GENERAL INFORMATION

The pneumatic system gives pneumatic pressure for engine start-up, air conditioning and pressurization system. Pneumatic pressure is normally generated by the engines; on ground can be supplied by THE APU or external power unit.

DESCRIPTION

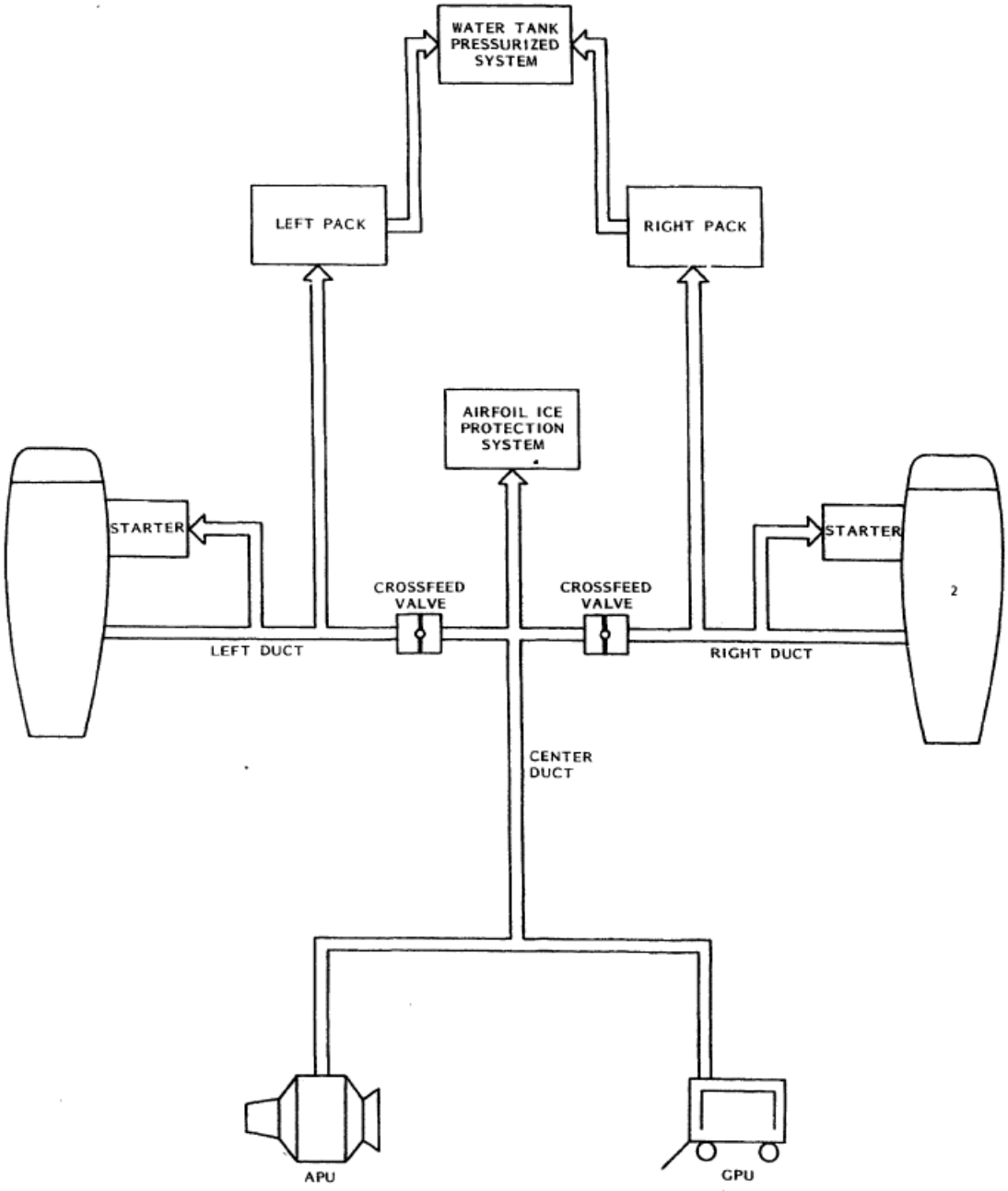
ENGINE PNEUMATIC PRESSURE

The pneumatic pressure comes from the low pressure turbine (8th stage) and from high pressure turbine (13th stage) of both engines. During normal operation, pneumatic pressure is generated exclusively by the low pressure turbine, to limit the loss of engine power. When the pressure coming from the 8th stage is not sufficient for the normal pneumatic system operation, the “augmentation valves”, which automatically controls the air flux coming from the 13th stage, start opening. The “augmentation valves” are controlled by the “AIR CONDITION SUPPLY Switches” and by the “AIR FOIL Ice Protect Switches”. Left and right engines provide air (bleed air) to each respective conditioning system. When required, the air conditioning or anti-ice system can receive bleed air whether from each or both engines. Two valves named “cross feed valves” divide the pneumatic system into three parts, right, central and left. The cross-feed valves are used to connects the right and left pneumatic system to the central duct.

APU PNEUMATIC PRESSURE

The APU can be used exclusively on ground as pneumatic pressure source for air conditioning system operation or engine start-up. AIR pressure generated by APU is controlled by a valve called “APU load control valve” which allows the pressure supplied by the APU to pass to the central duct. APU pneumatic pressure can be directed to left and right ducts opening the respective cross feed valve.

PNEUMATIC SYSTEM SCHEMATICS



PNEUMATIC PRESSURE INDICATOR:
Indicates the pneumatic pressure taken from the sensor in the central duct. Each notch corresponds to 200 PSI.

APU AIR Switch:
ON: Opens the valve which allows the APU to supply pneumatic pressure into central duct when the APU works at normal rpm operation.
AIR COND COOLER: Closes turbine bypass to increase to increase differential pressure across the turbine.
OFF: Removes electric power to the load control valve isolating APU from pneumatic system.

AIR COND SUPPLY Switches:
See chapter 02 AIR CONDITIONING AND PRESSURIZZAZION

AIR FOIL Switch:
See chapter 13 ICE AND RAIN PROTECTION

PNEU X-FEED VALVE L, R Levers:
UP/OPEN:
Opens respective cross feed valve.
DOWN/CLOSE:
Closes the crossfeed valve.