

VW Golf Mk6 Instrument Pack - Solderless Programming Adapter

Issue 1.0

Applicable to: *VW Golf Mk6 Models fitted with VDO Instrument Packs*
Also some related models, eg. Scirocco, Caddy, Transporter
Skoda Yeti
(All these versions have NEC processor and 24C32 or 24C64 EEPROM)



- **Allows the EEPROM to be read and programmed in-circuit.**
- **No need to remove needles or disconnect the LCD.**
- **Only the back cover of the instrument pack needs to be removed.**
- **No soldering required.**
- **Precision made in the UK.**
- **Compatible with Orange 5, Codex and UPA programmers.**

Instructions

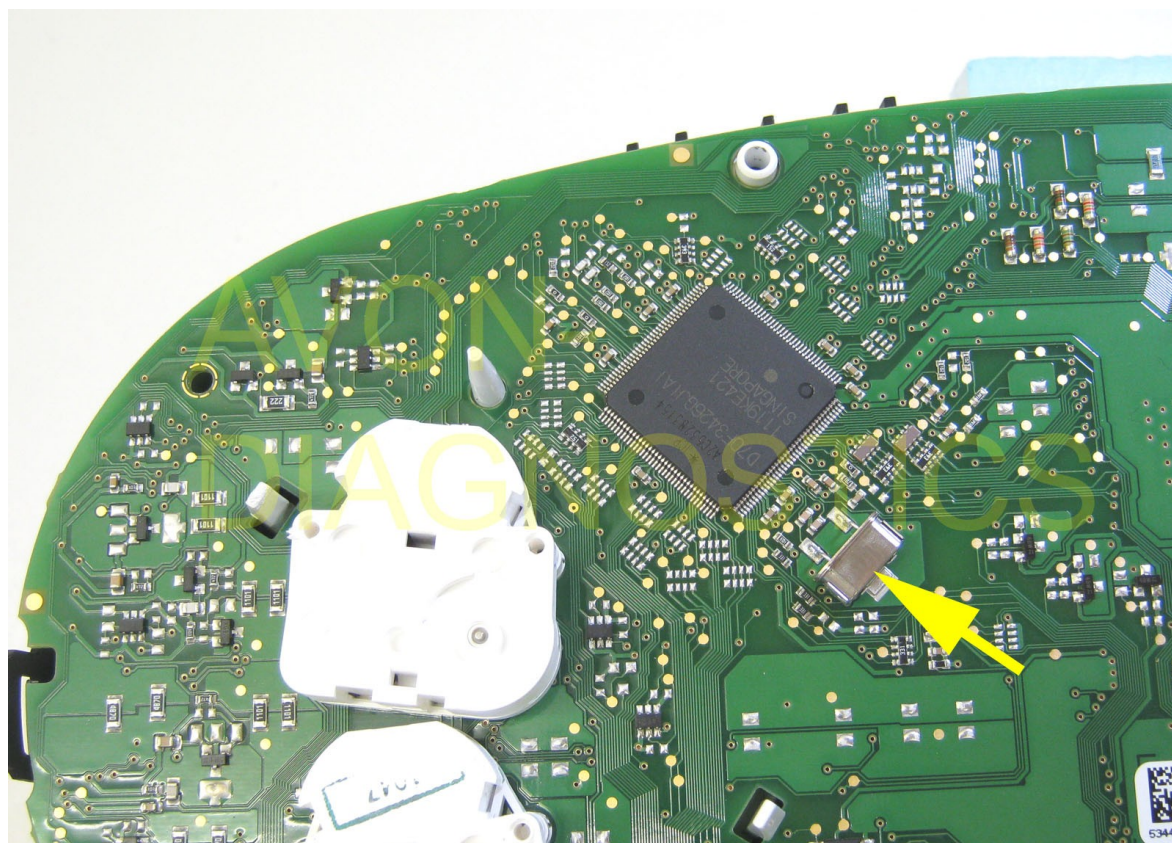
Two Adapters are supplied in the kit, marked 'Type A' and 'Type B'. This is to cater for the two different PCB layouts which are found in these instrument packs.

You will need to secure the instrument pack to prevent it moving around during programming operations due to its curved shape. Use the expanded polystyrene prop supplied in the kit.

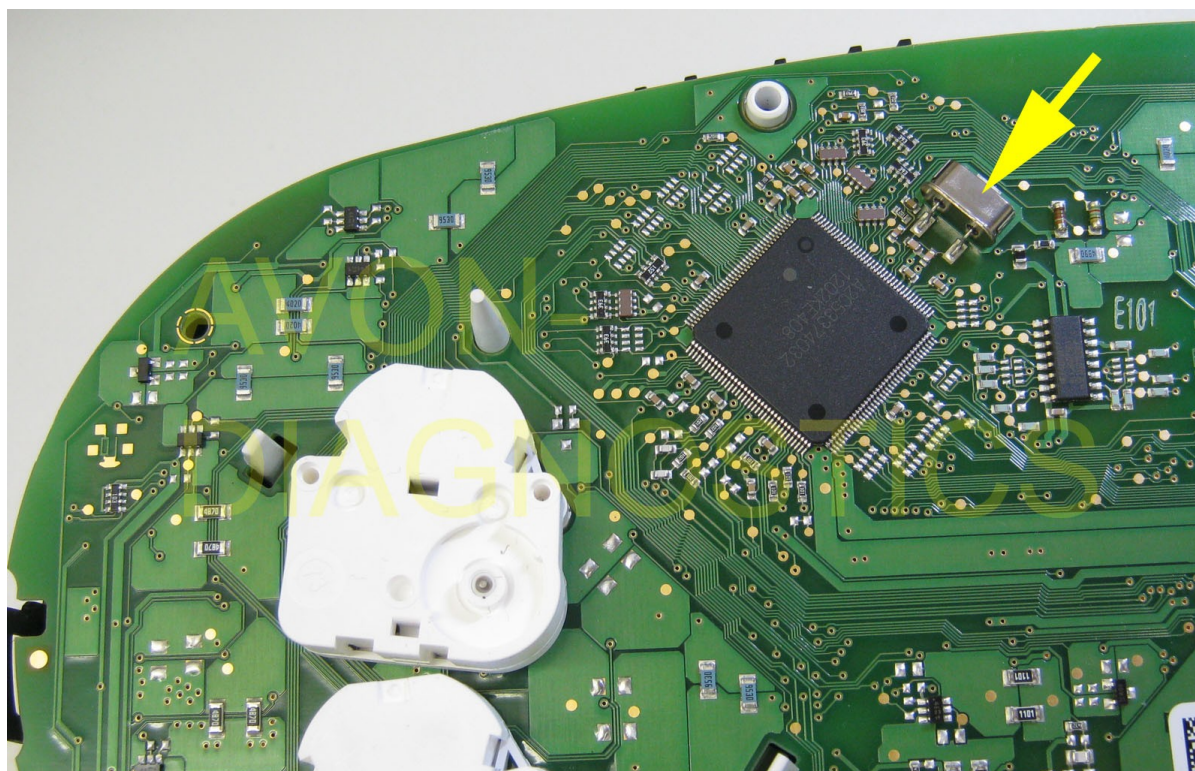


2) Remove the back cover of the instrument pack, and determine which type of PCB layout is present. Use the appropriate adapter.

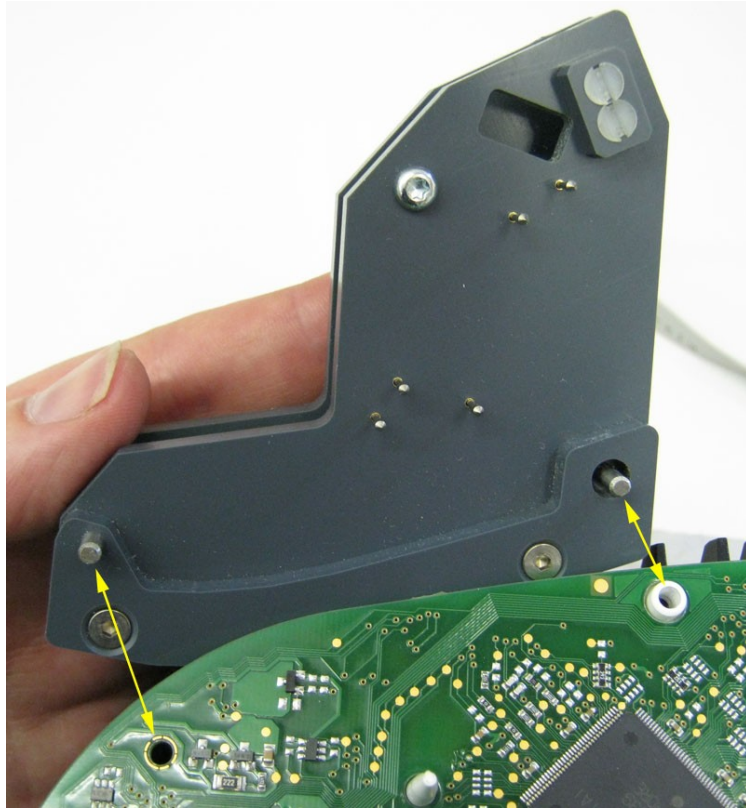
Type A PCBs have the crystal in the position shown arrowed. The crystal is the component in the small silver can in the photo:



Type B PCBs have the crystal in this position, again shown arrowed below:



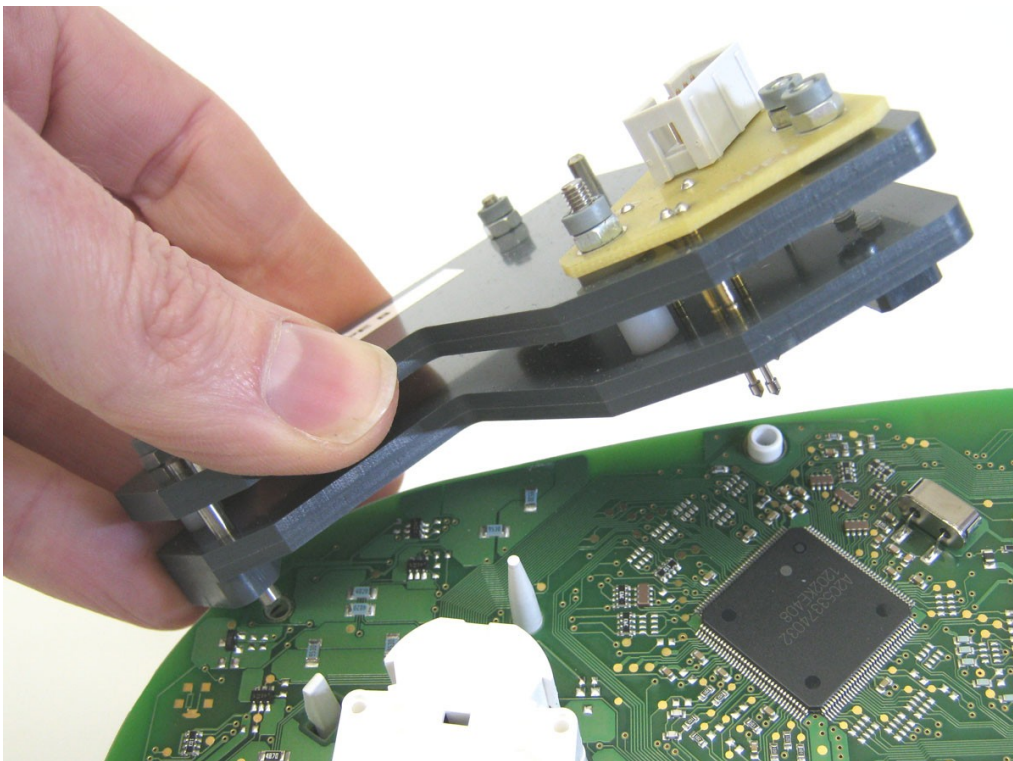
3) Locate the Adapter onto the back of the PCB, using the location holes shown



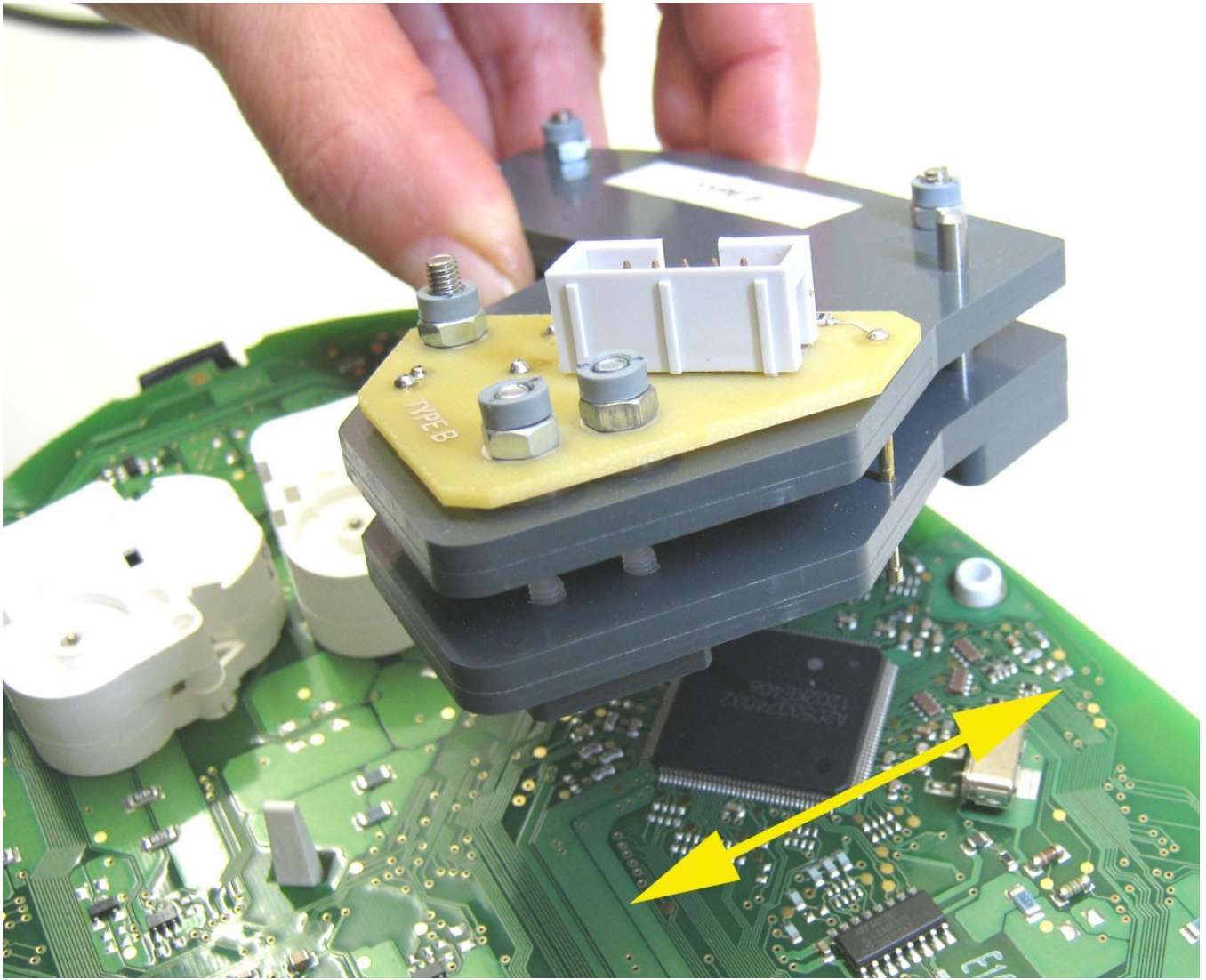
Try to avoid dragging the pins sideways over the PCB whilst aligning the pegs to the location holes.

The best technique is as follows:

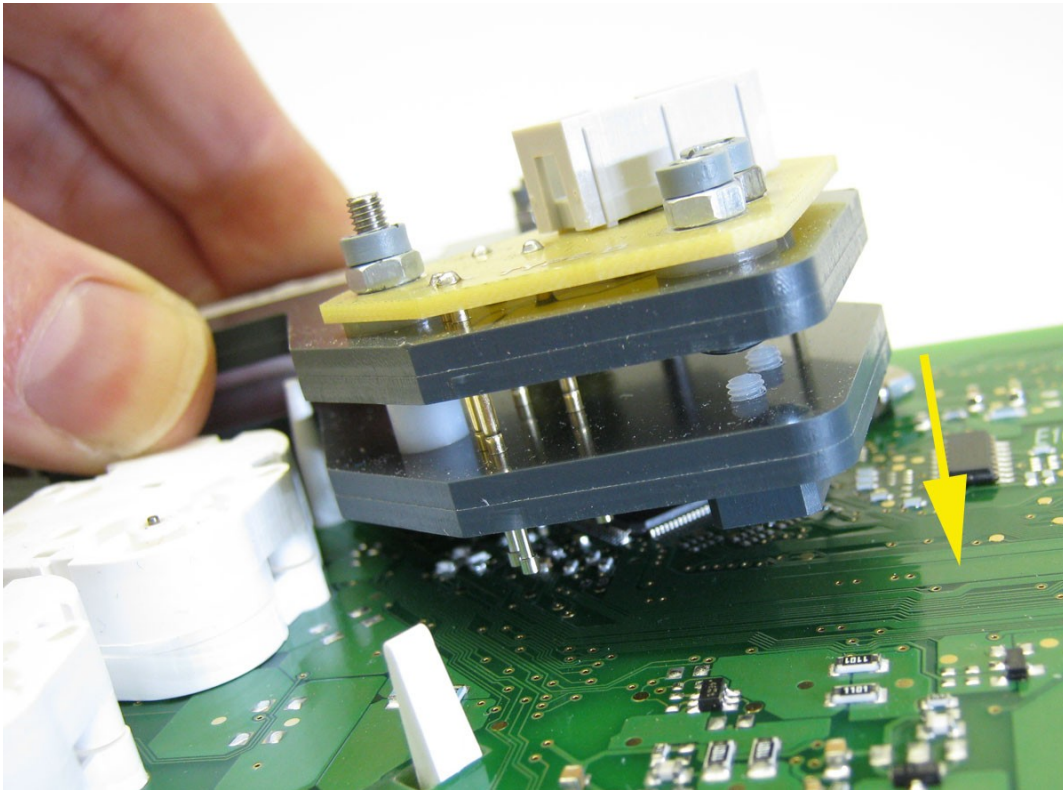
Firstly locate the left hand pin, whilst holding the rest of the adapter off the PCB



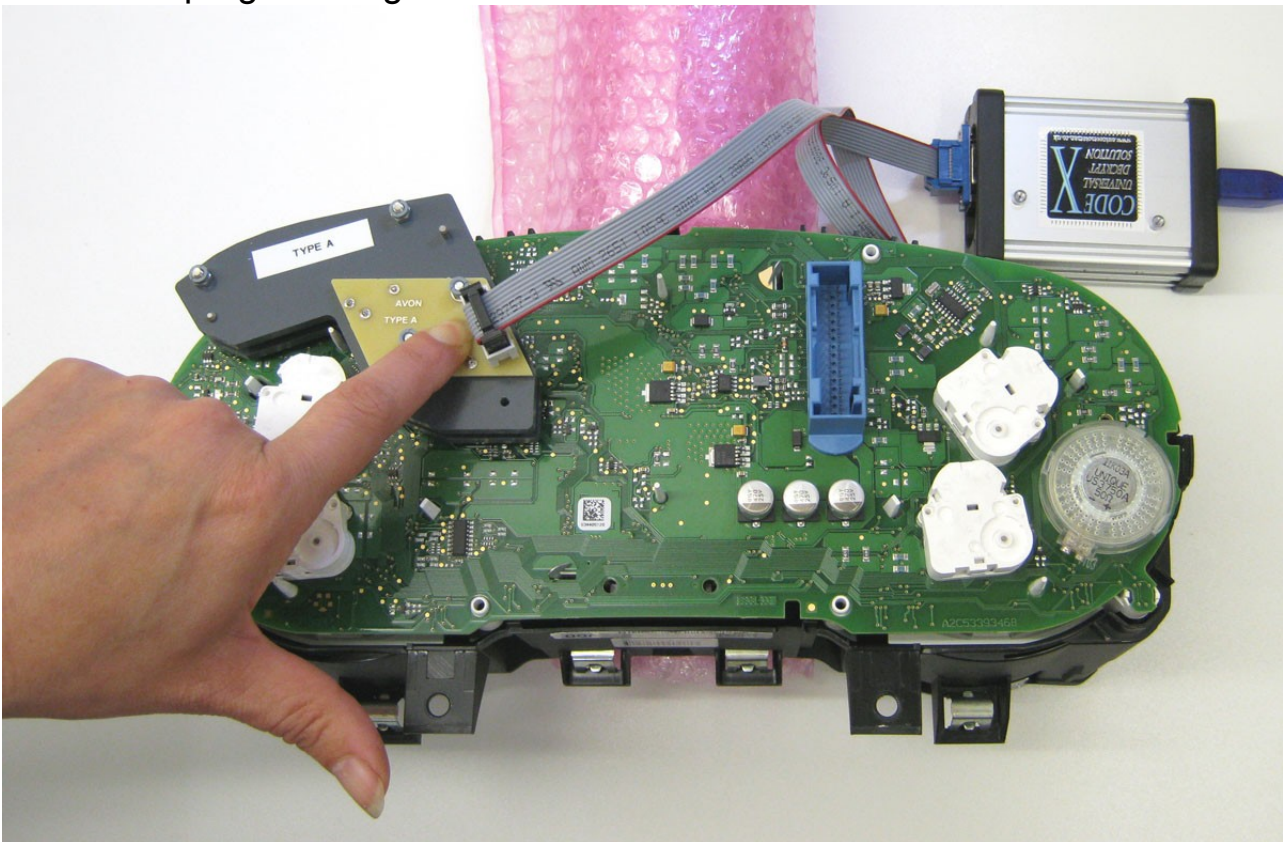
Secondly, swivel the adapter around on the left hand peg, until the right hand peg lines up with the white plastic boss on the instrument pack.



Finally push the adapter down until the foot on the adapter touches the PCB.



4) Once in place, use light finger pressure to hold the contact pins against the pads on the PCB whilst programming:



Kit Contents

- Type A Solderless Programming Adapter
- Type B Solderless Programming Adapter
- 50cm Data Cable for Codex or UPA Programmer
- Laminated Visual Guide to show Type A and Type B PCBs
- Box / Enclosure with moulded inserts for protection
- Expanded polystyrene support for Instrument Pack
- Optional – Adapter to allow connection to Orange 5 Programmer



Known Part Numbers

The kit has been successfully used on the following part numbers of instrument pack. Note that list isn't exhaustive, however all these part numbers refer to VDO packs.

5K0 920 961	TYPE B
5K0 920 962A	TYPE B
5K0 920 972	TYPE A
5K6 920 971A	TYPE A
5K0 920 960N	TYPE B
5K0 920 970J	
2K0 920 966A	TYPE B
7E0 920 960C	TYPE B

The kit will **NOT** work with instrument packs manufactured by Magnetti Marelli.

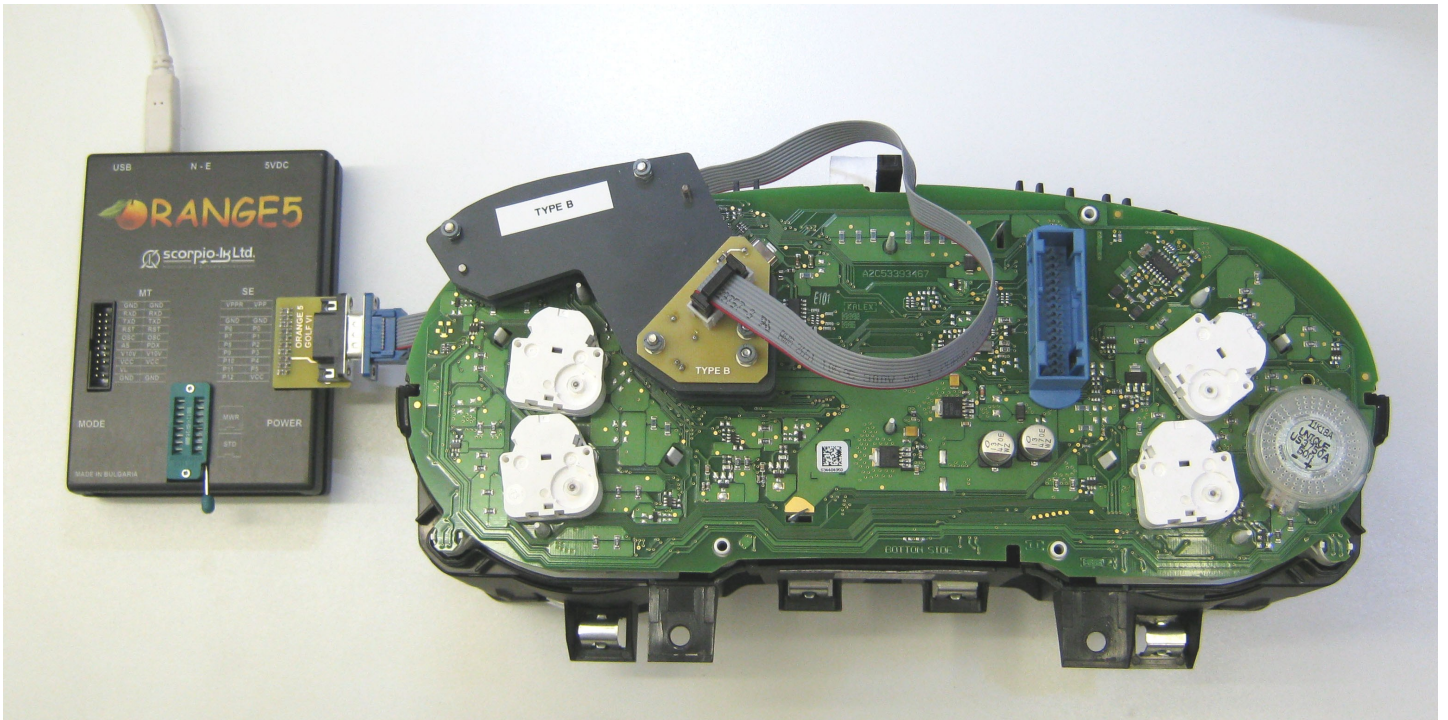
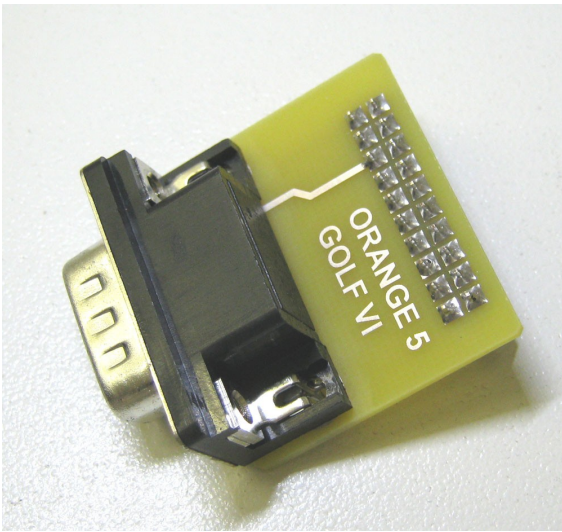
If there is sufficient demand, we will produce a separate tool to cater for Magnetti Marelli instrument packs.

Connecting to the Programmer

For Codex or UPA programmers, the blue 9 way D type connector on the ribbon cable simply plugs into the programmer.

For the Orange 5 Programmer, and for Omega Programmers, the Orange 5 sub adapter is needed.

This plugs into the right hand header on the Orange 5, marker "SE":



Confirming That The EEPROM Has Been Read Correctly

Look at the ASCII (right hand) side of the memory dump.

This should contain the text ‘‘Kombi’’ ‘‘Immo’’ and then the VW part number that appears on the label on the bottom of the instrument pack.

This is highlighted in blue in the example below.

This data should start at approximately 00E40 :

The screenshot displays a memory dump window titled 'Golf_2011_IPK_Example_1.bin - Orange5'. The window shows a list of memory addresses and their corresponding data. The data is presented in two columns: hexadecimal (left) and ASCII (right). Red arrows point to the ASCII strings 'EU_Kombi_UDS_UDD' at address 00E40 and 'Immo_UDS_UDD_RM09' at address 00E90. The data at address 00E40 is highlighted in blue in the original image. The ASCII view shows '259__c0705jjjjjj' for the address 00E30 and '5KEV_I' for the address 00E90. The bottom of the window shows 'Type: ST M24C64 (8 Kx 8) Socket: I2C' and 'vcc 5.00V'. The status bar at the bottom indicates 'Load 8 Kbytes from file 'Golf_2011_IPK_Example_1.bin''.

Hex Address	Hex Data	ASCII Data
00DC0	FF FF FF FF	????????????????
00DD0	FF FF FF FF	????????????????
00DE0	FF FF FF FF	????????????????
00DF0	00 00 00 00	.....@..M.....
00E00	00 00 00 00	.....
00E10	00 00 00 00	.....
00E20	00 00 41 30	..A04089A2C53424
00E30	32 35 39 5F	259__c0705jjjjjj
00E40	45 56 5F 4B	EU_Kombi_UDS_UDD
00E50	5F 52 4D 30	_RM09...j..@..M
00E60	00 06 40 16	..@..M..a.....
00E70	00 00 00 58	..X001.....
00E80	00 00 2D 2D	.....5KEV_I
00E90	2D 2D 2D 2D	Immo_UDS_UDD_RM09
00EA0	6D 6D 6F 5F	.....A030085K692
00EB0	00 00 00 00	.....0971A 5K6920971
00EC0	30 39 37 31	A 00000000000000
00ED0	41 20 20 30	00000000000000H
00EE0	30 30 30 30	2004200023000600
00EF0	32 30 30 34	0900000000000000
00F00	30 39 30 30	00000000000000@.
00F10	30 30 30 30	.....
00F20	00 00 00 00	.....
00F30	00 00 00 00	.....
00F40	00 00 00 00	.....
00F50	00 00 00 00	.....
00F60	00 00 00 00	.....
00F70	00 00 00 00	.....
00F80	00 00 00 00	....j.yyy.....04
00F90	32 30 FF FF	20??????????????
00FA0	FF FF FF FF	#####

How to Tell Which EEPROM is Fitted

The benefit of this product is that you don't need to disassemble the instrument pack to any large degree to read the EEPROM.

However 2 types of EEPROM can be fitted to these instrument packs – M24C32 or M24C64, and the markings on the chip itself can't be read.

We recommend you take the following approach:

- A) Assume that the EEPROM is an M24C64. Set up Orange accordingly, and read the data.
- B) Check that the part number (and other data) appears in the area from approximately address `00E40` as shown above.
- C) Then look at the area starting at address `01E40`. This area should be full of FFs and very little else.

If this area contains a repeat of the part number and the other text (“Kombi” etc.) then the EEPROM is an M24C32. Set the Orange 5 up for this EEPROM and read it again a second time. You will then get the correct .bin file.