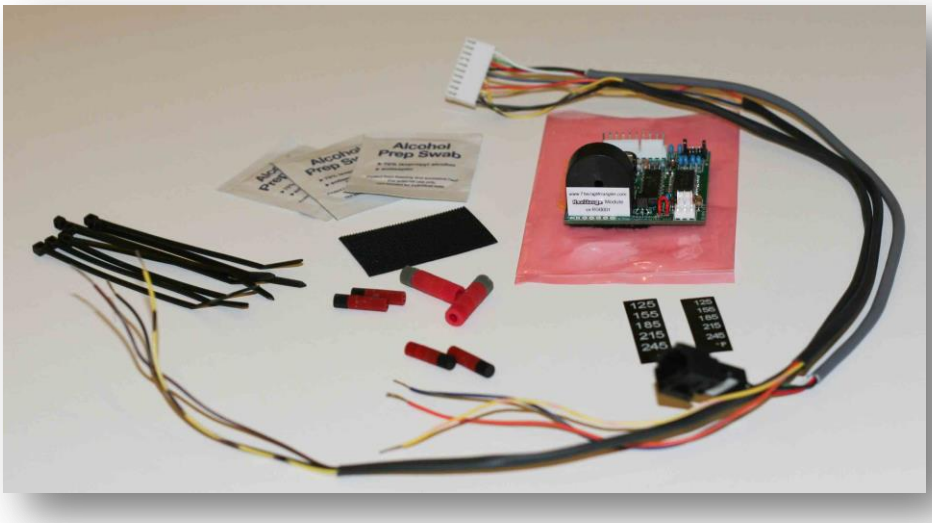
TheJagWrangler LLC

Jaguar XK8 / XKR 'RealGauge' Installation & Operation Manual

Model Years '00-'06, Right Hand Drive

Kit Contents supplied:

- Quantity 1 - RealGauge computer module (RHD model appearance may vary slightly).
- Quantity 1- RealGauge wiring harness (wire colors and number of wires may vary from photo below).
- Quantity 5 - 24-26 wire gauge Posi-Tap connectors (red/black). Note: Quantity 4 are required, one is a spare.
- Quantity 2- 20-22 wire gauge Posi-Tap connectors (red/slate).
- Quantity 8- 4" Tie-Wraps.
- Quantity 3- Isopropyl alcohol pads.
- Quantity 1- 1" x 2", self-adhesive industrial grade Velcro strip.
- Quantity 1- set of 12-point font numerical self-adhesive labels (usage optional).
- Quantity 1- set of 16-point font numerical self-adhesive labels (usage optional).
- Quantity 1 - Late model XK cluster adapter and Velcro patch, included 2003 and later vehicles only, not shown.
- Quantity 1 - approx. 1" x 1", self-adhesive industrial grade Velcro strip.



Rev 1.2

For more info or to purchase the RealGauge Module go to www.thejagwrangler.com

Tools List (must be provided):

- #2 Philips screwdriver.
- Ratchet or nutdriver set with 7mm and 8mm sockets.
- T-20 internal torx driver
- Standard slip-joint pliers
- Small pointed scissors
- Electrical tape
- Clean soft towel

Handy items (may be helpful to have on hand if needed):

- Toothpick
- Bright light
- Approx. 2 ft. length open cell foam self adhesive weatherstrip, approx 3/4" wide
- Superglue or Epoxy
- Small wire cutters
- OBDII Scanner (completely optional)

Installation Procedure:

1. Disconnect the battery negative cable.

2. Remove the main (speedometer) instrument cluster wood paneling and remove the instrument cluster from the vehicle. See this demonstrated in this video on YouTube at: http://www.youtube.com/watch?v=Af3YRj60Yro&feature=mfu_in_order&list=UL

3. Decide if you want to add numerical scale stickers to appear on the coolant gauge. It is optional. ***If you choose not to add a numerical scale, skip directly to step 7.***

Please be aware that the scale numbers will not be backlit, but some light from the needles will illuminate nearby labels at night. Some scale numbering options you can select are shown below.

Note that these examples are shown in 16-point Helvetica font, which is the same as the original 'H' and 'C' markings on the gauge. 12-point Helvetica font numerical stickers are also provided in the kit if you prefer smaller numbers or want to mix-and-match.

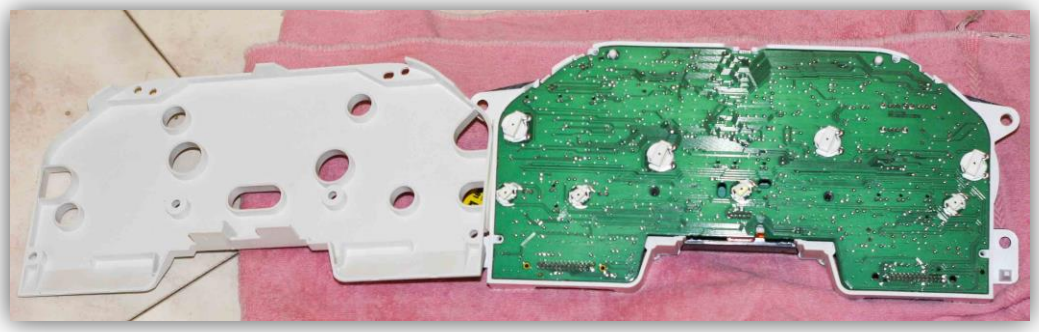
4. Remove the four T-20 torx screws from the front of the gauge cluster (circled in yellow below) and lift off the clear front cover and set it aside.

5. Carefully cut out the self-adhesive numbers with sharp scissors. Peel off the backing and apply the ones you select as per the gauge face examples above. Note that the backing is slit in the center of the label to ease removal. Use a toothpick to carefully align and position the adhesive labels before firmly pressing them down. The gauge needle can be rotated gently as necessary without harm. (***Be very careful not to break off the black plastic needle stops...they are quite fragile and are necessary for proper operation of the gauges****. If you break a needle stop you will need to repair it with a tiny drop of Superglue or Epoxy*.)

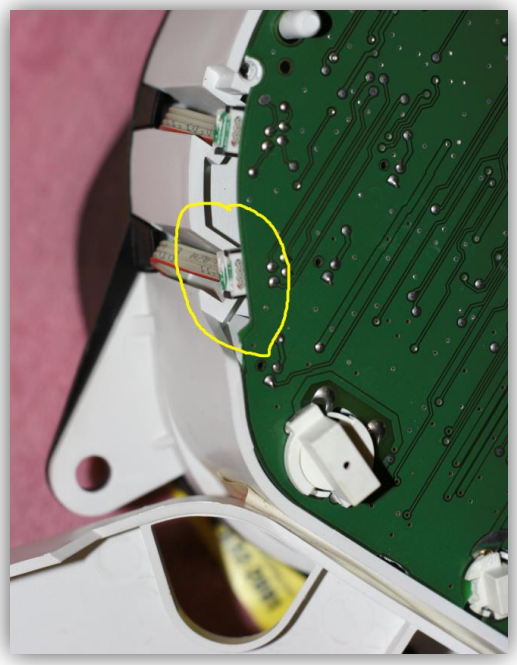
6. Replace the clear front cover and the four T-20 torx screws.

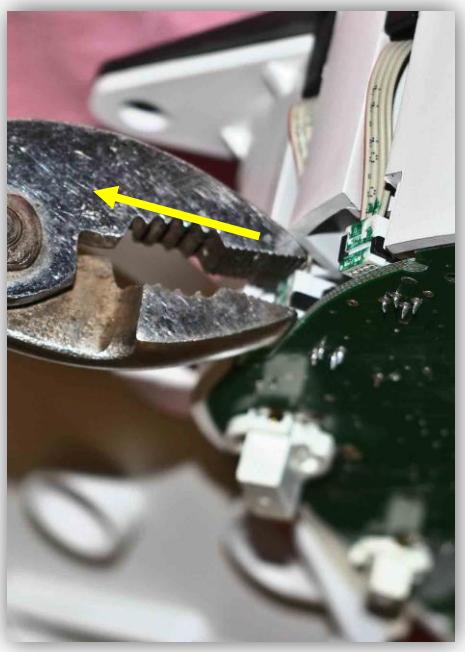
7. Place the instrument cluster face down on a clean soft towel and remove the six T-20 torx screws on the white back cover as shown below:

8. Remove the white back cover, opening from the right like a book to try to avoid tearing the identifying label on the left side, if possible. This will expose the circuit board. See below:



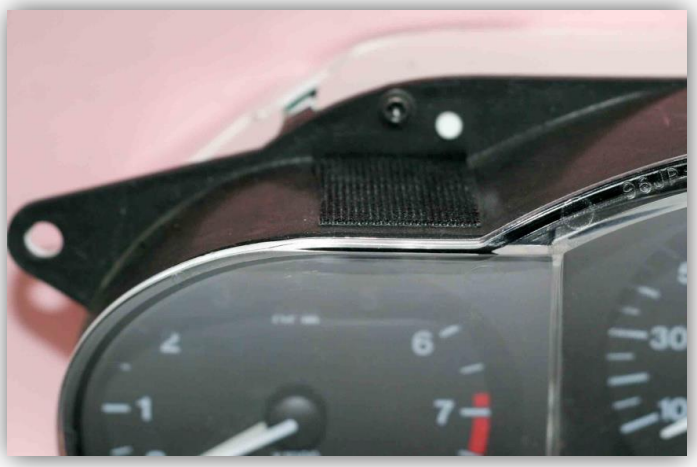
9. Note the gray and red ribbon *(beige and black on later models)* wire cable on the far left, over the coolant gauge (circled in yellow in the photo below). You will need to disconnect only the connector on this cable from the circuit board. Do not disconnect any other cables or remove the circuit board. To perform the disconnection, grab the upper part of the white connector *(green connector on later models)*, just above the flat ribbon cable with the slip-joint pliers firmly (*your fingers may do the job without pliers on the later models with the green connector*), and extract the connector with a slight rocking motion while pulling straight out (perpendicular to the edge of the circuit board). ***DO NOT YANK HARD OR YOU CAN TEAR THE SHORT CABLE UPON RELEASE.*** Just use a gentle pulling and slight rocking motion and be ready to stop your momentum when the connector releases.



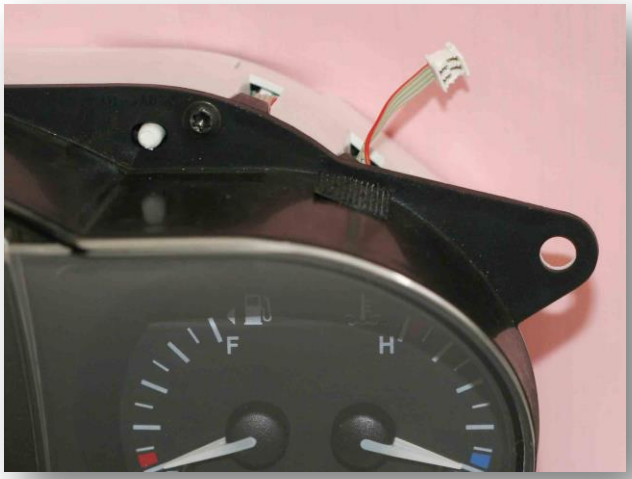


10. Fold this ribbon cable and connector end out of the case and replace the rear white cover of the instrument cluster and the six T-20 torx screws.

11. Place the instrument cluster with the top facing you. Using an alcohol pad, clean the black plastic surface above the tachometer area and above the temperature gauge area on top of the cluster and let it dry. Mount the larger self-adhesive Velcro strip over the tachometer along the curvature inflection line, as shown below.

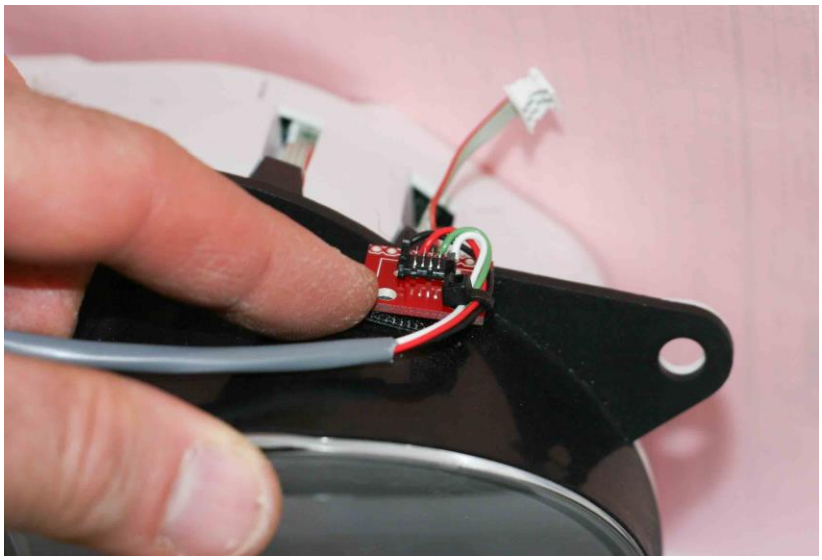


Mount the smaller self-adhesive Velcro square over the temperature gauge on the curvature at the back, just in front of the ribbon cable as shown.

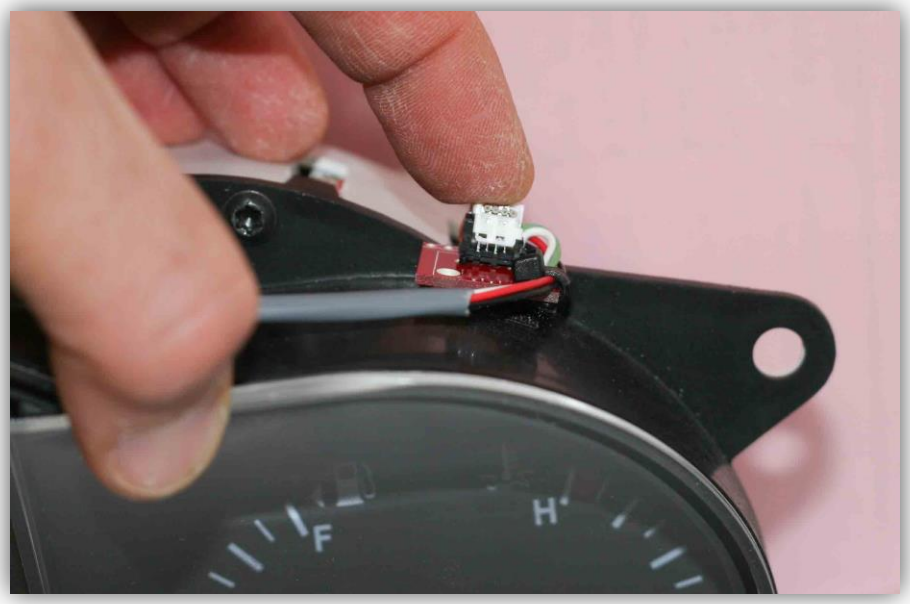


12. Install the RealGauge computer module on the Velcro over the tachometer with the label facing front. Align the right end with the curvature inflection point. The back end should be flush against the black plastic, and wedged under the white plastic protrusion.

Mount the red extension adapter on the Velcro on the right side of the cluster over the temperature gauge. On later model vehicles with the green instrument cluster connector, the appearance of the extension cable will differ from the photo.



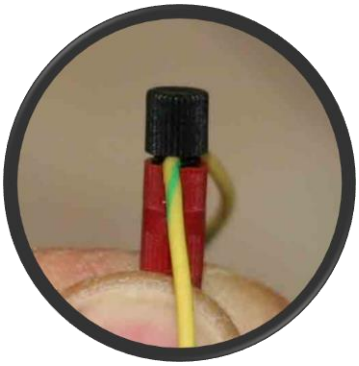
13. Twist the ribbon cable 180 degrees and plug it into the red extension adapter as shown. Press firmly to seat it.



14. Plug the 10-position white connector from the RealGauge wiring harness into the computer module as shown. Make sure the stops on each end of the connector face toward the front of the instrument cluster. Seat the connector fully.

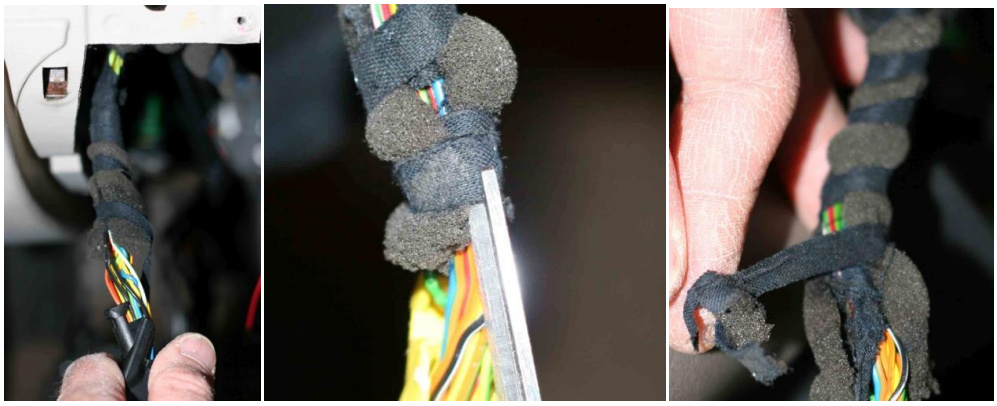
15. Replace the instrument cluster back in the vehicle by tilting the bottom in place first. Separate the longer three-wire cable to the right, and the shorter three-wire cable to the left as you reinstall. (Note: If there is a four-wire cable with a gray jacket with a black connector, also separate it to the right. It is only used on vehicles with the oil pressure gauge option). ***The harness cables should be in front of all the mounting brackets, except for the upper left bracket. Route the cable behind the upper left bracket in the space to the right of the mounting hole so that it does not obstruct the mounting hole. Do not*** plug the two instrument cluster connectors back in at this time. Press down on the RealGauge module tall speaker slightly, if necessary, to clear the dash opening while you rotate the upper part of the cluster into the opening.

16. Review the Posi-tap instructions found here: http://www.posi-lock.com/instructions1.html. Be particularly careful to put the Posi-Tap caps on squarely. If they are not put on squarely, they may not make contact with the wire and the small ***Red/Black*** Posi-Taps in particular might be damaged. The damage would be a bent or broken contact pin. See the incorrect and correct illustrations below:



If a Posi-Tap is accidently not put on squarely, check the internal pin for breakage or bending prior to reuse. If one gets damaged, use the spare ***Red/Black*** Posi-Tap provided in the kit.

17. Pull the **left** side instrument cluster BLACK connector out and underneath the instrument cluster. Using a pointed pair of scissors, carefully snip the fabric electrical tape on the end near the connector. ***Use care not to cut a wire!*** Unravel the fabric tape and remove the foam covering and set it aside. Also cut the end to unfasten and remove the inner black tape wrap underneath the foam. Using an alcohol pad, clean the sticky tape residue off of the wires.

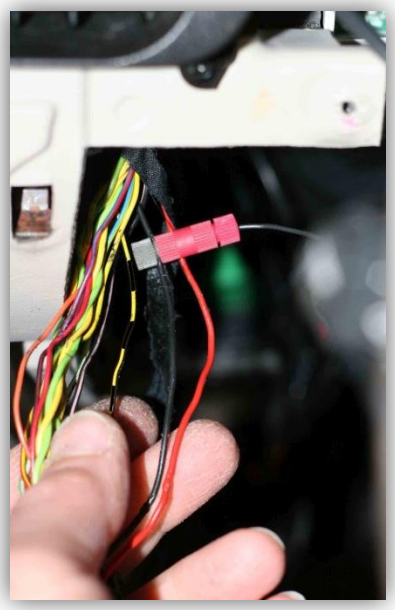


18. Sort through the instrument cluster **left** connector wires and separate out the **BLACK** (pin #16), the ***thicker*** **RED** (pin #15) and the **YELLOW/BLACK** (pin #7) wires from the rest of the bundle. There may be a thinner red wire - do not use that one. (Note: The wires may have lengthwise color stripes instead of bands as in the photo).

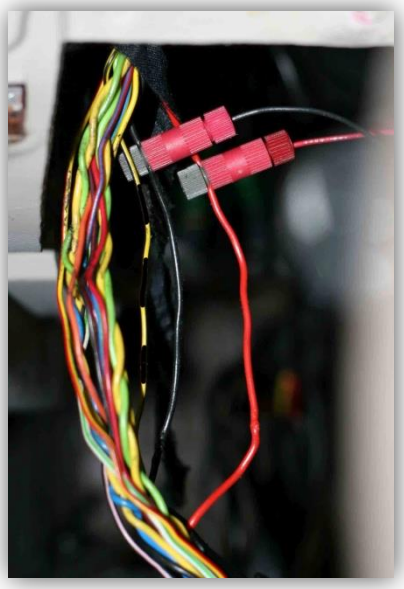
A bright light will be helpful for identifying the wire colors in the following steps.

Note: If you have problems identifying the wires by color alone in this step, remove the BLACK shell as described in step 24, 25 and 26 for the YELLOW shell, then return to this step. Note that the pin number for each corner pin (1, 13, 14, 26) is embossed in the connector body. Use these corner numbers as a reference to identify the desired pin numbers.

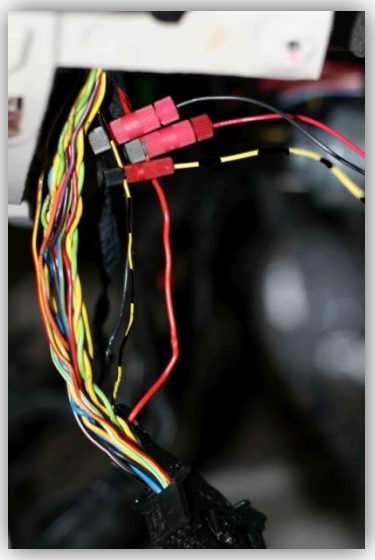
19. Starting about **3.5"** from where the wires exits the connector, tap the **BLACK** instrument cluster **left** connector wire with a *large* ***Red/Slate*** Positap. Then connect the **BLACK** wire from the RealGauge harness.



20. Next tap the ***thicker*** **RED** instrument cluster **left** connector wire with a *large* ***Red/Slate*** Posi-Tap. Then connect the **RED** wire from the RealGauge harness.



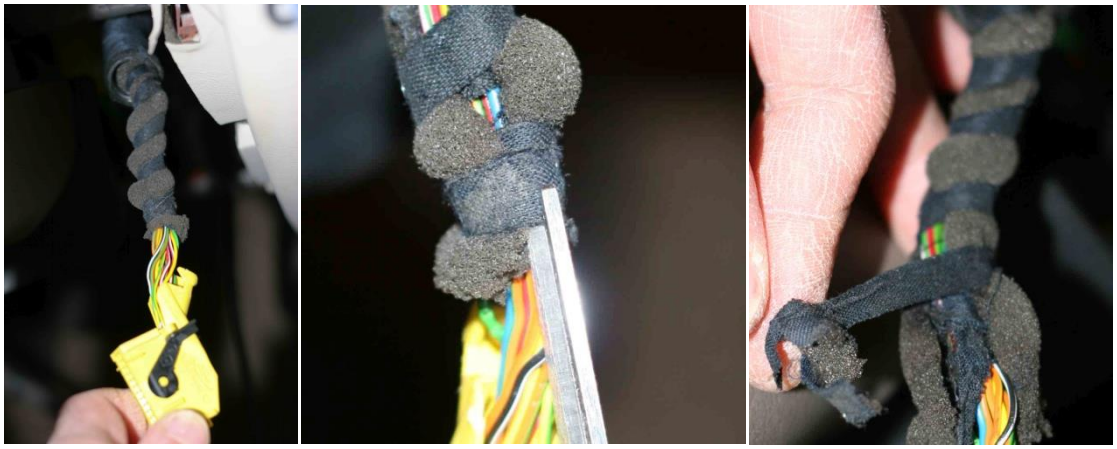
21. Next tap the **YELLOW/BLACK** instrument cluster **left** connector wire with a *small* ***Red/Black*** Posi-Tap. Then connect the **YELLOW/BLACK** wire from the RealGauge harness.



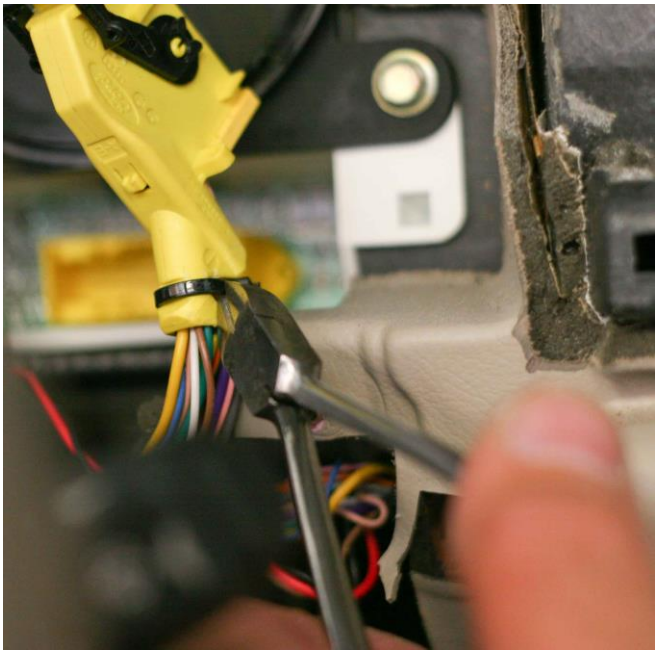
22. Use a tie wrap to strain relief the connections. Rewrap the lacing tape around the harness and then replace the foam around the harness. Secure it with the original fabric tape, wrapping the ends with electrical tape. If the original foam is badly deteriorated, self adhesive weather-strip foam from any hardware store can be substituted. The foam is primarily used to prevent wire abrasions and rattles.

If the black shell was removed in step 18, replace it, and snap on the black hood retainer (from the end) and replace the zip tie.

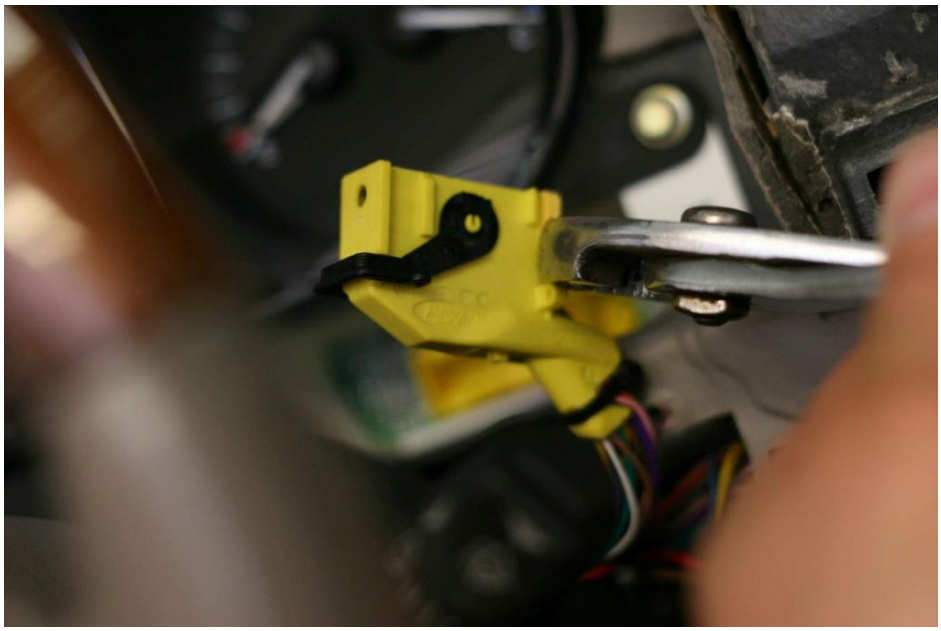
23. Pull the **right** side instrument cluster YELLOW connector out and underneath the instrument cluster. Using a pointed pair of scissors, carefully snip the fabric electrical tape on the end near the connector. ***Use care not to cut a wire!*** Unravel the fabric tape and remove the foam covering and set it aside. Also cut the end to unfasten and remove the inner black lacing tape wrap underneath the foam. Clean the sticky tape residue off of the wires using an alcohol pad.



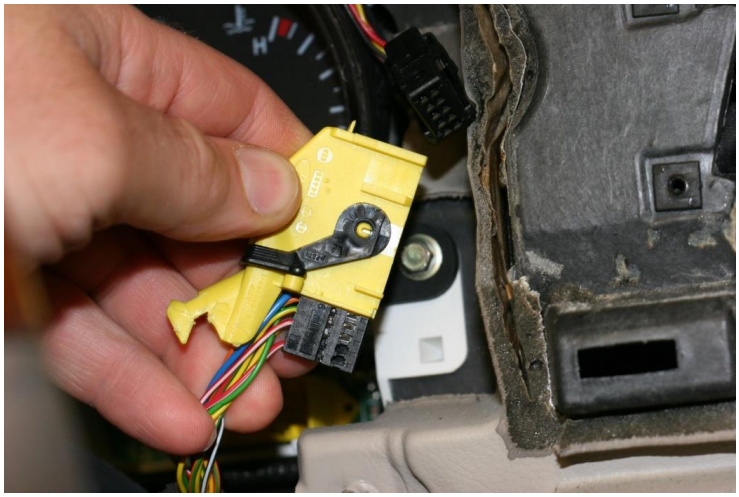
24. On the yellow connector clip off the zip tie at the harness with diagonal cutters. Be care not to damage the wires.



25. On the yellow connector, slide off the hood retainer on the end with your thumb. If it proves difficult, you can alternatively pry off the hood retainer from one side gently with a pair of pliers as shown.



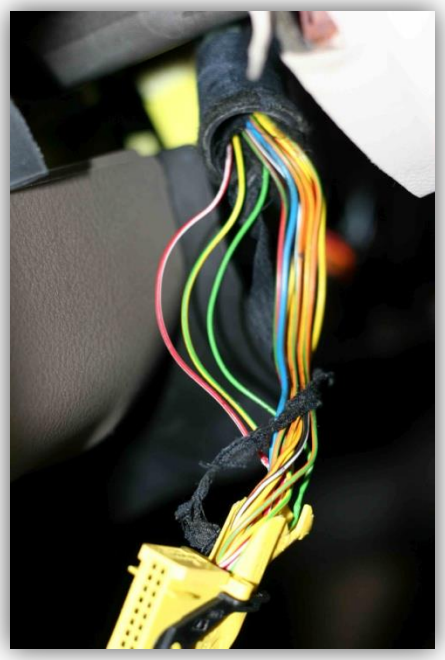
26. Then slide off the hood.



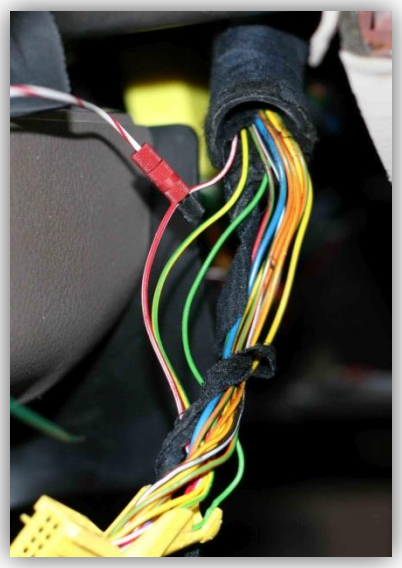
27. Note that the pin number for each corner pin (1, 13, 14, 26) is embossed in the black connector body. Using these corner numbers as a reference, separate out the **RED/WHITE** wire **at pin #3** and **GREEN** wire at **pin #19** from the rest of the bundle.

Also separate out the **YELLOW/GREEN** (pin # 4) wire from the rest of the bundle.

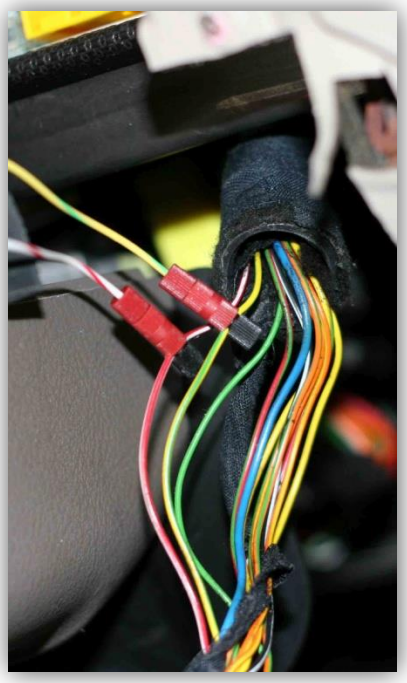
Then replace the yellow shell, snap on the yellow hood retainer (from the end as shown) and replace the zip tie.



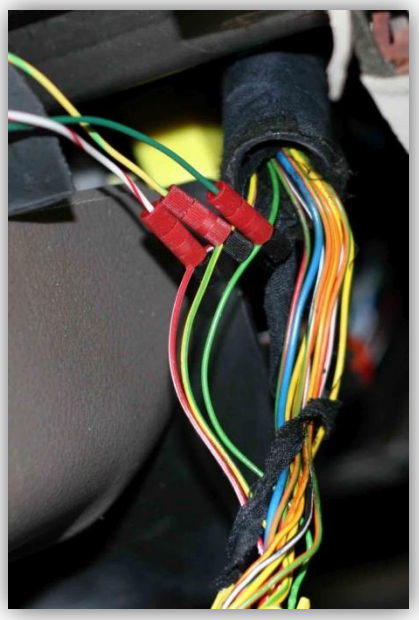
28. Starting about **3.5"** back from where the wires exit the connector, tap the **RED/WHITE** instrument cluster **right** connector wire with a *small* ***Red/Black*** Positap. Then connect the **RED/WHITE** wire from the RealGauge harness.



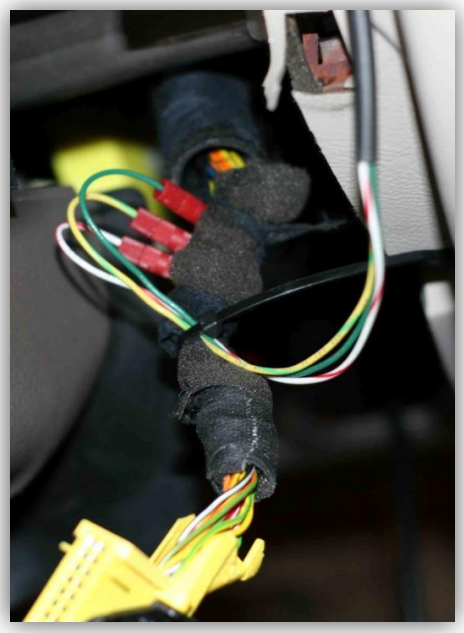
29. Next tap the **YELLOW/GREEN** instrument cluster **right** connector wire with a *small* ***Red/Black*** Posi-Tap. Then connect the **YELLOW/GREEN** wire from the RealGauge harness.



30. Next tap the **GREEN** instrument cluster **right** connector wire with a *small* ***Red/Black*** Posi-Tap. Then connect the **GREEN** wire from the RealGauge.

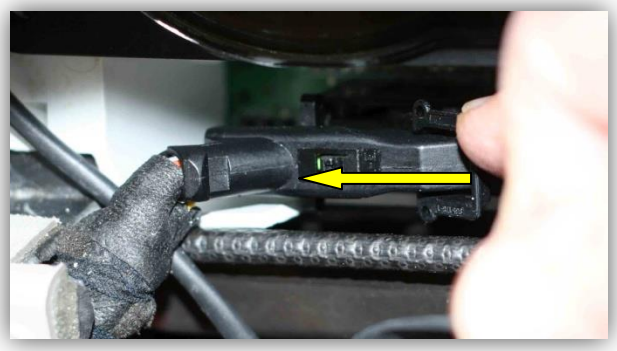


31. Use a tie wrap to strain relief the connections. Rewrap the lacing tape around the harness and then replace the foam around the harness. Secure it with the original fabric tape, wrapping the ends with electrical tape. If the original foam is badly deteriorated, self-adhesive weather-strip foam from any hardware store can be substituted.



32. Plug ***both*** instrument cluster connectors back in. To plug a connector in, the black plastic bail must be fully rotated AWAY from the cable end of the connector ***to start*** the insertion process. Then push the

connector in firmly. Then rotate the bail TOWARD the cable end and the connector will self seat and lock as shown in the photo below.



33. Reconnect the battery negative cable with the key removed from the car. If possible, have an observer in the car watching the coolant gauge as you reconnect the battery. The coolant gauge will undergo an initialization and test sequence automatically when the battery is connected. First the needle will vibrate at the low end of the scale for a second or two. This is the initialization process. Then, for the test sequence, the needle will swing to the top of the scale, the alarm will go off briefly while it hits the red area, and then the needle will return to the low end of the scale.

Problem? If the calibration and initial test sequence does not occur after connecting the battery, recheck your tap connections, particularly the **BLACK** and **RED** wires on the left connector and the 10-pin white connector on the RealGauge computer board.
Problem? If you hear 10 warning beeps in a row, this is from the climate system warning you that the aspirator fan under the dash is disconnected. You can ignore this. This will remedy itself once the lower panel is reassembled and the fan is plugged back in.

34. Now turn on the ignition fully, but do not start the car. Press and hold in the trip cycle button (at the end of the left/right turn blinker stalk) for at least four seconds.

After about four seconds another test sequence should initiate and **you should release the button**. The coolant gauge needle should swing to the top of the scale, the alarm will go off briefly while it hits the red area, and then the needle will return to the low end of the scale. You should then hear four quick beeps in a sequence.

Problem? If the test sequence does not occur when you press and hold the trip cycle button for 4 seconds, recheck your tap connections, particularly the **RED/WHITE** connection on the right connector and **YELLOW/BLACK** connection on the left connector.

35. Reset your windows after reconnecting the battery as follows: Get in the vehicle and shut the doors. Turn on the ignition fully, but do not start the car. Roll the windows all the way down, holding the window down button until you hear a click. Now roll the windows up, holding the up button until you hear a click. (On non-North American cars you may also need to reset the radio code. The code can be obtained from your dealer with proof of ownership if you do not have it.)

36. Now start the engine and note normal behavior of the temperature gauge as the engine warms up.

Problem? If the alarm sounds continuously, stop the engine and re-check the **GREEN** instrument cluster wire tap connection on the right connector.
Problem? If the gauge needle does not indicate coming up to proper operating temperature after five minutes, stop the engine and re-check the **YELLOW/GREEN** instrument cluster wire tap on the right connector.

Problem? (This procedure is only works for units labeled with version 2.1 and later software). **ONLY** if after rechecking connections, the coolant temperature indications are still erratic and/or the alarm is going off, perform a calibration reset as follows:

-With the ignition on and engine off hold down the TRIP cycle button for four seconds, starting the RealGauge test cycle, **and continue to hold the button through the entire test cycle until the test cycle completes and you hear three beeps in a row**.

-Now release the button immediately after the three beeps. The coolant gauge should now be pointing to the very top of the scale.

-Now turn the ignition off. This will restore the default RealGauge calibration. This is signaled by 5 beeps in a row.

-Now recheck for normal operation.

Optional: If you have an OBDII scanner you can check the accuracy of the gauge against the coolant temperature readout on your scanner. They should normally track within two to three degrees of each other. Sometimes the OBDII scanner's slow update rate or the RealGauge's needle damping causes a slight lag in one reading versus the other. Should you find a significant discrepancy, please contact *whitexkr@comcast.net* for support.

37. If you are adding the oil pressure option, now is the time to proceed with those instructions.

Otherwise, If everything is operating normally, add a few tie-wraps to neaten the harness installation and minimize wire movement.

Then replace the screws for the instrument cluster and the wood bezel, and reinstall the lower kick panel.

Remember to reinstall the connectors of the trip button on the wood bezel, and the valet switch and aspirator fan on the kick panel.

Congratulations on a successful installation!

Having Difficulty?

For support, email: whitexkr@comcast.net with as much detail as possible.

Operation:

The RealGauge Module does not need any special attention on a normal day-to-day basis. You will now see normal fluctuations in temperature as you drive, depending on the outside temperature, how fast you are going, the engine speed, the condition of the cooling system, the engine controller switching on the cooling fans, use of heating and AC, etc. By noticing changes to normal engine temperature patterns, you increase the likelihood that you can have cooling system problems evaluated and repaired before they become serious, expensive and potentially leave you stranded.

There are some special features which are available to test the unit, provide alarm (including low oil pressure), suppress the alarm and to help when the temperature gauge indicates potential cooling system problems described below:

Audible Alarm (High temperature or Low Oil Pressure)-

An over-temperature condition (over 230 degrees F) or a low oil pressure condition (as detected by the Jaguar OEM oil pressure switch) will cause an audible alarm, which is a high pitched continuous tone. In either case, the car should be pulled off the road as soon as it is safe to do so and the engine shut off to prevent engine damage.

IMPORTANT: RealGauge reads engine coolant temperature only. If excessive engine coolant is lost from the cooling system neither RealGauge nor the vehicle's over-temperature indicator warning light or message will indicate an overheating condition because the coolant level may be too low. Therefore **NEVER drive with a low coolant warning** or you will risk major engine damage.

Temporary Audio Alarm Suppression-

If the audio alarm goes off indicating an over-temperature condition (over 230 degrees F) or low oil pressure condition, the alarm can be suppressed by pressing and holding in the trip cycle button (at the end of the left/right turn blinker stalk) for 1.5 seconds. (Afterwards, you can manually cycle the trip cycle button back to your desired display). *The alarm will then remain suppressed until the ignition is turned off no matter what the temperature or oil pressure reading is*, and then re-enabled the next time the ignition is turned on again.

Test Mode / History Replay-

With the ignition fully on, but the engine off, press and hold in the trip cycle button (at the end of the left/right turn blinker stalk) for four seconds. (Afterwards, you can manually cycle the trip cycle button back to your desired display). This invokes test mode where the needle will swing to the top of the scale, and the alarm will trigger briefly, as a test, when it hits the red area of the scale. Then it will return to the low end of the scale.

At the end of the test mode the History Replay will automatically begin. The **peak temperature** recorded during each engine run (oldest first) since installation will replay on the coolant temperature gauge, for up to 60 of the last engine runs. After 60 engine runs, the oldest engine run is erased, and the most recent 60 runs will replay. Each engine run's maximum temperature reading will be preceded by two quick 'beeps', then the coolant gauge needle will go to the peak temperature for that entire engine run. When all the run peak replays are completed (about 120 seconds), four quick 'beeps' will signal the end of History Replay and operation will return to normal.

At any point during the History Replay, the replay can he halted by turning off the ignition or by starting the engine. If History Replay is restarted again, it will begin again with oldest first even if the replay had been interrupted previously.

The History Replay is useful for finding patterns which may indicate degrading operation of the cooling system. History Replay data is maintained permanently in non-volatile memory even if the car battery is disconnected.

Permanent alarm disable:

It is possible to permanently disable the audible alarm feature if this is desired. This is recommended if there is concern that the driver might be distracted or startled by the audible alarm. With the battery negative terminal disconnected, use small wire cutters clip off the red wire loop (shown below) at the front of the RealGauge module. Then reconnect the battery and reset the windows.

This will ***permanently*** silence and disable the alarm for the high coolant temperature and low oil pressure and you will ***never*** have an audible alarm. This can be verified by invoking Test Mode as described above.

Disclaimer

The purchaser assumes all liability for any and all damages which may result directly or indirectly from the installation, the use or the failure of this product.

RealGauge depends on the correct operation of the vehicle's coolant sensor, support electronics, **and proper coolant level** for correct operation. TheJagWrangler LLC does not warrant correct operation of RealGauge if these conditions are not satisfied.

No warranty is provided if this unit fails to warn of a fault condition in your vehicle and damage or expenses are incurred, other than refund of kit purchase price or replacement of the unit.

Use of the audible alarm feature is at the purchaser's risk, as it may distract or startle the driver and lead to an accident. If it is not desired, utilize the permanent alarm disable option.

Installation of this unit, as for many aftermarket products, may void your vehicle's warranty, if any.

If you do not agree to these terms please return the product within 90 days for a full refund.