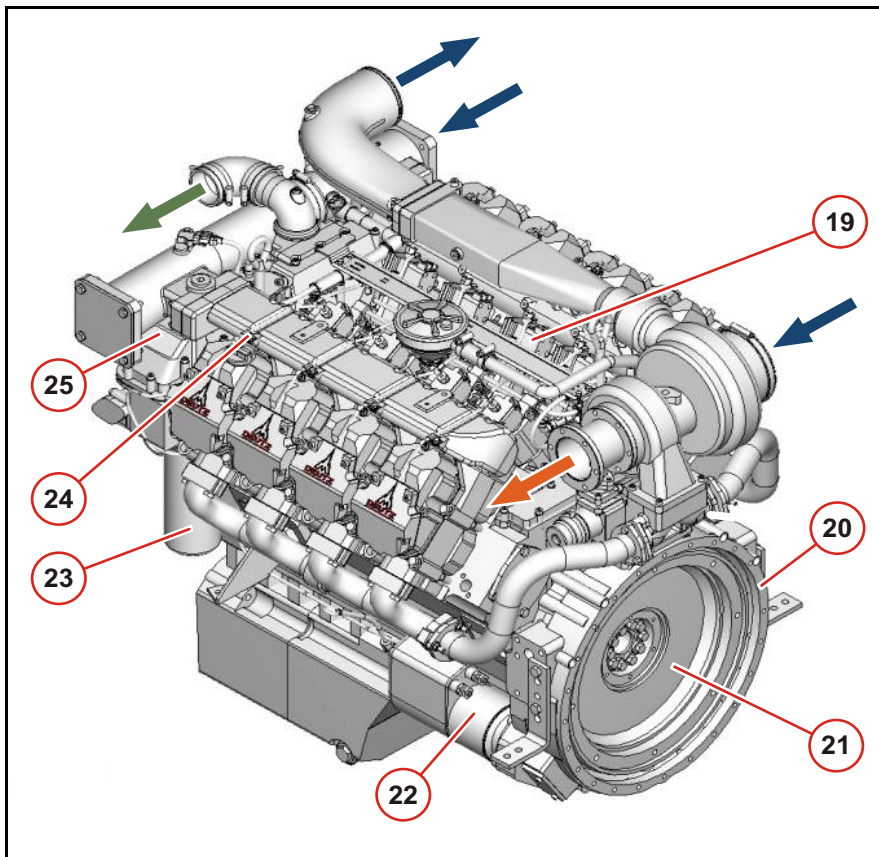
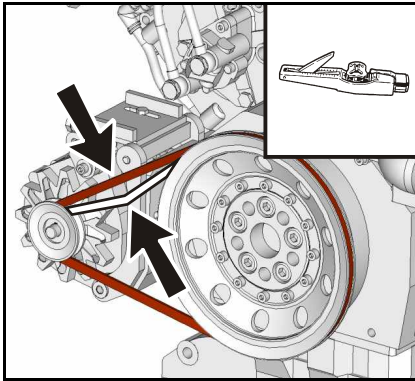


2



- 19. Injection pump (plug-in pump)
- 20. Gear connection (SAE)
- 21. Flywheel
- 22. Starter
- 23. Lubricating oil filter cartridge
- 24. High pressure pipe
- 25. Lubricating oil cooler

Example: TCD2015 V08 standard, industrial and vehicle engine, left side

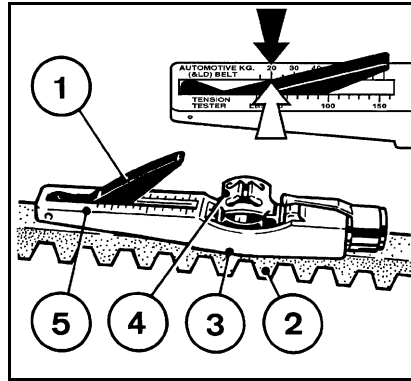


Checking the belt drive



Only carry out work on the belt drive when the engine is not running!

- Check the whole belt drive visually for damage.
- Renew damaged parts.
- Remount protective devices if necessary.
- Pay attention to correct fit of new belts, check the tension after running for 15 minutes.

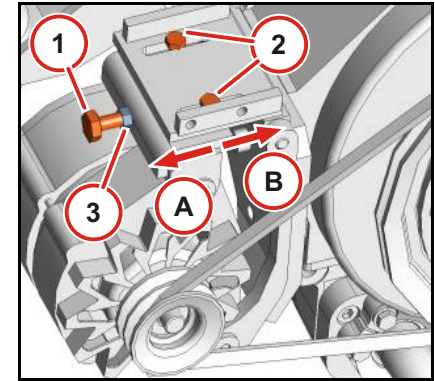


Checking the belt tension

- Lower indicator arm (1) into the measuring device.
- Place guide (3) between two belt pulleys on the V-belt (2). The stop should be at the side.
- Press the button (4) at right angles to the V-belt (2) evenly until you hear or feel the spring snap in.
- Lift the measuring device carefully without altering the position of the indicator arm (1).
- Read the measured value at the point of intersection (arrow), scale (5) and indicator arm (1). Setting values see (51).
- If necessary, re-tighten and repeat measurement.

Tools

(The belt tension measuring device (order no. 8115) is obtainable from your DEUTZ partner.



Tightening the belt

- Loosen screws 2.
- Tighten screw 1 in clockwise direction until the desired belt tension is achieved.
- Tighten screws 2.

Changing belts

- Loosen screws 2.
- Loosen screw 1.
- Tighten screw 1 in clockwise direction until the desired belt tension is achieved.
- Remove belt and fit new one.
- Tighten screws 2.

T01 63

Setting valve clearance
 engine TCD 2015 V08

Ignition sequence: A1-B4-A4-B1-B3-A3-B2-A2

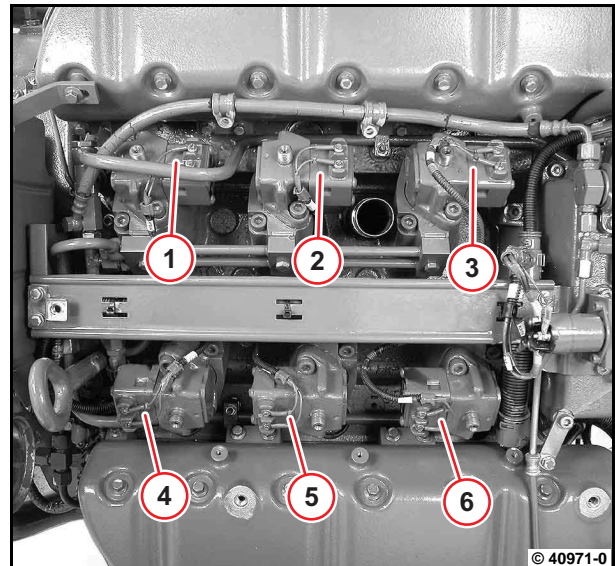
Valve overlap on cylinder	Setting on cylinder
A1	B3
B4	A3
A4	B2
B1	A2
B3	A1
A3	B4
B2	A4
A2	B1

4

T13 054

Connection plan of the injection pumps
 engine TCD 2015 V06

Item	Component	Cylinder assignment
1	Y15.1	A1
2	Y15.5	A2
3	Y15.3	A3
4	Y15.6	B1
5	Y15.4	B2
6	Y15.2	B3



T13 054

Connection plan of the injection pumps
 engine TCD 2015 V08

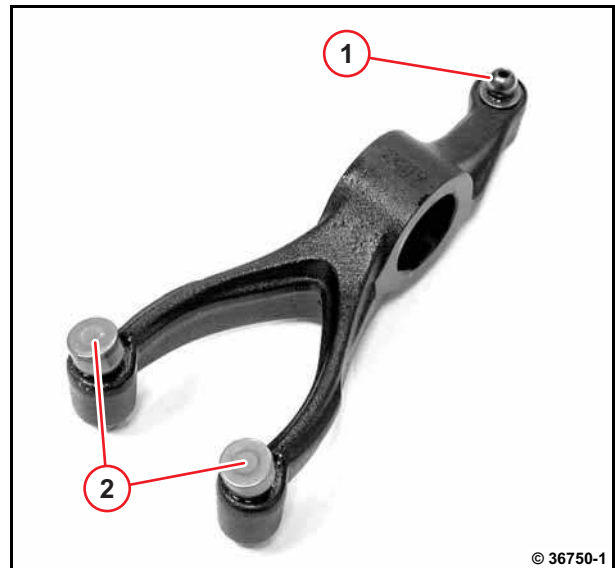
Item	Component	Cylinder assignment
	Y15.1	A1
	Y15.8	A2
	Y15.6	A3
	Y15.3	A4
	Y15.4	B1
	Y15.7	B2
	Y15.5	B3
	Y15.2	B4

ID no.	Name	Screw type	Notes / Remarks	Series	Pre-clamping value	Post-clamping value
A02 011	Main bearing cover, horizontal screws		Screws can be used a max. 3 times, otherwise renew every time they are loosened.	TCD 2015	80 Nm	+30° +30°
A02 020	Big end bearing cover on connecting rod		Renew screws every time they are loosened.	TCD 2015	50 - 60 Nm	+60° +60°
A03 010	Rear cover on crankcase		Insert with locking agent DEUTZ DW 59	TCD 2015	21 Nm	
A03 020	Genset support on crankcase	M10		TCD 2015	55 Nm	
A03 030	Lubricating oil pan on crankcase		Gasket steel beading Observe tightening order	TCD 2015	28 Nm	
				TCD 2015 (Railway)	24 Nm	
A03 031	Oil drain plug on lubricating oil pan		oil lightly	TCD 2015	120 Nm	
				TCD 2015 (Railway)	120 Nm	
A03 034	Half-flange on connecting flange	M8x30-10.9		TCD 2015 (Railway)	30 Nm	
A03 035	Connecting flange on lubricating oil pan	M10x20-10.9		TCD 2015 (Railway)	30 Nm	
A03 051	Valve housing (pressurestat) on crankcase		oil lightly	TCD 2015	50 Nm	210 Nm
A03 060	Crankcase breather		Pipe clamp	TCD 2015	8 Nm	
A03 064	Breather pipe on intake elbow/oil separator		Hose clip	TCD 2015	6.5 Nm	
A03 069	Breather pipe (holder) on cable harness rail			TCD 2015	20 Nm	
	Pipe (crankcase breather) on cable harness rail			TCD 2015 (Railway)	20 Nm	

- Visually inspect the components.
- Check ball stud (1) and adjusting screws (2) for wear.

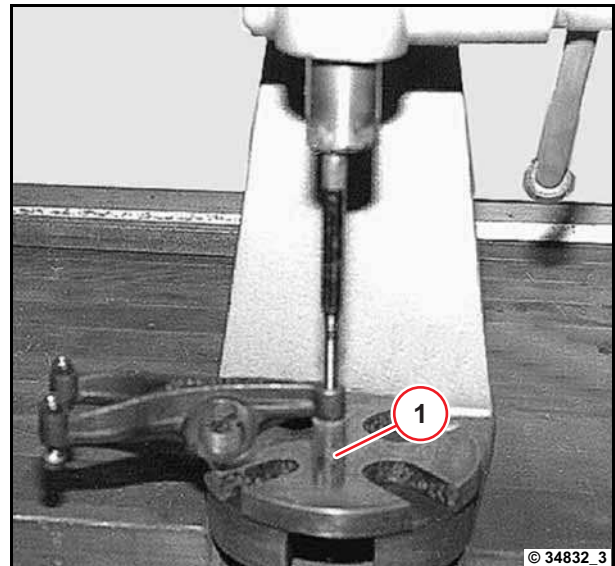


The components must be renewed in case of excessive wear.

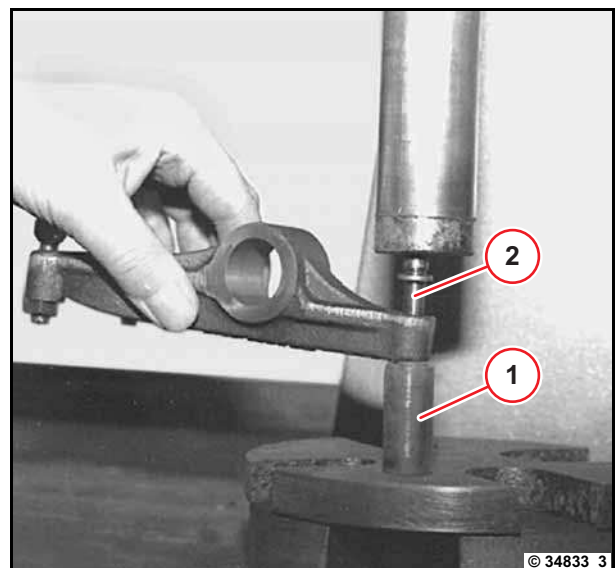


Renewing ball stud

- Place disassembly/assembly tool (1) underneath.
- Press out ball stud.



- Place disassembly/assembly tool (1) underneath.
- Press in new ball stud (2).



Press in valve seat insert

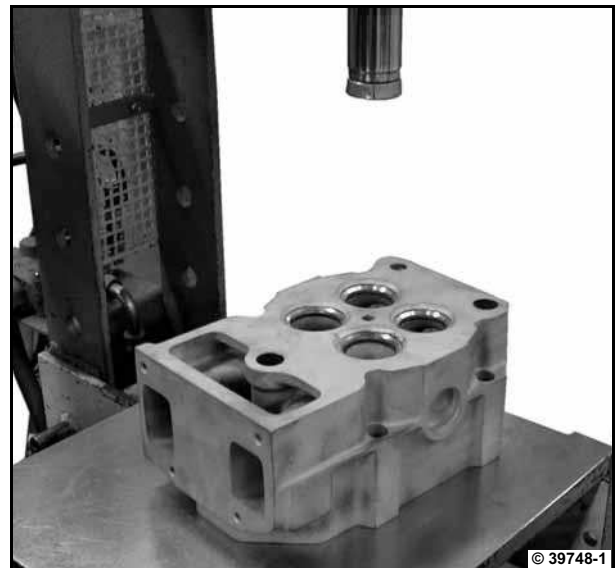
- Mount cylinder head.
- Select valve seat insert to fit housing bore.

 P01 21

P01 22

P01 23

P01 24



- Supercool valve seat insert in liquid nitrogen.



Use a suitable container for the liquid nitrogen and a suitable tool for inserting and removing the components.

At the beginning of the metal cooling, the liquid nitrogen boils strongly, the bubbling up process continues until the metal parts have reached the temperature of the liquid nitrogen (-196 °C).

The valve seat insert has the correct temperature if the bubbling up process of the nitrogen has finished.

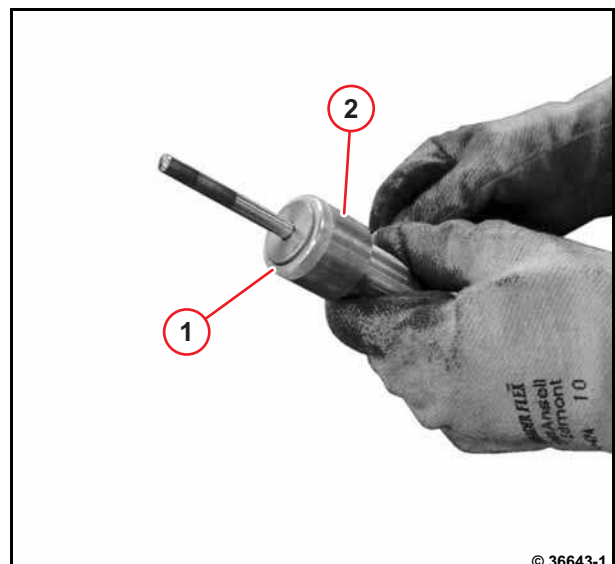


- Push valve seat insert (1) onto press-in pin (2).



Note installation position.

The valve seat surface must point to the press-in pin.

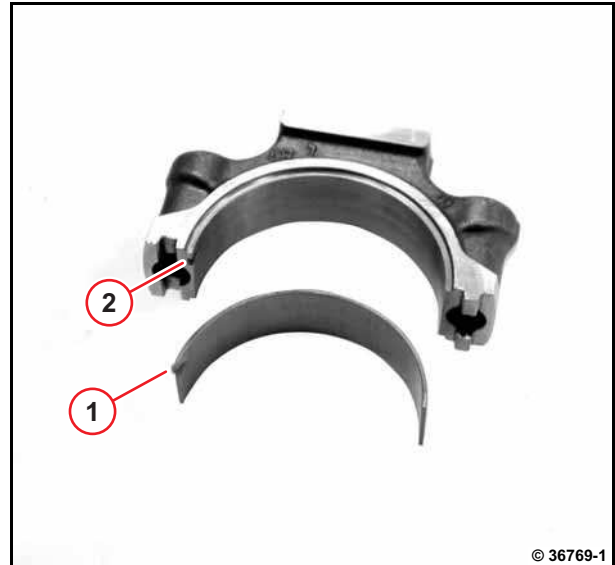


- Insert big end bearing shells in the respective big end bearing cap.



Attention!

Note the assignment of the bearing shells. The anti-rotation lock (1) must lock in groove (2).



- Lightly oil bearing surfaces.



- Insert the crankshaft carefully in the crankcase.



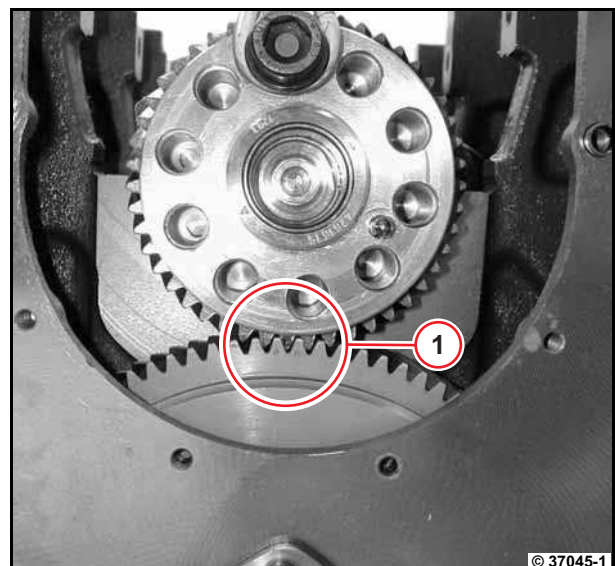
Attention!

Do not jam the con rods when inserting the crankshaft!

- Set the crankshaft in line with the camshaft (1) .



The marking on the crankshaft gear wheel must be between the marking points on the camshaft gear wheel.

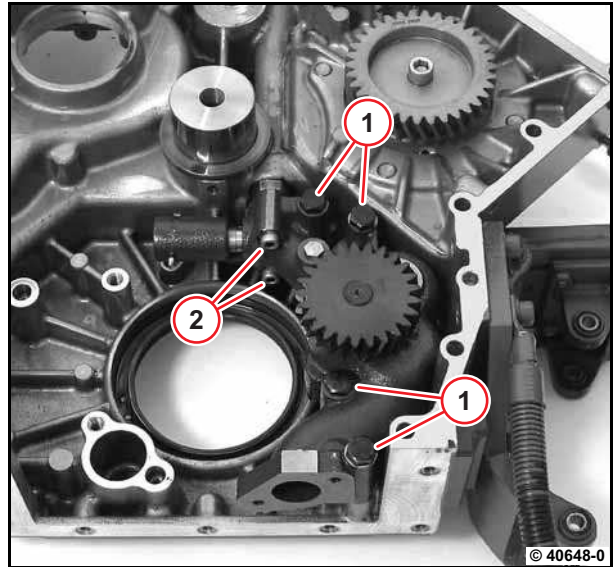


- Tighten screws (1).

 A08 010

- Tighten screws (2).

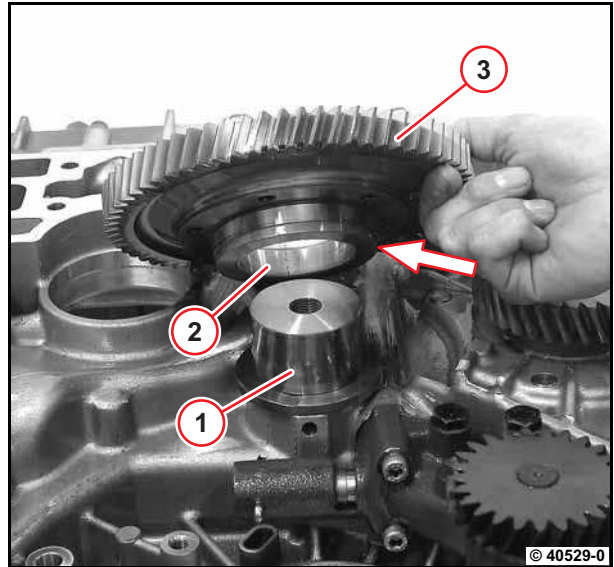
 A08 011



- Lightly oil journal (1).
- Lightly oil bearing bush (2).
- Mount idler gear (3).



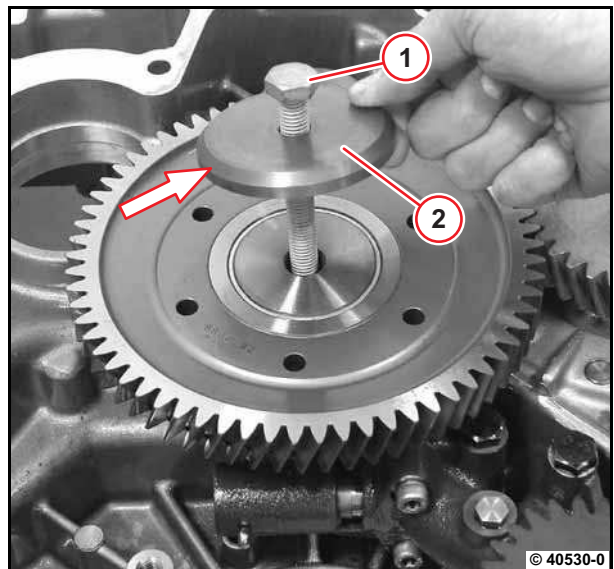
The collar (arrow) of the idler gear faces the genset support.



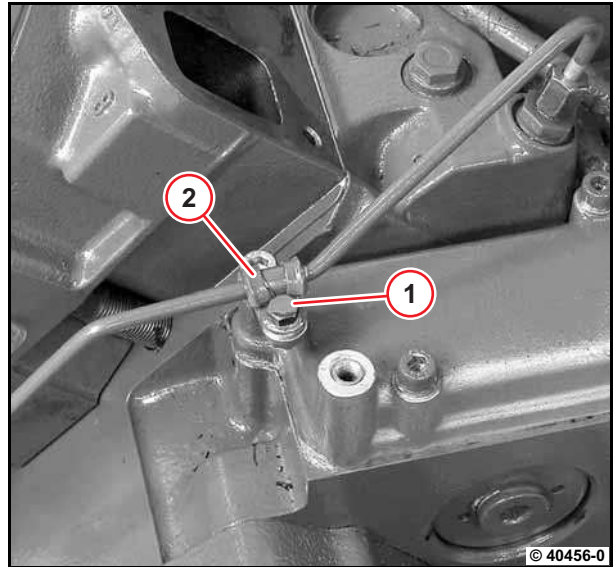
- Mount thrust washer (2).
- Fasten screw (1).



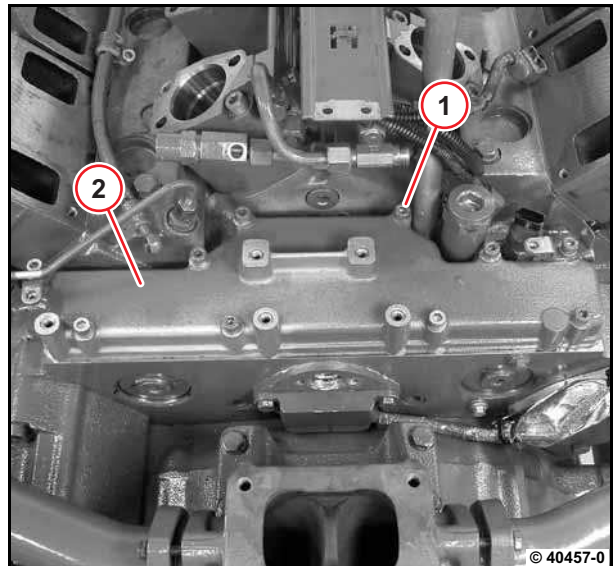
The bevelled side (arrow) of the thrust washer must face upwards.



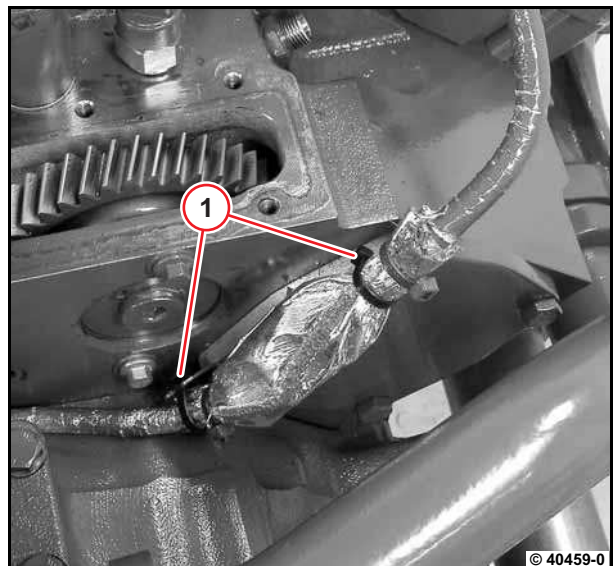
- Unscrew screw (1).
- Remove pipe clamp (2).



- Unscrew all screws (1).
- Remove gear case cover (2).

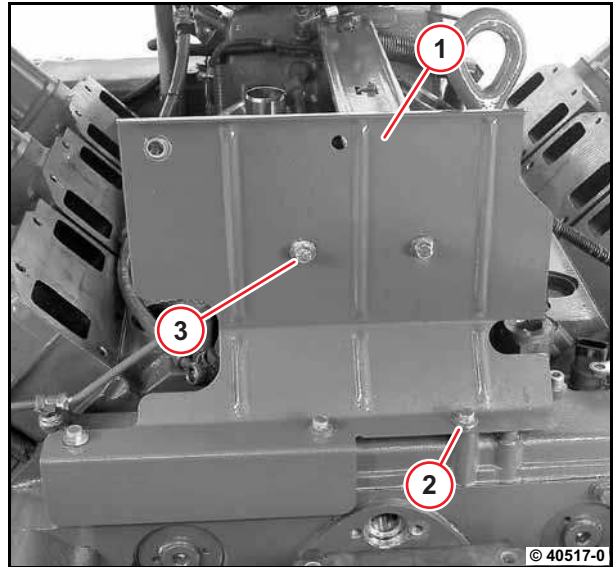


- Remove cable tie (1).



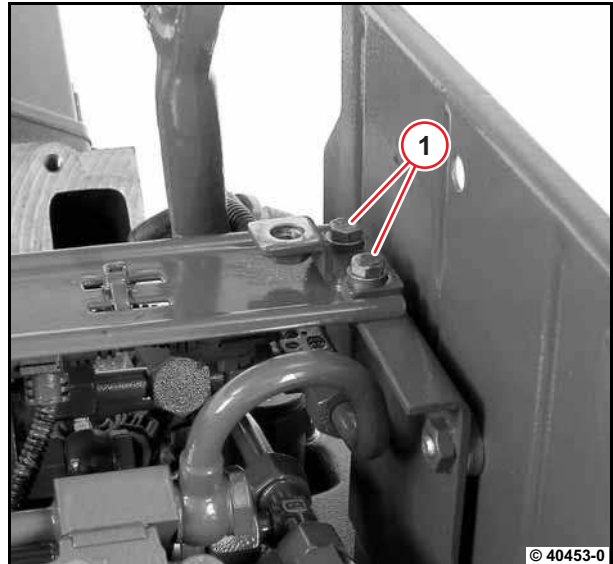
- Mount heat shield (1).
- Insert screws (3) with spacing sleeves.
- Tighten screws (2).
- Tighten screws (2 and 3) alternately.

 A12 071



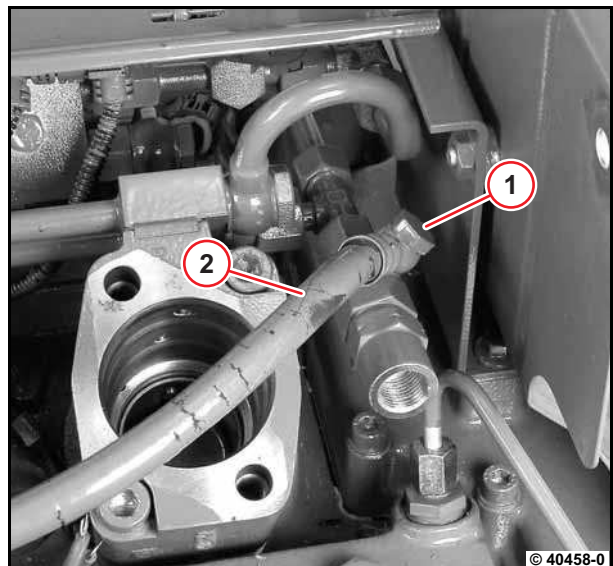
- Tighten screws (1).

 A13 094



- Mount new sealing rings.
- Position fuel hose (2).
- Tighten hollow screw (1).

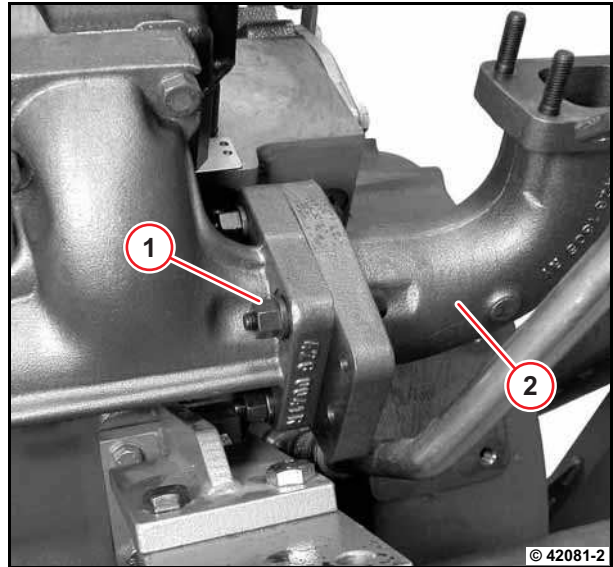
 A12 090



Installing exhaust manifold

- Clean sealing surfaces.
- Mount exhaust manifold (2).
- Coat the screws with fitting compound .
- Insert screws.
- Mount washers.
- Tighten nuts (1).

 [A06 010](#)

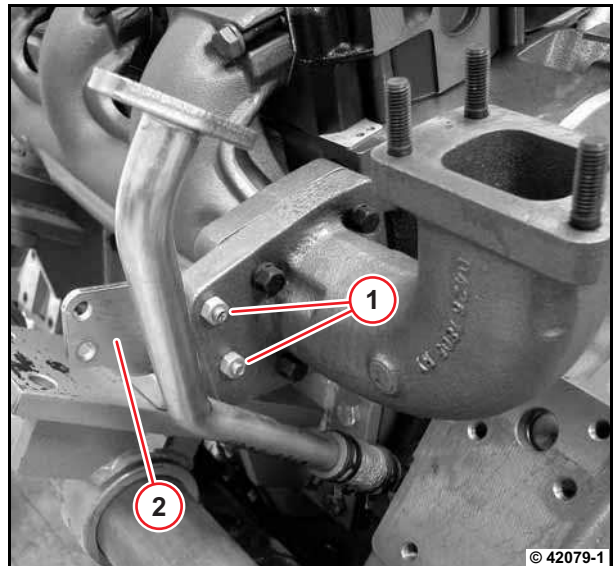


- Mount holder (2).
- Insert screws.
- Tighten nuts (1).

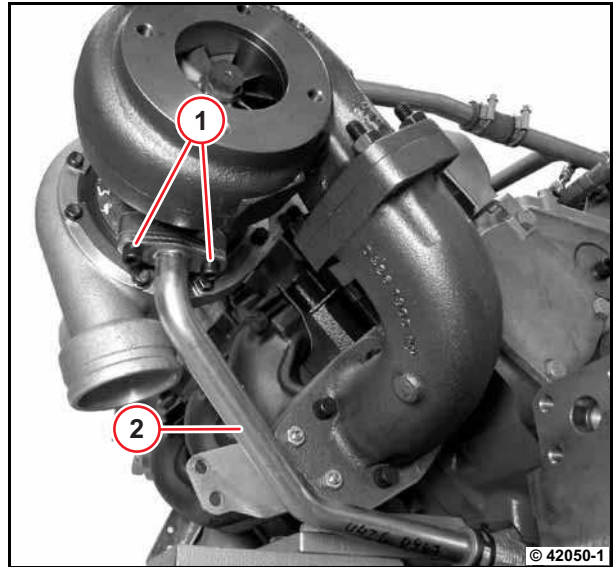
 [A06 034](#)

- Install turbocharger (A-bank).

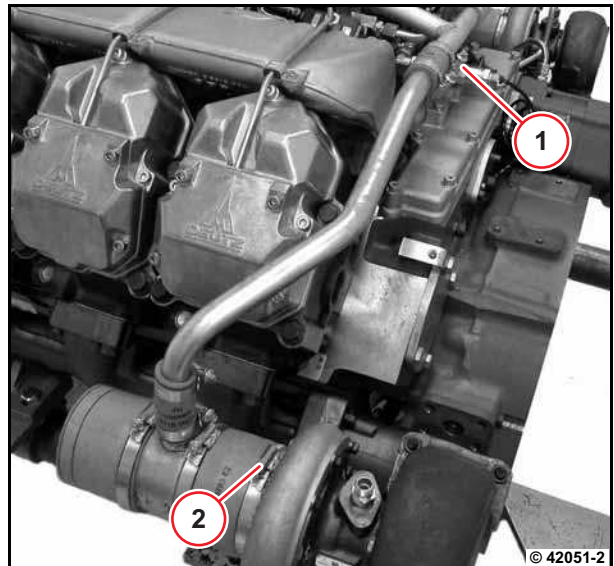
 [W 06-06-04](#)



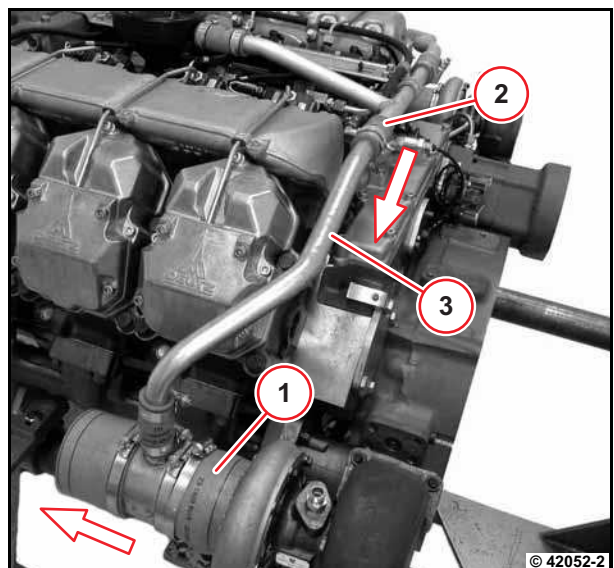
- Unscrew screws (1).
- Remove oil return pipe (2).
- Remove gasket.



- Loosen hose clip (1).
- Loosen hose clip (2).



- Pull off tubing connection (1).
- Pull off bleeding hose (2).
- Remove breather pipe (3).

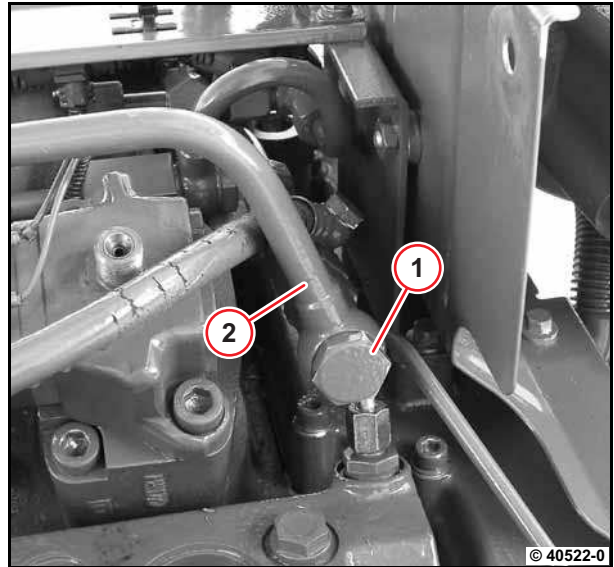


- Unscrew hollow screw (1).

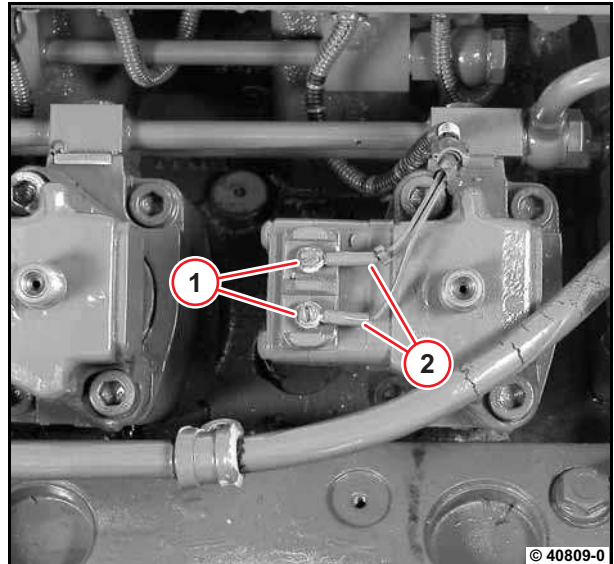


Hold overflow valve.

- Remove fuel pipe (2).
- Remove sealing rings.



- Loosen screws (1).
- Pull off cables (2).



- Unscrew screws (1).

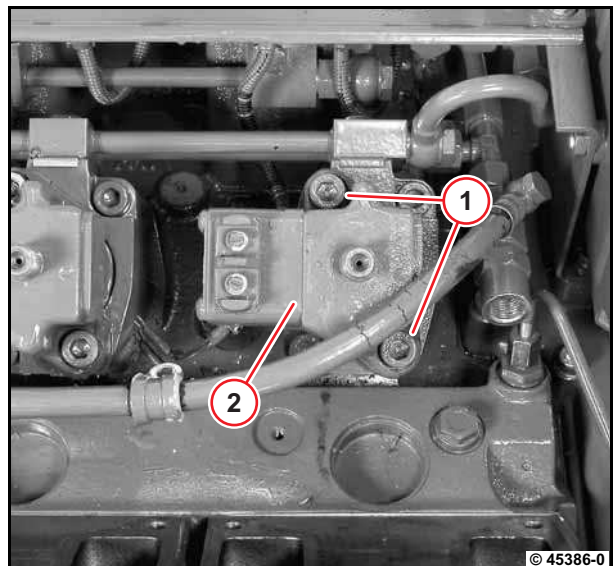


Loosen screws evenly to avoid jamming the injection pump.

- Remove fuel injector pump(2).



Lay out components in the order in which they should be installed.



Removing and installing the oil suction pipe



Commercial available tools



– W 08-04-07



Collect leaking operating substances in suitable vessels and dispose of according to regulations.

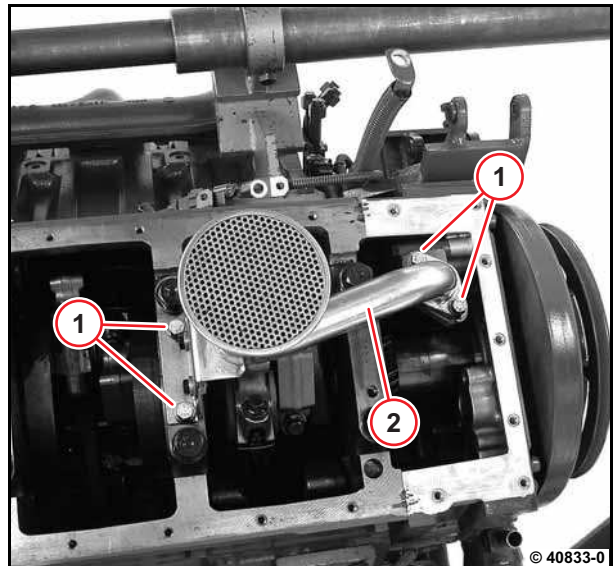
Removing the oil suction pipe

- Remove lubricating oil pan.

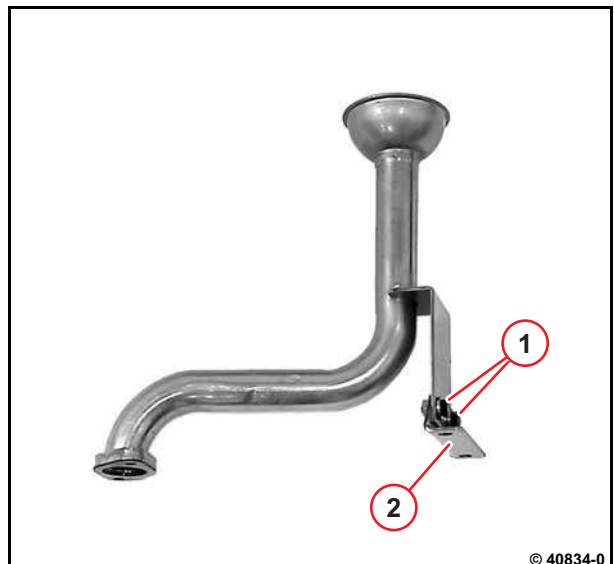


W 08-04-07

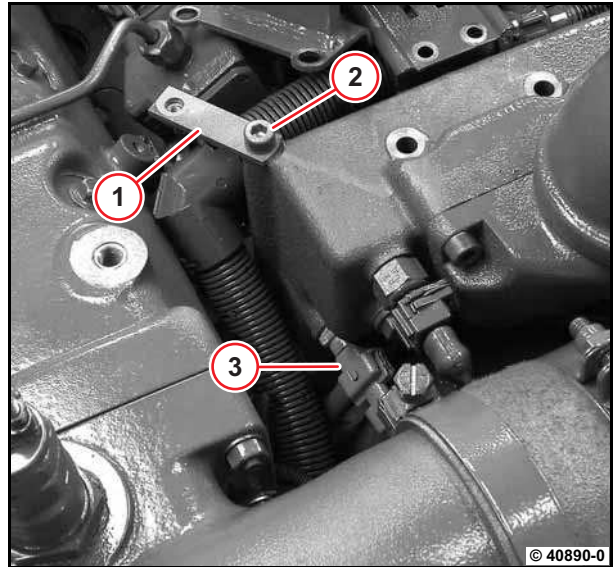
- Unscrew screws (1).
- Remove oil suction pipe (2).
- Remove gasket.



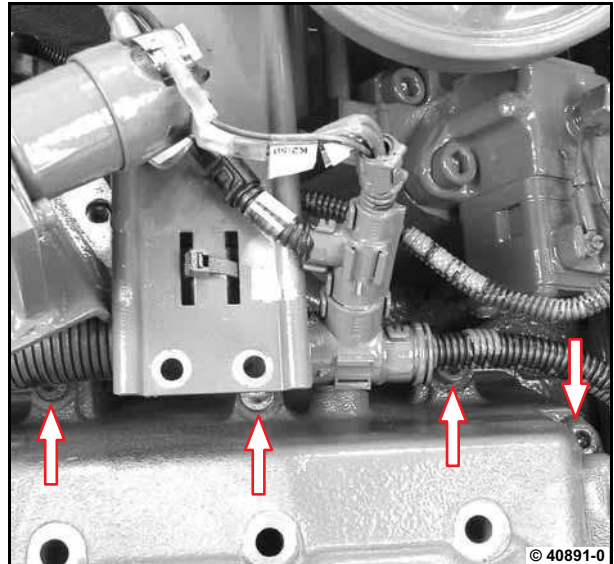
- Unscrew screws (1).
- Remove the holder (2).
- Visually inspect the components.



- Unscrew screw (2).
- Remove holder (1).
- Unlock cable plug (3) and remove.



- Unscrew screws (arrows).



- Remove the thermostat housing (1).
- Unlock cable plug (2) and remove.
- Remove gasket.

