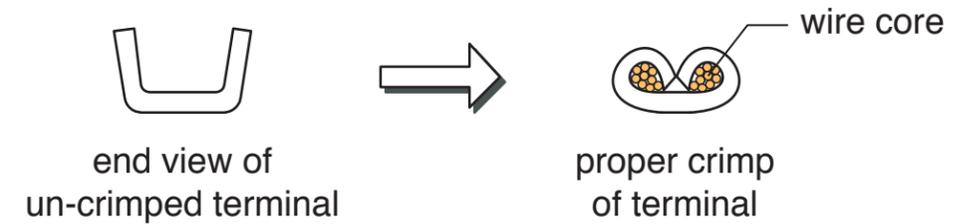
Type the following address into your web browser, to go directly to the video:
<https://www.youtube.com/watch?v=JAgEDoVI-co92973472>

Youtube Channel:
www.youtube.com/user/WiringHarness



If you have any questions concerning this or any of our products, please feel free to call us at 1-856-933-0801.

The terminals that we supply in our kits, utilize what is known as an "F" crimp. The "F" crimp, in a cross section, will look like the illustration below, when done correctly.



We carry the following crimping hand tools, to help with your terminal crimping. These hand tools are available, for purchase or rental.

AAW p/n 510585
OEM small terminal crimping tool (18-14 gauge)



AAW p/n 510586
OEM large terminal crimping tool (12-8 gauge)



AAW p/n 510609
Weather Pack/Metri Pack crimping tool (18-12 gauge)



STEP 1: DISCONNECT YOUR BATTERY:

Disconnect the battery, before installing the wiring kit, to prevent any accidental shorting caused by loose bare wire ends.



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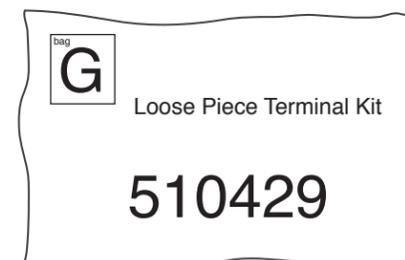
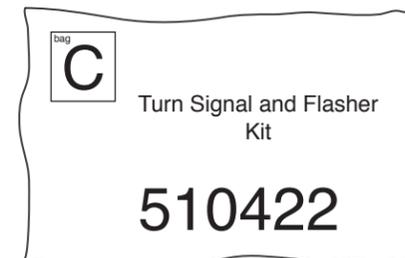
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STEP 2: START INSTALLING KIT:

This kit is broken down into individual sections, that are identified by a letter printed on the enclosed sheets, visible through each bag. The order of installation is shown below. Instruction sheets for each individual subkit are separate from the subkit and are matched by the subkit number. The 92971491 Loose Piece Terminal subkit contains the terminals used by all the subkits.

Table of Contents

Bag	Kit #	Sub-Kit Function
A	510420	Headlight and Running Light Subkit - Contains connections for: - Headlights and Headlight switch. - Front and rear running lights. - Brake and Backup Lights. - Brake and Backup Light switches. - License light . - Headlight Dimmer switches
B	510421	Ignition, Starter, Engine Subkit - Contains connections for: - Ignition switch. - Starter, Generator and Regulator. - Automatic Choke. - Electro-Magnetic Pilot Jet. - Distributor and Coil - Generator Warning iLight
C	510422	Turn Signal and Flasher Subkit - Contains connections for: - Speedometer Cluster Directional Light. - Turn Signal Switch - Front Turn Signal Lights - Rear Turn Signal Lights - Emergency Flasher - Emergency Hazard Lights
D	510423	Gauge Connection Subkit - Contains connections for: - Speedometer Cluster Lights - Oil Pressure Light - Generator Warning Light - Fuel Gauge Sender - High Beam Indicator Light - Speedometer Cluster Ignition Power
E	510424	Accessory Subkit - Contains connections for: - Horn - Radio - Courtesy Lights - Optional Fresh Air Fan and Switch
F	510425	Windshield Wiper Subkit - Contains connections for: - Wiper switch - Wiper Motor
G	510429	Loose Piece Terminal Kit - Contains terminals for all subkits.



92973472 - Main Instruction Set for 510419



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Read these notes before beginning installation.

This kit covers the Beetle wiring systems from 1962-1974. During those years there were many changes to the electrical systems that affected switches and subsequent wiring. While this kit is a 12 volt conversion, it is still necessary to consider the systems in those individual years to be sure the kit will accommodate the vehicle design of the year in question. We have researched the system designs and will provide detailed instructions that will enable you to wire this subkit to your vehicle. The original VW wiring nomenclature follows the European DIN standard. Therefore, circuit numbers are assigned to a function. This becomes very important when we try to fit a switch into the design for a specific year by enabling us to match a circuit function to a circuit requirement for that year. The design of this kit does not always follow the original wiring design in relation to original schematics and wire color coding. We have chosen a design process that takes into consideration the fact that many original switches are no longer available and that if new old stock parts are available, they are quite expensive. Our philosophy was to design around commercially available components with serviceability being a major consideration. With this in mind, we can discuss the major components that affect the design of this kit.

1. The entire electrical system was originally a 6 volt system through the 1966 model year. The 1967 model was the first year of the 12 volt system.
As this is a 12 volt conversion, all 6 volt equipment on vehicles prior to 1967 will have to be replaced with the 12 volt equivalent.
2. All Beetles used a floor mounted headlight dimmer switch through the 1965 model year. The 1966 model was the first year of the momentary headlight dimmer incorporated into the turn signal switch.
3. The emergency flasher first appeared in the 1966 model year. This modified the front and rear turn signal wiring which is covered in the Turn Signal subkit.
4. Front running lights for 1962-1966 were mounted inside the headlight bucket. From the 1967 model year forward the running lights were separate lights in the housings mounted on the front fenders. The 1962-66 vehicles turn off those front running lights when the headlights are turned on and used a separate circuit (57 circuit) in the headlight switch to control the front running lights. From 1967 forward, the front running lights stayed on when the headlights were turned on.
6. From 1962-1974 all rear turn signal were operated by a separate turn signal bulb.
6. Backup lights did not appear until the 1967 model year.
7. All 1962-1966 Beetles used a single brake switch. 1967 used a dual brake switch configuration. From 1968 forward a dual brake switch system was combined with a brake warning light.
8. All 1962-1966 Beetles used a single speed 6 volt wiper motor. This 6 volt motor cannot be used with this kit.
This kit does not support the use of the 6 volt wiper motors or any current reducing components to use the 6 volt wiper motor.
In order to use this kit, all wiper motors must be 12 volt motors.
1967 and up used several 12 volt two speed wiper motors. The 1967-69 12 volt two speed motor and switch can be used with this kit for 1962-66 vehicles.
Starting in 1972, the wipers were controlled by a steering column mounted switch.
9. There are several speedometer designs used throughout the years as follows:
 - a. 1954-1960 Beetle. 0-80 mph.
 - b. 1961-1967 Beetle. 0-90 mph.
 - c. 1968-1971 Beetle . 0-90 mph. (including 1971 Super Beetle).
 - d. 1972-1977 Beetle. 0-100 mph. (including 1972 Super Beetle).
 - e. 1973-1979 Super Beetle.The faceplate designs of the speedometers do differ by year, however, the important connections are the light and power leads on the rear of the speedometer unit.
10. The fuel gauge was a separate mechanical unit through 1967. This unit only contained an instrument light lead.
11. The fuel gauge was moved into the speedometer housing starting in 1968 and incorporated an electric sender unit located in the fuel tank. The fuel gauge required a vibrator unit (12 to 6 volt) mounted on the back of the speedometer mounted fuel gauge.
12. Several years did include warning lights for optional equipment. The rear window defogger light and the ATF temperature warning light circuits are not supported in this kit.
13. This kit is supplied with a lead wire for an engine temperature gauge. This is a common aftermarket gauge update.
14. An original bulb specification supplement can be download from the technical section of our website. This supplement identifies the original specification bulbs as well as replacement bulbs necessary for this 12 volt conversion. Acceptable alternative bulbs are also identified. All bulbs in vehicles prior to 1967 will be 6 volt and must be replaced with 12 volt equivalent bulbs for this kit.
15. All Beetles used a dash mounted ignition switch through the 1967 model year. Connections are made directly to the switch.
From 1968 on, the ignition switch was mounted in the steering column. Connections were made to jumper wires that were hard wired to the switch.
16. A supplemental switch chart is available for download from our technical section on our website. This provides a cross reference of original switches to help determine applicability to your installation.
17. Rear window defogger did not appear until 1970. This kit does not include or address the wiring for the rear window defogger or the rear window defogger switch.
18. Fresh air fan did not appear until 1971. This kit does include the wiring for the fresh air fan.
19. Automatic Stick Shift first appeared in 1970. This kit does not include the wiring for the Automatic Stick Shift.
20. The original Robert Bentley Official Service Manuals are an excellent source for original wiring diagrams and accessories such as the Automatic Stick Shift, Rear Window Defogger, and Fresh Air Fan. We strongly recommend these manuals as an addition to the research library for your vehicle.
21. The ignition key warning buzzer did not appear until 1970. This kit does not include or address the wiring for the key warning buzzer.
22. Beginning in 1972, the factory incorporated extra wiring to facilitate a "TEST NETWORK" throughout the vehicle. This kit does not include or address the wiring for the "TEST NETWORK".
23. Battery cables are not included in this ki

Part of the documentation package identifies a list of switches that are applicable to the year of the vehicle. There are no switches supplied with this kit as there are many available options including your original switches. We have researched these switches to determine availability and functionality with this kit design. A supplemental switch instruction set is available for download from our site under the technical wiring section. This supplement defines the function of the switches and the circuit connections. Use this supplement as a guideline in determining whether your original switches will work with this kit or it will be necessary to obtain new switches.

Again, there are no switches speedometer clusters, or components supplied with this kit. Switch selection is up to the installer. American Autowire has selected available 12 volt switches to help complete the wiring installation as follows:



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Read these notes before beginning installation (continued).

There are no switches supplied with this kit. Switch selection is up to the installer. While some 6 volt headlight, floor dimmer, brake, and backup light switches may be able to be used in this 12 volt conversion kit, it is recommended that all 6 volt switches, light bulbs, wiper motors, starters, generators, regulators, etc. be 12 volt. American Autowire has selected available 12 volt switches to help complete the wiring installation as follows:

- | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. 1962-1965 Beetle.</p> <p>a. Headlight sw 311-941-531B, 113-941-531, 113-941-531B, 211-941-531B, 113-941-531E</p> <p>b. Headlight Dimmer Relay not applicable</p> <p>c. Emergency Flasher not applicable</p> <p>d. Floor Dimmer sw 111-941-561B</p> <p>e. Brake switch 113-945-515H or original stock 2 prong</p> <p>f. Brake warning light not applicable</p> <p>g. Backup light sw not applicable</p> <p>h. Wiper switch 111-955-517A or original single speed wiper switch</p> <p>i. Ignition switch 111-905-803D or original switch</p> | <p>3. 1967 Beetle</p> <p>a. Headlight sw 113-941-531B, 211-941-531B, 113-941-531E</p> <p>b. Headlight Dimmer Relay 111-941-583 (original VW)</p> <p>c. Emergency Flasher 111-953-233 2 EMPI, 111-953-235G, 111-953-235 1, 113-911-627 2, 211-953-235A, 111-953-235D, 211-953-235A, 111-953-235F, 411-953-235B</p> <p>d. Floor Dimmer sw not applicable</p> <p>e. Brake switches 113-945-515G, or original stock 2 or 3 prong (used 2)</p> <p>f. Brake warning light not applicable</p> <p>g. Backup light sw 211-941-521, or original stock</p> <p>h. Wiper switch 141-955-517, 141-955-517A (2 speed wiper switch)</p> <p>i. Ignition switch 111-905-803D or original switch</p> | <p>5. 1972-1974 Beetle.</p> <p>a. Headlight sw 113-941-531B, 211-941-531B, 113-941-531E</p> <p>b. Headlight Dimmer Relay 111-941-583 (original VW)</p> <p>c. Emergency Flasher 111-953-233 2 EMPI, 111-953-235G, 111-953-235 1, 113-911-627 2, 211-953-235A, 111-953-235D, 211-953-235A, 111-953-235F, 411-953-235B</p> |
| <p>2. 1966 Beetle</p> <p>a. Headlight sw 311-941-531B, 113-941-531, 113-941-531B, 211-941-531B, 113-941-531E</p> <p>b. Headlight Dimmer Relay 111-941-583 (original VW)</p> <p>c. Emergency Flasher 111-953-233 2 EMPI, 111-953-235G, 111-953-235 1, 113-911-627 2, 211-953-235A, 111-953-235D, 211-953-235A, 111-953-235F, 411-953-235B</p> <p>The original system used a separate switch and indicator light assembly to a separate flasher relay. This kit does not use this design. This kit uses of the later 1968 and up emergency flasher which has the indicator light and all connections in one switch. The kit also eliminates the use of the original emergency flasher relay.</p> | <p>4. 1968-1971 Beetle</p> <p>a. Headlight sw 113-941-531B, 211-941-531B, 113-941-531E</p> <p>b. Headlight Dimmer Relay 111-941-583 (original VW)</p> <p>c. Emergency Flasher 111-953-233 2 EMPI, 111-953-235G, 111-953-235 1, 113-911-627 2, 211-953-235A, 111-953-235D, 211-953-235A, 111-953-235F, 411-953-235B</p> <p>The original system used a separate switch and indicator light assembly to a separate flasher relay. This kit does not use this design. This kit uses of the later 1968 and up emergency flasher which has the indicator light and all connections in one switch. The kit also eliminates the use of the original emergency flasher relay.</p> | <p>d. Floor Dimmer sw not applicable</p> <p>e. Brake switches 113-945-515G, or original stock 3 prong</p> <p>f. Dual circuit Brake warning light 113-919-233B, or original stock</p> <p>g. Backup light sw 211-941-521, or original stock</p> <p>h. Wiper switch original steering column mounted switch</p> <p>i. Ignition switch 111-905-865F or original switch</p> |
| <p>d. Floor Dimmer sw not applicable</p> <p>e. Brake switch 113-945-515H, or original stock 2 prong</p> <p>f. Brake warning light not applicable</p> <p>g. Backup light sw not applicable.</p> <p>h. Wiper switch 111-955-517 or original single speed wiper switch</p> <p>i. Ignition switch 111-905-803D or original switch</p> | <p>d. Floor Dimmer sw not applicable</p> <p>e. Brake switches 113-945-515G, or original stock 3 prong (used 2)</p> <p>f. Brake warning switch original stock</p> <p>g. Brake warning light w/test original stock</p> <p>h. Backup light sw 211-941-521, or original stock</p> <p>i. Wiper switch 141-955-517, 141-955-517A (2 speed wiper switch)</p> <p>j. Ignition switch (1968-70) 311-905-865A or original switch</p> <p>j. Ignition switch (1971) 111-905-865F or original switch</p> | <p>d. Floor Dimmer sw not applicable</p> <p>e. Brake switches 113-945-515G, or original stock 3 prong</p> <p>f. Dual circuit Brake warning light 113-919-233B, or original stock</p> <p>g. Backup light sw 211-941-521, or original stock</p> <p>h. Wiper switch original steering column mounted switch</p> <p>i. Ignition switch 111-905-865F or original switch</p> |

The original system used a separate switch and indicator light assembly to a separate flasher relay. This kit does not use this design. This kit uses of the later 1968 and up emergency flasher which has the indicator light and all connections in one switch. The kit also eliminates the use of the original emergency flasher relay.



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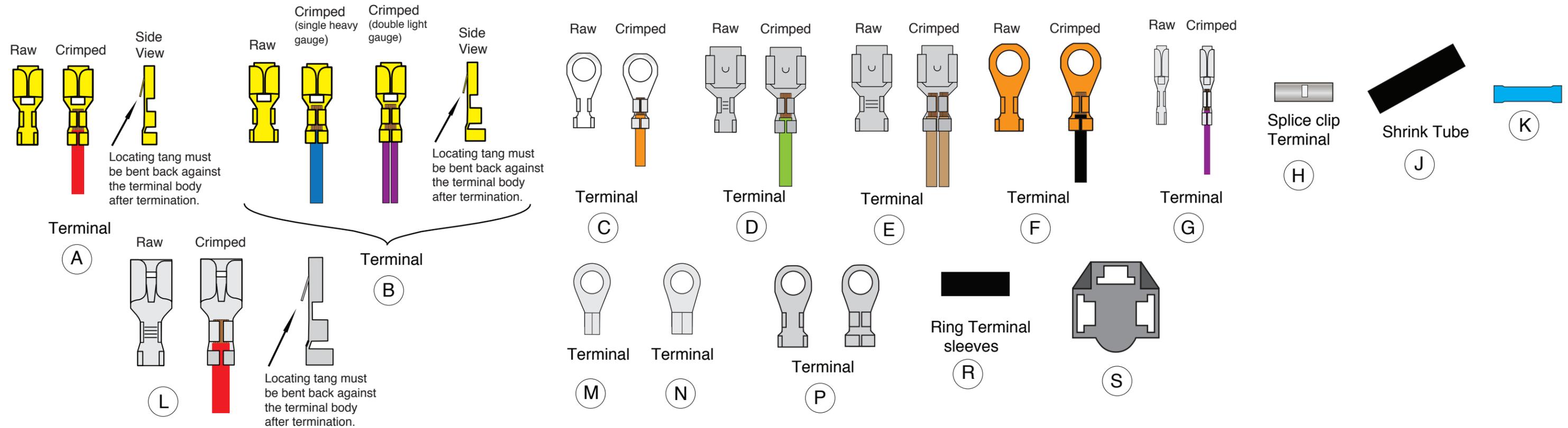
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Terminals used in this installation.

This kit contains a supply of terminals to complete the connections to the required switches and light assemblies. We have supplied additional terminals in the event that extra terminals are necessary. Each connection on the following diagrams identifies a specific terminal by a letter code that will correspond to the letter code on the terminals identified below. The terminals below are shown in actual size to help you identify the terminal required for each connection. Many of the terminals on the following drawings are already installed on the wires. These terminals will be shown in the crimped configuration and will not have a letter code next to the terminal.



Notes on installation

The enclosed instruction sheets show the connections to the appropriate switches. Before beginning, it is important to consider the following facts:

1. There is no set pattern on how the wire is routed to each switch.
2. Wire routing is an individual preference and therefore it is the responsibility of the installer to design the wire routing scheme for the specific vehicle. The important thing about wire routing is to consider the neatest bundle and the shortest distance. Extra wire should be eliminated once the desired routing has been measured. Excess wire should never be coiled and bundled out of the way.
3. In many cases, it would be desirable to follow the original factory routing scheme as there may be grommet and tube assemblies in place to protect the wiring as it passes through specific inner panels in the car.
4. There is more wire than required for the circuits in question. We have provided the extra wire to accommodate any wire routing scheme developed by the installer. With this in mind, each wired circuit should be routed and measured before the wire is cut and terminated to fit the routing scheme.
5. The drawings show the wire colors with the actual printing on each wire. Printed wires will have the same color coding as on the drawings and a circuit description printed on the wire every 3 inches.
6. When specific color coded and printed wire is not used for a circuit, every effort is made to utilize the original color coding and striping for the original Volkswagen circuit.
7. Each wire requiring termination is identified with the terminal letter code. These wires will be depicted in the "Raw" view with the required Terminal letter code. The wires are shown approaching the terminal as it would appear before termination.
8. In many cases, a wire will already be terminated on one end and will be shown on the drawing according to the "Crimped" view of the terminal and will not have a terminal letter designation code.
9. It is recommended that the proper crimp tool be used for the terminal installations. With the correct crimp tool, soldering the termination would not be necessary. When in doubt about the strength of the termination, it is recommended that the connection be soldered.
10. There are connections within some circuits that are best handled with an "in line splice". The physical location of the splice is up to the installer as it is dependent on the wire routing scheme. Closed barrel splice connectors are supplied for this connection as well as sealing shrink tubing to protect the completed splice. It is strongly recommended that the in line splice connection be soldered before sealing the connection with the shrink tubing. Be sure to install the wires through the shrink tubing before crimping and soldering the splice connection.



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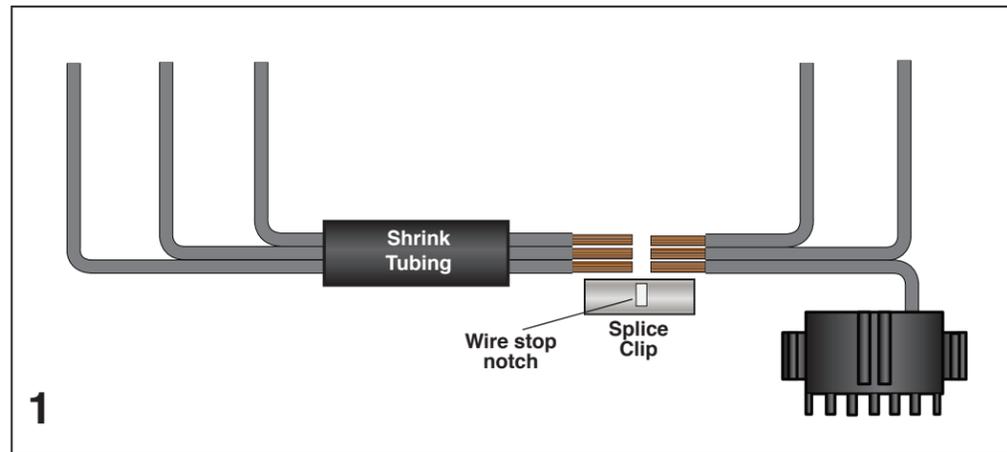
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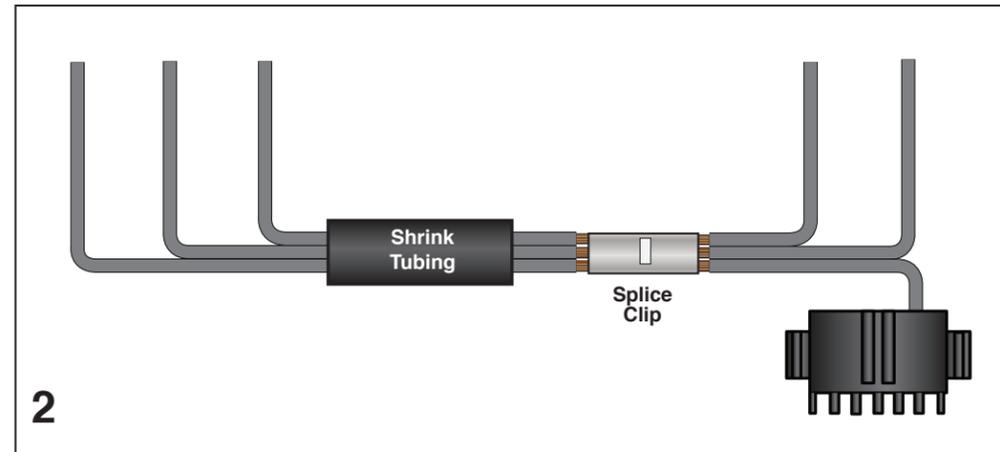
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In line wire splicing.

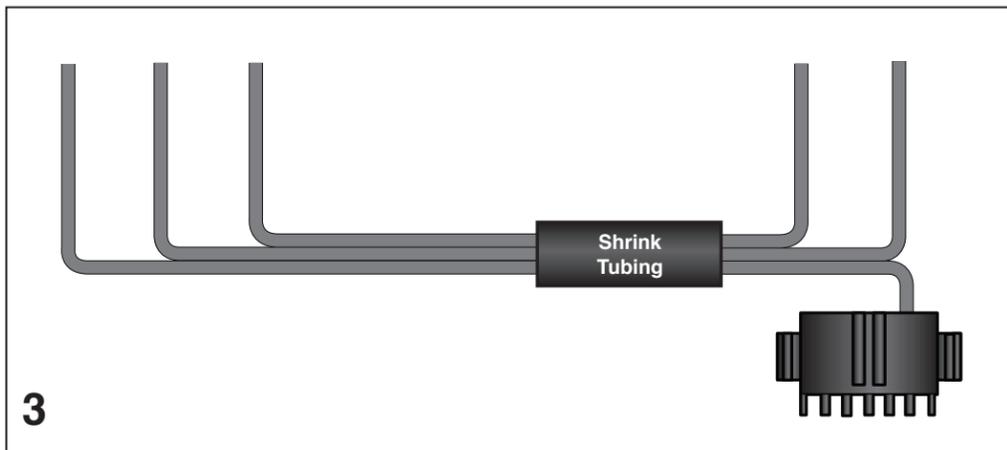
This kit uses in line splices in several of the subkits. This example shows the correct way to execute this splice.



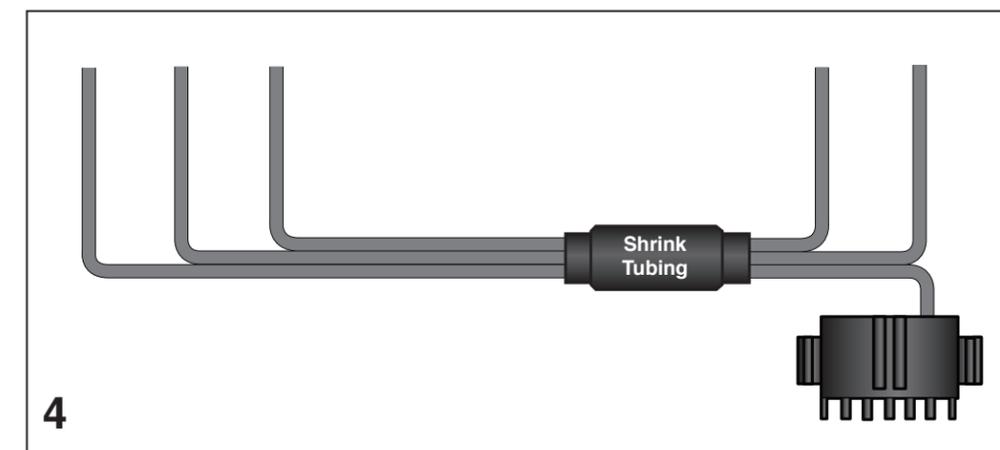
After routing wires to be spliced, strip the wires long enough to reach the wire stop in the splice clip. Slide the heat shrink tube over all the wires **BEFORE** installing the splice clip. Be sure the heat shrink tube is of adequate length to completely cover the splice.



Once the wires are installed into the splice clip, the splice clip can be crimped or compressed to tightly retain the wires. This connection can then be soldered.



Slide the shrink tube over the completed splice. Be sure to center the shrink tube so that none of the splice is exposed.

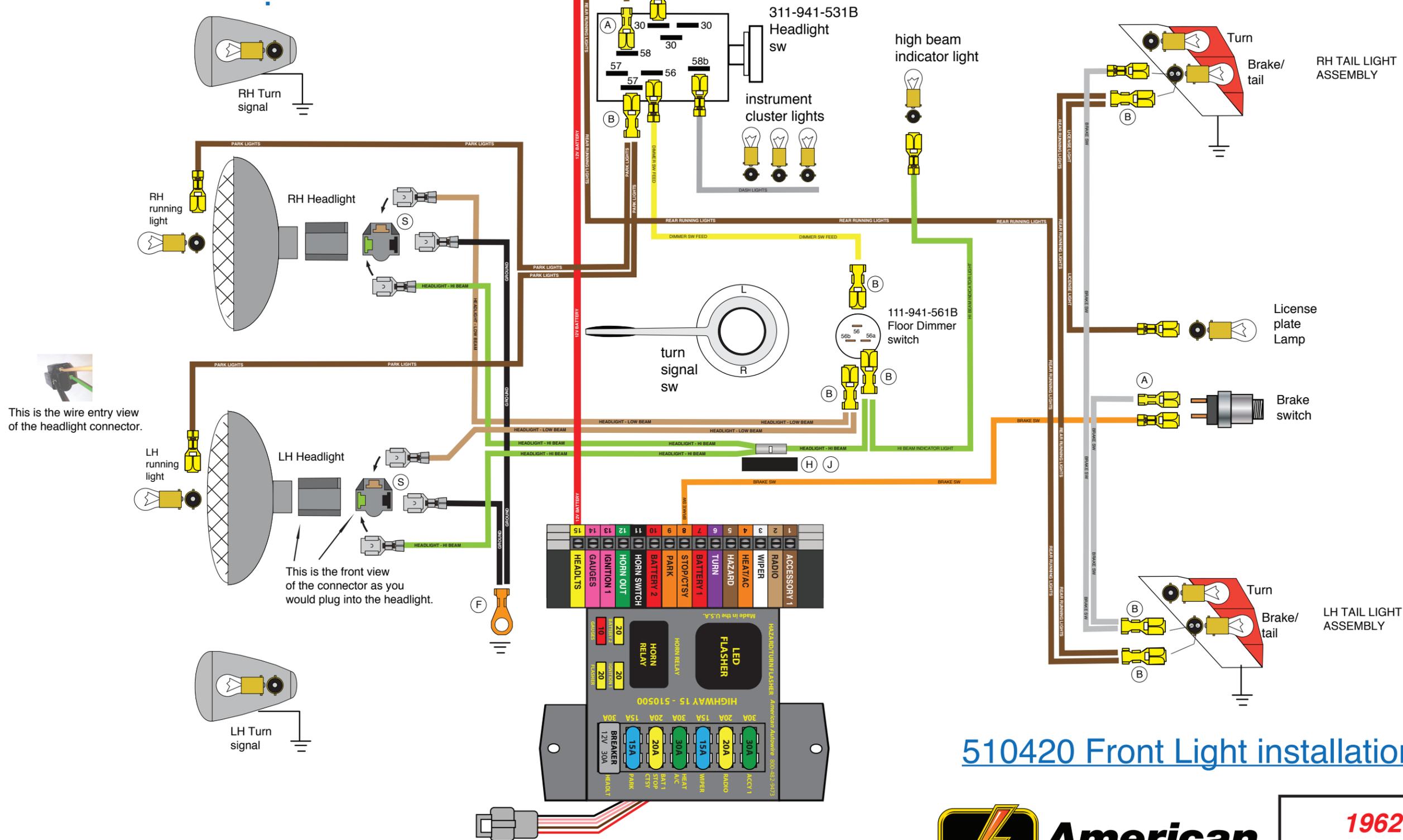


Heat the shrink tube to allow the sealant to form around the splice. The shrink tube will conform to the contours of the splice. This is the correct way to seal the splice.



1962-65 Beetle - Headlights, running lights, and brake lights.

Note: All 6 volt light bulbs must be replaced with 12 volt bulbs.



This is the wire entry view of the headlight connector.

This is the front view of the connector as you would plug into the headlight.

510420 Front Light installation instructions:

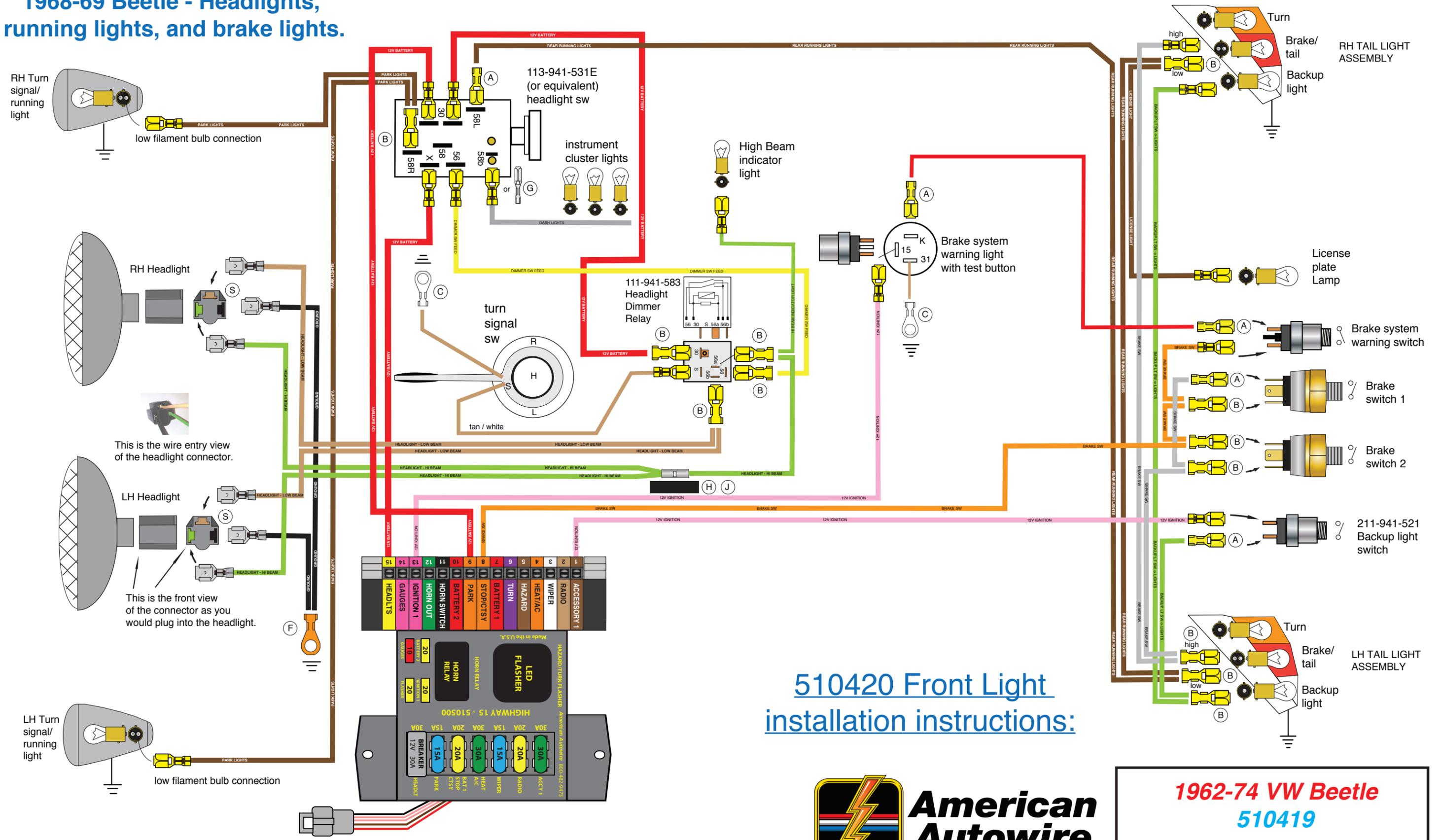
Note: All 6 volt light bulbs must be replaced with 12 volt bulbs.



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1968-69 Beetle - Headlights, running lights, and brake lights.



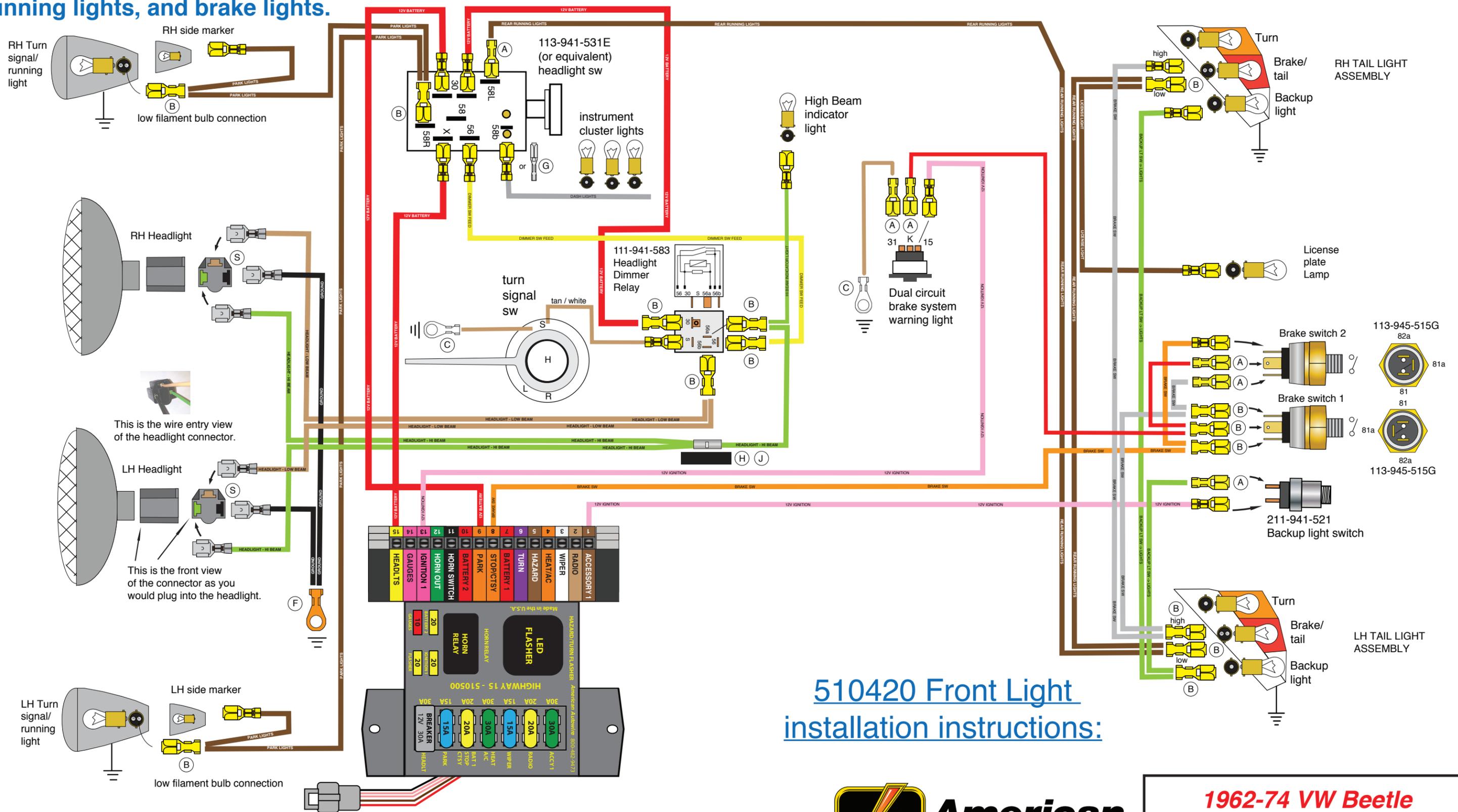
510420 Front Light installation instructions:



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1970-71 Beetle - Headlights, running lights, and brake lights.



510420 Front Light installation instructions:

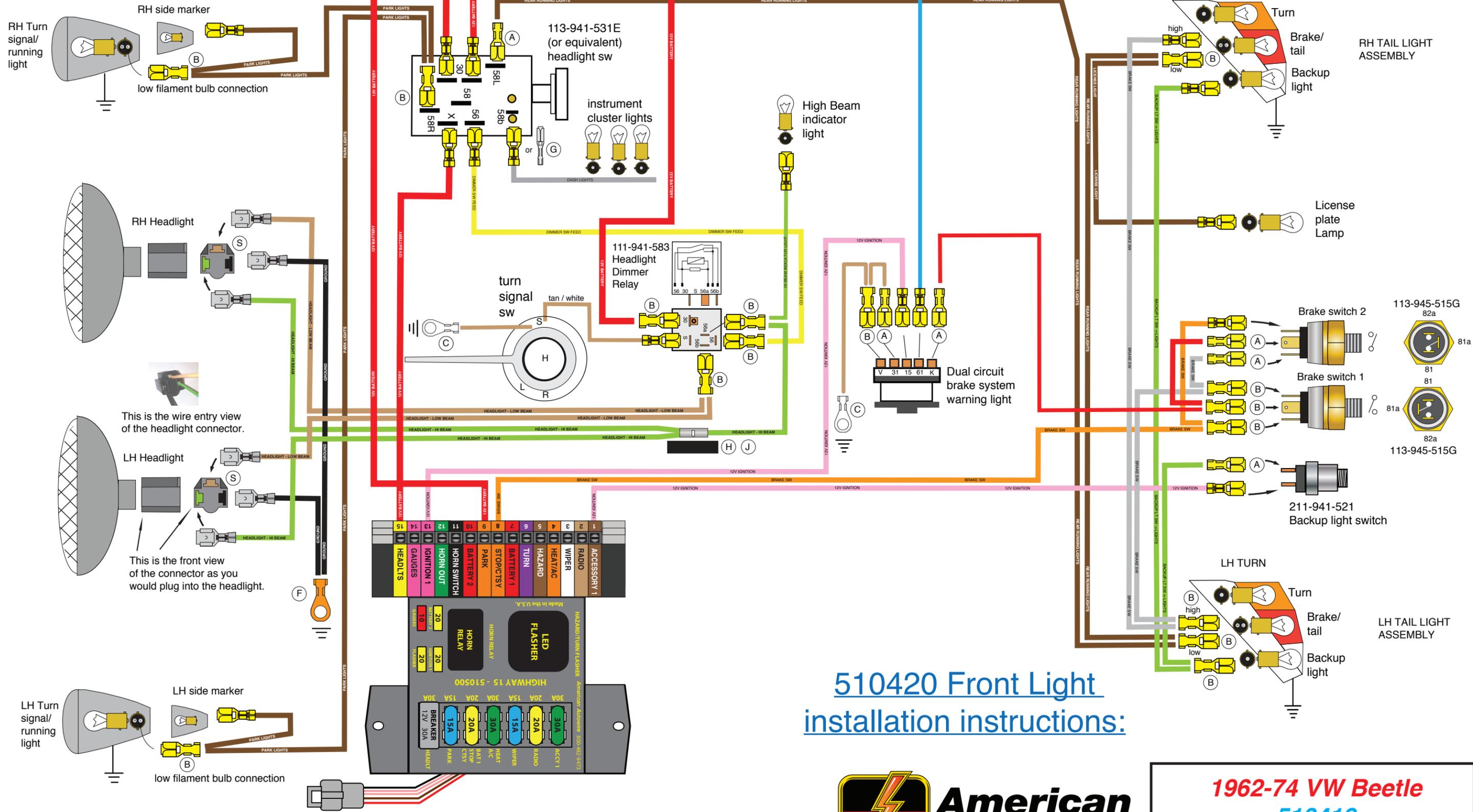


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1972 Beetle - Headlights, running lights, and brake lights.



510420 Front Light installation instructions:

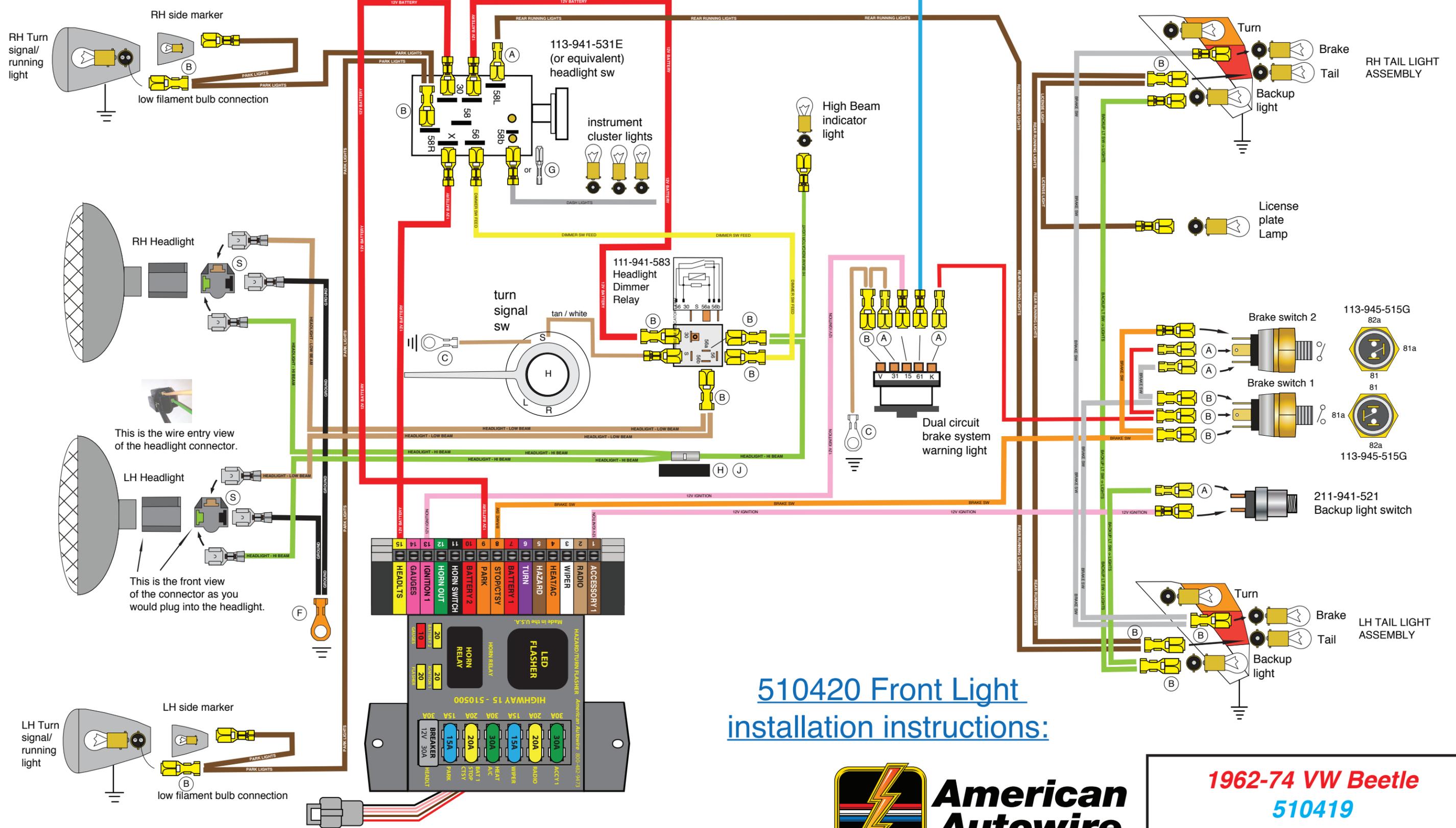


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1962-74 VW Beetle
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1973 Beetle - Headlights, running lights, and brake lights.



510420 Front Light installation instructions:



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WIRE FUNCTION CHART

<u>VW CIRCUIT</u>	<u>AAW CIRCUIT</u>	<u>WIRE GAUGE</u>	<u>WIRE COLOR</u>	<u>WIRE PRINTING</u>	<u>CIRCUIT FUNCTION</u>
58B	8	18	Gray	DASH LIGHTS	Dash light feed wire from headlight switch
30	2A	12	Red	12V BATTERY	Main power from Panel connection 15 (HEADLTS) to the headlight switch
30	2B	12	Red	12V BATTERY	Main power from Panel connection 11 (PARK) to the headlight switch
30	2C	12	Red	12V BATTERY	Headlight switch power terminal (30) to Dimmer relay power terminal (30)
30	2D	18	Red	no printing	Brake warning light "K" terminal to brake switch
58	9A	16	Brown	REAR RUNNING LIGHTS	Rear running light lead from Headlight switch to rear running lights
58	9B	16	Brown	REAR RUNNING LIGHTS	Right rear to Left rear running light jumper
58	9C	16	Brown	LICENSE LIGHT	License plate light lead wire
57	9D	16	Brown	PARK LIGHTS	Front running light lead from Headlight switch to left front running lights and side markers
57	9E	16	Brown	PARK LIGHTS	Front running light lead from Headlight switch to right front running lights and side markers
56	10	14	Yellow	DIMMER SW FEED	Power output from the headlight switch to the floor dimmer or Dimmer relay
56B	11A	14	Light Green	HEADLIGHT - HIGH BEAM	High beam headlight lead from the Headlight switch to left headlight
56B	11B	14	Light Green	HEADLIGHT - HIGH BEAM	High beam headlight lead from the Headlight switch to right headlight
	11C	18	Light Green	HI BEAM INDICATOR LIGHT	High beam indicator light in instrument cluster
56A	12A	14	Tan	HEADLIGHT - LOW BEAM	Low beam headlight lead from the Headlight switch to left headlight
56A	12B	14	Tan	HEADLIGHT - LOW BEAM	Low beam headlight lead from the Headlight switch to right headlight
	150A	14	Black	GROUND	Headlight ground wire
	150B	14	Black	GROUND	Headlight ground wire
	24	18	Light Green	BACK UP LT SW --> LIGHTS	Backup lights lead wire from backup light switch
15	39A	18	Pink	12V IGNITION	Main power from Panel connection 2 (ACCY 3) to the backup light switch
15	39B	18	Pink	12V IGNITION	Main power from Panel connection 2 (ACCY 3) to the brake warning light power in terminal (15)
31S	7	18	Tan / white stripe	no printing	Turn signal switch "S" terminal to headlight dimmer relay for momentary ground
	140	16	Orange	BRAKE SW	Main power from Panel connection 9 (STOP/CRTSY) to the brake switch
	17	16	White	BRAKE SW	Power lead wire from brake switch to brake lights
61	61	18	Light blue	no printing	Brake warning light terminal "61" to voltage regulator terminal "61"
31	31	18	Tan	no printing	Brake warning light ground wire(s)

[510420 Front Light installation instructions:](#)



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1962-74 VW Beetle
510419

Classic Update Series

92973472 Rev 1.0 7/13/2021

Read these notes before beginning installation.

The Engine and Starter wiring has some important facts that you must be aware of before installing this kit.

1. The electrical system was originally a 6 volt system through the 1966 model year. The 1967 model was the first year of the 12 volt system.

As this is a 12 volt conversion, all 6 volt equipment on vehicles prior to 1967 will have to be replaced with the 12 volt equivalent.

2. All Beetles used a dash mounted ignition switch through the 1967 model year. Connections are made directly to the switch.
From 1968 on, the ignition switch was mounted in the steering column. Connections were made to jumper wires that were hard wired to the switch.
3. A supplemental switch chart is available for download from our technical section on our website. This provides a cross reference of original switches to help determine applicability to your installation.
4. A stock 12 volt coil from 1967 and later or an aftermarket coil designed for use in a 12 volt application will be required.
5. The battery must be changed to a 12 volt battery.
6. Any indicator lights in the speedometer cluster must be changed to 12 volt equivalents.
7. The Automatic choke and the Electro-magnetic pilot jet must be checked and must be 12 volt compliant.
8. The generator and regulator must be 12 volt units. Generators and regulators from a 1967 and later 12 volt system can be used.
If you are converting to an internally regulated alternator, this becomes a moot point as you will not be needing the external regulator.
9. The starter must be a 12 volt unit. However, there are unique situations that must be addressed concerning the engine.
The flywheel size and starter ring gear tooth configuration was different on the 6 volt and the 12 volt cars. This means that a later 1967 and up starter cannot just be bolted to a 1966 and earlier car.
The options are:
 - a. Get your original 6 volt starter modified for 12 volt.
 - b. Run the 6 volt starter on 12 volts. General concensus is that it will spin faster but last quite a long time unless you crank the motor for long periods of time and overheat the starter
 - b. Change the flywheel on the motor to one that uses the 12 volt starter and use the stock 12 volt starter, Again, this may not be a simple bolt in. Check with your mechanic or the VW experts on all possible mechanical options and restrictions.

[510421 Starter, Ignition, Engine installation instructions:](#)



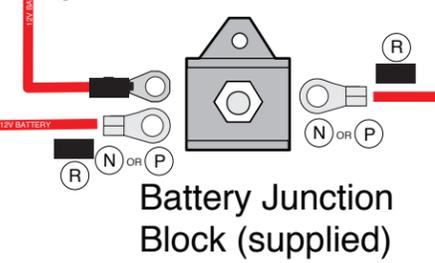
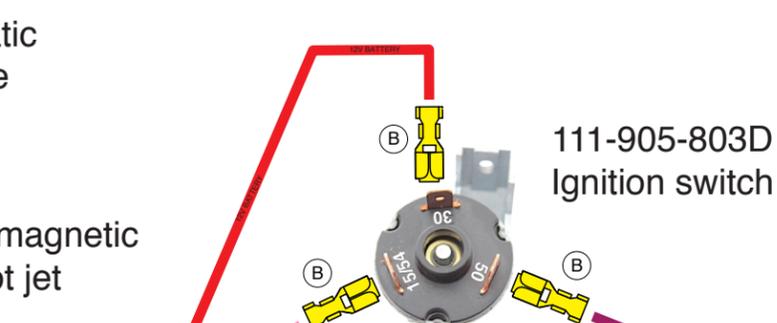
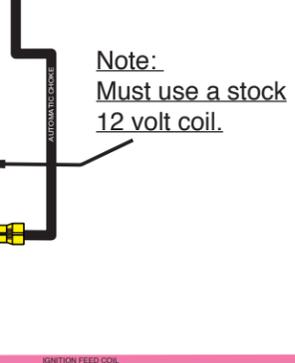
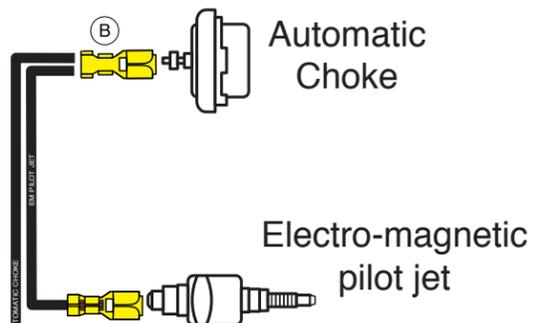
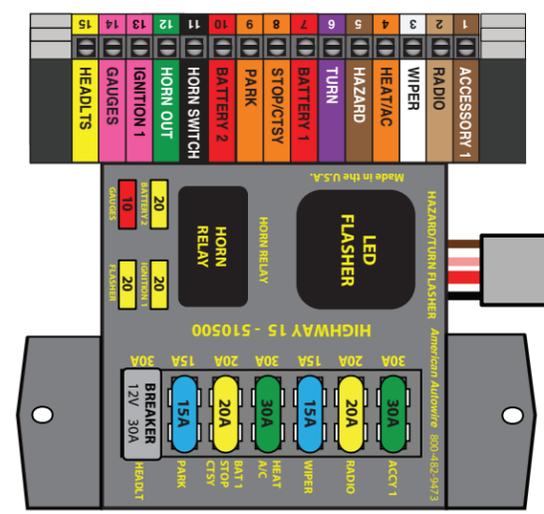
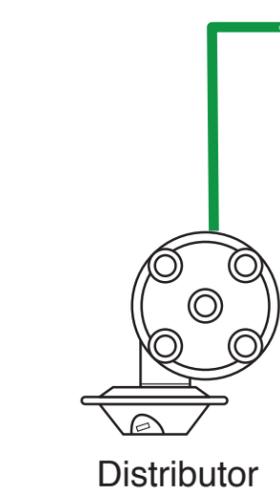
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1962-74 VW Beetle
510419

Classic Update Series

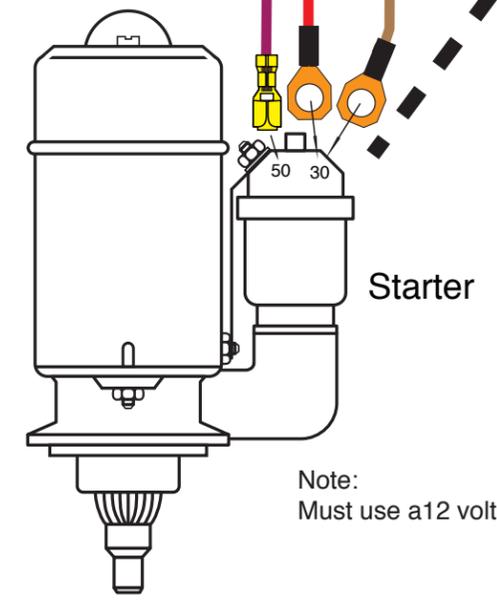
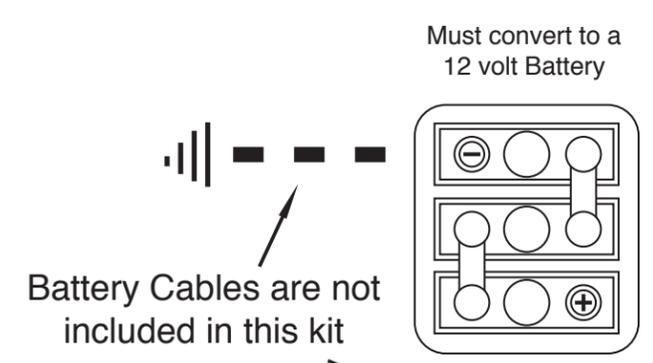
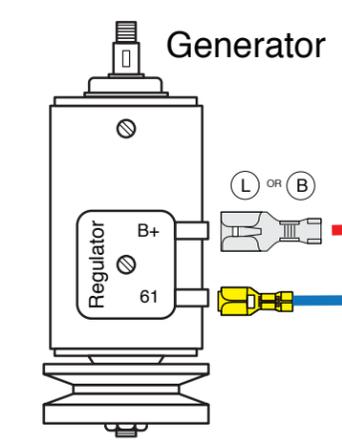
92973472 Rev 1.0 7/13/2021

1962-66 Beetle - Ignition and Starter



This wire is supplied in the 510423 Gauge Connection Kit

Note: Must use a 12 volt generator and regulator.



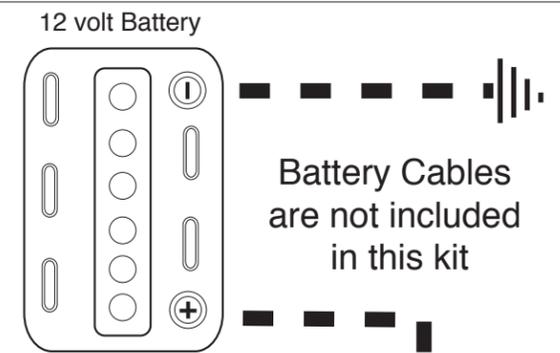
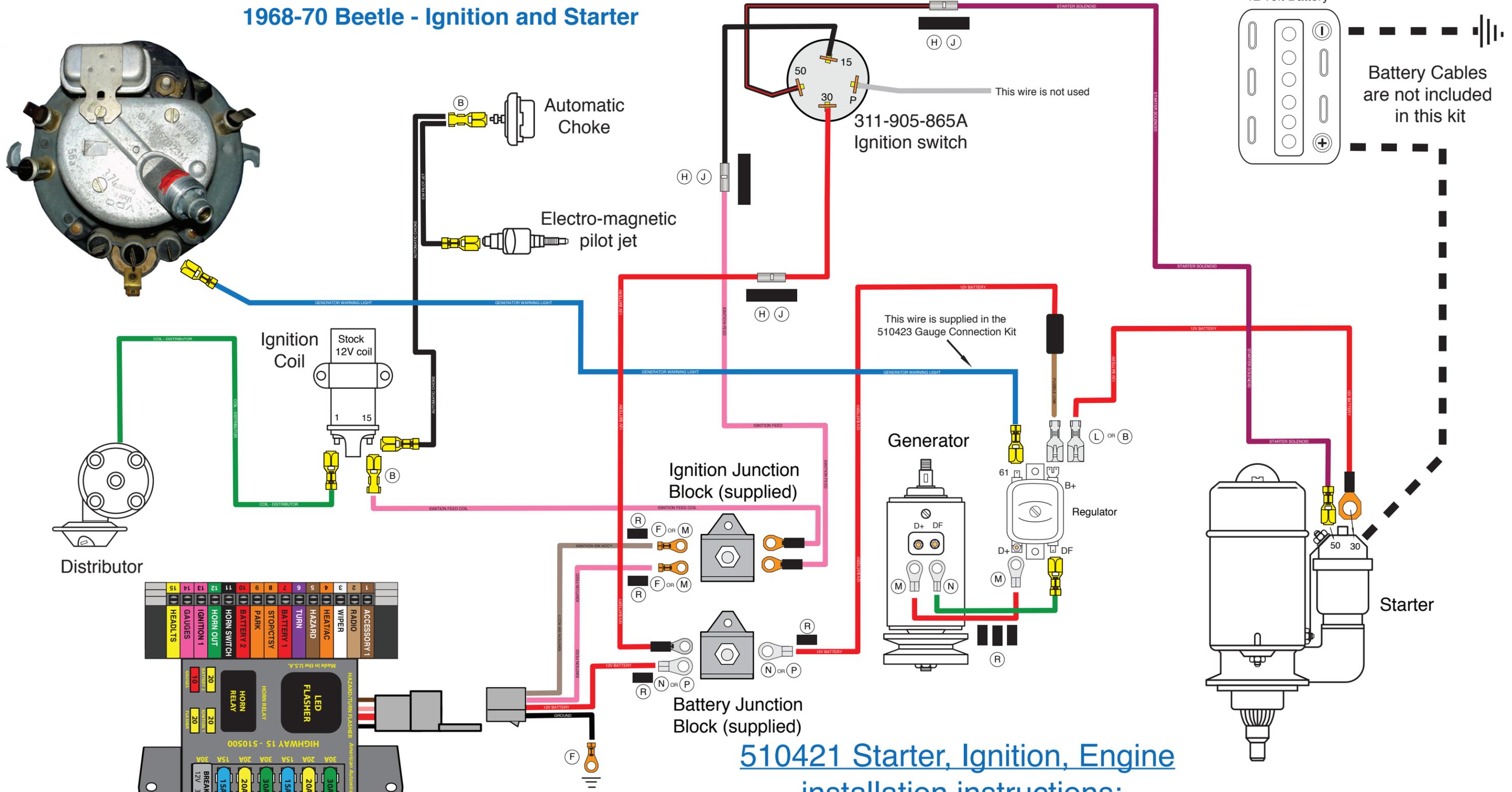
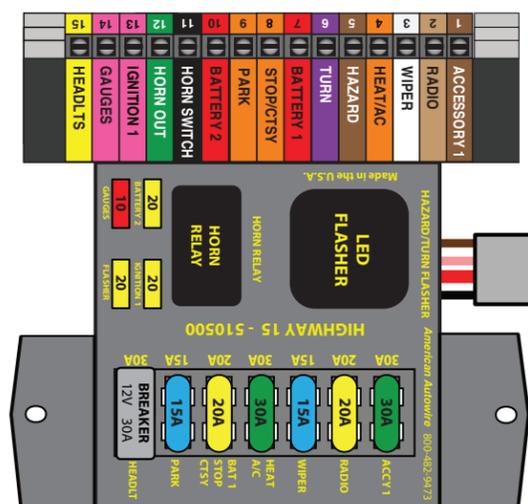
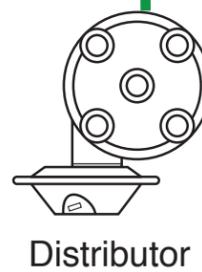
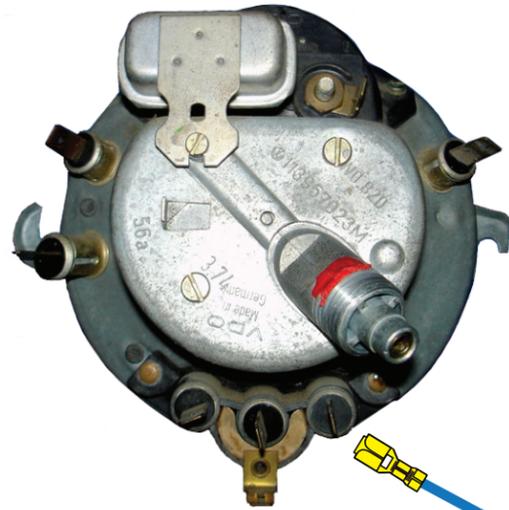
Note: Must use a 12 volt starter.

510421 Starter, Ignition, Engine installation instructions:



1962-74 VW Beetle
510419
Classic Update Series
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1968-70 Beetle - Ignition and Starter

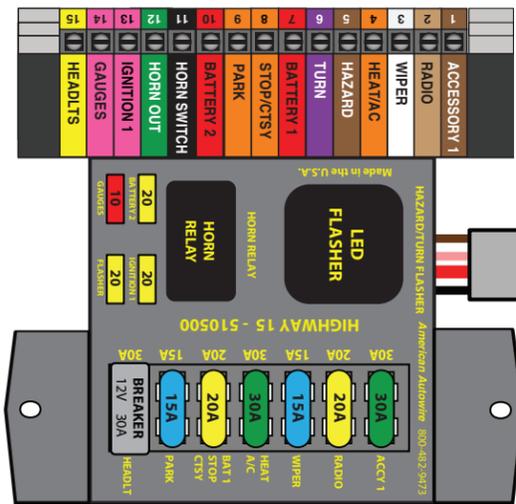
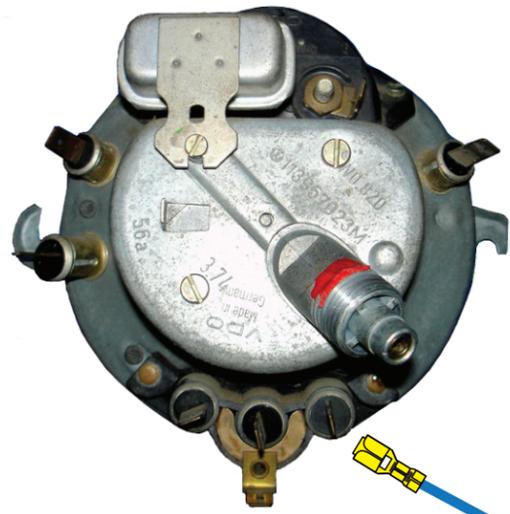


510421 Starter, Ignition, Engine installation instructions:

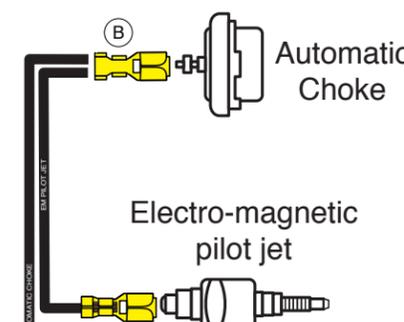


1962-74 VW Beetle
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Classic Update Series
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1971-74 Beetle - Ignition and Starter



This wire is not used



This wire is a live ignition wire when the key is on. It is not used in this kit.

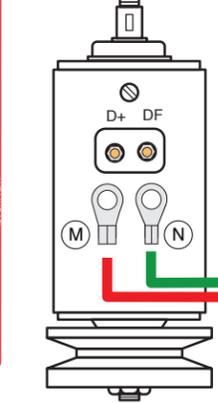
This wire is supplied in the 510423 Gauge Connection Kit

Ignition Junction Block (supplied)

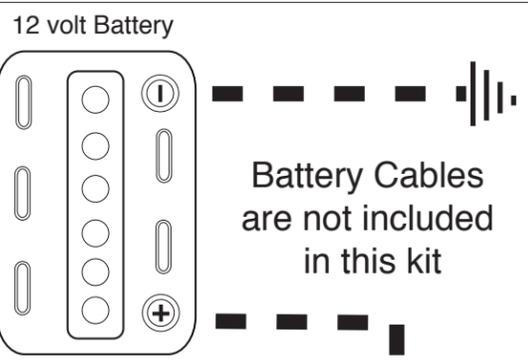
Battery Junction Block (supplied)

Generator

Regulator



111-905-865F Ignition switch



Battery Cables are not included in this kit

Starter

510421 Starter, Ignition, Engine installation instructions:



1962-74 VW Beetle
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WIRE FUNCTION CHART

<u>VW CIRCUIT</u>	<u>AAW CIRCUIT</u>	<u>WIRE GAUGE</u>	<u>WIRE COLOR</u>	<u>WIRE PRINTING</u>	<u>CIRCUIT FUNCTION</u>
30	2A	10	Red	12V BATTERY	Panel connector to battery junction block
15	3A	12	Pink	IGNITION FEED	Panel connector to Ignition junction block
	4	12	Brown	IGNITION SW ACCY	Panel connector to Ignition junction block
	150	14	Black	GROUND	Panel connector to chassis ground
15	3B	12	Pink	IGNITION FEED	Ignition junction block to ignition switch (1962-67) Ignition junction block to ignition switch in line splice (1968 up)
15	3C	12	Pink	IGNITION FEED - COIL	Ignition junction block to coil
	122	14	Dark Green	COIL - DISTRIBUTOR	Lead wire from coil to distributor
30	2B	12	Red	12V BATTERY	Battery junction block to fusible link in line splice connection
30	2D	12	Red	12V BATTERY	Battery junction block to ignition switch (1962-67) Battery junction block to ignition switch in line splice (1968 up)
30	2C	14	Brown	fusible link	Fusible link in line splice connection to starter battery terminal
30	2E	12	Red	12V BATTERY	Lead wire from regulator to starter battery terminal
30	2F	10	Red	12V BATTERY	Lead wire from generator "D+" terminal to regulator "D+" terminal
	152	16	Dark Green	GENERATOR - REGULATOR	Lead wire from generator "DF" terminal to regulator "DF" terminal
31	151	14	Black	GROUND	Ground wire from regulator to generator "31" terminal
50	6	12	Purple	STARTER SOLENOID - S	Ignition switch to starter solenoid (1962-67) Ignition switch in line splice to starter solenoid (1968 up)
	51	16	Black	AUTOMATIC CHOKE	Lead wire from coil to automatic choke
	52	16	Black	EM PILOT JET	Lead wire from automatic choke to electro-magnetic pilot jet

510421 Starter, Ignition, Engine installation instructions:



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**1962-74 VW Beetle
510419**

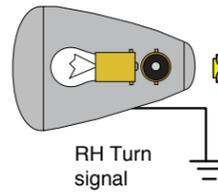
Classic Update Series

92973472 Rev 1.0 7/13/2021

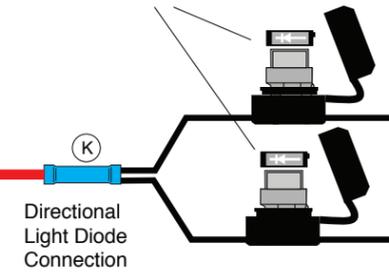
1962-65 Beetle - Turn signal lights



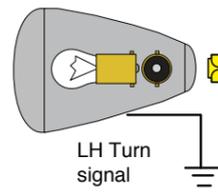
Note: Must replace 6 volt bulbs with 12 volt bulbs



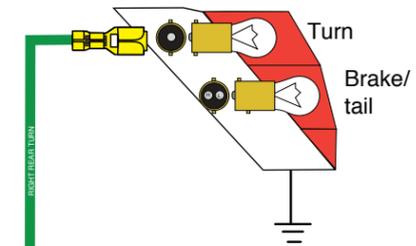
Both diodes must be installed in this direction



Note: Must replace 6 volt bulbs with 12 volt bulbs

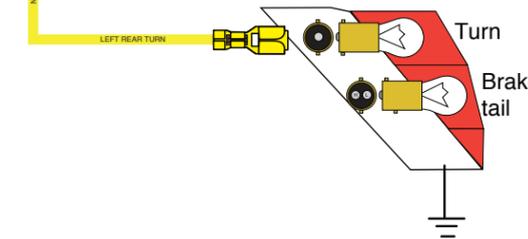


Note: Must replace 6 volt bulbs with 12 volt bulbs

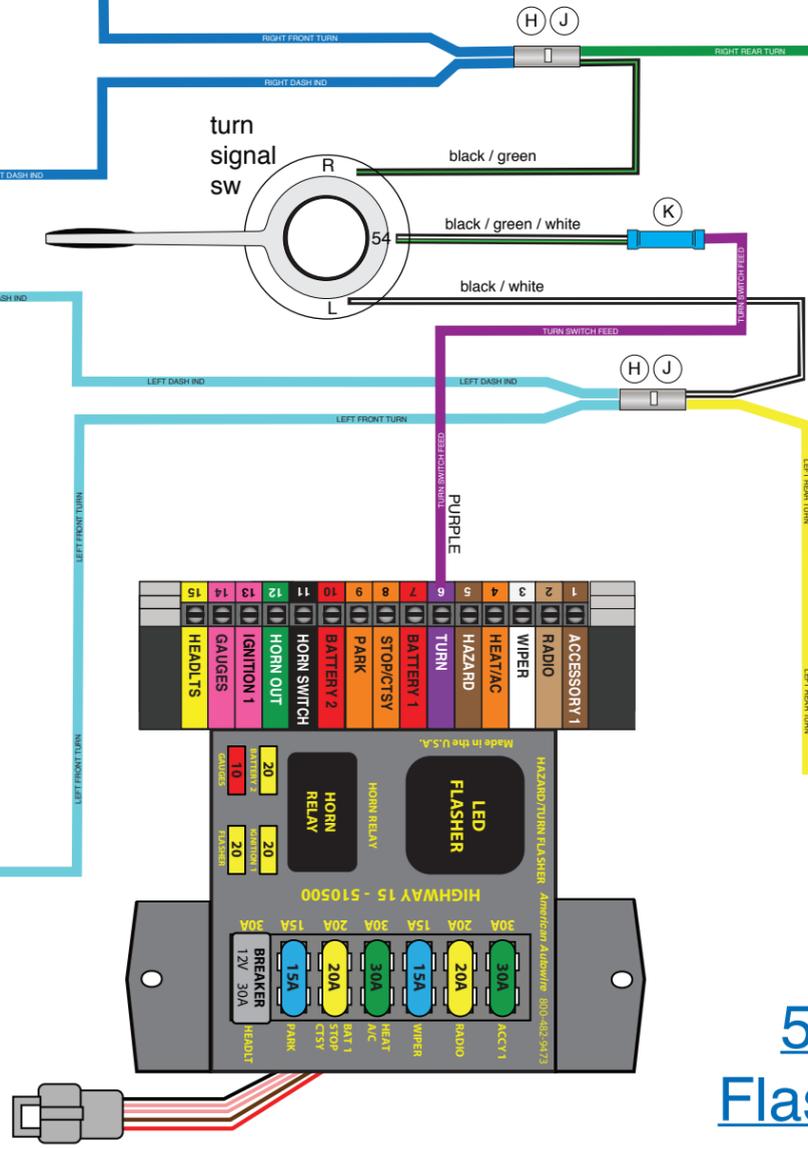
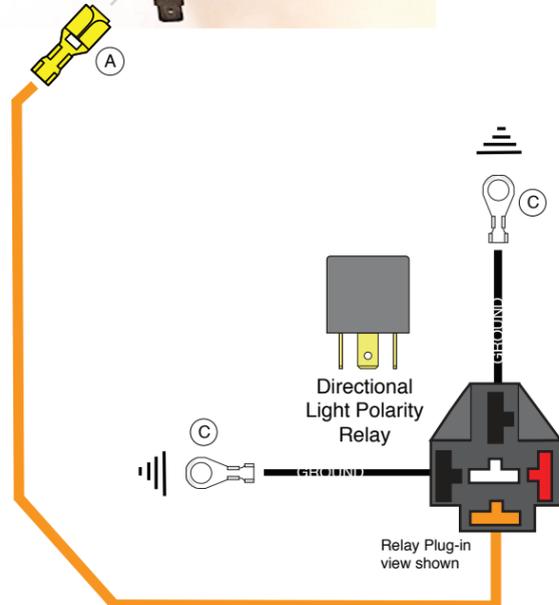


RH TAIL LIGHT ASSEMBLY

Note: Must replace 6 volt bulbs with 12 volt bulbs



LH TAIL LIGHT ASSEMBLY



510422 Turn Signal/Emer. Flasher Installation instructions:



1962-74 VW Beetle
510419
Classic Update Series
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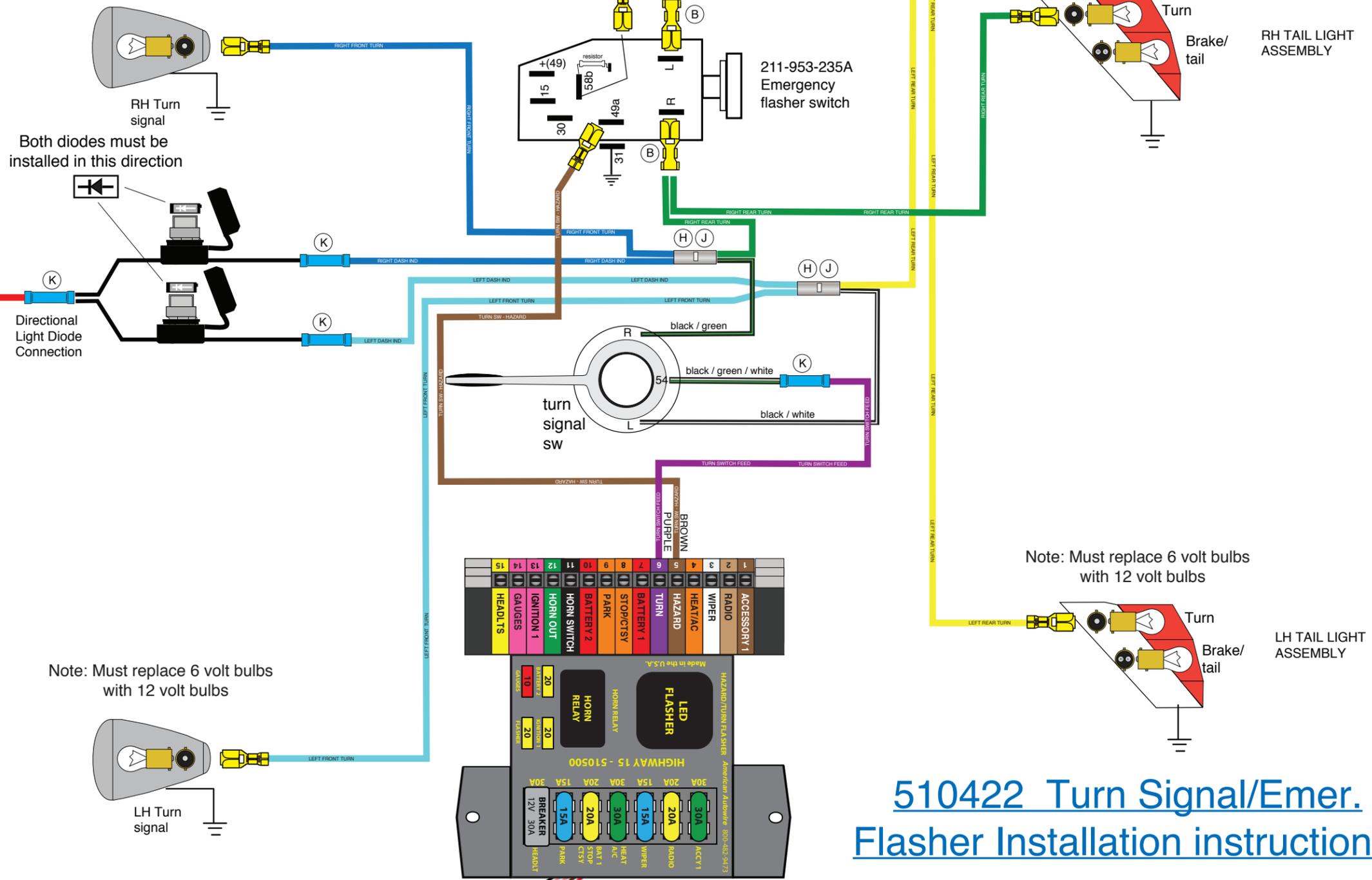
1966 Beetle - Turn signal, hazard and brake lights



Note: Must replace 6 volt bulbs with 12 volt bulbs

To terminal 58b on headlight switch

Note: Must replace 6 volt bulbs with 12 volt bulbs

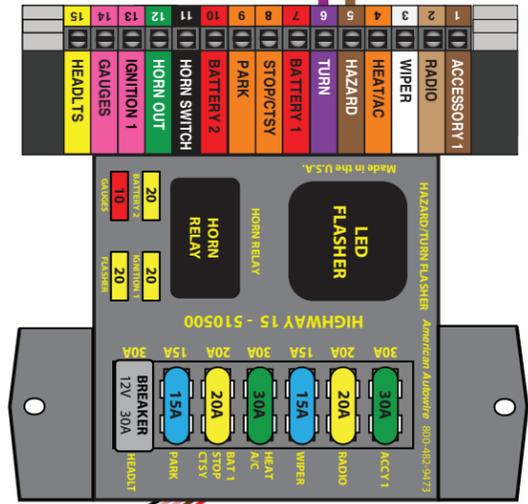
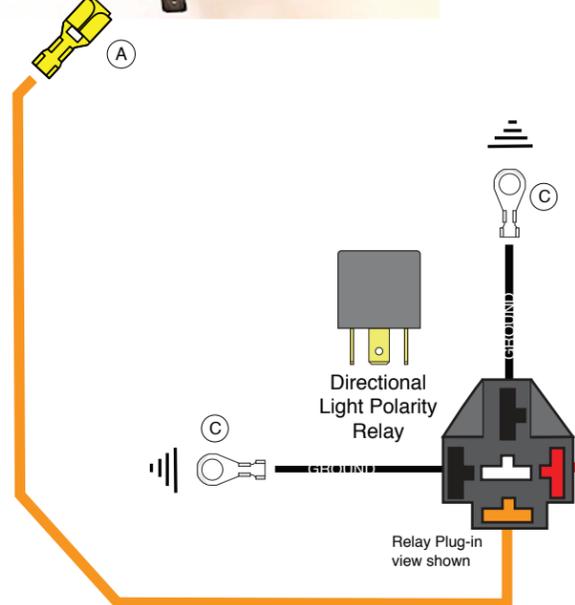


Both diodes must be installed in this direction

Directional Light Diode Connection

Note: Must replace 6 volt bulbs with 12 volt bulbs

Note: Must replace 6 volt bulbs with 12 volt bulbs

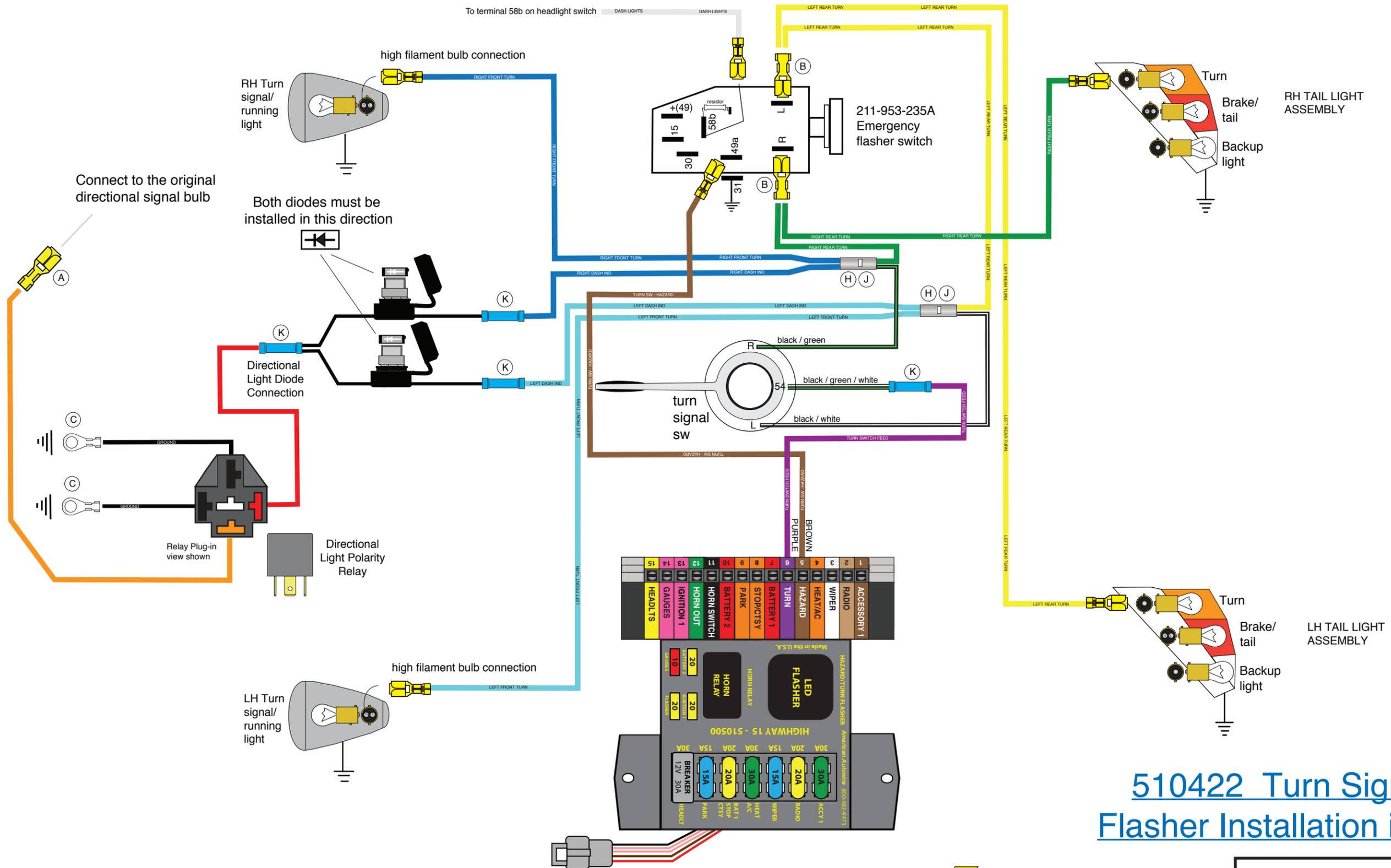


510422 Turn Signal/Emer. Flasher Installation instructions:



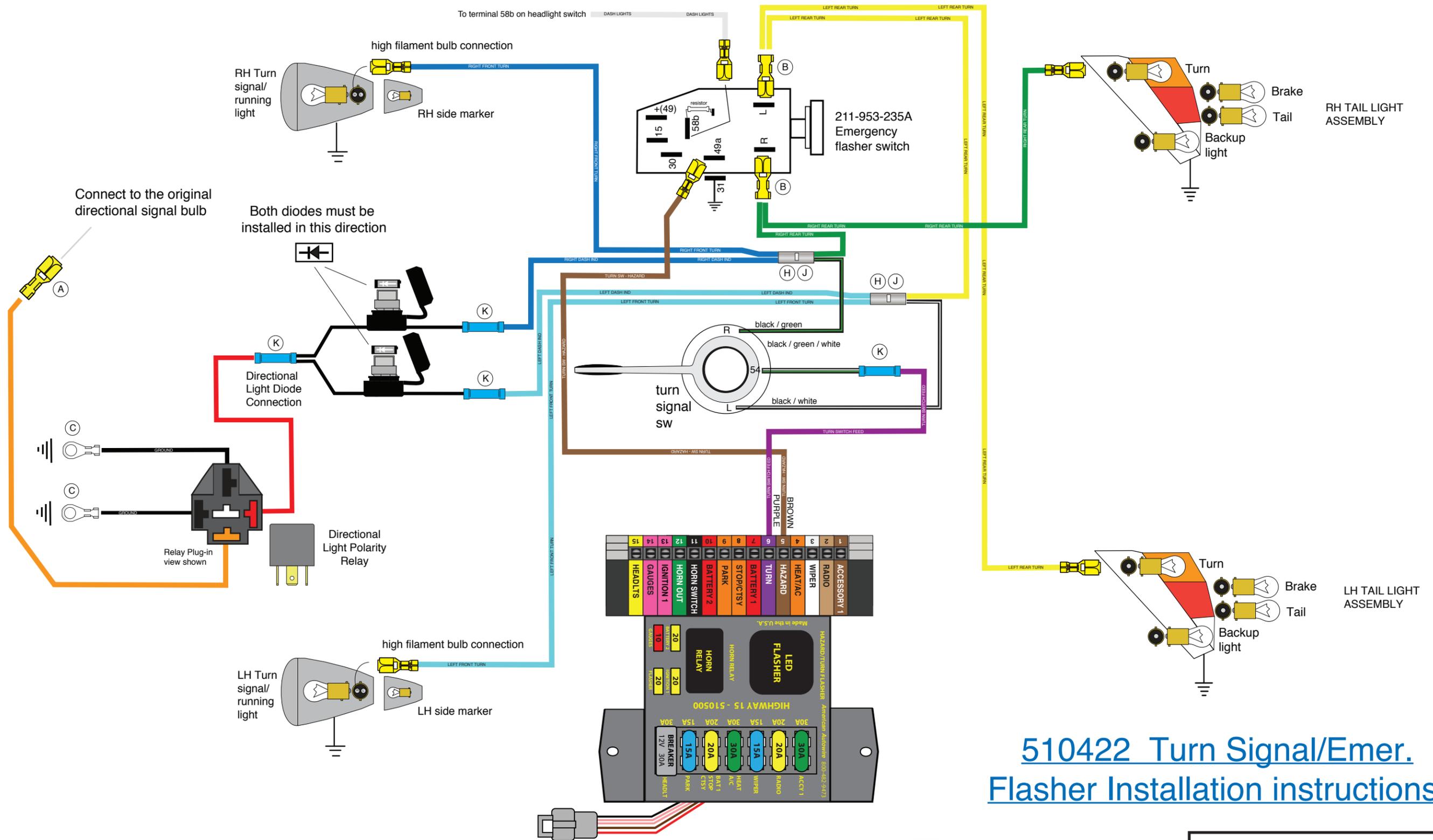
1962-74 VW Beetle
510419
Classic Update Series
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1968 - 69 Beetle - Turn signal and hazard lights



1962-74 VW Beetle
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1973-74 Beetle - Turn signal and hazard lights



510422 Turn Signal/Emer. Flasher Installation instructions:



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**1962-74 VW Beetle
510419**

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WIRE FUNCTION CHART

VW CIRCUIT	AAW CIRCUIT	WIRE GAUGE	WIRE COLOR	WIRE PRINTING	CIRCUIT FUNCTION
58B	8	18	Gray	DASH LIGHTS	Emergency flasher terminal 58B to instrument panel light lead from headlight switch
L	14A	18	Light blue	LEFT FRONT TURN	In Line splice to left front directional light
L	14B	18	Light blue	LEFT DASH IND	In Line splice to left dash indicator light
R	15A	18	Dark blue	RIGHT FRONT TURN	In Line splice to right front directional light
R	15B	18	Dark blue	RIGHT DASH IND	In Line splice to right dash indicator light
54	16	16	Purple	TURN SWITCH FEED	Main power from panel connection 7 (TURN SW) to turn signal switch 54 feed wire
49A	27	14	Brown	TURN SWITCH FEED	Main power from panel connection 6 (HAZARD) to emergency flasher switch 49A terminal
L	18A	16	Yellow	LEFT REAR TURN	Turn signal switch to left rear directional
L	18B	16	Yellow	LEFT REAR TURN	In Line splice to emergency flasher terminal "L" for left rear turn
R	19A	16	Dark Green	RIGHT REAR TURN	Turn signal switch to right rear directional
R	19B	16	Dark Green	RIGHT REAR TURN	In Line splice to emergency flasher terminal "R" for right rear turn
	150A	18	Black	GROUND	Ground lead for new directional light polarity relay
	150B	18	Black	GROUND	Ground lead for new directional light polarity relay
	51	18	Red	(none)	12V feed from directional light diode connection to directional light polarity relay
	50	18	Orange	(none)	Output from directional light polarity relay to dash indicator lamp

[510422 Turn Signal/Emer. Flasher Installation instructions:](#)



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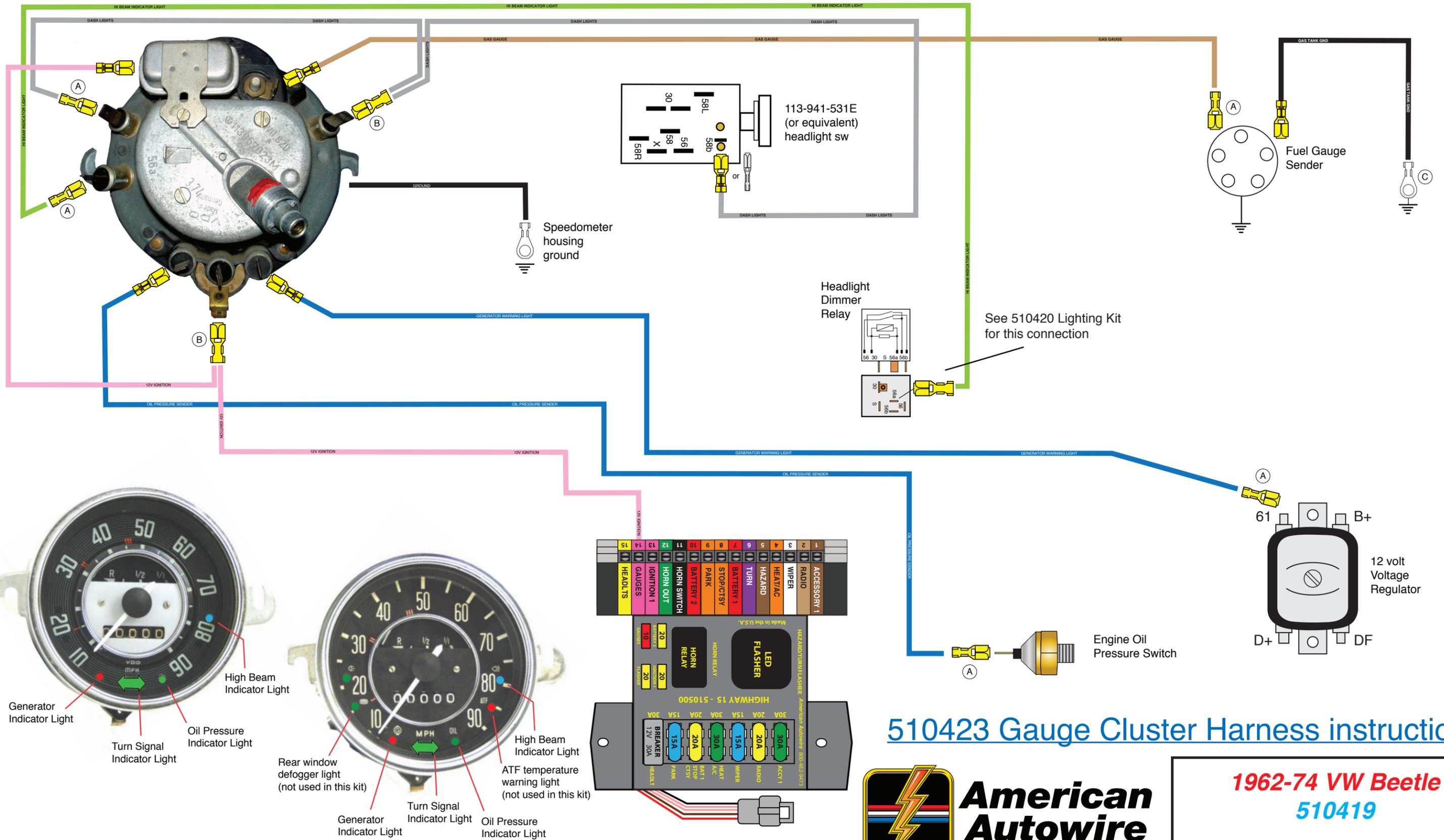
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**1962-74 VW Beetle
510419**

Classic Update Series

92973472 Rev 1.0 7/13/2021

1968-71 Beetle - Speedometer cluster

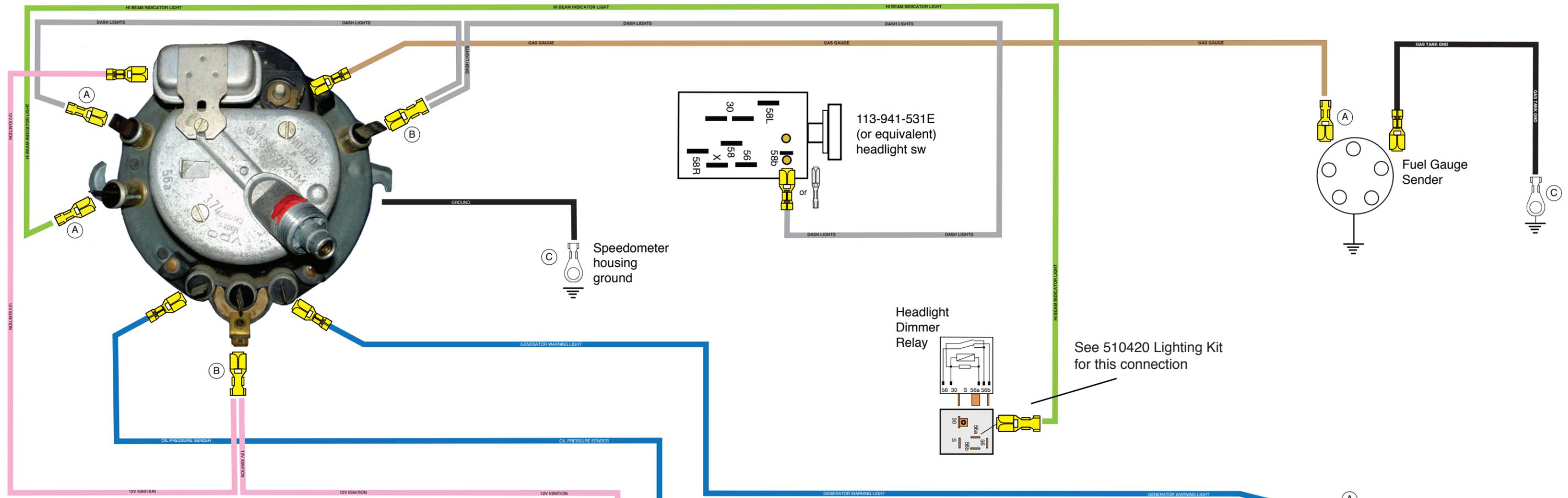


510423 Gauge Cluster Harness instructions:

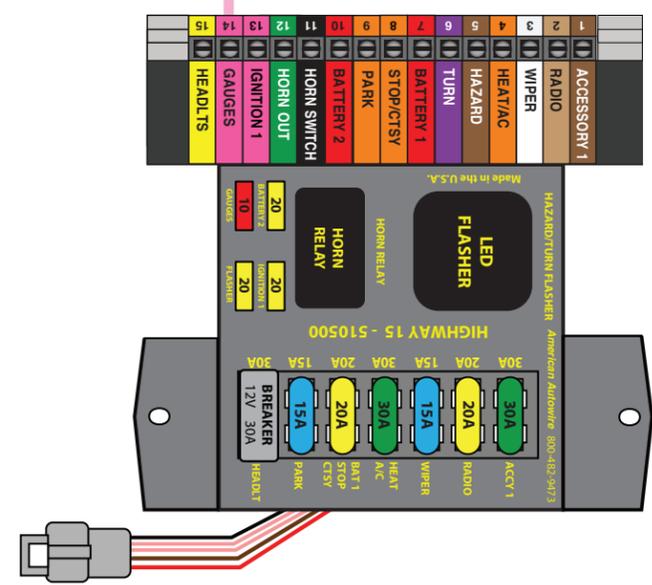


1962-74 VW Beetle
510419
Classic Update Series
 92973472 Rev 1.0 7/13/2021

1972-74 Beetle - Speedometer cluster



See 510420 Lighting Kit for this connection



510423 Gauge Cluster Harness instructions:



1962-74 VW Beetle
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Classic Update Series
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WIRE FUNCTION CHART

<u>VW CIRCUIT</u>	<u>AAW CIRCUIT</u>	<u>WIRE GAUGE</u>	<u>WIRE COLOR</u>	<u>WIRE PRINTING</u>	<u>CIRCUIT FUNCTION</u>
58B	30	18	Tan	GAS GAUGE	Fuel tank sender to fuel gauge for 1968 and up vehicles
15	39	18	Pink	12V IGNITION	Main power from Panel connection 14 (GAUGES) to instrument cluster indicator lights and fuel gauge vibrator
K2	61	18	Dark blue	GENERATOR WARNING LIGHT	Generator warning light lead from regulator to speedometer cluster "GEN" indicator light
	151	16	Black	GAS TANK GND	Fuel tank sender ground wire
K3	31	18	Dark blue	OIL PRESSURE SENDER	Oil pressure sender to speedometer cluster "OIL" oil pressure indicator light
	35	18	Dark green	ENGINE TEMP SENDER	Optional aftermarket engine temperature sender to an optional engine temperature gauge
	150	16	Black	GROUND	Speedometer housing ground wire
	121	16	White	COIL -> TACH	Ignition coil to an optional aftermarket tachometer

[510423 Gauge Cluster Harness instructions:](#)



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1962-74 VW Beetle

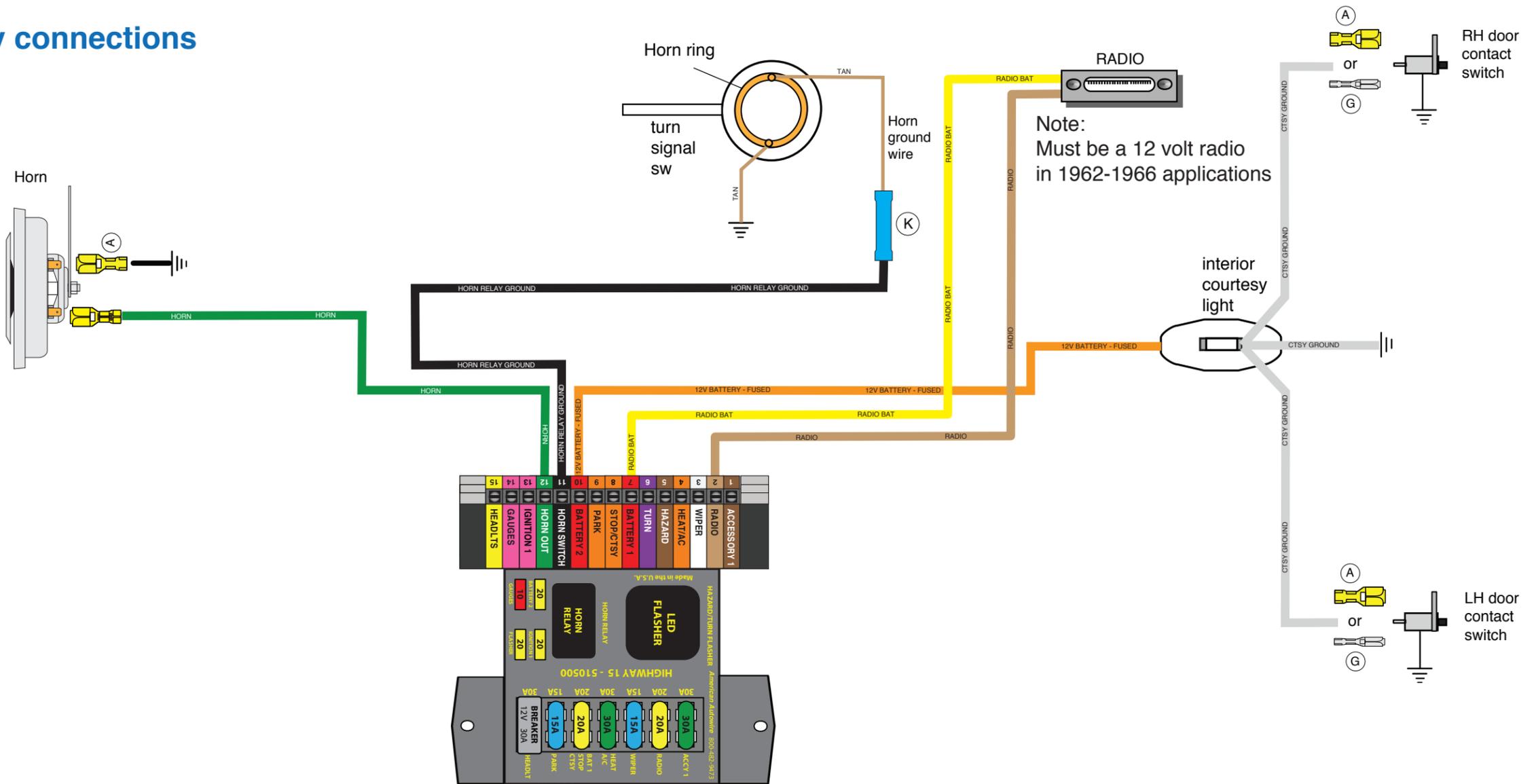
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1962-70 Beetle - Accessory connections

Note:
Must be a 12 volt horn
in 1962-1966 applications



WIRE FUNCTION CHART

VW CIRCUIT	AAW CIRCUIT	WIRE GAUGE	WIRE COLOR	WIRE PRINTING	CIRCUIT FUNCTION
	43	16	Tan	RADIO	Main power from Panel connection 3 (RADIO) to the radio
	29	14	Dark green	HORN	Main power from Panel connection 13 (HORN OUT) to the horn
	151	18	Black	HORN RELAY GROUND	Lead from Panel connection 12 (HORN SW) to horn ground lead in steering column
	99	16	Yellow	RADIO BAT	Main power from Panel connection 8 (BAT 3) to the radio
33B	33B	16	Black/yellow stripe	no printing	Optional fresh air fan feed wire from fresh air fan switch to fan
33F	33G	16	Black/light green stripe	no printing	Optional fresh air fan feed wire from fresh air fan switch terminal 33F to fan terminal 33F - 1971
33F	33F	16	Black/red stripe	no printing	Optional fresh air fan feed wire from fresh air fan switch terminal 33F to fan terminal 33F - 1972 up
15	15	14	Orange	ELECTRIC FAN	Main power from Panel connection 1 (HEAT/AC) to the fresh air fan switch
31	31	16	Black	GROUND	Optional fresh air fan ground wire
	156	18	White	CTSY GROUND	Courtesy light and door switch ground wire
	40	18	Orange	12V BATTERY - FUSED	Main power from Panel connection 9 (STOP/CRTSY) to the courtesy lights

[510424 Accessory Harness instructions:](#)



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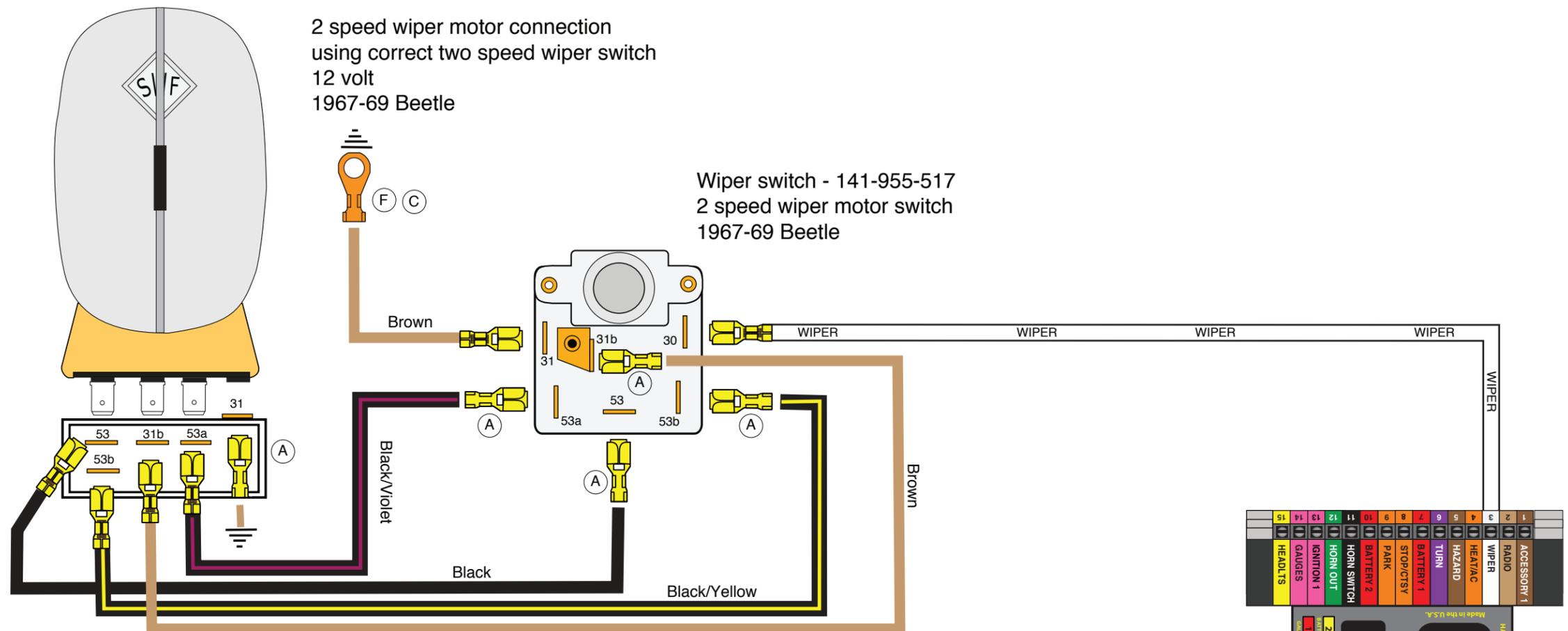
**1962-74 VW Beetle
510419**

Classic Update Series

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1967-1969 Beetle - Windshield Wiper Motor Connections.

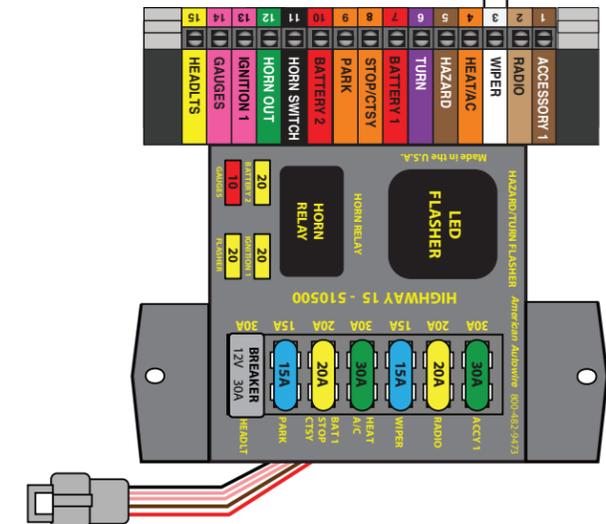
(can be retro fitted to 1962-1966 vehicles as part of a 12 volt conversion)



Notes:

- This kit is designed to work with the correct combination of wiper switch and wiper motor for 1967-69 vehicles. This is a 12 volt 2 speed motor application. When performing a 12 volt conversion on 6 volt vehicles, both the motor and switch must be replaced with the 12 volt equivalent. Other combinations of switches and motors are not covered in this kit and are the responsibility of the owner/installer. American Autowire cannot provide technical assistance for these combinations. Some of this information is available on open forums, but American Autowire will not be responsible for any of these modifications. Use of these modifications will void any warranty on the kit.
- The following connections would apply to this motor and switch combination:

switch connection	motor connection	description
30	30	POWER in from the "WIPER" connection on the fuse panel. The original stock color of this wire was black.
53a	53a	PARK position on the switch (53a) to PARK position on the wiper motor (53a).
31	31	chassis GROUND. The motor is grounded on terminal 31 through a grounding tab on the motor mount. This tab is for any extra system grounding or if the motor mount does not make a good ground.
31b	31b	INTERNAL GROUND lead from 31b terminal on the switch to terminal 31b terminal on the wiper motor.
53	53	LOW SPEED connection from the 53 terminal on the switch to the 53 LOW SPEED terminal on the motor.
53b	53b	HIGH SPEED connection from the 53b terminal on the switch to the 53b HIGH SPEED terminal on the motor..



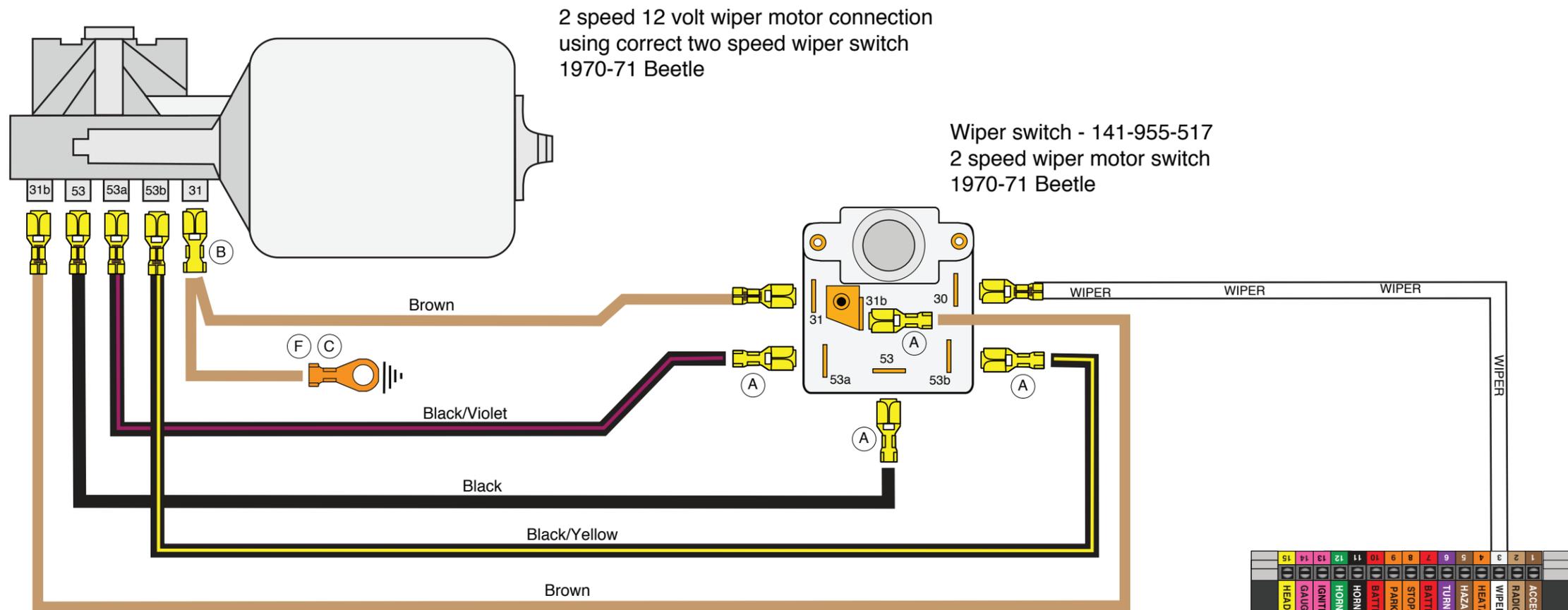
[510425 Wiper Motor Harness instructions:](#)



1962-74 VW Beetle
510419

Classic Update Series

1970-1971 Beetle - Windshield Wiper Motor Connections.



2 speed 12 volt wiper motor connection using correct two speed wiper switch 1970-71 Beetle

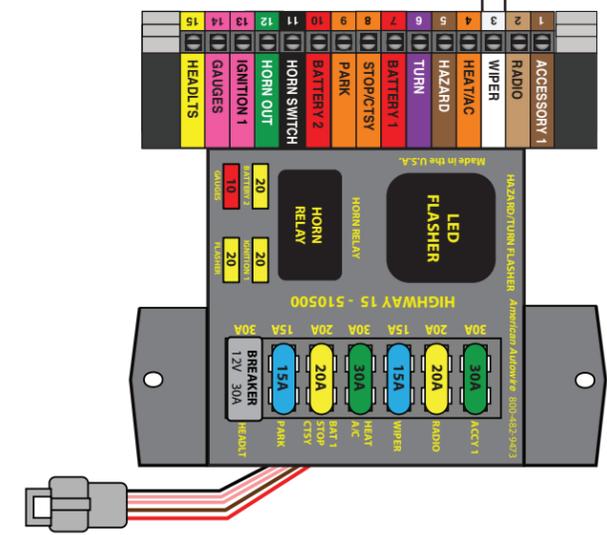
Wiper switch - 141-955-517
2 speed wiper motor switch 1970-71 Beetle

Notes:

- This kit is designed to work with the correct combination of wiper switch and wiper motor for the year of the vehicle. Other combinations of switches and motors are not covered in this kit and are the responsibility of the owner/installer. American Autowire cannot provide technical assistance for switch and motor combinations that were not designed for the year of the vehicle in question. Some of this information is available on open forums, but American Autowire will not be responsible for any of these modifications. Use of these modifications will void any warranty on the kit.

2. The following connections would apply to this motor and switch combination:

switch connection	motor connection	description
30	30	POWER in from the "WIPER" connection on the fuse panel. The original stock color of this wire was dark green.
53a	53a	PARK position on the switch (53a) to PARK position on the wiper motor (53a).
31	31	chassis GROUND. The motor is grounded on terminal 31 through a grounding tab on the motor mount. This tab is for any extra system grounding or if the motor mount does not make a good ground. It is a common ground with terminal 31 on the wiper switch.
31b	31b	INTERNAL GROUND lead from 31b terminal on the switch to terminal 31b terminal on the wiper motor.
53	53	LOW SPEED connection from the 53 terminal on the switch to the 53 LOW SPEED terminal on the motor.
53b	53b	HIGH SPEED connection from the 53b terminal on the switch to the 53b HIGH SPEED terminal on the motor..



510425 Wiper Motor Harness instructions:

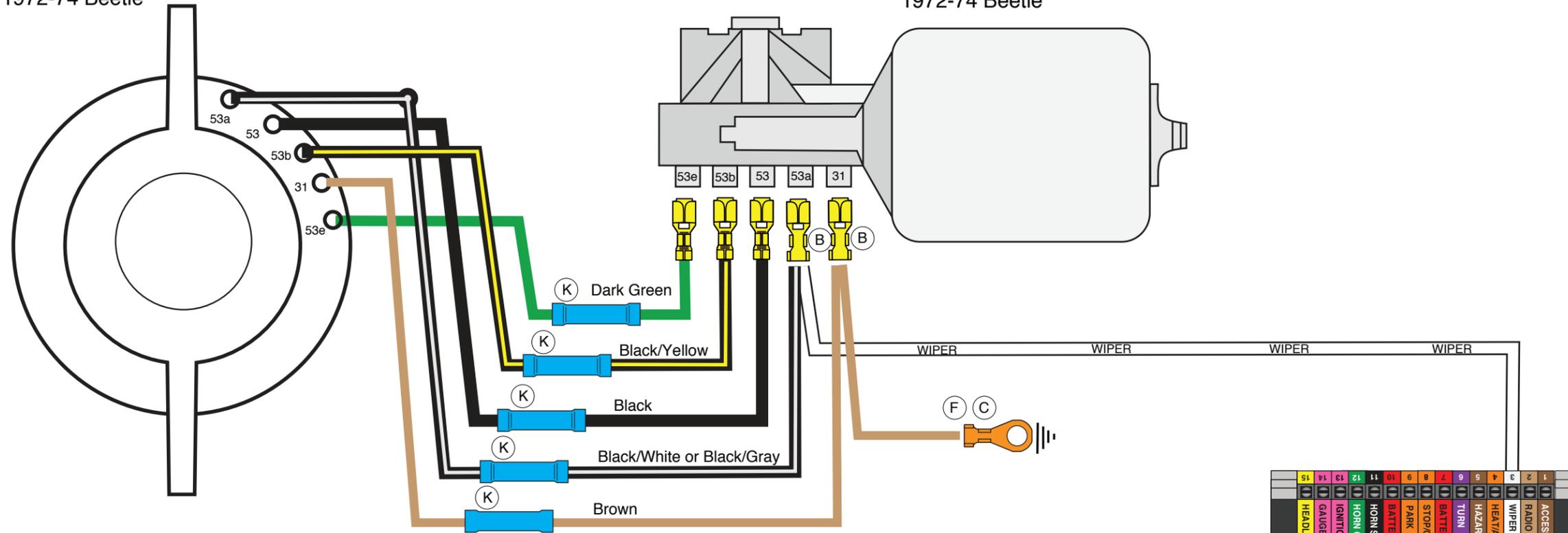


1962-74 VW Beetle
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1972-1974 Beetle - Windshield Wiper Motor Connections.

2 speed wiper motor switch
mounted in steering column
1972-74 Beetle

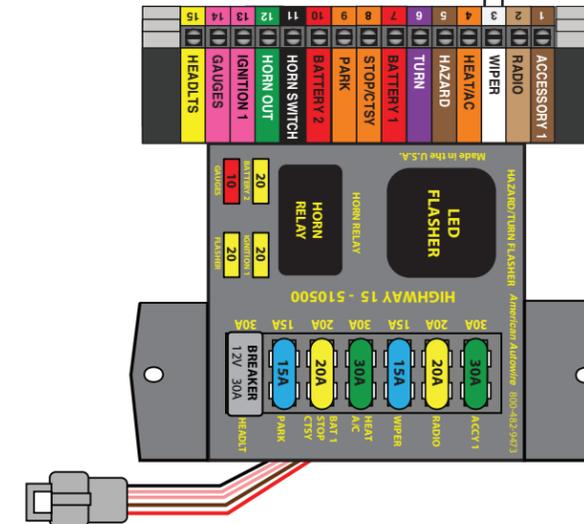
2 speed wiper motor connection
using correct two speed wiper switch
12 volt
1972-74 Beetle



Notes:

1. This kit is designed to work with the correct combination of wiper switch and wiper motor for the year of the vehicle. Other combinations of switches and motors are not covered in this kit and are the responsibility of the owner/installer. American Autowire cannot provide technical assistance for switch and motor combinations that were not designed for the year of the vehicle in question. Some of this information is available on open forums, but American Autowire will not be responsible for any of these modifications. Use of these modifications will void any warranty on the kit.
2. The wiper switch is mounted in the steering column and has pigtail wires attached directly to the switch. The motor itself may be equipped with a harness attached to the motor and ending in a connector. Splice clips are provided to facilitate the connections. You may use either terminal K or terminal H and shrink tube J to complete the connection. The original color coding on the wires is maintained whenever possible through this connector. The following connections would apply to this motor and switch combination:

switch connection	motor connection	description
53a	53a	POWER in from the "WIPER" connection on the fuse panel. The original stock color of this wire was Black/Gray.
53a	53a	This is the PARK position on the wiper motor (53a).
31	31	chassis GROUND. The motor is grounded on terminal 31. The switch and the wiper motor share a common ground.
53	53	LOW SPEED connection from the 53 terminal on the switch to the 53 LOW SPEED terminal on the motor.
53b	53b	HIGH SPEED connection from the 53b terminal on the switch to the 53b HIGH SPEED terminal on the motor.
53e	53e	Lead from 53e terminal on the switch to terminal 53e terminal on the wiper motor.



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WIRE FUNCTION CHART

VW CIRCUIT	AAW CIRCUIT	WIRE GAUGE	WIRE COLOR	WIRE PRINTING	CIRCUIT FUNCTION
54	92	16	White	WIPER FEED	Main power from Panel connection 4 (WIPER) to the windshield wiper switch terminal "54" (1962-66)
54	54	16	Black	no printing	Power wire from wiper switch terminal "54" to wiper motor terminal "54" (1962-66)
54D	53D	16	Black / purple stripe	no printing	Low speed power wire from wiper switch terminal 54D to the wiper motor terminal 54D. (1962-66).
31	31	16	Tan	no printing	Ground lead from wiper motor terminal "31" (1967-69)
31B	31B	16	Tan	no printing	Internal ground from wiper switch terminal 31B to wiper motor terminal 31B.
30	92	16	White	WIPER FEED	Main power from Panel connection 4 (WIPER) to the windshield wiper switch terminal "30" (1967-69)
53	53	16	Black	no printing	Low speed power wire from wiper switch terminal "53" to wiper motor terminal "53" (1967-69)
53B	53B	16	Black / yellow stripe	no printing	High speed power wire from wiper switch terminal "53B" to wiper motor terminal "53B" (1967-69)
53A	53A	16	Black / purple stripe	no printing	PARK position from wiper switch terminal "53A" to PARK position on the wiper motor terminal "53A" (1967-69)
31	31	16	Tan	no printing	Ground lead from wiper motor switch terminal "31" (1967-69)
31	31	16	Tan	no printing	Ground lead from wiper motor terminal "31" (1967-69). Check for hard tab ground.
31B	31B	16	Tan	no printing	Internal ground from wiper switch terminal 31B to wiper motor terminal 31B.
30	92	16	White	WIPER FEED	Main power from Panel connection 4 (WIPER) to the windshield wiper switch terminal "30" (1970-71)
53	53	16	Black	no printing	Low speed power wire from wiper switch terminal "53" to wiper motor terminal "53" (1970-71)
53B	53B	16	Black / yellow stripe	no printing	High speed power wire from wiper switch terminal "53B" to wiper motor terminal "53B" (1970-71)
53A	53A	16	Black / purple stripe	no printing	PARK position from wiper switch terminal "53A" to wiper motor terminal "53A" (1970-71)
31	31	16	Tan	no printing	Lead wire from wiper switch terminal "31" to wiper motor terminal "31" (1970-71)
31	31	16	Tan	no printing	Ground lead from wiper motor terminal "31" (1970-71)
31B	31B	16	Tan	no printing	Internal ground from wiper switch terminal 31B to wiper motor terminal 31B.
53A	92	16	White	WIPER FEED	Main power from Panel connection 4 (WIPER) to the windshield wiper motor terminal "53A" (1972-74)
53A	53A	16	Black / white stripe	no printing	PARK position from wiper switch terminal "53A" to wiper motor terminal "53A" (1972-74)
53	53	16	Black	no printing	Low speed power wire from wiper switch terminal "53" to wiper motor terminal "53" (1972-74)
53B	53B	16	Black / yellow stripe	no printing	High speed power wire from wiper switch terminal "53B" to wiper motor terminal "53B" (1972-74)
53E	53E	16	Dark Green	no printing	Lead wire from wiper switch terminal "53E" to wiper motor terminal "53E" (1972-74)
31	31	16	Tan	no printing	Ground lead from wiper motor terminal "31" (1972-74)
					Internal ground from wiper switch terminal "31" to wiper motor terminal "31" (1972-74)

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