In order to accurately measure distance, your RAC Plus must know the exact distance that the vehicle will travel based on pulses from the vehicle's speed sensor. The calibration number is the automatic calculation that represents the number of pulses received over a set distance. This number, once calculated, will remain accurate until a change to the vehicle occurs, such as different size tires are put on the vehicle, tire wear, tire pressure change, etc. Such changes will require a re-calibration in order to maintain proper accuracy.

The RAC Plus has the ability to store four (4) separate vehicle calibration numbers in memory. This simplifies sharing one instrument between up to four different vehicles.

In order to calculate the calibration number for your particular vehicle, you must first establish a calibration course. The length of the course can be any known distance more than 500 feet. One thousand feet is ideal, but the course can be any distance over 500 feet (for example, 623 feet from pole to tree). Your course should be straight and accurate, so take the time to measure the course using a 100' tape or hand wheel. Mark the beginning and ending points so they can be seen from inside your vehicle. Remember, the course length can be any accurate distance over 500 feet, so for convenience you could use a telephone pole or other marker as reference point.

Note: If you are using the Metric unit of measuring, laying out the calibration course in feet is required to obtain the most accurate calibration number.

Step 1

Slide the ON/OFF switch to ON. Your RAC will perform a brief Self Test. The current calibration number will be shown in the larger, upper display (D-1) and CF U(vehicle 1, 2, 3 or 4) in the smaller, lower display (D-2). This is displayed for 3-4 seconds while a tone sounds, then 0 is shown in D-1 (0.000 if the mile or meter unit of measurements is selected) while CH is shown in D-2.

Step 2

Press the Menu key, the # 1 key and Enter. At this point, the unit of measurement will automatically change to feet. You can then select the vehicle number that this calibration will be for by using the 1 through 4 numeric keys.

Step 3

Once the vehicle number has been selected, press Enter. Key in the course length (in feet) to be used for the calibration using the number keys, then press Enter again.

Step 4

Using a reference point on your vehicle (i.e. the window post, door handle, your shoulder, etc.), align your vehicle to the beginning course marker.

Step 5

Press the CH key and drive away. As you drive, the pulses received from the vehicle are being shown in D-1. This is not the distance being traveled, so don't panic when the display doesn't equal the actual length of your calibration course. When you reach the end of the course, stop your vehicle so you are exactly aligned (using the same reference point in the vehicle) with the end course marker.

Step 6

Press the CH key. The calibration factor will then be shown in D-1. You should record the calibration number, vehicle number and date in the Appendix of this manual on page A-7. It is also recommended that you put this same information on a piece of tape attached to the inside of the vehicle's glove box.

Step 7

Press Enter and the unit of measurement will return to your desired unit of feet, mile or meter. Press Enter again to exit the menu function and return to normal operation. Your calibration number for the vehicle selected is now stored in the RAC's nonvolatile (permanent) memory. The calibration number will stay in memory for more than 50 years, or until you re-calibrate or manually change the data. You are able to view the calibration number and unit (vehicle) number every time you power up the RAC.

You should rerun the calibration course, in the normal mode, to verify the calibration for your vehicle. Press the CH key prior to measuring. If this is the first time you have calibrated a DMI, you may want to run the course a couple of times to practice being properly aligned when starting and stopping at the course markers.

Important: Ideally, the calibration number used should be between .500 and 1.200.

If your calibration number is below this range, you need to use a higher division factor such as 16 on the Modular Distance Sensor (MDS). Of course, if your calibration number is too high, you can lower the number by using a lower number such as 1 on your MDS. This is done by adjusting the rotary switch on the MDS so the slot points to 1, 2, 8, 16, 32 or 64.

Any time you adjust the rotary switch setting, you must re-calibrate to get the correct calibration number. Changing the switch setting will not change the calibration number, only the number of pulses being received by the RAC.

Refer to How do I adjust the *Vehicle Speed Sensor Pulse Rate?* for more information on this adjusting the rotary switch.