

BLAUfergnügen! Inc.

Installation Guidelines for European Specification Headlamp Harness

4A0 900 001A S4

The Actual Mounting location for various components involved in the installation of the BLAUfergnügen! Inc. S4 Euro Harness are yet to be Identified. This harness is a PRE-RELEASE model. This harness, which shares much of the same configuration of the newer 100 models, has been successfully installed by individuals who desired to install European Lamps in their S4.

Please use the following information as a guideline only.

1. Disconnect the Positive Battery terminal.

Always wear protective gear when working near a battery.

2. Remove Front License plate bracket, Then the lower Grille insert by gently pulling unit forward.

3. Remove front bumper by removing hex head cap screws from the bottom of cover on each side. Remove upper bumper trim. You may also need to remove lower splash pan if applicable.

4. Remove both original head lamp assemblies from vehicle.

5. Determine a convenient location to mount the Relay Bank. It needs to be mounted on the drivers side of the vehicle, making sure ample wire is available to connect each head lamp to the harness and also to connect to the final location of the Main Power Breaker.

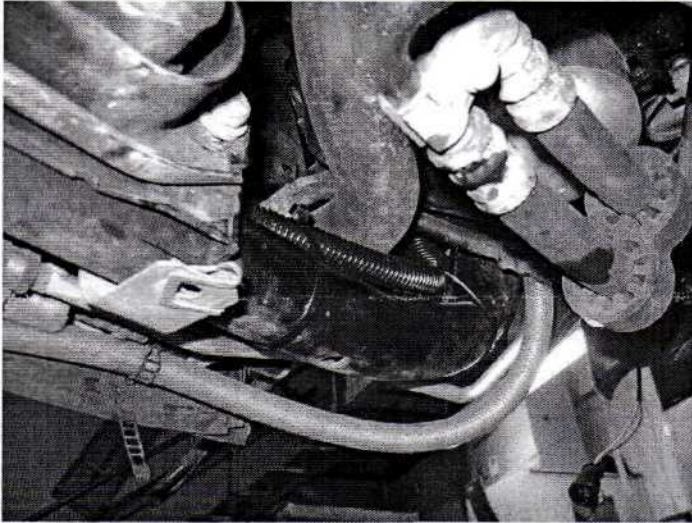
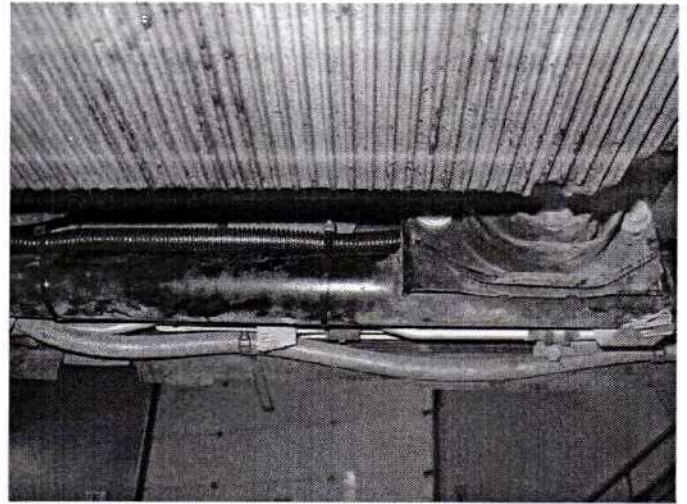
NOTE: Some customers have reportedly made a bracket to hold the Relay Bank on top of the ABS brake unit. If you select to follow this technique, **BE SURE to NOT jeopardize the operation of your ABS System.**

6. Install the (3) supplied Bosch 40 Amp relays into new relay socket bank.

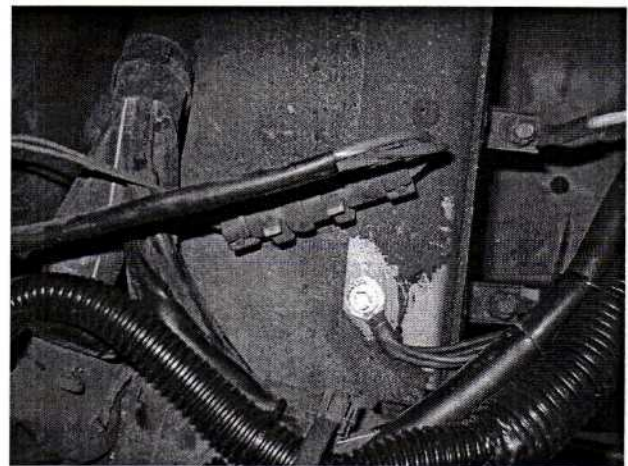
7. Feed long portion of New Harness along the factory existing harness that connects to the multi stage resistor for the radiator fan. Direct cable under drivers side frame horn. Protect harness with the supplied 3/4" loom as shown. (view is from front of vehicle, just under head lamp cavity on drivers side)



8. Continue feeding harness toward passenger side of vehicle along lower tubular frame cross member. Run harness in front of forward engine mount, under lower radiator hose and then up along inside of frame horn between frame and air conditioner accumulator tank, to head lamp cavity. Loosely Secure the New Harness to the tubular cross member with nylon ties until you are able to properly position harness from side to side. Make sure it cannot come into contact with any sharp edges or moving engine components. (view is from under vehicle, looking forward)



9. Locate New Harness grounding ring terminal which is situated close to relay bank. It has a heavy black wire attached to it. Attach this terminal to an existing adequate ground or create new location with screw provided as demonstrated in the photo. It is important to get a good ground! Failure to do so can cause your lights to be unnecessarily dim or not function at all!



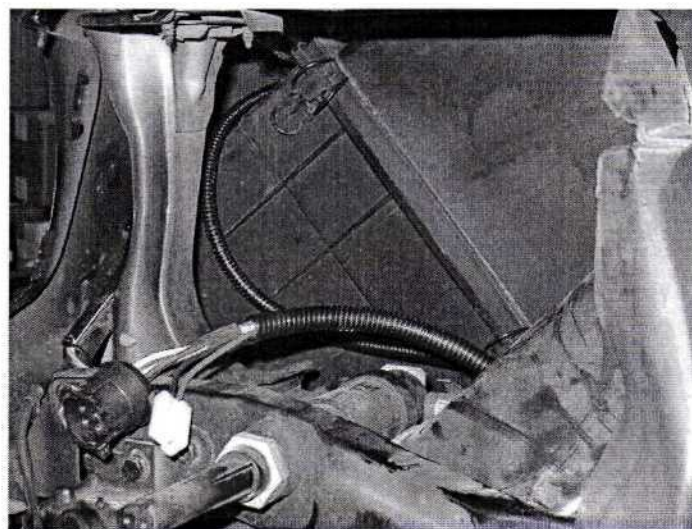
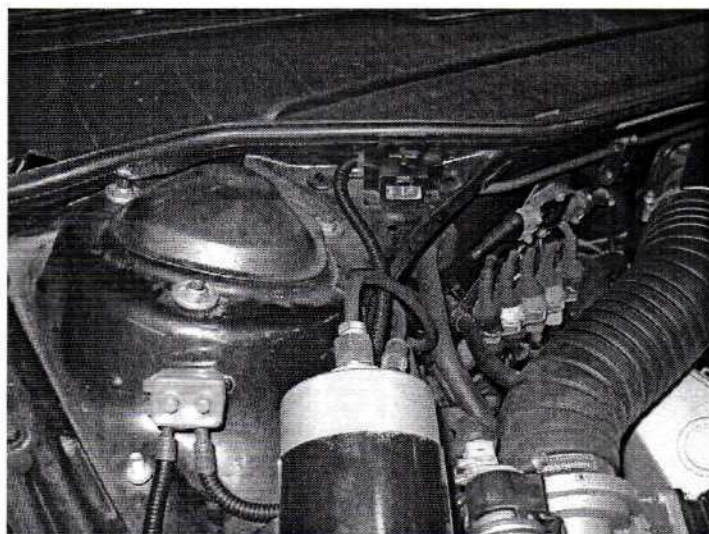
10. On the drivers side, Route the short portion of harness up behind head lamp cavity bracket towards new headlight location. Plug the 3 male bullet connectors into the factory original drivers side head lamp plug. Match them wire color for color. The white wire is for High Beam, The yellow for Low beam and the brown is ground. Most Vehicles use these same colors, but you may need to use a test light to get it correct. Tie the entire connection in a way that it cannot be pulled apart accidentally. If possible use some dielectric silicone to protect the connection from corrosion.

11. Connect the Blue wire using the supplied "T" Tap connector and Blue jumper wire, into a marker light power feed wire. You can find this at the marker lamp connector plug, and it needs to have 12 volts on it when the marker lamps are turned on. This will illuminate the "Day" portion of the New head lamp.

NOTE: If you want "Day Lamps" to function with ignition switch, You can also connect this to any suitable feed wire that has 12 volts on it when the ignition switch is in the 'on' position.

12. Connect the single red colored wire to an existing Fog lamp feed wire. Do this in a similar fashion, using a "T" type tap on an existing fog lamp feed wire, having 12 volts on it when Fog Lamps are turned On.

13. On the passenger side, locate and drill (2) 7/64 holes to mount supplied circuit breaker. Attach with supplied screws. Route Main Power cable behind air box (10g red) to breaker terminal marked "Aux". Connect Main Power jumper cable (16" 10g Red wire) to terminal marked "Batt". Route Main power jumper cable towards the Factory Auxiliary Jump Start terminal located Near passenger side strut tower on fire wall Carefully connect jumper terminal to Factory Lug. Make sure to install the protective breaker boot before putting the terminals on the circuit breaker. Cover breaker terminals with supplied boot. (views are from '92 100. S4 is very similar)



14. Install the new head lamps on the vehicle using original hardware. Plug the four pole connectors from the new harness into corresponding sockets on head lamp housings. The four plug connectors will fit properly **only** in one direction, so don't force. Plug the 3 prong connectors into new head lamps. The Three terminal plugs supply power to the Fog portion of the head lamp.

15. Reconnect vehicles positive battery cable and check function of lights. If all light functions appear correct, install previously removed components in reverse order of removal. If lights do not work properly proceed to trouble shooting section.

TROUBLE SHOOTING

All Euro harnesses are bench tested for function before being packaged.

In the event that you experience problems, please consult the following troubleshooting guide before calling BLAUfergnugen! Inc. for assistance.

If Headlights do not turn on, and or Relays do not "click" when lights are turned on:

Check connection at original headlight plug on driver side of vehicle. The original harness provides **both power and ground circuits to relay coils**. Removing relays will help you determine operation. With one relay in the connector location with White wires protruding from it, you should hear the relay "click" or activate when the high beam is engaged. With one relay in the connector location with Yellow wires protruding from it, you should hear the relay "click" or activate when the Low beam is engaged. With one relay in the connector location with Red wires protruding from it, (when applicable) you should hear the relay "click" or activate when the auxiliary switch is engaged.

If relays fail to respond, do the following test.

Confirm that when **High Beam** is turned on, that you have 12 volts of power to the terminal of the relay body **with the single white wire, while using any brown connection in the relay body**. Low beam relay operation is tested the same as high beam but with dimmer switch on Low Beam and using the single Yellow wire at Relay body. If no power is detected, try the chassis for a ground instead of the brown wire in the relay body. If with a chassis ground, power is detected at the single White and Yellow wires, (red where applicable) corresponding to High and Low beam, OEM harness ground is faulty. Likely you would have had head lamp problems prior to the installation of the European harness with this scenario. Consult factory manual to locate ground lug for head lamp ground and inspect. Testing with one relay in rotation can also identify a faulty relay.

If Relays Operate correctly when light switch is turned on and off,
but head lamps do not come on:

Check **Main ground** connection at the terminal with the heavy black wire attached to it. (step 9) This provides the ground for the bulbs in your New Euro lamps. Also, check **Main Power** connection at the factory's Auxiliary Jump Start Terminal as this provides power for the new lamps. Check with test light, that power is allowed to go through circuit breaker. NOTE: Relays will work correctly even if Main power and ground connections are "open".

Check that head lamp connectors are install correctly on head lamp.

If Relays Operate correctly and both power and ground are properly connected:

Use a test light at the 4 pin nylon terminal bodies (head lamp connectors) for power with the lights turned on. The white wire should be on with the high beam, the yellow on with low beam. If some circuits work, try rotating relays to identify a faulty relay. No power at the head lamp plugs would indicate a break in the unresponsive wire or a problem with a terminal on the Relay connector body. Wire terminals can inadvertently be pushed out through the bottom of relay connector body when installing relays, disrupting the connection with the relay itself. Check to see that all wire connectors are firmly attached to the relay at the bottom of the relay bank.

If Headlights blink off unsuspectedly:

Examine and confirm that the 50Amp Circuit Breaker is installed correctly. The terminal marked "Batt" must be connected to the battery jumper cable. Check fusible link for integrity.(See Below)

If Daylights fail to function:

Check for 12 volts at blue "T"-Tap connections near OEM head lamp connector. If you would prefer Daylights to turn on with key, you will need to find a suitable "switched feed" to attach the blue leads to.

If High Beam Lights Stay ON:

Check the Harness Overview page attached to this document for additional information.

Notice:

Your Euro harness is protected on the Head lamp side with a 50 amp "auto reset" breaker. If the main power feed is "shorted" to ground, the breaker will "open" to protect the circuit. The breaker will reset after it cools down. For added protection against the inadvertent lapse of illumination, a "fusible link" has been installed in parallel as a "One Time" protection device. It is installed across Main Breaker and appears as a small metal connection between both terminals. This fuseable link must remain in place to insure safe operation.

For Safety reasons, This link MUST BE REPLACED IF EVER BLOWN.

Contact Blaufernugen Inc. for replacement links.

WIRE LEGEND

Typical Harnesses use the following wire COLORS for the listed application.

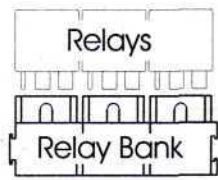
WIRE COLOR	WIRE USEAGE
BROWN	COIL TRIGGER GROUND (input) HEADLAMP BULB GROUND
YELLOW	LOW BEAM COIL TRIGGER(input) HEADLAMP LOW BEAM FILAMENT
WHITE	HIGH BEAM COIL TRIGGER(input) HEADLAMP HIGH BEAM FILAMENT
BLUE	DAY LIGHT BULB CIRCUIT
BLACK	DAY LIGHT BULB GROUND, also H1 FILAMENT GROUND
RED (when used)	H1 COIL TRIGGER, also H1 BULB FILAMENT
HEAVY GAUGE RED	MAIN POWER FEED FOR ALL RELAYS (Does not feed DAY LIGHT circuit)
HEAVY GAUGE BLACK	MAIN GROUND FOR ALL BULBS CIRCUITS

Harness General Overview

All connections are viewed from the WIRE SIDE of connector. Some Harness versions may have different plugs than those shown in this diagram. Wire colors however are always the same from harness to harness.

! Attention !
 If your Cars High Beam Headlamps "Hang",
 (remain when switching back to low beam)
 You may need to "Load" your harness.

Please Read Information Box
 on the Reverse Side of this Page

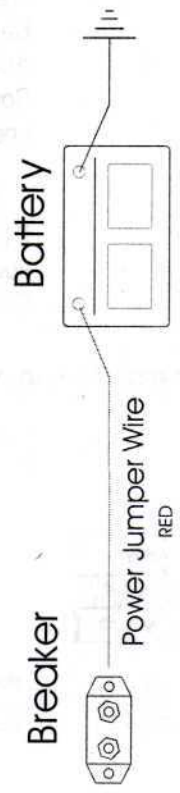
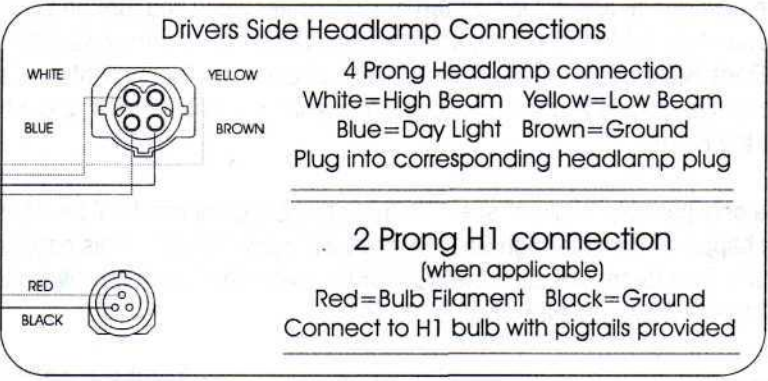


Harness Coil Trigger Inputs
 (3) .156 Bullet Male
 White=High Beam Yellow=Low Beam
 Brown=Ground
 Plug into existing Bulb Socket on Drivers side

"DayLight" connection
 Note: Some harnesses have connectors (2),
 One near each headlamp plug
 Blue=Bulb Filament
 Connect to Marker lamp wire with "T" tap

Chassis Ground Connection
 Black/Brown
 Attach to suitable ground

"H1" Coil Trigger Wire
 Connect with "T" tap to existing Fog light Feed
 or apply 12 volts from auxilliary switch for H1 activation



Main Power Wire
 RED

Headlight Hang

A small percentage of Vehicle Owners have reported a situation where their High Beam Lights remain on when switching back from High Beam to Low Beam.

This is clearly caused by an unknown "Stray" 5 to 7 volts in the OEM High Beam wire in Some Vehicles. What is happening is this; The "Stray" Voltage is just enough to Hold the relays Engaged or ON after switching to Low Beam from High Beam. Typically, we find that the Stray voltage is not strong enough to engage the High Beam relay on its own In other words, When you initially turn on your headlamps in the low beam position, the High Beams will not come on BUT, Once the High Beams have been engaged, they STAY ON !!

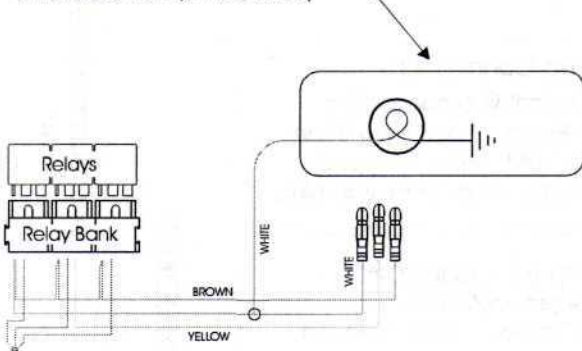
The cause of this "Stray" voltage is yet to be determined. You may desire to check for this problem BEFORE you install your harness. Simply connect a voltmeter to an OEM High Beam supply wire found near the one of the headlamps. IF you have any voltage higher than 5 volts.....Your car exhibits this problem !

Some have reported that the problem disappeared when they decided to replace the entire Headlamp Switch Assembly in the steering column. It is possible that the switch could develop Carbon Deposits on each side of the electrical contacts inside. These Deposits are created by repeated "Arcing" of the contacts through normal use. This "Carbonized Plastic" subsequently acts as a resistor, allowing some voltage to pass through the circuit. However, Replacing your switch can be a costly repair and worse yet, it MAY NOT fix the problem !

BLAUfergnugen! Inc. Is interested in finding a solution for this situation. Unfortunately, there is only a handful of vehicles that have presented the problem. Until the actual reason for this issue is understood, We recommend mounting a small light bulb in some type of protective housing, somewhere inside the engine compartment and connecting it as shown below. This additional bulb will in essence, put an additional "Load" on the new Harnesses Relay Input Lines, forcing the Relay to "drop out" when you switch back to your Low Beams from High Beam. Please note that the new underhood bulb will dimly glow when your lights are an Low Beam, and will likely burn much brighter when you turn on your High Beams. Because of the added lamps capability to generate heat, You may want to visit your local Auto Parts Store and examine their selection of universal "dome lights" or "backup Lamps". Some of these come in a metallic housing, making the install easier and a better choice for under the Hood.

The only possible "Failure" scenario that can be experienced will be if this bulb burns out. If that happens, then the High Beam Relays will again "Hang". If this happens, make sure you have Low Beam selected, then QUICKLY switch the headlamp switch to OFF and back ON. This will Disengage the High Beam Relay.

Shielded Lamp Assembly



Install a Shielded Lamp Assembly (preferred) in any under hood location where it will not interfere with any other components yet in the vicinity of the New Harness input Connections. On single wire units, Be sure the housing obtains an adequate ground. Double wire units will need one wire connected to a good chassis ground.

Then, Connect the "filament" wire from the new Bulb Assembly, to the WHITE wire, found at or near the OEM Connection where you originally connected the New Head lamp Harness to the Vehicles wires.