

Wydruk

11 listopada 2017 19:30

Reading measured value block Specified readouts for engine code AAT as from 3rd control unit version and AEL

Display group 000 with ignition on and engine stopped

Display group 0										◀ Indicated on display
XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	◀ Display zones
1	2	3	4	5	6	7	8	9	10	Intake air quantity: Readout is undefined; ignore
										Fuel temperature: 90 at approx. 20 °C, no specification
										Intake air temperature: 195 at approx. 20 °C, no specification
										Coolant temperature: 195 at approx. 20 °C, no specification
										Atmospheric pressure (ambient pressure): 240 at approx. 1000 mbar, no specification
										Intake manifold pressure (charge pressure): 117 at approx. 1000 mbar, no specification
										Injection quantity: 0
										Accelerator pedal position: Press down slowly. The readout must rise steadily up to 255. If it does not, check accelerator pedal sender -G79 => Page 23-124
										Commencement of injection: Readout is undefined; ignore
										Engine speed: 0

Display group 000 at idle (warm engine, coolant temperature at least 80 °C)

Display group 0										◀ Indicated on display
XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	◀ Display zones
1	2	3	4	5	6	7	8	9	10	Intake air quantity: 41 ... 75 OK
										• If outside tolerance, briefly press accelerator pedal. If reading still does not match specification: Check exhaust gas recirculation system1
										Fuel temperature: 175 at approx. 55 °C, no specification
										Intake air temperature: 177 at approx. 30 °C, no specification
										Coolant temperature: 62 at approx. 90 °C, no specification
										Atmospheric pressure (ambient pressure): 240 at approx. 1000 mbar, no specification
										Intake manifold pressure (charge pressure): 117 at approx. 1000 mbar, no specification
										Injection quantity: 5 ... 25 OK
										Accelerator pedal position: 0 (not pressed)
										Commencement of injection: 45 ... 60 OK
										• If outside tolerance: Check commencement of injection and adjust as necessary => Page 23-33 .
										Engine speed

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- Manual gearbox: 33 ... 36 OK
- Automatic gearbox: 30 ... 33 OK

1)Checking EGR system:

=> 5-cyl. Diesel Engine, Mechanics (2.5 l engine); Repair Group 26; EGR system

Display group 000 at full throttle (test drive, coolant temperature at least 80 °C)

Attention: Heed instructions for test drive at full throttle => Page [01-63](#).

Display zone 1 ... 5

Display group 0

XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

◀ Indicated on display

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

◀ Display zones

Display zones 6 ... 10 => Page [01-83](#)

Intake manifold pressure (charge pressure)

- AAT: 168 ... 187 (1.72 ... 1.92 bar) OK
- AEL: 168 ... 194 (1.72 ... 1.92 bar) OK
- If outside tolerance: Check charge pressure system2

Injection quantity (full throttle quantity)

- AAT: 115 ... 125 OK
- AEL: 135 ... 150 OK
- 80: Emergency injection quantity - control unit has detected system fault

Accelerator pedal position: 255 (floored)

Commencement of injection (dependent on engine speed)

- AAT: 190 ... 210 OK
- AEL: 160 ... 210 OK
- If outside tolerance: Check injection control => Page [23-52](#)

Engine speed: 140 ...190 (readout 190 corresponds to 4400 rpm; not to be exceeded, engine is governed)

2)Checking charge pressure system

=> 5-cyl. Diesel Engine, Mechanics (2.5 l engine); Rep.Gr. 21

Display zone 6 ... 10

Display group 0

XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

◀ Indicated on display

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

◀ Display zones

Intake air quantity: at least 190 OK
 ▪ Less than 190: Check air flow meter =>Page [23-89](#)

Fuel temperature: Ignore

Intake air temperature: Ignore

Coolant temperature: Ignore

Atmospheric pressure (ambient pressure): Ignore

Display zones 1 ... 5 => Page [01-82](#)

Display group 001 injection pump at idle (warm engine, coolant temperature at least 80 °C)

Display group 1	XXXX	XX.X	X,XXX	XXX.X	◀ Indicated on display
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rpm	mg/S	V	°C	◀ Display zones 1 ... 4
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Coolant temperature: 80...100 °C: OK
 ▪ Less than 80 °C: Warm up engine

Voltage of slide travel potentiometer -G149: 1,250 ... 1,750 V OK

▪ Less than 1,250 V:

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			<ul style="list-style-type: none"> Injection pump setting too rich - replace injection pump Greater than 1,750 V: Engine too cold - warm up Injection pump setting too lean - replace injection pump
			Injection quantity: 2.0 ... 10.0 mg/S OK <ul style="list-style-type: none"> Less than 2.0 mg/S: Injection pump setting too rich - replace injection pump Greater than 10.0 mg/S: Engine too cold - warm up Injection pump setting too lean - replace injection pump
			Engine speed <ul style="list-style-type: none"> Manual gearbox: 750 ... 800 rpm OK Automatic gearbox: 690 ... 750 rpm OK

Display group 004 injection pump at idle (warm engine, coolant temperature at least 80 °C)

Display zone 1 ... 2			
Display group 4			
XXXX rpm	X.X ° b.TDC	X.X ° b.TDC	XX %
			◀ Indicated on display ◀ Display zones 1 ... 4
			Display zones 3 and 4 => Page 01-86
			Commencement of injection specified by control unit:- 1°a.TDC ... 2° b.TDC OK <ul style="list-style-type: none"> Advanced 2 °b.TDC: Engine too cold - warm up
			Engine speed <ul style="list-style-type: none"> Manual gearbox: 750 ... 800 rpm OK Automatic gearbox: 690 ... 750 rpm OK

Display zone 3 ... 4			
Display group 4			
XXXX rpm	X.X ° b.TDC	X.X ° b.TDC	XX %
			◀ Indicated on display ◀ Display zones 1 ... 4
			Duty cycle (actuation) of commencement of injection valve: 4 ... 40 % OK <ul style="list-style-type: none"> Greater than 40 %: Injection pump setting retarded - check commencement of injection =>Page 23-33
			Actual commencement of injection:- 1°after TDC...2°before TDC OK <ul style="list-style-type: none"> Retarded 1 °a.TDC: Extremely retarded injection pump setting, Injection timing control blocked, Commencement of injection valve defective - check timing range => Page 23-52 Advanced 2 °b.TDC: Engine too cold - warm up Injection pump setting advanced too far Commencement of injection valve defective - check timing range => Page 23-52
			Display zones 1 and 2 => Page 01-85

Display group 002 at idle (warm engine, coolant temperature at least 80 °C)

Display group 2			
XXXX rpm	X.X %	X X X	XX.X ° C
			◀ Indicated on display ◀ Display zones 1 ... 4

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				Coolant temperature: 80...100 °C: OK ▪ Less than 80 °C: Warm up engine
				Operating status: ▪ XX1: Air conditioner compressor on ▪ X1X: Idling speed switch closed ▪ 1XX: Idling speed increased due to: Switch-on of air conditioner
				Accelerator pedal position: 0.0 %: OK ▪ Greater than 0.0 %: ▪ Accelerator position sender -G79 incorrectly set or defective, ▪ Open circuit in wiring - check accelerator pedal sender -G79 => Page 23-124
				Engine speed ▪ Manual gearbox: 750 ... 800 rpm OK ▪ Automatic gearbox: 690 ... 750 rpm OK

Display group 003 exhaust gas recirculation at idle (warm engine, coolant temperature at least 80 °C)

Display group 3				◀ Indicated on display
XXXX rpm	XXX mg/S	XXX mg/S	XX %	◀ Display zones 1 ... 4
				Duty cycle (actuation) of EGR valve: 14 ... 75 % OK
				Actual intake air quantity:- 210 ... 370 mg/S OK ▪ If outside tolerance, briefly press accelerator pedal. If reading still does not match specification: ▪ Less than 210 mg/S: ▪ Unmetered air in intake system, ▪ excessive exhaust gas recirculation - check1) ▪ Greater than 370 mg/S: ▪ Engine too cold - warm up ▪ Insufficient exhaust gas recirculation - check1)
				Air quantity specified by control unit:- 210 ... 370 mg/S OK ▪ Greater than 370 mg/S: Engine too cold - warm up
				Engine speed ▪ Manual gearbox: 750 ... 800 rpm OK ▪ Automatic gearbox: 690 ... 750 rpm OK

1)Checking EGR system:
 => 5-cyl. Diesel Engine, Mechanics (2.5 l engine); Repair Group 26; EGR system

Display group 008 at full throttle (test drive, coolant temperature at least 80 °C), engine code AAT

Attention: Heed instructions for test drive at full throttle => Page [01-63](#).

Display group 8				◀ Indicated on display
XXXX rpm	XX.X mg/S	XX.X mg/S	XX.X mg/S	◀ Display zones 1 ... 4
				Injection quantity limitation on account of air quantity detected (avoidance of smoke): 35 ... 45 mg/S OK ▪ Less than 35 mg/S: ▪ Insufficient air quantity detected - check air flow meter ▪ => Page 23-89 . ▪ Exhaust gas recirculation at full throttle - check EGR system1). ▪ Intake air temperature too high
				Injection quantity limitation on account of engine speed (torque limitation): 37 ... 42 mg/S: OK ▪ Less than 37 mg/S: Engine speed too high or too low

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				<ul style="list-style-type: none"> Greater than 42 mg/S: Increased injection quantity due to tuning
Desired injection quantity (accelerator pedal position): at least 42 mg/S OK				
<ul style="list-style-type: none"> Less than 42 mg/S: Accelerator pedal not floored. Accelerator position sender -G79 incorrectly set or defective - check accelerator pedal sender -G79 => Page 23-124 				
Engine speed 2800...4000 rpm OK				

1)Checking EGR system:
=> 5-cyl. Diesel Engine, Mechanics (2.5 l engine); Repair Group 26; EGR system

Display group 008 at full throttle (test drive, coolant temperature at least 80 °C), engine code AEL

Attention: Heed instructions for test drive at full throttle => Page [01-63](#).

Display group 8				<ul style="list-style-type: none"> Indicated on display Display zones 1 ... 4
XXXX rpm	XX.X mg/S	XX.X mg/S	XX.X mg/S	
				Injection quantity limitation on account of air quantity detected (avoidance of smoke): 44 ... 48 mg/S OK <ul style="list-style-type: none"> Less than 44 mg/S: Insufficient air quantity detected - check air flow meter => Page 23-89. Exhaust gas recirculation at full throttle - check EGR system1). Intake air temperature too high
				Injection quantity limitation on account of engine speed (torque limitation): 43 ... 46 mg/S: OK <ul style="list-style-type: none"> Less than 43 mg/S: Engine speed too high or too low Greater than 46 mg/S: Increased injection quantity due to tuning
Desired injection quantity (accelerator pedal position): at least 48 mg/S OK				
<ul style="list-style-type: none"> Less than 48 mg/S: Accelerator pedal not floored. Accelerator position sender -G79 incorrectly set or defective - check accelerator pedal sender -G79 => Page 23-124 				
Engine speed 2800...4000 rpm OK				

1)Checking EGR system:
=> 5-cyl. Diesel Engine, Mechanics (2.5 l engine); Repair Group 26; EGR system

Display group 011 charge pressure control at full throttle (test drive, coolant temperature at least +80 °C)

Attention: Heed instructions for test drive at full throttle => Page [01-63](#).

Display group 11				<ul style="list-style-type: none"> Indicated on display Display zones 1 ... 4
XXXX rpm	XXXX mbar	XXXX mbar	XX %	
				Duty cycle (actuation) of charge-pressure control solenoid valve -N75: 30 ... 80% OK
				Actual charge pressure 1720 ... - 1920 mbar: OK <ul style="list-style-type: none"> Less than 1720 mbar or greater than 1920 mbar: Charge pressure control defective, Turbocharger defective - check charge pressure control2)
Charge pressure specified by control unit:- 1720 ... 1920 mbar OK				
<ul style="list-style-type: none"> Greater than 1920 mbar: Increased charge pressure due to tuning 				

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Engine speed: 2800 ... 3500 rpm OK

2) Checking charge pressure control:

=> 5-cyl. Diesel Engine, Mechanics (2.5 l engine); Repair Group 21; Checking charge air system with turbocharger--