

Subject : Piston pin bearing, conversion to reinforced design

Models affected : Motorised glider engines, type 501 and 505, all models up to engine no. 3,332.827

Reason : Break-down of lubrication and loss of hardness due to overheating (leaning down, insufficient cooling) might lead to premature failure of the presently used bearing.

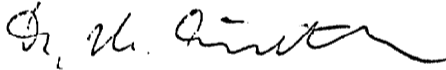
Priority : 1) In case of exceeding the temperature limits exchange within three hours of operation.
2) For safety reasons within 100 hours of operation.

Tasks : Exchange of piston pin bearing to cageless design according to the following instructions.

Weight and centre of gravity : Not affected.

Remarks : Order parts from Rotax as required. This engine modification service has to be carried out by a licensed and qualified person and confirmed in the aircraft log book.

Gunskirchen, 1989 06 30



Approved by

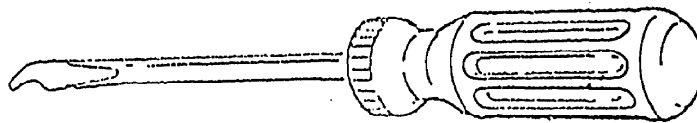
Bundesamt für Zivilluftfahrt

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Assembly instructions:1) Tools required:

- Torque wrench in the range of 20 Nm
- Socket 17 A/F
- Screw driver - ground to shape as shown, from item 876 200 - for the removal of piston pin circlips

2) New items necessary:

- 2x 832 320 cageless piston pin bearing.
- 2x 831 881 gasket (cyl. head)
- 2x 831 855 gasket (cyl.)
- 2x 831 860 gasket (intake)
- 2x 831 841 gasket (exhaust)
- 4x 945 735 piston pin circlip



3) Disassembly:

3.1. Removal of air guides, ignition coils carrier, intake manifolds complete with carb, exhaust system.

3.2. Removal of cylinder heads and cylinders.
Undo nuts item 7 and lift off cyl. heads and cylinders.

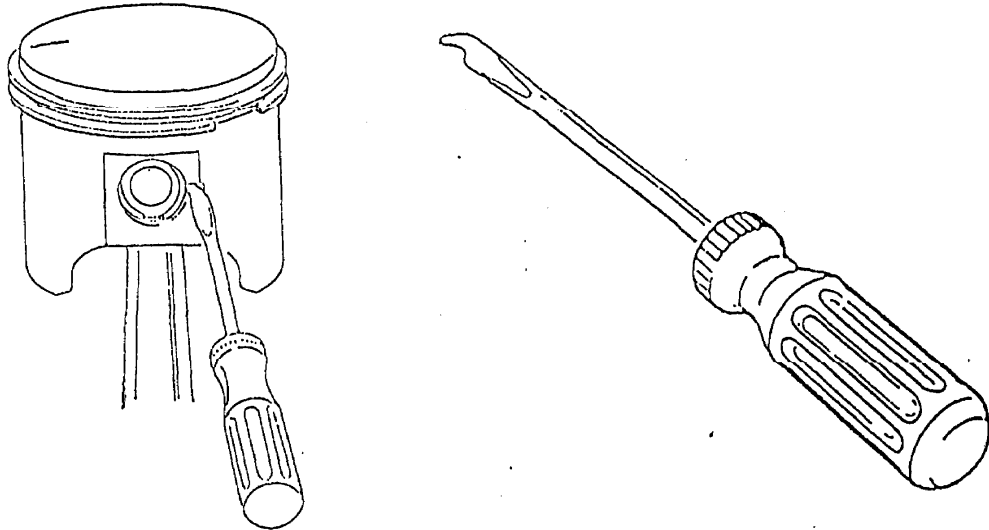
Attention: Mark nut item 7 and sleeve item 6, to ensure refitting at initial location to fit suspension plate.

Mark cylinder head, cylinder and piston to ensure refitting in same position.

3.3. Cover crankcase opening (applicable only if engine is installed upright). Use cover as illustrated on page 8 (appendix 1).

3.4. Removal of piston:

3.41 Remove piston pin circlips (e.g. as per tool shown).

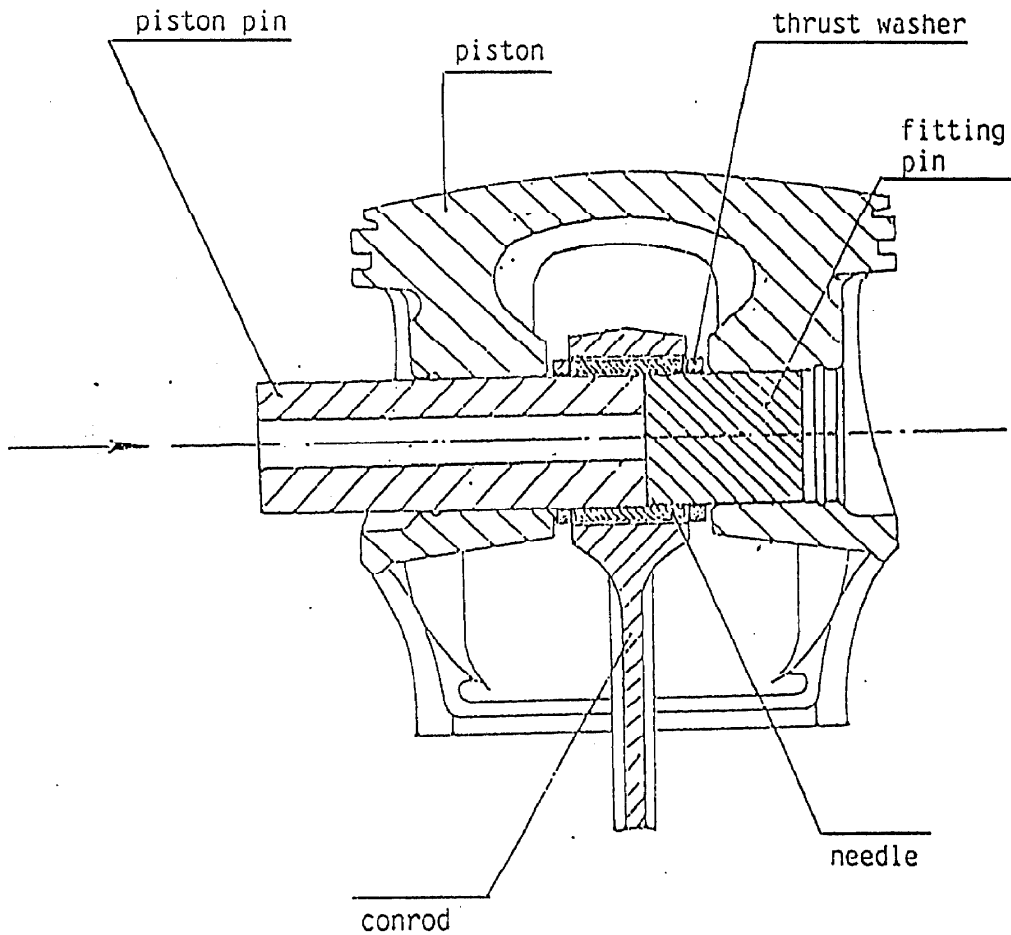


3.42 Withdraw piston pin. To ease removal warm up piston to around 50°C.

3.43 Remove piston.
Clean piston, particularly piston dome (remove carbon deposits with scraper). Check piston rings for easy movement.

3.44 Remove all used gaskets and clean sealing surfaces.

4.15 Place piston over conrod and push piston pin in position.



Attention: Arrow on piston dome to point towards exhaust port.
Refit piston in original position.

4.16 Fit piston pin circlips with the gap downwards.

Attention: Use always new circlips.
Make sure not to bend or damage circlips
when fitting.
Clip must sit tight!

4.2. Fitting of cylinders (consult also appendix 2):

4.21 Renew all gaskets.

4.22 Set piston to T.D.C., apply oil to piston and fit cylinder.

Attention: Ensure that piston rings are in proper position (securing pin between ends of ring). Press rings into groove manually.

4.23 Fit cylinder head and tighten nuts with 20 Nm.

Attention: Refit cylinder as initially positioned.

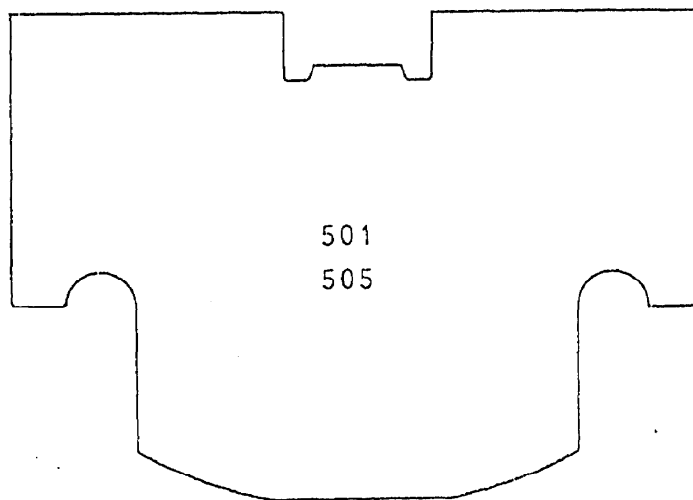
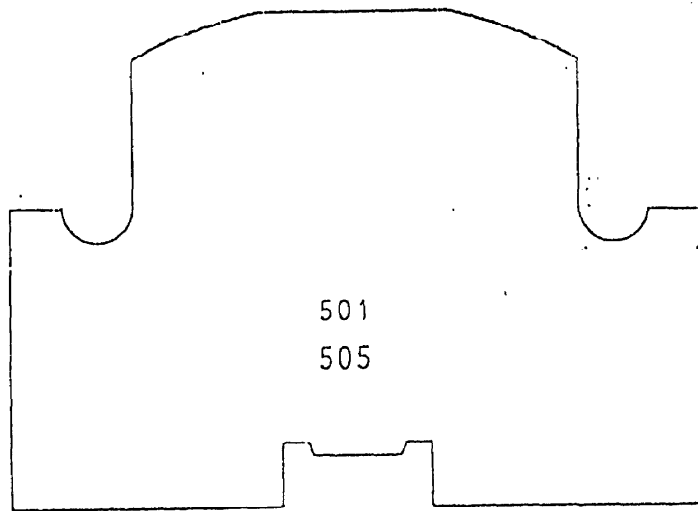
5) Refit remaining parts (see 3.1.) in proper sequence.

6) Conduct trial run.

2 enclosures

appendix 1Engine type 501 / 505

template for crankcase cover, use carton or sheetmetal



appendix 2

