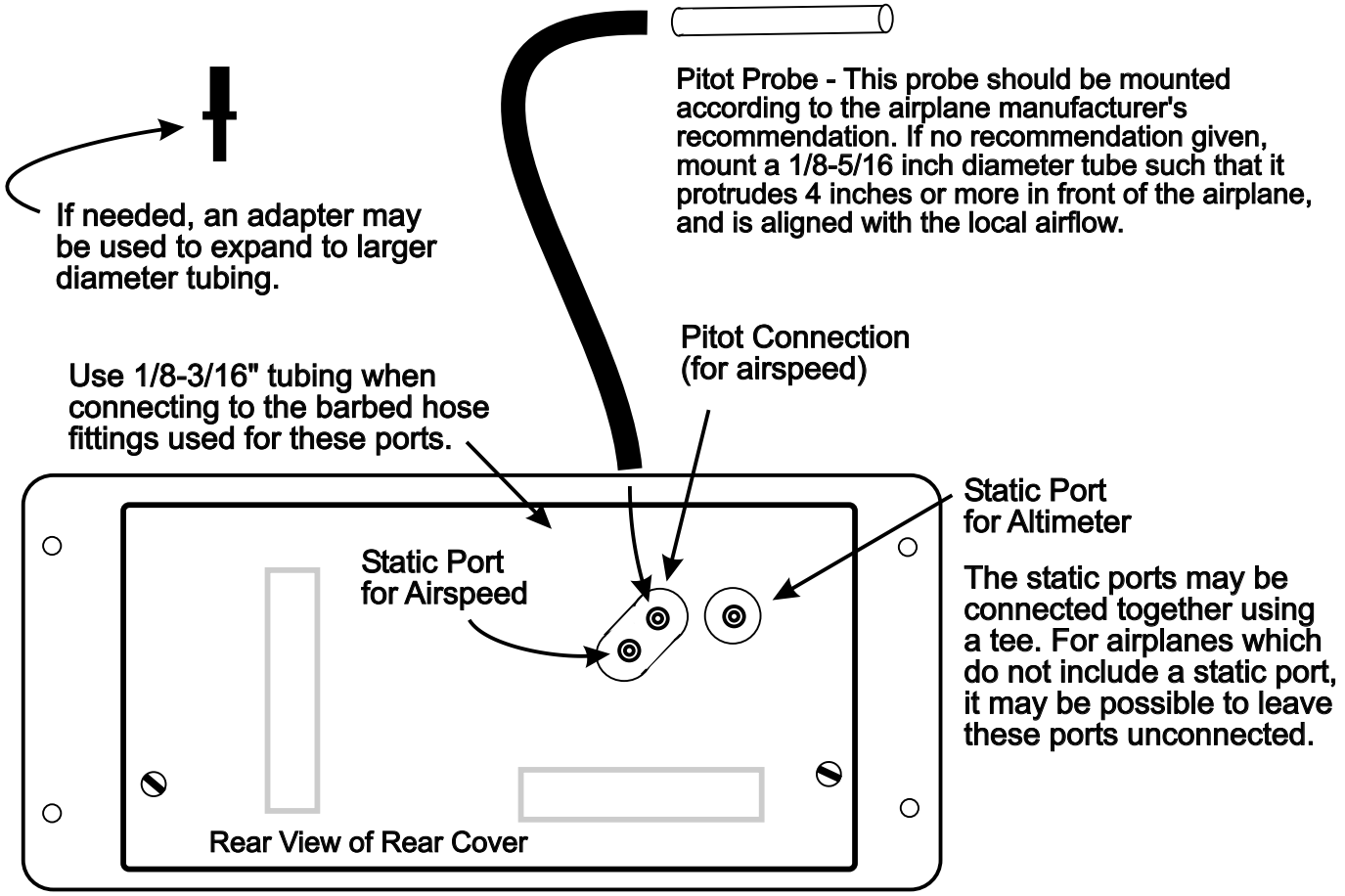
Pitot/Static Port Connections & Airspeed Function Operation and Limitations



The altimeter/VSI and airspeed sensing is made by measuring the pitot and static air pressures. The altimeter/VSI requires only the static pressure, while the airspeed requires both pitot and static air pressures.

Providing the instrument with perfect sources of these pressures is impossible, but it is usually practical to get sources which are quite close. Flight tests should be conducted to establish airspeed and alitmeter errors that result from the pitot/static errors, and instrument errors. This can be accomplished using GPS measured velocities, and flying 2-way courses to minimize the effect of wind.

Airspeed errors will vary with the speed of the airplane, and must be established at various speeds to determine how the error varies with speed. Typically static pressure errors are responsible for the majority of airspeed errors, and this can be especially true in airplanes which do not include a static port.

The airspeed function of the EIS will provide indicated airspeed measurments from a minimum of 30 mph (26 knots) to a maximum of at least 285 mph (250 knots). For speeds below this minimum, the instrument will display dashes (---), indicating that the instrument is unable to compute an airspeed.

WARNING: Do not rely on this instrument to measure airspeeds above 285 mph (250 knots). The airspeed function will display airspeed to at least 285 mph (250 knots), and will very likely accurately display speeds above this. Be aware that when the instrument has reached the maximum speed that it can measure, it will not provide any indication that it is at its maximum. Thus, flying the airplane above this speed will result in no change in the speed indicated on the instrument. The maximum speed the instrument can display may vary, and cannot be relied on to be repeatable.

WARNING:

The airspeed indicator should not be the sole source for stall warning. Stalling an aircraft near the ground is one of the most common causes of fatal accidents. An independent stall warning (and/or natural airframe buffetting near the stall) are necessary. The airspeed indicator should not be assumed accurate until sufficient flight testing has determined its accuracy in your particular installation. Installation errors and instrument errors can result in inaccurate or unreliable airspeed measurments. Do not fly an airplane that is completely dependent on only the airspeed indicator to prevent stall.

ALWAYS REMEMBER -- DO NOT FLY TOO SLOW WHEN NEAR THE GROUND. DO NOT BANK STEEPLY WHEN NEAR THE GROUND.