

Subject:	Replacement of the gas spring or spindle in the engine bay
Serial number applicability:	EASA.A.0220, Variant ASW 27-18E, all serial numbers
Compliance:	If necessary
Reason:	<p>Minor damage, corrosion or paint residues on the piston rod may damage the sealing and result in a failure of the gas spring. The cylinder itself must not be damaged or deformed. Loss of internal gas pressure can be diagnosed when engine extension takes considerably more time than retraction. In these cases it is mandatory to exchange the gas spring.</p> <p>The spindle can be replaced according to the same working order.</p>
Action:	<p>It is advisable to prepare a means to suspend or support the power-plant (a trolley stand or a wooden post of approx. 110 cm (3,6 feet) length, and have the help of a second person at hand. See figure 1 for the following description.</p> <ol style="list-style-type: none">1. Extend the engine. Retract it slightly again, this relieves the spindle. Turn the main switch off.2. Remove the bolt on top of the spindle ①. With a properly pressurized gas-spring, the engine will stay erected. Otherwise it must now be suspended or supported.3. Remove the two bolts at the hinges ②. Take care not to loose the one washer and the one brass bushing on every bolt. The help of the second person is needed now. At the precise moment, when the second bolt is removed:<ol style="list-style-type: none">(a) the upper strut ③ will swing to either direction by the force of the gas strut, be prepared to keep her from doing so;(b) the engine needs support, otherwise it falls back into the engine bay.4. Swing the upper strut ③ rearwards and upwards, until the gas-spring is completely extended. The engine can now be suspended or supported (eg. with the wooden post from the back of the engine bay).5. Now bolts ④ and ⑤ can be removed. In total there are three brass bushings on bolt ④ and there might be an additional washer between the two U-brackets to cope with tolerances. The gas spring and/or the spindle can be taken out now.6. Install the new gas spring in reverse order. Use new Poly-Stop-Nuts.7. Do not forget that the ground contact wire ⑥, the gas spring and the spindle are all on the same bolt with the three brass bushings.8. Do not forget the brass bushing under the head of the bolt ⑤. The orientation of the brass bushing for the gas spring at this bolt can be seen on figure 1.9. It is important to reinstall the bolts at the hinges ② from the correct sides (from the outside to the inside, see figure 1). Have a look that the vane of the end-switch is on the correct side of its actuator.10. It is important to install the bushings at ① with the correct orientation (see figure 1)

Material and drawings:

- 1 Gas-spring AS part-nr. 298.67.1004 (if necessary).
- 4 Self-locking (Poly-Stop) Nuts M6
- 1 Self-locking (Poly-Stop) Nuts M8

Weight (Mass) and Balance:

no effect


Notes:

All Actions are to be accomplished according to EU-VO 2042/2003, Part M.

All Actions are to be inspected by certifying staff according to EU-VO. 2042/2003 Teil M / Part 66 ¹

Poppenhausen, 01.09.09

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¹ As long as there are no regulations about certifying staff for sailplanes and powered sailplanes (and outside the scope of European regulations), the appropriate national rules apply (§66.A.100).

Figure 1:

