Volvo 850’s Odometer Gear Repair

http://www.matthewsvolvosite.com/2005/01/odometer-fix-how-to/

OVERVIEW

How many miles do you have on your Volvo? Don’t know? Maybe it’s time to fix the odometer 😞. Note: MVS reader Steven reports this impacts both the trip meter and odometer. If you have a Volvo with an OBD system under the hood (generally up to 1995 and some ‘96 models), you can read the actual miles from the ECU so that you can set your odometer to the correct number after it’s fixed.

Please read the first few steps carefully as these are our most common questions we receive after a client has performed a repair and the odometer still does not work. The reason the original gear or gears have failed is that they are made of urethane and lubricated with petroleum grease. This combination breaks down the urethane into a waxy substance which flakes and breaks away. This will also leave a waxy film and deposits on the shafts, gears, housing and peg on the pods.

* Work smart, meaning have a clean area to work and the proper tools to perform the repair. General tools that will be needed depending on the vehicle are small standard screwdriver, small Phillips screwdriver, assortment of torx drivers, diagonal cutters (dikes), 1/4" socket set are just a few of the items that may be needed.

* No grease is needed with the new gears. Our gears are made using Celcon® which has graphite mixed into the material and does not require any additional lubricant.

* Make sure that you have blown the speedometer and odometer assembly clean with high pressure compressed air. Even if you think that you have found all of the broken pieces you still need to perform this step.

* Wipe the area around the gears, any shaft or shafts that the gears may ride on, the motor shaft and the peg on the pod that the small gear spins on clean, using a clean cloth and rubbing alcohol. Any residue left over from the old gears can allow the new gears to stick and not allow the odometer to work.

* On units that use a gear and pod combination: install the gears into the housing first and then install the motor assembly. Before installing the screws that secure the motor and circuit board use a small standard screw driver and rock the tenths digit of the odometer up and down. This will help to seat the gears into place and allow the motor assembly to seat fully.
PROCEDURE

**Jump to Addendum**

Odometer Fix Step 01

Remove vents to access inner fastenings

Odometer Fix Step 02

More screws around the dash to come out
Odometer Fix Step 03

Wiggle the dash top up from one side to the other

Odometer Fix Step 04

Pull apart the plug wires
Separate the second wiring plug.

Flip up the latches that hold the unit in.
Pry open the second clip

Lay back the latch tops
Begin to wiggle and lift the unit upward.

When the unit is loose cover the top and front with a towel to prevent scratches on either area.
Odometer Fix Step 11

Wedge the dash up as far as possible

Odometer Fix Step 12

Disconnect the next wiring plug
Odometer Fix Step 13

Lift the unit out carefully

Odometer Fix Step 14

Make sure the steering wheel is as low as it will go or there isn’t room to pull the unit out.
Odometer Fix Step 15

Take the unit to a clean table to work on it.

Odometer Fix Step 16

The back of the unit before anything is removed.
Odometer Fix Step 17

Remove the 9 or 10 screws that hold on the back...put them in a bowl for safe-keeping (some of the screws are under the edge)

Odometer Fix Step 18

Undo the two screws on the back
NEW! STEP 19.5 (October 6, 2009):
There is a brass nut and washer on the back of the cluster that must be removed before you can gain access to the odometer and trip gears. Do not tighten too much after the repair as you can crack the circuit board.
http://img222.imageshack.us/img222/2110/dsc00061kn6.jpg <- brass nut

Odometer Fix Step 20
GENTLY pry up the face plate all the way around the unit...like opening a paint can.

Set the dial board aside on its face so the pins don’t get bent.
Odometer Fix Step 23

The blue unit comes out next...

Odometer Fix Step 24

Disconnect the plug between the blue unit and the base.
Odometer Fix Step 25

This is the unit alone... the gear is in the wheel on the right hand side of it as shown.

Odometer Fix Step 26

Unscrew the wheel section from the unit
Odometer Fix Step 27

The gear section separated from the unit

Odometer Fix Step 28

The broken gear is the yellow spot in the gear assembly...
Odometer Fix Step 29

My cheap digital won't focus this close, but the broken gear and the tooth can be seen even though they are fuzzy...that little piece causes all this work!

Odometer Fix Step 30

The new gear is the white spot on the right...it will set into the wheel on the left.
Odometer Fix Step 31

This is the new gear set into the wheel as it will go back into the unit.

Odometer Fix Step 32

The gear is in the wheel and the wheel is in the unit and the wheels on the bus go round and round and round...
Odometer Fix Step 33

Replace the end cap onto the unit

Odometer Fix Step 34

Tighten the screws without over tightening
Odometer Fix Step 35

Reconnect the plug to the base

Odometer Fix Step 36

(sorry it is blurry) - this is the unit replaced back into the base and plugged in
Carefully press the button to reset the trip-ometer to zero to see if it works.

GENTLY replace the face of the unit.
Reverse everything you have done to put the back on...then the frame...then return the whole unit to the car and re-install.

**UPDATE** Oct. 16 2005: More images, these from Govil. Thanks Govil!

**GEAR WITH BROKEN TOOTH**
Odometer Fix Addendum Step 02

Replacement Gear in Place
Turn Gear to Ensure That Total Miles Change When Trip Meter Changes From 9'10 to Whole Mile. If Not, Remove Large Gear and Turn Trip Gear to the Proper Position.
Odometer Fix Addendum Step 03

ENSURE THAT THE BUMPS IN THE ODOMETER SIT INTO THE HOLES IN THE INSTRUMENT PANEL BEFORE REPLACING THE FRONT.

Odometer Fix Addendum Step 04

Odometer Fix Addendum Step 05

www.OdometerGears.com