

## 01-416 Modifications to precombustion chambers

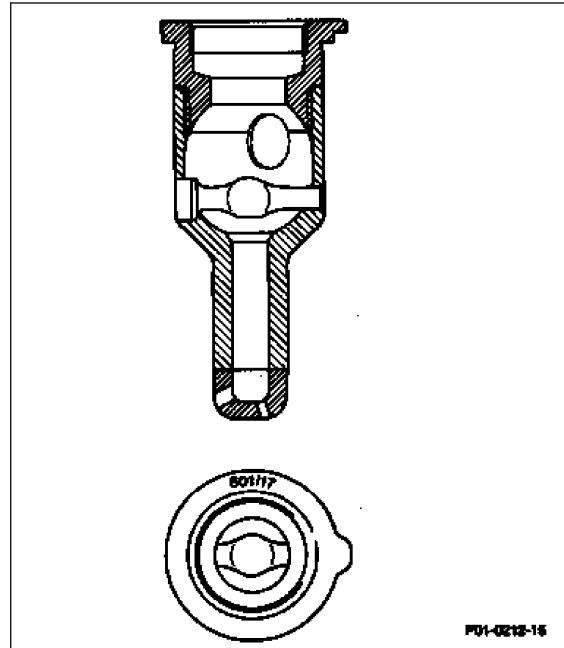
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### Precombustion chamber combustion bore pattern modified

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As of 06/86 the combustion bore pattern of the precombustion chambers was modified to improve combustion on engines 601.91, 602.91 and 603.91.

Modified precombustion chambers are marked with the code number 601/17.



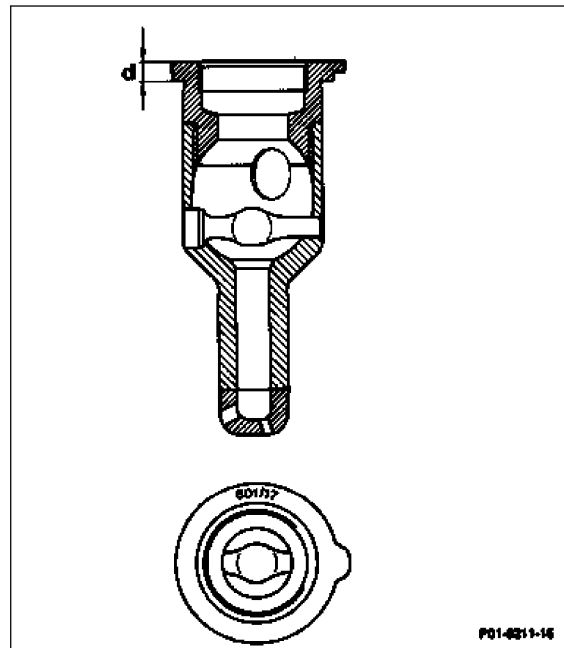
P01-0212-15

### Collar height on upper section of precombustion chamber increased

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As of 09/87 the collar height (d) on the upper section of the precombustion chamber on engines 601.91, 602.91, 603.91 and 603.96 was increased from 5 mm to 6 mm.

Engines 601.91 (CH) and 602.96 with angular injection are not affected by this modification.



P01-0211-15

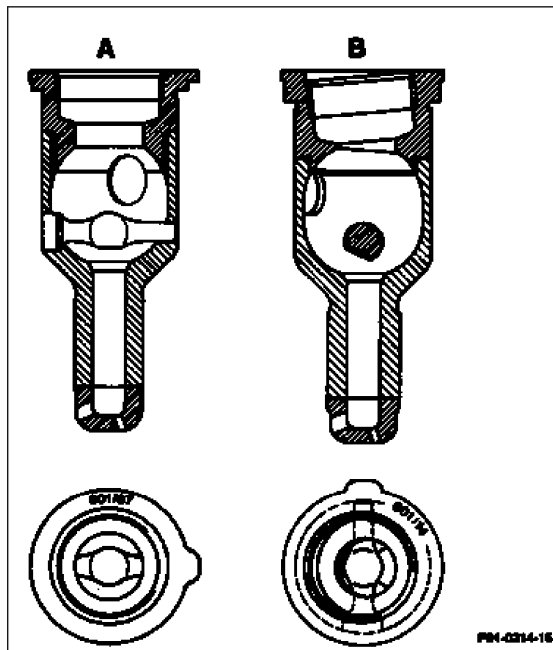
## Precombustion chambers with angular injection

The shape and design of the precombustion chambers has been changed in the course of improving the emissions (exhaust gas recirculation).

### Shape of prechambers

The installation bore was inclined  $5^\circ$  to the longitudinal axis of the precombustion chamber. This results in the injection nozzles injecting the fuel into the precombustion chamber at a slight angle rather than vertically.

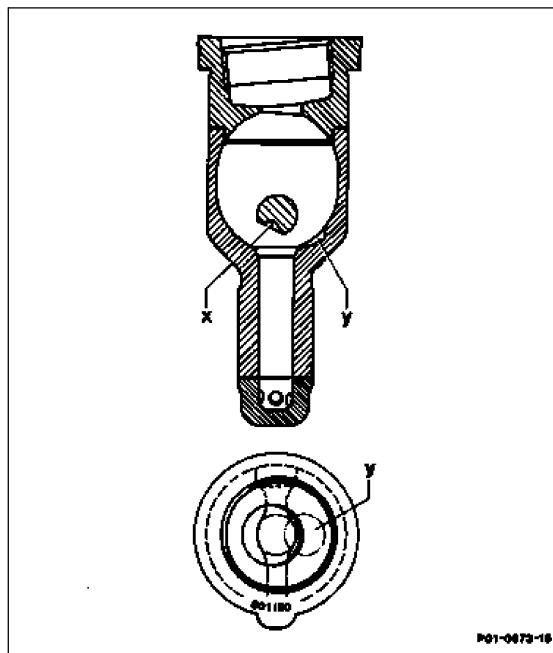
- A Precombustion chamber with vertical injection  
B Precombustion chamber with angular injection



P01-0214-15

### Peculiarities of precombustion chambers

The insert pin is produced using a heat-resistant material (Incoloy) due to the higher thermal load. A cone (x) on the insert pin and a recess (y) at the bottom of the precombustion chamber serve to give the air/fuel mixture a better swirl. Moreover the volume of the precombustion chambers on engines 603.962 and 603.90 (USA) was increased from 10.34 cm<sup>3</sup> to 11.37 cm<sup>3</sup>.



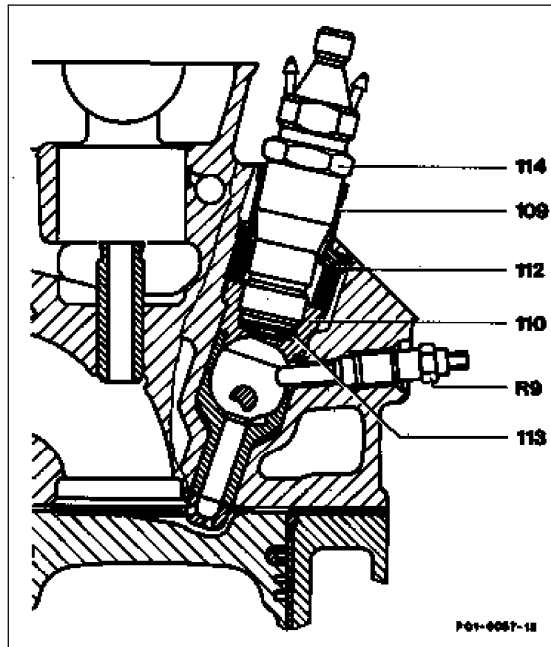
P01-0073-15

### Installation of nozzle holder

For angular injection the nozzle holder (114) is inserted into the upper section of the pre-combustion chamber turned 180° in relation to the previous position. A threaded ring (112) with inner splines serves for installing the nozzle holder.

A sealing sleeve (109) is located in the gap between the threaded ring and nozzle holder to protect against contamination (discontinued as of 08/93)

- R9 Pencil-type glow plug
- 109 Sealing sleeve
- 110 Precombustion chamber
- 112 Threaded ring
- 113 Sealing plate
- 114 Nozzle holder



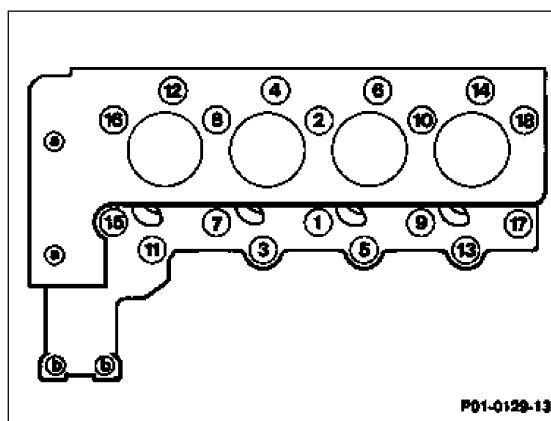
P01-0057-15

### Threaded ring for holding nozzle holder

The threaded ring used for angular injection is equipped with inner splines.

The groove for a pin wrench present on the threaded ring for vertical injection is no longer present.

- A Threaded ring, vertical injection (threaded on inside)
- B Threaded ring, angular injection (inner splines)

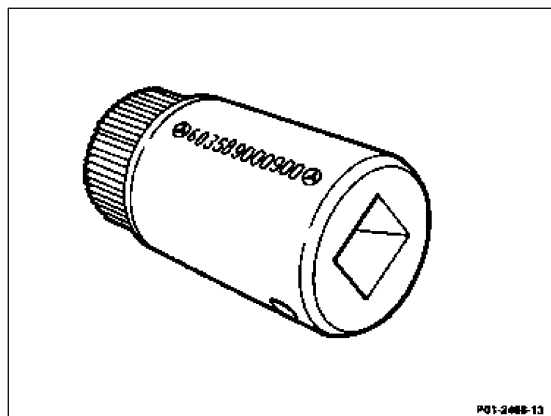


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The splined wrench 603 589 00 09 00 is required for removal and installation of the threaded ring with inner splines.

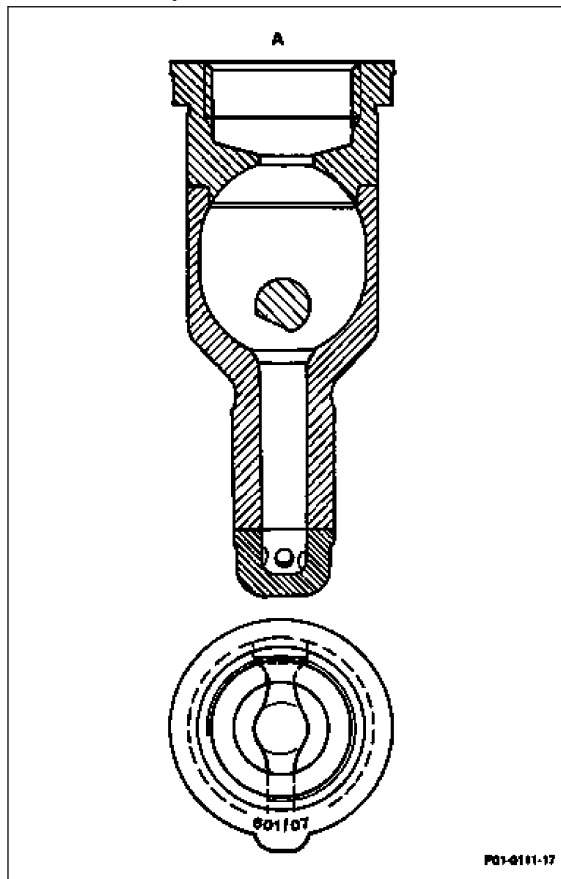
### Precombustion chambers turned 180°

Due to other modifications to the nozzle holder combination in relation to the precombustion chamber longitudinal axis the former is inclined at an angle of 5° and installed in the upper section of the precombustion chamber turned 180°.

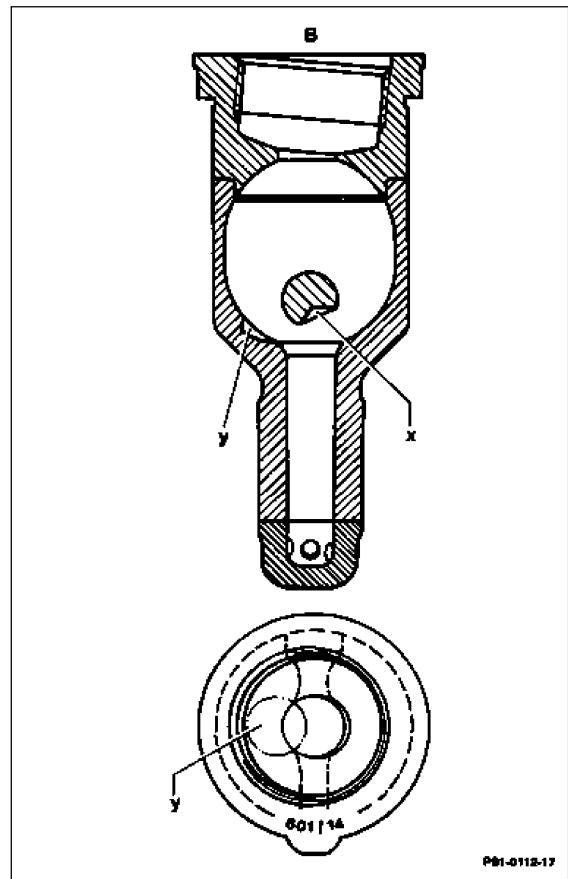


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Differences in precombustion chambers

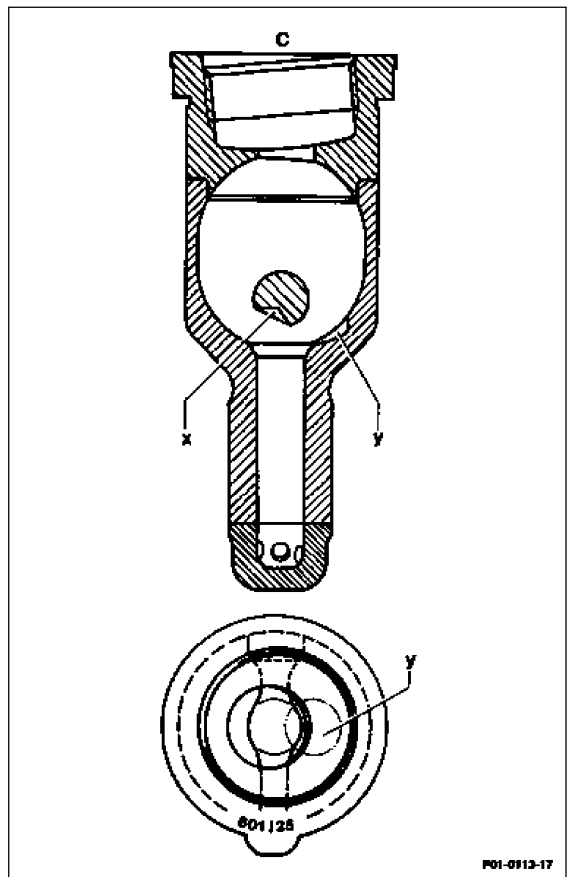


P01-0111-17



P01-0112-17

- A Code 601/07 or 17/09 or 23
- B Code 601/14/15 5° inclined (engine 601.91 as of 10/87 <sup>CH</sup>)
- C Code 601/25/26/30/36 5° inclined, turned 180° (all engines as of 06/88)



P01-0113-17

Survey, precombustion chambers

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Engine	601.91 1) 602.91 1) 603.91 1)	603.96 up to 9/88	601.91 (CH) 2) as of 10/86 up to 8/88	602.961 up to 09/88	601.91 2) 602.91 2) 603.91 2) as of 09/88	602.961 as of 09/88 602.962 Standard 602.96 (A) as of 1989 603.96 (A) as of 09/88	603.962 2) 603.970 2) (USA) as of 09/88 603.9713) as of 09/92 as of 04/94 602.96/ 603.966) 603.976)
Code	601/07 or 17	601/09 or 23	601/14	601/15	601/25 or 295)	601/26 601/364)	601/30 601/363)
Version	A	A	B	B	C	C	C
Combustion neck OD (mm)	14	15	14	15	14	15	15

- 1) Without exhaust gas recirculation
- 2) With exhaust gas recirculation as of 02/90
- 3) As of 02/92 (USA), ECE as of 01/93, certain burner bores countersunk 4°, prechamber volume increased to 11.37 cm<sup>3</sup>
- 4) Engine 602.96 as of 05/92 with EGR, certain burner bores countersunk 4°
- 5) As of 03/92 with EGR
- 6) As of 04/94 all turbocharged engines, (standard prechamber of 11.37 cm<sup>3</sup>) prechamber volume and certain burner bores countersunk 4°