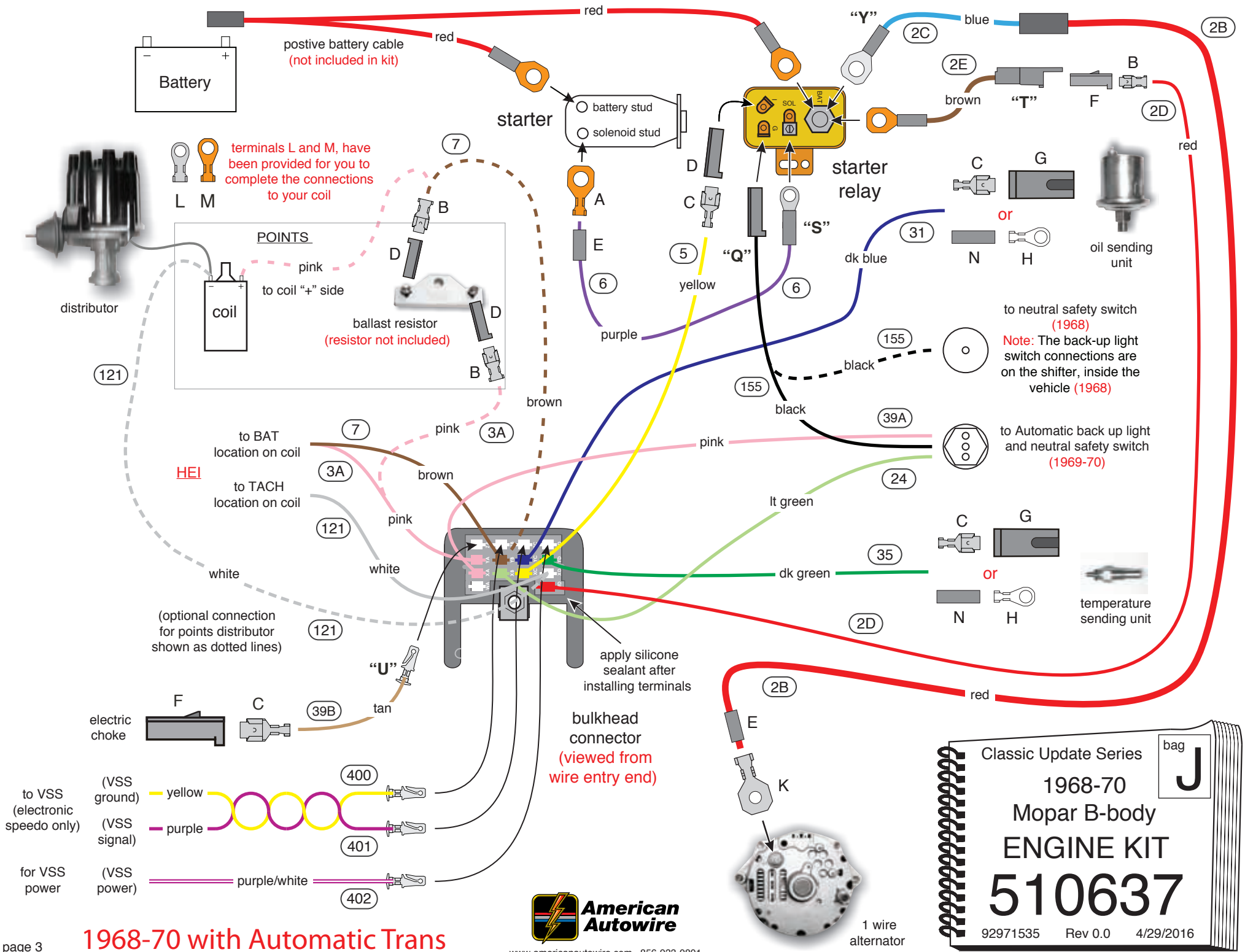


Classic Update Series **bag J**  
 1968-70  
 Mopar B-body  
**ENGINE KIT**  
**510637**  
 92971535 Rev 0.0 4/29/2016





1968-70 with Automatic Trans



Classic Update Series bag J

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## Optional Wires to be plugged into the Bulkhead Connector

If you have any of the following, plug these wires into the Engine Harness 14-way Bulkhead Connector (see pages 1-3) first:

Electric Choke, plug in the loose tan "ELECTRIC CHOKE" wire (circuit 39B).

Electric Speedometer, plug in the loose yellow "VSS GROUND" (circuit 400), the loose purple "VSS SIGNAL" (circuit 401), and the loose purple/white "VSS POWER" (circuit 402) wires.

Temporarily plug the Engine Harness 14-way Bulkhead Connector into the mating Bulkhead Connector of the Dash Harness (located in the center of the Firewall) before routing and connecting any of the wires. The Engine Harness Bulkhead Connector will need to be removed from the Dash Harness Bulkhead Connector later after routing and attaching all of the wires, and will be snapped into the Front Light Harness Bulkhead Connector.

### 1. Back-up Lights – Manual Transmission

For the 1968–1970 vehicles, the Back-up Switch is located on the Transmission. Obtain the thin pink "12V IGNITION" wire (circuit 39A) and the light green "BACK UP LT SW --> LIGHTS" wire (circuit 24) from the 14-way Bulkhead Connector in the Engine Harness **510638 Bag J**, and route these wires to the Back-up Light Switch (see pages 1 and 2).

Wire Color	Printing	Wire Number
Pink	12V IGNITION	39A
Light Green	BACK UP LT SW --> LIGHTS	24

### 2. Backup Lights/Neutral Safety Switch – Automatic Transmission

For the 1968 vehicles, the Back-up Light Switch is located inside the vehicle on the Shifter (see the Dash Harness Instructions for this connection). Since the pink and light green Back-up Switch wires are in the Dash Harness as well as the Engine Harness, you will not use the pink (circuit 39A) and light green (circuit 24) wires in the Engine Kit. Remove these two wires or stow them away.

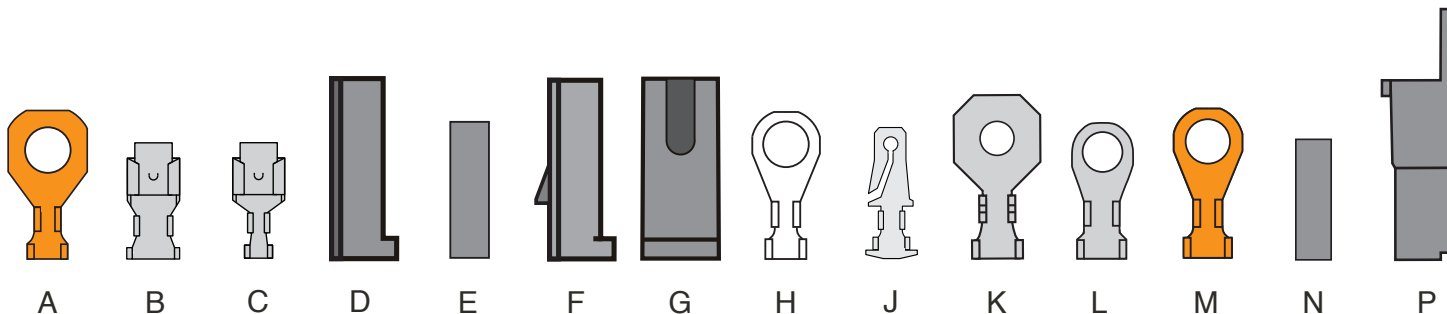
The Neutral Safety Switch is located on the Transmission and it is a single pin switch. Obtain Pigtail "Q" with the black, no printing wire, (circuit 155) and plug the connector of pigtail "Q" to the Starter Relay Ground Terminal **G** (see page 3). This wire will provide ground for the Starter Relay during crank. Route the black wire to the Neutral Safety Switch on the transmission and connect.

For the 1969-1970 vehicles, the Back-up Light Switch and the Neutral Safety Switch are combined into one 3-pin Switch which is located on the transmission. Obtain the thin pink "12V IGNITION" wire (circuit 39A) and the light green "BACK UP LT SW --> LIGHTS" wire (circuit 24) from the 14-way Bulkhead Connector in the Engine Harness and route these wires to the 3-pin Back-up Light Switch (see page 3) and cut to length.

Obtain Pigtail "Q" with the black no printing wire (circuit 155) and plug the connector of pigtail "Q" to the Starter Relay Ground Terminal **G** (see page 3). This wire will provide ground for the Starter Relay during crank. The center pin of the 3-pin Backup Light/Neutral Safety Switch goes to ground in Park or Neutral. Route the loose end of the black wire to the 3-pin Backup Light/Neutral Safety Switch on the Automatic Transmission and cut to length.

Obtain a 3-wire Aftermarket Jumper Harness available for this 3-pin Backup Light/Neutral Safety Switch, crimp on three terminal "J's" to each wire of the Jumper Harness and insert each terminal into a 1-way connector "P". Crimp on terminals "C" to the light green (circuit 24), black (circuit 155), and pink (circuit 39A) wires from the Engine Kit and insert each into a 1-way connector "F". Now connect all three connectors "F" to the Jumper Harness. **Note: the black wire (circuit 155) from the Engine Kit must be connected to the center pin (brown wire) of the Backup Light Switch. Connect the light green wire (circuit 24) to the black wire and connect the pink wire (circuit 39A) to the purple wire of the Aftermarket Jumper Harness. Polarity doesn't matter for the outer two pins.**

Wire Color	Printing	Wire Number
Pink	12V IGNITION	39A
Light Green	BACK UP LT SW --> LIGHTS	24
Black	no printing	155



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### 3. Clutch Interlock Switch

**For the 1970 vehicles with a Manual Transmission**, The Clutch must be depressed before you can crank the Engine. To accomplish this, the ground terminal **G** on the Starter Relay goes to ground through a wire that connects to a Clutch Interlock Switch on the Clutch Pedal. Obtain the pigtail “**Q**” with the black no printing wire (circuit 155) and connect the 1-way connector of this pigtail to the ground terminal **G** of the Starter Relay (**see page 2**). Route the black wire to the Engine Bulkhead Connector and cut to length. Crimp on terminal “**J**” and plug into the Bulkhead Connector (unplug the Bulkhead connectors to plug in terminal “**J**” and then make sure that terminal “**J**” is fully seated and then, reconnect the Bulkhead Connectors).

**Note: for the 1968-69 vehicles with a Manual Transmission**, there is a unique Starter Relay that does not have a ground terminal on the relay and there is no Clutch Interlock Switch on the Clutch Pedal. Pigtail “**Q**” will not be used for these vehicles (**see Page 1**).

<u>Wire Color</u>	<u>Printing</u>	<u>Wire Number</u>
Black	no printing	155

### 4. Main Fuse Panel Feed

Obtain the Fuse Link pigtail “**T**” and attach the ring terminal to the battery stud (BAT) of the Starter Relay (**see pages 1-3**).

Obtain the large red “12V BATTERY” wire (circuit 2D). This wire is already plugged into the Bulkhead Connector and route to the Starter Relay, cut to length, install terminal “**B**” and plug into connector “**F**”. Connect to Pigtail “**T**” (circuit 2E).

<u>Wire Color</u>	<u>Printing</u>	<u>Wire Number</u>
Brown	Fuse Link	2E
Red	12V BATTERY	2D

### 5. Starter Relay to Starter Solenoid

Obtain the large purple Starter Solenoid Feed pigtail “**S**” and attach the ring terminal to the Solenoid “**SOL**” terminal of the Starter Relay (**see pages 1-3**). Route this purple, “STARTER SOLENOID – S” wire (circuit 6) to the Starter, cut to length, slide on sleeve “**E**” and crimp on ring terminal “**A**”. Connect this ring terminal to the Solenoid Stud of the Starter.

<u>Wire Color</u>	<u>Printing</u>	<u>Wire Number</u>
Purple	STARTER SOLENOID-S	6

### 6. Ignition Start Wire

Obtain the yellow no printing (circuit 5) wire that is already plugged into the Bulkhead Connector, this is your start circuit. Route the yellow wire to the Starter Relay and cut to length, crimp on terminal “**C**” and plug into connector “**D**”. Connect this wire to the Ignition terminal “**I**” of the Starter Relay (**see pages 1-3**).

<u>Wire Color</u>	<u>Printing</u>	<u>Wire Number</u>
Yellow	no printing	5

### 7. Alternator Output Power

Obtain the pigtail “**Y**” with the large red no printing wire and the blue fusible link (circuits 2B and 2C) and connect the ring terminal end of the blue wire (circuit 2C) to the Battery Stud (**BAT**) of the Starter Relay (**see pages 1-3**). Route the other end of the large wire (circuit 2B), to the Alternator, cut to length, slide on sleeve “**E**”, and crimp on the ring terminal “**K**”. Attach the ring terminal “**K**” to the Alternator output stud.

<u>Wire Color</u>	<u>Printing</u>	<u>Wire Number</u>
Red	no printing	2B
Light Blue	Fuse Link	2C

### 8. Ignition Coil with Full Voltage

If using an Aftermarket Ignition System or an HEI Distributor which requires a full 12 volt feed, route the large pink “IGNITION FEED” wire (circuit 3A) from the Bulkhead Connector to the positive (+) side of the Ignition Coil (**see pages 1-3**) and cut to length. Route the brown no printing wire (circuit 7), also from the Bulkhead Connector, to the positive (+) side of the Ignition Coil and cut to length. This brown wire provides voltage during crank. Terminals “**L**” and “**M**” have been provided to make this connection.

<u>Wire Color</u>	<u>Printing</u>	<u>Wire Number</u>
Pink	IGNITION FEED	3A
Brown	no printing	7



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### 9. Ignition Coil with Reduced Voltage

If using a points type Ignition System that requires reduced voltage, route the large pink "IGNITION FEED" wire (circuit 3A), from the Bulkhead Connector, to the Ignition feed side (see pages 1-3) of a Ballast Resistor (not provided in this kit), cut to length, and crimp on terminal "B" and plug into connector "D". Route the brown no printing wire (circuit 7), from the Bulkhead Connector, to the coil side of the Ballast Resistor and double it with the cut off portion of the large pink wire, crimp on terminal "B" and plug into connector "D". This brown wire provides voltage during crank. Route the other end of the large pink wire to the positive (+) side of the Ignition Coil and cut to length. Terminals "L" and "M" have been provided to make the connection to the Ignition Coil.

<u>Wire Color</u>	<u>Printing</u>	<u>Wire Number</u>
Pink	IGNITION FEED	3A
Brown	no printing	7

### 10. Electric Choke

For vehicles equipped with an Electric Choke, if you haven't already, obtain the tan "ELECTRIC CHOKE" wire (circuit 39B) and plug it into the Bulkhead Connector. Route the tan wire to the Electric Choke, cut to length, install terminal "C" and insert into connector "F". You can now connect to the Electric Choke (see pages 1-3).

<u>Wire Color</u>	<u>Printing</u>	<u>Wire Number</u>
Tan	ELECTRIC CHOKE	39B

### 11. Water Temp Sender

Obtain the dark green "WATER TEMP SENDER" WIRE (circuit 35) which is already plugged into the Bulkhead connector. Route this wire to the Water Temperature Sender, cut to length, install terminals "C" or "H" (install sleeve "N" first if using terminal "H"), plug into connector "G" (if using terminal "C") and connect to the Water Temperature Sender (see pages 1-3).

<u>Wire Color</u>	<u>Printing</u>	<u>Wire Number</u>
Dark Green	WATER TEMP SENDER	35

### 12. Oil Pressure Sender

Obtain the dark blue "OIL PRESSURE SENDER" wire (circuit 31) which is already plugged into the Bulkhead connector. Route this wire to the Oil Pressure Sender, cut to length, install terminals "C" or "H" (install sleeve "N" first if using terminal "H"), plug into connector "G" (if using terminal "C") and connect to the Oil Pressure Sender (see pages 1-3).

<u>Wire Color</u>	<u>Printing</u>	<u>Wire Number</u>
Dark Blue	OIL PRESSURE SENDER	31

### 13. Tachometer Signal

Obtain the white "COIL --> TACH" wire (circuit 121) which is already plugged into the Bulkhead Connector, route to the negative (-) side of the Ignition Coil and connect. If using an Aftermarket Ignition System or an HEI Distributor, connect per the Manufacturer's recommendations (see pages 1-3).

<u>Wire Color</u>	<u>Printing</u>	<u>Wire Number</u>
White	COIL --> TACH	121

### 14. Electric Speedometer

**NOTE: These three wires are only used if you are using an Electronic Speedometer.** If you haven't already, obtain the purple/white "VSS POWER" wire (circuit 402), the purple "VSS SIGNAL" wire (circuit 401) and the yellow "VSS GROUND" wire (circuit 400) and plug these wires into the Bulkhead Connector. Route these three wires to the Vehicle Speed Sensor and connect the purple/white wire to the VSS power lead, the purple wire to the VSS signal lead, and the yellow wire to the VSS ground lead (see pages 1-3).

<u>Wire Color</u>	<u>Printing</u>	<u>Wire Number</u>
Purple/White	VSS POWER	402
Purple	VSS SIGNAL	401
Yellow	VSS GROUND	400

**NOTE: Once the Bulkhead Connector has had all of its wires plugged in, the connector cavities should be sealed with dielectric grease on the terminals. Also to assure a moisture resistant seal, silicone can be applied to seal the outside of the connector.**

