



# LISTEN TO YOUR GMC

## **-FREE DIAGNOSTICS-**

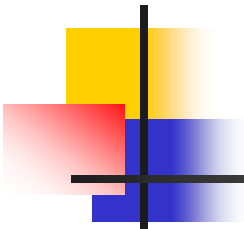
- \* WATER PUMP / SYSTEM
- \* VACUUM PUMP
- \* AIR PUMP
- \* GAS PUMP
- \* GAS TANK VENTS
- \* SOUNDERS
- \* BATTERY LEAK DOWN
- \* ENGINE COOLANT
- \* NEUTRAL START SAFETY SWITCH
- \*



# AIR PUMP (ride height pump)

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- \* TURN ON KEY
- \* AIR PUMP RUNS – THEN STOPS
- \* NO STOP, YOU HAVE A LEAK OR BAD PUMP
- \* CHANGE RIDE HEIGHT, PUMP RUNS



# BRAKE VACUUM PUMP (we all have one –RIGHT?)

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- \* TURN ON THE KEY
- \* VAC PUMP RUNS FOR 20 SECONDS – THEN SHUTS OFF
- \* DOES NOT SHUT OFF – YOU HAVE A LEAK
- \* PUMP PEDDLE 2 TIMES --- PUMP RUNS, AND STOPS
- \*

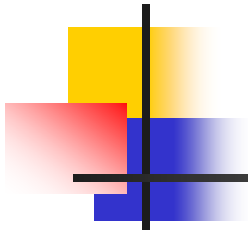
# IF THE WATER PUMP RUNS YOU HAVE A LEAK



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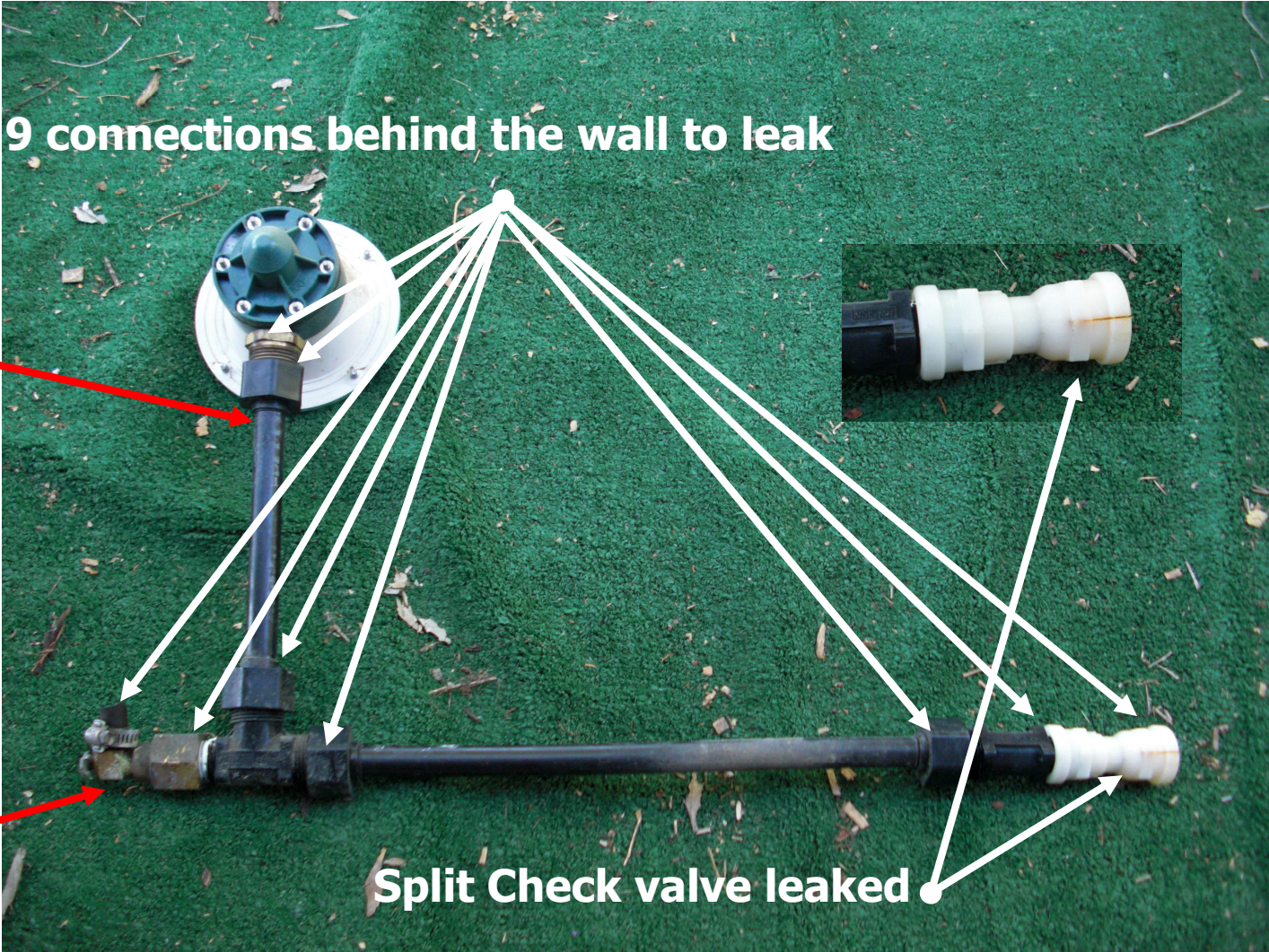
- \* Turn on the water pump
- \* If it runs , you have a leak
- \* if the pump runs (burps) at night – you have a leak
- \* there are many places for leaks – even the pump it's self

# City Water Connect behind the wall



Repair / replacement fittings no longer available

Drain valve has not opened in 30 years – and will not open



9 connections behind the wall to leak

Split Check valve leaked

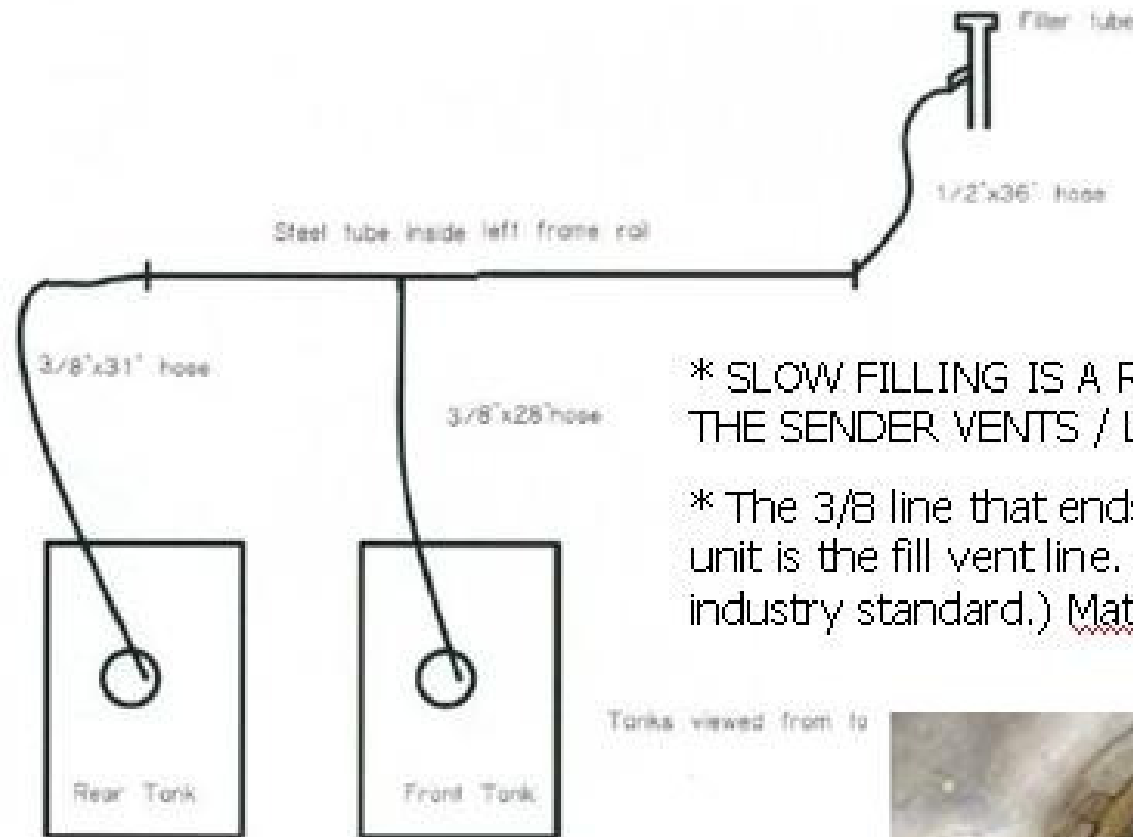


# When you fill your gas tank

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- \* **If your tank will not fill at full pump rate**
  - your sender vents are plugged
- \* **If you have pressure when you remove the gas cap**
  - your liquid vents are plugged
- \* **Do not fill until the pump stops**
  - all tanks leak on the top and will smell of gas
- \* **All rubber lines last only 2 years**
- \* **Replace –top-of-tank lines with hard lines**

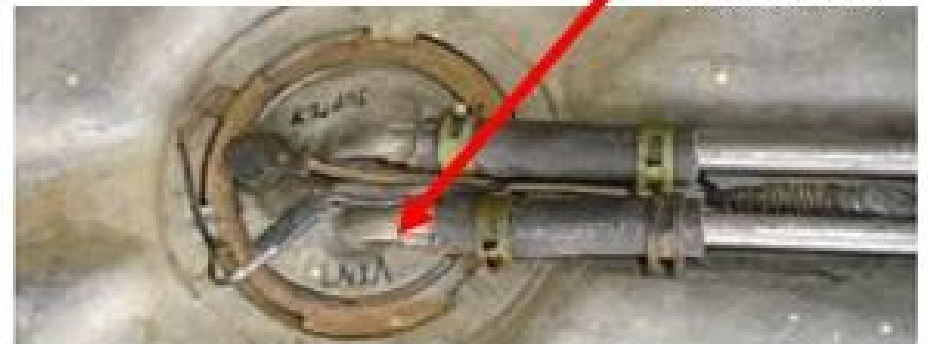
# VENTS FOR FILLING THE TANKS



\* SLOW FILLING IS A RESULT OF A, PLUG, IN THE SENDER VENTS / LINES

\* The 3/8 line that ends in the top of the sending unit is the fill vent line. (This description is an industry standard.) MattC

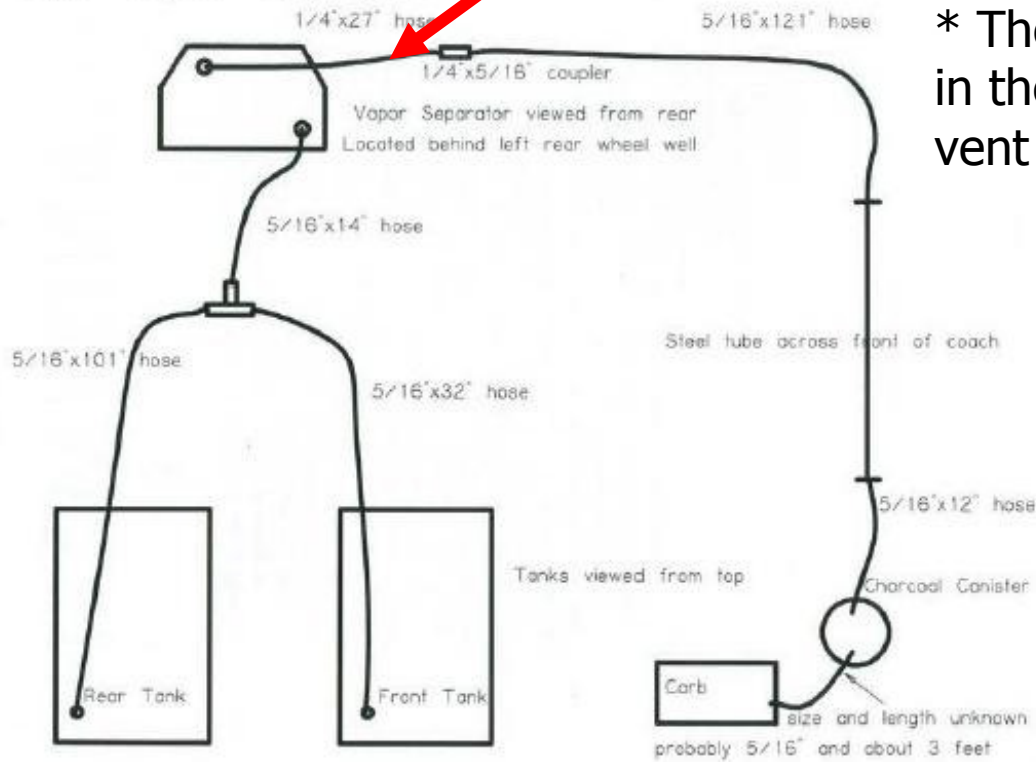
GARTON



PICTURE BY RICK WILLIAMS

# VENTS FOR TANK PRESSURE

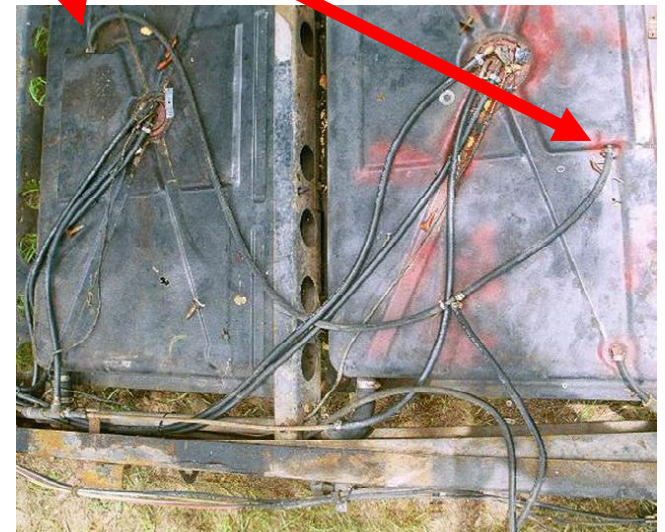
Original Tank Vapor Collection



\* PRESSURE IN THE TANKS IS A RESULT OF A PLUG IN THE VENT / LINES.

\* The 5/16 line that is in different places in the top of the tanks is the evaporation vent line. (Also a standard name.) MattC

Charles



PICTURE BY RICK WILLIAMS

Picture by Rick Williams





# Coolant Recovery Tank a diagnostic tool

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## **WHEN THE ENGINE IS COLD**

- Top off, the radiator by filling the recovery tank
- **You have a leak - if the level in the recovery tank, goes down**
- You should see anti-freeze in the recovery tank

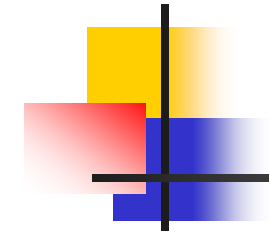
## **WHEN THE ENGINE IS HOT**

- Have enough volume in the tank, to allow for expansion in the cooling system
- If the level does not raise when the engine is hot
- Your radiator cap may not be working

## **MORE**

- Read the manual - next slide
- If you change the recovery tank, make sure the volume of the new tank is sufficient

# Coolant Recovery System



Any air or vapor in the cooling system will be forced to the coolant reservoir under the liquid level and leave through the vent tube at the top of the reservoir. As the system cools, the extra coolant in the reservoir will be drawn back to the radiator through the vent valve. In this manner, the radiator will keep itself full at all times. The need for additional coolant can be detected by observing the level of coolant in the reservoir at the “COLD” level line when the engine is cold.

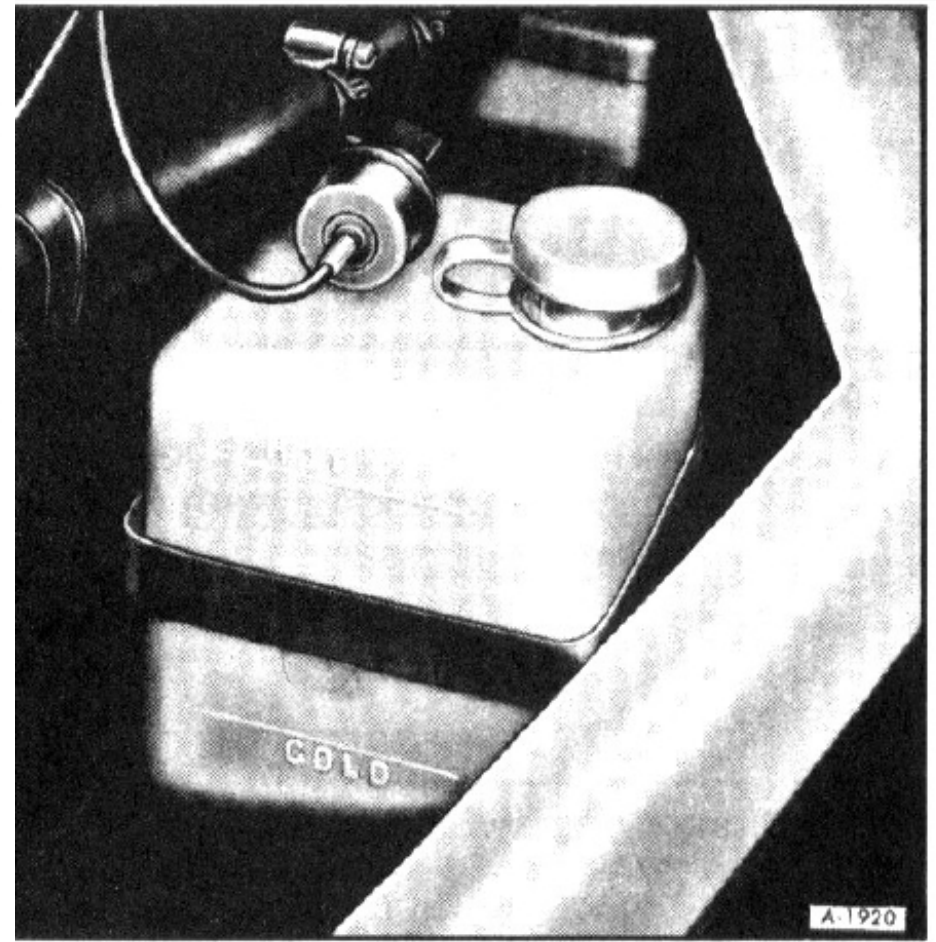


Figure 2–Coolant Recovery Reservoir

## GENERAL DESCRIPTION

The engine cooling system is the closed-pressure type with thermostatic control of coolant circulation. The radiator is equipped with separate coolers in the right tank which aid in cooling engine oil and automatic transmission fluid (See figure 1).

The cooling system is sealed by a pressure type radiator filler cap which causes the system to operate at higher than atmospheric pressure. The higher pressure raises the boiling point of the coolant and increases the cooling efficiency of the radiator. The 9 pound pressure cap used raises the coolant boiling point approximately 22 degrees F.

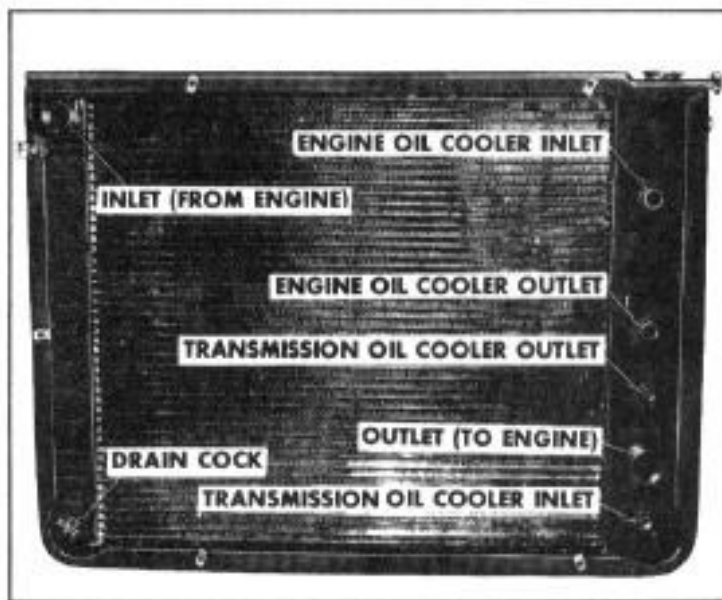


Figure 1-Radiator Core

The pressure type radiator filler cap contains a blow off or pressure valve and a vacuum or atmospheric valve. The pressure valve is held against its seat by a spring of predetermined strength which protects the radiator by relieving the pressure if the pressure should exceed that for which the radiator is designed.

The vacuum valve is held against its seat by a light spring which permits opening of the valve to relieve vacuum created when the system cools off.

A pressure-vacuum valve radiator cap is used which allows the coolant to expand through the pressure valve in the center of the cap without building unnecessary pressure. The expanding coolant flows into the coolant reservoir (See figure 2). The vent valve closes due to expansion and coolant flow. The nominal 9 pound pressure will not be reached until the system is working at maximum capacity.

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# NEUTRAL START SAFETY -NSS SWITCH-

- \* TURN ON THE KEY
- \* TURN KEY TO START
- \* NO CLICK – COULD BE THE NSS
- \* LOOK HERE TO ADD JUMPER

<http://minniebiz.com/gmcmotorhome/2011/05/22/how-to-jumper-the-park-neutral-safety-switch/>



PIX BY MINNIE

# BOVEE SOUNDERS

<http://www.bdub.net/bovee/BoveeProducts.pdf>  
gary.bovee@gmciotsguide.com

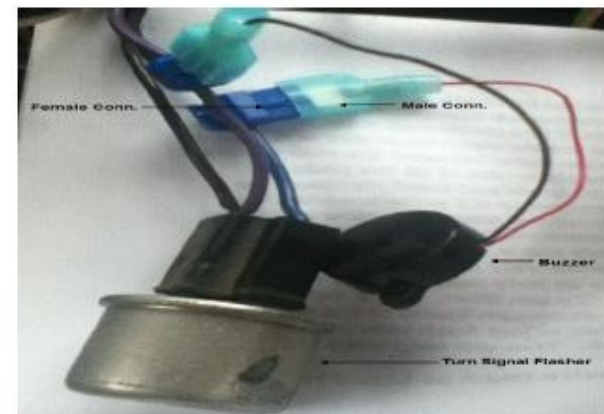
- \* KEY OFF – LIGHTS ON = SOUND
- \* SAVES BATTERY
- \* USE FOR BATTERY LEAK-DOWN TEST

**Headlight Reminder Alarm \$10.00 plus \$2.50 shipping**



**Turn Signal Reminder Alarm - \$10.00 plus \$2.50 shipping**

- \* TURN SIGNAL ON = SOUND
- \* NO MORE 5 MILE BLINKING



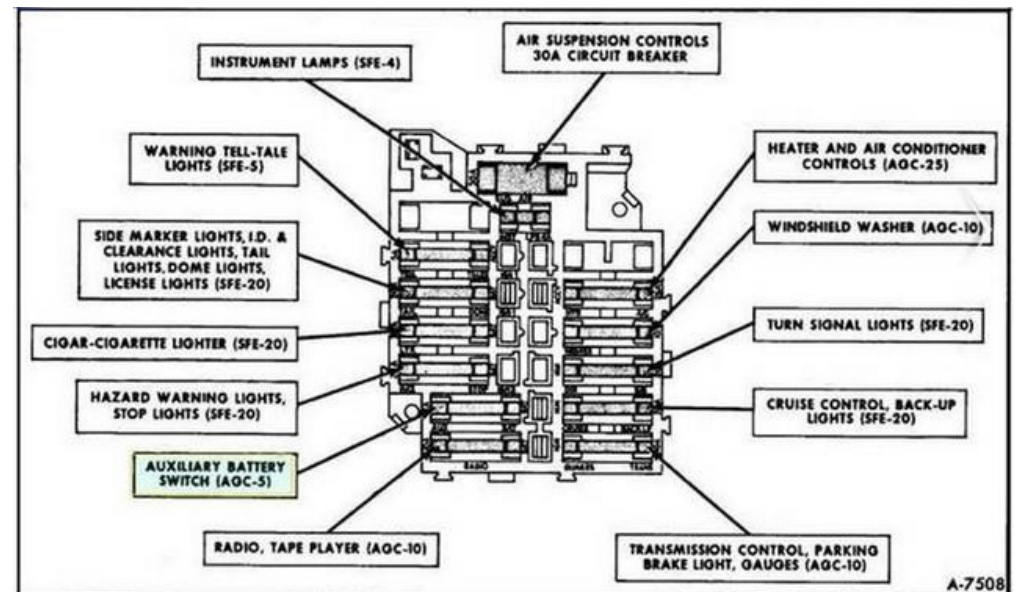
# Battery leak-down testing (10 TO 50 MA)



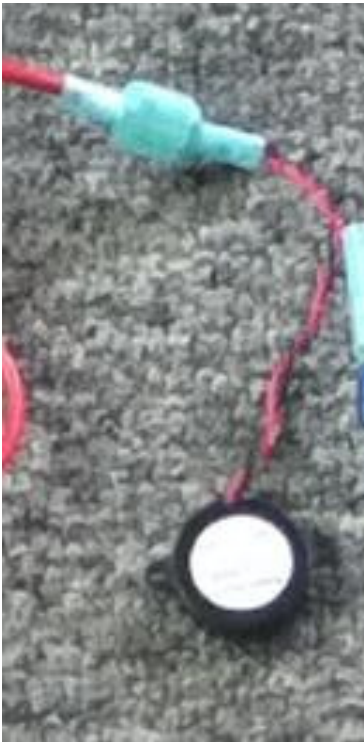
- \* check current from battery
- \* check every fuse
- \* will test down to 10 ma current

<http://gmcmotorhome.info/chassis.html#leak>

Headlight Reminder Alarm \$10.00 plus \$2.50 shipping



# CURRENT CHECK



# ALL YOU NEED

