

Installing the New Face for the Volvo 740 Turbo Vacuum/Boost Gauge

INTRODUCTION: These instructions will guide you through the installation of this new face for your existing vacuum/boost gauge. It is a simple procedure that has evolved with the help of several friends on the Turbobricks.org mailing list. If you have any feedback to offer regarding the installation, look or function of the new face feel free to email me any time at dbarton@linkline.com. Thanks, Dave Barton, www.davebarton.com

CAUTION: The front surface on this new face is fragile and can be marred or scuffed if scratched with a fingernail. Also try to keep from touching and leaving fingerprints on it. A soft cloth (such as a cotton t-shirt) may be used when handling.

Tools needed: Phillips screwdriver, flat blade screwdriver, rubber cement, clean hands.

Original "blind" Factory Boost Gauges



New "Numbered" Gauge Faces



REMOVAL OF INSTRUMENT CLUSTER:

To begin with, it's always a good idea to disconnect the negative battery cable from your battery.

It is NOT necessary to remove the steering wheel, but it does allow a bit more room.

Start by removing the two plastic covers (covering two Phillips screws) on the bottom right and left of the instrument cluster where the two knobs protrude (clock adjuster on left and instrument light dimmer on right). Then remove the two screws behind them.



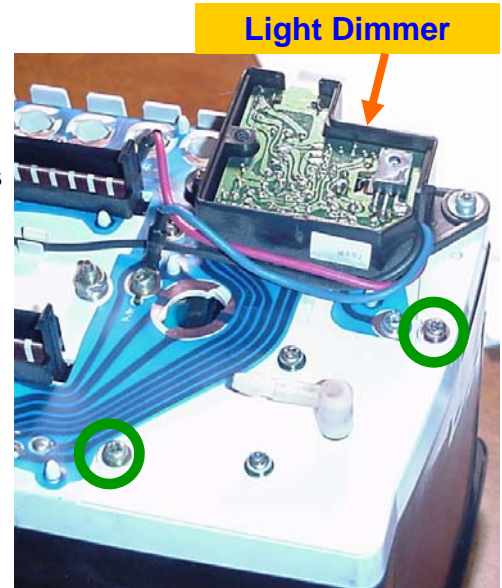
The instrument cluster will pull out toward you, although it may require a bit of wiggling. There are two rubber pads on the top of the cluster that help to keep it in place. Once you pull it out an inch or so, it should slide out without much fuss.

Slide the cluster out far enough so you can peek behind it and see the wire connections. If it won't slide out enough, sometimes there are wires or a vacuum/boost hose that have been zip-tied to something. Check for that. **Write down the colors and locations of each connection** so there will not be any question as to where they go when you reassemble the dash. Now carefully pull the connections free from the cluster. There are several wide, flat plugs for the electronic speedometer and other devices. Some of the plugs are sort of fragile, so your gorilla hands should be gentle.

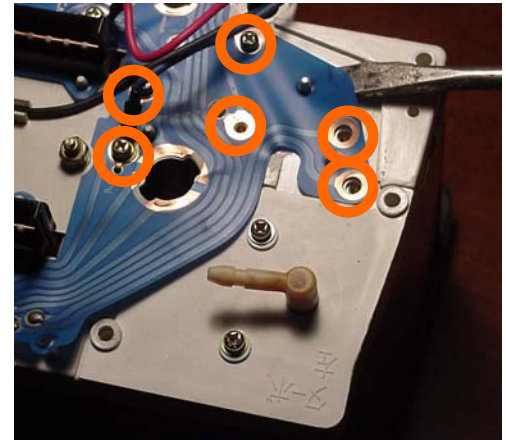
On the back, you will find a rubber vacuum hose connected to a plastic fitting on the back of the boost gauge. Disconnect it also. Once all connections are free, slide the instrument cluster out and take it to a bench, kitchen table, or other clean work area.

REMOVAL OF BOOST GAUGE:

Lay the cluster down with the rear facing up. The boost gauge is under the plastic panel where the vacuum connection is. The square plastic panel (about 2 1/2 inches by 2 1/2 inches in size) is connected to the back of the gauge (see photo) by two Phillips screws. You will see two other Phillips screws in the center of the panel near the vacuum connector (**don't remove these**) The two screws at the opposite corners will need to be removed (**circled in GREEN**), but **FIRST** you will need to remove the light bulb at the corner of the boost gauge rear panel. To remove it, simply turn it 1/4 turn counterclockwise.



You will need to gently lift (again, no gorilla paws) and flex the flexible plastic circuit board away from the back of the cluster so that the plastic panel and boost gauge may be lifted up and out of the cluster. **If you feel uncomfortable doing this**, you may first remove the light dimmer assembly (this is the black box held by two screws — photo upper right) and several screws holding the circuit board (**circled in RED**). This will allow you to more easily lift the circuit board out of the way. A flat screwdriver (**in photo to right**) may be used to **gently** help pry the circuit board from the plastic pegs.



Now you can lift out the gauge. Once the gauge is free, also lift out the front frame that the front of the gauge fits into (black plastic square piece — photo below). The back side of this frame should have an arrow indicating UP. If not, pay attention to how the pegs line up between the gauge and the rear of the black frame.



DISASSEMBLY OF THE BOOST GAUGE:

I STRONGLY recommend CLEANING YOUR HANDS before handling the gauge face or other gauge parts. Also be gentle when handling this gauge. The brass movement is fragile and can be damaged if the the gauge is used as a football.

First step.... you will need to remove the needle from the front of the gauge. It's a simple procedure. **Grasp the center of the needle and turn the needle to the right (clockwise) until it comes to a stop** (less than 1/2 turn). Now continue rotating the needle, **forcing it past the stop**. Once you feel it push past the stop, continue rotating while gently pulling the needle away from the gauge face. Continue this until the needle comes off. Don't pull too hard on the black plastic center or it will pull off separately. Work slowly.



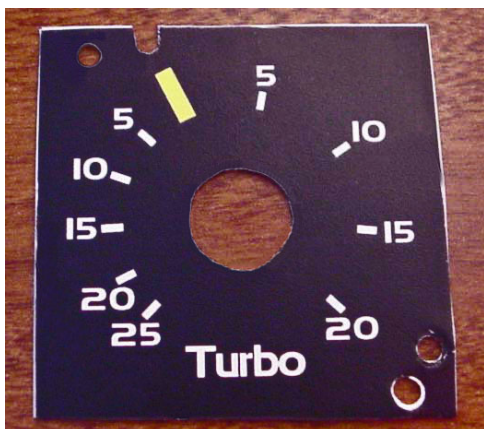
NOTE: If you feel tempted to pry this needle off, you will probably break it and your Volvo will hate you. Trust me and remove it the way I described.

Now it's time to remove the original gauge face from the clear plastic body of the gauge. The factory attached the face using a few pieces of **clear double-sided tape**. Gently pull the face off. You may insert a flat screwdriver or other tool to help pry it off if you like, but it should not be needed.

REASSEMBLY OF YOUR BOOST GAUGE:

Now it's time to install the new gauge face.

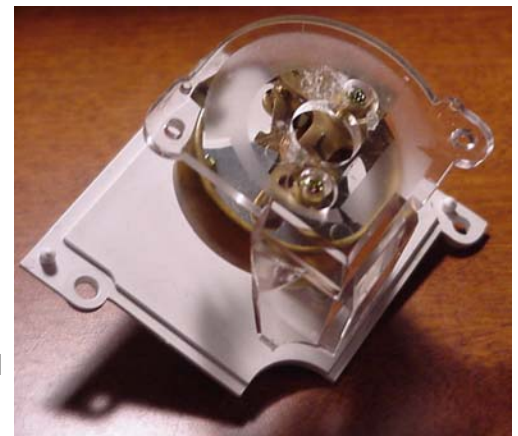
If you haven't already done so, remove the old adhesive from the clear plastic front of the now faceless gauge. You might use a gentle solvent, such as kerosene or mineral spirits on a rag.



The new gauge face has already been cut to size and all holes cut out. Try test-fitting the face **without** glue and fit the black plastic frame as well.

I recommend the use of a small amount of rubber cement or hobby tacky glue to adhere the new face to your gauge. Rubber cement is very forgiving if you make a

mistake and it gives you a few moments to position the face just right. Brush a little on the clear plastic front of the blank gauge when you're ready to glue the face down. Is you get a fingerprint or smudge on the face, do not use water or any liquid to clean is. A soft dry sock work well if needed. Wipe lightly. The printing can be damaged easily by rubbing too hard.



You'll notice there are some holes in the **new face** that need to line up with some raised locating pegs. Position the new face in the same way the old face was positioned, with the raised pegs in the holes.



After gluing the new face on, fit the black plastic frame (**no glue is needed on the frame**). Make sure the pegs are in the two holes in the corners. **The frame only goes on one way**, so don't try to install it upside down.

Replace the needle on the small shaft and place the pointer at the yellow "**zero**" mark. Now press the needle back on with your finger so it stays in place and doesn't lose its position if you move it a little with your finger. This might take a few tries before it's just right AND pointed at the center of the yellow.



Before you install the gauge into your dash, double-check to see that the needle moves freely to the right and left without binding against a part of the face or center hole. The under-side of the needle center might be very close to the center hole. The part of the needle center that goes into the hole in through the new face can contact the edges of the hole if the face is slightly off-center. If any rubbing or binding occurs, you should shave a little of the face edge with a razor to make the center hole a little wider.

The gauge is now done and ready to be installed back into the instrument cluster.

It may be easier to put the black plastic frame in the instrument cluster first, then slowly lower the gauge into the hole. It can also be inserted with the frame attached, but sometimes the frame gets in the way or falls off.

Re-installation of the instrument cluster is a reverse of the removal process.

And DON'T forget to re-connect your vacuum/boost hose and re-connect your battery (almost forgot that one, huh?).

CALIBRATION OF THIS GAUGE:

I have tested a number of these boost gauges from several different year 740 Turbos. I have found a slight variance between them, even though they are all identical in design. This means that Volvo has

not gone to great effort to keep the calibration the same with these gauges. This is not a big surprise, since these gauges were never intended to be calibrated to exact standards. As a consequence, you may find the increments on the **new gauge face** may not be perfectly accurate in all ranges, although I believe they will be very close... probably within 1 PSI.

Some minor adjustments can be made to these gauges. The easy one, of course, is repositioning the needle to zero if it's off a little. This is done with a little nudging back and forth at the needle limits (clockwise or counterclockwise). A really hard adjustment is manually tweaking the brass movement within the gauge to bring it to a closer calibration at a specific range. This type of operation is well beyond my knowledge and experience and I do not recommend trying this, unless you have a spare gauge that you may dispose of in the event you irreparably damage the one you're "adjusting."

There you have it. If you think of any ideas to make installation better, please get in touch with me.

Thanks, Dave