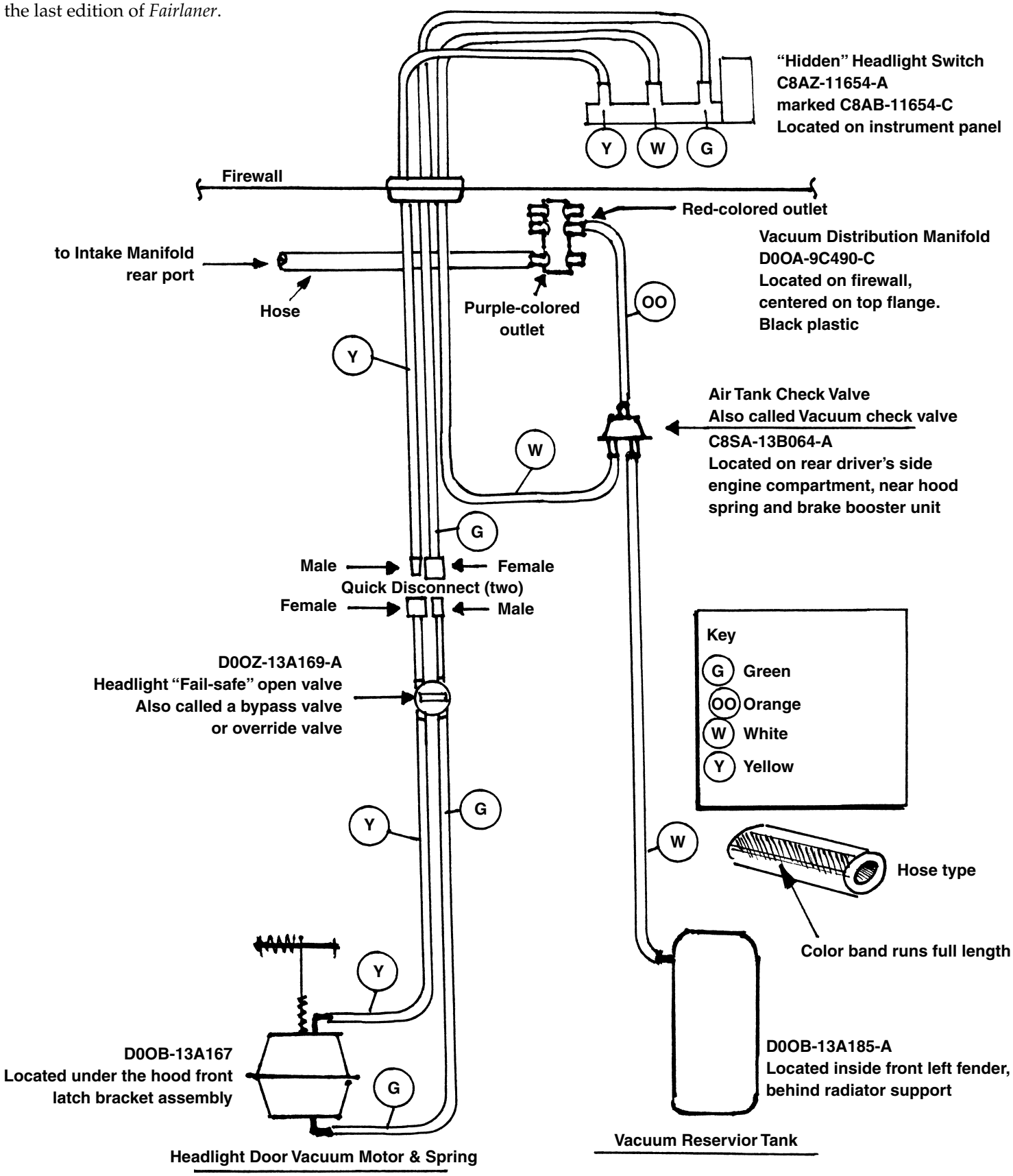
1970-71 Fairlane/Torino Corner

Hideaway Headlight Vacuum System Schematic

by Bill Shenk

The schematic shown here supplies supplemental information to the article on hide-away headlights in the last edition of *Fairlaner*.



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Hideaway Headlight Vacuum Leak Repair Procedure

by Bill Shenk (with supplemental info from Tim Zagata)

Testing the hidden headlight system step-by-step, to locate the vacuum leak, takes some time—usually 2 to 3 hours. It is helpful to have about 10 feet of 7/32" I.D. hose to use for in-line replacement testing. And having spares of critical items like the air tank valve, headlight door switch, and vacuum motor unit can really help in troubleshooting. Other than basic hand tools for parts removal and reassembly, that's all you need.

I have included a simple diagram below to assist in repairing the system. Be very careful when unhooking hoses. I also want to point out that the weakest link in the hideaway system is the headlight switch itself (and the most difficult part to get at). So, unless you know the problem is with the switch, I would leave checking this component until last. Besides, if all the other items check out to be good, then you know it has to be the switch.

Before you begin to tear out the hoses, valves and all the harness wire wrap straps, look over the system and make a very simple diagram of the parts and where they are located. This will assist you later as you proceed to hook things back up. Also, you will have to run the engine at each troubleshooting step, so have the car outside on level ground with chocks around front and rear tires. You don't want any accidental movement of the car while you are in front of it!

Here is my suggested procedure for locating vacuum leaks: Warm up the engine for about 2 minutes, then shut it down.

Step #1

Replace the Bypass Valve (**F**) with another spare (new) valve. Turn the top of the valve perpendicular to the hoses. Reconnect both green and yellow hoses to the new valve.

Start engine. Pull out headlight switch. Check for normal operations. Turn off the engine and wait about 15 seconds. If there is still a leak, the doors should slowly start to open. If doors do not raise after you stop the engine, the old valve was bad and you should keep the new valve in the system.

Step #2

Replace the Air Tank Check Valve (**C**) with a spare (new) tank valve. Reconnect all three white hoses to the new valve.

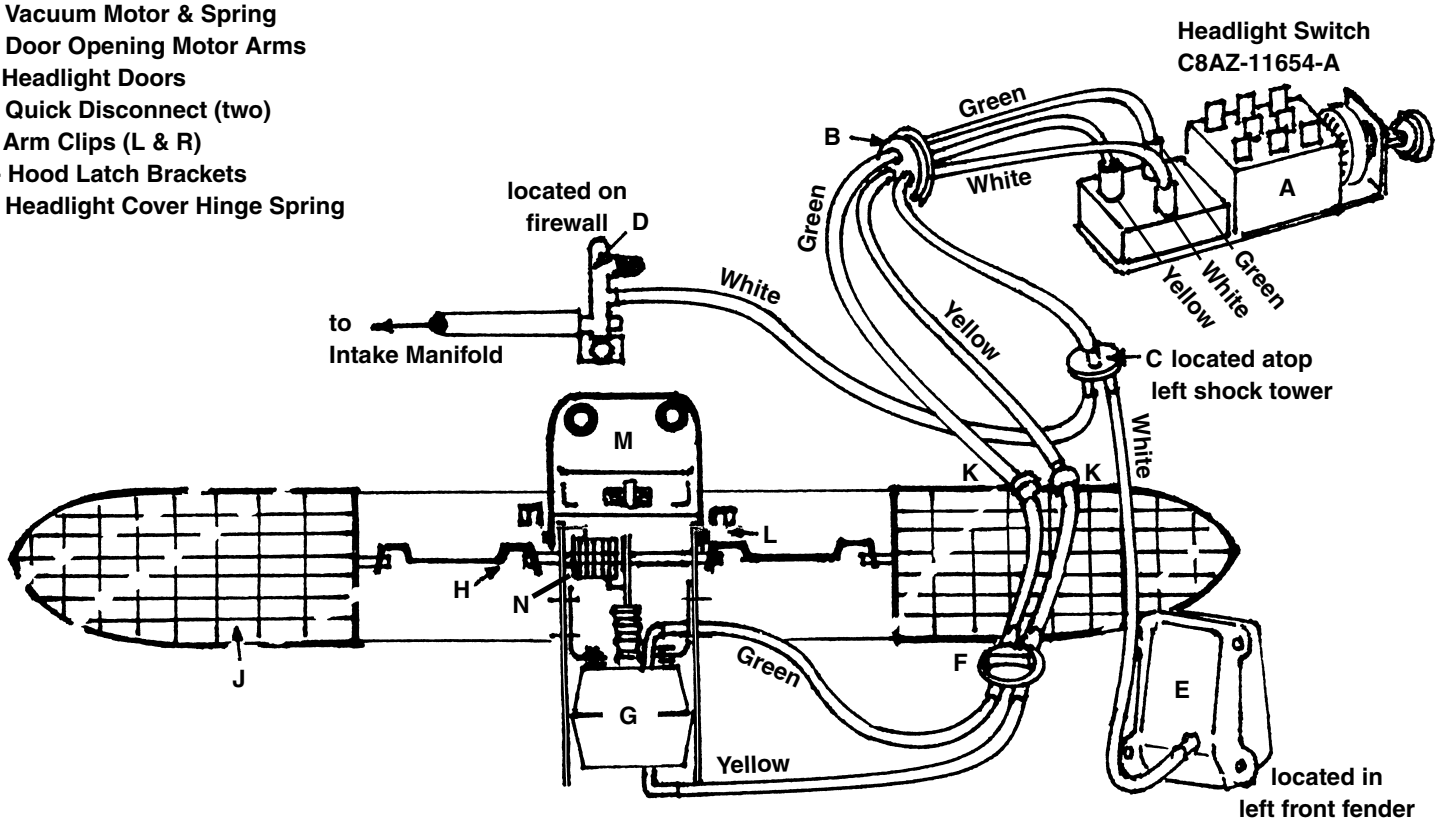
Start engine. Pull out the headlight switch. Check for normal operations. Turn off the engine and wait about 15 seconds. If there is still a leak, the doors should slowly start to open. If doors do not raise after you stop the engine, the old check valve was bad and you should keep the new valve in the system.

Step #3

At this point, you need to bypass green, white, and yellow hoses one at a time. The white hose runs between the Air Tank Check Valve (**C**) and Vacuum Reservoir (**E**). The green and yellow hoses run between the Bypass Valve (**F**) and Vacuum Motor unit (**G**). Use 5 feet of hose to replace one of these hoses.

Start engine and check headlight door operation with headlight switch on and off. Stop engine. If doors slowly open, leak is still there. Repeat for each hose.

A - Light Switch
B - Firewall Plug
C - Air Tank Check Valve
D - Vacuum Distribution Manifold
E - Vacuum Reservior
F - Bypass Valve (Override)
G - Vacuum Motor & Spring
H - Door Opening Motor Arms
J - Headlight Doors
K - Quick Disconnect (two)
L - Arm Clips (L & R)
M - Hood Latch Brackets
N - Headlight Cover Hinge Spring



Step #4

One other hose can be checked just in case vacuum is not getting into the system. This is the hose from the Vacuum Distribution Manifold (**D**) to the engine intake manifold. Replace this hose and check for normal operation.

Step #5

At this point, you have to conclude that either the Vacuum Motor (**G**) or the Headlight Switch (**A**) is the bad part. Assuming you have a spare vacuum motor, begin disassembly of the hood latch bracket (**M**) and removal of the motor arms, arm clips, and all mounting brackets. Install the new vacuum motor and reconnect the top green hose and yellow bottom hose.

Start the engine. Repeat the drill. If you get the same results, you know the headlight switch is the bad part. This is probably a good time for a lunch break. Because when you get back, you will be lying down next to the front seat with your head under the dash. This is no easy job, I can tell you.

Before you replace the switch, make very sure it has the required 8-pin connections and is not the 7-pin one. The 1970-71 Torino line uses the 1968 part, C8AZ-11654-A (marked C8AB-11654-C). The 8 pins are in three rows—2 pins in the center row, and three each in the outer rows. There is a 7-pin switch which eliminated the front parking light terminal. The 7-pin switch should not be used.

This spring opens the headlight covers in the event of a vacuum failure. It is located near the vacuum motor. See illustration on facing page.

When this valve (located near the driver's side shock tower) is in the "bypass" position, it closes off each port on the switch side of the valve. This cuts off the vacuum source to the headlight door actuator motor.

It also allows vacuum to flow between the two ports on the headlight door side of the valve. This is where the spring (see photo at top of page) comes into play. Since vacuum is allowed to flow through both ports of the door side of the bypass valve, that allows the actuator motor to move freely either up or down. The tension from the spring forces the actuator motor arm to keep the headlight doors open. This is useful when cleaning or changing a headlight bulb. Or when icy weather is expected, the bypass valve can be used so that the headlight doors will always remain open and not be frozen in the closed position when your headlights are required.