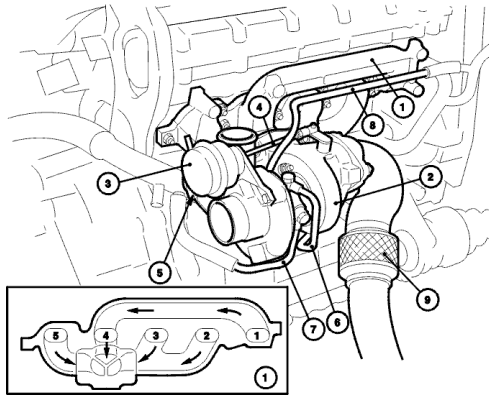


Exhaust manifold/turbocharger (TC)



1. Exhaust manifold
2. Turbocharger (TC)
3. Pressure regulator
4. Link
5. By-pass valve
6. Oil intake
7. Coolant inlet
8. Coolant return.
9. Flexible joint (bellows)

The illustration displays the exhaust manifold and turbocharger (TC) which are each normally covered by a heat deflector plate made of special double layer aluminum plate. The exhaust manifold (1) is made of heat resistant cast iron and is small to save space. It is divided into three separate ducts from the exhaust vent to the turbocharger (TC). This is so that the exhaust pulses do not interfere with each other but are instead used to accelerate the turbocharger (TC) turbine as fast as possible. The manifold exhaust ducts for cylinders 4 and 1 and for cylinders 2 and 3 are connected while cylinder 5 has its own exhaust ducts. The configuration is based on the cylinder firing order (1-2-4-5-3).

The turbocharger (TC) (2) is equipped with:

- A pressure regulator (3) which controls the waste gate valve via a link (4). The pressure in the regulator is controlled by an electronically controlled turbo valve. If the turbo valve fails the pressure regulator ensures that boost pressure is limited to approximately 135 kPa (absolute pressure).
- The by-pass valve (5) which damps pressure surges in the intake manifold when the throttle is closed suddenly by routing some air from the pressure side to the suction side.
- Oil inlet (6) and return connector (concealed by turbocharger (TC)).
- Coolant inlet (7) and return connector (8).

The exhaust system has a new type of flexible joint (9) which consists of a number of layers of corrugated metal surrounded by a metal based braid. The joint loses very little heat which leads to the three-way catalytic converter (TWC) being "triggered" quickly.