

Instructions for Tightness Checks of the Instrument System

Pressure-tightness of the instrument system is crucial for proper functioning of all instruments. It should be checked at regular intervals.

Parts needed for the system check:

- the airspeed indicator (ASI),
- a 60 ml syringe from a pharmacy,
- (lubricate the piston with Vaseline for ease of movement),
- an approx. 40 cm (16 in) length of instrument tube (preferably made from silicone)
- a T-connection

Procedure.

All steps to be done should be executed with consideration and care. Rapid pressure changes are to be avoided by all means.

Make sure that the pressure changes effected by the syringe take place slowly so as to avoid damage to the instruments!

First of all, the ASI has to be checked for air leaks.

Connect the ASI total pressure tube socket to the syringe by means of the silicone tube and slowly increase the pressure up to a reading of 150 kph (80 knots). If this reading stands for more than one minute, this side is o.k. Now, similarly, connect the ASI static pressure tube socket to the syringe and **very gently create a suction** until, again, the ASI will read 150 kph (80 knots). If this reading stands for more than one minute, too, the ASI is tight and can be used for the following steps.

Otherwise, the ASI is unserviceable. Proved tight, the ASI should be reconnected to total and static pressures.

Check-out of total and static pressure tubes as well as the TE system involving **all instruments connected**. The total and static pressure ports in the fuselage are meant to be connected to **ASI, altimeter, computer and transponder**. As a rule, the static pressure socket of the variometer is connected to a **TE probe**. Where a **multi-probe** is mounted, it should **exclusively** serve the **variometers** and the **computer**.

The static pressure ducts are checked out by increasing and decreasing pressure. For this purpose the static pressure ports in the hull (and, if applicable, in the probe) have to be sealed off by a soft tape. Then the T-connection has to be inserted into the static pressure duct, and its free end will, through the piece of hose, be connected to the syringe. Carefully increase **suction/pressure** until the ASI reads 150 kph. If this reading stands for more than one minute, this duct is o.k. Remove the T-Connection and reconnect the duct.

Now, seal the total pressure port of the fuselage (and, if applicable in the probe). Then repeat the procedure given above with the total pressure ducts – however, with **increased pressure** only, not with suction. If the ASI reading stands for more than one minute, the system is sufficiently tight. Should there appear any leakages, the sources of them have to be located and eliminated.

Leakage in the TE system is the main reason that prevents proper TE compensation!