

## **Retro fitting an XJ40 TPS in lieu of a Bourns TPS on a HE V12**

As used on my '85 XJ-S V12 HE.

### **FIRST THINGS FIRST.**

The TPS wiring pigtail has 3 colours, Red, Green, Yellow. They terminate at a plug of the chassis loom, about 6" from the TPS. At this plug they change colours to Yellow/Black, Yellow/Pink, Yellow/White. **WRITE THESE DOWN**, you will need this information later.

Firstly, remove the old sensor, 3 screws, from the bottom of the throttle capstan plate.

There are a few ways of retro fitting the XJ40 unit to the throttle pedestal. You may have your ideas, good.

My fitment was to use a 2 ½" "cup type" core plug (that is what I had lying around), it is about ½" thick, drilled a hole in the middle, then carefully file that hole to a diameter that allowed the "boss" of the new TPS to go thru it, accuracy is not that important. Some core plugs a "curved" on that face, mine was, so I simply tapped (bashed actually) with a large flat steel plate to get it flat, you need it flat, so that the 2 mounting tabs of the new TPS sit flat on that surface, and being made of brass it was simple to convince it that flat was what I wanted.

You could make an adaptor out of aluminium if you have access to a lathe, and can turn up whatever takes your fancy, I don't, so what I had lying around made sense.

I then transposed the 3 mounting hole locations to the core plug (I used the old TPS for that), and drilled 3 holes. I found 3 screws a bit longer than the original mounting screws and screwed the core plug to the capstan plate.

Then came the adaptor for the drive of the new TPS. The shaft thru the capstan plate has a "D" shaped end, and the XJ40 TPS is a "tang" drive, and because of the core plug thickness they don't meet, good. I found a piece of spacer tube with a bore that slid snugly over the shaft of the pedestal 5/16" I think, I carefully shaped one end to form a "D" that was a firm fit on the original drive shaft, I then took some time to measure the length of the adaptor I needed. This was basically trial and error, by cutting a small

amount off the adaptor tube each time until I got the TPS to sit flat with the adaptor in place, not hard by any means. Once this was achieved, I used JB Weld to attach the adaptor to the original shaft.

Since the “tube” I used for the adaptor had a good thick wall section, I simply drilled and tapped the side and used 2 screws opposite each other to form the “tang” drive, and since the XJ40 TPS is “spring loaded” to idle return position accuracy is not critical here.

I then plugged the TPS into the socket and turned ON the ignition, and “probed” the Red and Yellow wires at the chassis loom connector. Using the wiring colour convertor you wrote down at the beginning. I forget coz my car has been COMPLETELY rewired under the bonnet/hood, with MANY alterations), so I simply used the process of elimination to get the 2 wires I needed for adjustment metering. I then moved the TPS around rotationally till I got a reading somewhere near what is required, then I marked the position of the “slots” onto the mounting face of the core plug, then moved the TPS again to recheck my markings, I did this many times until I was satisfied that once drilled I would have sufficient adjustment. I then drilled/tapped 2 holes into the core plug, and used 2 screws to hold the new TPS in place, then did the adjustment, finally locking it down, refitted the pedestal, adjusted the cross rods, NEVER touched it since.

Please note:

Jaguar once supplied a TPS fitting kit for the “new upgrade TPS”, and that “new upgrade TPS” was in fact the XJ40 style unit. That fitting kit is NLA from Jaguar. It was expensive at the time.

Update, May 2017: The “old style Bourns TPS” is once more available from Jaguar Independent Parts Suppliers. This might be an option for some owners.

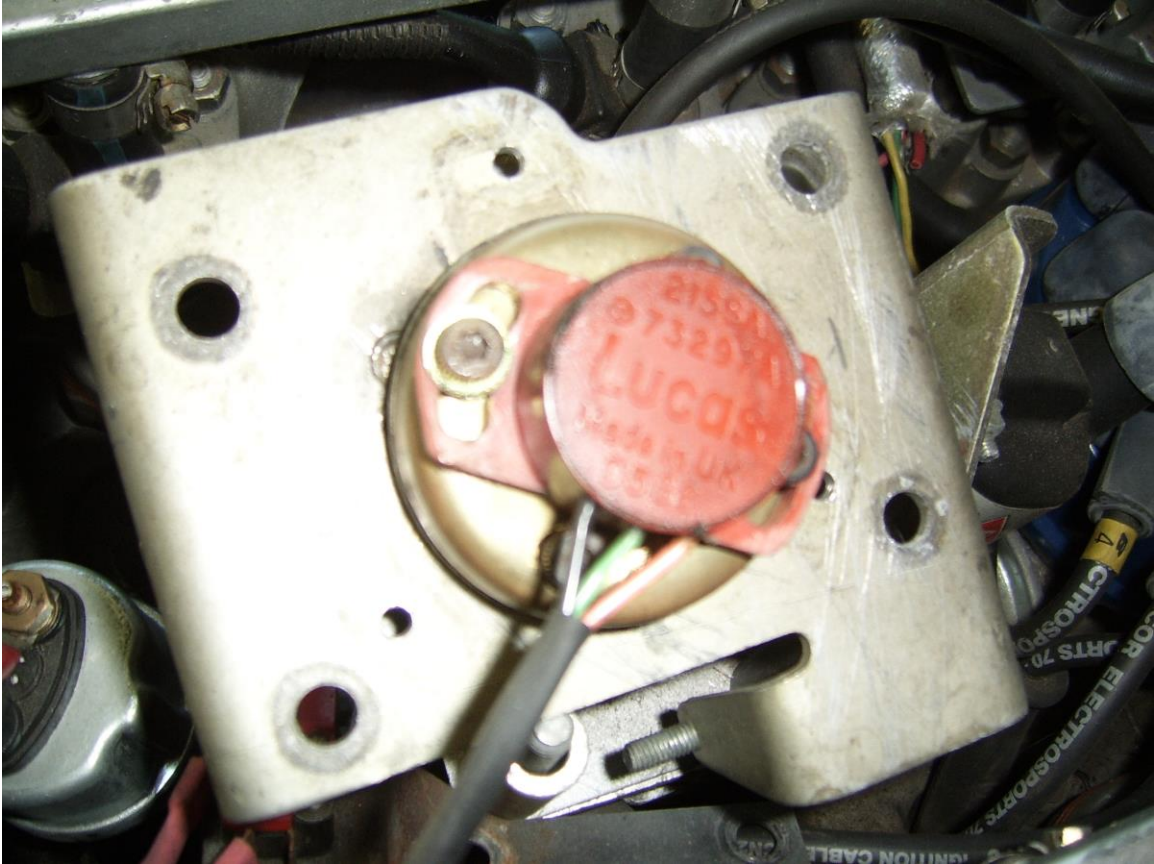


Figure 1 TPS finished



Figure 2 TPS core plug adaptor