

Replacing turbocharger (TC)

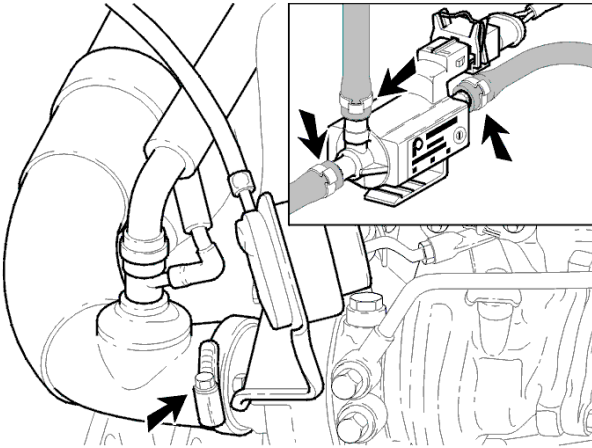
Prerequisites

Remove:

- The complete air cleaner (ACL), see [Replacing the air cleaner \(ACL\), B4194T, B4204T engines](#)
- The engine cover
- The rear engine splash guard.
- The heat shield from inlet manifold / turbo charger (TC)

Remove the air hoses from turbo charger (TC)

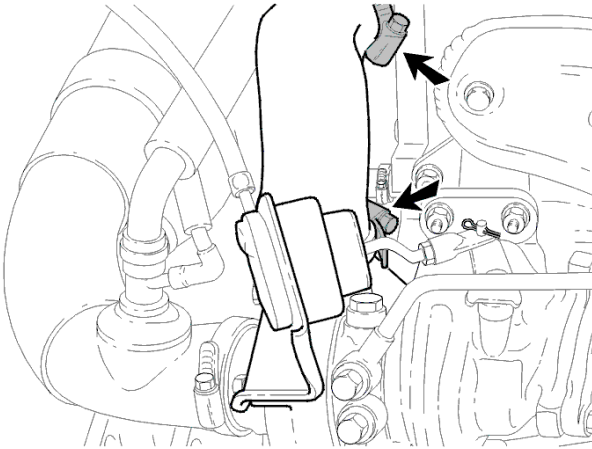
- Remove the hoses from the turbocharger control valve (TCV)
- Unscrew the hose clamp and disconnect the air inlet hose from the turbo.



Remove turbocharger (TC) upper charge air pipe

Remove:

- The connector cover
- The clamps, and undo the upper charge air-pipe.

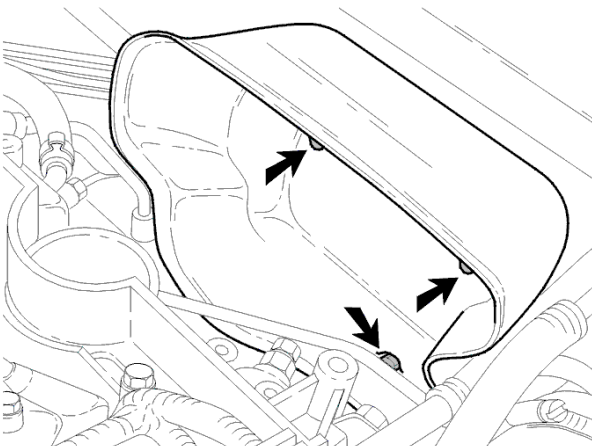


Draining coolant

See [Replacing coolant](#)

Remove heat shield from firewall

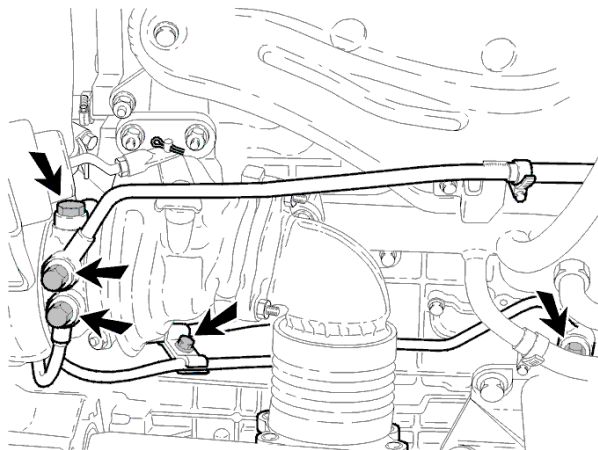
Remove the nuts and take the heat shield off.



Remove oil and water hoses from turbo charger (TC)

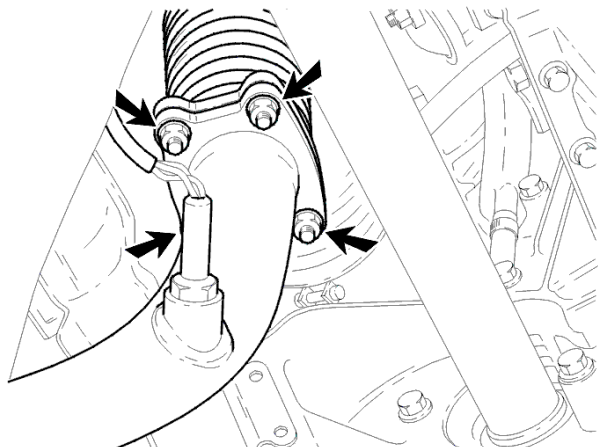
Undo:

- The upper and lower TC coolant pipes
- The upper TC oil pipe
- The clamp from the lower oil pipe
- The banjo bolt from the oil pipe at the engine side.
Catch spilt oil.



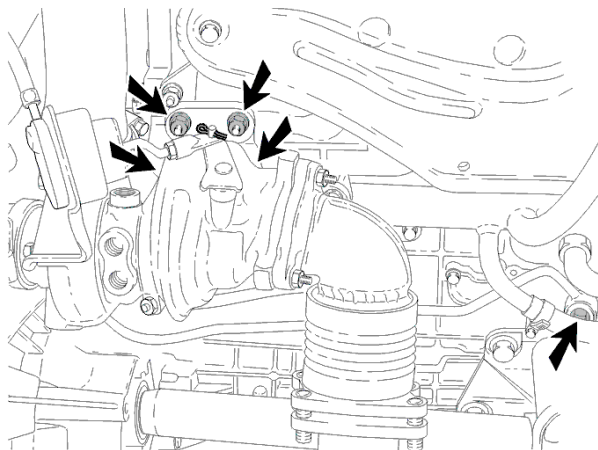
Remove exhaust down pipe from exhaust manifold

- Remove the nuts.
- Pull the exhaust down pipe downwards
- Remove the gasket.



Remove turbocharger (TC)

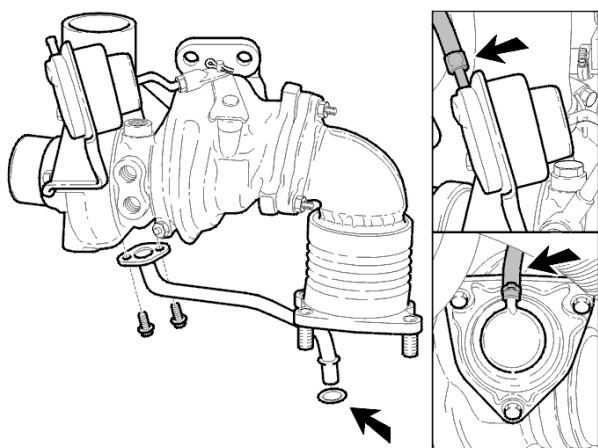
- Remove the TC exhaust manifold nuts
- Remove the hoses from the turbocharger control valve (TCV). Mark the hoses
- Pull the turbocharger (TC) from the exhaust manifold
- Pull the oil return pipe carefully out of the engine block
- Rotate the turbocharger (TC) and remove it
- Seal the holes in the engine.



Remove parts from turbocharger (TC)

Remove:

- The two hoses
- The oil return pipe and the gasket.



Replacing the boost pressure control (BPC) valve

See [Replacing boost pressure control \(BPC\) valve](#)

Replacing the bypass valve

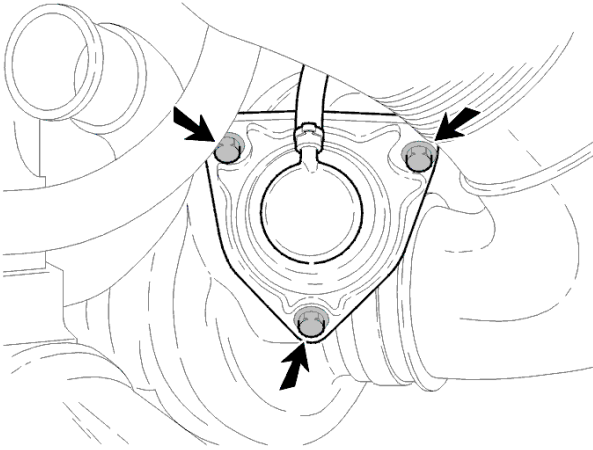
Remove:

- The three bolts
- The diaphragm and the cover.

Check the diaphragm valve.

Install the diaphragm and the cover.

Tighten the three bolts.



Replacing the turbo charger (TC) exhaust curve

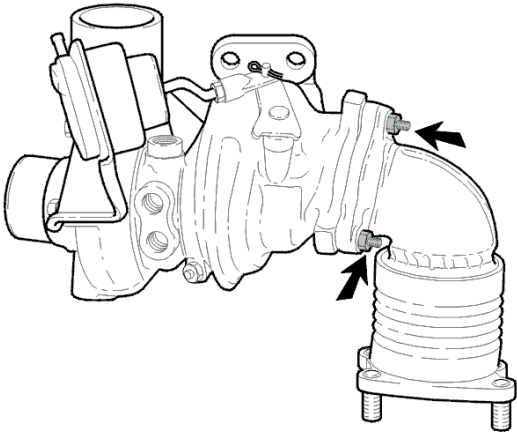
Remove the three nuts.

Take the exhaust curve off.

Transfer the studs onto the new turbo. Tighten to **20 Nm**.

Clean both surfaces carefully.

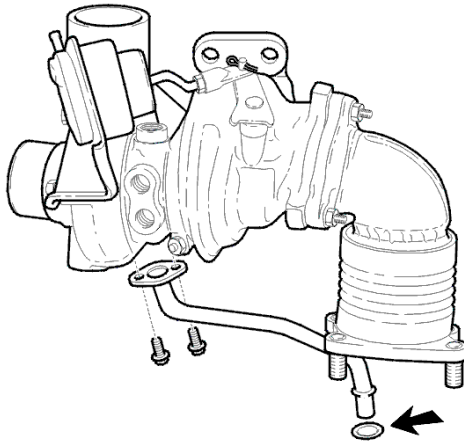
Mount the exhaust curve with new nuts. Tighten to **45 Nm**.



Installing parts on turbocharger (TC)

Install:

- The gasket and mount the oil return pipe on the turbocharger (TC).



Installing turbocharger (TC)

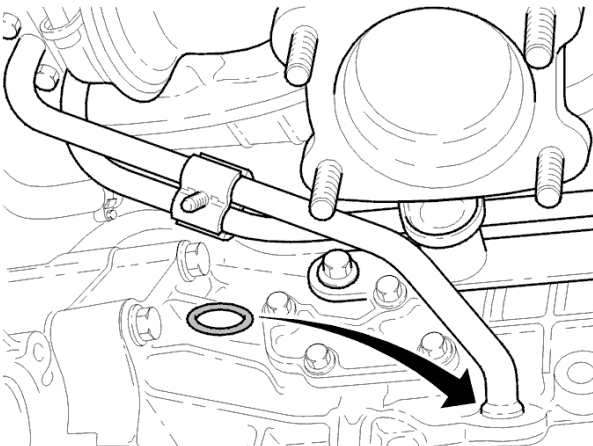
Clean the manifold surface carefully.

Position the turbocharger (TC) on the exhaust manifold.

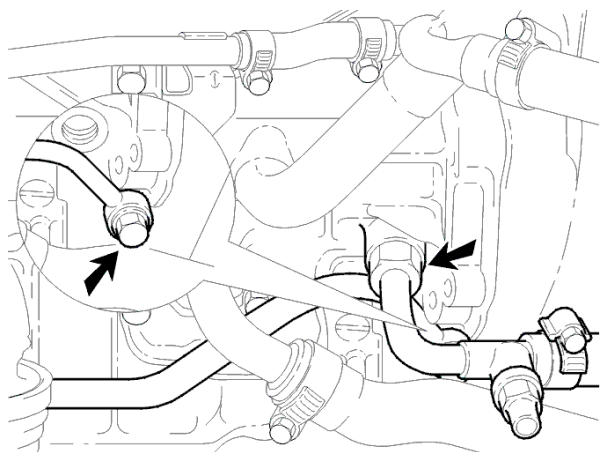
Install a new O-ring on the oil return pipe.

Push the oil return pipe into the engine block.

Tighten the nuts. Tightening torque **45 Nm**.



Install oil supply pipe at engine side and turbo charger (TC)



Note! Undo the water pipe cap-nut and bend the pipe away. Tighten the cap nut afterwards to 25 Nm.

Install new rings on the bolt, use some grease on the engine.

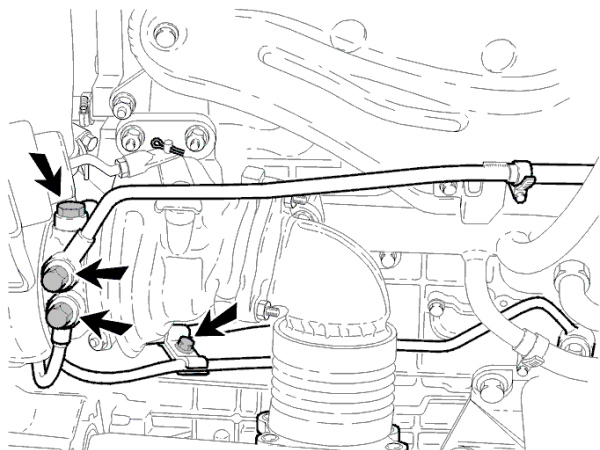
Install the pipe with new rings on the turbo.

Install oil and coolant pipes

Install:

- The lower coolant pipe, tighten to **25 Nm**
- The upper coolant pipe, tighten to **25 Nm**
- The clamp on the oil pipe. Position the clamp.

Note! Use a new copper rings for coolant pipe and upper oil-pipes.



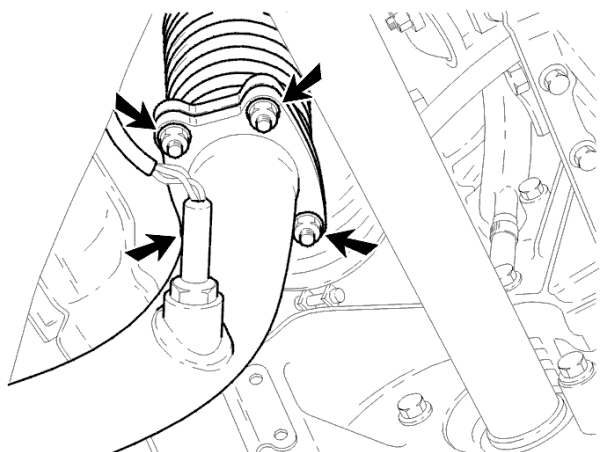
Install exhaust down pipe

Install the exhaust down pipe.

Use a new gasket.

Tighten to **25 Nm**.

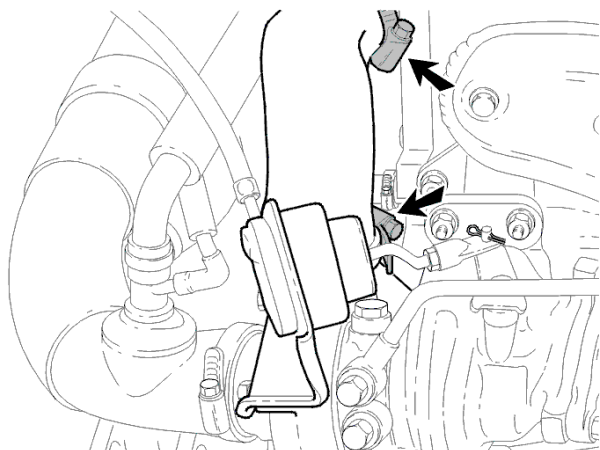
Install the engine splash guard.



Install turbocharger (TC) upper charge air pipe

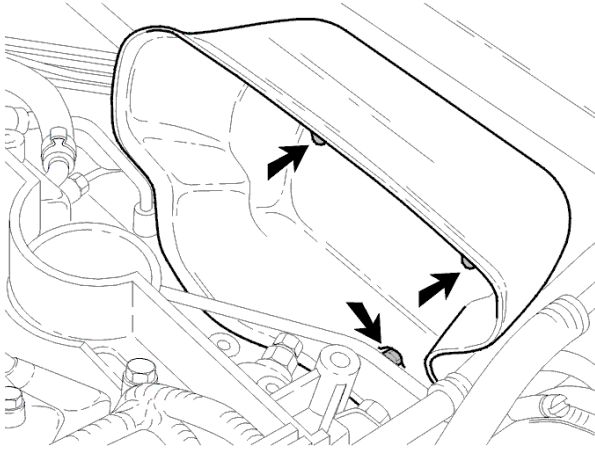
Install:

- The upper charge air pipe. Tighten to **6 Nm**.
- The connector cover.



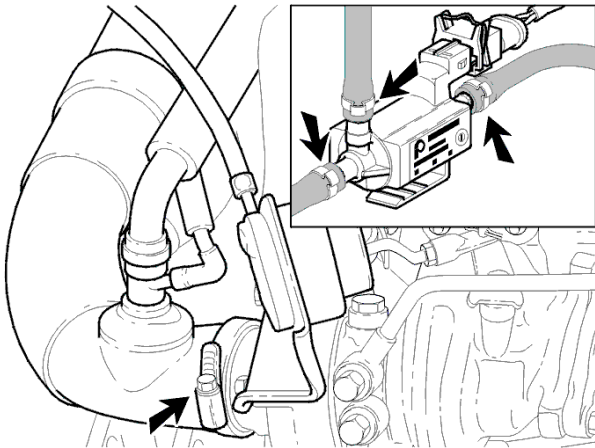
Mount heatshield on firewall

Install the heatshield and tighten the nuts.



Install air inlet hose

- Apply soap and push the air inlet hose onto the turbocharger (TC), tighten to **6 Nm**
- Install the EVAP hoses
- Install the connector
- Install the vacuum hoses for the turbocharger control valve (TCV) as marked.



Install:

- The complete air cleaner (ACL), see [Replacing the air cleaner \(ACL\), B4194T, B4204T engines](#)
- Fill the coolant system, see [Replacing coolant](#)
- Check the adjustment of the turbocharger (TC), see [Checking and adjusting boost pressure control valve on turbocharger \(TC\)](#)
- Fit the engine cover.