UnwiredTools, LLC
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UnwiredTools ACCII Upgrade Kit™

Installation Guide and Owner's Manual

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NOTICE REGARDING WARRANTIES

The *UnwiredTools* ACII Upgrade Kit *™* comes with a Limited Warranty, a copy of which appears on the back of this Manual. With regard to this Manual and the information in it (the "Manual"), please note that, although UnwiredTools has endeavored to make it as accurate and informative as possible, the variability of vehicles, the circumstances of installation, changes from year to year, and other factors make it impossible for UnwiredTools to guarantee that this information is accurate and/or directly applicable for your vehicle and your particular circumstances. The information in this Manual therefore is provided as a general guide or illustration. It is your responsibility and not that of UnwiredTools to ensure that this Product is suitable for your vehicle and that it meets your needs or requirements. This Manual is provided "as is" and without any warranties of any kind. UnwiredTools makes no representations or warranties with respect to this Manual, e.g., as to its accuracy, completeness or appropriateness to any particular vehicle or situation. UNWIREDTOOLS HEREBY DISCLAIMS ANY AND ALL WARRANTIES AS TO THIS MANUAL, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. UNWIREDTOOLS ALSO DISCLAIMS ANY LIABILITY FOR YOUR USE OF THE MANUAL. PLEASE USE IT AT YOUR OWN RISK. This Manual may be updated from time to time. Users are encouraged to visit our Web site at www.unwiredtools.com to obtain the latest version, to obtain information about the Product, and to obtain other support information.

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WARNING: READ BEFORE BEGINNING INSTALLATION

The *UnwiredTools* ACCII Upgrade Kit™ installs into vehicles for which it is designed, and couples into hot water lines, electrical systems, and vacuum lines. Please be aware that improper handling, installation or use can cause damage to your vehicle, other property, and even injury, grave harm or worse to you and others. Please follow the instructions set out in this Manual where they are applicable to your vehicle. If you are in doubt or have questions, contact a qualified service representative.

1. Read this entire Manual before beginning installation.
2. Check all kit components to make sure that all appear undamaged.
3. Make sure your vehicle is off, and is cool. Ensure that it is immobilized, e.g., in park with the emergency brake engaged.
4. Ensure that your work area is free of any circumstances that could result in electrical shock. All power tools and electrical cables should be properly grounded. Keep floors and other areas dry if electrical equipment is being used.
5. Ensure that there is nothing loose or unconnected before the vehicle is started

Important Note:

Note: This kit is intended for professional installation. A trained technician will have the documentation, tools, and training needed to find and fix vacuum leaks or wiring problems in your vehicle which may interfere with the function of this product. Professional installers familiar with this product may be found under the Support section of www.unwiredtools.com .

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Table of Contents

ACCII Upgrade Kit

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Contents of the UnwiredTools ACCII Upgrade Kit™
Please check the contents of this package to make sure it is complete. Your kit should include the following:

A. 1 ea Digital controller
B. 1 ea Hot water valve, this is used to control hot water to the heater core
C. 2 ea Vacuum valves, used to control the leg air flaps and the hot water valve plus bracket
D. 1 ea Hardware Kit

Digital Controller

Hardware kit contents

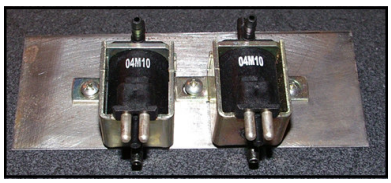
- 5 ea 8" plastic wire ties
- 2 ea 18" vacuum tubing
- 1 ea 43" vacuum tubing
- 2 ea 12" vacuum tubing
- 1 ea four way vacuum “X” connector
- 2 ea vacuum “U” connector

Hot Water Valve

Recommended Tools

- Phillips screwdriver (long and short profile)
- Multi-meter
- Needle Nose Pliers
- Utility Knife
- Wire Cutters
- Socket Set

Vacuum Valves



Hardware Kit

ACCII Upgrade Kit

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The UnwiredTools ACCII Upgrade Kit™ upgrades the unreliable analog and mechanical ACCII Climate Control System to modern digital microprocessor technology. This upgrade replaces both the OEM servo and the OEM amplifier with rugged, industrial strength solenoid valves and a proprietary Controller module.

The UnwiredTools ACC II Upgrade Kit™ restores your ACCII system to better than original function.

The features of this upgrade include the following:

- For all Mercedes 107, 116, and 123 chassis models with ACCII Climate Control
- Eliminates expensive and unreliable mechanical servo
- Eliminates analog amplifier module, no more overheating of module
- Keeps OEM controls and the “factory” look
- No more running down the battery due to a stuck servo
- Integrates into existing A/C vacuum and electrical system
- Two hour installation time*
- Less expensive and more reliable than rebuilt servos
- No Core Exchange Required
- Five year limited warranty

*Time does not include repairing faulty vehicle vacuum systems. If you suspect your vehicle has a vacuum leak, it is recommended that you have a professional install this kit in your vehicle.

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Theory of Operation

The OEM Servo and Amplifier work in conjunction with three sensors to regulate the temperature in your ACCII Climate Control System. The three sensors are the thumb wheel in the console, the cabin temperature, and the outside air temperature. These values act as inputs to the Servo, which then selectively: controls fan speeds, opens and closes flaps, and meters the flow of hot water into the heater core. The OEM Servo and Amplifier is a complex collection of electrical, mechanical and vacuum connections and controls. The temperature value on the console thumbwheel is known as the "set-point". The job of the Climate Control System is to regulate the temperature to maintain the cabin pressure as close as possible to the set-point. Unless explicitly turned off, the Air Conditioning compressor is always running. When the set-point is higher then the current cabin temperature, hot water is passed into the heater core, to raise the temperature, easily over-powering the air conditioning and delivering the desired set-point temperature.

The UnwiredTools ACCII Upgrade Kit™ (KIT) provides the same regulated climate control functionality as delivered by the OEM system, but uses reliable, modern technology and also has an enhanced regulation control algorithm.

The KIT monitors the position of the console thumbwheel to determine the desired cabin temperature. The set-point value is compared to the current temperature in the cabin and side vent duct, as measured by replacement sensors. These new sensors are used because the function and reliability of the OEM sensor chain and supporting mechanical interfaces isn't good enough. Bypassing the OEM sensor chain permits the KIT to make the system more reliable while improving performance. **Note: These replacement sensors are new with this version "H" of the KIT. Starting with this version calibration is no longer required.**

When the inside temperature differs from the set-point, the KIT opens or closes the vacuum-actuated hot water valve. This difference sets the fan speed. When the difference is large, the fan speeds up. As the temperature approaches the set-point, the fan speed slows, creating a comfortable climate control environment in the vehicle.

The KIT improves the function of the ACCII system including the hot water valve, vacuum valves, digital control, and new sensors. The OEM look and feel is retained but with vastly improved performance.

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Installation Overview

Installing the UnwiredTools ACCII Upgrade Kit™ (KIT) includes the following steps:

1. Take inventory of any current problems with the vehicle's vacuum system. If there are any known vacuum leaks (outside of the Servo itself), they should be repaired prior to installation.
2. Identify mounting location in your vehicle for each of the Controller Box, Vacuum Valves, and Hot Water Valve.
3. Removal of the glove box liner.
4. Removal of OEM Servo Amplifier.
5. Make electrical connections behind the glove box.
6. Test thumbwheel sensor connection.
7. Identify the vacuum lines on the OEM Vacuum Connector.
8. Removal of OEM Servo & Installation of Hot Water Valve and Return Tube. These replace the coolant connections that previously passed through the OEM Servo.
9. Mount the KIT's Controller Box and the solenoid switch-over valves.
10. Install Switch-Over Valve Vacuum & Electrical Connections
11. Install Electrical Connections
12. Install Temperature Sensors
13. Tidying Up

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1. A Quick Word on Vacuum Leaks

The best practice is to find and fix any vacuum leaks before proceeding. Leaks generally are easy to find if you have a vacuum diagram and know where to find the vacuum actuators and switches. **Access to some actuators is time consuming. A difficult to reach actuator may be be better capped and left in place than replaced. Call UnwiredTools for troubleshooting assistance.**

We have developed a number of detailed, color coded, vacuum diagrams which are available free of charge. These diagrams were created from careful study of the OEM diagrams as well experience and feedback from professional technicians. Additional vacuum and electrical diagrams for your ACCII equipped vehicle are available from our website:

http://unwiredtools.com/accii.html

The next steps of the installation walk you through removing the glove box liner where you gain access to the vacuum bundle, as shown here. If you need to test or patch around individual vacuum circuits, this is a handy place to cut, test and re-join with a piece of tubing if needed. The next photo shows a leg vent actuator on a 123 chassis. You should be comfortable with working with the vacuum system. If this is beyond your skill set or comfort level, we highly recommend that you take your KIT and vehicle to an experienced professional mechanic. If you need assistance locating a mechanic in your area, we can help. Our website has a database of shops familiar with our product line. You can find this list here:

http://unwiredtools.com/shops.asp

If your system has leaks there will be no vacuum source when the ACCII system is turned on. A minimum of vacuum of 300mmHg is needed to operate the system. A common troubleshooting practice is to use a known good vacuum source until the vacuum leak is repaired. Shown here is temporarily tapping into a vacuum hose in the engine bay.

Vacuum diagrams for your vehicle are available for download at:

http://unwiredtools.com/vacuum

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2. KIT Mounting Locations

You should be able to find a good, solid mounting points for both the Controller Box and the solenoid switchover valves. The Controller Box's wiring harness is equipped with 18 inch leads, which should give you ample flexibility to place the box in a convenient place. The best place to consider is in the vicinity of the OEM Servo's location, where all of the vacuum and electrical connections are found presently. Once the Servo is removed (in a later step of the installation), ample space should be available.

The actual mounting space varies on the different chassis models. Mounting the Controller to the passenger side wheel well is preferred for 116 and 123 chassis. On 107 chassis models the best place is tie wrapped to the thick wire bundle between the aux water pump and the coolant expansion tank.

> It's common to find alarm systems under the hood or behind the glove box liner. These systems can often be the source of poorly grounded connections or wiring damage. If these systems are no longer required, consider removing them to gain access to good mounting locations for the KIT's Controller Box and external solenoid valves.

A bracket is provided to mount the vacuum valves to the coolant expansion tank on a 107 chassis.

Now that you have identified good mounting points within the engine compartment for your KIT, it is time to begin the actual installation by removing the glove box liner.

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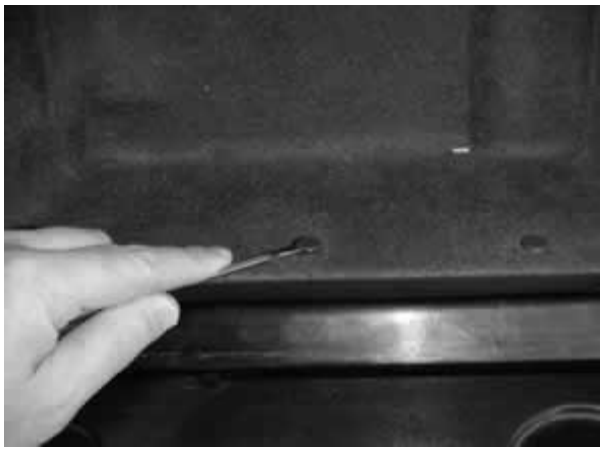
3. Removal of the glove box liner



The installation of the UnwiredTools™ ACCII Upgrade Kit begins inside the car by removing the liner for the glove box. The liner is held in place by 2-piece expanding plastic plug fasteners. Depending on your model vehicle, there are up to seven of these fasteners. Remove the fasteners by inserting a small, thin flat-blade screwdriver under the upper head of the plug. Gently pry the head up then pull it out. When the upper piece is pulled out the expanding plug can be removed. Work slowly and gently. These fasteners get brittle with age.

Next remove the 2 screws which hold the glove box latch in place. These screws are oriented vertically and there is little clearance. A very short screwdriver or a 1/4" ratchet drive screwdriver will be needed.

You can also remove the glove box door to gain additional space to maneuver. This is done by removing the Philips head screws attached to the hinges and the screws attached to the sides of the door. Be sure to keep track of all these pieces for reassembly!

The glove box light can be removed by inserting a thin screwdriver edge at the front then gently prying down and toward the rear. When the light is removed from its hole the glove-box liner may be removed.

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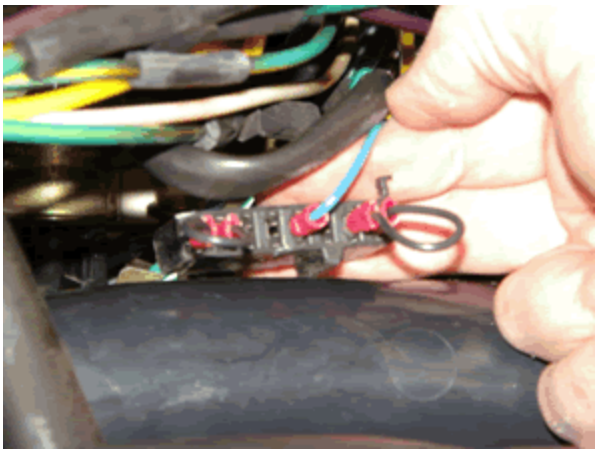
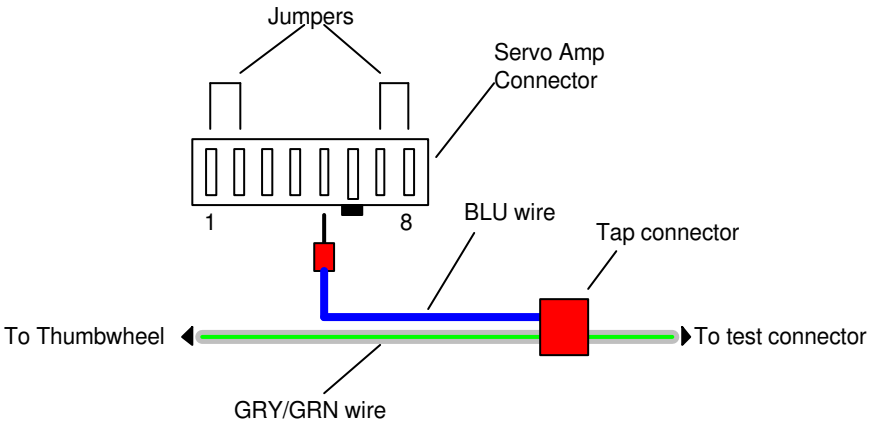
4. Removal of the Servo Amplifier

When the glove box liner is removed, the servo control amplifier can be accessed and removed. The amplifier is held in place by two Philips-head screws. **Note:** On 107 chassis models, the servo amp is located on the transmission tunnel side, not the passenger door side.

With the Servo Amplifier removed, our next task is to install jumpers across terminals of the Amplifier connector. The connector is keyed so you can determine which side is position 1. There are a total of eight positions on the connector. Obtain the two jumpers found in the Electrical Hardware Kit. Install jumpers across positions 1 to 2 and 7 to 8 as shown below.



The blue wire shown in position 5 is added in the next step of the installation.



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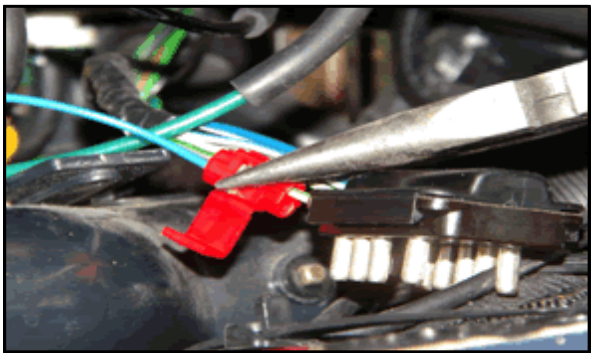
5. Electrical connections behind glove box

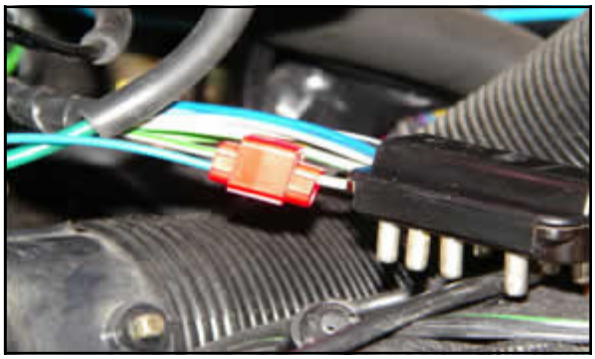
The next step in our installation calls for accessing the Test Connector. This connector has 10 positions and mates with a socket attached behind the glove box liner. This is a friction-fit connector. Carefully separate the connector from the socket. Once separated, extend this connector as far as you can toward you. This jacket of the wire bundle leading to this connector must be stripped back approximately two inches to gain access to the wires as shown. BE VERY CAREFUL as there are many conductors beneath the insulation/tape.

With the Test Connector's wiring harness covering stripped away, we are ready to gain access to the console thumbwheel wire. This wire is connected to the Controller Box to tell the KIT the desired temperature, or set-point.

The thumbwheel wire is accessed by tapping into position 10 on the Test Connector, which is the gray/green wire. There is also a white/green wire in this bundle, so be sure to pick the correct one. You should locate both the GRY/GRN wire and WHT/GRN wire and put them next to each other to make sure you have the right one. The Electrical Hardware Kit contains a Tap connector and an 8 inch piece of blue wire with a blade "fast on" connector crimped on the end.



The tap contains positions for two wires. Place the tap over the GRY/GRN wire then insert the blunt cut end of the BLU wire into the tap. Using pliers, carefully tighten the tap's housing. This will connect the wires together. When the tap's metal plunger has been fully compressed into the plastic body, close the latch, as shown.



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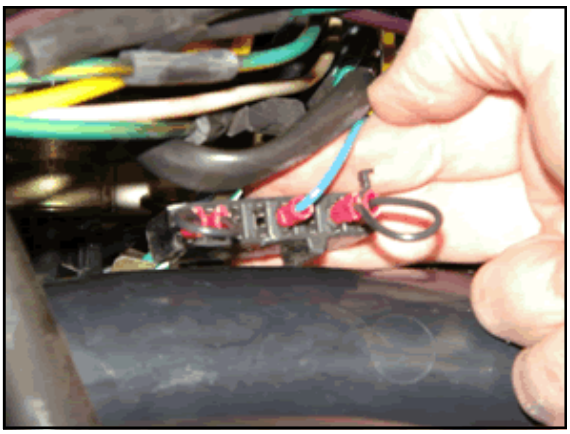
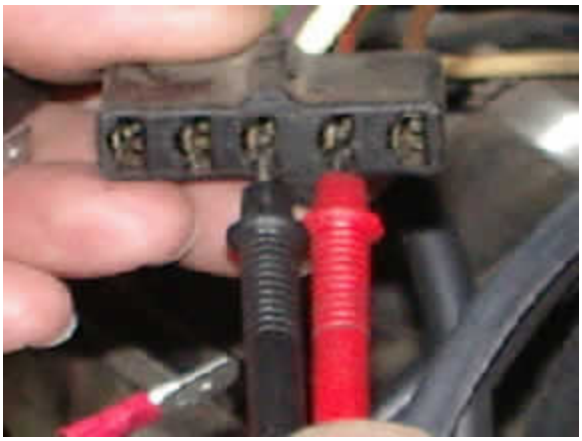
6. Testing Thumbwheel Sensor

Insert the blue wire's blade connector into position five of the Servo Amp wiring harness as shown.



The next step is to verify that the thumbwheel sensor connection has been properly made and that your thumbwheel is in proper operating condition. The thumbwheel sensor is a variable resistor, so we will test by checking the resistance read with a multi-meter set to Ohms. Probe pins 2 and 3 of the OEM Servo electrical connector as shown. These are the BRN and RED/GRN wires leading into the connector. The table lists at right shows the approximate values relative to the thumbwheel's position.



Thumbwheel	Ohms
Full cold (< 65)	300, +/- 30
75	900
Full Heat (> 85)	1480, +/- 120

If these values do not match the values from your vehicle, double check your connections made in the previous steps. If you continue to have difficulty, contact UnwiredTools technical support.

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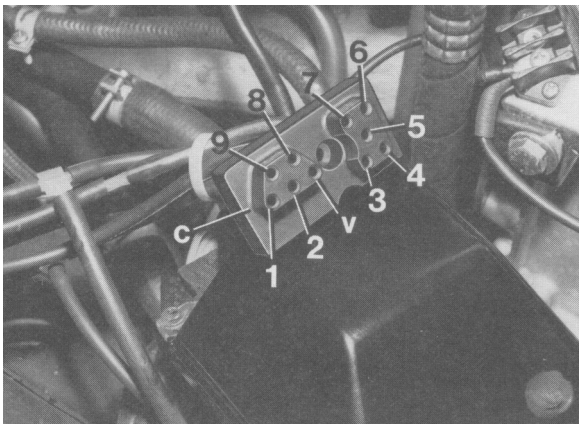
7. Identifying OEM Vacuum Connections and their Colors

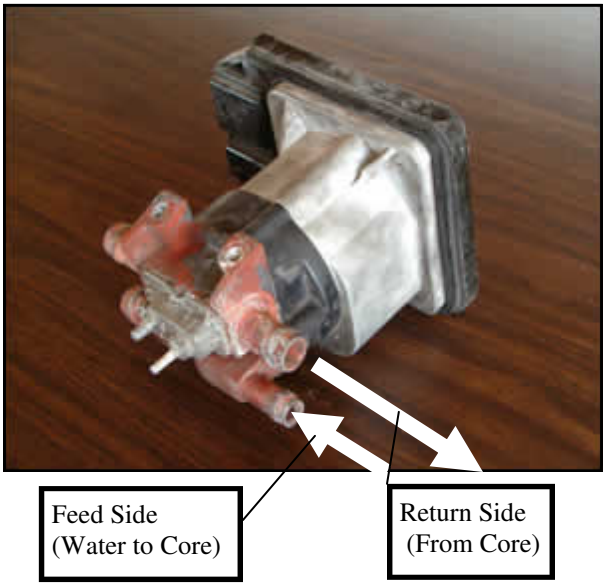
The purpose of this step is to prepare for the vacuum connections which will take place after the OEM Servo is removed and the Controller Box is mounted. Remove the vacuum connector from the OEM Servo. Note that the rubber connector for the vacuum lines is secured to the OEM Servo with one screw. Remove the screw and pull out the connector.



Compare the color of the vacuum lines in your vehicle to the color of the OEM lines listed in the table below. If they differ, write down your colors in the space provided on page 20. It may be necessary to tag the individual lines to keep them properly identified, especially if your lines have been replaced previously. After you have verified and written down the colors on page 20 then cut off the vacuum connector.

8. Removing the OEM Servo & Installing Hot Water Valve

In this step, the OEM Servo is removed from your vehicle. The four water (coolant) lines at the bottom of the Servo can be plugged with corks as the lines are removed. If you plug these lines as you remove them, then coolant loss will be minimal and the heater system should not have to be bled. Use the reference picture to the right to identify the feed and return sides of the OEM Servo. You may want to tag those lines prior to removing them from the OEM Servo. This will assist you in the next step after the OEM Servo is removed. Be sure to keep the hose clamps, as these are re-used in most circumstances. Once the coolant lines are identified, remove the OEM Servo by removing the 2 bolts holding it to the bracket.



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8. Removing the OEM Servo & Installing Hot Water Valve, Continued

After the OEM Servo is removed, the Hot Water Valve supplied in the KIT is installed on the feed side pair of hoses. Carefully note the orientation of the water valve. The **black** side of the new Hot Water Valve connects to the aux water pump. This installation step varies by chassis types:

107 Chassis Installations: Use the 90° bend hose as shown in the top picture. The 90° bend hose attaches to the black side of the Hot Water Valve and the aux water pump.

116/123 Chassis Installations: A straight hose is needed, not the 90° bend hose supplied in this kit. A stepped straight 6 inch hose is available from local sources, Use any one of these part numbers:

Dayco 87612
Drive-Rite 303612
Gates 87612

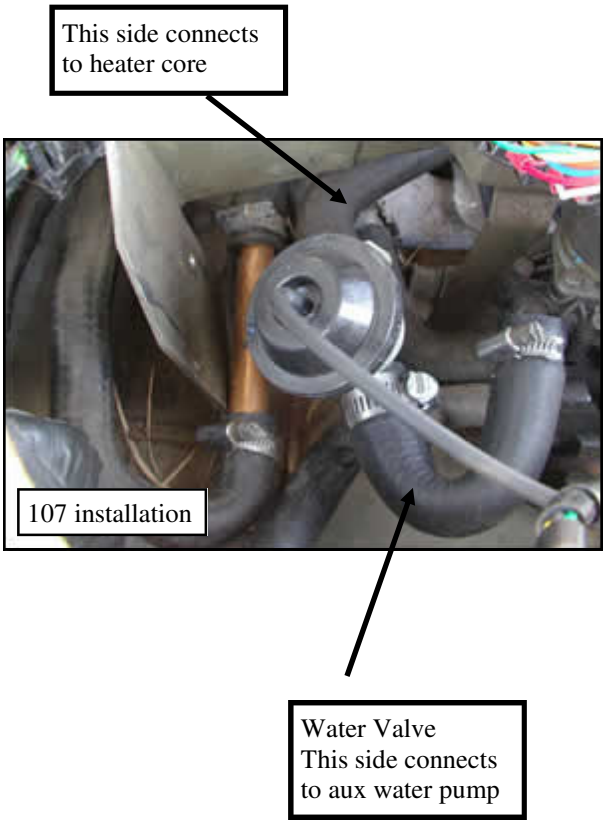
Regardless of the chassis type, the black side of the Hot Water Valve installs towards the aux water pump.

The return tube supplied in the KIT is connected between the hoses on the return side. Again, use the reference picture on the previous page to properly identify the return side hose connections.

Make sure the hose clamps are secure.

The next page is an overview of the entire Hot Water configuration of the KIT. We are done with the Hot Water Valve for now and will revisit it when we get to the vacuum and electrical connections.

The next step is to mount the Controller Box and vacuum switch-over valves..



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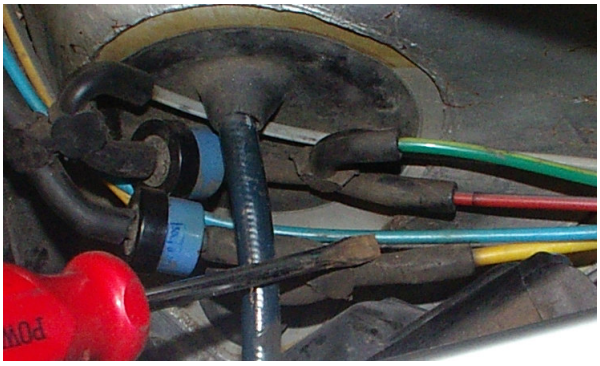
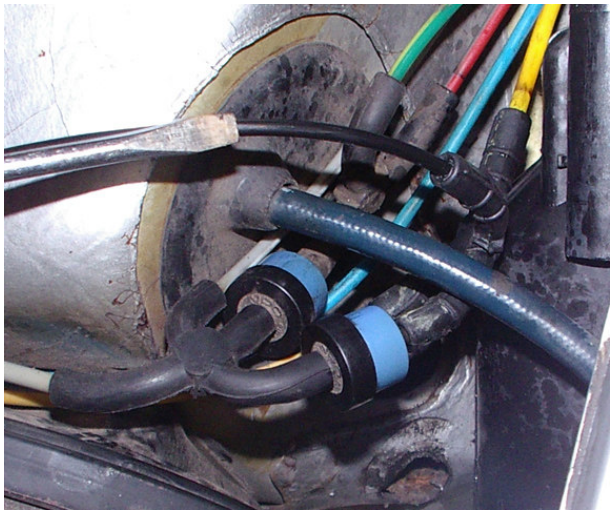
8. Installing Hot Water Valve, Continued

The vacuum source for the hot water valve must be constant. This is important because the source of vacuum in most gas engine cars is the intake manifold. The intake manifold vacuum goes low when the engine is under load. Under these conditions the intake manifold vacuum alone may not be enough to keep the hot water valve closed.

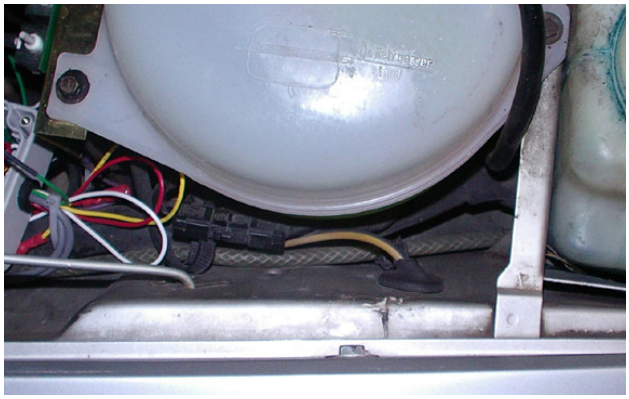


The photo at right shows the 3-way connector which joins the YEL and YEL/GRY vacuum lines together. This junction is connected to the vacuum reservoir. Connect the vacuum source of the hot water valve to this junction

The photo here shows the 3-way connector replaced with a 4-way. The black tube carries vacuum from the vacuum reservoir to the hot water valve. This connection can be made on all Mercedes models with the ACCII system. For 107 chassis cars there is an easier way.



In 107 chassis cars the vacuum reservoir is located inside the passenger front fender. The photo here shows the YEL/GRY vacuum line penetrating the fender next to the coolant tank. This vacuum line may be yellow, yellow with a grey stripe, or grey with a yellow stripe. This location is much closer to the vacuum valves so it is a much more convenient place to tap into the vacuum reservoir.



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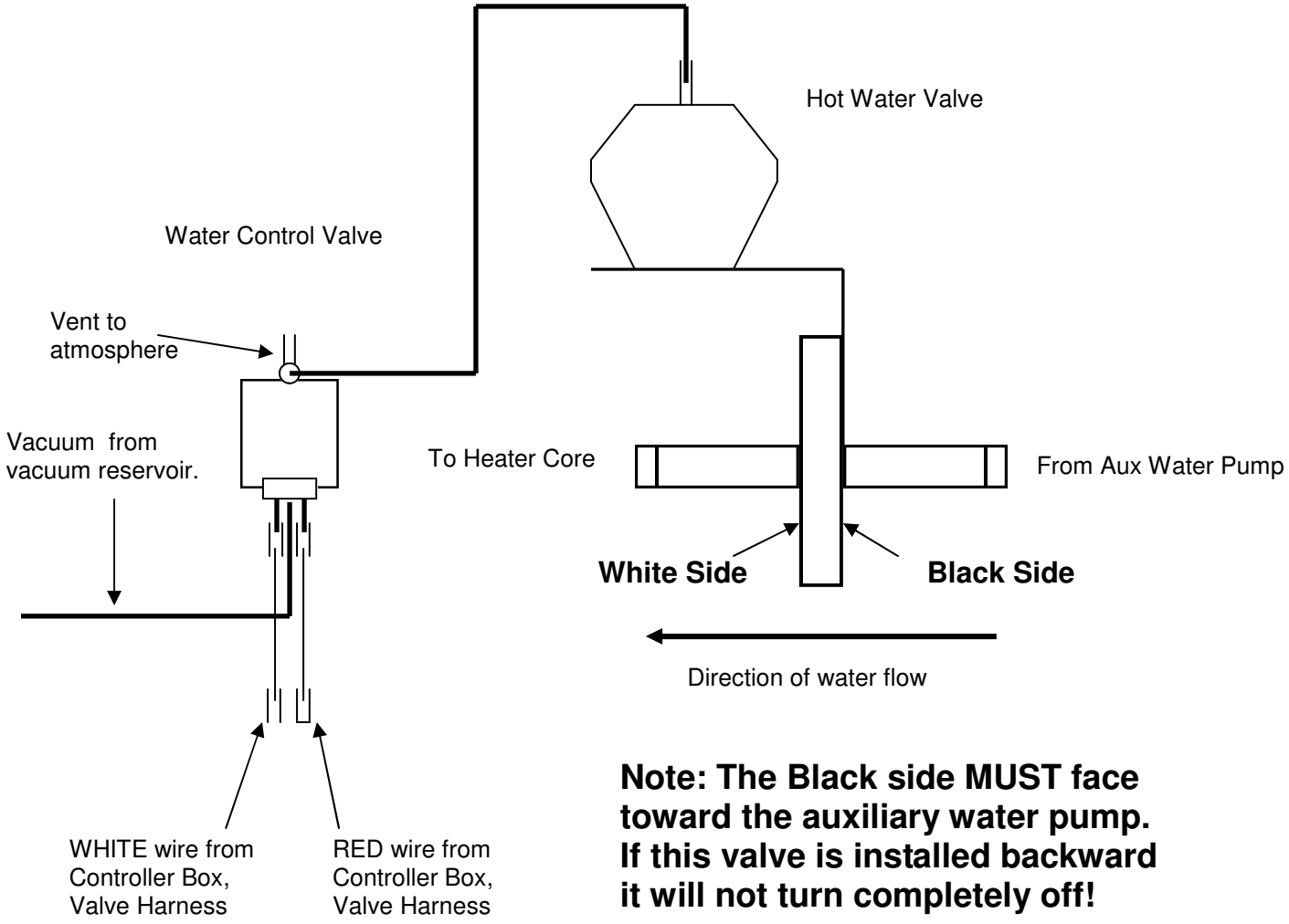
Hot Water Controls



Note: The Black side MUST face toward the auxiliary water pump. If this valve is installed backward it will not turn completely off!

Note: The green wires for the Water Control Valve may connected to either terminal of the valve. This valve is not polarized, so either terminal may be connected to +12V.

Note: A 6 1/2" length of 15mm tubing is required to connect the Hot Water Valve to the Auxiliary hot water pump for 116/123 chassis installations. For 107 chassis installations, use the 90° curved hose included with this kit.

The hot water control valve is shown here. The vacuum source for this valve must be a constant vacuum source. A good source is the bundle of vacuum lines behind the brake booster on gas cars.

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9. Mounting Solenoid Vacuum Switch Over Valves & Controller Box

The Controller Box must be secured either to the firewall, the OEM Servo bracket, the wheel well, or wire-tied to the cables running along the wheel well. The Controller Box has wires of approximately 12 inches in length. Be sure that the Controller Box and vacuum switch-over valves are mounted close enough to connect their respective wiring connections.

The KIT contains two vacuum switch-over valves. Typical mounting points for the valves include the firewall, the wheel well, or on the coolant expansion tank. The valves need to be mounted side by side. Your KIT includes a 90° bracket useful for mounting to the coolant expansion tank on a 107 chassis, as shown to the right. Be sure to not over-tighten the fasteners holding the bracket.

With the vacuum switch-over valves and the Controller Box mounted, we are now ready to begin making vacuum and electrical connections in the engine compartment.

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10. Switch-Over Valve Vacuum & Electrical Connections

At this point, you should have your Controller Box mounted, your two vacuum switch-over valves mounted, and have completed your vacuum connections color chart and recorded your values on page 21.

We are now ready to make the necessary vacuum and electrical connections. The step by step instructions are below and your connections should be compared to the diagram found on the following page. The instructions refer to positions rather than color, so be sure to use your color chart to make sure you have the correct vacuum lines.

1. Connect vacuum positions 1,2,3,4 via the four way vacuum connector found in the Vacuum Hardware Kit.
2. Connect vacuum positions 5 and 6 via the “U” connector found in the Vacuum Hardware Kit.
3. Connect vacuum position 7 to the top vacuum port of the Leg switch-over valve.
4. Connect vacuum position 8 to the middle (perpendicular) vacuum port on the Leg switch-over valve.
5. Connect the middle (perpendicular) vacuum port of the Hot Water switch-over valve to the top of the Hot Water Vacuum Valve.
6. Connect the bottom vacuum port of the Hot Water switch-over valve to a one way valve found in your Vacuum Hardware Kit, and then on to a constant vacuum source. The blue side of the one-way valve should be connected toward the switch-over valve and the black side toward the constant vacuum source. See the diagram for the proper orientation. The constant vacuum source may be the vacuum pump on diesels or one of the intake manifold vacuum lines behind the brake booster on gas cars.
7. In the OEM Servo, there were two vacuum lines, yellow and black, which connected to the Thermo Switch located beneath the Servo. Connect these two lines together with a “U”.
8. Using the Valve Wiring Harness extending out from the Controller Box, connect the two red sockets, one to each of the two switch-over valves.
9. Using the Valve Wiring Harness extending from the Controller Box, connect the yellow wire socket to the other electrical terminal on the Leg switch-over valve.
10. Using the Valve Wiring Harness extending from the Controller Box, connect the white wire socket to the other electrical terminal on the Hot Water switch-over valve.

When the vacuum connections are complete start the car and run the system on Auto-Lo, Verify that at least 300mm Hg of vacuum is present at the vacuum “X” connector. If not then call

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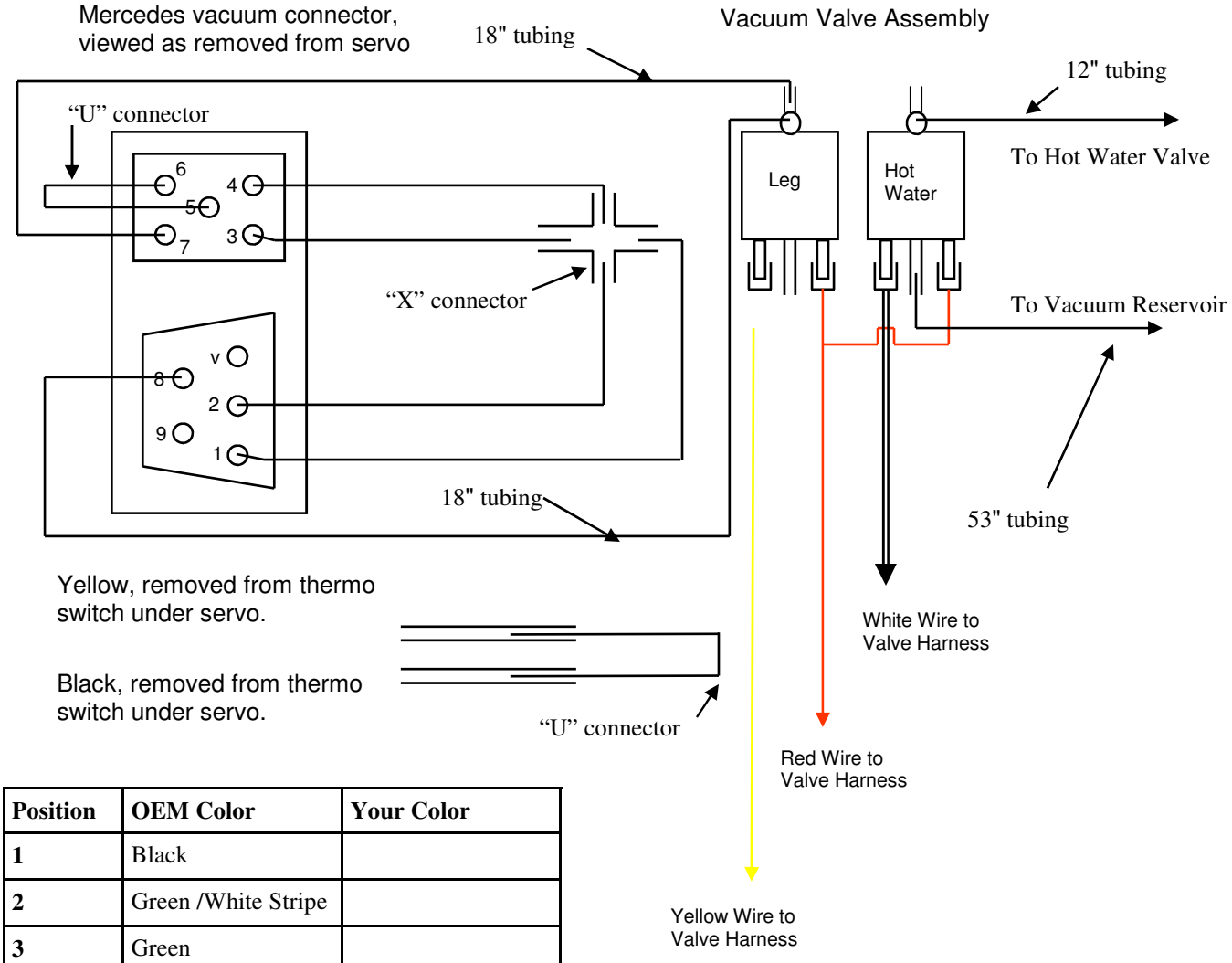
10. Switch-Over Valve Vacuum & Electrical Connections, Continued



Position	OEM Color	Your Color
1	Black	
2	Green /White Stripe	
3	Green	
4	Yellow	
5	White	
6	Violet	
7	Violet	
8	Blue/White Stripe	
9	White	
V	Black	

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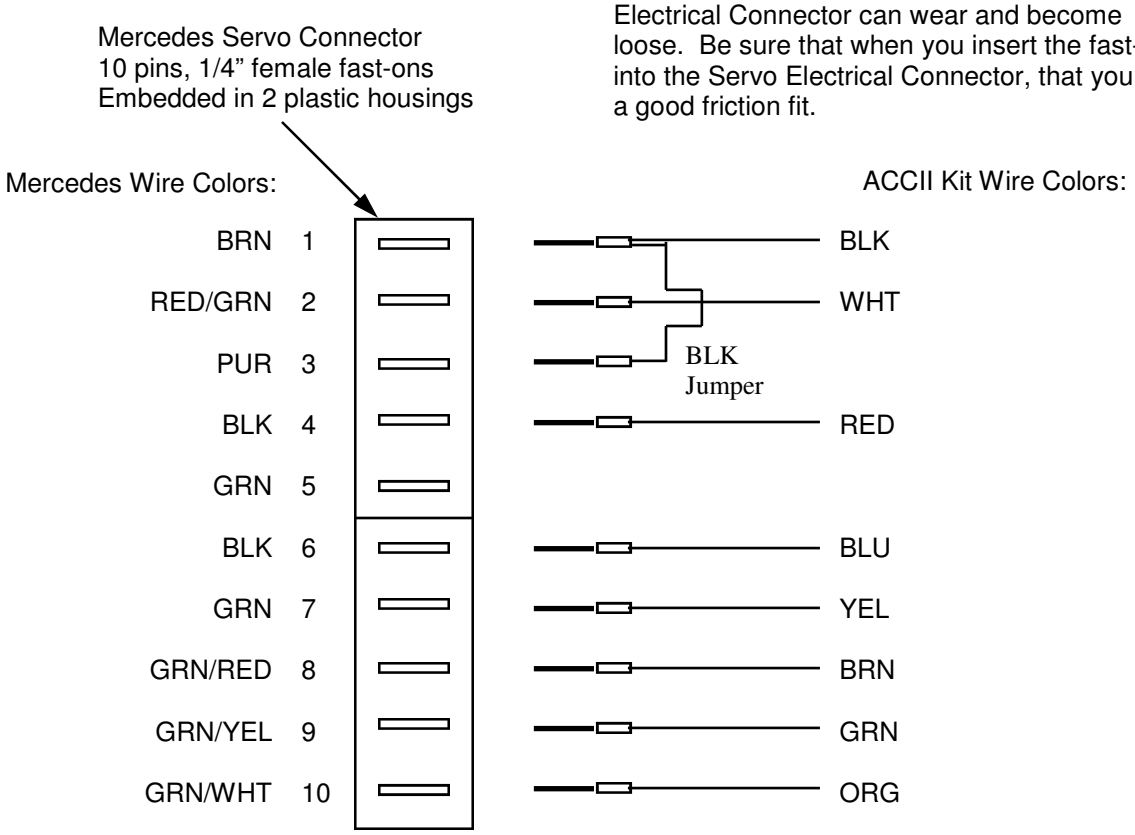
11. Electrical Connections

Locate the “Fan and Power” wiring harness and plug the loose connectors into the servo connector that you unplugged from the servo in an earlier step. There are 10 pins. **The pin on the far right is pin 1.** Starting from right to left, plug in the following:

The diagram below illustrates the required connections. Note that the receptacles in the Servo Electrical Connector can wear and become loose. Be sure that when you insert the fast-ons into the Servo Electrical Connector, that you get a good friction fit.



Note: Make sure that the white wire does not accidentally touch the red, damage to the controller may result!

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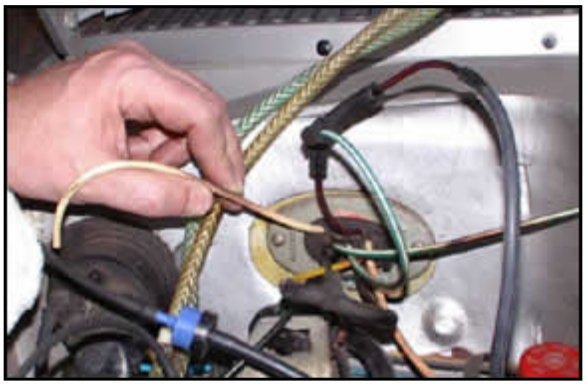
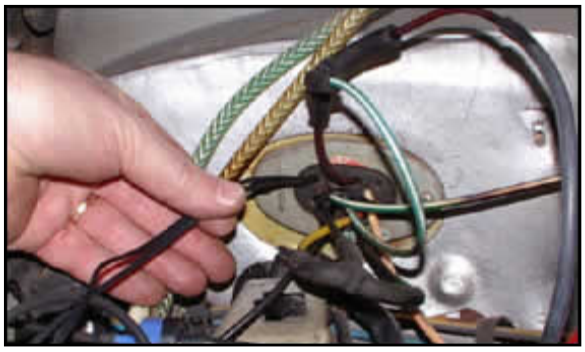
12. Temperature Sensor Installation





Your KIT uses two temperature sensors to provide real-time feedback to the Controller Box. The values read from these sensors cause the Controller Box to alter fan speeds and alter the amount of hot water permitted into the heater core. Each sensors is attached to the Controller Box by a four foot piece of black wire with a colored piece of heat-shrink tubing at the end. These wires must be passed through the firewall and into the vehicle behind the glove box. The easiest way to do this is to remove the unused vent vacuum tube as shown in the top photo. Pass the two black wires through the firewall via the space left by the removed vent vacuum line. Push the wires all the way through the firewall. Note that this step assumes that your Controller Box is now securely mounted in the engine compartment.

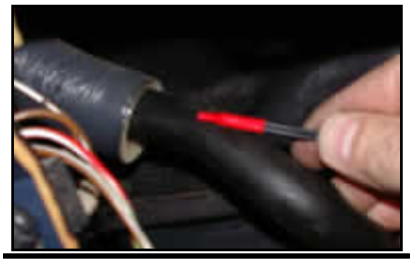
The two sensors can be distinguished by the coloring found at the tip of the wire. The sensor destined for the duct has a black tip. The other, red, sensor gets fed into the OEM in car vent tube.

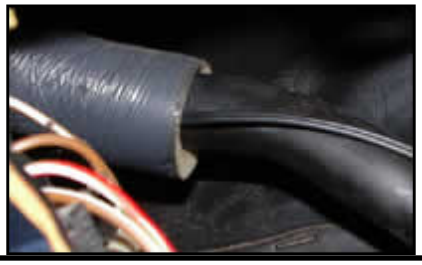
Duct Temperature Sensor Installation:

1. Create a **small** cut in the duct behind the glove box using a utility knife as shown.
2. Carefully insert the black tip of the sensor until it is fully submerged into the duct as shown.

Ambient Temperature Sensor Installation:

1. Carefully insert the red tip of the sensor into the foam tube until it is in the “free space” beyond the end of the plastic vent tube which also passes into the foam tube.
2. If the foam tube is deteriorated then replace it.
3. Carefully insert the red tip of the sensor until it is fully submerged into the duct as shown.





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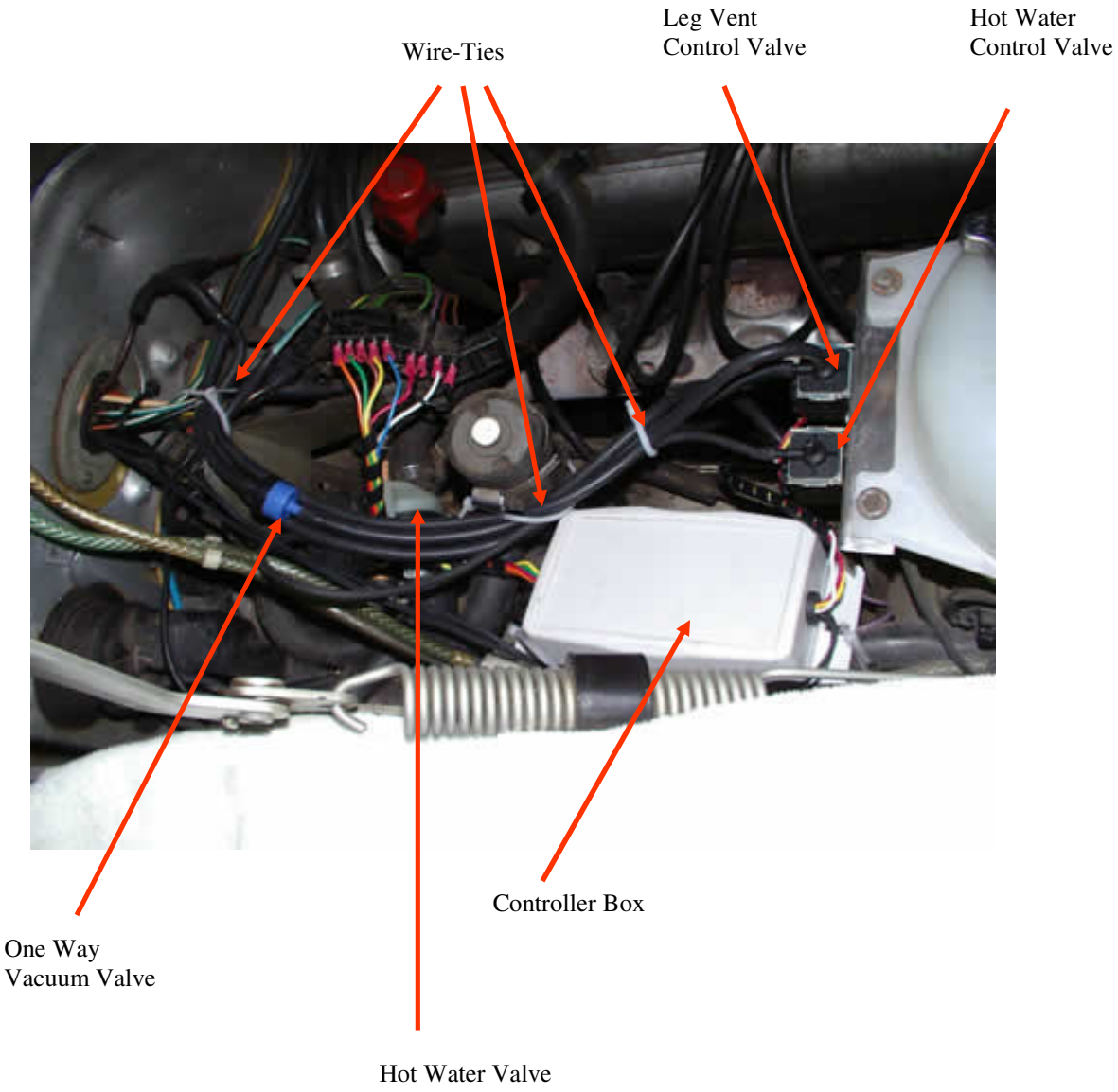
13. Tidying Up

Your UnwiredTools ACCII Upgrade Kit™ contains plastic wire-ties in the Vacuum Hardware Kit. These are useful for cleaning up the installation by securing the vacuum and electrical connections into tidy bundles. Be careful not to tighten the wire ties too much around the vacuum lines, otherwise you might impact the vacuum flow. Check your coolant level, replace your glove box liner and enjoy your new ACCII Upgrade Kit!



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Troubleshooting Guide

The UnwiredTools™ ACCII controller is fully tested at the factory. Although failures may occur, they are infrequent and generally easy to spot. The installation of the UnwiredTools™ ACCII Upgrade Kit is much easier if the ACCII system on the vehicle was working before the OEM servo failed. If the ACCII system was out of service for some time before installation of this kit then be prepared to track down vacuum leaks. **Call us if you are having trouble with a vacuum leak.** UnwiredTools publishes a full set of color vacuum diagrams. These diagrams are much easier to read and have much more detail than the OEM diagrams. **They are available to you at no charge as a download from http://unwiredtools.com/vacuum.**

As you step through these troubleshooting steps, you may need refer to the vacuum and wiring diagram on page 21.

Q. When I press "Auto Lo" or "Auto Hi" nothing happens, the fan does not turn on.
A. The Controller box and fan circuits are powered when vacuum appears at the main vacuum switch on port 3 of the vacuum connector. Check for vacuum here. When you press "Auto Lo" or "Auto Hi" , port 1 becomes the vacuum source for the system. Check that there is vacuum on port 1. If the vacuum is OK, then check the wiring connections and the fuse. ***Make sure power is getting to the controller***.

Q. The fan comes on and changes speeds when it is supposed to, but there is no heat.
A. First check if the hot water valve is opening. One side of the hot water valve is connected to the +12V (red) connector. The other side of the hot water valve goes to the controller via a white wire. Unplug this white wire and connect the free wire of the hot water valve to ground. This will force the hot water valve to open. You should hear it click. If the valve is opening, but there is still no heat, then you probably need to bleed air from the heater system. Be sure to replace the wiring connections.

Q. **When I press "Auto-Lo" or "Auto-Hi" the fuse blows.**
A. This indicates a possible defect in the wiring harness. Check to make sure that the connectors are tight and none of the wires are pinched.

Q. **The temperature is constant but its stays too hot or too cold.**
A. The temperature wheel may be out of adjustment. If the temperature wheel is set for 65 degrees the resistance should be 3000 Ohms. Refer to the test procedure on page 14. If you find that the wheel is not in the correct position, you may need to remove it and adjust it's position.

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ACCII Manual Revision History

Date	Revision	Description
11/16/2003	A	Initial Release
03/02/2004	B	Added photos, fixed color code error
07/01/2004	C	Added UT Logo, added vacuum connection diagram
08/25/2004	D	Added Servo Electrical Connector Diagram, changed Leg Vent Servo bypass step to optional
08/25/2004	E	Added diagram and photo showing placement of Servo Amp Jumpers. Clarified Vacuum valve wire connection step.
12/08/2004	F	Added calibration feature
03/14/2005	F.02	Added troubleshooting information. Added detail for new valve assembly.
04/12/2005	F.025	Added alt ground wire suggestion
04/12/2005	G	Added water valve orientation page. Added description of diagnostics.
05/23/2005	G0.2	Changed to constant vacuum source for hot water valve. Added assembly page for vacuum valves.
05/23/2005	G0.3	Minor revisions in software description (page 2)
07/22/05	G0.4	Added Curved water hose and one-way valve for 107 chassis.
09/01/05	G0.5	Added Photos and procedures for 107 chassis.
11/21/05	H1	Eliminated 2 valves, added new temp sensors (duct temp, cabin ambient), eliminated calibration step.

Support:
Please visit **http://unwiredtools.com** for the latest product and support information.
You can join the UnwiredTools support forum and view the latest manuals and tech notes as well as find an installer in your area.

ACCII Upgrade Kit

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UNWIREDTOOLS Limited Warranty

UNWIREDTOOLS, LLC ("UT") warrants that your new UnwiredTools™ ACCII Upgrade Kit ("Product") is free from defects in materials and workmanship at the time of manufacture. This warranty extends for a period of FIVE YEARS from the date of purchase of the original Product. If there is a defect in or malfunction of this Product that is covered by this warranty, UT will repair the Product free of charge as follows: PARTS: New or comparable rebuilt parts will be provided in exchange for defective parts. LABOR: You will not be charged for labor required by UT to make the necessary repairs under this warranty. UT is not responsible, however, for any other labor charges, for example, such as those attributable to removing the Product from your vehicle or reinstalling it in your vehicle. This warranty does not include normal wear and tear, tubing, wiring connector, or other parts which may wear or fail as a result of normal use. This warranty also does not include any defect or failure of any kind arising from improper installation, improper use, neglect, abuse, accident, or any cause other than defects in materials and workmanship at the time of manufacture. This warranty applies only to the original purchaser of the Product from UT or an authorized distributor or reseller. It does not apply to persons who purchased this Product second hand or used.

TO OBTAIN SERVICE UNDER THIS WARRANTY, the Product must be delivered to a UT Authorized Service Center nearest to your location; or the Product must be shipped postage prepaid, insured and via a traceable shipping method to a UT Authorized Service Center or to the UT Corporate Service Center at 2200 East Cedar Avenue, Suite 1, Flagstaff, Arizona 86004. You must:

- Pack your Product in the original carton or equivalent.
- Enclose a copy of the bill of sale or invoice showing original purchase date and seller. (Please note that you should retain the original proof of purchase for your records to establish date of original purchase. Your warranty starts with the date of original purchase.)
- Enclose a card or note describing in detail the difficulty you are experiencing with the Product.
- Be sure to include your complete name, address and daytime telephone number. In addition, please include your e-mail address if you agree to permit UT to contact you through it.
- Bring or ship, prepaid and insured, via a traceable shipping method, the above Product to the nearest UT Authorized Service Center location or to the UT Corporate Service Center.

Please note that UT will NOT pay return postage, shipping or insurance, so you will need to make arrangements for this. Products repaired or replaced pursuant to this warranty will be returned to the address identified as the sender unless another address is provided. The UT and/or the Service Center cannot be held responsible for any loss or damage that occurs while in transit or outside our control.

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To find the nearest Authorized Service Centers within your local area, see our Web site at www.unwiredtools.com , or you may call the UT Corporate Service Center directly at 928-773-0469.

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