

# Inline Radiator Hose Temperature Sensor Adapter Installation Guide

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Thanks very much for purchasing this Steiger Performance Inline Radiator Hose Temperature Sensor Adapter! If you run into problems or have any questions/comments, please don't hesitate to contact me via e-mail at [jon@steigerperformance.com](mailto:jon@steigerperformance.com) or postal mail at: Steiger Performance, PO Box 440, Fredonia, NY 14063.

*Note: You can download a PDF version of this guide at <http://www.steigerperformance.com>*

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**Tools that may be required:** Cutting tool, screwdriver or hex driver, wrench or socket for the temperature sensor, terminal crimper

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There are two versions of this adapter – one has a 1/8 NPT threads and the other has a 3/8 NPT threads. The 1/8 NPT version comes with a ring style electrical connector while the 3/8 NPT version comes with a grounding screw and quick disconnect style electrical connector. Both versions include stainless steel hose clamps. Installation is fairly simple, but it would still be a good idea to read completely through these instructions prior to starting the install.

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## **INSTALLING THE ADAPTER**

- 1) Choose the location on your radiator hose where you want to install the adapter. Hold the adapter up against the hose to make sure you will have enough room for it and for the sensor you plan to use. The adapter should be mounted in a straight section of the hose; this straight section should be at least 4 inches long.
  - 2) Mark the location on your radiator hose where you wish to install the adapter. Keep in mind that inserting the adapter into your radiator hose will make it 1 inch longer. If you would like to keep your radiator hose at its original length, the best method is to choose the location where you want the sensor to be, then make marks 1/2" to either side of that location. When you cut the hose, you will actually make two cuts, one on each mark you made earlier. This will cut a 1 inch section out of your radiator hose, so when the adapter is installed, the hose will remain at its stock length.
  - 3) Make your cut(s) in the radiator hose. If you have enough clearance, you do not need to remove the radiator hose from the vehicle first, but be aware that if you do not, when you cut into it you will probably spill some coolant. As such, do not try this when the engine is warm, and please be sure to clean up any spilled coolant immediately – the sweet smell can attract wild animals, pets, children, etc. and is lethal if swallowed.
  - 4) Insert your sensor into the adapter. Note: The threads on the adapter are tapered to ensure a good seal. As such, the sensor may not screw all the way down into the adapter– this is normal. Just screw it in until it is tight; if you attempt to screw it all the way in, you will damage the adapter and/or the sensor. You may use thread sealant if you wish, but be aware that if your sensor obtains its ground through the body of the sensor, the sealant may prevent the sensor from grounding. If the sensor you are installing does not provide its own ground, you will need to provide a ground to it. (See the "Grounding the Sensor" section below.)
  - 5) Slip a hose clamp over both sections of the radiator hose you just cut, insert the adapter, position the clamps and tighten them.
  - 6) Make the electrical connection to your sensor. If you are relocating a stock sensor to the radiator hose and the factory wiring is too short to reach the new location, it may be necessary to lengthen it by splicing in a section of wire.
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## **GROUNDING THE SENSOR**

Most temperature sensors require a signal wire and a ground. Some sensors provide their own ground, in which case there will be two (or more) wires running to the sensor. However, the vast majority of temperature sensors expect to get their ground via the body of the sensor itself. (If you are not sure what type of sensor you have, consult your sensor documentation or factory service manual.) Most sensors of this type are screwed into the intake manifold, water pump or engine block, all of which are grounded. However, when you install a sensor in the radiator hose, it is isolated from the engine ground by the rubber radiator hose. In order for the sensor to function, you will need to provide it with a ground. How you can do this depends on the type of adapter you are using:

**1/8 NPT:** A ring style electrical connector was included with your adapter. You will need a crimping tool to attach an 18-22 gauge grounding wire to the connector. Slip the ring connector over the sensor threads prior to screwing it into the adapter. Run the wire to a convenient spot on the vehicle's engine or body which is grounded.

**3/8 NPT:** The 3/8 NPT version includes a grounding screw on the side of the adapter along with a lock washer and a set of quick disconnect style electrical connectors. To use the quick disconnects, use a crimping tool to crimp the female electrical connector to an 18-22 gauge grounding wire and plug it into the adapter. If you prefer, you can replace the quick disconnect with a ring style connector (not included), or simply wrap the bare wire around the screw before tightening it. Using a terminal of some type is recommended for reliability and a clean looking install. If you remove and re-install the grounding screw, take care not to strip the adapter's aluminum threads by over tightening. Just snug it up so that it is tight – if you are worried about the screw loosening due to vibration, you can add a drop of thread locker.

If you do not want to use an electrical connector, yet another way that the adapter can be grounded is to simply take a wire and strip an inch or so of insulation from the end. Before inserting the adapter into the radiator hose, slip this wire in between the adapter and the hose such that the exposed strands of wire are sandwiched between the adapter and the radiator hose. Connect the other end of this wire to a convenient ground on the vehicle's engine or body.

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