AVANTI P180

Ground Handling

Towing

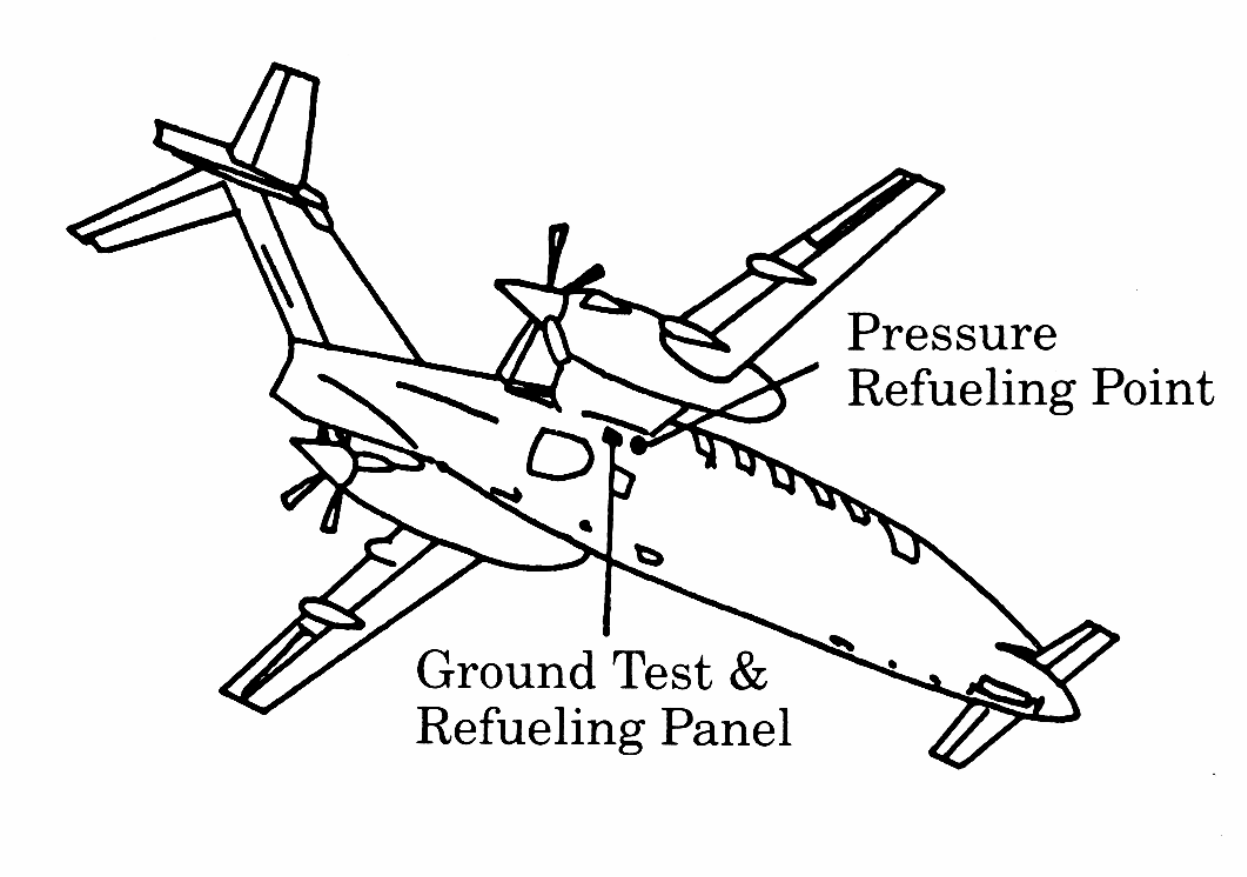
The airplane should be moved on the ground with the aid of the nosewheel towing bar provided with the airplane. The tow bar is designed to attach to the nose wheel axle.

CAUTION: Disengage steering link connecting pin. Do not push or pull on propellers or control surfaces when moving the airplane on the ground.

Release parking brake before towing the airplane.

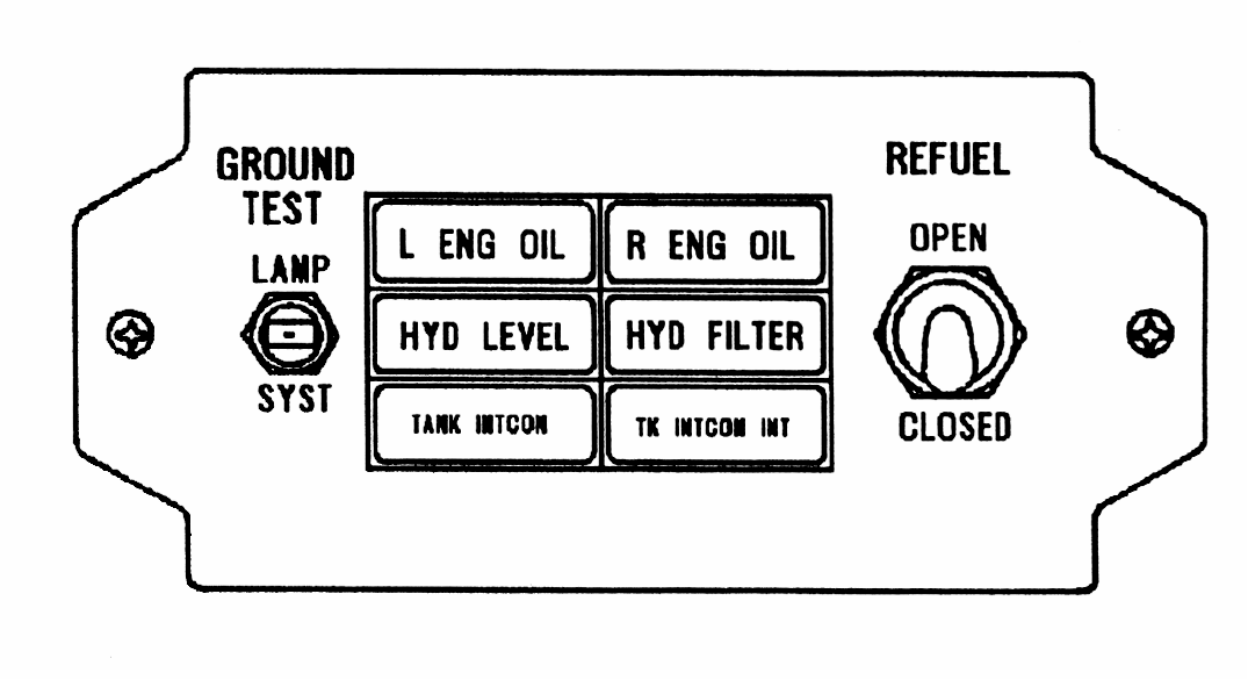
At completion of towing operations reconnect steering link. While hangared, the steering link may be disengaged.

Ground Test/Refuel Panel



This airplane utilizes a ground test/refueling annunciator panel to aid the ground crew in servicing the aircraft. The panel consists of a GROUND TEST switch, a REFUEL control switch, red-warning lights and amber-caution lights. The red lights indicate: a low oil level condition in the left or in the right engine, a hydraulic system fluid low level condition or a hydraulic system fluid filter obstruction. The amber lights indicate when the fuel tank interconnect valve is in transit or open.

Access to the ground test/refueling panel is through a side-hinged door on the right. side of the fuselage under the wing. The GROUND TEST switch has three positions. In the LAMP position, it tests the panel lights and all lights should illuminate. In the SYST position, it tests the monitoring system circuitry and all lights should illuminate in a few seconds, then go off when the switch is released. The third position is the center (or OFF) position.



The REFUEL switch has two positions: OPEN and CLOSED. In the OPEN position the switch opens the left and right fuel systems interconnect valve allowing for single point gravity or pressure refueling. When the switch is set to open, the TK INTCON INT amber light momentarily comes on, then goes off when the valve is completely open and the TANK INTCON amber light comes on. When the control switch is set to the CLOSED position, the TANK INTCON light goes off, then the TK INTCON INT light momentarily comes on until the valve is completely closed.

CAUTION: The fuel systems interconnect valve must be open for refueling operations only. Close the valve after the refueling has been completed.

Refueling

The total system capacity is 397.3 U.S. gallons (1,504 lts).

Fuel requirements: JP-4, JP-8, commercial kerosene, Jet A, A-1 and B fuels. If for any reason these fuels are not available, advise flight crew.
Anti-icing additives must be used on this aircraft. Consult with flight crew concerning the use of fuel additives.

The airplane may be filled through a single-point gravity filler located on top of the fuselage's right side above the wing or through a single-point pressure filler located in the refueling access door on the right side of the fuselage below the wing.

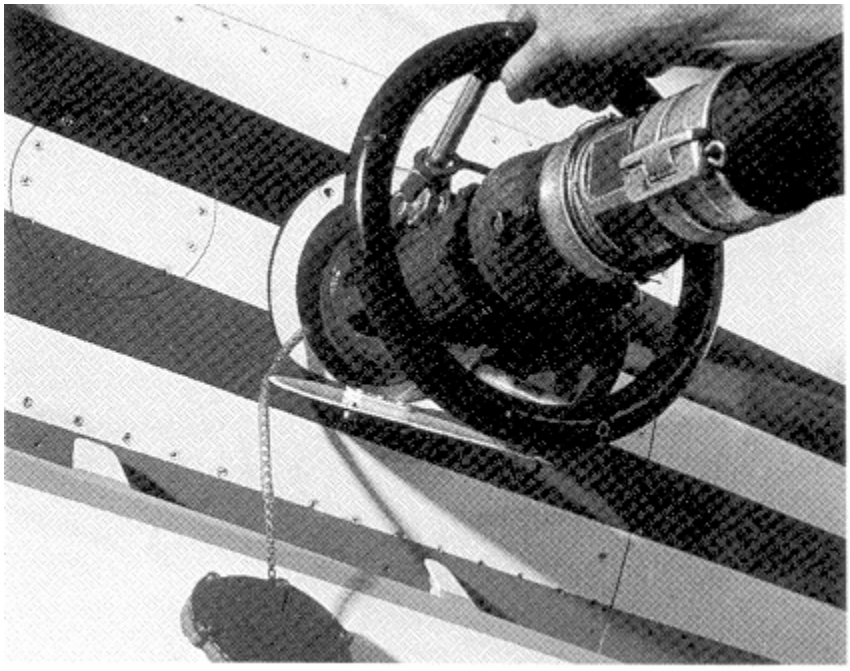
Gravity Refueling

Open the REFUEL switch, verify the TANK INTCON annunciator light is on, remove filler cap and fill the fuel tank through the filler neck. Reinstall filler cap and set the REFUEL switch to the CLOSED position. Ensure TK INTCON INT and TANK INTCON annunciators are OFF.

Pressure Refueling

NOTE: A minimum truck delivery pressure of 20 PSIG at the nozzle is required for satisfactory system performance. Do not exceed maximum delivery pressure of 60 PSIG.

Open the REFUEL switch, verify the TANK INTCON annunciator light is on, open the refueling access door, remove refuel adapter cap, connect refueling nozzle to refuel adapter, apply refueling pressure, set the GROUND TEST switch to SYST position, verify a fuel flow stop, release GROUND TEST switch, continue fuel flow until tank is at requested level. When fuel flow is finished, disconnect the refueling nozzle from refuel adapter, install refuel adapter cap and close access door. Set the REFUEL switch to the CLOSED position and ensure the TK INTCON INT and TANK INTCON annunciators are OFF.



Defueling

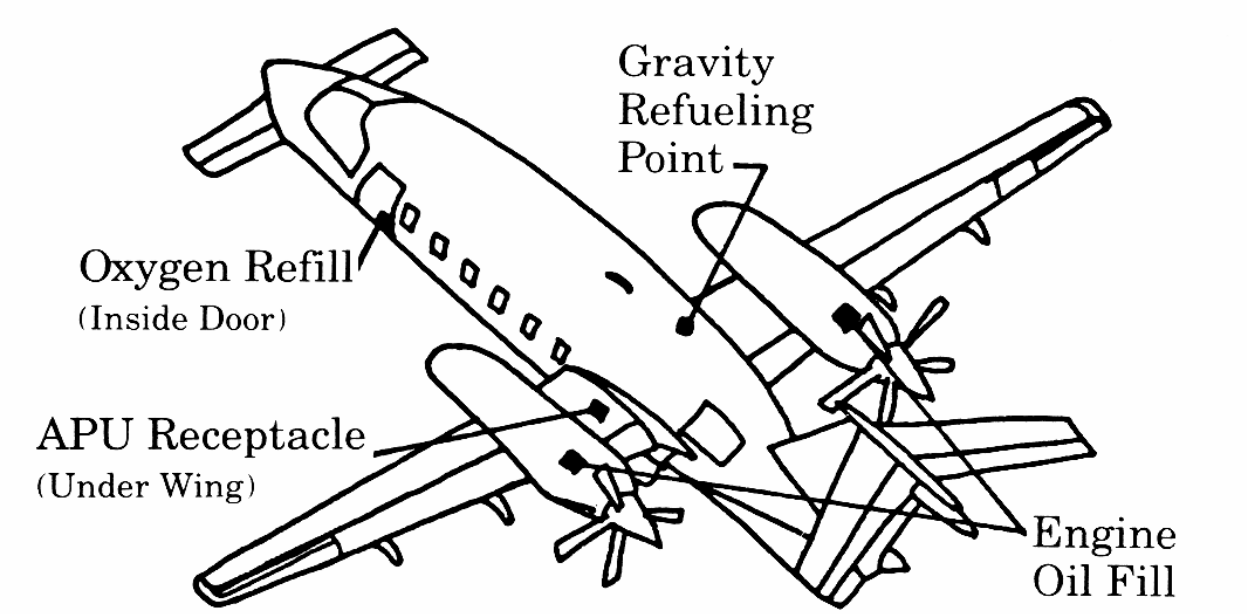
Defueling this airplane is not possible without special procedures. Consult flight crew for information on defueling.

CAUTION: Defueling is not allowed through pressure refuel adapter.

Engine Oil

Consult flight crew for the correct type of oil to use.

CAUTION: The oil level must be checked within ten minutes of engine shutdown. If more than ten minutes has elapsed, have the flight crew carry out a normal dry motoring run prior to checking oil.



Engine oil can be checked by using the L and R ENG OIL red warning lights on the ground test/refueling panel.

When the oil level is two quarts low the L and/or R ENG OIL red warning light will be on. If the lights are off, move the GROUND TEST switch to the LAMP position to test the lamps, then to the SYST position. The L and R ENG OIL red warning light will come on verifying the system is working and oil level is satisfactory.

The engine oil tank capacity is 3.35 U.S. gallons (12.7 Its.) for each engine. To top off the affected engine's oil, open engine nacelle access door, unlock and remove filler cap and indicator assembly from filler neck, check oil tank contents against markings on dipstick and service as required. Fill the oil tank to normal level and record quantity of oil added to system. Install filler cap and indicator assembly ensuring cap is locked securely. Close all access openings.

Oxygen System

The filler valve for the oxygen cylinder is located on the end of the cabin floor step just aft of the lower cabin door. To charge the oxygen system, remove the protective cap from the filler valve and attach the fitting from an aviator's breathing oxygen bottle. Open the cylinder supply valve on the airplane and fill the system slowly by adjusting the recharge rate with the pressure regulating valve on the bottle. When the pressure on the cylinder reads 1850 psi at 70°F, close the pressure regulating valve and replace the protective cap on the filler valve.

External Power

The external power unit should have a capacity of 1,200 amps at 28 volts D.C. and 400 amps max continuous rating.

The external power receptacle is located on the left side of the fuselage below the wing.

CAUTION: When connecting or disconnecting external power, DO NOT approach aircraft from the rear.

Lavatory Servicing

The chemical toilet is the standard dry chemical type. The toilet should be removed, emptied and cleaned after each period of use. A non-metallic stiff bristle brush and a water and detergent solution may be used to clean the bowl. Any approved dry chemical may be used in accordance with the manufacturer's instructions.

Parking/Mooring

When parking the airplane, be sure that it is sufficiently protected against adverse weather conditions by installing dust covers on engine air inlet and exhaust ports; attach propeller restrainers to prevent windmilling; and install pitot covers.

When parking the airplane for any length of time or overnight, it should be parked in a hangar or moored securely. To moor the airplane head it into the wind. Be sure flaps are retracted. Install the controls gust lock. Chock the main wheels. To secure tie-down ropes, bolt attachment fittings (located in the loose equipment bag) to underside of wings.

Control Locks

The control lock is installed by connecting the rod between the pilot control column and rudder pedals. With the pedals in neutral, insert the long pin of the rod through the pedals locking hole and insert the short pin of the rod through the control column locking plate. Then insert the pin through the hole provided in the rear side of the pilot's control wheel when centered, and position the clamp around the engine control levers.

Parking Brakes

Application:

Pump on toe brakes until they are firm, pull the parking brake handle and rotate handle 90° clockwise to lock.

Release:

Rotate handle 90° counter-clockwise and push handle in completely to ensure that the brakes are released.

Airframe Deicing

Use a water/glycol mixture conforming to MIL-A8243 to remove accumulated ice, snow and/or frost from the airplane.

Avoid using high pressure spray to "batter" ice and snow off airplane surfaces. Composite surfaces can be damaged easily. Apply deicing fluids at low angles. Do not spray heated deicing fluid or hot water directly on cold windows. (Spray fluid above window and let it run down). Do not spray deicing fluid directly into engine, scoops, drains, etc. Check that ice and/or snow is not forced into areas around flight controls during ice and snow removal.

Airframe & Windshield Anti-Ice

This aircraft does not require anti-icing fluids, Icex, etc.

Tires

All tires are tubeless. They should be filled with nitrogen to the following pressures:

Nose Tires 67 psi.
Main Tires 110 psi.

Windshield & Window Cleaning

CAUTION: Check with flight crew before cleaning windshield. The application of a rain repellent such as RAIN-X or Repcon is required on the windshield after cleaning when operation in rain is anticipated.

CAUTION: Do not wipe a dry windshield or window. Damage can result.

To remove dirt, mud, and other loose particles from exterior surfaces of windshields and windows, use clean water or a mixture of 50% isopropyl alcohol and water. Remove any adhered particles with a bare hand and water before any cloth is rubbed over the surface. Wash interior and exterior windows surfaces with mild soap and warm water. Use a soft cloth or sponge in a straight rubbing motion. Do not use any abrasive materials or any strong acids or bases. Rinse thoroughly with clean water and dry with a lint-free cloth.

Exterior Cleaning

Ground the airplane to prevent static electricity. Mask or otherwise cover all equipment or components that can be damaged by the cleaning moisture.

Prepare a solution of detergent and water and apply it using a circular motion on the airplane exterior surfaces. A low pressure sprayer may be used to spray on the solution. Extend flaps to permit cleaning of hidden areas.

CAUTION: Do not use a brush to clean the windshields or windows as this could damage their surfaces.

CAUTION: Do not use high-pressure water on bearings, electrical or electronic equipment.

The airplane must be cleaned by starting at the lower surfaces of the wings and fuselage working outward from the main landing gear. Then wash the upper surface of the wings, nacelles and center section of fuselage. Spray the remaining upper surfaces of the fuselage and tail sections moving from center to the ends. All areas of the airplane should be completely covered with the cleaning solution. Heavily soiled or difficult-to-clean areas should be cleaned repeatedly.