TDI VCDS Info
Updated 21 Dec. 2010

Ross-Tech is not responsible for any damage or problems that may result from following these instructions. They are to be used at your own risk.

Note: These are useful procedures that may or may not work on your particular vehicle. Consult a Factory Repair Manual before doing any modifications to your car.

Q: What is VCDS?

VCDS (VAG-COM Diagnostic System) is Windows-based software that allows a PC to act as a diagnostic tool for VW/Audi/SEAT/Skoda vehicles.

Q: That's great, so what can I do with it?

Well, here is a partial list:

01 **Control Unit Info** (means you can read your ECU's part number without pulling it out)
02 **Read Fault Codes** (aka DTC's, you can find out why your MIL - aka CEL - is on)
03 **Output Tests** (as part of troubleshooting procedures, you can turn on various actuators)
04 **Basic Settings** (lets you set readiness, perform various functions)
05 **Clear Fault Codes** (lets you get rid of the DTC's)
07 **Code Module** (lets you to set up the "BIOS" of a control module)
08 **Measuring Blocks** (lets you measure various running parameters)
10 **Adaptation** (lets you adapt or introduce components to one another)
11 **Login** (needed to access certain functions)
15 **View Readiness** (checks to make sure self-tests have been done)
Data Logging (you can save measuring blocks to a file - up to 3 groups of 4 at a time)
7-Digit PINs (used for new keys, instrument clusters, or new ECU's)

Q: So, specifically, as relates to my TDI, what can I do with it?

Note: The following advanced operations are intended for a stock 90-hp A4 TDI (ALH engine). Expect some variations if you have an A3/B4 car (A3 Jetta, Passat).

Air system part I: MAF

- Go into Engine measuring block 003
- Start Logging data
- In a high gear (4th/5th), give full throttle from 2500 rpm up to 3500rpm.
- Find and Open the Log file in Windows Explorer

- Graph MAF actual -vs- rpm in Excel
- The MAF is OK if the actual value is at least 850-900 mg/h at 3000 rpm.
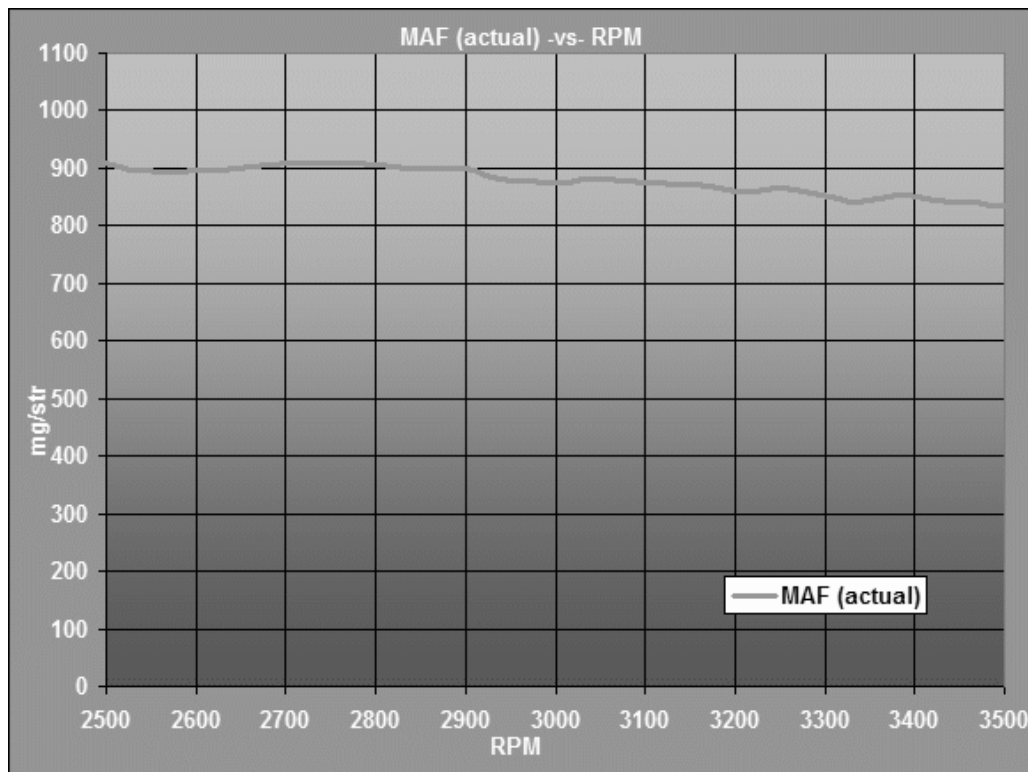
Air system part I: Turbo

- Go to Engine Measuring Block 011
- Start Logging the data
- In a high gear (4th/5th) give full throttle from 1500-2000 rpm to 3500-4000 rpm
- Find and Open the Log file in Windows Explorer
- In Excel graph actual/requested boost -vs- rpm
- On a stock vehicle, one should see a spike at 2.1 bar quickly regulated at 1.9 through the whole rpm range
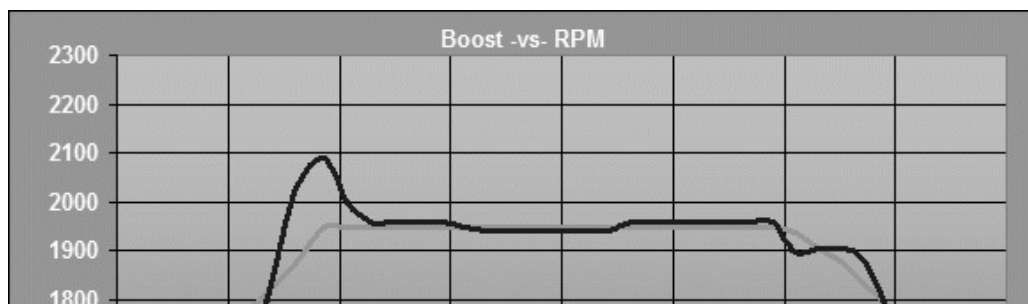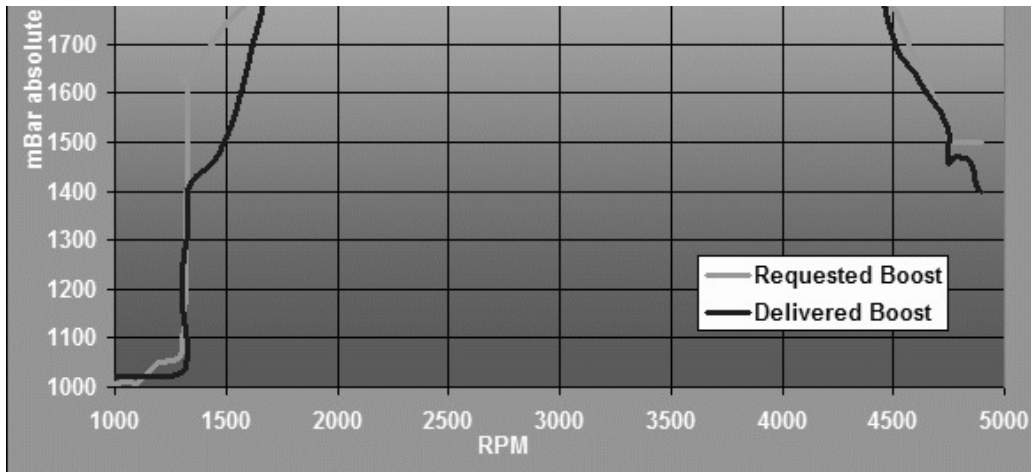

Setting Injection Timing:

The current Release of VCDS contains the **TDI Timing Checker.** See this page for more information.
This procedure does NOT apply to the PD engines!

- Engine has to be warm (coolant above 85ºC)

- Go to Engine Measuring Block 000

- Switch to Basic Settings

- Take note of the values in fields 2 (timing) and 9 (fuel temp)

- Report in the following graph

- Specification is within the shaded area between the blue and red lines

- To slightly advance timing, you need to be in the upper portion of the shaded area.

- Setting is done mechanically, slightly rotating the pump shaft once its three screws have been loosened.

- It is strongly discouraged to set your timing outside of the specification!

Fuel Temp (9)
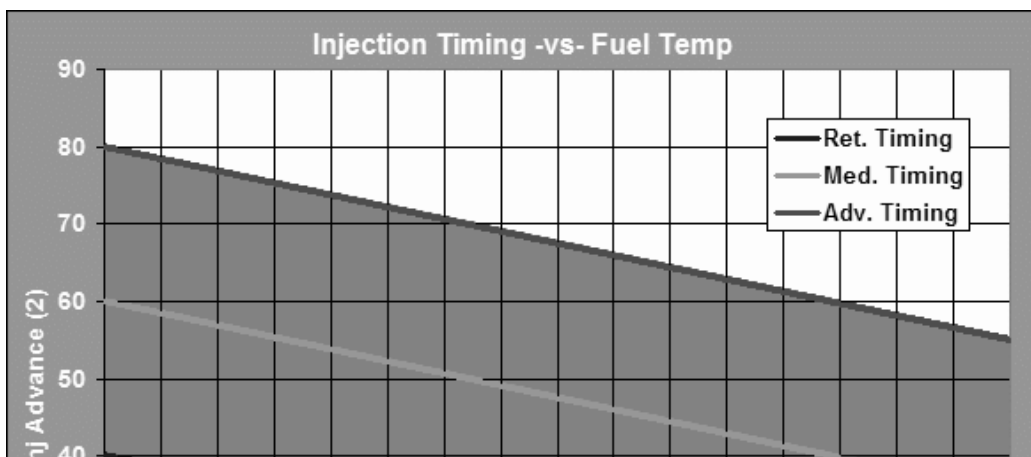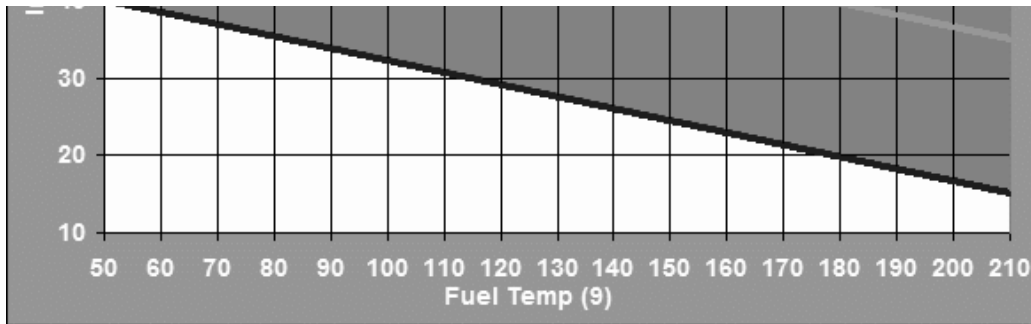
Special adaptations: Login code 12233:

These procedures do NOT apply to the PD engines, which use a completely different type of EGR system and for which there is no known modification. !

- To perform the following adaptations (except idle) you need to use the Login function.
- Enter 12233 as a Login code.
- Misuse of some of the adaptations can lead to engine failure.
- This is done at your own risk!
- Note that the EGR setting is for off-road use only...

  [Select]
  [01 - Engine]
  [Login - 11]
  Enter 12233 to activate special adaptations,
  [Do It!]

  [Adaptation - 10]
  Enter the "channel number" below to select each channel.
  Put in the suggested value(s) in "new value".
  [Test]
  Observe the "test value" field to make sure the adaptation setting is acceptable.
  [Save]

Channel 1: injected quantity

- Check the injected quantity at idle, engine warm and all power consuming devices turned off.
- Specification is 2.5 to 9 mg/h.
- To change the amount of injected fuel perceived by the ECU, go to adaptation channel 1.
- If you have driveability problems, you may want to increase it to 3-4 mg/h.
- For slightly improved throttle response, you may try to decrease the value.

Channel 2: idle speed

- No login required
- The stock adaptation value should be 32768 (corresponds to 903 rpm).
- Increase or decrease this to change idle speed.

Channel 3: EGR

- To decrease the EGR rate, increase the number to the highest possible value (typically 33768).
- This will prevent/slow down the intake manifold clogging problem and reduce smoke.
- Though the MAF at idle is still within specifications (370 mg/h) do not use this adaptation on the road :-)
- Again, this EGR setting is for off-road use only !!!

Channel 4:

- Don't mess with it!

Channel 5: starting conditions

- Though undocumented, this channel effects the injected quantity the ECU allows when starting.
- You may want to experiment with it as a temporary fix for bad-start problems

Channel 18:

- On some EDC-15 ECUs, this channel has a non-zero value in it like 190.
- Yes, that's the "speed limiter".   Don't mess with it!
- It can only be adjusted downward, and it's one-way!   You cannot increase the value, and if you decrease it, you're stuck with it.
- So unless you want to permanently decrease your car's top speed, Don't mess with it!
- If you do mess with it and your car ends up with a lower top speed than it had before, don't call us, don't e-mail us, and don't complain that we didn't warn you!

Activating Cruise Control on a new ECU (DBW):

Factory fresh ECU's often come with cruise control de-activated.

[Select]
[01 - Engine]
[Login - 11]
Enter 11463 to activate cruise control
[Do It!]

Installing a new ECU:

Immobilizer Procedures in the Ross-Tech Wiki

Q: Where can I find specific info about my car?

First off, the best source is the aforementioned Factory Repair Manual. See here for some useful links for particular vehicles:

VW & Audi Application Charts

And of course, everyone with a TDI should frequent Fred's TDI Forums, aka TDIClub.com:

TDI Club Specifically the TDI Club FAQ

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