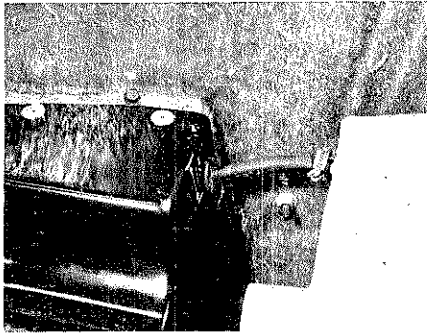
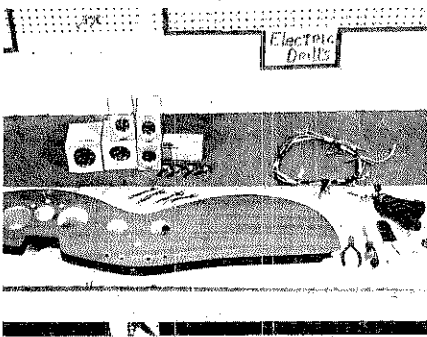


# Assembly



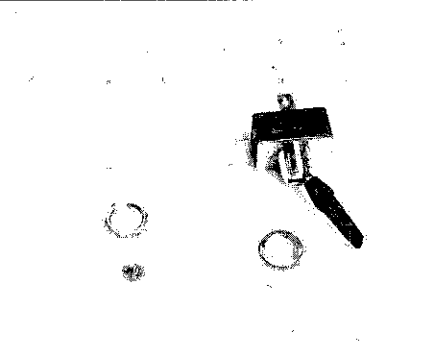
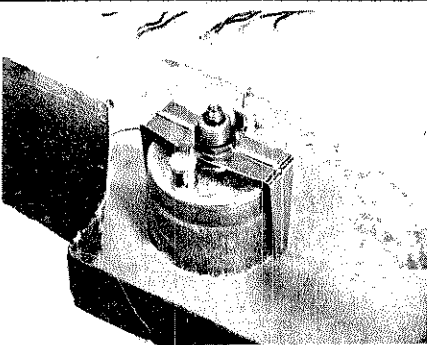
Install a piece of  $\frac{1}{4}$ " gas line to connect the chassis line to the gas tank and clamp both ends securely.



## 37. PREPARE THE DASH. 2 hrs.

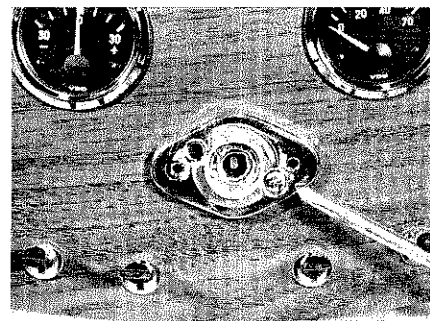
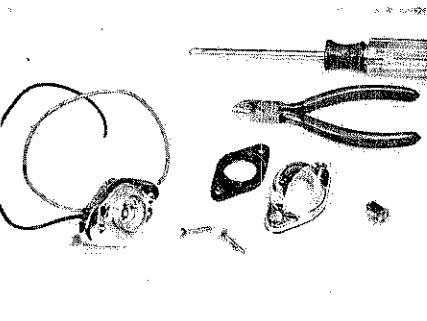
(Move to the next step if you have ordered a prewired dash.)

Lay out your soft surface and locate all gauges, switches, dash lights, and the dash wiring harness.



Install each gauge securely per enclosed instruction. The wiring harness has been designed with the following sequence: Speedometer, gas tachometer, amp, and oil. (Note: Be careful to keep all gauges level.)

Remove the fasteners from behind each switch. (Discard the wire securement screw and the back nut on toggle switches.) Install each switch with the writing on the back of the switch, down.

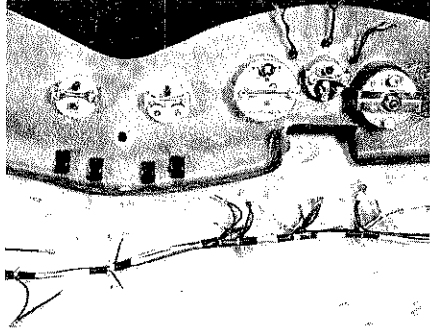


When the deluxe dash light is ordered (optional), disassemble the light. Drill a  $\frac{3}{4}$ " hole in the center of the dash. Center the light on the dash and drill a pilot hole through the lower right hand hole in the light frame. Install a screw.

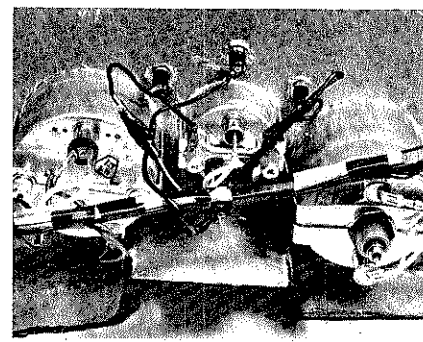
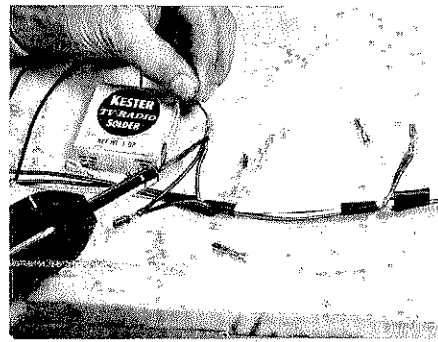
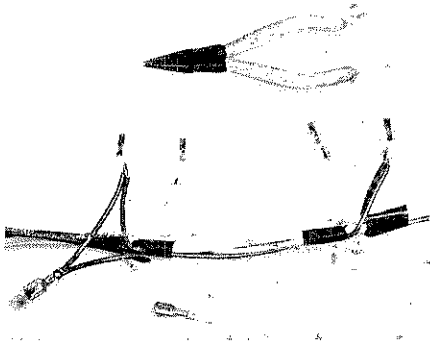
Check the light for squareness then drill the upper left hand hole. Secure with a finishing screw.

Install and secure the left and right amber turn signal indicating lights and the red center generator light. The high beam indicator light is located on the dash or on the top surface of the driver's side headlight shell.

# Assembly

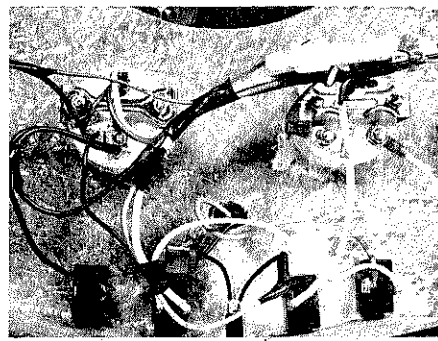
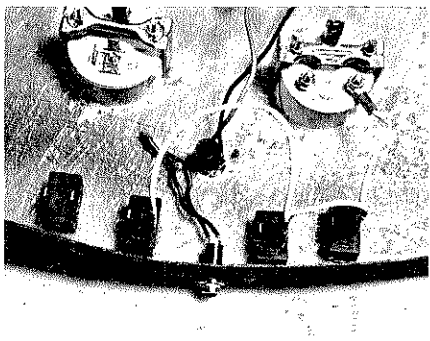


Lay the finished dash carefully on a soft surface, face down.  
String out the dash harness and locate and align each connection wire.  
Enclosed in a plastic bag with the amp and oil pressure gauge are found small wire connectors. On the harness locate the bare ended wires, connect white to white, two pairs brown to brown, and leave one white wire free.



Solder a wire connector clip to each of the four wire points.

Connect the remaining wires in the harness to their appropriate terminal per the following electrical schematics. A single brown ground wire should remain for connection to your radio. Remember, this body is fiberglass, therefore, all electrical equipment must be grounded.



owner's photo

If you have selected a hardwood dash, the schematic remains the same, but the switches become push/pulls and the connectors are somewhat different.

If you should decide to install auxiliary equipment, i.e., windshield washers, we recommend using a two stage switch for both wipers and washers instead of two switches.

Your dash is now complete.

# Wiring Instructions

## 1. HEADLIGHTS.

On the front harness, locate the three wires for both left and right headlights. After the headlight shells have been mounted, with the flextube secured to the front side panel, feed the wires through the flextube and into each headlight shell.

Remove the leads from the connecting block and connect the harness leads to the connecting block on the rear of each headlight seal beam per the markings on the connecting block.

(Headlight seal beams not provided with unassembled Duchess.)

OPTIONAL: The blue high beam indicator light may be installed on the driver's side headlight shell. Drill a  $25/64$ " hole in the top of the shell  $2\frac{1}{2}$ " back from the front of the shell. Install the blue light, applying a small amount of silicone caulk to weather seal the light.

Connect a lead to the high beam wire and the other to the ground wire. Solder the connectors.

## 2 FOG LIGHTS.

Cut an 8" and a 6" piece of 14 gauge Brown wire. Attach a large ring terminal to one end of the 8" piece. Slip the other end of the 8" piece and one end of the 6" piece into another large ring terminal and secure. To the open end of the 6" piece of wire, attach a small ring terminal to complete the ground wire.

After the fog lights are mounted on the crank plate, connect the large terminal to each fog lamp base. Drill a  $13/64$ " hole in the side of the  $3/8$ " steel bumper mount and connect the small ring terminal to the chassis with a  $3/16$ " rivet to complete the ground.

Connect 2' of Yellow 12 gauge wire in series to the hot leads of the fog lights. Attach a female slide connector to the end of the wire and complete the circuit using a two-way splice to connect the Yellow wire to the front harness.

Solder and tape all open connections.

## 3. FRONT TURN SIGNALS AND RUNNING LIGHTS.

For the driver's side turn indicators, connect the White/Black wire to the lamp opposite the ground terminal. For the passenger side turn indicators, connect the Green/Black wire opposite the ground. (The ground is forward of the two terminals on the end of the bulb.) The White wire for running light attaches on the same side as the ground. Keep the leads in the lamp as short as possible. After clip connecting the leads to the lamp, carefully feed the wires back through the fender. Mount the lamp and use silicone caulk to seal the hole and protect the underside wires.

Secure the harness to a bolt securing the headlight cradle.

(The bulb is marked top up. If properly wired, the bulb should be installed this way. If the signal does not work, or one bulb is brighter than the other for running lights, turn the bulb upside down.)

CAUTION: Wires cannot be pinched or insulation scraped off as this is an easy area to create a short. Be careful!

Use four-way splices to connect all of the turn indicator wires behind the dash. One is used for the White/Black wires, another is used for the Black/Green wires.

# Wiring Instructions

## 4. HEADLIGHT RELAY.

From the front harness connect two 12 gauge White wires to 56a and (56b or "F") of headlight relay. Cut a 13" piece of 12 gauge White wire and attach slide connectors to each end. Attach that wire to relay #56 and the other end to the #3 fuse on the bottom of the fuse block. Connect the Brown/White wire from the steering column to the "S" marked terminal on the relay.

## 5. HORN COMPRESSOR

Connect a Brown ground wire to the negative terminal on the bottom of the compressor. Cut a 12" piece of Black 16 gauge wire and connect the female slide connector to each end. Connect one end of this wire to the positive side of the compressor and the other side to number 87 on the horn relay.

## 6. HORN RELAY.

(When mounting the horn relay, make sure the terminal connectors are pointing down so that moisture will not accumulate and short out the relay.)

Make a jumper wire by cutting 1" of Black 16 gauge wire. Connect a female slide terminal to each end. Connect a piggyback terminal to number 86 on the horn relay. Connect the jumper from 86 to 30/51 on the horn relay.

Number 85 on the horn relay will be connected to the horn cap or switch. Connect the Black wire from the harness to the remaining spade connector at 86.

## 7. BRAKE MASTER CYLINDER

Connect the Black and Red wires from the front harness to the master cylinder connections. You may select either sending unit, but, select only the spade connections which are parallel to each other. (Some sending units have three terminals, the third terminal would be blank.)

## 8. FUEL GAUGE SENDING UNIT.

Connect the ground wire to one of the bolts that secures the sending unit to the tank. Connect the Pink lead to the spade connector on the sending unit.

## 9. FUSE BLOCK

Solder a "one to two" adapter to each fuse terminal. For jumpers on either standard or wooden dash, bend the right terminal of one "one to two" adapter 90° to its present position. Bend the left terminal of the adjacent "one to two" adapter so that it touches the adjacent "one to two" adapter. Solder the overlap connection of the "one to two" adapters.

## 10. WINDSHIELD WIPER MOTOR (Wood dash with push/pull switches).

For 1969 through 1971 VW chassis, cut 16" of 14 gauge Black wire and secure a female slide connector to each end. Connect this wire to number 53 on the wiper motor with a piggyback connector. Connect the other end of this wire to the two-position switch.

The correct switch terminal is opposite the terminal marked battery.

Cut 2" of 16 gauge Black wire and attach two female slide connectors. Attach this jumper to the piggyback terminal at 53 and attach the other end to 53a on the wiper motor. (Low speed is now connected.) Cut 16" of 16 gauge White wire and attach a female slide to one end and a small ring to the other end. Connect the slide connector of

# Wiring Instructions

this wire to 53b on the wiper motor and the ring terminal to the "head" terminal on the switch. (High speed is now connected.)

Cut an 8" piece of 16 gauge Brown wire and attach a female slide to one end. Locate the ground wire for the radio and connect this ground to the open end of the 8" wire with a Scotch lock. Connect the female slide to #31 on the wiper motor.

## 11. TURN SIGNAL FLASHER.

Cut a 7" piece of 16 gauge Black wire and fasten a female slide connector to each end. Connect one end of this wire to the flasher, the other end to the fuse block per diagram. Connect the Black/Green/White wire from the column to the other side of the flasher.

## 12. BATTERY.

Connect the 12 gauge Red/White wire from the rear harness to the Red/White VW wire attached to the positive post of the battery. Connect the Red/Black 12 gauge wire to the Red/Black wire already connected to the starter solenoid.

## 13. REAR TURN SIGNALS AND RUNNING LIGHTS.

Remove the lens from the tail lamp and drill the mounting holes into the fender. Thread the White wire from the rear harness through the fender lamp base and solder this wire to the left side of each lamp. On the driver's side, solder White/Black adjacent to the White. On the passenger side, solder Black/Green adjacent to the White. Below each two color wire, solder the Brown ground wire to its terminal.

## 14. BRAKE LIGHTS.

Connect the male slide connector to the wire coming out of the brake light.

Insert the mounting bolt of each brake light through the subframe cover. Cut two 6" pieces of 16 gauge Brown wire and secure a large ring terminal to each end. Connect one end of these jumpers to each brake light when securing the lamp to the subframe cover. Connect the other end to the subframe bolt that secures the diagonal brace of the subframe.

Connect the red wire from the rear harness to each light with a female spade connector.

## 15. LICENSE PLATE FRAME.

Cut a 7½" piece of 16 gauge Brown wire and attach two large ring terminals to each end.

Attach one end of this wire to the mounting bolt for the license light mounting bar (inside engine cover). Connect the other end to the top spare tire frame mounting bolt.

Attach a small ring terminal to the Black lead from the license light after it has passed through the fiberglass of the engine cover. Secure this lead to the top bolt of the engine cover latch section.

Cut 7" of 16 gauge White wire and secure a small ring terminal to one end. Secure the ring terminal to the other half of the engine cover latch on the rear tie-in. Connect the other end of the White wire to the White wire (running lights) in the rear harness. (You will need to open the harness casing to find the White wire at this location.)

## 16. OIL SENDING UNIT.

Attach the Green wire from the rear harness to the sending unit. See engine diagram.

---

# Wiring Instructions

---

## 17. COIL

Attach the Yellow wire from the rear harness to the negative side of the coil (points side). Attach the Black harness wire to the positive side of the coil. See engine diagram.

## 18. VOLTAGE REGULATOR

The voltage regulator can be mounted in a number of places, including on the fiberglass. However, a most convenient location is just above the generator/alternator on the sheet metal of the fan shroud.

Connect the Red 12 gauge wire of the rear harness to the B+ terminal of the regulator. Connect the Light Blue wire of the rear harness to the 61 terminal of the regulator.

For other locations you will have to add or delete to the length of the Red and Blue wires per the location requirements.

## 19. GENERATOR

(When regulator is mounted on the engine)

Cut a 6" piece of 12 gauge Red wire and attach a small ring terminal to each end. Connect one end of this wire to the D+ terminal on the generator and secure the other end to the D+ terminal of the regulator. Cut a 6" piece of 16 gauge White wire and attach a small ring terminal to one end and a female slide to the other end. Connect the ring terminal end to the D- terminal on the generator and slide the terminal to D- on the regulator.

**For Alternator Models:** Cut the Red 12 gauge wire to desired length and attach a small ring terminal. Connect the Red wire to B+ on the alternator. Use the original VW wiring harness to connect the alternator to the regulator. Connect the Light Blue 16 gauge wire from the rear harness to the Blue wire on the voltage regulator.

## 20. STARTER SOLENOID

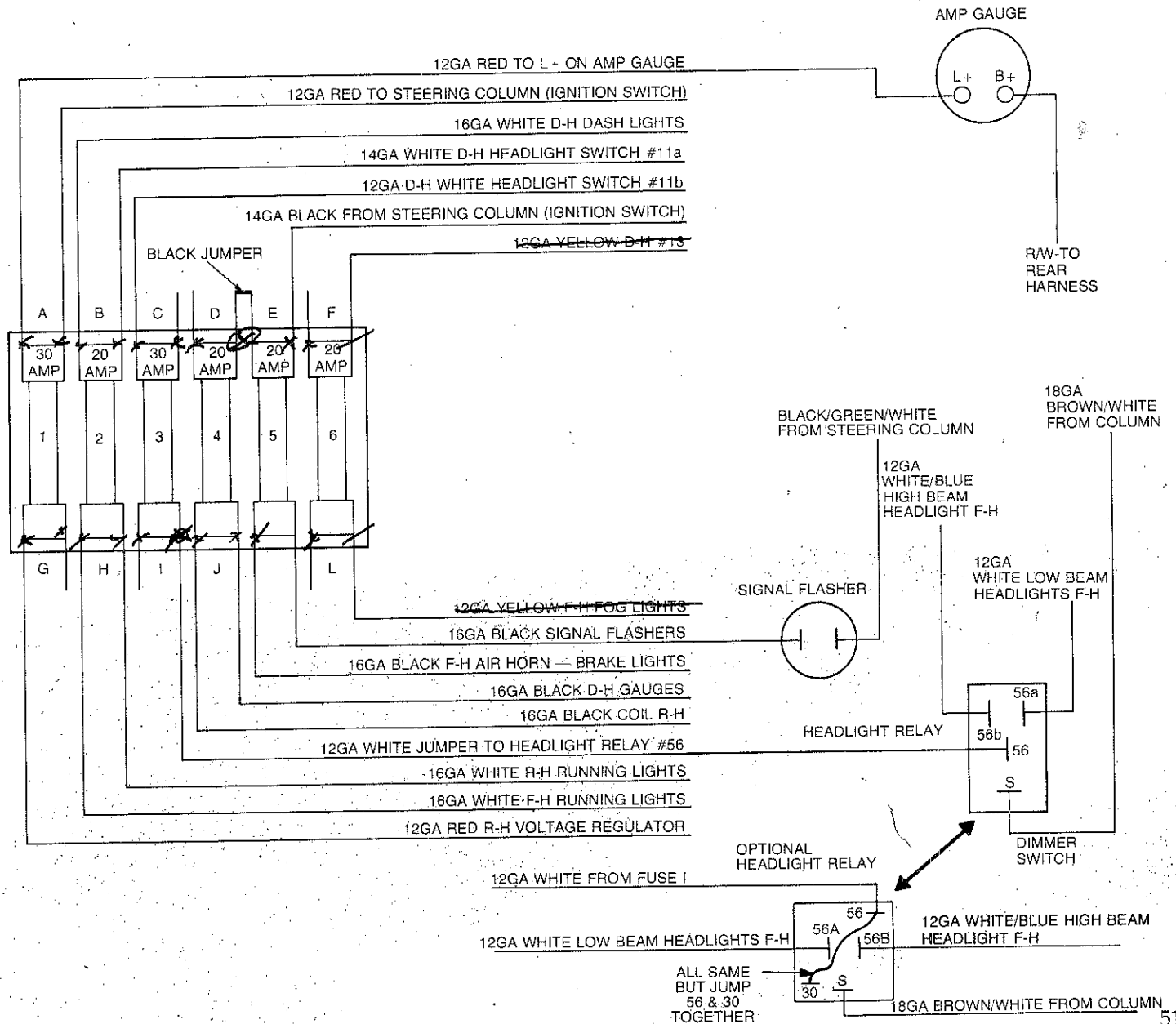
Connect the original VW 5 gauge wire from the positive battery post to the stud on the starter solenoid. Locate the original 12 gauge VW Black/Red wire attached to the starter solenoid. Connect this wire to the Black/Red wire from the rear harness using original terminals.

# Wiring Diagrams

## FUSE/CIRCUIT IDENTIFICATION

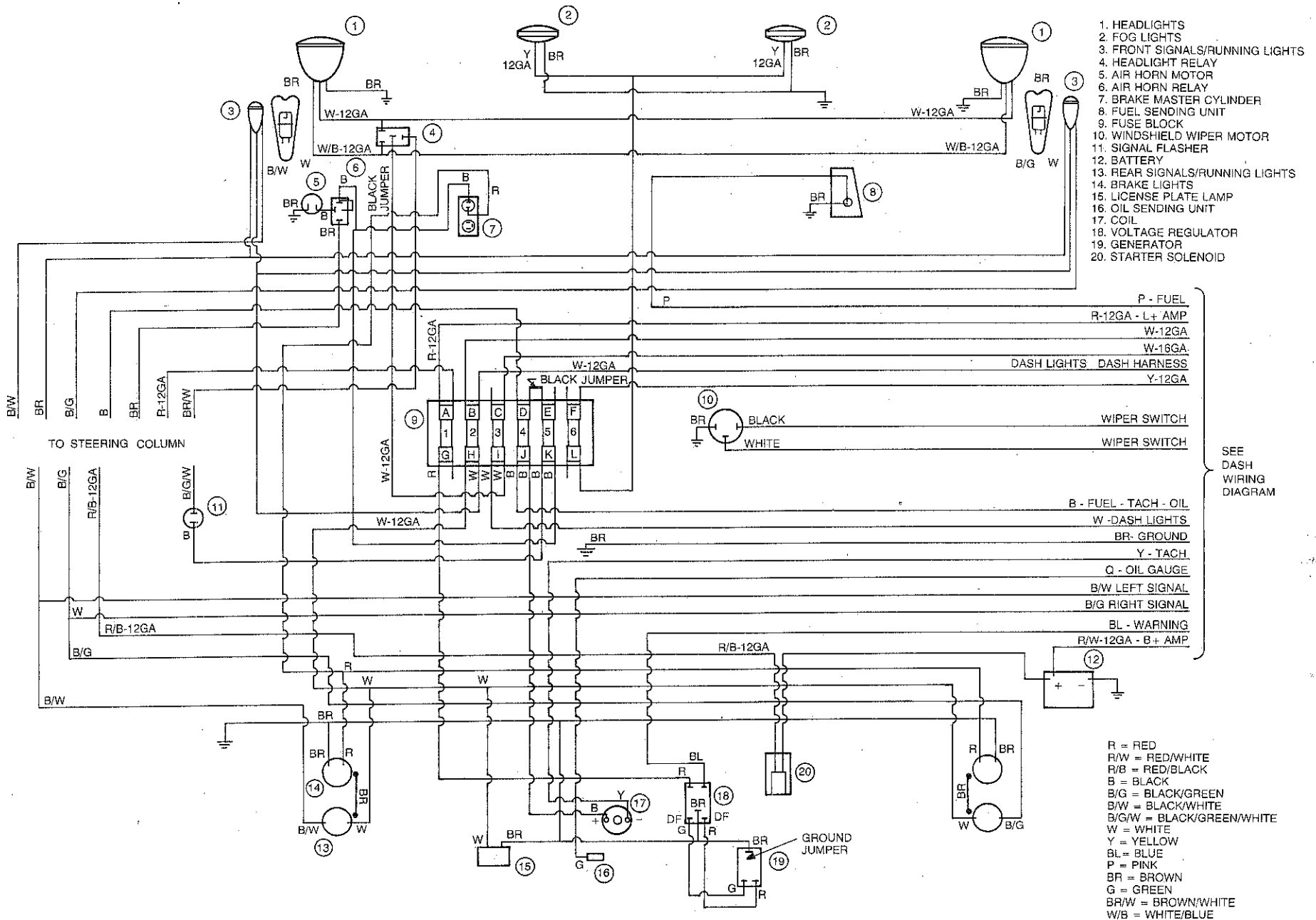
1. VOLTAGE REGULATOR
2. HEADLIGHTS-FRONT RUNNING LIGHTS
3. TAIL LIGHTS - DASH LIGHTS
4. COIL - DASH - GAUGES
5. AIR HORN - BRAKE LIGHTS - TURN SIGNALS
6. FOG LIGHTS

F-H FRONT HARNESS  
 R-H REAR HARNESS  
 R/W RED/WHITE  
 BR/W BROWN/WHITE  
 B/G/W BLACK/GREEN/WHITE  
 DH DASH HARNESS



# Wiring Diagrams

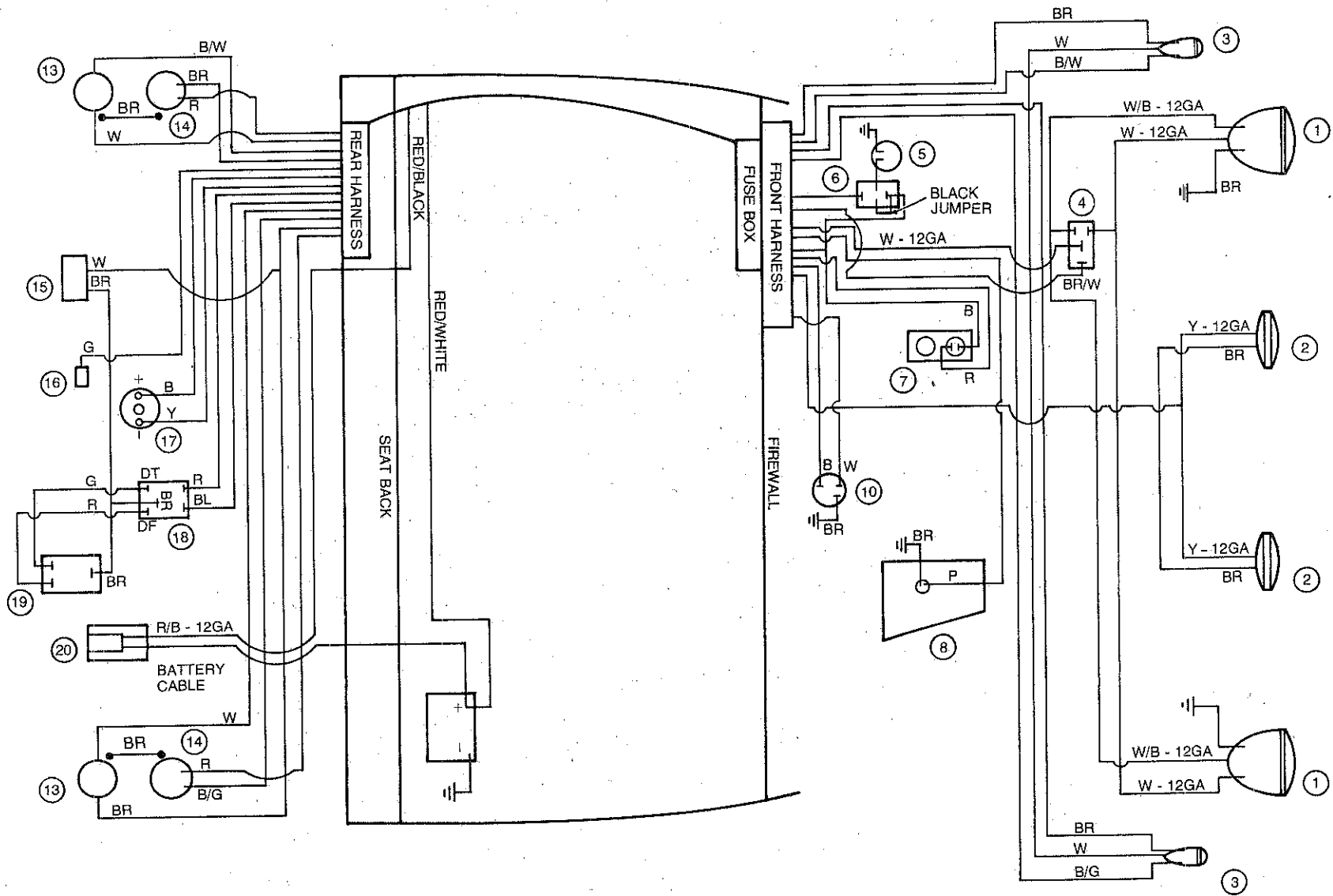
## General



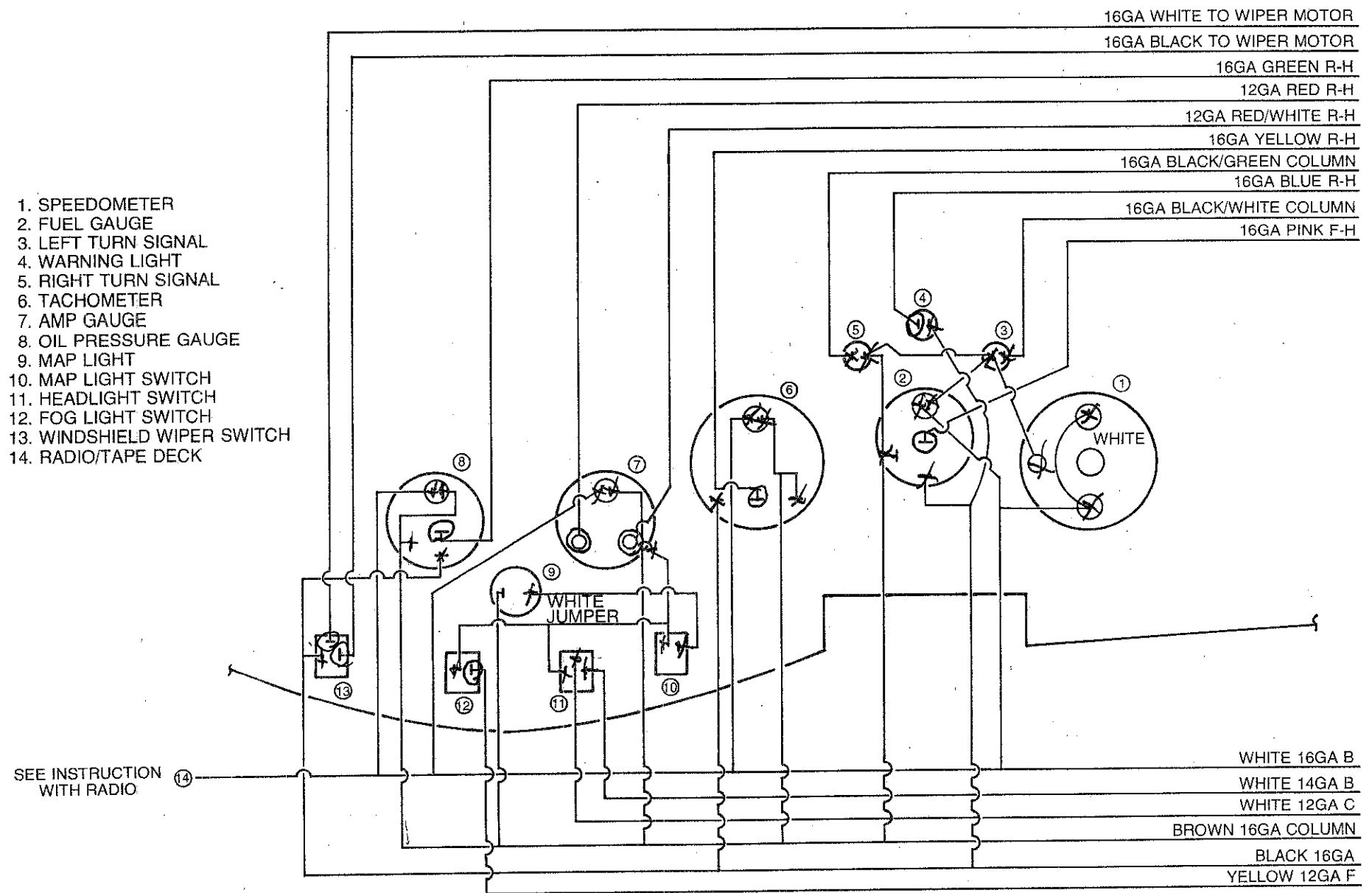
SEE DASH WIRING DIAGRAM



# Wiring Diagrams

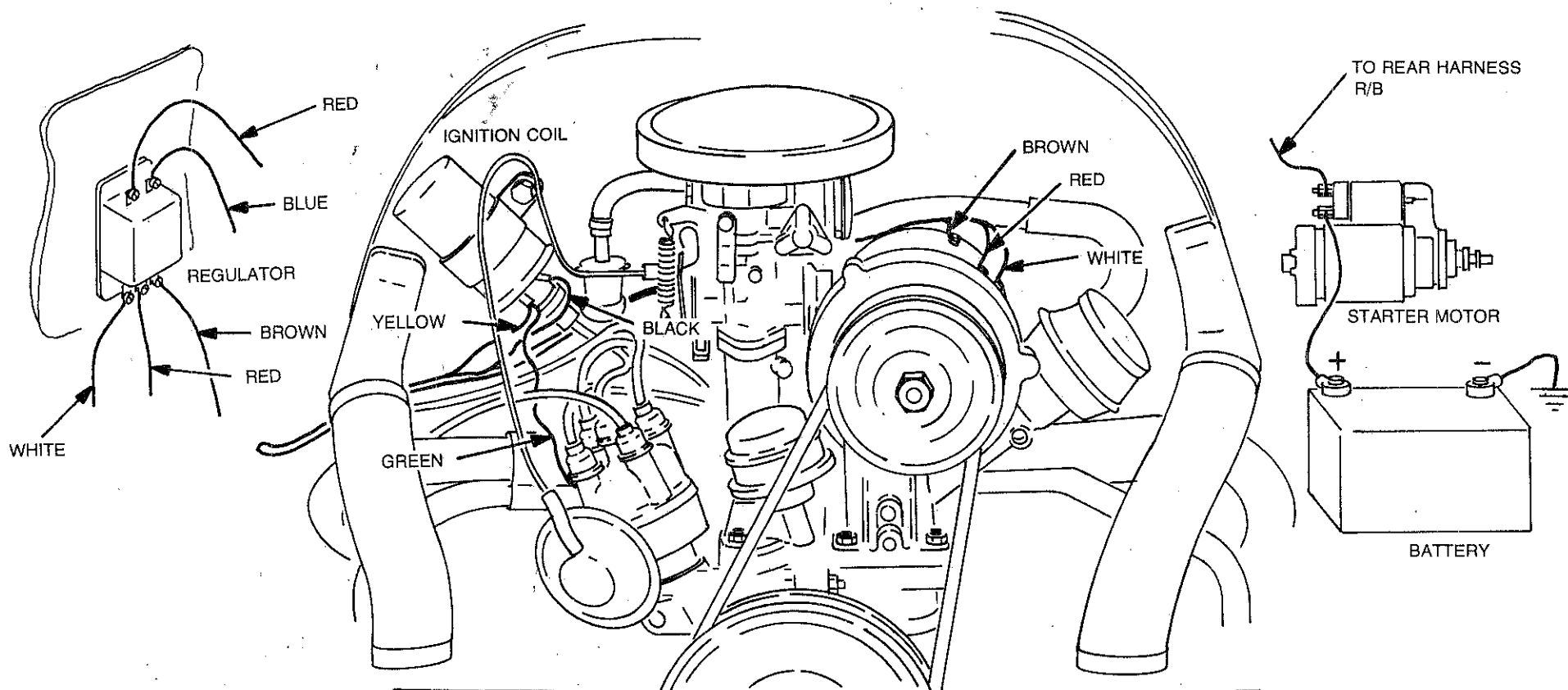


# Wiring Diagrams



Back View

# Wiring Diagrams



There are three wires near the ignition coil (Black, Yellow, and Green). Connect the Green wire to the oil pressure sender below the distributor. Connect the Yellow wire to the negative (-) terminal of the ignition coil (this terminal leads to the distributor).

Connect the Black wire to the positive (+) terminal of the coil. On a carbureted engine be sure that there is a wire from the positive (+) terminal to the choke and pilot jet of the carburetor. If the wires are missing, make up a wire and connect them.

Regulator can be mounted just inside the rear side panel at the wheel well area on the driver's side.