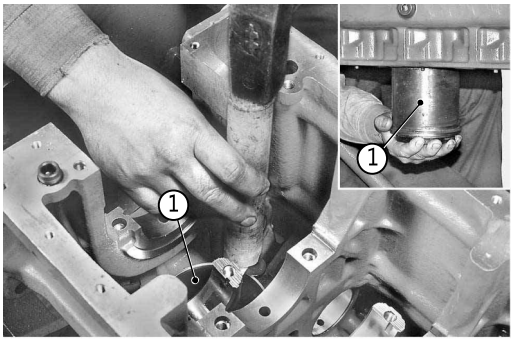
Pistons and cylinder liners

Disassembly

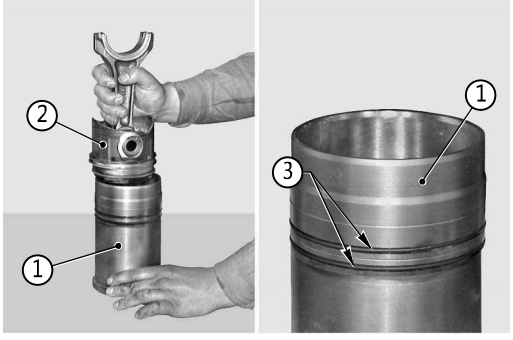
1. Using a plastic drift and mallet, free and remove cylinder liner (1) and pistons and connecting rods at the same time.



2. Remove piston-connecting rod assembly (2) from the lower part of cylinder liner (1).

   Remove O-rings (3) from cylinder liner (1).

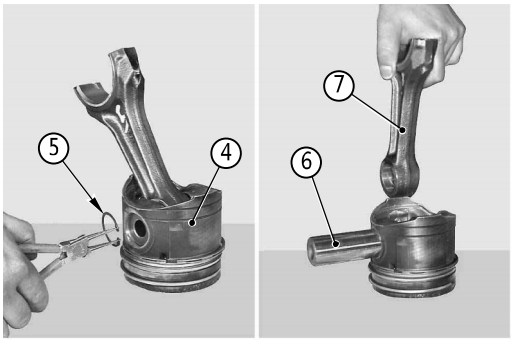
> **IMPORTANT**
>
> Renew the O-rings on reassembly.



3. Remove circlip (5) from piston (4).

   Withdraw pin (6) and remove connecting rod (7).

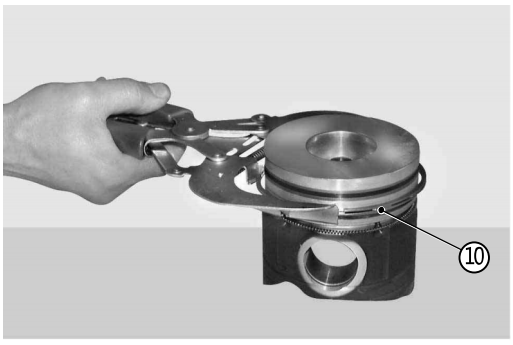
> **IMPORTANT**
>
> Note the arrow on the piston crown is opposite to the number on the connecting rod.



4. Using piston ring pliers, remove first and second rings (8) and (9) from piston (4).

> **IMPORTANT**
>
> Note that the word TOP is inscribed on the upper face of the piston rings.

5. Remove wiper ring (10).



5.

Remove spring (11) of wiper ring (10).

6.

Assembly

Position O-rings (2) on perfectly clean and degreased cylinder liner (1).

WARNING

The O-rings are specially treated and once removed from their packaging, they must not be exposed to the air for more than 48 hours.

IMPORTANT

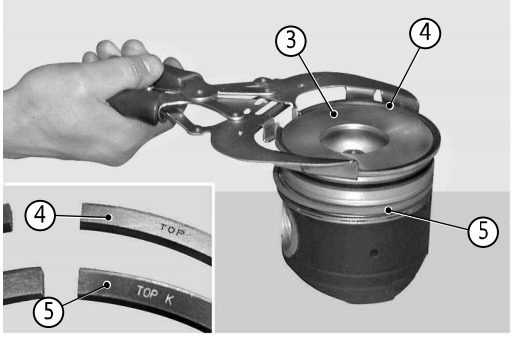
Do not lubricate O-rings (2).

1.

Using piston ring pliers, fit rings (4) and (5) on piston (3).

WARNING

The upper rings must be installed with the word TOP towards the piston crown.

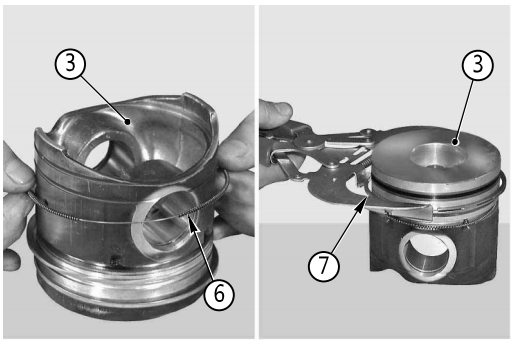


2.

Upend piston (3) and fit spring (6) and oil control ring (7).

IMPORTANT

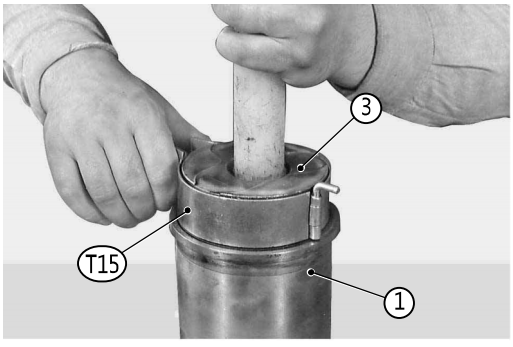
The oil control ring gap must be located at 180° with respect to the join of the spring.



3.

Upend cylinder liner (1), lightly lubricate the interior and partially fit piston assembly (3).

Position the gaps in the piston rings as described in "TECHNICAL DATA AND DIMENSIONS" and use a ring compressor T15 (P/N. 5.9030.654.0/10) and a driving tool made of soft material, insert piston (3) fully into liner (1).



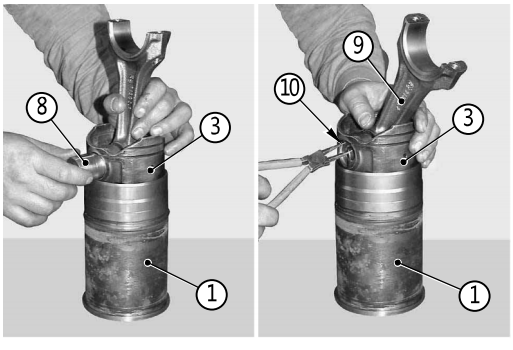
4.

Slide piston (3) so that pin seat (8) is beyond the rim of liner (1).

Lubricate pin seats (8) and fit connecting rod (9) and circlips (10).

WARNING

The connecting rod must be installed with the number (referred to the connecting rod cap) facing the side opposite the arrow on the piston.



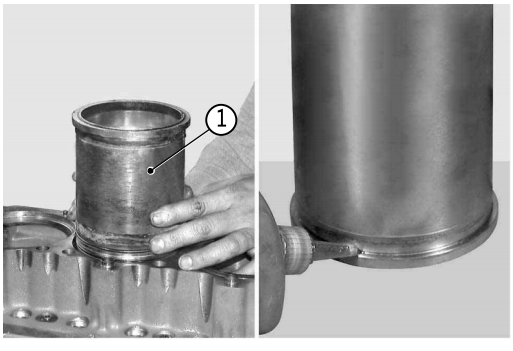
5.

Apply a continuous film of sealant around the flange of liner (1) and fit the assembly in the corresponding bore in the block.

- Liner: Loctite 986 AVX

IMPORTANT

Ensure that the sealant film is continuous and avoid contact with the O-rings.



6.

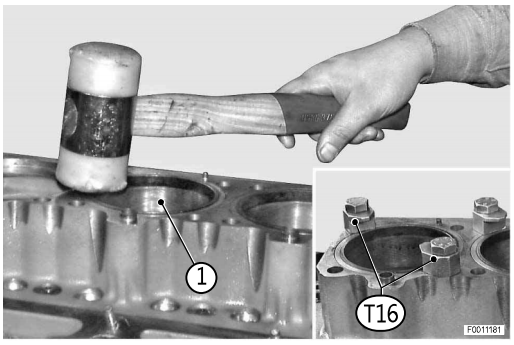
Apply constant and forceful hand pressure on the liner to ensure that the O-rings engage the sealing surfaces of the block bore.

WARNING

Do not use the mallet at this stage.

Once the second O-ring has seated in the sealing surface of the bore, drive liner (1) home using a plastic-faced mallet.

Fit diagonally opposed clamping blocks T16 (P/N. 5.9030.631.4/10) and leave in position until Loctite is completely cured (approximately 4 hours).

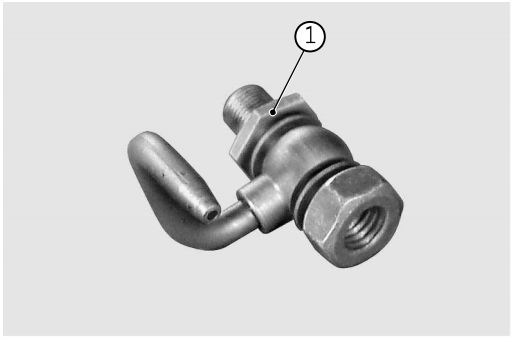


7.

Assembly of piston cooling jets (only if removed)

Apply sealant to the base of fittings (1), screw the fittings into the block and then tighten them.

- Fittings: Loctite 242
- Fittings: 30–35 Nm



1.

Turn the block and fit the specific tool for the engine on overhaul on the 1st cylinder; fit the first copper seal (2), jet (3), second seal (4) and nut (5) in sequence.

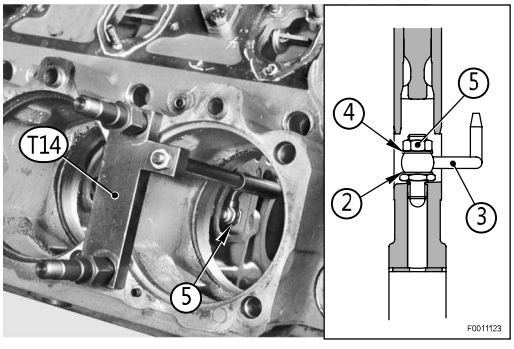
With the jet inserted in tool T14, tighten nut (5).

For pistons without cooling chamber: tool (code 5.9030.731.4)

For pistons with cooling chamber: tool (code 5.9030.732.4)

- Nut: 25–29 Nm

Repeat these operations for all cylinders.



2.

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