

## Repair Manuals

Turbocharger: removal/installation

### Warnings and recommendations

Allow the engine to cool down

Plug open connections with clean plugs

Remove each plug immediately before installing the component

Clean off the sealing surfaces

Renew the locking nuts

Renew the seals

Renew the turbocharger coolant hose quick-release coupling

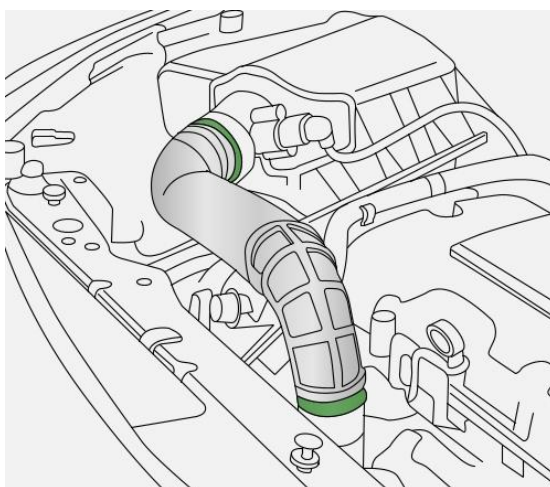
Renew any damaged or deformed clips

### Removal

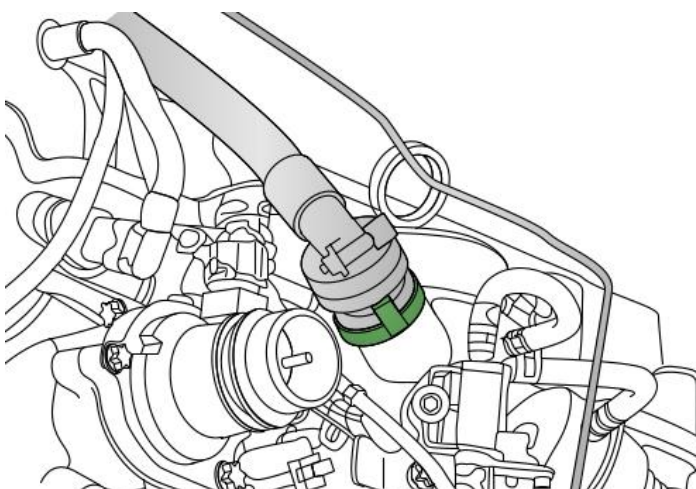
Disconnect the battery earth cable

Drain the cooling system

Remove the turbocharger air inlet hose

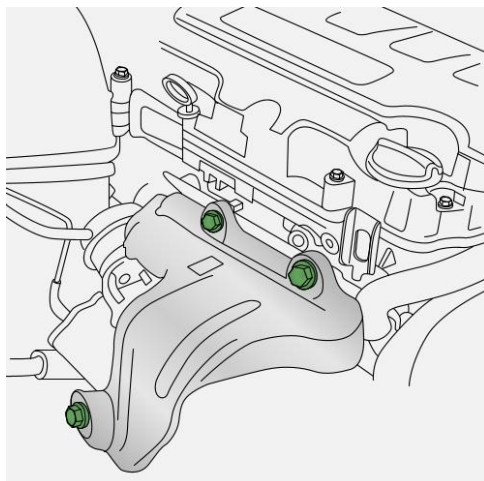


Disconnect the positive crankcase breather

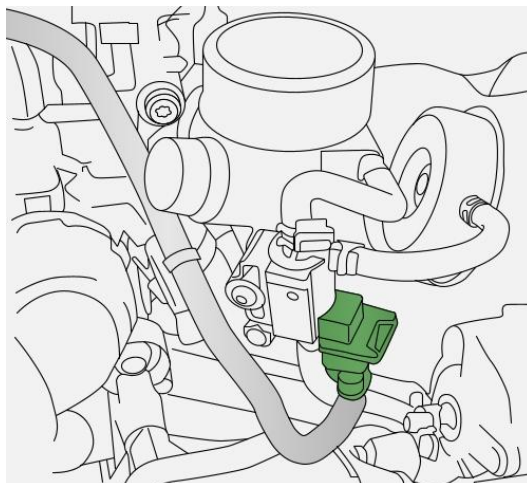


Remove the turbocharger heat shield

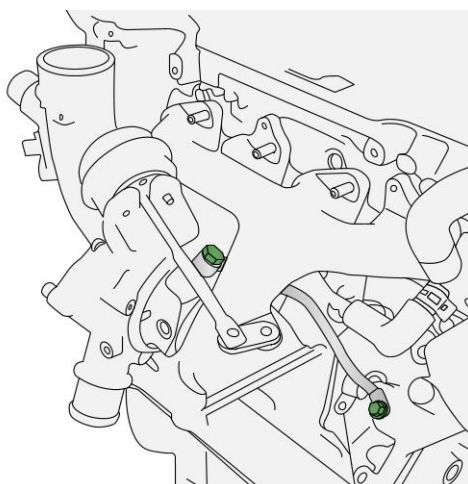
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Disconnect the wastegate control solenoid electrical connector

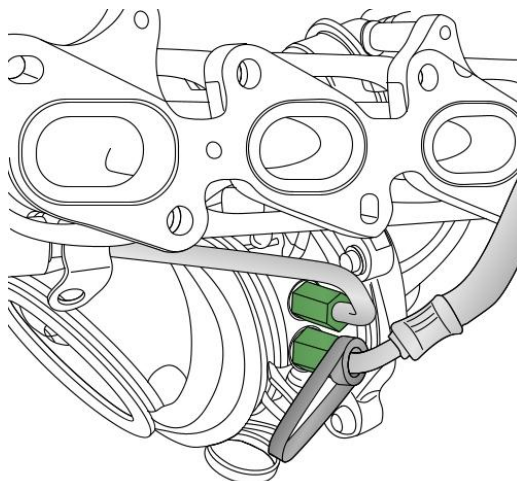


Remove the turbocharger oil supply line

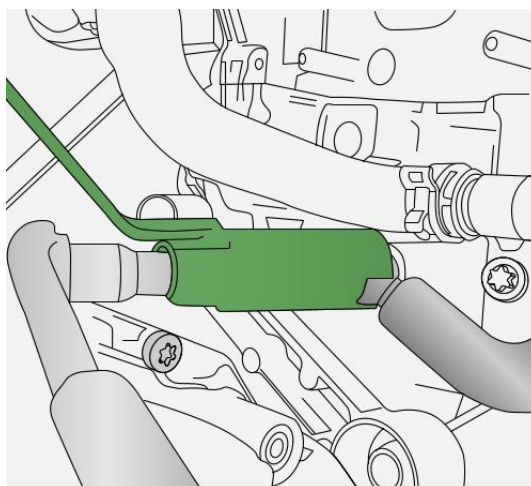


Disconnect the turbocharger air outlet hose

Disconnect the cooling hoses from the turbocharger. Use the special tool.

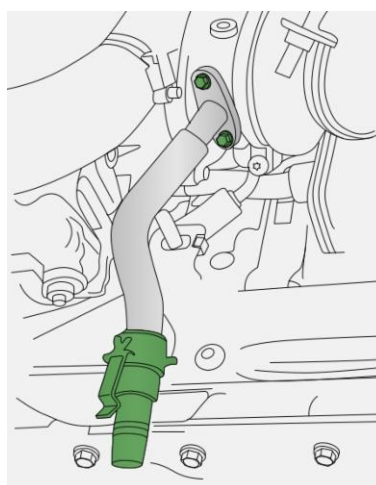
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Disconnect the turbocharger water cooling hose from the engine block. Use the special tool to counterhold.



Disconnect the catalytic converter from the turbocharger

Remove the turbocharger oil return pipe



Remove the turbocharger and manifold together

**Installation**

Before refitting the turbocharger, carry out the following procedure:

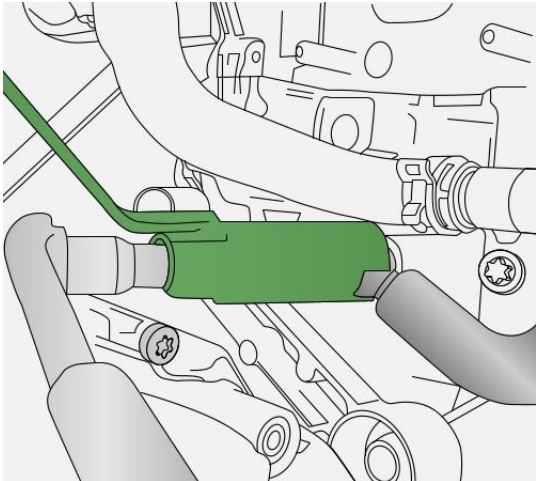
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- Check the air hoses for damage and contamination
- Check the intercooler for damage and contamination
- Check the oil lines for clogging and contamination

Installation is in the reverse order of removal

Note:

Refit the turbocharger coolant supply hose. Use the special tool to counterhold.



Refill the cooling system

- ❶ Cooling system 9 - 9.5 (l)

Bleed the cooling system

Renew the engine oil and filter

- ❶ Engine sump, including filter 4 (l)
- ❶ Engine oil drain plug (Renew the sealing washer) 14 (Nm)
- ❶ Oil filter (Cover) 25 (Nm)
- ❶ Renew the seal

Reconnect the battery earth cable

Start the engine

Run the engine at idle speed for at least 1 minute

Check the oil pressure

- ❶ Oil pressure (At idle speed) 1.5 (bar/rpm)
- ❶ Oil pressure 3.8 - 6.5 / 3000 - 3500 (bar/rpm)

Check the air inlet system for leaks

Check the turbocharger oil lines for leaks

Delete all the fault codes

Torque settings

Exhaust manifold

- ❶ Exhaust manifold 8 (Nm)

Turbocharger oil supply line

- ❶ Turbocharger oil supply line (To turbocharger) 20 (Nm)
- ❶ Turbocharger oil supply line (To oil cooler) 8 (Nm)

Turbocharger oil return line

- ❶ Turbocharger oil return line 8 (Nm)

Turbocharger coolant hose:

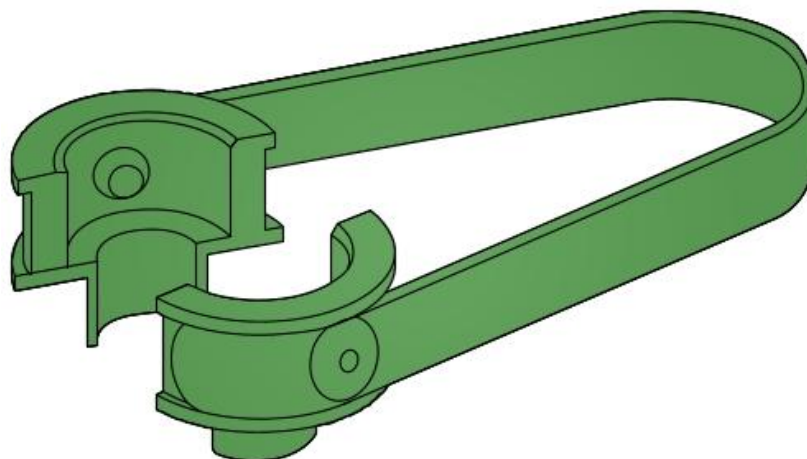
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- Banjo bolt: (30 Nm)
- Quick-release coupling: (20 Nm)

### Special tools

Connector removal tool: (EN-49940)



Counterhold tool: (EN-49942)

