ERJ 145

AIR CONDITIONING AND PNEUMATIC CONTROL PANEL

NOT FOR REAL WORLD USE!

GENERAL

The pneumatic system adopts an integrated bleed air philosophy. Either one or both engines, an external pneumatic source or the APU supplies the system. It supplies a high temperature compressed air for air conditioning, ice protection, pressurization and engine starting.

An external pneumatic source or the APU supplies the system before the engine start and the engines normally supply the bleed air after startup.

The air conditioning system processes the high temperature compressed air from the pneumatic system to provide environmental control within the passenger cabin. The system includes two Environmental Control Units responsible for the air conditioning.

The pressurization system controls the cabin's pressure by regulating the conditioned air from the cabin. The system is designed to maintain 7.8psi that allow a maximum cabin pressure of 8000 feet.

Cabin pressure is automatically controlled.

A ventilation system is responsible to cool down the equipment in the rear and forward electronic compartments.

PNEUMATIC SYSTEM

The pneumatic system receives compressed hot air from the following sources:
-9^{th} compression stage of engines
-14^{th} compression stage of engines
-APU
-ground source

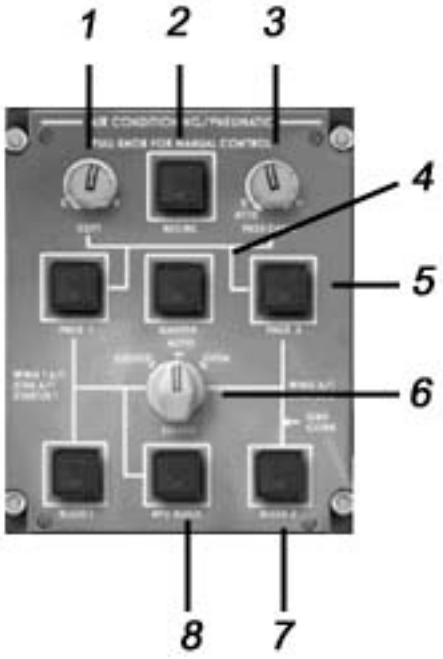
It controls the engine start, air conditioning, pressurization and ice protection.

The normal flight procedure requires isolating the engine bleed into the left and right system after the engine start.

The APU can provide bleed air on the ground and in-flight. It is however used mostly as a ground pneumatic source for air conditioning and engine start. The APU bleed valve controls APU airflow. The APU bleed button on the overhead panel controls this valve.

AIR CONDITIONING

The environmental control units provide the plane air conditioning. The cockpit and the cabin temperature is adjustable by two independent knobs on the overhead panel. The system is normally operated in automatic mode.
The air-conditioning distributed by a gasper system and general outlets between the cockpit and the cabin.
The Recirculation Button on the overhead panel controls recirculation fans.



1) **Cockpit temperature selector knob**
   Controls the left pack on the automatic mode through the digital temperature controller.

2) **Recirculation button**
   Turns ON or turns OFF both recirculation fans
   A stripped bar illuminates to indicate it's released

3) **Passenger cabin temperature selector knob**
   Controls the right pack on the automatic mode through the digital temperature controller

4) **Gasper button**
   Turns ON or turns OFF the gasper fan in-flight only
   A stripped bar illuminates to indicate that is released
   On the ground the gasper fan is turned ON as soon as the associated DC Bus is energized

5) **Air conditioning pack button**
   Opens or closes the pressure regulating and shutoff valve of the associated ECU.
   A stripped bar illuminates to indicate that is released

6) **Cross bleed knob**

CLOSED - Closes the cross bleed valve
AUTO – Selects the automatic mode of the cross bleed valve
OPEN – Opens the cross bleed valve

7) **Bleed air button**

Opens or closes the associated engine bleed valve
A stripped bar illuminates to indicate that is released

8) **APU bleed button**

Opens or closes the APU bleed valve
A stripped bar illuminates to indicate that is pressed
An OPEN sign illuminates to indicate that the APU bleed valve is in the OPEN position