GENERAL

The fuel system can be divided into an aircraft fuel system, an engine fuel system, and an APU fuel system.

The aircraft fuel system supplies fuel to the engines, and if applicable the APU, and is controlled from the FUEL panel. Failures will be detected and the relevant alerts are presented.

Fuel is stored in two integral wing tanks, one in each outer wing, and a separate collector tank in each nacelle. Each wing tank is equipped with a dual ventilation system. If one system should become blocked, the other is capable of providing sufficient ventilation for normal operation. To remove accumulated water, a drain valve is installed at the lowest point of the wing tank.

Each collector tank receives fuel by gravity flow from its corresponding wing tank and feeds its respective engine fuel supply system. Each collector tank is ventilated through an open line into the corresponding wing tank.

A fire shut-off valve is installed in each engine fuel supply system. The valve closes when the fire handle is pulled, shutting off the fuel supply to the respective engine.

For APU equipped aircraft

The APU fuel system is supplied form the right-hand collector tank. The APU fuel shut-off valve is normally controlled via the APU start selector. The valve can be closed by the APU automatic shut down system or the fire protection systems if either system is activated.

Fuel pumps

Two electrically driven fuel pumps are installed in the bottom of each collector tank. The pumps supply fuel under pressure to the engine driven high-pressure pumps. Each pump has the capacity to supply sufficient pressure for all engine power requirements.

Crossfeed

Engine fuel supply lines are interconnected so that each fuel pump can supply fuel to either engine fuel supply line via crossfeed valves. These valves are normally closed. They can be opened to supply an engine from the opposite wing tank or to supply both engines from either wing tank. Cross feeding from wing tank to wing tank is not possible.

Fuel capacities

<table>
<thead>
<tr>
<th>TANK CAPACITY</th>
<th>Wing tanks:</th>
<th>Collector tanks:</th>
<th>Total:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liters:</td>
<td>5036</td>
<td>100</td>
<td>5136</td>
</tr>
<tr>
<td>US gallons:</td>
<td>1330</td>
<td>26</td>
<td>1356</td>
</tr>
<tr>
<td>Kilograms:</td>
<td>4080</td>
<td>80</td>
<td>4160</td>
</tr>
<tr>
<td>Pounds:</td>
<td>9000</td>
<td>180</td>
<td>9180</td>
</tr>
</tbody>
</table>

Conversion factors:
- 3.7854118 l/US gallon
- 1.2346153 l/kg
- 0.45359237 kg/lb
Functional diagram - For aircraft not equipped with APU
Functional diagram - For aircraft equipped with APU
Controls and indicators

- **X-FEED P/B**
  - Normal (blank)
  - No crossfeed.
  - ON (blue) and Flowbar (white)
  - Crossfeed.
  - NOTE: If flowbar does not come on, valve position disagrees with p/b selection.

- **SYSTEM SHUTOFF INDICATOR**
  - Flowbar (white)
  - Fire shutoff valve open.
  - SHUT (white)
  - Fire shutoff valve closed.

- **PUMP P/B**
  - Normal (blank)
  - Pump in operation.
  - FAULT (amber)
  - Pump output pressure low.
  - OFF (white)
  - Pump manually switched off.
Alerts

<table>
<thead>
<tr>
<th>CONDITION(S) / LEVEL</th>
<th>AURAL</th>
<th>MWL/MCL</th>
<th>CAP</th>
<th>LOCAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUMP FAULT</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FUEL QUANTITY**

**Description**

The aircraft is equipped with a fuel quantity indication system. This system consists of several tank probes, a combined processor/fuel quantity totalizer, displays for each wing tank quantity, and a level light.

Additionally, magnetic fuel level indicators are installed.

Fuel quantity data, measured by the probes, is fed to the processor, where it is corrected for density and converted to kilograms. Total fuel quantity (including collector tanks) is then displayed at the fuel quantity totalizer. Fuel quantity for each wing tank (including collector tank) is displayed at the FUEL panel and fuel service panel.

A level light is provided at the FUEL panel to indicate a fuel unbalance between the wing tanks, or a low fuel quantity in one wing tank.

For quantity checks on the ground, each wing tank is equipped with a magnetic fuel level indicator. The accuracy of the indicated quantity is similar to that of the fuel quantity indication system (aircraft must be in level position). The indicator is calibrated in kilograms or liters and includes the fuel in the collector tank.
FUNCTIONAL DIAGRAM

LH WING TANK

TANK PROBES

MAGNETIC FUEL LEVEL INDICATOR

COMBINED PROCESSOR FUEL QUANTITY TOTALIZER

FUEL QUANTITY DISPLAY

LEVEL LIGHT

FUEL PANEL

RH WING TANK

TANK PROBES

MAGNETIC FUEL LEVEL INDICATOR

FUEL QUANTITY DISPLAY

FUEL QUANTITY DISPLAY

FUEL QUANTITY DISPLAY

FUEL SERVICE PANEL
Controls and indicators

**FUEL QUANTITY TOTALIZER**

**FUEL QUANTITY INDICATION**
Shows total fuel quantity in wing tanks.

**NOTE:** Displayed values include 80 kg in collector tanks.

**FUEL QUANTITY DISPLAY**
Shows fuel quantity in corresponding wing tank.

**NOTE:**
1. Displayed value includes 40 kg in collector tank.
2. When the wing tank is empty LO 40 (LO flashes) is shown.

**LEVEL LIGHT**
- Fuel unbalance between the wing tanks of 250 kg or more.
- Fuel quantity in one wing tank drops below 200 kg.
MAGNETIC FUEL LEVEL INDICATOR

- Push and turn 90 degrees to unlock indicator.
- Lower the indicator until built-in-magnet is felt to float.
- Read indicator.

WARNING: Depending system configuration calibration of the magnetic level indicator is in kilograms, pounds or in liters.
Alerts

<table>
<thead>
<tr>
<th>CONDITION(S) / LEVEL</th>
<th>AURAL</th>
<th>MWL/MCL</th>
<th>CAP</th>
<th>LOCAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>FUEL LEVEL</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CAUTION

LEVEL

RE-FUELING AND DE-FUELING

Description

Pressure re-and de-fueling of the aircraft is accomplished through a single connection, located at the underside of the RH wing and is controlled from the fuel service panel which is installed in RH nacelle. Instructions for re-and de-fueling are engraved on a plate next to the fuel service panel.

Maximum re-fueling pressure : 60 psi
Maximum de-fueling suction pressure : 11 psi

Gravity re-fueling of the wing tanks is also possible through over wing filler points.
Controls and indicators

### Fokker 50 - Fuel System

**SELECT** | **CHECK**
---|---
**RE- AND DEFUELING** |  |  
POWER SWITCH | ON | ALL DISPLAYS ON  
TANK SWITCHES | SHUT | READ QUANTITY VALVE SHUT LIGHTS ON

**REFUELING** |  |  
MODE SWITCH | SET | PRESET QUANTITY INCREASED  
PRESENT REQUIRED QUANTITY | AUTO | VALVE SHUT LIGHT(S) OUT
WHEN THE REQUIRED QUANTITY IS REACHED | CHECK TOTAL OF INDIVIDUAL TANK QUANTITIES EQUALS PRESET VALUE  
MODE SWITCH | SET/AUTO |  

**SHUT OFF TEST** |  |  
OPERATE TEST SWITCH DURING REFUELING | ALL VALVE SHUT LIGHTS ON  
IN AUTO MODE | DISPENSER FLOW STOP  
RELEASE TEST SWITCH | PRESET DISPLAYS ALL SHUT  
IN ALL MODES |  
STOP  
DISPENSER FLOW CONTINUES

**RE- AND DEFUELING** |  |  
POWER SWITCH | ON | ALL DISPLAYS ON  
TANK SWITCHES | SHUT | READ QUANTITY VALVE SHUT LIGHTS ON  
MODE SWITCH | MANUAL |  
TANK SWITCHES | OPEN |  
WHEN THE REQUIRED QUANTITY IS REACHED | APPLICABLE VALVE SHUT LIGHT(S) ON

**AFTER RE- AND DEFUELING** |  |  
TANK SWITCHES | SHUT | VALVE SHUT LIGHTS ON  
POWER SWITCH | OFF | ALL DISPLAYS AND LIGHTS OFF

**CAUTION** |  |  
IF ANY INDICATION IS NOT CONFORMING TO INSTRUCTIONS | STOP REFUELING AND REFER TO MAINTENANCE MANUAL CHAP. 12

**INSTRUCTION PLATE** |  |  
FUEL PANEL CALIBRATED IN KG
SYSTEM OPERATION

Fueling

Before all re- and de-fueling:

Power switch ................................................................. ON
Tank switches ............................................................ SHUT
Fuel quantity displays ............................................. CHECK
Valve shut lights .................................................. CHECK ON

Re-fueling

Auto re-fueling

Mode switch ................................................................. SET
Preset QTY SEL ........................................................... INCR
   Till required quantity is indicated on preset fuel quantity display
Dispenser pump ............................................................ START
Mode switch .................................................. AUTO REFUEL
Valve shut lights ................................................ CHECK OUT

Shutoff valve test:

Test switch .............................................................. OPERATE

Within seven seconds re-fueling should stop and the VALVE SHUT light should illuminate on.
If not see ‘Shutoff valve malfunctioning’.

When re-fueling is completed:

Valve shut lights .................................................. CHECK ON
Tank quantities ...................................................... CHECK
Power switch ......................................................... OFF

CAUTION: DO NOT SET POWER SWITCH TO OFF WHILE DISPENSER PRESSURE IS STILL ON
Manual re-fueling

Mode switch ................................................. MANUAL REFUEL
Dispenser pump .................................................... START
Tank switches ..................................................... VALVE OPEN
Valve shut lights ............................................... CHECK OUT

Shutoff valve test:

Test switch ........................................................ OPERATE

Within seven seconds re-fueling should stop and the VALVE SHUT light should illuminate on.
If not see ‘Shutoff valve malfunctioning’.

When individual tank quantity is reached:

Tank switch .............................................................. SHUT
Valve shut light ...................................................... CHECK ON

When both tanks switches are shut:

Power switch ............................................................... OFF

Shutoff valve malfunctioning

If a fueling shutoff system is unserviceable:

Dispenser pump ............................................................ STOP
Overwing filler cap ......................................................... OPEN
Dispenser pump ....................................................... START

Stop re-fueling at dispenser when completed.

Crossfeeding

To feed both engines from one wing tank:

X-feed ............................................................... ON
Flowbar ............................................................... CHECK
Pumps (tank in use) .................................................... ON
Pumps (other tank) ................................................. OFF

To feed one engine from both wingtanks:

X-feed ............................................................... ON
Flowbar ............................................................... CHECK
Pumps .............................................................. ALL ON
Use of magnetic fuel level indicators

In case of a malfunction of the normal fuel quantity indication system, use the manually operated magnetic fuel-level indicators. The indicators are calibrated either in liters or kilograms. Be aware that the indication is affected by bank angles in case the surface is not level.

**WARNING:** Depending system configuration The magnetic level indicators are calibrated either in liters, pounds or kilograms.