i) Any kinks in Bowden cables or fuel lines and hoses? Elastic cords of the engine bay doors in good condition?

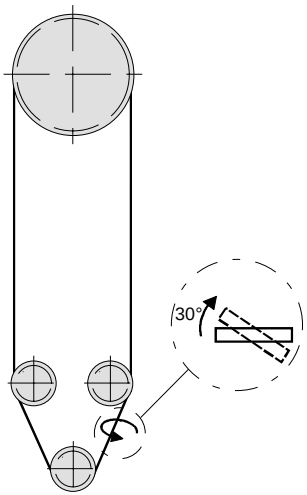
j) Inspect hoses (especially fuel and coolant hoses) and all components for signs of chafing.

k) Check carburettor and air filter for secure seating.

l) Check limit switch for electric jack for damage and secure seating - including its electric connectors.

m) Check the toothed belt for wear and correct pre-tension.

It should be possible to twist the belt just by 30° with normal hand force applied between the bottom belt pulley and one of the guide pulleys. This measuring method may be relatively imprecise, yet it may aid to recognise a considerably too low belt tension. Further notes on measuring and adjustment of belt tension are given in the Maintenance Manual, Section 2.



n) Turn the propeller through by hand one time (Ignition OFF?) and check for excessive friction.

Visual Inspection of the Propeller

a) Visual inspection of the propeller as per propeller manual.

b) Visual inspection of propeller mounting.

completely covered by neatly fitting doors.

2.3.1.2 Engine controls in the cockpit

The throttle and the propeller stop block are operated via Bowden cables by a pair of control levers in the engine control console which is fitted beneath the instrument panel. Also the PRIMER and STARTER buttons and the main switch are located at this engine control console (see also Flight Manual Section 7.9 for a complete description and illustration of this console).

The power-plant as well as the propeller extension and retraction are controlled by the ILEC-Power-Plant Control Unit (see also Flight Manual Section 7.9 for a complete description and illustration of this control unit).

2.3.1.3 Propeller Gear and Timing Belt

The timing belt uses a special type of gear contour and must only be replaced for the original SCHLEICHER part; the same applies to the four belt pulleys.

The belt tension and the belt running is adjusted factory-made.
As experience shows the adjusted belt tension remains constant over a long period of time. If during pre-flight check there is reason to believe that the belt tension is too low or if any assembly works make it necessary to re-adjust the belt tension, this is done according the specifications in the Mainenance Instruction **"Adjusting the drive belt"** (Section 12.6).

TN 15:

The original text is being replaced by the Mainenance Instruction **"Adjusting the drive belt"** (Section 12.6)

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2.3.1.4 Oil and Fuel Systems

- Total loss oil lubrication:

The engine uses a total loss oil lubrication which is supplied by a metering pump [9]. This pump is located behind the water pump through which it is driven and which in turn is driven by the crank shaft. The oil metering pump uses two outputs, one to the engine main bearings direct and the other to the combustion chamber indirect via an inlet beneath the carburettor.

Whenever the oil supply is disturbed this system must always be bled. Therefore, we do not recommend to invert the fuselage for any maintenance work because this will allow air to penetrate into the connection line between oil tank and metering pump. Also if the oil tank went completely empty it is necessary to re-bleed the system. If the tank has been emptied during engine operation it must be considered to overhaul the engine because it may have been running possibly some time without oil supply.

WARNING: Failure to bleed the oil connection line to the metering pump may result in destruction of the engine.

The oil for the total loss supply is filled into a tank [10] between engine and exhaust silencer.

At the right side of this tank an oil level photo-electric diode [11] is fitted which activates a yellow warning light at the ILEC control unit in case of low oil level.

Fig.2.3-6 Belt Adjustment

TN 15:

The Fig. 2.3-6 is being replaced by the Mainenance Instruction **"Adjusting the drive belt"** (Section 12.6)

12.6 Maintenance Instructions

The following Maintenance Instructions are established from time to time as required, in accordance with experience accumulated in operating the ASH 26 E. The Maintenance Manual is to be supplemented by inserting any new Maintenance Instruction which may have been issued for the ASH 26 E.

The general **Maintenance Instruction "PAINT CRACKS"** dated June 26, 1989, describes how to inspect, preserve, and repair the paint surface, respectively.

The **Maintenance Instruction A** for the ASH 26 E (dated July 31, 1995) describes how to replace the elastic plastic sealing strips at the control surface and flap gaps, as well as how to apply or replace the turbulators at the horizontal and vertical tailplanes.

The **Maintenance Instruction "Venting the oil pump"** dated March 25, 1997 describes the how to vent the oil pump at the power-plant.

The **Maintenance Instruction "Fuel"** dated Aug. 19, 1999, describes the use of motor vehicle fuel types.

The **Maintenance Instruction „Adjusting the belt drive“** dated August 27, 2007 describes adjusting the belt tension and the belt running.

Maintenance Instruction
Adjusting the drive belt
Issue I

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Power-plant AE50R and IAE50R-AA

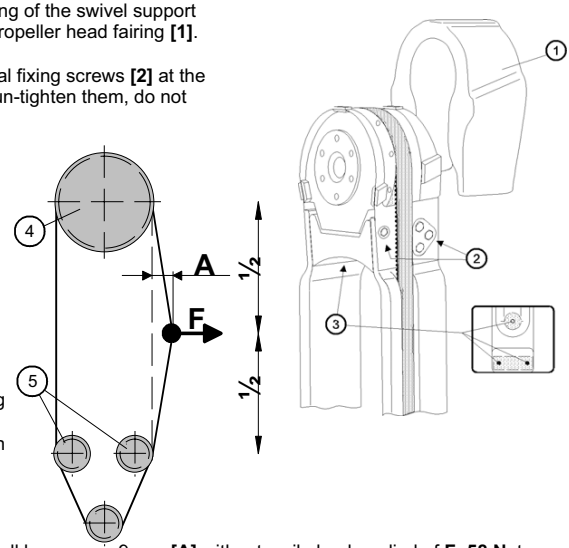
Subject:

The belt tension is adjusted such that the belt eigenfrequency - in the area where it is running in the channel inside both swivel support arms - corresponds to **48 Hz**. As experience shows the adjusted belt tension remains constant over a long period of time. If during pre-flight check there is reason to believe that the belt tension is too low or if any assembly works make it necessary to re-adjust the belt tension, this is done according to the procedure mentioned below:

Preparation:

Remove the side fairing of the swivel support arms as well as the propeller head fairing **[1]**.

Un-tighten the 4 lateral fixing screws **[2]** at the propeller head (only un-tighten them, do not remove).



Initial adjustment:

Prior to the fine tuning of the belt tension via its eigenfrequency, an initial adjustment is done using a spring scale.

The belt deflection shall be approx. 9 mm **[A]** with a tensile load applied of **F=58 N,** to be measured at the point in the middle between the lower guide pulley **[5]** and the upper belt wheel **[4]**,

Change of the belt tension:

The lock-nuts of the 3 tensioning screws **[3]** must be loosened. By evenly turning in and out respectively the 3 tensioning screws the prop head is moved parallel and thus the belt tension changed.
If the propeller is fully extended, the belt tension makes it difficult to turn the tensioning screws. For adjusting the tensioning screws the propeller may be retracted a little, until the belt tension decreases.

Fine adjustment:

With the above described measuring method the adjusting tolerances of the belt tension are still relatively large. More exact results are achieved by measuring the eigenfrequency of the belt. This is done by "picking" the belt (like a guitar string) between the lower guide pulley **[5]** and the upper belt wheel **[4]**. Using a **frequency meter** the oscillation (eigenfrequency) of the belt is then measured.

After the above described initial adjustment has been done the belt tension is increased by evenly turning in and out respectively the 3 tensioning screws **[3]** so that the belt eigenfrequency will become **48 H**z.

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Frequency Measurement:

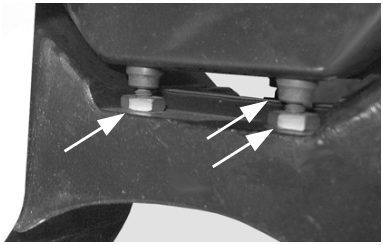
As frequency meters for the special purpose of measuring belt eigenfrequency are relatively expensive, there is a cheaper alternative: by means of a commercial quality chromatic **guitar (bass-) tuning meter** the belt eigenfrequency may also be measured and determined. Yet it is necessary to bring the belt tension before into the required range by the above described initial adjustment, as these meters do not indicate the frequency but the produced pitch. Then the fine adjustment of the belt tension is done until the tone **„G“** (contra-G“) is reached which corresponds to the required **48 Hz**.

These standard tuning meters however do not show to which octave the indicated tone belongs; so it would be imaginable that the belt inadvertently was adjusted into "one octave too high“, i.e. to the so-called **G^1**. That would correspond to about 96 Hz and would be a much too high belt tension. Therefore, it is **indispensable** to do first the above described rough initial adjustment.

Another alternative would be to use an existing notebook which features a sound card and a microphone. The measurement can then be done using any freeware **Frequency Analyse Programme**.

Tensioning screws:

If there is need to turn the tensioning screws **with thread diameter M6** so far inside that more than 6 mm free screw thread are visible on leveling pads, then so-called back-up support nuts must be fitted and locked with each tensioning screw (see arrows in the Figure next to this text). This will prevent safely a failure of the tensioning screws due to oscillation fatigue.



In order to fit the back-up support nuts first the lateral fixing screws **[2]** must be re-tightened and then the tensioning screws **[3]** must be turned back so far that the plugged-on dish end can be taken off and thus the support nut screwed on.

After turning in again the 3 tensioning screws back to the previous position, the lateral fixing screws are un-tightened again and the belt tension must be checked once again.

When the final position has been found, the tensioning screws are safely tightened and locked together with the upper support nut and the lower hexagon nut.

Note: In case of power-plants which use tensioning screws **with thread diameter M8**, no back-up support nuts are fitted.

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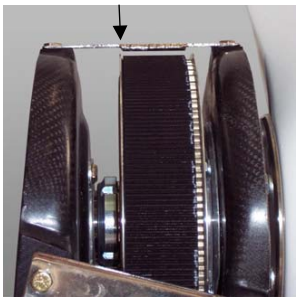
Belt running: An increased wear occurs also if the belt is running up at the washer discs of the pulley, particularly at the upper pulley.

The correct belt running must be checked with the engine idling. For this purpose the lateral fixing screws **[2]** have to be re-tightened and the engine started.

Warning: Engine must only be operated with the wings rigged or with the fuselage sitting in a special console. Never do adjustment works when the engine is running.

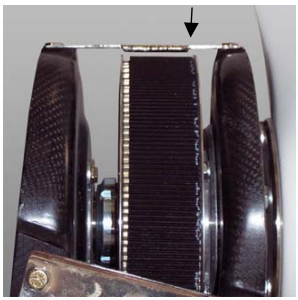
The belt is running correctly if it just touches the rear washer disc of the pulley when idling and the front washer disc when running under full RPM.

Flight direction >>>



Idling: the belt is close to the rear washer disc

Flight direction >>>



Full RPM: the belt is close to the front washer disc

If the belt is running up the front washer disc, the **front** tensioning screws have to be turned in (clockwise).

If the belt is running up the rear washer disc, the **rear** tensioning screws have to be turned in (clockwise).

NOTE: Turning the tensioning screws **[3]** affects the belt tension again, and corresponding corrections become necessary.

NOTE: After retightening all bolted connections the belt tension must be checked again by means of the frequency measurement.

Poppenhausen, August 27, 2007

Alexander Schleicher
GmbH & Co.

by order

(M. Münch)