OEM Wiring Harness Installation

BMW X5/X5M X6/X6M (E70/E71)

All models and trim levels

Hardware supplied

OEM Hitch Wiring Harness, including:

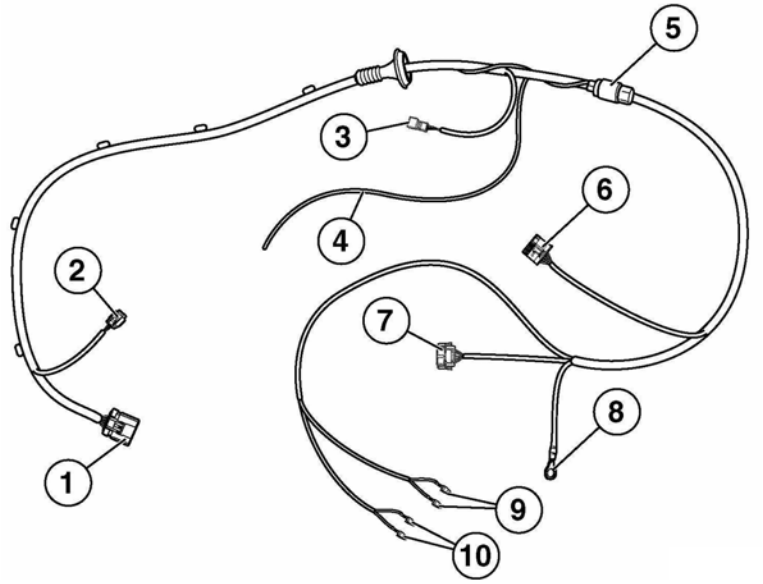
- 7-PIN ROUND TRAILER RECEPTACLE
- ADAPTER FROM 7-PIN ROUND TO 4-PIN FLAT
- HELBAKO TRAILER CONTROL MODULE (AHM)
- ALL NECESSARY WIRE CONNECTORS, FUSES, & WIRE TIES

1 – Plastic rivet (5/16" stem fascia retainer)

2 – Wire ties for securing harness to hitch beam (11")

Tools Required

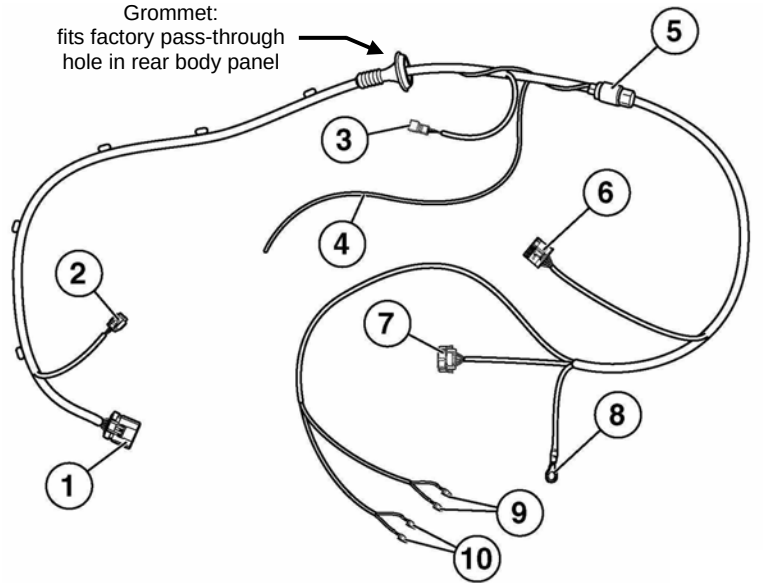
Phillips screwdriver
Small punch or an ice pick
Electrical tape
Fish wire
Pliers



1	7 pin connector – plug into back of 7-pin round trailer receptacle
2	2 pin connector (blue/gray, blue/yellow) – plug into Comfort Access antenna, only if the vehicle's original Comfort-Access wiring has to be re-routed per step 2B
3	3 pin connector (green, orange/green, black/yellow) – plug into vehicle's bus (CANbus)
4	Single wire (blue/brown) – connect to emergency hazard lights signal
5	2 pin connector (blue/gray, blue/yellow) – plug into vehicle's original Comfort-Access antenna connector, only if such connector has to be re-routed per step 2B
6	16 pin connector – plug into Trailer Control Module (AHM), included with wiring kit
7	4 pin connector (red, yellow/red, yellow/green, brown) – Unused except when installing an Electric Trailer-Brake Controller
8	Single wire (brown) with ring connector – attach to Ground
9	Single wires – insert into back of fuse box
10	Single wires – insert into back of fuse box

Wiring Installation Steps:

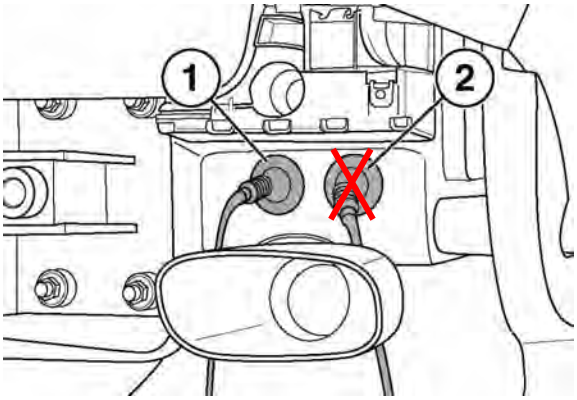
Referring to the wiring-harness diagram below, the harness will be routed such that its connectors (1) and (2) will be located at the center exterior of the vehicle, and its connectors (3) through (10) will be located inside the vehicle at the electrical panel (located behind the passenger's side trim panel of the cargo area).



1. **Obtain access to vehicle's electrical panel:**
   Inside the cargo area, remove the passenger-side plastic storage bin, if vehicle is so equipped.
   The bin is secured by two re-usable plastic rivets and one single-use plastic rivet.
   To remove the single-use rivet, push in the center with a small punch or pick and then pry rivet out.
   (A replacement rivet is included in the installation kit).

   Remove the passenger-side trim panel in cargo area. This will provide access to the vehicle's electrical panel.

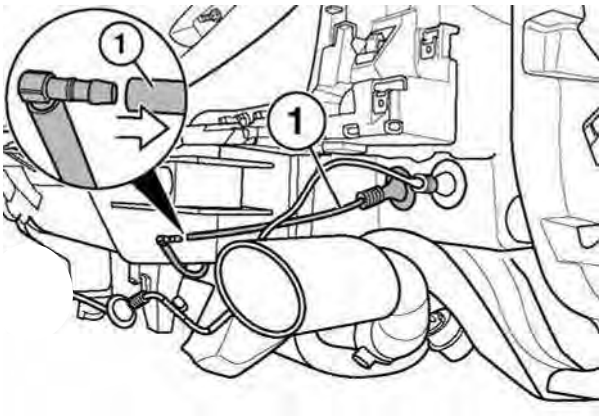
2. **Free up vehicle's innermost pass-through hole for use by the hitch wiring harness:**
   At the rear of the vehicle on the passenger side, there are two factory pass-through holes for wiring.
   The hitch wiring harness must use the inner of these two holes. (Use of the outer hole will prevent the harness from reaching the 7-pin round trailer receptacle).



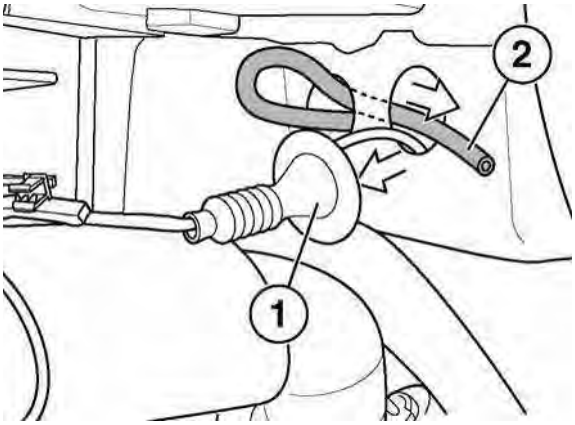
If the inner access hole has nothing passing through it, <u>proceed to step 3</u>.
Otherwise, perform both steps 2A and 2B below.

2A. ***If the inner access hole has a vacuum hose passing through it***,
Re-route the vacuum hose to the outer grommet as follows:

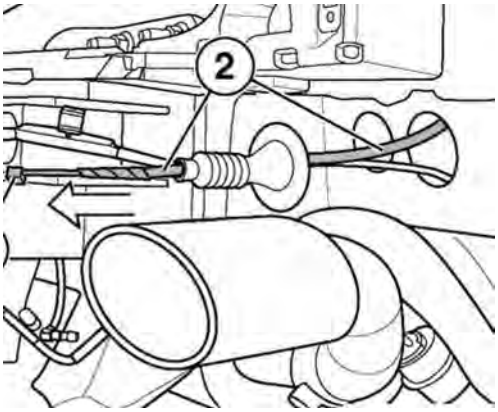
- Detach hose (1) from inline coupling.



- Pull the grommet out to the exterior of the vehicle, and remove tape from hose.
- Remove grommet (1) from hose (2) and then re-route hose through other body hole.



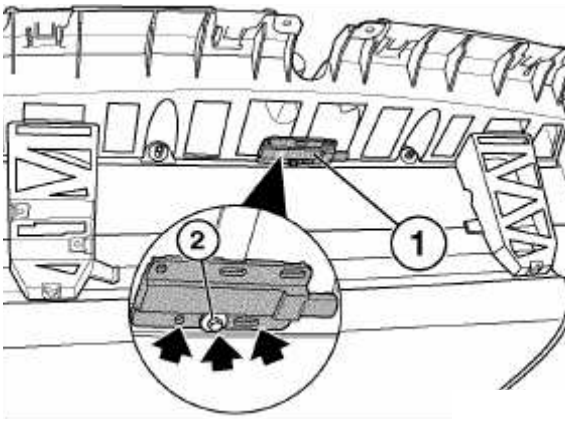
- Using a fish wire, pull hose through other grommet alongside existing wiring.



- Re-seal grommet to hose/wires with electrical tape and re-connect hose to inline coupling.

2B. ***If the inner access hole has wiring for the Comfort Access antenna passing through it***, Substitute the Comfort-Access wiring that is included on the hitch harness as follows:

- Disconnect the wire from the exterior Comfort-Access antenna (1). It may be necessary to temporarily loosen or remove the mounting screw (2) in order to disconnect the wire.



- Pull the disconnected antenna wire (along with its grommet) through the body-access hole into the interior of the vehicle.
- This antenna wire will be plugged into a connector on the hitch wiring harness (see connector (5) on the harness diagram), and then the Comfort-Access wire on the hitch harness will be plugged into the external antenna.

3. **<u>Route the hitch harness from exterior trailer receptacle to interior electrical panel:</u>**
Install 7-pin round trailer receptacle into its bracket on the hitch, with the hinge toward the front of the vehicle. Then connect the round harness plug to the back of the receptacle. Ensure that the harness plug is fully seated and the gray locking tab is in its fully closed (locked) position.

   Starting from the 7-pin round receptacle, route the harness between the hitch beam and the vehicle chassis, and then along the hitch beam toward the passenger side.

   Pass the harness through the inner access hole to the interior of the vehicle. Note: the 16-pin connector for the Trailer Control Module will be a tight fit through the access hole. Move the locking lever on this connector to its unlocked position; this will help ease passing it through the access hole.

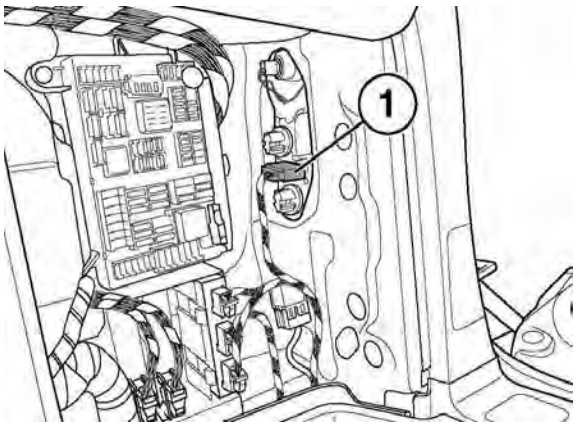
4. **<u>Optional substitution for original Comfort-Access wiring:</u>**
If the original Comfort-Access wiring was re-routed to the interior of the vehicle in step 2B, then connect the small 2-wire plug of the hitch harness to the exterior Comfort-Access antenna. Then, inside the vehicle, connect the original Comfort-Access antenna wire to the 2-pin connector of the hitch harness (see connector (5) on the harness diagram).

   Note: This step is only applicable if Comfort-Access wiring was re-routed in step 2B. Otherwise, the Comfort-Access connectors on the hitch harness (connectors (2) and (5) on the wiring diagram) go unused and may be taped off.

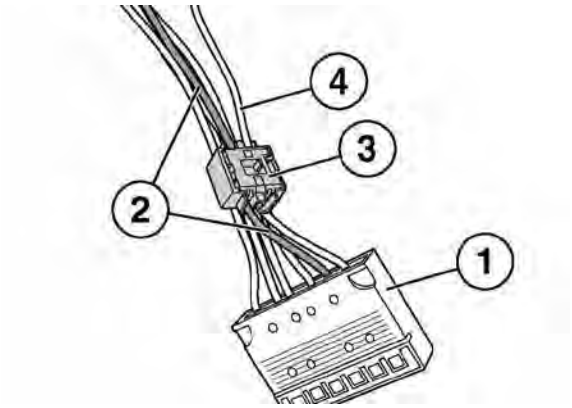
5. **<u>Optional preservation of emergency flashers on trailer when vehicle is off and locked:</u>**
To prevent battery drain, the vehicle will automatically put CANbus modules such as the trailer-control module into a sleep mode after several minutes whenever the ignition is off and the keyfob is not present. This disables all trailer lights. However, in a roadside emergency with a trailer attached, it may be desirable for the trailer's hazard lights to remain operational for an extended period of time with the vehicle off, doors locked, and keyfob not present – such as when leaving the vehicle unattended with its emergency flashers on.

For the trailer hazard lights to remain operational under such conditions, a direct (non-CANbus) connection to a tail-light turn signal is required. If this optional connection is desired, perform the following steps:

- Route the single blue/brown wire of the hitch harness to the area behind the passenger-side tail light.
- Unplug the electrical connector (1) from the passenger-side tail light.

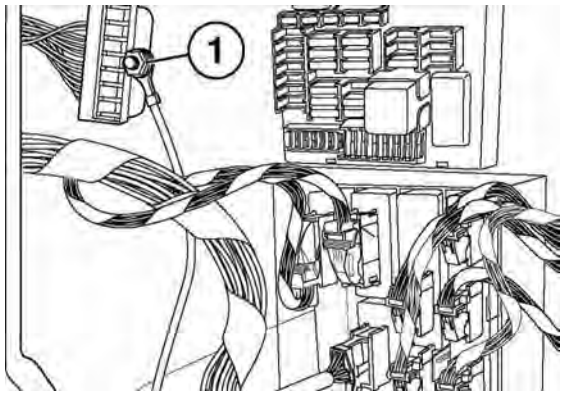


- Locate the blue/brown wire (2) of the tail-light plug. This is the turn-signal wire.
Use the wire-tap (3) (included in the kit) to connect the blue/brown wire of the taillight to the single blue/brown wire of the hitch wiring harness (4) .

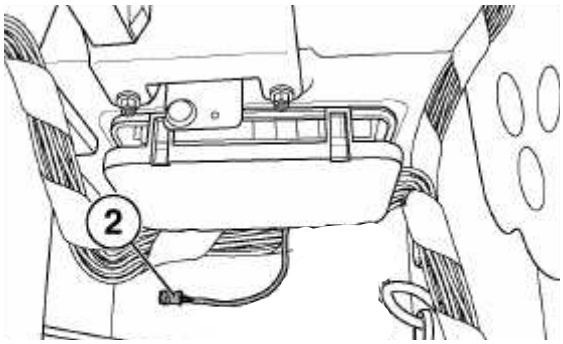


- Reconnect the tail-light plug.

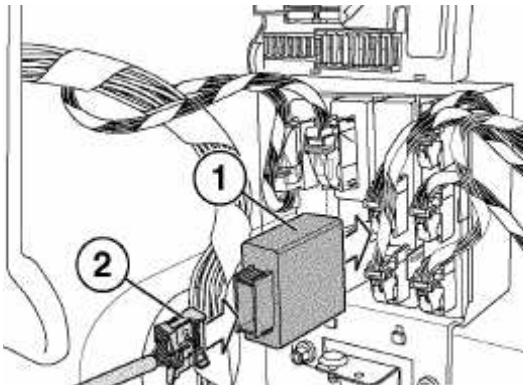
6. **<u>Connect hitch harness to Ground, CANbus, and Trailer Control Module:</u>**
   Connect the brown wire with end ring (1) on the hitch harness to the vehicle Ground stud as shown below.



Locate the vehicle's 3-wire CANbus plug (2) shown below, and connect it to the 3-wire CANbus connector on the hitch harness. Note: the vehicle's CANbus plug may be taped flat against the rest of the vehicle wire bundle and it may be obscured by the fuse panel.

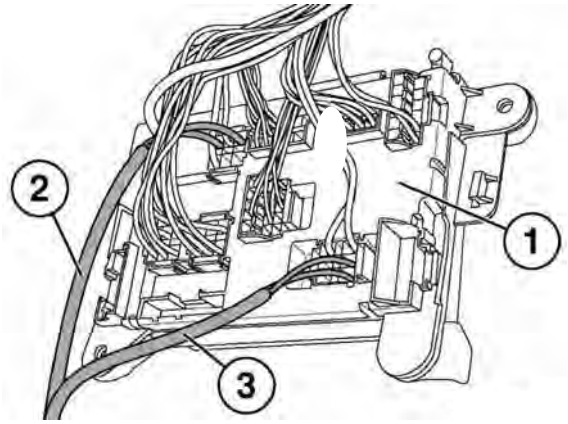


Connect the Helbako Trailer Control Module (1) to the 16-pin plug of the hitch harness (2). If there is an available slot in the vehicle electrical panel, install the Trailer Control Module there. Otherwise secure it in the battery compartment.



7. **<u>Connect the hitch harness to the vehicle's fuse panel:</u>**
   Remove 3 phillips screws securing fuse panel (1) and turn panel around to access the connectors on the back.

   Plug the two pairs of wires from the hitch harness (2) and (3) into the back of the fuse panel as shown below.



Harness pair **X11016**:

Plug the wires into the <u>blue</u> connector located at the upper left on the back of the fuse panel.

The red/blue wire into pin position 1 (upper-left corner) fuse 116.

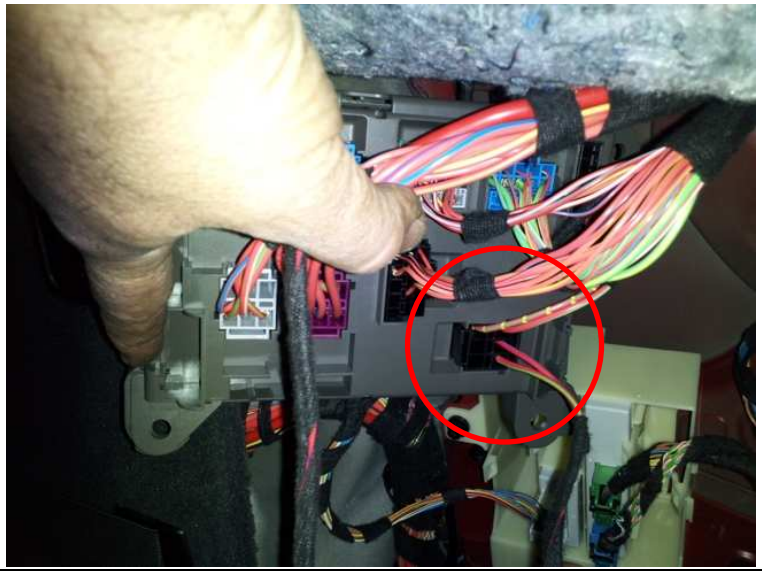
The red wire into pin position 3 (upper-right corner) fuse 118.

Harness pair **X11014**:

Plug the wires into the <u>black</u> connector located at the lower right on the back of the fuse panel.

The red/green wire into pin position 3 (lower-right corner) fuse 144.

The red/violet wire into pin position 2 (immediately above the lower-right corner) fuse 143.

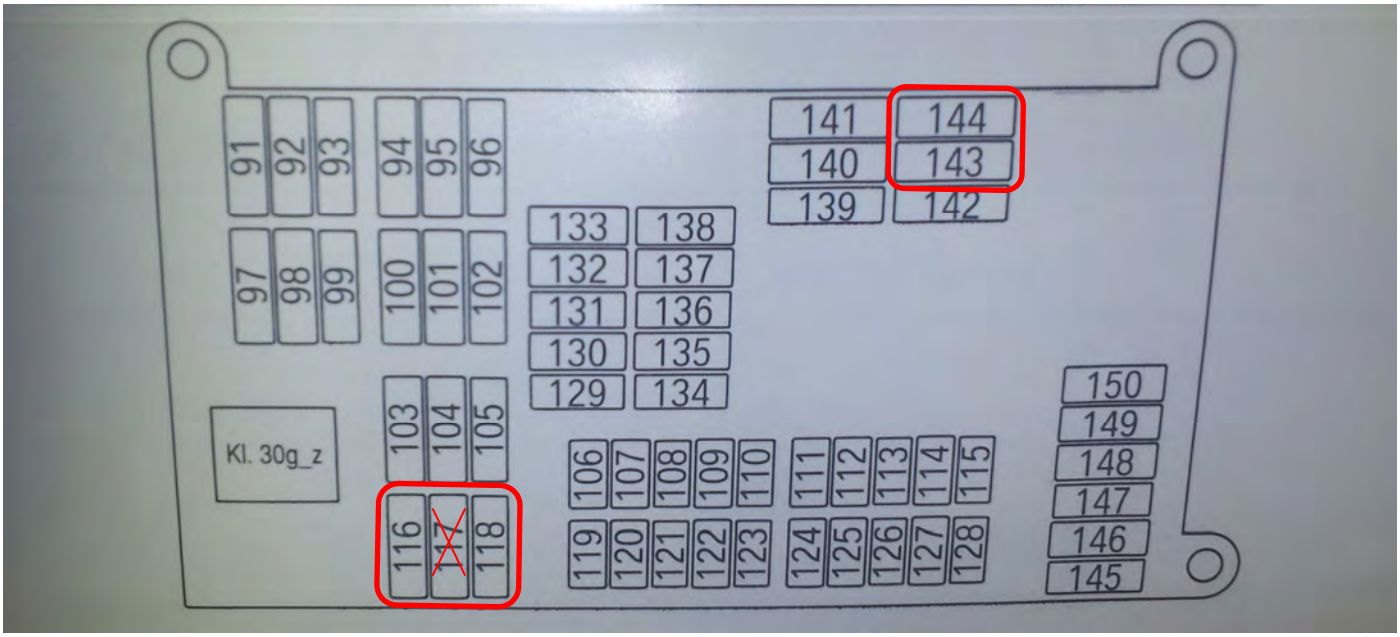


8. **Install fuses to power the hitch harness:**

Turn fuse panel back around to its front side.

Refer to the fuse layout below, and install the following 4 fuses (provided in the kit):

Install 20 amp fuse into position 116.
Install 30 amp fuse into position 118.
Install 25 amp fuse into position 143.
Install 25 amp fuse into position 144.



Re-install the fuse box.

Using the short wire ties provided, secure all slack hitch-harness wires to prevent rattles.

Replace passenger-side cargo trim panel.

If applicable, replace passenger-side plastic storage bin. (Use the replacement plastic rivet provided in the kit in lieu of the one-time-use rivet that was removed).

At the exterior, ensure the rubber grommet of the harness is properly seated in the body access hole. Then, using the long wire ties provided, secure the harness to the hitch beam.

All wiring is now complete. The vehicle must be reprogrammed before the trailer lights will work properly.