



PI 1883
For technical personnel only!
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PRODUCT INFORMATION

RECIRCULATION VALVE FOR AUDI 4.0L V8 TDI (EA898)

NEW IN OUR PRODUCT RANGE

Pierburg no.	Ref. no.*	Replacement for	Vehicle manufacturer	Vehicle applications
7.05645.05.0	057 145 829 D	7.05645.00.0/.03.0/.04.0	Audi	SQ7 (4MB) TDI quattro
			Bentley	Bentayga (4V1) 4.0 D

Motorservice has expanded its product range with a recirculation valve from Pierburg. This valve is used in the latest generation of the V8 TDI engine from VAG.

In addition to an electrical compressor, the EA898 4.0 TDI is equipped with two conventional exhaust gas turbochargers and uses sequential charging to increase efficiency.

In the low engine speed range, the electrical compressor supports starting. When accelerating in the middle engine speed range, the recirculation valve opens a connecting channel between the two turbochargers and conveys charge air out of the passive turbocharger in front of the compressor impeller of the active turbocharger. At higher engine speeds, the recirculation valve closes again and the engine is operated in bi-turbo mode.

You can find further information on the principle of operation on the back page.



The full designation in Audi catalogues is:
"GX37 charge air recirculation module (recirculation valve)"

All content including pictures and diagrams is subject to change. For assignment and replacement, refer to the current catalogues or systems based on TecAlliance.

* The reference numbers given are for comparison purposes only and must not be used on invoices to the consumer.



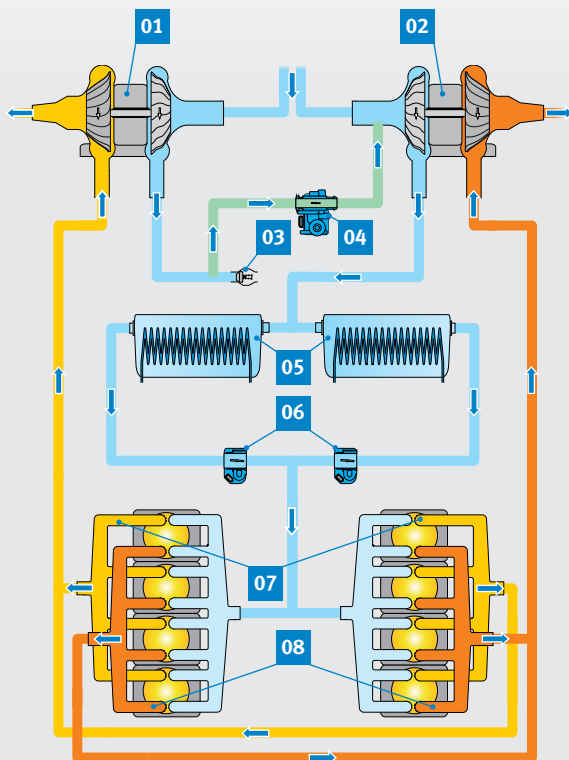
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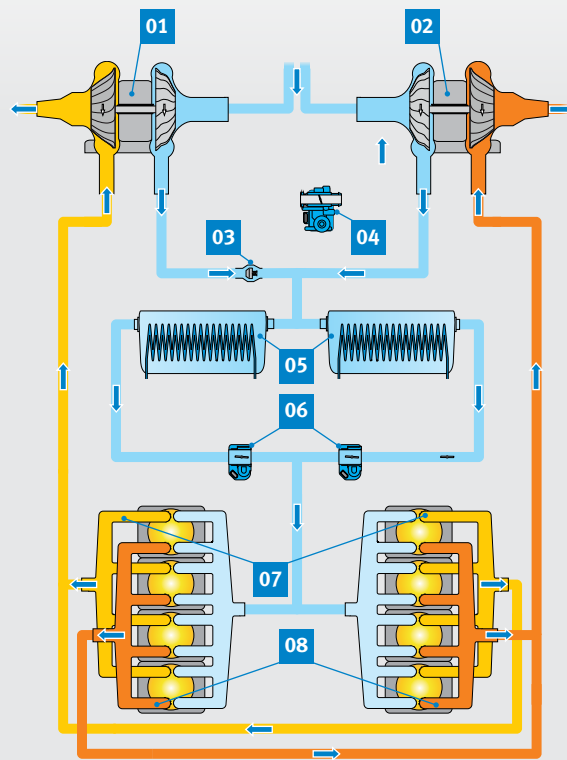
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SEQUENTIAL TRANSITION MODE

(Mono-turbo mode with preparation for bi-turbo mode)



BI-TURBO MODE



- 01 Passive turbocharger
- 02 Active turbocharger
- 03 Sequence valve
- 04 Recirculation valve
- 05 Charge air cooler
- 06 Regulating throttle
- 07 Exhaust manifold to passive turbocharger
- 08 Exhaust manifold to active turbocharger

From approx. 2200 rpm, the passive turbocharger (01) is activated.

- The recirculation valve (04) opens a connecting channel. This enables air to flow from the passive turbocharger (01) into the inlet to the active turbocharger (02).
- Each individual cylinder has two exhaust valves, from which two separate lines (07) (08) run to the two turbochargers.
- The exhaust valves, whose exhaust gases (07) power the passive turbocharger (01), are opened successively by adjusting the exhaust cam. This enables the passive turbocharger (01) to accelerate without the power for the active turbocharger (02) being abruptly reduced.

Above 2700 rpm the engine runs completely in bi-turbo mode:

- The recirculation valve (04) is closed. The passive turbocharger (01) can build up turbocharger pressure.
- The spring-pressure-controlled sequence valve (03) is pressed open.
- The full power of both turbochargers is available to the engine.

