



# CHAPTER

# 47

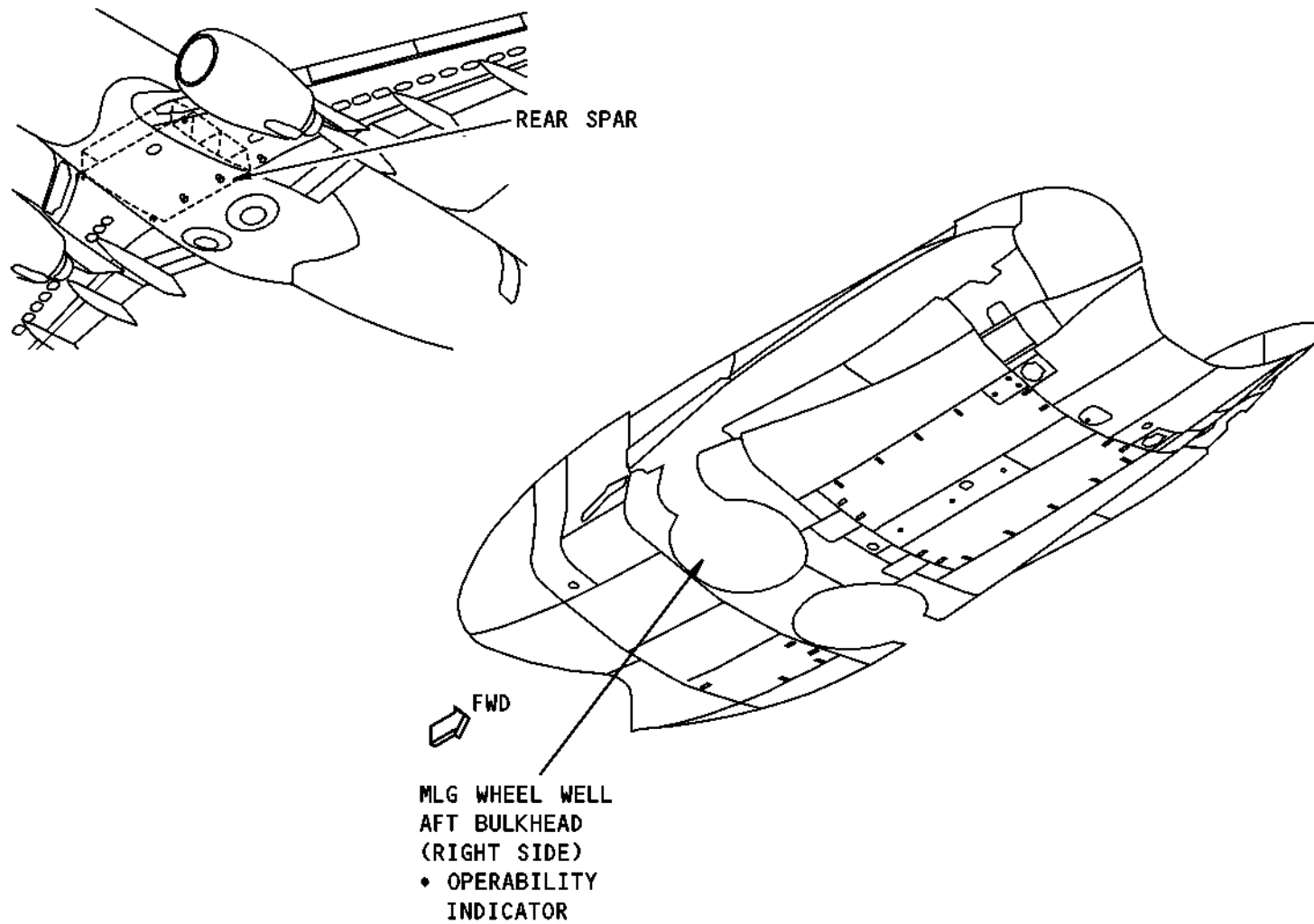
# INERT GAS SYSTEM

## **NITROGEN GENERATION SYSTEM - COMPONENT LOCATION - 1**

### **Operability Indicator**

The NGS operability indicator is on the aft bulkhead in the right wheel well, adjacent to the APU fire control panel.

The NGS operability indicator is not functional.



**NITROGEN GENERATION SYSTEM - COMPONENT LOCATION - 1**

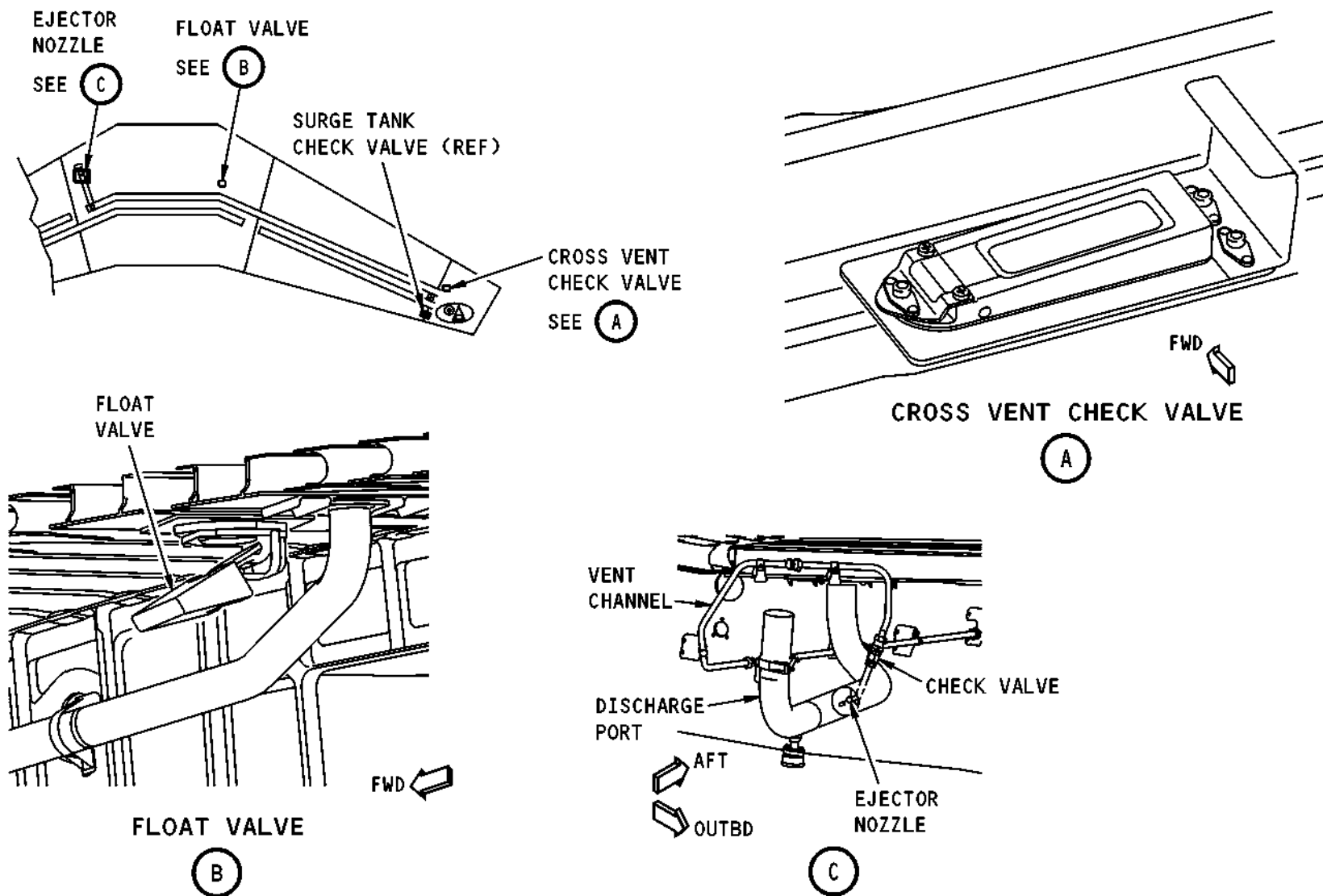
## **NITROGEN GENERATION SYSTEM - COMPONENT LOCATION - 2**

### **Nitrogen Enriched Air Distribution System (NEADS) - Center Tank and Wing Structure**

These NEADS components are in the center tank:

- Flame arrestor
- Primary backflow prevention check valve
- Ejector nozzle
- Float valve.

The cross vent check valve is in the right surge tank.



NITROGEN GENERATION SYSTEM - COMPONENT LOCATION - 2

## NEADS - GENERAL DESCRIPTION

### Purpose

The Nitrogen Enriched Air Distribution System (NEADS) supplies nitrogen enriched air from the nitrogen generation system (NGS) to the center tank.

### Description

These are the components of the NEADS:

- Float Valve
- Cross Vent Check Valve (CVCV)
- Backflow Prevention Check Valve (BPCV)
- NEADS Duct
- Dielectric Isolator Hose
- Flame Arrestor.
- Ejector Nozzle

NOTE: The flame arrestor is capped and sealed at the wheel well side of the rear spar.

### Float Valve

The float valve is in the right side (cheek) of the center tank. It closes when the center tank is full of fuel. It opens to make sure that the NEA is in specification when there is air volume in the center tank. The float valve is attached to the number 12 stringer. You get access to it through the center tank access door in the right wing.

### Cross Vent Check Valve

The cross vent check valve (CVCV) is in the right surge tank and is usually closed. During descent, the air pressure in the center tank must be equal to ambient air pressure. The CVCV prevents ambient air from going into the center tank from the right surge tank. This lets the NGS pressurize the center tank with NEA. The CVCV opens to let fuel flow to the surge tank if there is an overfill event.

NOTE: There is sufficient airflow from the left surge tank to equalize the tank pressure with ambient air pressure during descent.

### Backflow Prevention Check Valves

The backflow prevention check valve prevents fuel flow back into the ASM. The vent channel is open to the air bubble in the tank. Fuel can go into the channel during these conditions:

- The system fills the tank to VTO and is inactive for long periods of time
- Warm weather expands fuel in the tank
- You refuel the airplane when it is not level
- Rejected takeoff
- Ground maneuvers

The primary backflow prevention check valve is in the left cheek of the center tank. You get access to it through the center tank access door in the left wing.

## **NEADS - GENERAL DESCRIPTION**

### **NEADS Duct**

The NEADS duct consists of aluminum tubes and fittings. It moves the NEA from the NGS to the center tank.

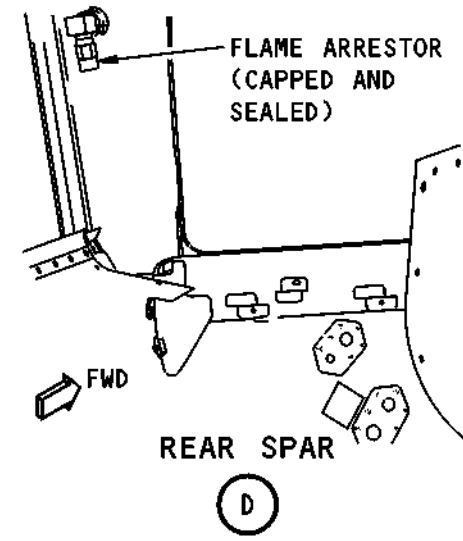
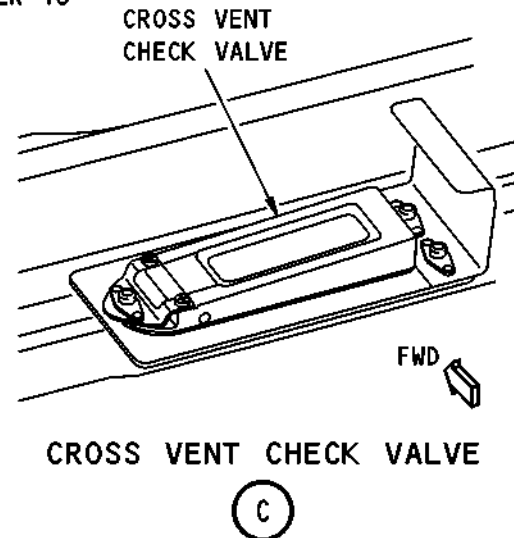
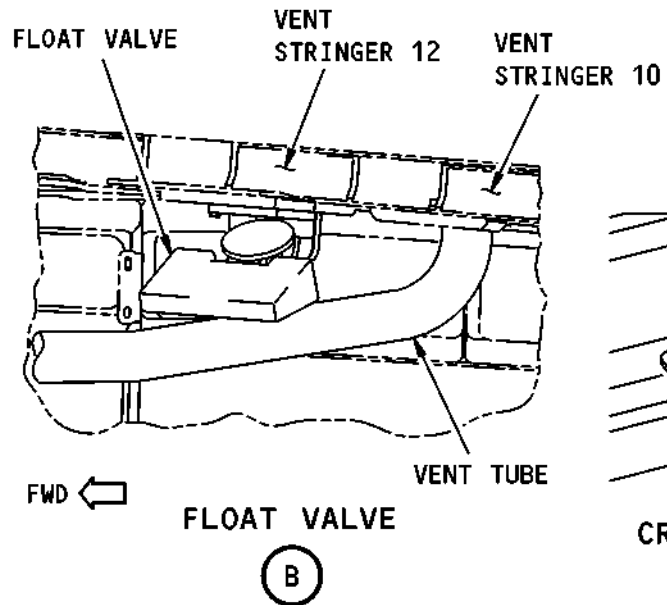
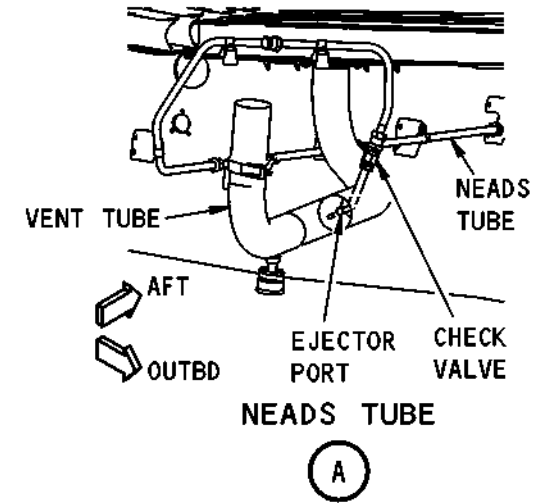
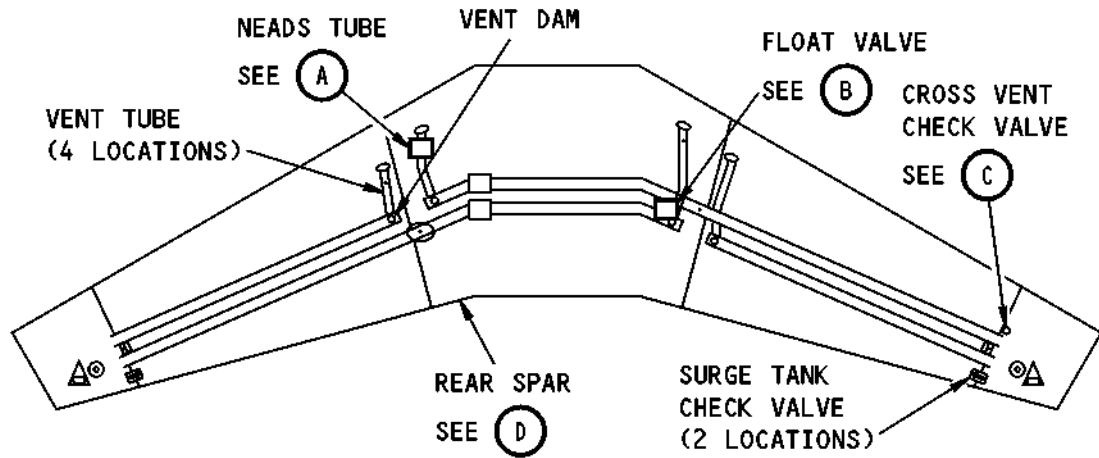
### **Flame Arrestor**

The flame arrestor is an in-line honeycomb unit. It gives protection against lightning caused ignition. It is installed into a bulkhead fitting and attached to the rear spar of the center tank. You get access to the flame arrestor from the left main wheel well and the left cheek of the center tank.

NOTE: The flame arrestor is capped and sealed at the rear spar.

### **Ejector Nozzle**

The ejector nozzle is welded into the vent tube in the left cheek of the center tank. The nozzle is the source of NEA for the tank. The nozzle and the float valve work together. They mix the air into a satisfactory oxygen decreased atmosphere that will not support combustion.



1315948 S0000230346\_V2

NEADS - GENERAL DESCRIPTION



## **NEADS - COMPONENT LOCATION - 1**

### **General**

The provisions for the NEADS system are located in the left wheel well and in the center tank.

### **Components - Left Wheel Well**

These components are in the left wheel well attached to the center tank rear spar (View A):

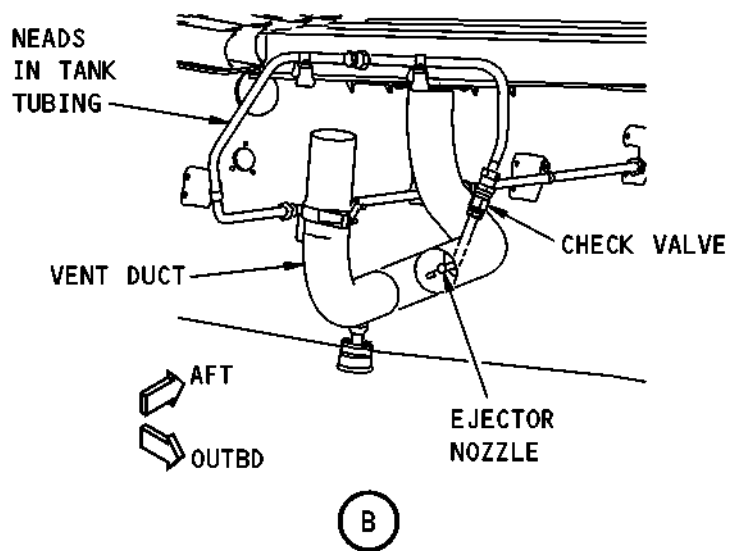
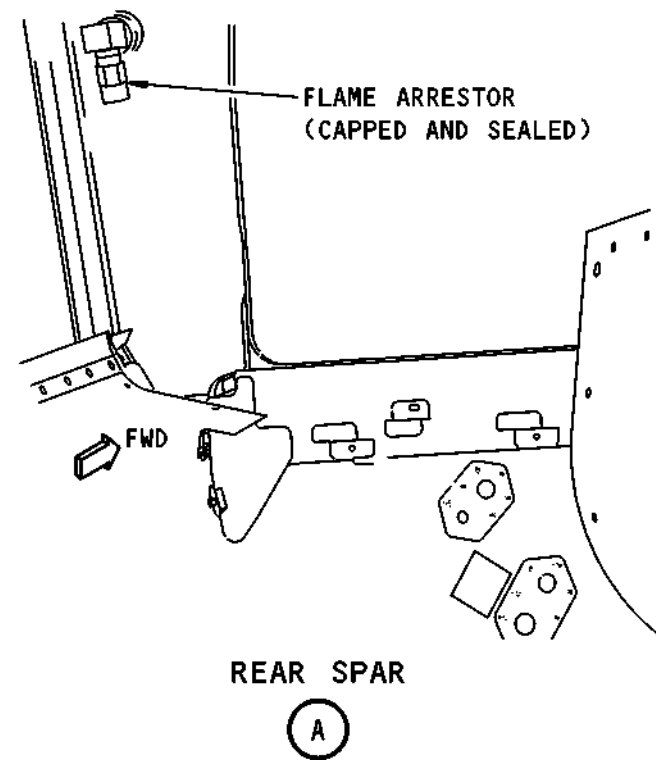
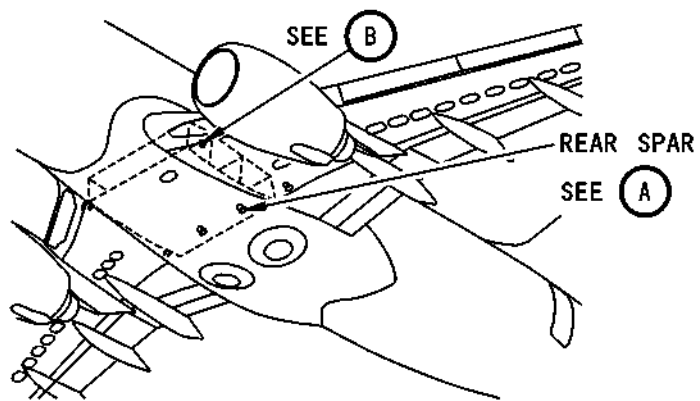
- Flame arrestor

NOTE: The flame arrestor is capped and sealed at the rear spar.

### **Components - Center Tank - Left Cheek**

These components are in the left cheek of the center tank (View C):

- Primary backflow prevention check valve
- Ejector nozzle



1315952 S0000230387\_V2

NEADS - Component Location - 1

## NEADS - COMPONENT LOCATION - 2

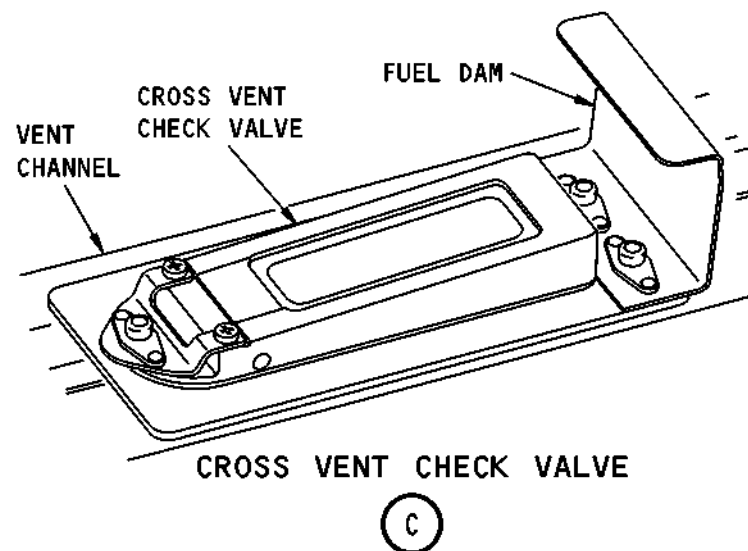
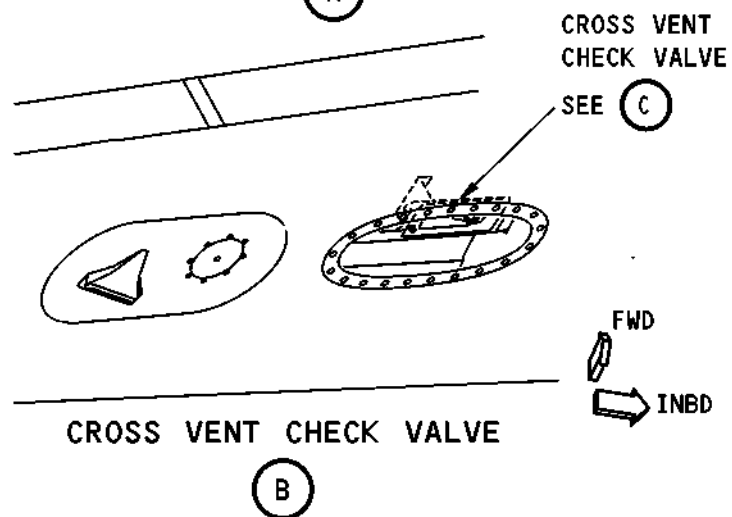
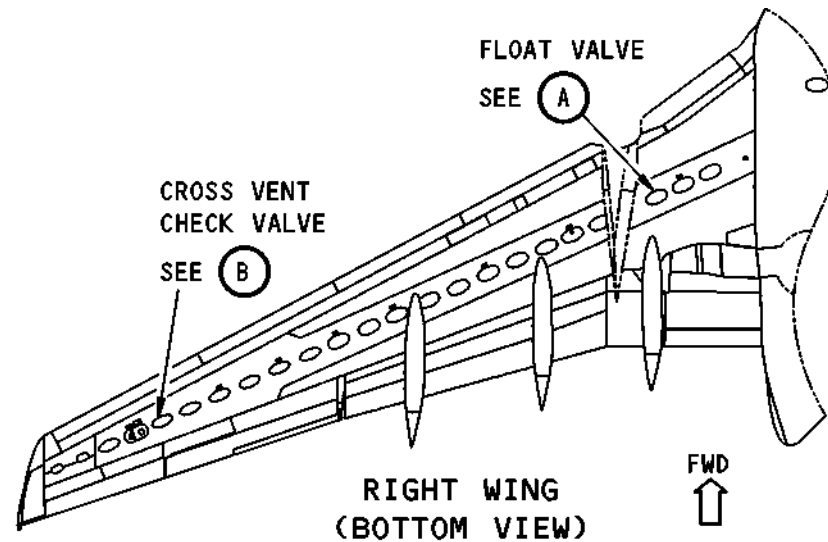
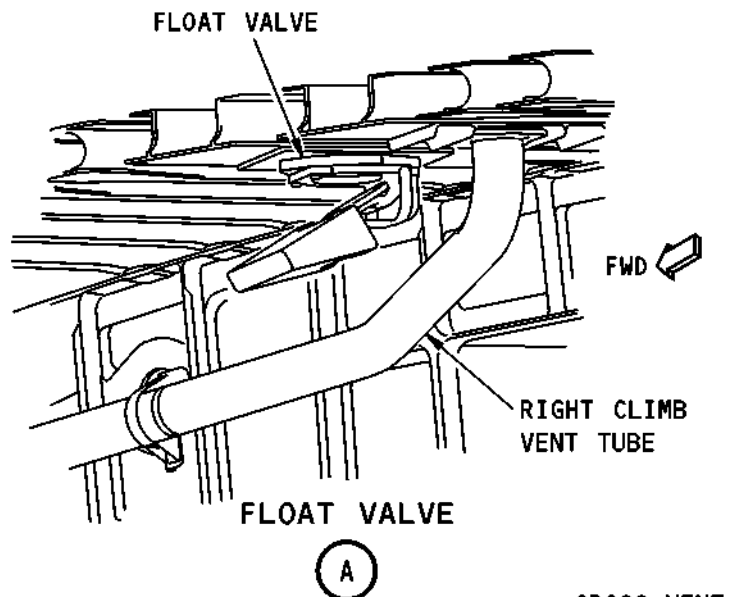
### General

The right cheek (side) of the center tank has these components:

- Vent channel
- Float valve

The right surge tank has these components:

- Vent channel
- Cross vent check valve (CVCV)



J64709 S0000180165\_V3

NEADS - COMPONENT LOCATION - 2

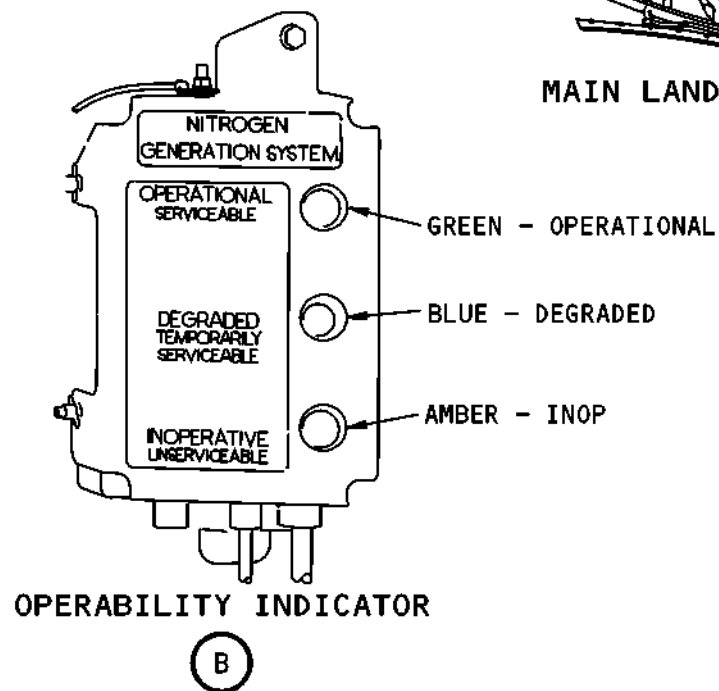
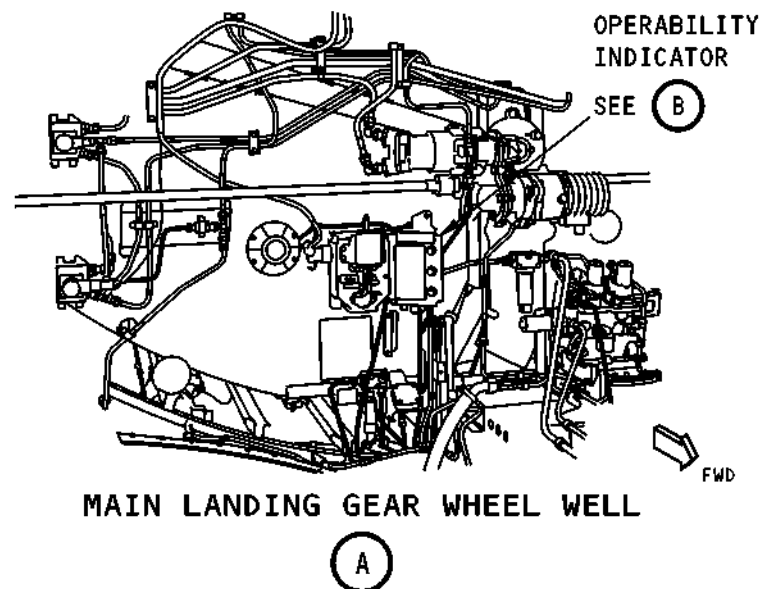
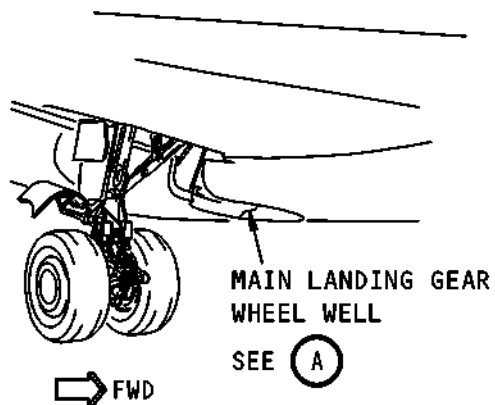
THIS PAGE IS INTENTIONALLY LEFT BLANK

## **NGS INDICATION - OPERABILITY INDICATOR**

### **Location**

The operability indicator is on the aft bulkhead of the right main landing gear wheel well. It is adjacent to the APU remote control panel (P28).

NOTE: The operability indicator is not functional.



OPERABILITY INDICATOR