

Servicing diesel direct injection system

Removing and installing unit injector

Special tools and workshop equipment required

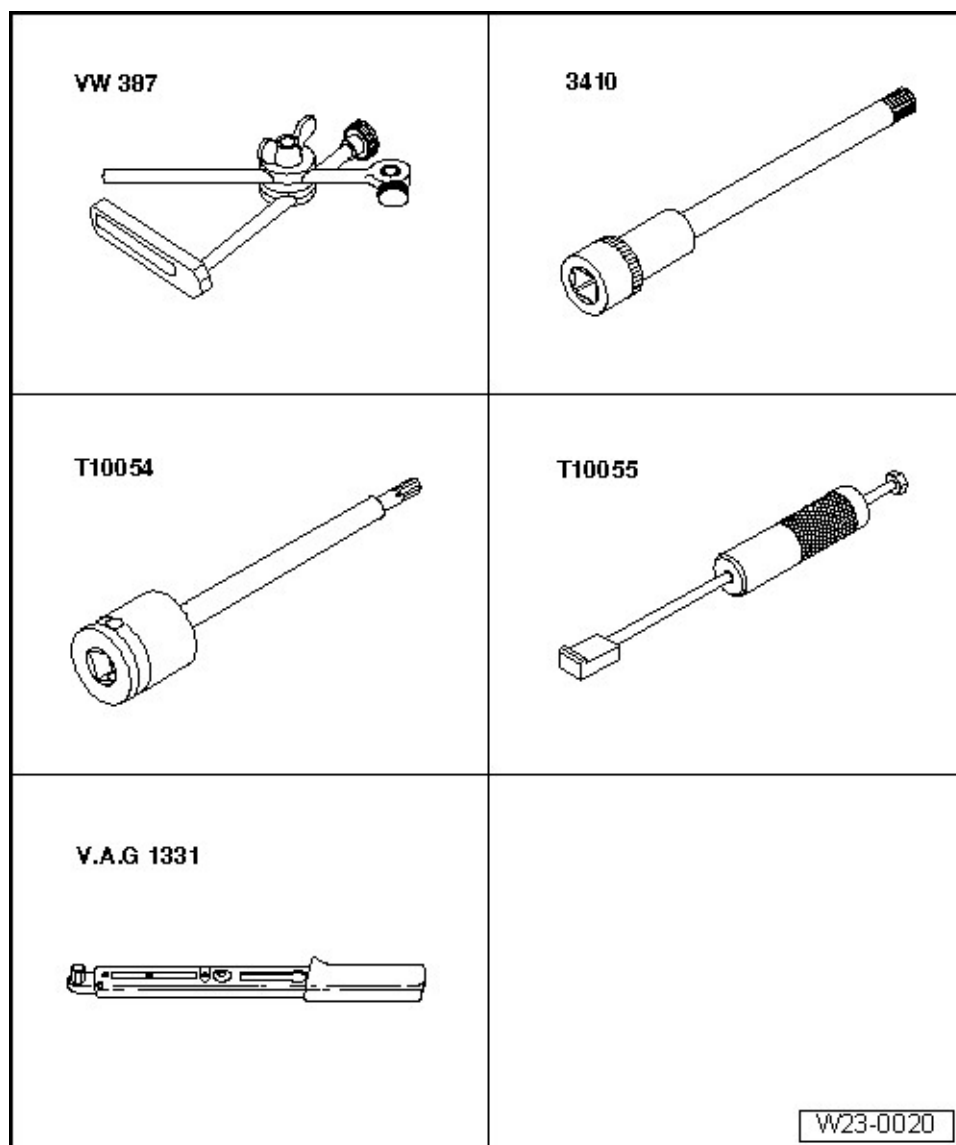
- ♦ VW 387
Universal dial gauge bracket
- ♦ 3410 Insert
- ♦ T10054 Insert
- ♦ T10055 Puller
- ♦ VWorkshop depth gauge VAS 5276 (measuring range at least 400 mm)
- ♦ Angle wrench V.A.G 1756

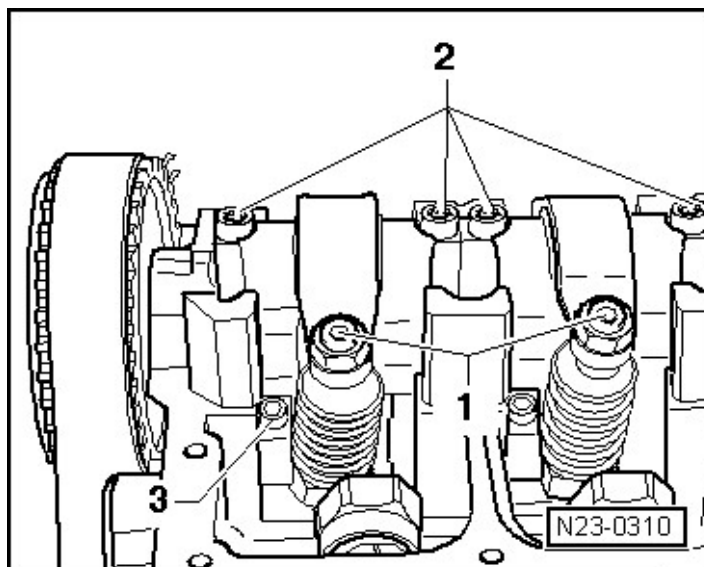
Removing

- – Remove cylinder head cover:

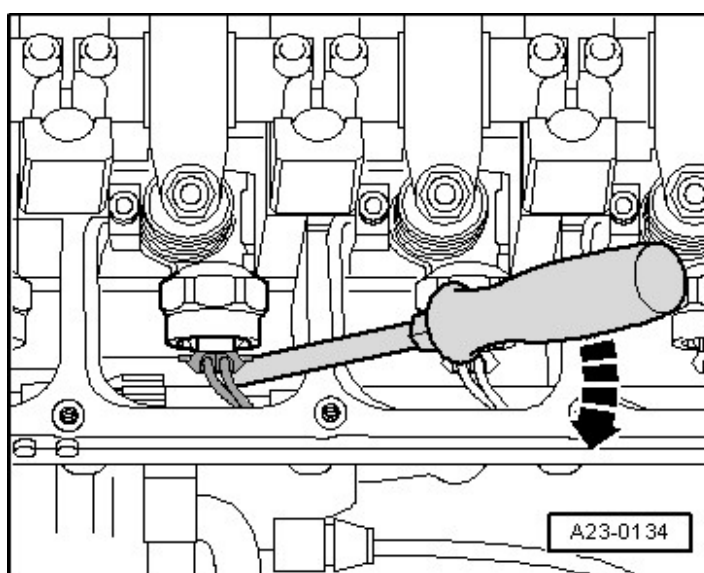
[=> 4-Cyl. diesel direct injection engine \(TDI\), Mechanics; Repair group 15; Removing and installing cylinder head; Removing and installing cylinder head cover](#)

- – Turn crankshaft until the set of cams for the unit injector which is to be removed/installed point evenly upwards.
- – → Loosen lock nuts of adjustment screws -1- and screw the screws out until the relevant rocker arm lies against the plunger spring of the unit injector.
- – Remove rocker arm shaft securing bolts -2- (working from outside to inside) using insert 3410 and take rocker arm shaft off.
- – Remove tensioning block securing bolt -3- with insert T10054 and remove the tensioning block.





- – → Lever connector off unit injector with a screwdriver -arrow-. Support the opposite side of the connector with light finger pressure to stop it from jamming.



- – → Apply the puller T 10055 into the slot on the side of the unit injector in place of the tensioning block.
- – Pull unit injector upwards out of cylinder head seat with gentle taps.

Installing

Notes:

- ♦ New unit injectors are supplied with O rings and heat insulating seal.
- ♦ If a new unit injector is installed, the appropriate adjustment screw in the rocker arm must also be renewed.
- ♦ If the removed unit injector is re-installed, renew O-rings and heat insulating seal => Page 23-34.
- ♦ Each time work is performed which requires the unit injector to be adjusted, the adjustment screw in the

rocker arm and also the unit injector ball pin must be cleaned and checked for signs of wear. If wear is evident the ball pin and the adjustment screw must be replaced.

- ♦ Grease the contact surface between ball pin and adjustment screw with G 000 100 grease.
- – Check that the three O rings and the heat insulating seal along with circlip are seating correctly before installing unit injector.

Note:

The O-rings must not be twisted.

- – Oil the O-rings and fit the unit injector into the cylinder head with great care.
- – Push the unit injector evenly into the cylinder head onto its stop.
- – Fit the tensioning block into the slot on the side of the unit injector.

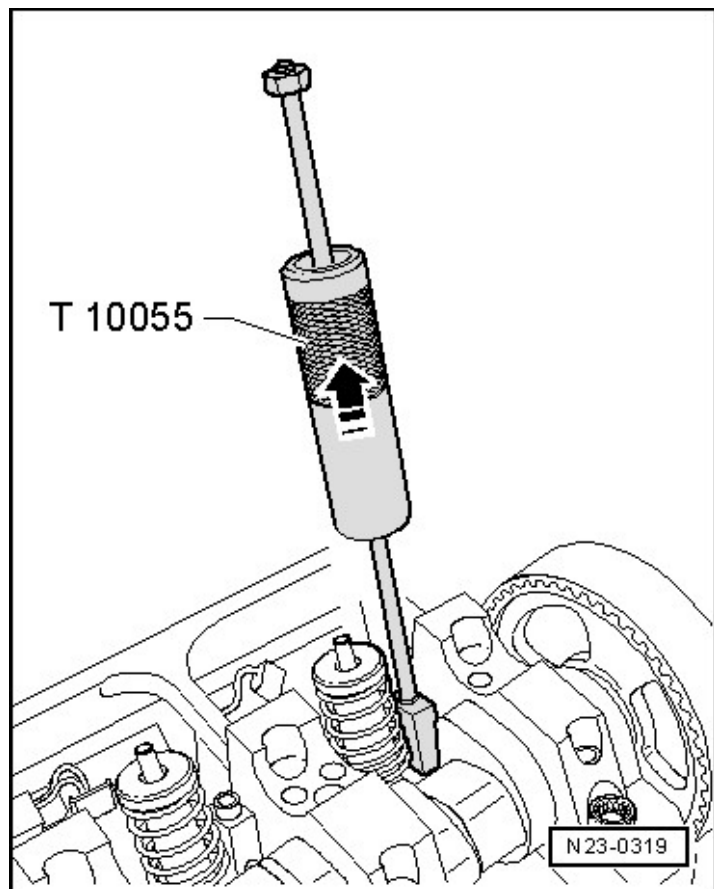
Note:

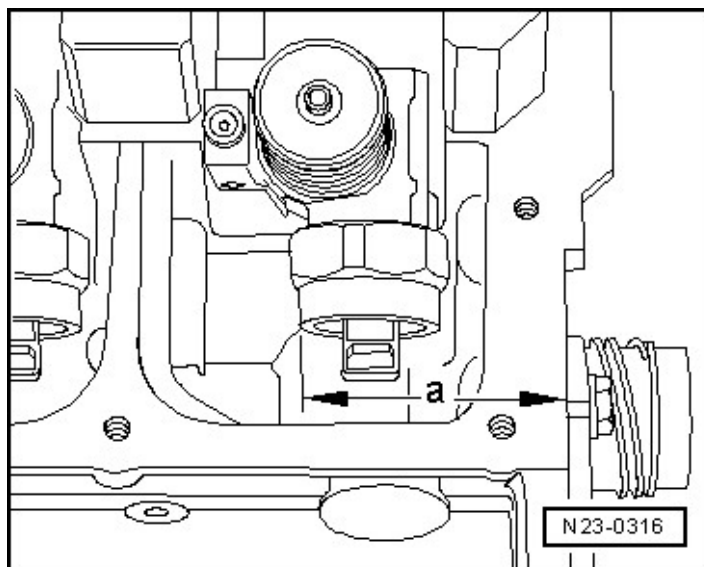
If the unit injector is not at right angles to the tensioning block the securing bolt may loosen, which can result in damage to the unit injector or the cylinder head.

- – Therefore align the unit injector as follows.
- – Screw the new securing bolt into the tensioning block until the unit injector can still be turned easily.
- – Now align the unit injector at right angles with the camshaft bearing blocks.
- – Using a workshop depth gauge VAS 5276 (measuring range at least 400 mm), check distance "a" from outside edge of cylinder head to round surface of unit injector.

→ Unit injectors with cylindrical collar on nut:

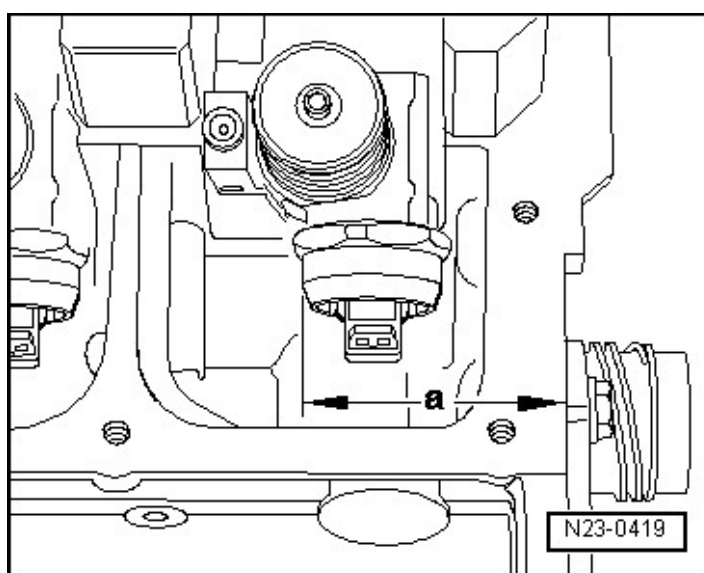
Cylinder	Dimension "a"
1	332.2 ±0.8 mm
2	244.2 ±0.8 mm
3	152.8 ±0.8 mm
4	64.8 ±0.8 mm





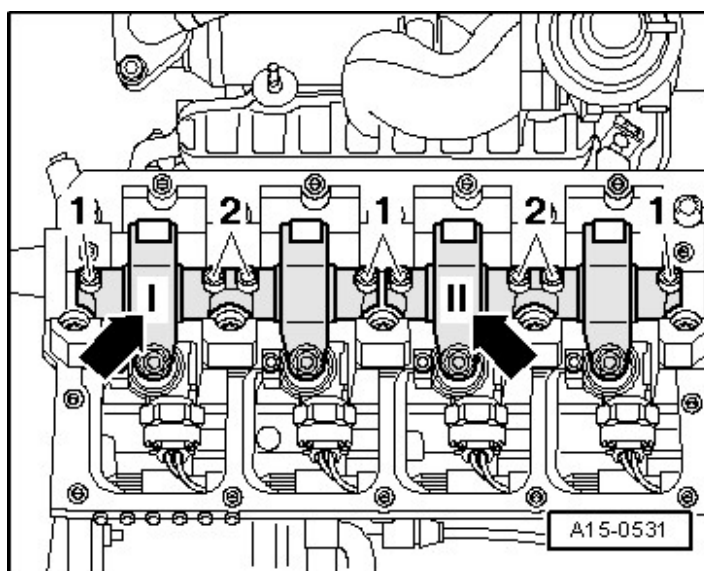
→ Unit injectors with chamfered collar on nut:

Cylinder	Dimension "a"
1	333.0 ±0.8 mm
2	245.0 ±0.8 mm
3	153.6 ±0.8 mm
4	65.6 ±0.8 mm



All models

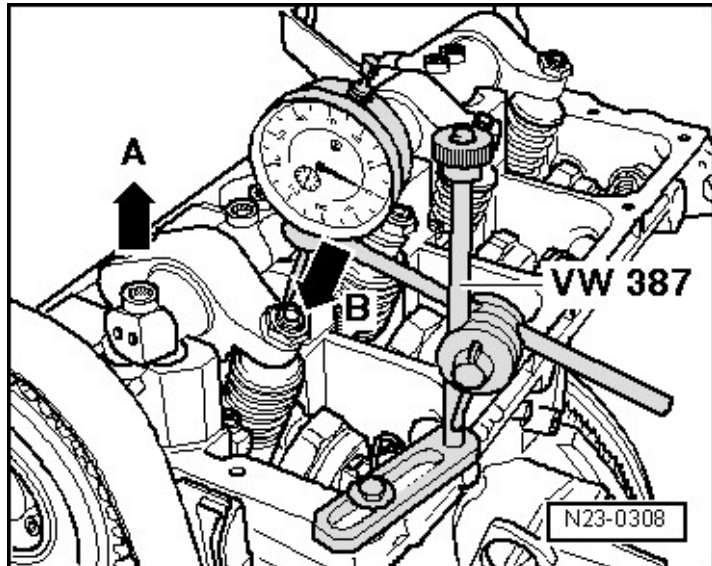
- – Align the unit injector as necessary and tighten the securing bolt as follows:
 - – Tightening torque: 12 Nm and turn 3/4 turn (270°) further
- – → Fit the rocker arm shaft.
- – First tighten inner bolts -2- then outer bolts -1- in several stages.
 - – Tightening torque: 20 Nm + 1/4 turn (90°) further



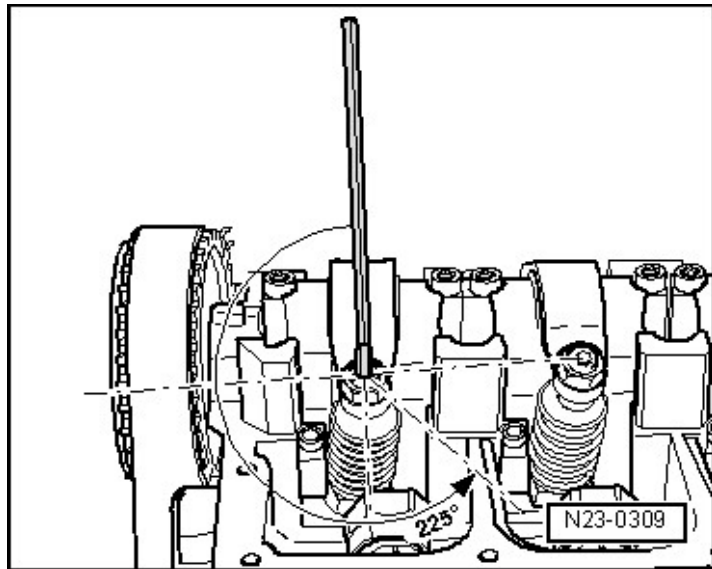
- – → Fit the dial gauge onto the adjustment screw of the unit injector as shown.
- – Turn the crankshaft in direction of

engine rotation until the roller of the rocker arm is positioned on the peak of the drive cam.

- – Roller side -arrow A- positioned at highest point
Dial gauge -arrow B- positioned at lowest point
- – Remove dial gauge.
- – Turn adjustment screw inwards into rocker arm until a firm resistance is felt (unit injector positioned at stop).



- – → Using angle wrench V.A.G 1756 (special tool), back off adjuster screw 225° from stop.
- – Hold adjustment screw in this position and tighten the lock nut to 30 Nm.
- – Connect unit injector connector, install cylinder head cover and toothed belt guard.



=> [4-Cyl. diesel direct engine \(TDI\), Mechanics; Repair group 15; Removing and installing cylinder head; Removing and installing cylinder head cover](#)