

# Contents Programed Repairs Engines 601, 602, 603 Mechanical II

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## Programed Repairs Engines 601, 602, 603 Mechanical II

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Operation no. of operation texts and operation values  
or standard texts and flat rates

### 01 Oil leakage

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Complaint:

#### External oil leakage

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Cause/Remedy:

In the event of external oil leakage, whose cause cannot be identified with certainty, proceed as follows:

Clean area to be tested removing all oil, dry and spray with "MB contrast spray, white", part no. 000 989 03 59.

Allow engine to run, oil leakage becomes visible after 2 – 5 min.

Seal point as required.

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## 01 Cylinder head gasket

Complaint:

**Oil leakage, rear right (driving direction) between cylinder head and cylinder head gasket**  
Engines 601.911

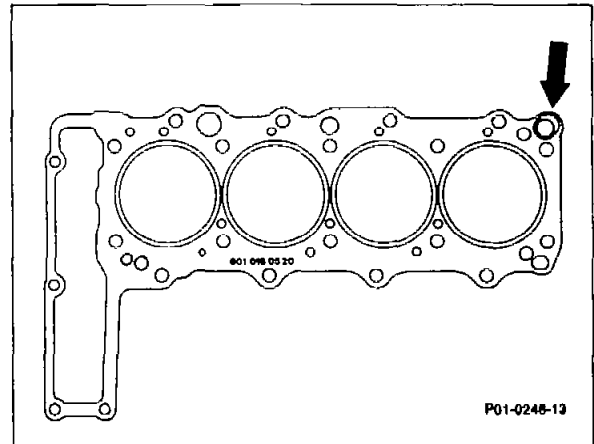
Cause/Remedy:

The following engines produced before 10/84 up to the engine end numbers listed are affected:

Manual transmission	028239
Automatic transmission	003360

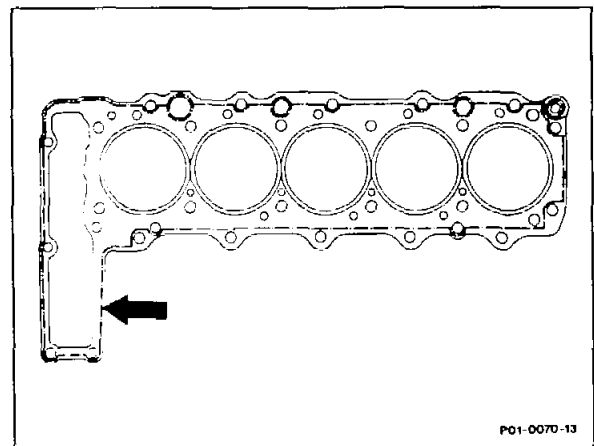
Oil return hole in cylinder head gasket does not have beaded sheet metal edge.

Install new cylinder head gasket part no. 601 016 05 20 with beaded sheet metal edge around oil return hole (arrow).



Engines 601 as of 11/84, 602, 603.91/96  
Install cylinder head gasket with Viton seal at oil return port and silicone sealing strip (arrow).

<u>Prod. breakpoint:</u>	engine 602.96	05/89
	engine 602.91	09/89
	engine 603.96	10/88
	engine 603.91	09/88



## 01 Cylinder head gasket

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Complaint:

**Coolant loss to the outside at rear left of cylinder head gasket**

Engine 601

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Cause/Remedy:

The coolant flows out at the rear left, runs through the inclined position of the engine at the separation point of cylinder head/crankcase on to the right-hand side of the engine and then down through the crankcase.

Replace cylinder head gasket.

**The following engines may be affected (period April–May 1988):**

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Model	Engine	Vehicle ident end no.	
		from	to
124.120	601.912	A 746469	A 760958
124.180	601.912	F 074743	F 077264
201.122	601.911	A 446573	A 449045
		F 501053	F 509117

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Complaint:

**Loss of coolant at cylinder head gasket to outside or to inside**

Engines 601, 603

Cause/Remedy:

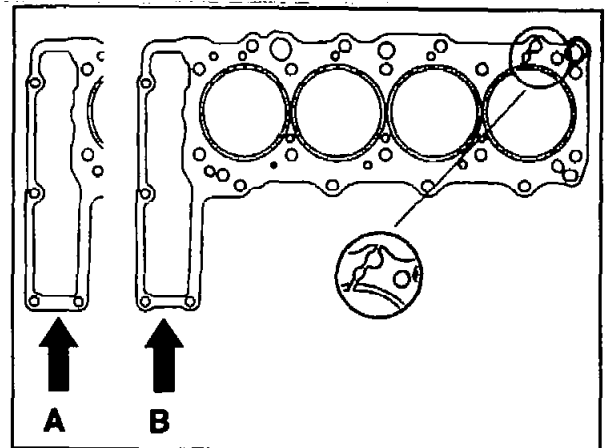
Gaskets from the following period are affected:

Engine 601 as of 01/85 up to 08/85

Engine 601 as of 01/85 up to 01/86

When installed, the gasket on engine 603 is recognizable from the straight web (arrow, A) and on engine 601 from the recessed web (arrow, B).

The cylinder head gasket may be torn both to the inside as well as to the outside (see ill.).



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If a loss of coolant exists, it is essential on these engines to check the cylinder head gasket for leaks (Repair Instructions 01-015 and 01-020, respectively).

If the cylinder head gasket is torn through to the inside into the combustion chamber, the piston projection must be measured before fitting a new cylinder head gasket (see Repair Instructions 03-316). (Possible initial damage to conrod as a result of water hammer.)

**Vehicles affected**

Model	Engine	Vehicle ident end no.	
		from	to
124	601	A 010408 F start of production	A 113431 F 000485
	603	A 010408 F start of production	A 184855 F 003891
201	601	A 192572 F 078457	A 261897 F 166815

## 01 Cylinder head

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Complaint:

**Engine oil in cooling system**

Engines 601, 602, 603

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Porous cylinder head in the area of the front oil passage for supplying oil to first camshaft bearing or of hydraulic valve clearance compensating elements.

Replace cylinder head.

Clean cooling system (Repair Instructions 20-015).

### **Note**

It is not always possible to detect this leakage when pressure-testing the removed cylinder head.

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## 01 Crankcase

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Complaint:

### **Oil leak at gasket between charge air manifold and cylinder head**

Engines 602.96, 603.96 (turbo)

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Cause/Remedy:

As of approx. 07/90 surface spalling may occur at the joint of the first piston ring. The cylinder wall is damaged as a result and the scavenging quantity is increased. As a result, oil is entrained into the engine ventilation and flows out of the gasket of the charge air manifold.

Damage code for warranty/goodwill:

01 002 11 scoring on crankcase cylinder bore.

Illuminate engine/determine findings.

Production breakpoint

*Modified piston rings installed since 11/91.*



Slight oil leakage (sweating) at gasket between charge air manifold and cylinder head corresponds to present status of series production. Refer to Up-to-date Troubleshooting 14-92121.

### **Production breakpoint of modified piston rings**

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Engine	Engine end no. manual transmission	Engine end no. automatic transmission
602.961	006373	009855
602.962	015352	011326
603.960	-	036342
603.963	-	003189

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## 01 Cylinder head

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Complaint:

**Engine has blue exhaust, clatters, runs roughly**

Engines 602.96, 603.96 up to 31.3.94

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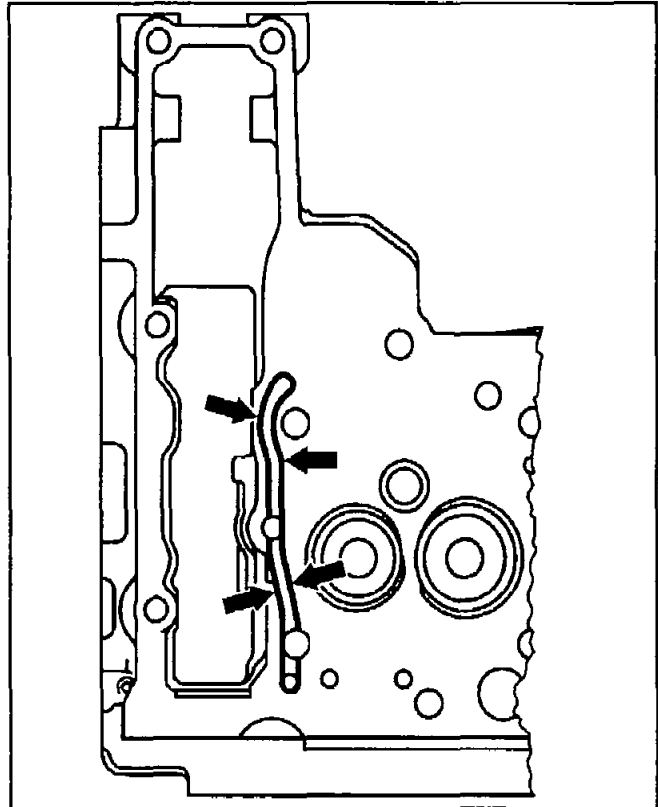
Cause/Remedy:

Cylinder head gasket leaking in area of oil cross gallery to cylinder 1.

- 1 Determine condition and inspect engine with inspection lamp, if necessary.
- 2 Replace cylinder head gasket (01-415).



Before installing cylinder head, always deburr the oil cross gallery and chamfer the edges, respectively.



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