Cruise Control for Audi A4/S4 (B6 or B7)

This document shows a step by step process of how to install cruise control to your A4 Avant or Saloon. It has been adapted from a version originally on the www.audiretrofit.co.uk site, which was in turn adapted from information provided by TDIAvant from tyresmoke.net. It has also been amended with other information gleaned from tyresmoke.net (Shark90, TDIAvant & co.), other forums and the Ross-Tech wiki.

Important

In order to complete this install you will need access to a VAG-COM cable and software in order to program the settings after the physical install.

Also during the install it will be necessary to remove the driver airbag so please remember to take extra care when handling this and make sure that the car's negative battery terminal is disconnected.

Parts Required

1 x Cruise control stalk (I used part # 4E0 953 521 B)

1 x Steering Control Module (I used part # 8E0 953 549 N)
Note: This may not be required if your car is fitted with the multi function steering wheel. See this website for details & part numbers: http://wiki.ross-tech.com/wiki/index.php/Cruise_Control_Retrofitting_(8E)

1 x Steering column lower cowling (I used part # 8E0 953 512 P)

2 x Screws N 909 068 02

Tools Required

1 x Socket Set (including 8mm socket and torx T55 socket)

1 x Screwdriver set including torx screw bits (in particular T8, T15, T30)

1 x VAG-COM Cable with software

Pre-Install

It is recommended to perform a full VAG COM scan, and save/print the log file. This lets you see the existing coding of the modules to help you when recoding or logging in to them.

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THE INSTALL

1. Using the details in your owner's manual locate the car battery.

2. Unscrew the clip that holds the negative (black) battery cable in place and disconnect the cable from the battery. (Make sure that the cable is safe from accidentally contacting the battery after it has been removed).

3. At the back of the steering wheel there are 2 torx screws (T30) securing the airbag. Remove these to release the airbag.
   Note 1. It's easiest if you turn the wheel to 3 o'clock and 9 o'clock when doing this, for best access to the screws.
   Note 2. I used torx T30 bit for these screws. I've also read that a size 27 works. A short screwdriver, small socket set or allen style torx driver is best, due to the proximity of the dash.
   Note 3. On some cars [B7s?] there are 2 plastic clips which cover the 2 torx screws at the back of the steering wheel; these obviously need to be removed first.

4. Remove the Airbag and then disconnect the wiring harness from the steering wheel.
   Note 1. I couldn't actually separate the airbag wiring from the wheel, so I just left them attached and removed the wheel.
   Note 2. I read elsewhere that when removing the harness, you should pull the contrasting colour clip on the yellow connector to release it (I couldn't manage this - see Note 1 above)

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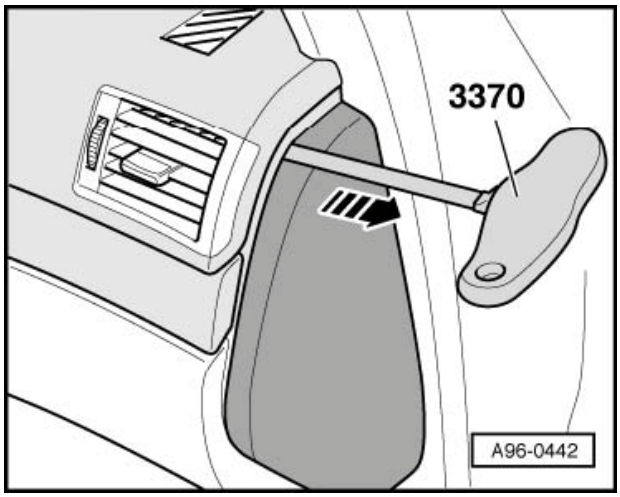
5. Remove the large torx bolt from the centre of the steering wheel and remove the steering wheel.
   Note 1. Before removing the steering wheel, it's advised to mark the 12 o'clock mark on the steering column (there should already be a mark on the wheel). This makes it easier to align later on.
   Note 2. I've read elsewhere that the large bolt is not a torx, but a 12mm 12 tooth splined, as used on cylinder head bolts etc. However I used a T55 ok.

6. Open the driver's door and then use a small flat head screwdriver which has had the end wrapped with electrical tape to remove the side panel cover (the tape will stop the dash/trim from getting scratched).



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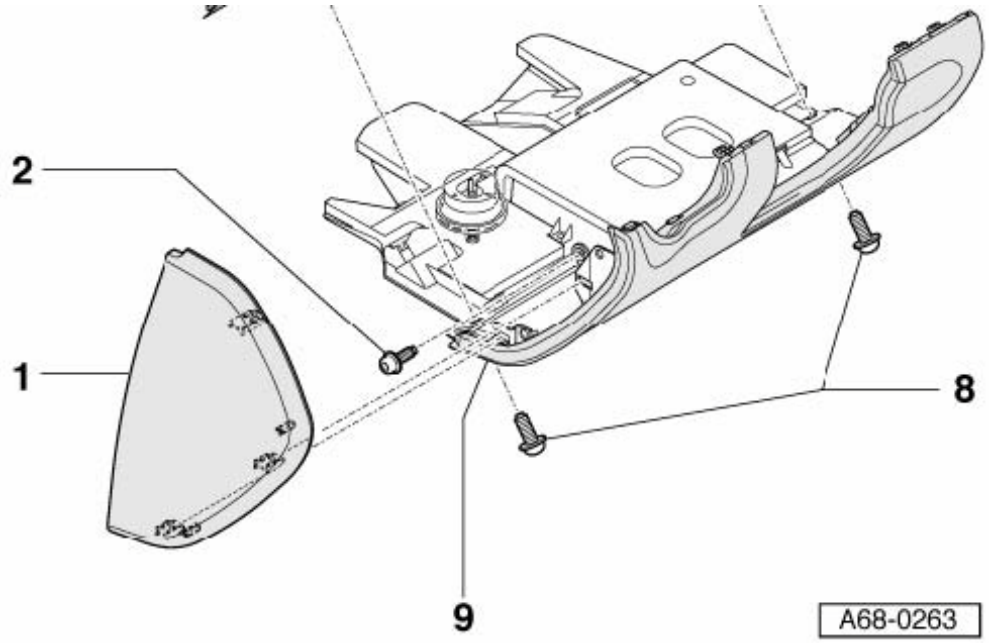
7. Remove the lower driver side footwell trim:
   Step 1. So as not to scratch the trim, make sure the floor mat is clean or covered with a towel.
   Step 2. Remove bolts in positions -2- and -8- with an 8mm socket.
   Step 3. Carefully pull storage compartment at top of dash panel each side of the steering wheel boss until it unclips. (Be careful that you don't push the metal trim upwards on the left hand side of the steering wheel. It's a bit of a pest to get off!)
   Step 4. Unclip diagnostic connector at the bottom on the right.
   Step 5. Unplug connector on footwell light and on additional loudspeaker, if applicable.
   (I didn't do steps 4 & 5, I just left them attached and rested the trim on my legs/the floor)



8. On the steering column use a long reach torx T8 screw driver to remove the 2 screws at the front of the lower cowling section, and also remove the cap head screw from the middle of the lower cowling.
   Note 1. I used a T8 screwdriver from a £5 Maplin set (product code N55FX), which I modified to remove about 15mm of the handle, to give about 65mm of shaft which can reach the torx screws.
   Note 2. I used a T25/T30 torx bit for the cap head screw in the middle of the lower cowling.

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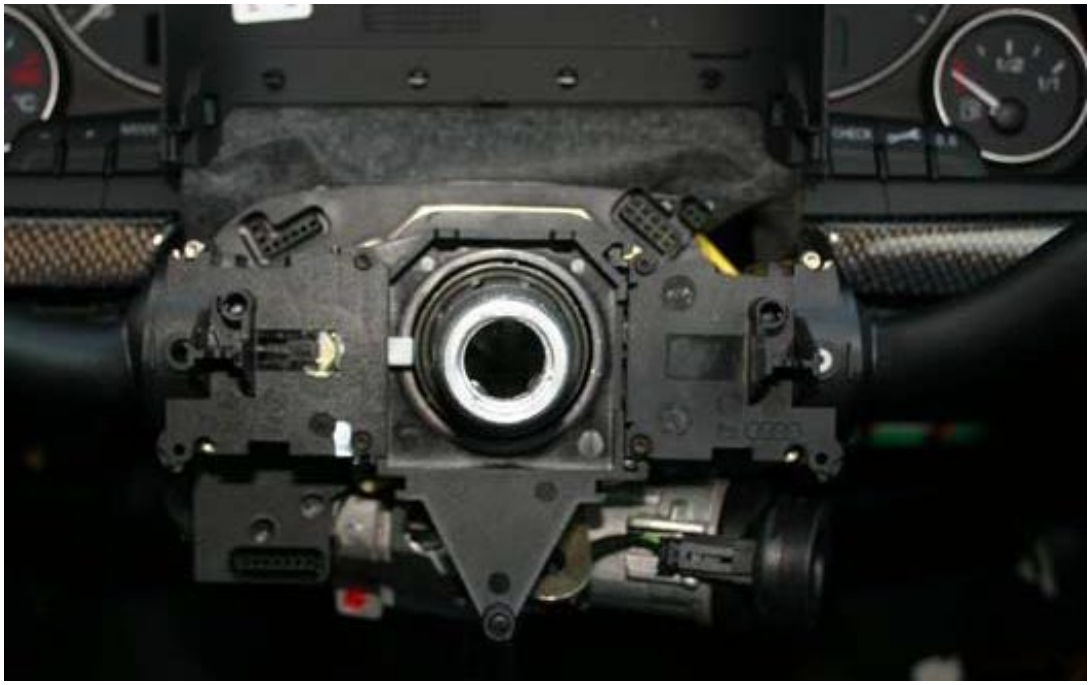
9. Remove the slip ring, which is held in with 3 clips; 1 at either side and 1 at the bottom. Then disconnect the wiring connector, which is the yellow connector at the top right, to the rear.



10. Unscrew the wiper arm control unit and the indicator control unit, each one is held in with 2 T8 torx screws.
    Note 1. Make sure you are removing the long (about 30mm) screws, not the small (about 10mm) screws; the small screws hold the stalks together. On my car, the short screws were silver, and the long screws were black and they were dabbed in yellow paint!

11. Remove the cap head screw which is located just behind the V shaped piece of plastic.
    Note 1. Again, I used a T25/T30 torx bit here.

12. Remove the wipe control arm and disconnect the wiring going into the back of the SCSM (Control Unit) on the left hand side. Unplug the indicator arm and the SCSM can be removed.
    Note 1. The plug going into the back of the SCSM is tight and has a catch nearest the steering column.

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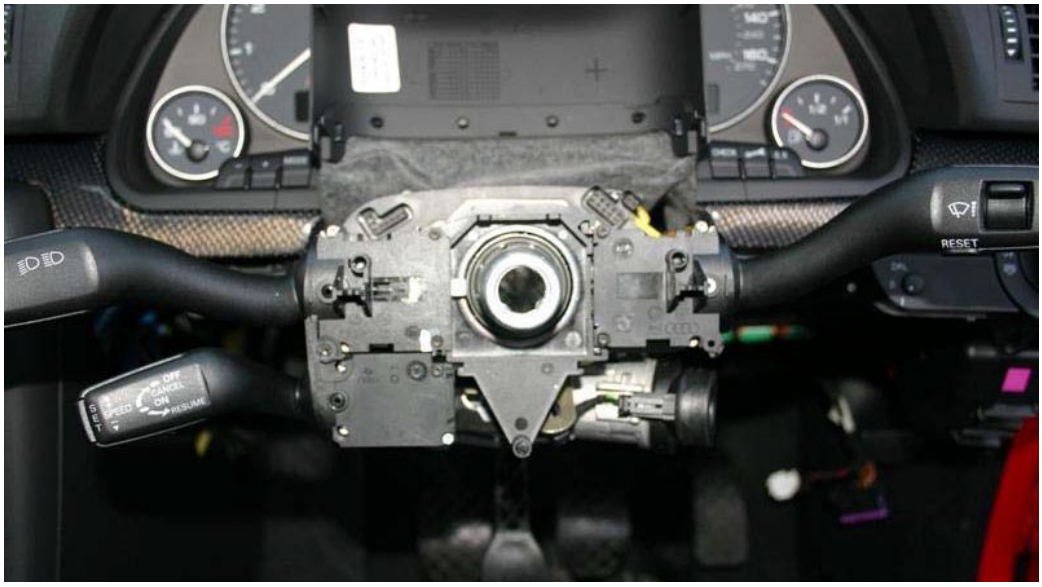
13. Push the new SCSM module in place (where applicable) and connect the wiper arm, indicator arm and the new cruise arm. Each arm is held down with two torx screws. Reconnect the wiring harness to the new SCSM module, and Screw the cap head screw back in place.

    Note 1. Make sure you push your new SCSM fully back towards the instrument cluster, as far as it will comfortably go – I didn't at first, which led to my trim rubbing against the steering wheel and squeaking!



14. Reconnect the slip ring and connect the wiring harness, reconnecting all 3 clips.

15. Put the cowling back in place remembering to use the new lower cowling section. Screw this in place using the 2 torx screws and the cap head screw.

16. Put the lower foot well trim back in place in the reverse order to how it was removed, remembering to connect the diagnostic port and the light if present.

17. Refit the steering wheel back onto the car and try and set it at a level position, fix the wheel in place with the large centre torx screw. Torque this bolt to 50Nm.
    Note 1. Official guidance is to use a new steering wheel bolt, (or some people just wire brush the old thread-lock off the existing one), then use more Loc-Tite when refitting the new bolt. I didn't bother with this, I just torqued the bolt to 50Nm. However don't take that as a recommendation! You have been warned!

18. Reconnect the airbag wiring harness and refit the airbag by screwing the airbag back in place and put back the small plastic clips at the back of the steering wheel.

19. Reconnect the battery and connect the vag-com cable to the diagnostic port.

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VAG COM Coding

20. First of all you need to code the SCSM with the correct coding.
    Note 1. Open VAG-COM (connected to your port and ignition in position II)
    Note 2. Click on module [16 - Steering Wheel]
    Note 3. Go into [Coding – 07]
    Note 4. Using the code from your previous SCSM, you need to determine the new code for your module. The only bit that you should change is the second last digit (i.e. 0xxNx - where N is the bit to change, x are your current values). If you do not currently have CC or DIS, this should be '0'.
    Note 5. Enter the new code.
    Note 6. Click on [Do it!].

(See **Appendix A** for the full coding breakdown for the SCSM)

21. In my case, as I fitted a second hand SCSM, I had to make the SCSM "learn" my car's VIN.
    Step 1. Go into [Adaptation – 10]
    Step 2. Select channel 81
    Step 3. Select New Value = 00111
    Step 4. Hit enter on your keyboard, or click [Save]
    Step 5. Select [Done, Go Back]

22. Clear the SCSM fault codes, and confirm non re-appear.
    Step 1. Go to [Fault Codes – 02]
    Step 2. Select [Clear Codes – 05]
    Step 3. Select [Done, Go Back]

23. Next you need to log in to your brakes module.
    Step 1. To work out your login code, see **Appendix B**. Use the existing coding of your car to work out what's installed, then determine the log in code from that. My login was 09295 for my S4.
    Step 2. From the module selection page, select [03 – ABS Brakes]
    Step 3. Go to [Login – 11]
    Step 4. Enter your code and select [Do It!]
    Step 5. If you get the login code incorrect, you will get "Connection lost due to dropped session" error and you will have to turn the ignition off, take the key out, and start again.

24. Once you have logged in correctly, you need to re-code the module. Formulate your coding from **Appendix B** /use your previously recorded value. Mine was 04595 for the S4.
    Step 1. Select [Coding – 07]
    Step 2. Enter your code in "Software Coding"
    Step 3. Select [Do It!]

25. When you have done that, **DO NOT CLOSE THE CONTROLLER**. If you do, you'll have to log in and re-code again.

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26. Now complete the steering angle sensor recalibration. (Remember, don't close the controller before you do this, it must be done in the same session).

    Step 1. Select [Fault Codes - 02]
    Step 2. Select [Done, Go Back]
    Step 3. Turn steering wheel at least 30 ° left and back straight ahead.
    Step 4. Select [Meas. Blocks - 08]
    Step 5. Enter Group 005, [Go!]
    Field 1 (Steering Angle Sensor -G85-)
    Specification: 0.0 °
    Tolerance (when straight): ±5.0 ° (Note - When the steering wheel is straight the value shown should be -5 - +5 degrees, set it in between these values and leave it there for the rest of the procedure)
    Step 6. Select [Done, Go Back]

27. Next you need to code the brakes module for cruise:
    Step 1. Select [Login - 11]
    Step 2. Enter 40168
    Step 3. Select [Do It!]
    Step 4. Select [Basic Settings - 04]
    Step 5. Enter Group 001, [Go!]
    Step 6. If successful the blocks should read something like Steering Angle Adjust OK
    Step 7. [Done, Go Back]
    Step 8. Select [Fault Codes - 02], all fault codes should have disappeared.
    Step 9. Select [Done, Go Back]
    Step 10. Select [Close Controller, Go Back - 06]

28. To finish the job you need to code the engine for cruise:
    Step 1. From the module selection page, select [01 – Engine]
    Step 2. Select [Login – 11]
    Step 3. Enter 11463
    Step 4. Select [Do It!]

That should be it! Now your errors should disappear, and Cruise Control should be correctly set up!

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Appendix A – SCSM Module Coding

0?xxx: Steering Wheel Type

0 = Standard (without Multifunction)
1 = 3-Spoke Steering Wheel (Sport Steering Wheel)
2 = Multifunction Steering Wheel with Radio Control
3 = Multifunction Steering Wheel with Radio/Telephone Control
4 = Multifunction Steering Wheel with Radio/Telephone/Voice Control
5 = Multifunction Steering Wheel with Radio/Voice Control

0x?xx: Options

+1 = Tiptronic

0xx?x: Board Computer & Cruise Control

0 = Board Computer & Cruise Control not installed
1 = Board Computer installed
2 = Cruise Control installed
4 = Board Computer & Cruise Control installed

0xxx?: Rear Wiper (Chassis)

1 = Rear Wiper not installed (Sedan/Cabriolet)
2 = Rear Wiper installed (Avant)

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Appendix B – Brakes Module Login & Coding

Control Module Coding II/Login *(Bosch 5.7)*

Note #1: After Login/Coding-II has been carried out, you need to recode the control module.
Note #2: Special Login/Coding-II 09399 is used for BFB Engine with 1LT Brakes and Multitronic.

Select 03 (Brake Electronics)
Coding II/Login -> Function 11

0?xxx: *Chassis*

- **9** - Audi A4

0x?xx: *Brakes*

- **2** - Brembo 17" *(PR-1LJ)*
- **3** - FN3 16" *(PR-1LT/1LF)*
- **4** - HP2 16" *(PR-1LX)*
- **4** - FNR 16" *(PR-1LA/1LG)*
- **5** - FN3 15" *(PR-1LB/1LE)*
- **6** - C54 *(PR-1LZ)*

0xx?x: *Engine*

- **5** - 4/6 Cyl. Diesel
- **7** - 4/5 Cyl. Gasoline
- **9** - 6/8 Cyl. Gasoline

0xxx?: *Transmission*

- **5** - Manual
- **7** - Automatic *(5HP19, 5HP24, AG4, AG5)*
- **9** - Multitronic

Control Module Coding *(Bosch 5.7)*

Note #1: Coding is accepted after a specific login has been carried out.
Note #2: After succesful coding the steering angle sensor basic setting needs to be carried out.
Note #3: Special Coding 04499 is used for BFB Engine with 1LT Brakes and Multitronic.

See next page for Coding info

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Select 03 (Brake Electronics)
Coding -> Function 07

0?xxx: *Chassis*

4 - Audi A4

0x?xx: *Brakes*

1 - C54 *(PR-1LZ)*
2 - FN3 15" *(PR-1LB/1LE)*
3 - HP2 16" *(PR-1LX)*
3 - FNR 16" *(PR-1LG)*
4 - FN3 16" *(PR-1LT/1LF)*
5 - Brembo 17" *(PR-1LJ)*

0xx?x: *Engine*

5 - 4/6 Cyl. Diesel
7 - 4/5 Cyl. Gasoline
9 - 6/8 Cyl. Gasoline

0xxx?: *Transmission*

5 - Manual
7 - Automatic *(5HP19, 5HP24, AG4, AG5)*
9 - Multitronic