

JAGUAR XK8 - 1998 Brake Switch replacement

Quick brake switch serviceability check

Quick check to confirm serviceability is to disconnect the white connector plug from the brake light switch which is located up and behind the brake pedal internally near the brake booster. There are four pins on the brake switch female plug that are shown below.

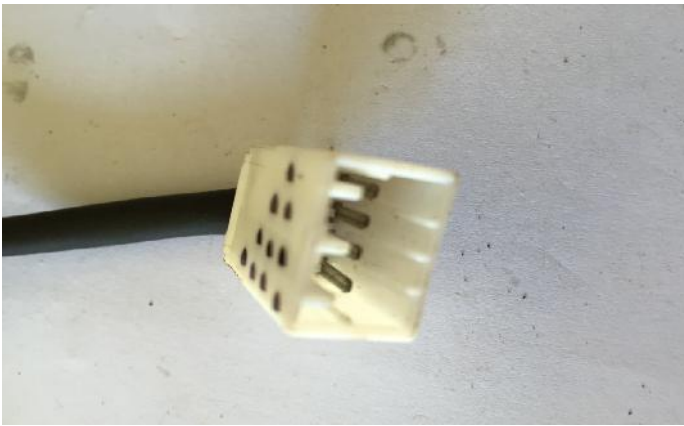
*** Please note that the gearbox will not release from the PARK position with the brake switch disconnected.**

Testing the two OUTER pins (1 and 4) first:

The two OUTER pins (shown as pins 1 and 4) are the normally closed (NC) micro switch that connects the **cruise control** when the brake pedal is NOT depressed. This is probably the most likely to fail, as it is constantly under load when the centre console cruise control button is selected to ON. Connect your multimeter to pins 1 and 4 and then select the beep mode for a constant audio signal. Whilst connected to the meter, be sure to press and wiggle the brake pedal to identify if the micro switch has an internal fault. Pressing the brake pedal slightly down should break the switch contact and stop the audio beep.

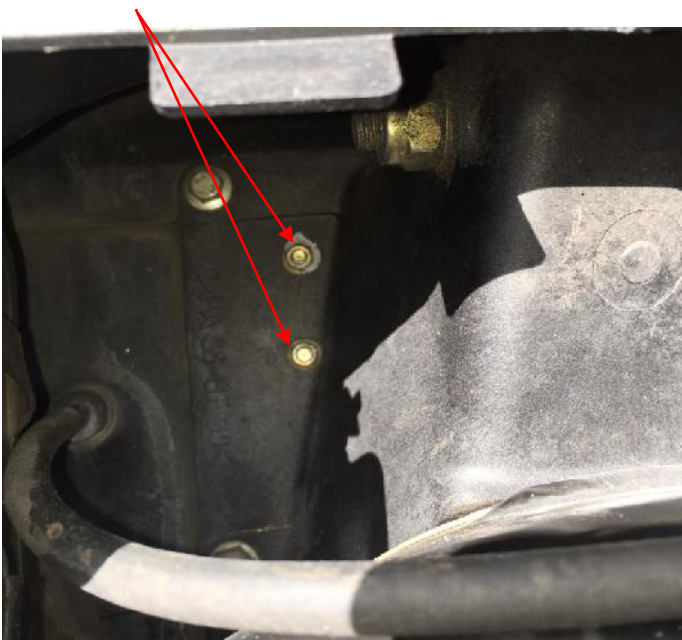
Testing the two INNER pins (2 and 3):

The two INNER pins (shown as pins 2 and 3) are the normally open (NO) micro switch that connects the **brake lights** when the brake pedal IS depressed. It would be rare for this micro switch to fail as it is rarely placed under load. There should be an audio beep when the pedal is depressed which should stop when the pedal is released.



Removing the brake light switch from the vehicle

Open the bonnet, remove the plastic brake booster cover above the brake pedal location (RHD shown). With an 8mm socket, remove the two x 8mm nuts behind the brake booster as indicated below.



Return to the inside of the vehicle, depress the brake pedal and pull down on the brake pedal switch to remove it from the vehicle. This may take a little patience and a wiggle or two to get it out.

Option 1 - Replace

A genuine Jaguar XK8 '98 brake switch (**LJB6420BB**) retails at around US\$150 and may take some time to deliver. If you're happy with this, order one now and head to the re-install guide on page 3.

Option 2 - Repair

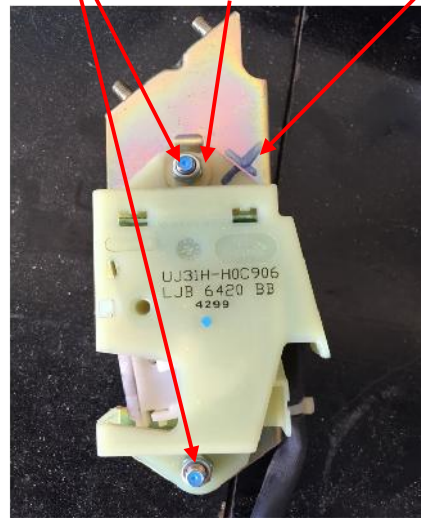
Most of the mechanism will be fine, except for the micro switches which probably need replacing. This is a relatively simple task if you have a small drill and soldering iron. Jaguar used Cherry micro switches which are no longer readily available, so drop into Jaycar or Radio Shack and pick up two standard GE3-11 switches which are rated at 3amp. These are listed in Australia as Jaycar part (SM1038) Price - \$5 each.

It's important to note that although the original Cherry micros have both (NO + NC) contacts in each switch, you only require one switch with (NO) contacts and the second switch with (NC) contacts for our purpose

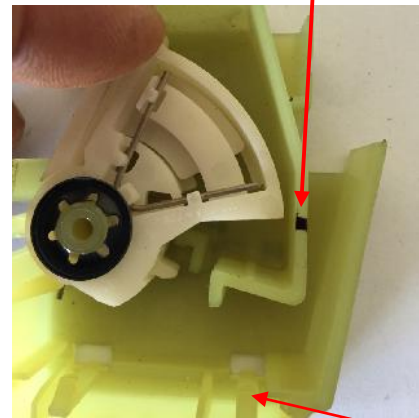
Replacing the micro switches

1) Remove the 2 x 8mm nuts to release the metal backing plate. It may be a good idea to also witness mark its position for reassembly.

*** Note that the top nut has a plastic washer.**

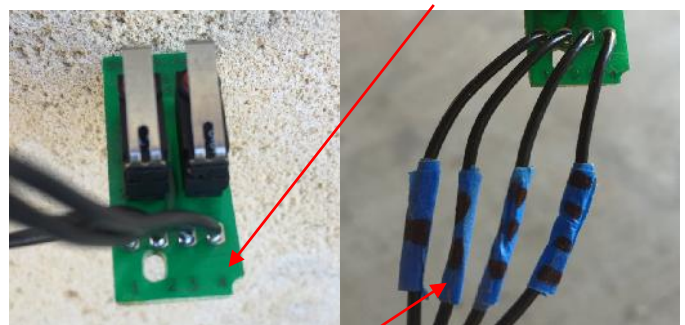


2) Mark the rotating cam position where the micros make first contact.



3) Remove the internal micros & PCB by pressing the 2 plastic lugs.

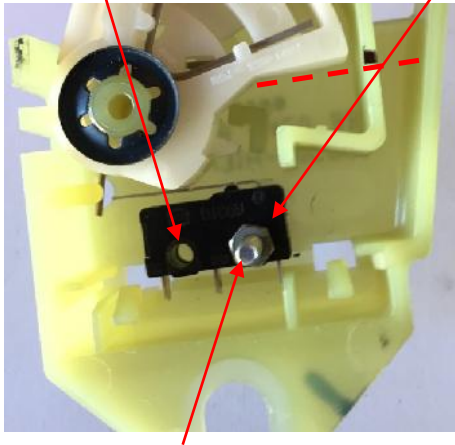
4) Note that the PCB has terminal numbers 1, 2, 3, 4 stamped for indent.



4) Marking these wires from 1 to 4 will make next phase easier.

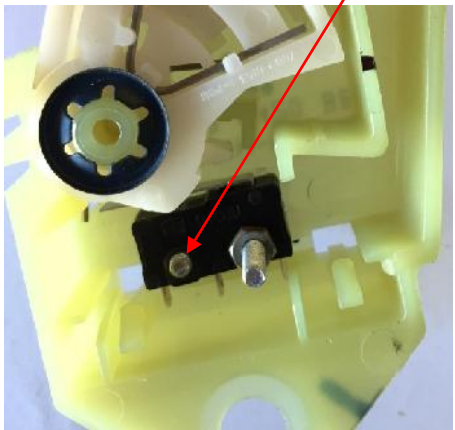
Installing the replacement micro switches

5) With the cam rotated to the micro contact position (step 2), place one of the new switches into position with the micro switch just at the point of contact and drill thru the plastic housing on the RHS only as shown. Do NOT drill the 2nd locating hole at this point.



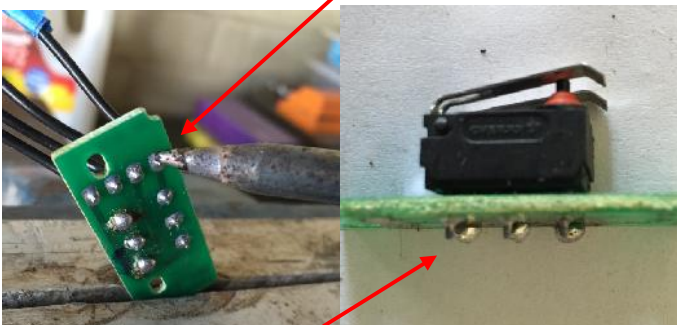
6) Install a single metal thread and tighten enough so the micro is firm.

7) With the cam in the micro contact position (step 2) rotate the micro so that the switch makes initial contact. Drill the second hole (LHS) thru the plastic housing in this position.



8) Remove the micro switch to prepare it to attach the wiring harness.

9) Free the original wiring harness from the PCB with a soldering iron.

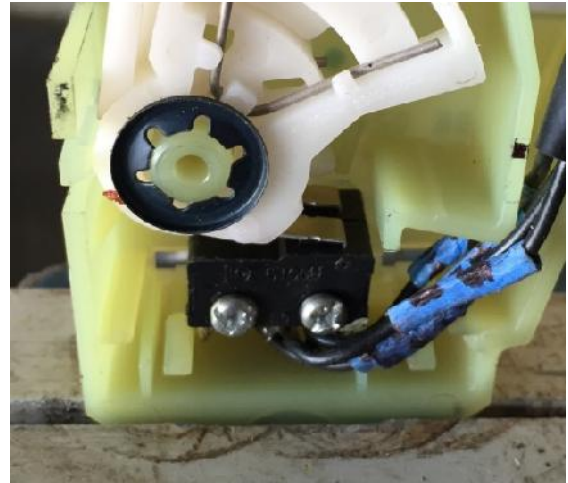


The 2 x Cherry original micros have both NO and NC contacts on each switch, however one switch is used on the (NC) side ONLY (cruise control function) and the second switch is used on the (NO) side ONLY (brake light function). The wiring harness will be soldered onto the two new switches which will be paired one on top of the other in situ after the connections are made. Throw the PCB and switches in the bin.

Soldering the harness to micro switches

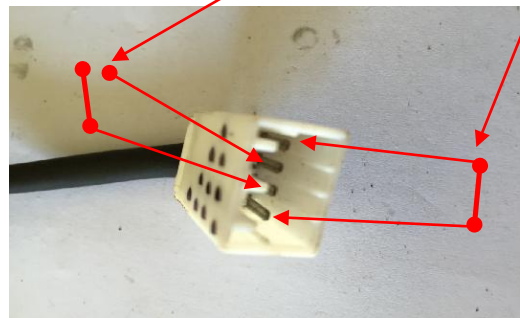
10) Bare and tin the wire ends then solder to the micro terminals.

Wires (1 + 4) OUTER to the normally closed (NC) pins
Wires (2 + 3) INNER to the normally open (NO) pins



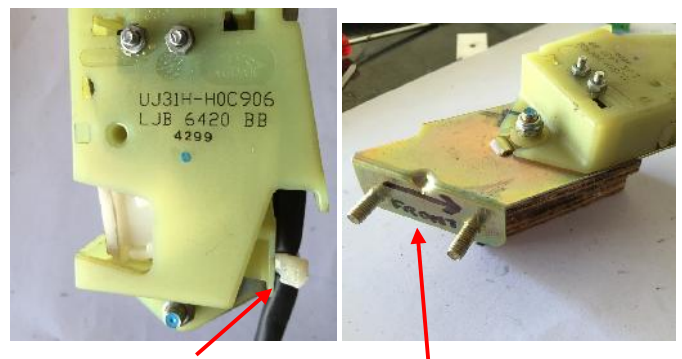
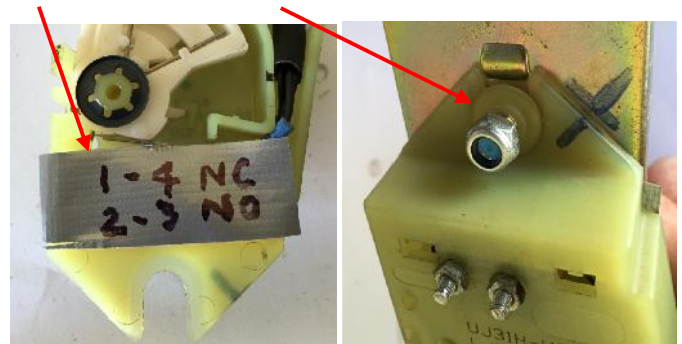
11) Install both micros into the housing, fine tune the micro 1st contact point, then tighten the metal thread screws when in position. These two micros don't need exact syncing, as their functions are not inter-related.

12) Multi meter beep test the harness plug OUTER two pins are (NC) and the INNER two pins are (NO)



12) Check that the micros still function correctly after soldering. Always place the soldering tip heat onto the wire and not the micro terminal as you may melt the micros plastic housing thru heat transfer via the pin.

13) Apply an insulating layer over the micros before installing backing plate, ensure the plastic washer is inserted on one end of the housing.

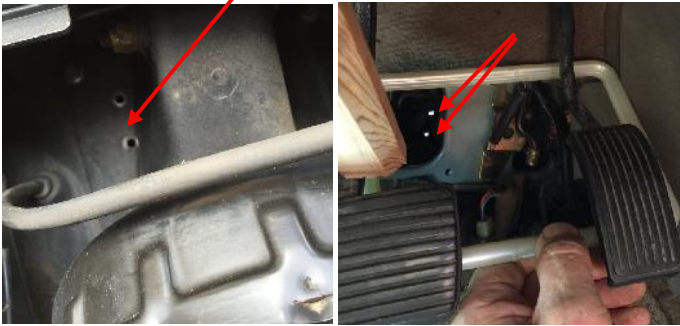


14) Zip tie harness to housing, mark back plate direction for orientation.

Brake light switch installation

This part can be made difficult and time consuming, or made simple .. It can be done single handed if you set yourself up properly first.

1) Tie a small round sinker on the end of some light fishing line, then drop the sinker and line thru the FRONT mounting hole from above.



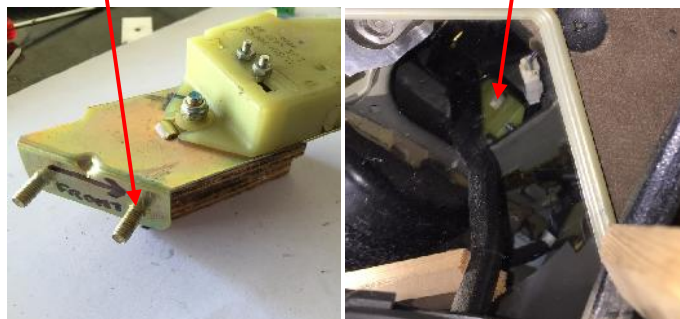
2) Cut a 180mm (7") piece of softwood to hold the brake pedal in the depressed position to allow more access whilst working below.



3) Set yourself up with a few good LED work lights around the foot well area, a stable working platform and add some comfort.



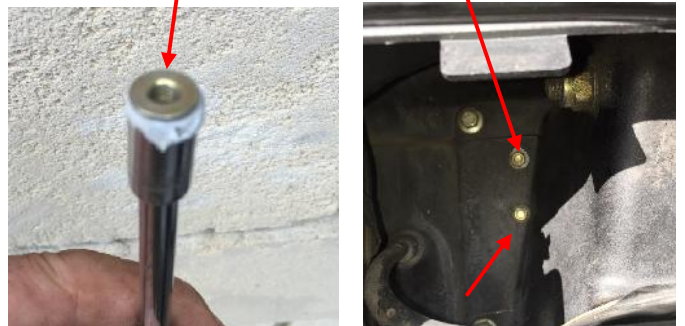
4) Remove the sinker and tie the fishing line onto the FRONT thread of the backing plate, place the unit as close as you can into final position.



5) When the unit is roughly into position by hand, withdraw the fishing line from above and apply tension to the line by securing the line to the bonnet. You can then fine tune the forward locating bolt of the backing plate into position laying on your back on the platform. This may take a few attempts, but have patience as the tension on the line will guide the bolt. I found when working upside down in reverse with a mirror, that the units actual position is a lot closer to the rear of the car than you think. Once the forward bolt is in position, the aft bolt is easy to wiggle in and locate. You could tie an additional line onto the rear bolt if you wish, but this may become a tangled mess and is not essential, in my opinion.

Brake light switch installation

6) Place nut into the 8mm socket with some Bluetack or chewing gum. As the front bolt is still attached to the fishing line, loosely screw the nut onto the REAR bolt first, then cut the fishing line free from the FRONT bolt and screw its nut into place. Tighten the rear nut up to finally secure the unit in place.



7) Locate the male and female harness plugs and apply enough pressure until they click back into position. It only fits together one way.



8) Check the wiring harness is free from sharp edges and moving parts. Exercise the brake light switch cam plastic trigger before releasing pedal.



9) There is an L-shaped metal rod attached to the brake pedal arm which activates the brake light switch trigger mechanism. Hold downward pressure on the pedal and remove the timber batten then slowly relax the brake pedal back to the normal position, making sure that the L-bar enters the trigger area at the correct point. It's highly unlikely that it's not perfectly aligned, but more as a precaution.

10) Clean up your tools around the engine bay, put your fishing rod back in the boat, pull your handbrake on tight, step on the brake pedal and start your engine. If you can't get the gear lever out of PARK, return to step one on page one. Otherwise, head out for a test drive and check your cruise control operation, don't forget to also check your three brake lights are all illuminating as per normal operation.

Replacing the micro switch was a 30min exercise plus another 30mins for me to source the parts. You have to remove the unit from the car anyway, so for an hours work it's a saving of \$150 and you end up with a more robust product, that will last longer than the original part. Removal was 15mins and reinstallation 45mins, completed in 2hrs total.