

Product: Speedometer	Description TROUBLESHOOTING GUIDE	Date Oct 2003
Type: Mechanical		Issue 1

General Information:

This troubleshooting guide is intended to help you with the installation of Siemens VDO Automotive instruments. Please however check the instructions provided within the package the instrument came in for more details.

Testing

American cars are geared for the speedometer cable to turn 1,000 revolutions in a mile. Changing tires or ring gears and pinion, changes the revolutions by a percentage at all speeds. This percentage can be determined as follows:

1) Drive a measured 10 mile course after setting the trip meter to "0". Note the reading at the end of the ten mile course. A 9.4 reading means 6% slow. A 10.4 reading means 4% fast.

2) Mark a 52 foot 9 1/2 inch course on a driveway or parking lot with tape. Place a piece of tape on the rocker panel under the driver's door. Disconnect the speedometer cable from the speedometer head. Push the car up to the starting point aligning the tape on the car with the tape on the ground. Place a paper clip on the speedometer cable core and mark the cable housing at this starting point. Push the car along the marked course counting the cable revolutions as you go until you reach the tape marking the end of the course. The core would turn ten times if the tires and drive train were to factory standard. If the core turned 9-1/2 times, you are 5% slow. If it turned 10-3/4 times, you are 7-1/2% fast. Run test three times and average.

Once you determine the percentage of difference, you may be able to correct the difference by changing the speedometer gears. The following is a listing of gears available from G.M. dealers for turbo 350 and 400 transmissions.

G.M. Driven Gears (the gear on the end of the speedo cable) for Turbo 350 and 400:

Part Number	Number of Teeth
3987917	17
3987918	18
3987919	19
3987920	20
3987921	21
3987922	22

By installing a driven gear with more teeth than the one on the speedometer cable, the cable turns faster and increases the speed shown on the speedometer.

G.M. Drive Gears (the gear in the transmission driving the speedometer cable gear):

Turbo 350 Part #	No. of Teeth	Turbo 400 Part #	No. of Teeth
6261783	8	8629549	18
6261782	9	8629547	15
8629547	15	8440055	8

If the drive gear is changed to a gear with more teeth, the speedometer will show a decrease in speed. Fewer teeth will show an increase in speed. The percent of change depends on how many more or fewer teeth are on the gears compared to the gears you are changing.

If you cannot correct the speedometer reading sufficiently with gear changes, most speedometer repair shops can make a ratio adapter which will make the correction. VDO also manufactures programmable speedometers which can be adjusted in the field by the owner to virtually any ratio. Check with your selling dealer.

We have tried to cover most problems or situations you may encounter. If you need further assistance, please call 1-800-265-1818 for technical support