Workshop Manual

Audi A4 2008 ➤
Audi A5 Cabriolet 2009 ➤
Audi A5 Coupé 2008 ➤

4-cylinder direct injection engine (1.8, 2.0 ltr. 4-valve TFSI - generation III)									
Engine ID	CJEB	CNCD	CUHA	CUJA	CJED				

Edition 10.2014

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12 - Electrical wiring harness

13 - Camshaft control valve 2 - N208-

14 - Bolt

- ❑ 9 Nm

15 - Engine speed sender - G28-

- ❑ Removing and installing ⇒ page 421

16 - O-ring

- ❑ Renew

17 - Hall sender 2 - G163-

- ❑ Removing and installing ⇒ page 420

18 - Bolt

- ❑ 9 Nm

1.2 Test data, spark plugs

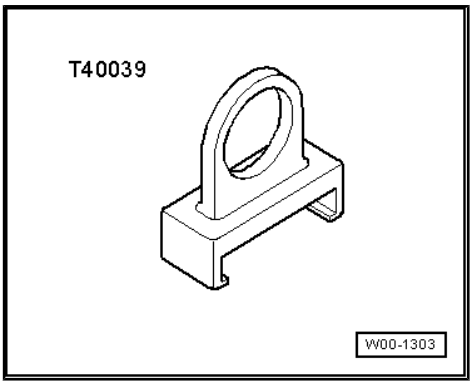
3.0 ltr. TFSI engine		
Idling speed		Cannot be adjusted; regulated by idling speed stabilisation
Ignition timing		Not adjustable (determined by control unit)
Ignition system		Multi-coil system with 6 ignition coils (output stages integrated) connected directly to spark plugs via spark plug connectors
Spark plugs	Designations	⇒ Data sheets for exhaust emissions test
	Tightening torque	⇒ Maintenance ; Booklet 812
Firing order		1-4-3-6-2-5

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1.3 Removing and installing ignition coils

Special tools and workshop equipment required

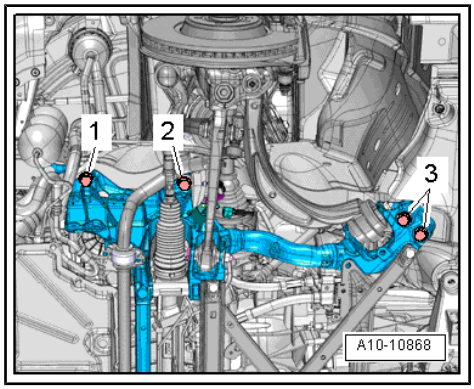
- ♦ Puller - T40039-



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– Mark installation position of subframe on longitudinal members with felt-tip pen.

– Unscrew subframe bolts -1, 2, 3- on both sides in several stages and in diagonal sequence.



Caution

Risk of damage to running gear components.

- *The vehicle must NOT be lowered onto its wheels if the engine/gearbox mountings, steering rack or subframe cross brace are not properly installed.*

– Lower subframe using engine and gearbox jack - V.A.G 1383 A- only far enough to detach engine mounting (left-side). At the same time check clearance of hydraulic hoses (left-side) and electrical wiring (right-side).

– Detach engine mounting (left-side).

Installing

Installation is carried out in the reverse order; note the following:

- Tightening torques
⇒ “2.1 Exploded view - assembly mountings”, page 79

Note

- *Renew the bolts tightened with specified tightening angle.*
- *Fit all cable ties in the original positions when installing.*

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– Align subframe on longitudinal members according to markings made before removal.

– Tighten subframe bolts only to specified torque (do not turn further); the bolts should only be fully tightened after performing the wheel alignment check ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Exploded view - subframe .

WARNING

Risk of accident because of loose bolt connections.

- *Do NOT drive the vehicle unless the subframe bolts have been finally tightened.*

– Install anti-roll bar (⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Removing and installing anti-roll bar), and secure suspension strut to track control link (⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Exploded view - subframe).

– Install electrical wiring ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.

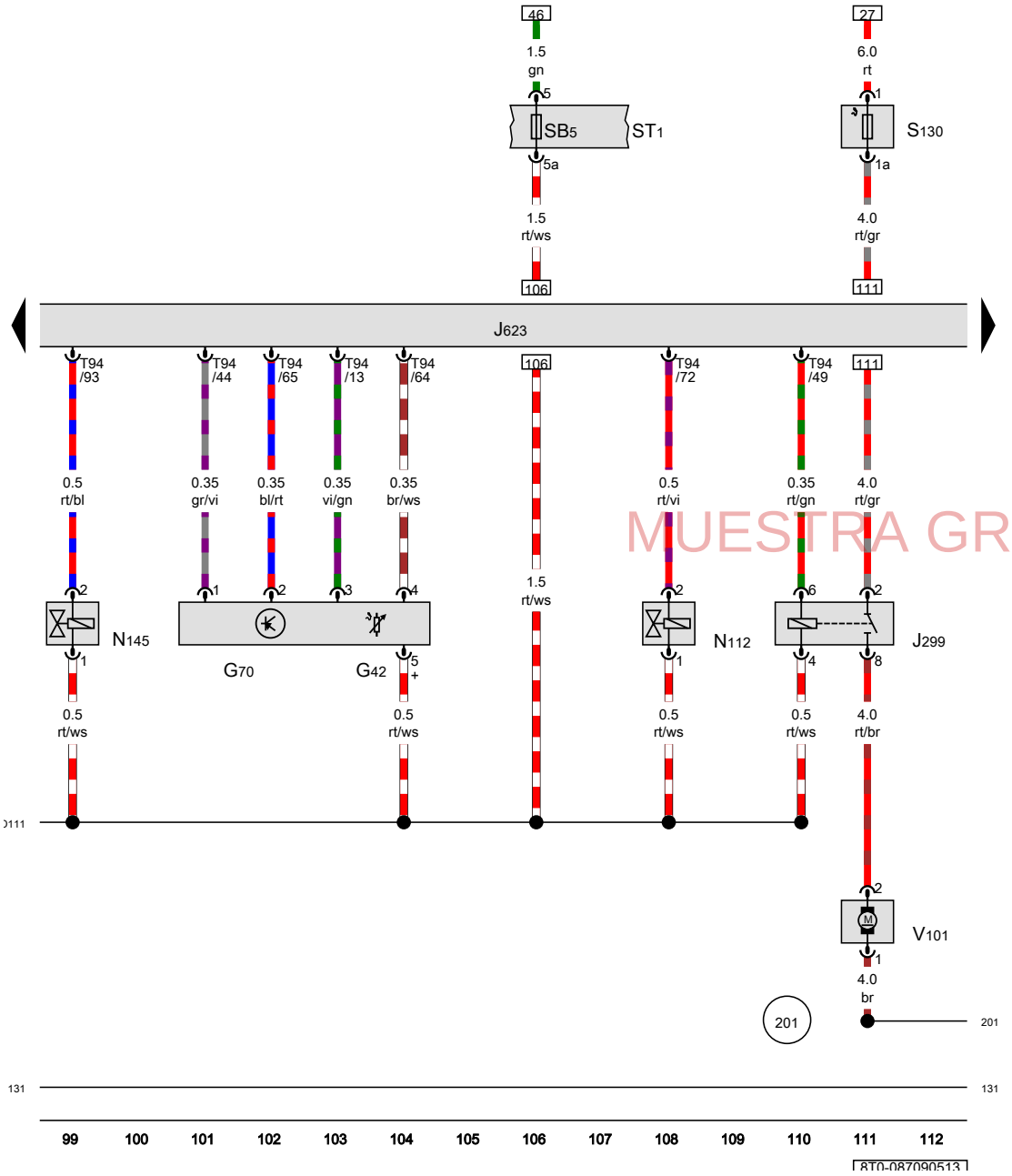
– Observe steps required after re-connecting battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

– Secure intermediate steering shaft to steering rack ⇒ Running gear, axles, steering; Rep. gr. 48 ; Steering column; Exploded view - steering column .

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Air mass meter, Secondary air pump relay, Engine control unit, Right electrohydraulic engine mounting solenoid valve, Secondary air pump motor

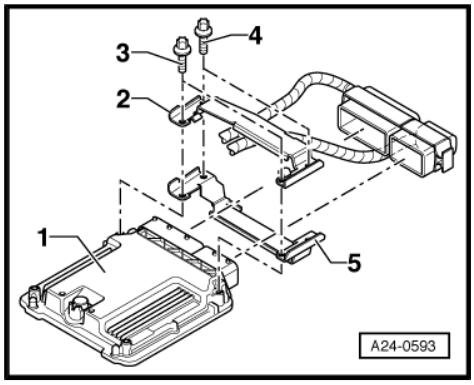
G42	Intake air temperature sender
G70	Air mass meter
J299	Secondary air pump relay
J623	Engine control unit
N112	Secondary air inlet valve
N145	Right electrohydraulic engine mounting solenoid valve
ST1	Fuse carrier 1
SB5	Fuse 5 on fuse holder B
S130	Secondary air pump fuse
T94	94-pin connector
V101	Secondary air pump motor
131	Earth connection 2, in engine compartment wiring harness
201	Earth connection 5, in engine compartment wiring harness
D111	Connection 9 in engine compartment wiring harness



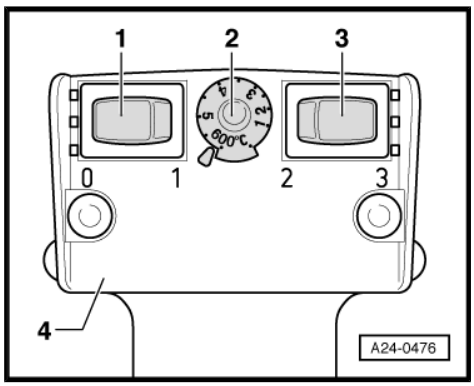
ws	=	white
sw	=	black
ro	=	red
rt	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
vi	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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The threads of the two shear bolts -3- which are screwed into the engine control unit are not secured with locking fluid. Do not apply heat to the threads in the control unit housing; this is not necessary and would cause overheating of the control unit.



– Select settings on hot air blower as shown in illustration, i.e. set temperature potentiometer -2- to maximum heat output and two-stage air flow switch -3- to position 3.

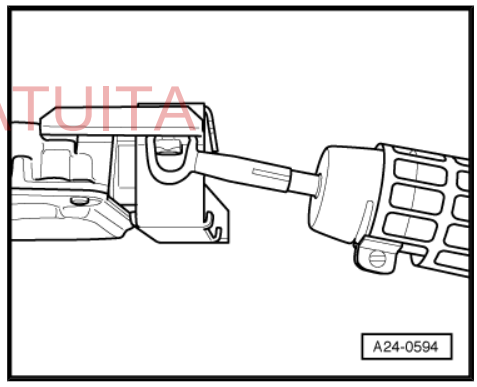


WARNING

Heating the thread of the locking plate also heats up the shear bolts and parts of the metal housing. Take care to avoid burns. It is also important to ensure that only the thread is heated and none of the surrounding components if at all possible. These should be covered if necessary.

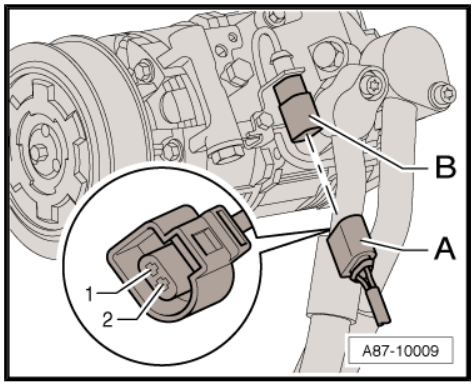
– Apply heat to the threads of the shear bolts on the connector side for approx. 25 to 30 seconds.

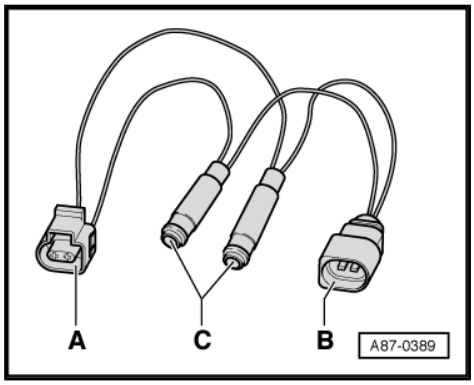
– Unscrew shear bolts using vice-grip pliers (see arrow in illustration).



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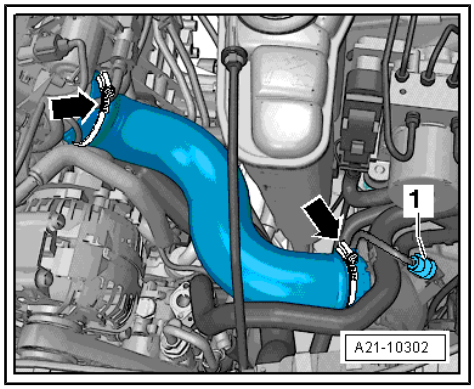
Note

- *The air conditioner compressor regulating valve - N280- is activated by the onboard supply control unit - J519- when requested by the air conditioner operating and display unit (Climatronic control unit - J255-) ⇒ Vehicle diagnostic, testing and information system VAS 5051 ("Guided Fault Finding") and ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.*
- *The top illustration shows an air conditioner compressor on which the connector -A- to the vehicle wiring harness is plugged in directly at the air conditioner compressor regulating valve - N280- (connector -B-). Depending on the version of the air conditioner compressor, the connector -B- may also be provided with a short wire.*
- *The activation of the air conditioner compressor regulating valve - N280- is displayed in the measured value block of the onboard supply control unit - J519- . The maximum control current depends on the version of the operating and display unit (Climatronic control unit - J255-) ⇒ Vehicle diagnostic, testing and information system VAS 5051 ("Guided Fault Finding") and ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.*
- *The measured current flowing via the air conditioner compressor regulating valve - N280- is displayed in the measured value blocks of the air conditioner operating and display unit (Climatronic control unit - J255-) and the onboard supply control unit - J519- ⇒ Vehicle diagnostic, testing and information system VAS 5051 ("Guided Fault Finding") .*
- *If the required actual current does not flow via the air conditioner compressor regulating valve - N280- , check the positive and earth connections of the onboard supply control unit - J519- and the wiring between -J519- and -N280- on the basis of the current flow diagram for open circuit, contact resistance and interchange ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.*
- *You can also use an improvised adapter lead for this test. For this you will need e.g. one connector each (-A- and -B-; part numbers 1J0 973 702 and 1J0 973 802 and the corresponding plug contacts), two commercially available sockets for banana plugs -C- and two wires (cross-section = 0.5 mm^2).*

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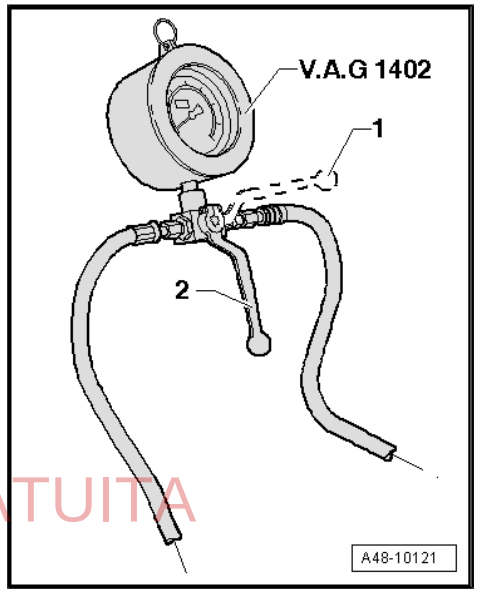
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– Install air intake hose -arrows-.



All vehicles (continued):

– Make sure lever on pressure gauge is at position -2-.
– Remove hose clamps -3094- .
– Start engine but do not press accelerator.
– Turn steering wheel approx. 10 times from lock to lock.
– Switch off engine and top up hydraulic fluid in reservoir if necessary.



Note

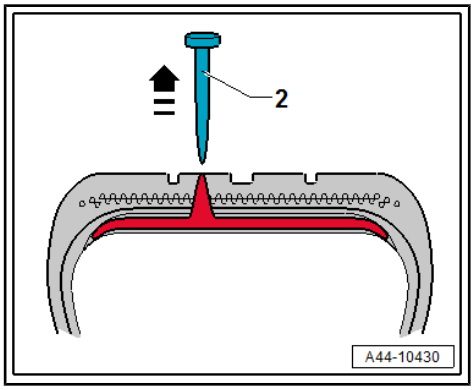
- *To avoid damaging the power steering pump, please note the following points:*
- *Cut-off valve of pressure gauge must not remain closed for more than 10 seconds during this test.*
- *Start engine without pressing accelerator and leave it running at idling speed.*
- *Take pump pressure reading at idling speed immediately after starting engine (have second mechanic take reading).*
- *The pressure will drop during the test; the highest pressure reading is therefore the required test value.*

– Then check delivery pressure.
– Start engine.

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The hole is sealed off by the sealant.



Caution

The Seal Inside technology does not guarantee that the tyre is repaired permanently after a puncture.

Unlike other tyres with run-flat capability, Seal Inside tyres may not be driven when they are underinflated or flat.

27.5 Servicing tyres with run-flat capability

General notes

Caution

A damaged tyre may only be assessed by qualified personnel.

WARNING

- *Run-flat tyres must be renewed after a puncture.*
- *Note the special installation instructions.*

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– As with standard tyre/wheel systems, the wheel must also be checked before fitting.

– After a puncture, the wheel should be checked for damage (excessive lateral and radial run-out or other damage), as the wheel may have been damaged if it hit a pothole while the tyre was flat.

– Damaged wheels must be renewed.

Note

- *Flat tyre sprays/foams can be used with SST tyres.*
- *Tyres must be renewed after a puncture.*
- *Note the manufacturer's instructions.*

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