

EMBRAER 120



Hydraulic Power

GENERAL DESCRIPTION

The airplane has two hydraulic systems: the green and blue systems. The hydraulic systems power the following airplane components:

Hydraulic Green System:

- Landing Gear;
- Forward Door Actuation;
- Normal Brake (outboard pair);
- Nose Wheel Steering;
- Flap System (outboard pair);
- Rudder.

Hydraulic Blue System:

- Emergency Brake;
- Normal Brake (inboard pair);
- Flap (inboard and nacelle pairs);
- Rudder.

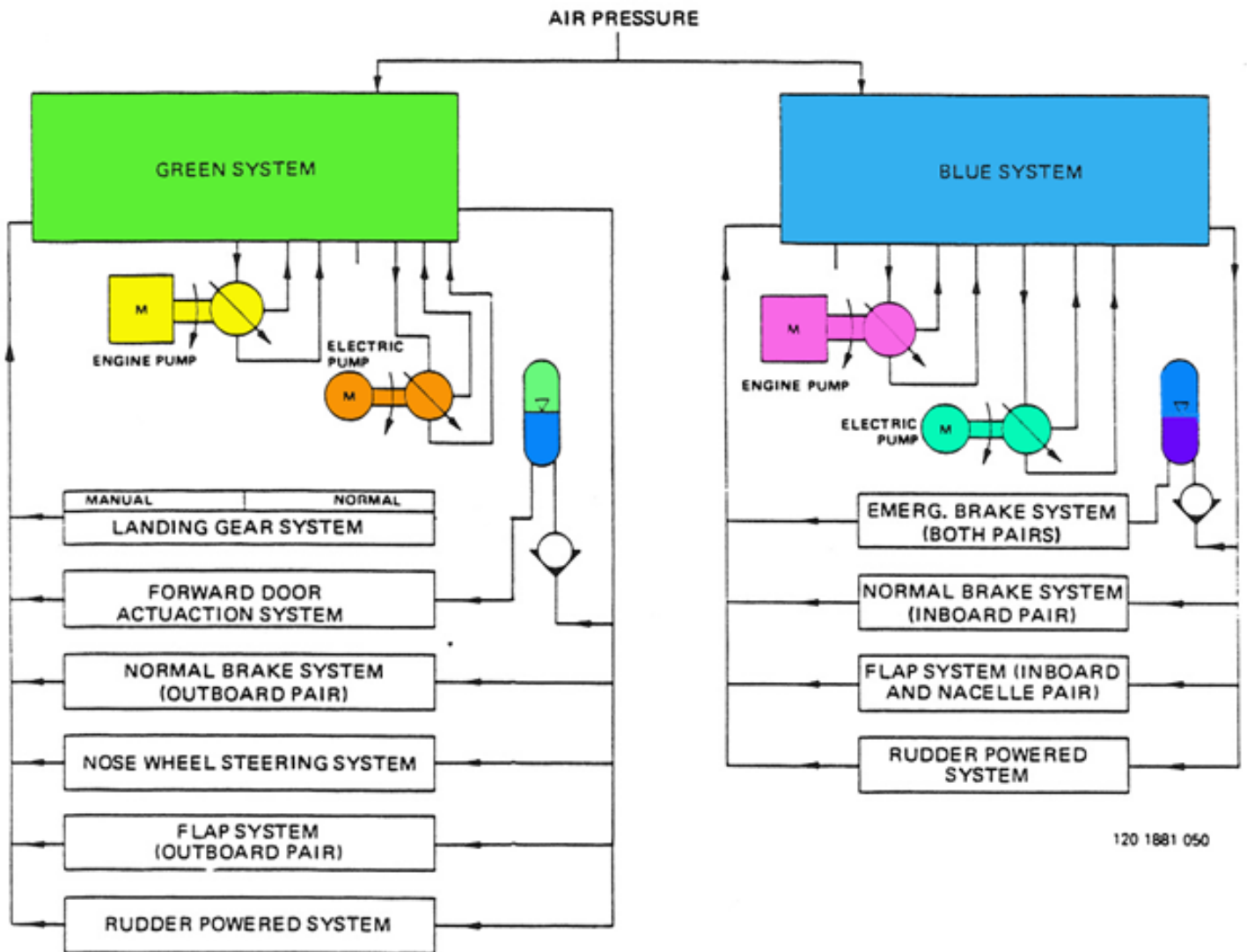
Either the green or the blue hydraulic system can power the rudder with no decrease in the airplane controllability.

The green and blue system reservoirs are pressurized by bleed air. Pressurization of all reservoirs ensures positive fluid flow to all hydraulic pumps.

The green and blue hydraulic systems have an engine-driven pump and a backup electric motor-driven pump. The green system engine-driven pump is powered by the left engine and the blue system engine-driven pump is powered by the right engine.

The green system backup electric motor-driven pump is connected to Relay Box DC bus 1 (airplanes Pre-Mod. SB 120-24-0051) or Relay Box bus 2 (airplanes Post-Mod. SB 120-24-0051 or SN 120.292 and on).

The blue system backup electric motor-driven pump is connected to Relay Box DC bus 2 (airplanes Pre-Mod. SB 120-24-0051) or Relay Box bus 1 (airplanes Post-Mod. SB 120-24-0051 or SN 120.292 and on).



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HYDRAULIC POWER DIAGRAM

GREEN SYSTEM MAIN PUMP LOW PRESSURE LIGHT (AMBER)

ILLUMINATED - When the engine driven pump outlet pressure drops below 1500 psi.

GREEN SYSTEM RESERVOIR LOW LEVEL LIGHT (AMBER)

ILLUMINATED - When the reservoir level is below 0.8 liters.

HYDRAULIC FLUID QUANTITY INDICATOR

Indicates the respective system fluid quantity. The bands are from full level (4.3 L) to 0.8L, green range; from 0.8 L to empty, yellow range.

BLUE SYSTEM RESERVOIR LOW PRESSURE LIGHT (AMBER)

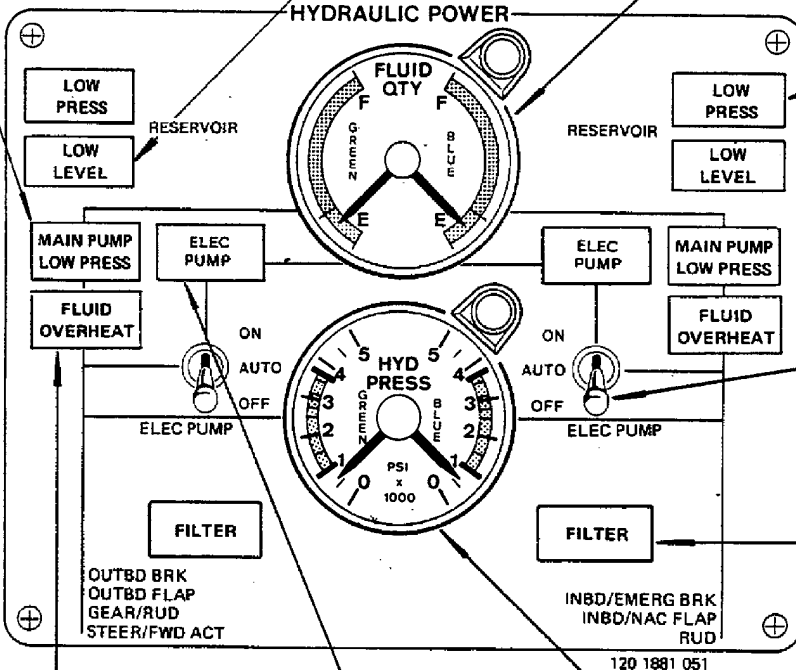
ILLUMINATED - When the reservoir pressure drops below 12 psig.

BLUE SYSTEM ELECTRIC HYDRAULIC PUMP SWITCH

ON - Turn on the electrically driven hydraulic pump. Limited to 20 sec of operation, due to high drain on battery. Unlimited use when engine starter/generator is generating.
AUTO - The electrically driven pump is automatically turned on when the corresponding engine driven pump outlet pressure drops below 1500 psi.
OFF - Turn off the electrically driven pump.

BLUE SYSTEM FILTER LIGHT (AMBER)

ILLUMINATED - When at least one of the following filters become clogged: engine pump pressure filter, electric hydraulic pump pressure filter and return filter.



GREEN SYSTEM ELECTRIC HYDRAULIC PUMP LIGHT (WHITE)

ILLUMINATED - When the electrically driven pump is functioning.

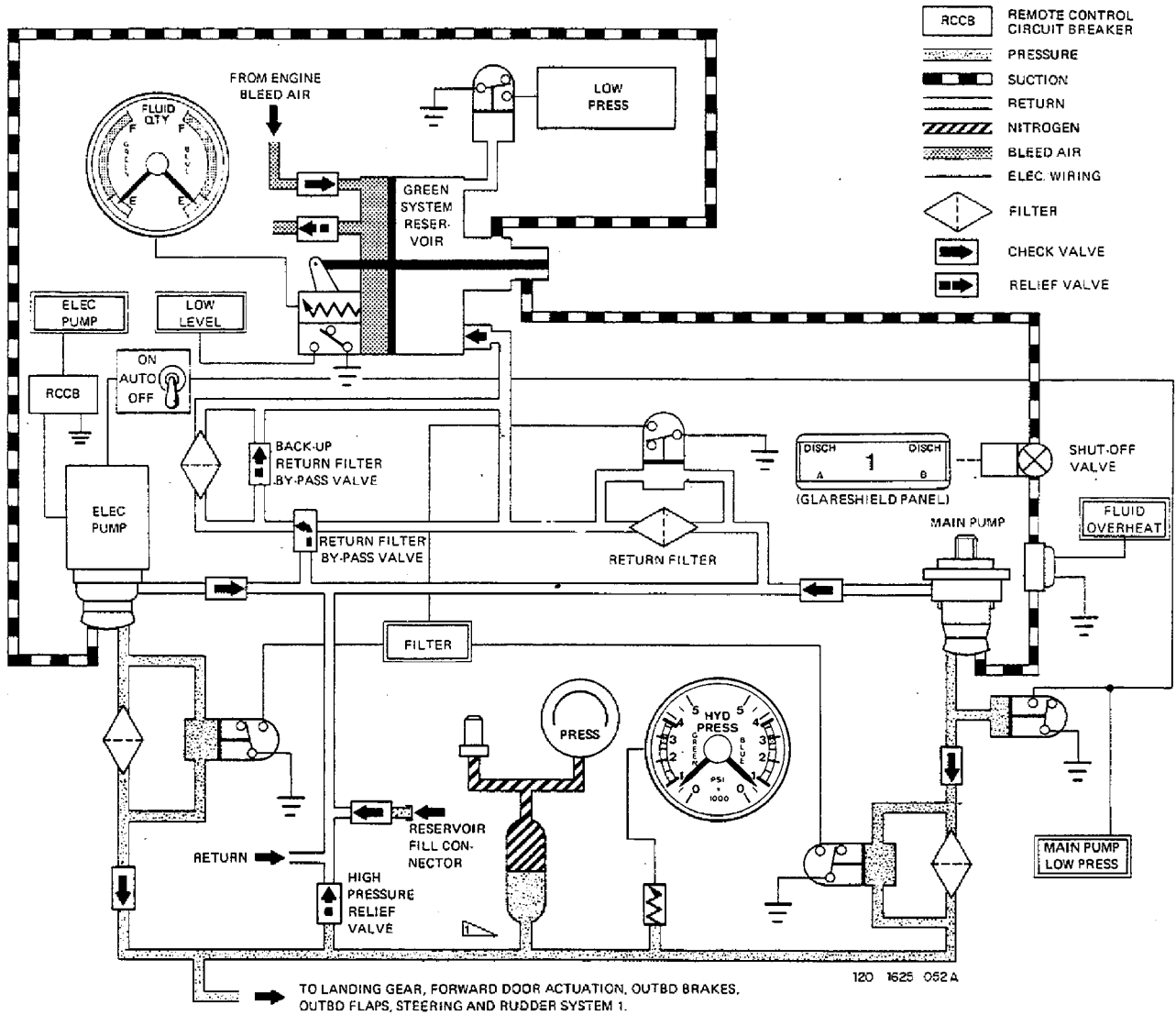
GREEN SYSTEM MAIN PUMP FLUID OVERHEAT LIGHT (AMBER)

ILLUMINATED - When fluid temperature at suction line exceeds 248°F (120°C).

HYDRAULIC PRESSURE INDICATOR

Indicates the respective system pressure.
 Green color band at 2700 psi
 Yellow color band at 3100 psi to 2700 psi and 3100 to 3700 psi.
 Red radial at 1000 psi and 3800 psi.

HYDRAULIC POWER PANEL (OVERHEAD PANEL)



AIRPLANES POST-MOD SB 120-029-0024 OR S/N 120-046, 120-050, 120-051, 120-053 THRU 120-055, 120-057 AND ON. DO NOT HAVE THE ACCUMULATOR, GAGE AND CHARGING VALVE.

HYDRAULIC GREEN SYSTEM SCHEMATIC