Repair Instructions
for Replacing the Display of the IPK

The malfunction described within this document can occur without any mechanical impact, especially at low temperatures. Although not activated, some pixels of the display may be illuminated. The number of affected pixel will grow over time. This effect is irreversible, so the IPK unit will have to be replaced finally, which is quite expensive. Alternatively you can replace just the display, providing that you are good at soldering very small parts.

Figure 1: Display malfunction

The disassembling is a little bit complicated. First you will have to remove two screws holding the cover, then another one which is holding the IPK in place.


Figure 2: Removing the cover


Figure 3: Unscrewing of the IPK

The IPK is hold in place by two additional clips at the back. You can tilt it like shown in figure 5. The author did so by loosen the dashboard as shown in figure 4.

Figure 4: Removing the IPK

Figure 5: Disconnecting the plug

In order to disassemble the IPK you will have to remove some torx screws at the back. The rest is just clipped on. For now access to the circuit board is sufficient (fig. 6). For unsoldering of the flat cable the author recommends the usage of a microscope (fig. 7). Leave the display in its position to avoid tearing off the flat cable.

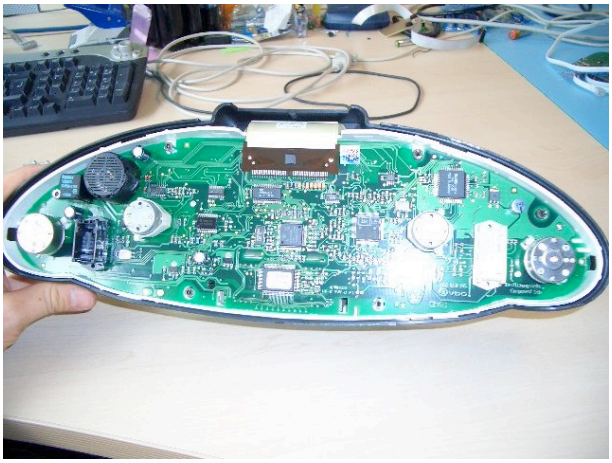

Figure 6: Populated circuit board

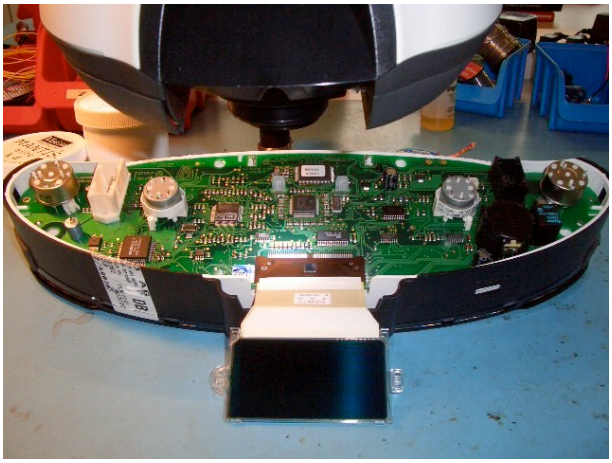

Figure 7: Unit below a microscope

The soldering iron should have a narrow end and not exceed 25 W. This will avoid damage to the circuit board. But don't start this work without a desoldering blade (fig. 8).

As an alternative you can brake the connection of the flat cable by moving the display and its cable back and forth carefully, when the display has already been detached from its base (fig. 7). The soldering joints will brake just below the foil. NEVER drag at the display to avoid tearing off the contacts. So better start with the defective display first. Figure 9 shows the different results of both methods.

Figure 8: Working with the unsoldering device

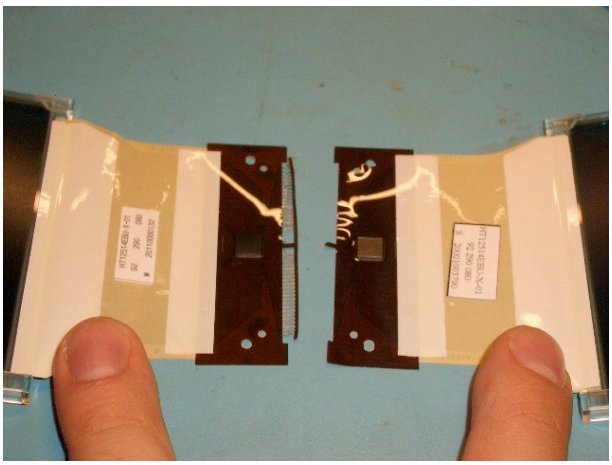

Figure 9: Comparison of results

In order to remove the display you have to remove the front cover of the IPK. First remove the reset button for the trip counter by pulling it away (fig. 10), then the cover. Now remove the surrounding trim, but avoid touching the needles (fig. 11).

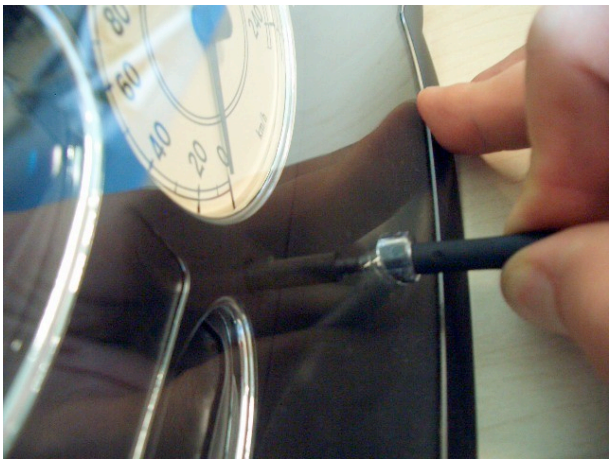

Figure 10: Removing the rubber button

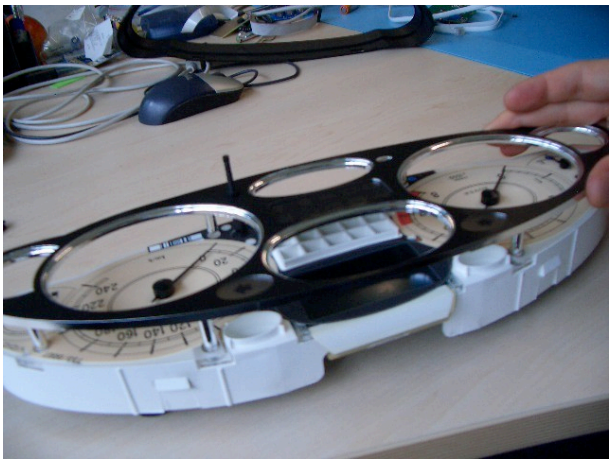

Figure 11: Removing the front cover

Use a small lever to unclip the display. There is no need to remove the background of the speedo (fig. 12 and 13).

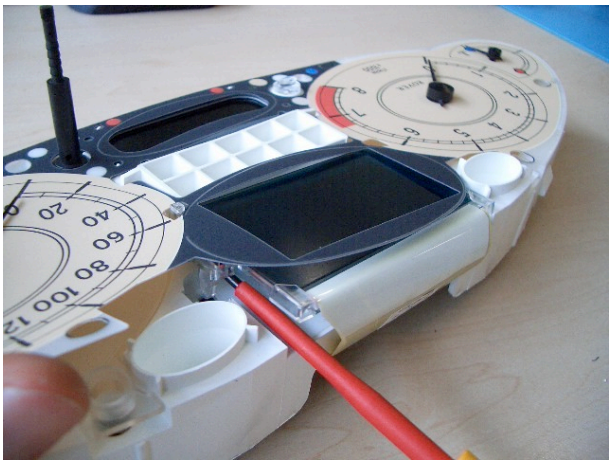

Figure 12: Detaching of the clips

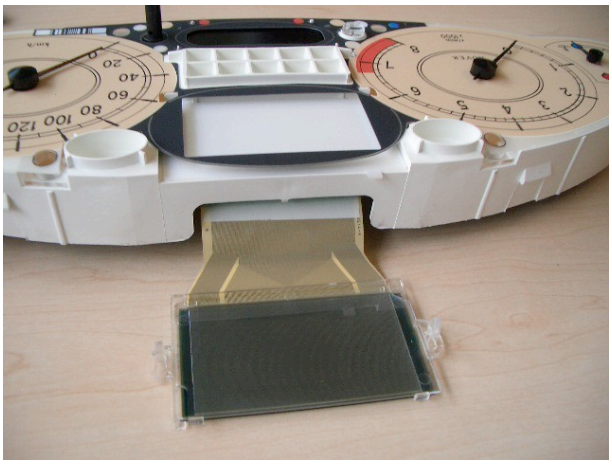

Figure 13: Back side of display with connecting flat cable

Providing the flat cable has already been disconnected, you can start to connect the new display. A fixation with hot glue may be helpful. Figure 14 shows the reattached flat cable.

Now reassemble the IPK in reverse order. The most difficult part has been the refitting of the dashboard, so the author recommends to avoid disassembling this part.

Figure 14: Flat cable soldered on

Figure 15: Flawless display

The method described within this document is just a suggestion by the author. The owner of the car is still fully accountable for all consequences arising from his/her work based on this instructions.