

## 03-317 Renewal of piston rings

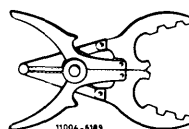
Piston removed (03-316).

### Data

		Tolerance when new	Wear limit
Maximum wear limit of the cylinder bores in direction of driving or transverse direction at the upper and lower point of return of the 1st piston ring			0.09
Axial clearance for piston rings in	Groove a	0.05-0.08	0.10
	Groove b	0.01-0.03	0.10
	Groove c	0.01-0.04	0.06
Piston ring gap in	Groove a	0.20-0.35	1.0
	Groove b	0.20-0.35	0.8
	Groove c	0.20-0.35	0.8
Piston clearance		0.008-0.018	0.08

### Special tool

Piston ring spreader



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### Note

If piston rings are renewed, the cylinder wear and the piston ring axial clearance must be measured with new piston rings.

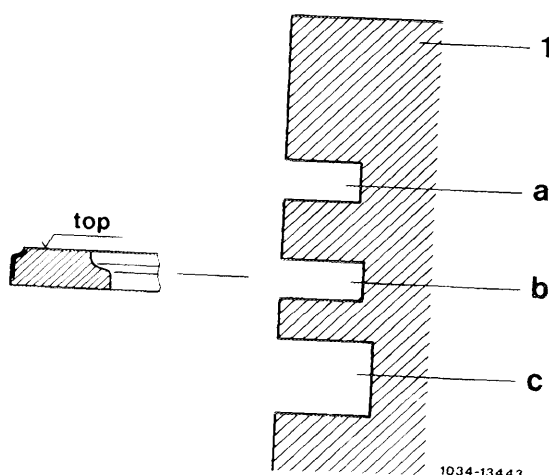
- 1 Remove old piston rings; remove carbon from piston crowns and firing webs.
- 2 Remove carbon from piston ring grooves; do not use sharp-edged tools to prevent damage to the groove corners.
- 3 Clean oil holes in the circular oil groove.

**Caution!**

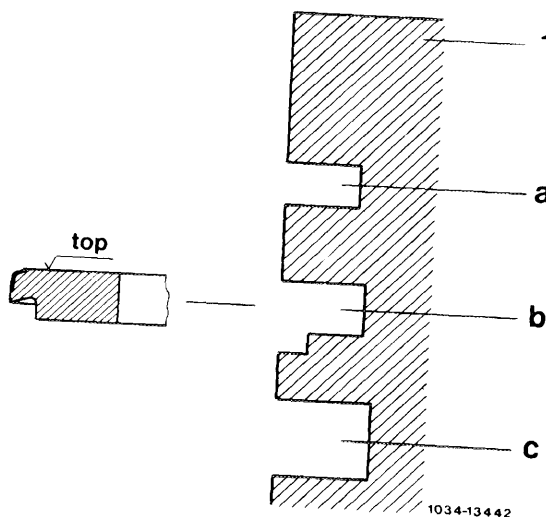
It is possible that pistons with different 2nd piston ring (straight face or taper face ring) are installed in the same engine.

The 2nd piston ring must be replaced with the piston ring of identical shape, otherwise it could get stuck in the piston ring groove.

Straight face piston ring



Taper face piston ring



- 4 Install 3rd piston ring (oil control ring). The joint of the inner spiral spring must be opposite the gap of the piston ring.

Install 2nd piston ring.  
Observe piston ring shape.

Install 1st piston ring.

**Caution!**

The marking „TOP“ on the piston ring must be at the top.