DIESEL ENGINES: AGR, AHF, ALH, AFN, AHH, AHU, AVG, AJT, AQM, AGP, AGD   *pro*

AHG, AKU, AEY, ACV, ASV, 1Z

Checking diesel injection timing with MTpro

It is possible on most VAG TDI engines to check the diesel injection timing with the MTpro handset. The vehicle must have reached normal operating temperature prior to the check being carried out. Using the VAG serial application, connect the MTpro handset to the vehicles 16 pin diagnostic connector.

- Select 01 - Engine
- Select 04 - Read Data Stream In Basic Settings
- Select channel 000

A screen displaying the following information should now be visible:

000 < Group number	Max	Min		Max	Min
1	41	41	40	6	202	202	202
2	45	84	41	7	174	175	174
3	0	0	0	8	175	175	175
4	39	41	36	9	79	79	79
5	98	99	98	10	100	100	90

Explanation of the fields shown above

1	Engine Speed	6	Atmospheric Pressure
2	Commencement of Injection	7	Coolant Temperature
3	Accelerator Position	8	Intake Manifold Temperature
4	Injection Quantity	9	Fuel Temperature
5	Intake Manifold Pressure	10	Air Mass Intake

NOTE: The values displayed on this screen are not quoted in any particular units and appear just as numerical values.

When using this screen, it is important that the first column containing data is used and not the columns labelled 'Max' or 'Min'. The value displayed in field 7 relates to the engine coolant temperature and MUST be below 73 (this is equivalent to 85ºC). As the sensor is of the NTC type, the value in this field will reduce as the temperature of the coolant increases.

Select the graph that corresponds to the vehicles engine code (see following pages), compare the fuel temperature value (field 9) with the commencement of injection value (field 2). If the intersection of the two values falls within the shaded band, the injection timing is correct. If the value is outside the band, the pump timing requires adjustment.
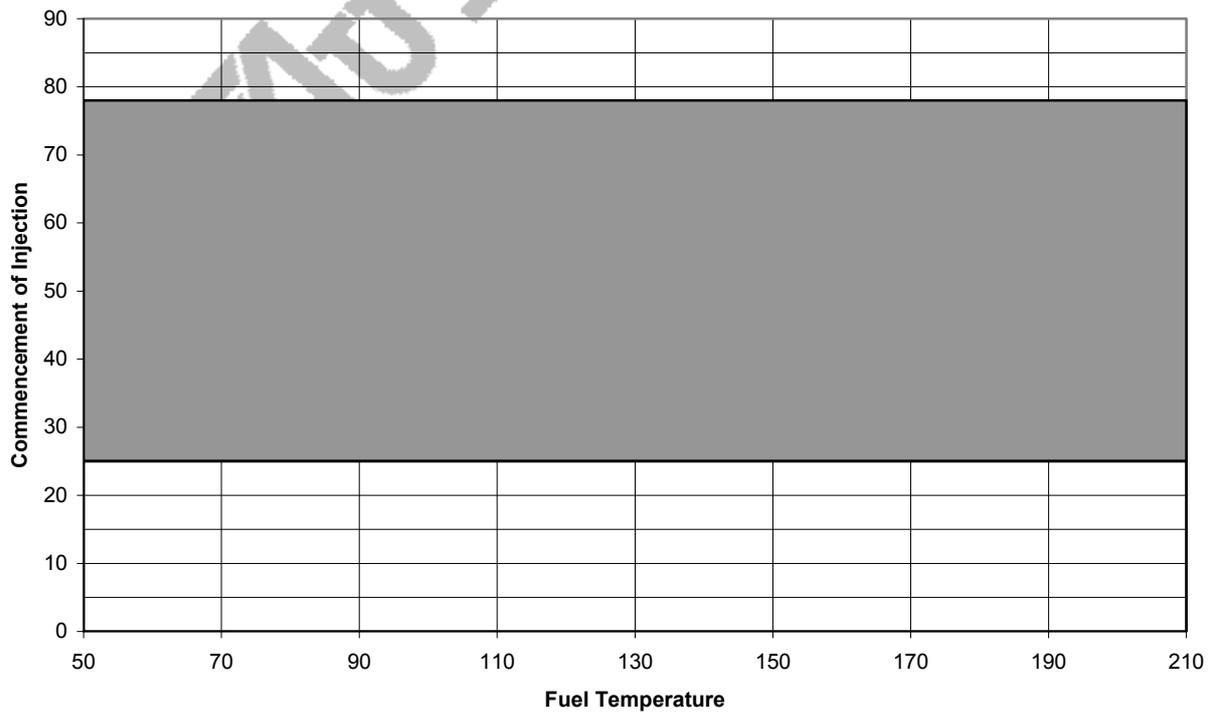
AGR, AHF, ALH, AFN, AHH, AHU, AVG, AGP, ALE, AQM, ASV, 1Z

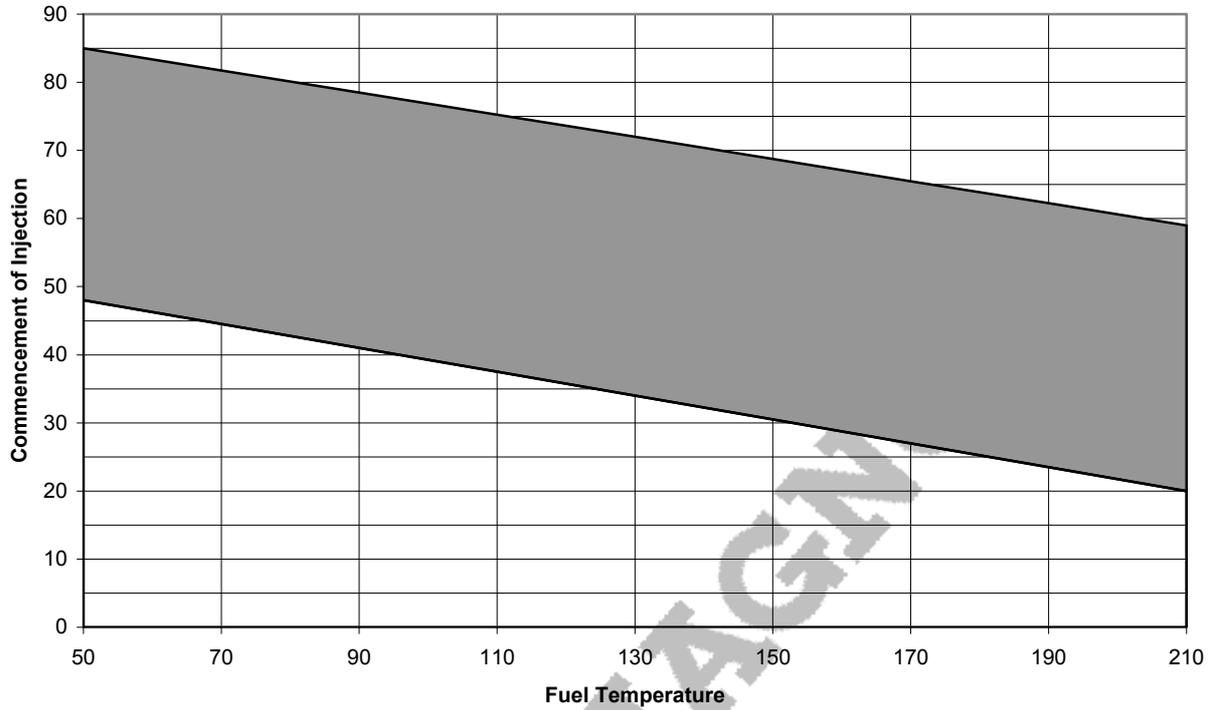**Dynamic Diesel Timing - AGR, AHF, ALH, AFN, AHH, AHU, AVG, ALE, ASV, 1Z**

Commencement of Injection vs. Fuel Temperature

Dynamic Diesel Timing - AQM, AGP

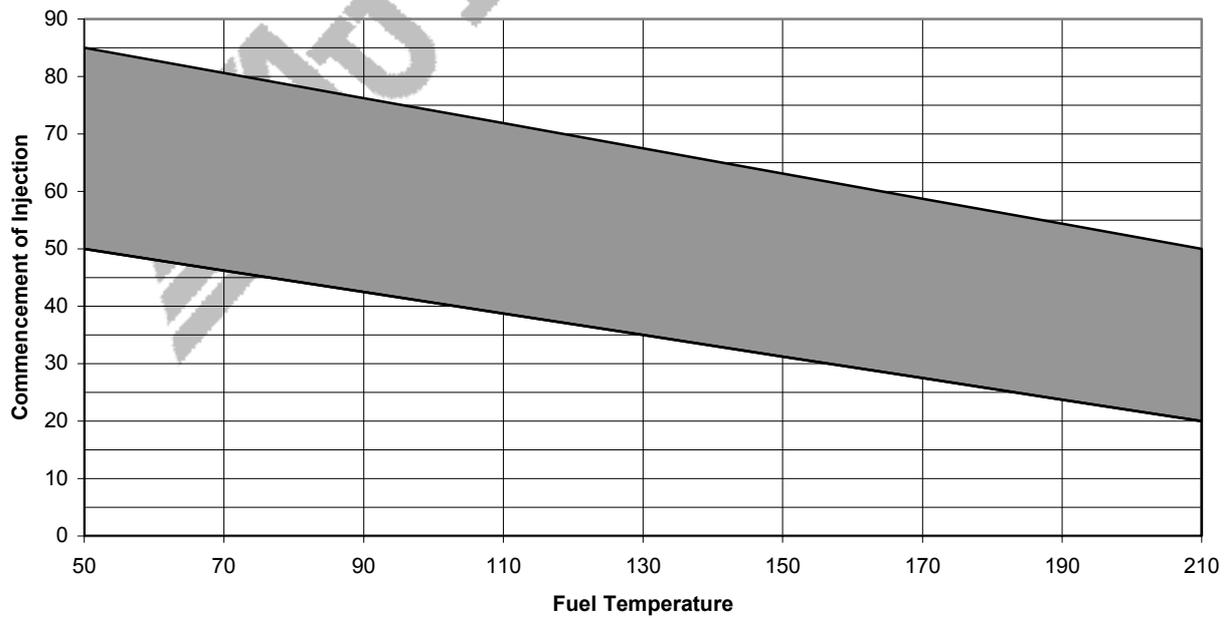Commencement of Injection vs. Fuel Temperature

AGD
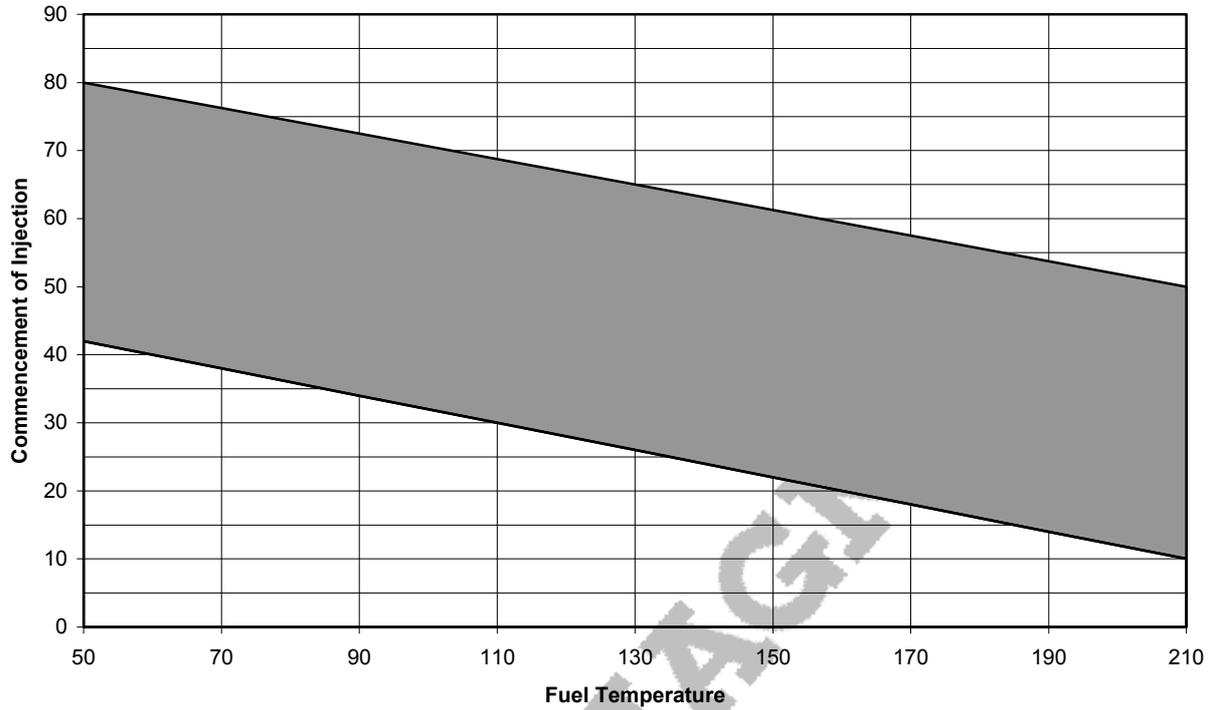
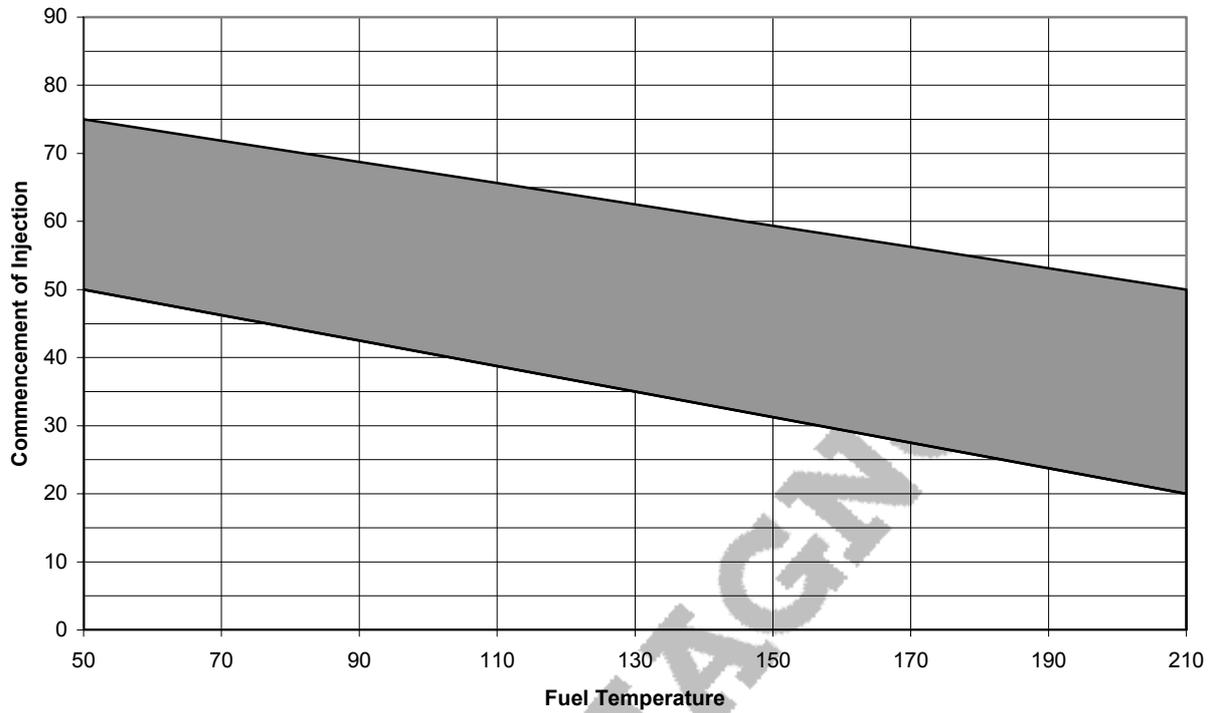**Dynamic Diesel Timing - AGD (80 pin)**

Dynamic Diesel Timing - AGD (68 pin)

Dynamic Diesel Timing - AEY

Dynamic Diesel Timing - AHG, AKU
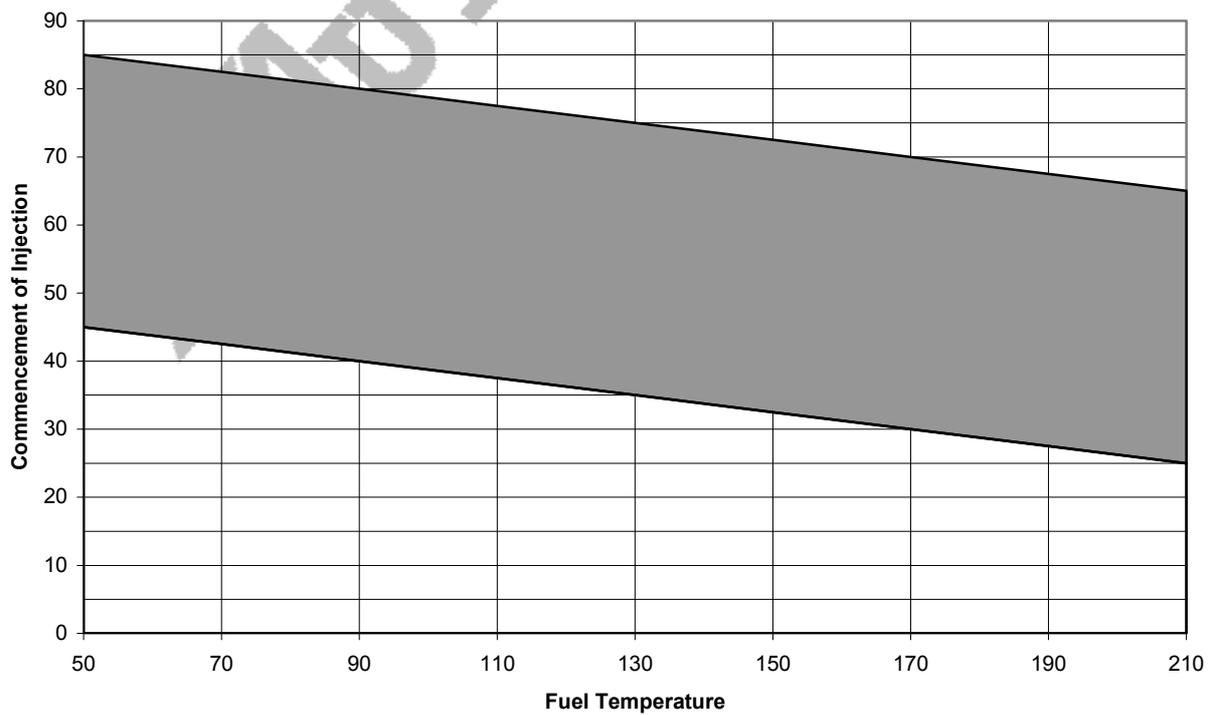
ACV, AJT

Dynamic Diesel Timing - ACV, AJT (-4/99)

Chart: Commencement og Injection (vertical axis, 0–90) vs Fuel Temperature (horizontal axis, 20–180)

Dynamic Diesel Timing - ACV, AJT (5/99-)

Chart: Commencement of Injection (vertical axis, 0–90) vs Fuel Temperature (horizontal axis, 120–190)
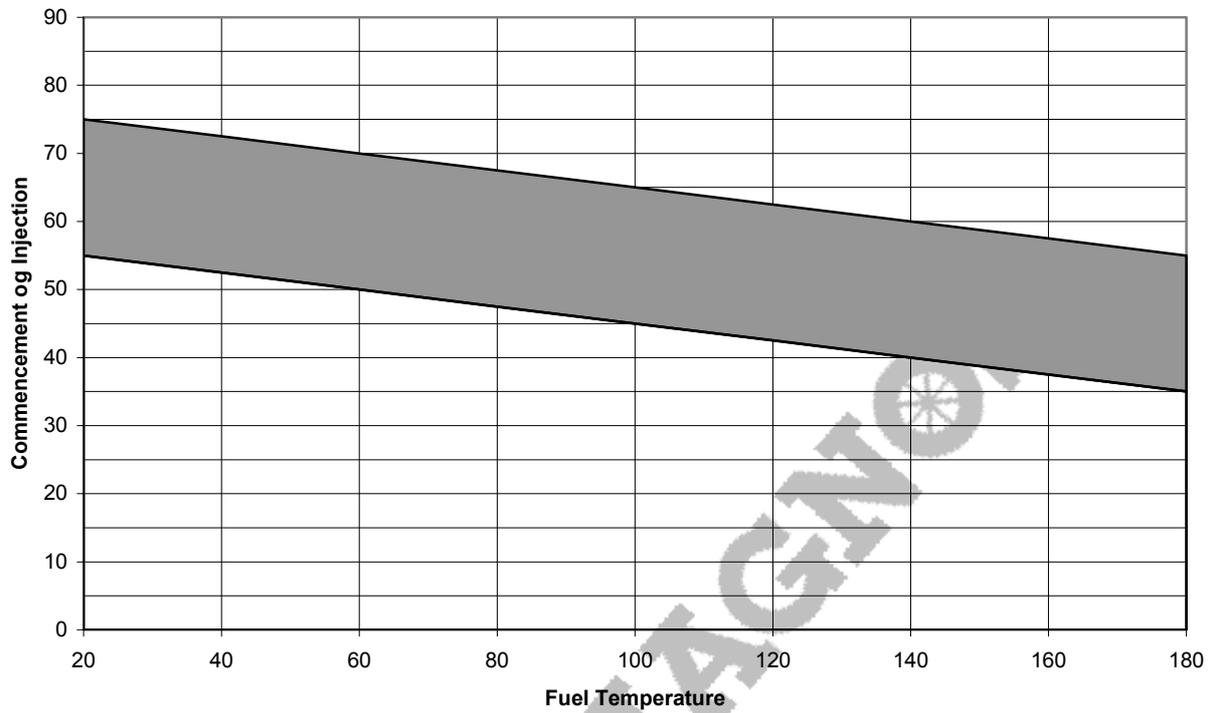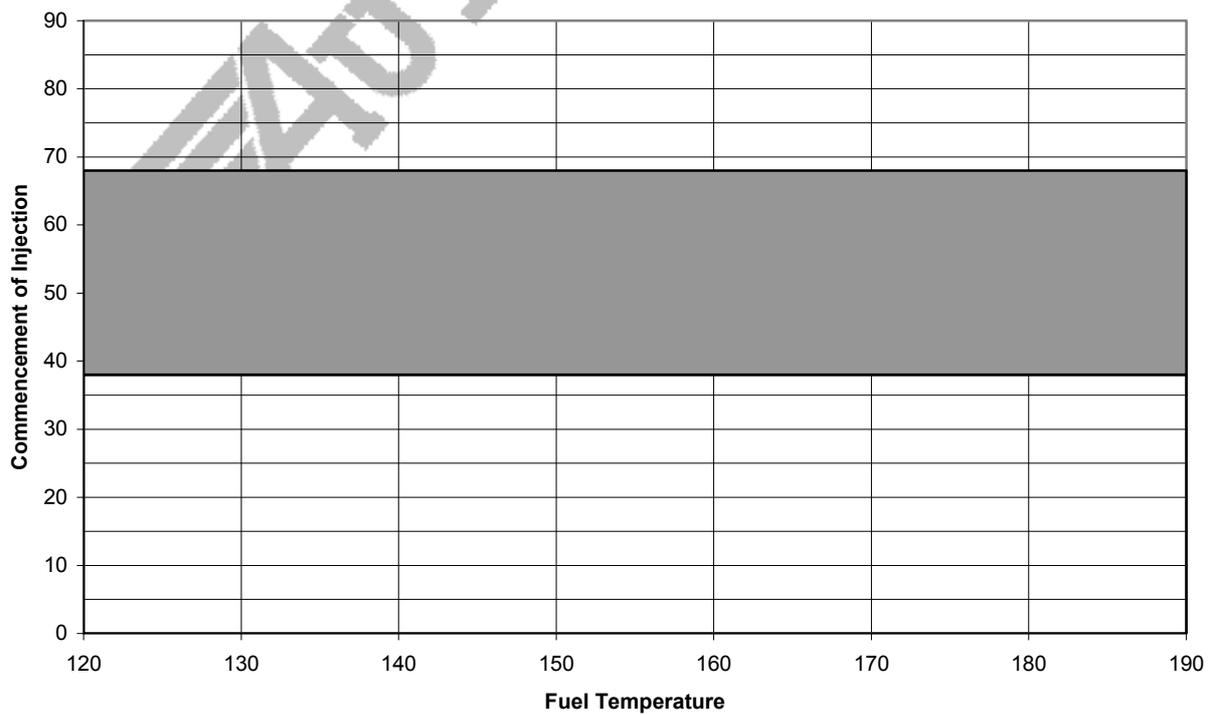
Checking diesel injection timing with MTpro *continued*

The procedure for dynamically checking the diesel pump timing on these engines is different to other models. The MTpro handset is still required but for these engines, the actual timing value is checked.

The vehicle must have reached normal operating temperature prior to the check being carried out. Using the VAG serial application, connect the MTpro handset to the vehicles 16 pin diagnostic connector.

- Select 01 - Engine
- Select 08 - Read Measuring Blocks
- Select channel 007

Once channel 7 has been selected, the engine coolant temperature must be checked, this appears in field 4. The value displayed must indicate that the engine coolant temperature is in excess of 80ºC. If the temperature is below this level, the engine must be allowed to warm up prior to further checks taking place.

When the coolant temperature has reached the desired level, it is necessary to exit the 'Read Measuring Block' function.

- Select 04 - Read Data Stream In Basic Settings
- Select channel 004

Although injection pump timing can be displayed within this measuring function, the engine will not be at its base level and a true base injection value cannot be obtained.

Channel 004 displays injection timing data, specifically, the value shown in field 3 indicates the diesel injection timing value.

<u>The value must be 2º ATDC ±1.5º</u>