

PITOT/STATIC SYSTEM - DESCRIPTION AND OPERATION

1. Description

- A. The pitot system includes a pitot assembly and tube assembly, located in leading edge of left wing (right wing for right system), just inboard of landing lights (WS 185.00). Refer to Pitot/Static System - Maintenance Practices, Figure 201. For Airplanes 20800533 and On and Airplanes 208B2315 and On the pitot systems also have drain valves installed for each of the two pitot systems. The drain valves are found at the lowest points of each of the two systems at FS 118.00 on the left and right side of the avionics rack. The drains are used to drain moisture from the systems. Refer to Pitot/Static System - Maintenance Practices, Figure 202. Refer to Chapter 5, Inspection Time Limits for time limit intervals for draining moisture from system. Ram air passes through the pitot assembly, is then routed through lines to a pressure switch (located forward of instrument panel on instrument panel support), and then to airspeed indicator. The pitot assembly incorporates two electrical heating elements to prevent ice from obstructing passage of ram air through pitot assembly. The heating elements, powered by the electrical system, are controlled by a switch located at the lower left corner of instrument panel. One switch controls both left and optional right (if installed) pitot tube heating elements.
- B. The static system includes a static port, a static source drain valve, an alternate static source selector valve assembly, and necessary plumbing to operate airspeed indicator; vertical speed indicator, and altimeter. The static port is located in pitot assembly. A line runs from static port, through tube assembly along leading edge of wing to WS 33.50, and down forward door post at FS 154.00 to static source drain valve, which is located below and to the left of alternate static source selector valve. The static source drain valve is located at the lowest point in system and is utilized for draining any moisture in system. Refer to Pitot/Static System - Maintenance Practices, Figure 203. Refer to placard adjacent to drain valve for drain valve operation instructions. Refer to Chapter 5, Inspection Time Limits for time limit intervals for draining moisture from system.
- C. The alternate static source valve is located on left lower instrument panel, allowing for an alternate source of static air pressure to be obtained from inside cabin. The right pitot/static system does not incorporate an alternate static source selector valve. The static ports in pitot tube are the only source of static air for the right system.

NOTE: The alternate static source is to be used only in emergency situations, when normal system is inoperative. When alternate static source valve is used, instrument readings may vary from normal readings due to static air source being obtained from inside cabin. Refer to Pilot's Operating Handbook for flight operation using alternate static source.

- D. The airplane has airspeed warning horns installed. The horns are installed behind the headliner above the pilot. Airplanes that have the G1000 system installed, the G1000 activates airspeed warning horns. On airplanes that do not have the G1000 system installed, the overspeed pressure switch activates airspeed warning horns. The horns will operate when the airspeed is more than 175 KIAS (V_{MO}).
- E. Airplanes that have a pneumatic or TKS anti-ice system installed also have a Low Speed Awareness (LAA) system installed as follows:
- (1) The 97.5 KIAS LAA system is installed in airplanes that have the optional TKS system installed. The LAA system operates from inputs given from the pitot-static system. The LAA system is installed with airplanes that have the G1000 system installed and airplanes that do not have the G1000 system installed. The warning horns operate when airspeed is less than 97.5 KIAS, +2 or -2 KIAS. A warning signal can also be heard in the pilot's headset. For more data on the 97.5 KIAS LAA system, refer to Low Airspeed Awareness System - Description and Operation (With TKS System).
 - (2) The 110 KIAS LAA system is installed on airplanes that have pneumatic anti-ice system installed. The LAA system operates from inputs given from the pitot-static system. The warning horns operate when airspeed is less than 110 KIAS, +5 or -5 KIAS. A warning signal can also be heard in the pilot's headset. For more data on the 110 KIAS LAA system, refer to Low Airspeed Awareness System - Maintenance Practices (With Pneumatic System).
- F. The Altair Engine Trend Monitoring (ETM) System is attached to the pitot-static system behind the copilot's instrument panel at FS 117.55. It includes a pitot transducer and a static transducer. The transducers supply analysis to the ETM. For more information on the ETM system, refer to Altair ADAS+ Engine Trend Monitoring System - Description and Operation or Altair ADAS_d Engine Trend Monitoring System - Description and Operation.