Ground Handling Procedures

Edition 2
Revision 1
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LUXAVIATION S.A.

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Content

1. General

The Luxaviation Ground Handling procedures describes all aspects of the entire ground operation of Luxaviation S.A.

Every aeroplane of Luxaviation will be operated in compliance with the terms of its Certificate of Airworthiness (C of A) and within the approved limitations contained in the Aircraft Flight Manual (AFM).

The Handling procedures have been created as a collection of rules and practices recommended by the aircraft manufacturers for operational staff.

All personnel shall comply with the laws, regulations and procedures of those states in which operations are conducted and that are pertinent to the performance of their duties.

The aircraft under the AOC of Luxaviation are:

F8X	LX-SHS
G650	LX-SIX
C56XL/ XLS	LX-SEH; LX-VMF:
EMB135BJ	LX-OLA;LX-TRO
BD700	LX-NAD; LX-AMG; LX-JNC
B200GT	LX-KAY

Handling Manual distribution list

Copy ID	Manual Holder	Version
Centrik	Compliance Monitoring Manager	Electronic Copy
Centrik	Ground Operations Manager	Electronic Copy
Download Link Luxaviation Homepage	3rd Party GSP/FBO	Electronic Copy

Document specific terms and words

Note: A Note highlights an important operating condition or a procedure.

Caution: A Caution call attention to operating procedures which, if not strictly observed, may result in damage.

WARNING: A Warning calls attention to operating procedures which, if not strictly adhered to, may result in damage, injury or loss of life.

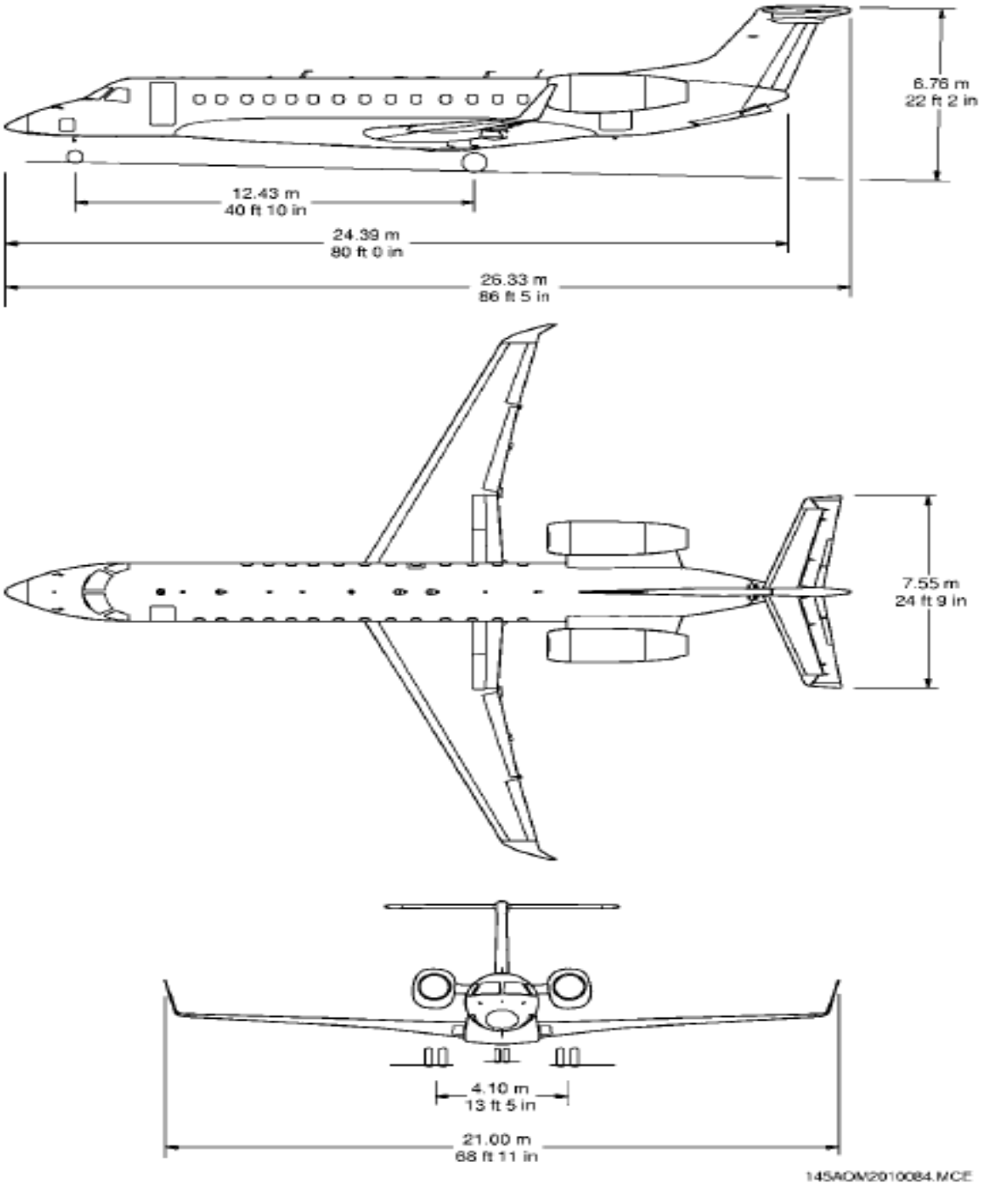
0.1 System of amendment and revision

The Ground Operations Manager is responsible for editing the Handling Manual. Each holder of a copy of this manual, or appropriate parts of it, shall keep it up to date with the amendments or revisions supplied by the Ground Operations Manager.

The Ground Operations Manager will initiate a complete re-print and distribution of the manual in accordance with the latest revision status, if and when appropriate.

2. EMBRAER LEGACY 600

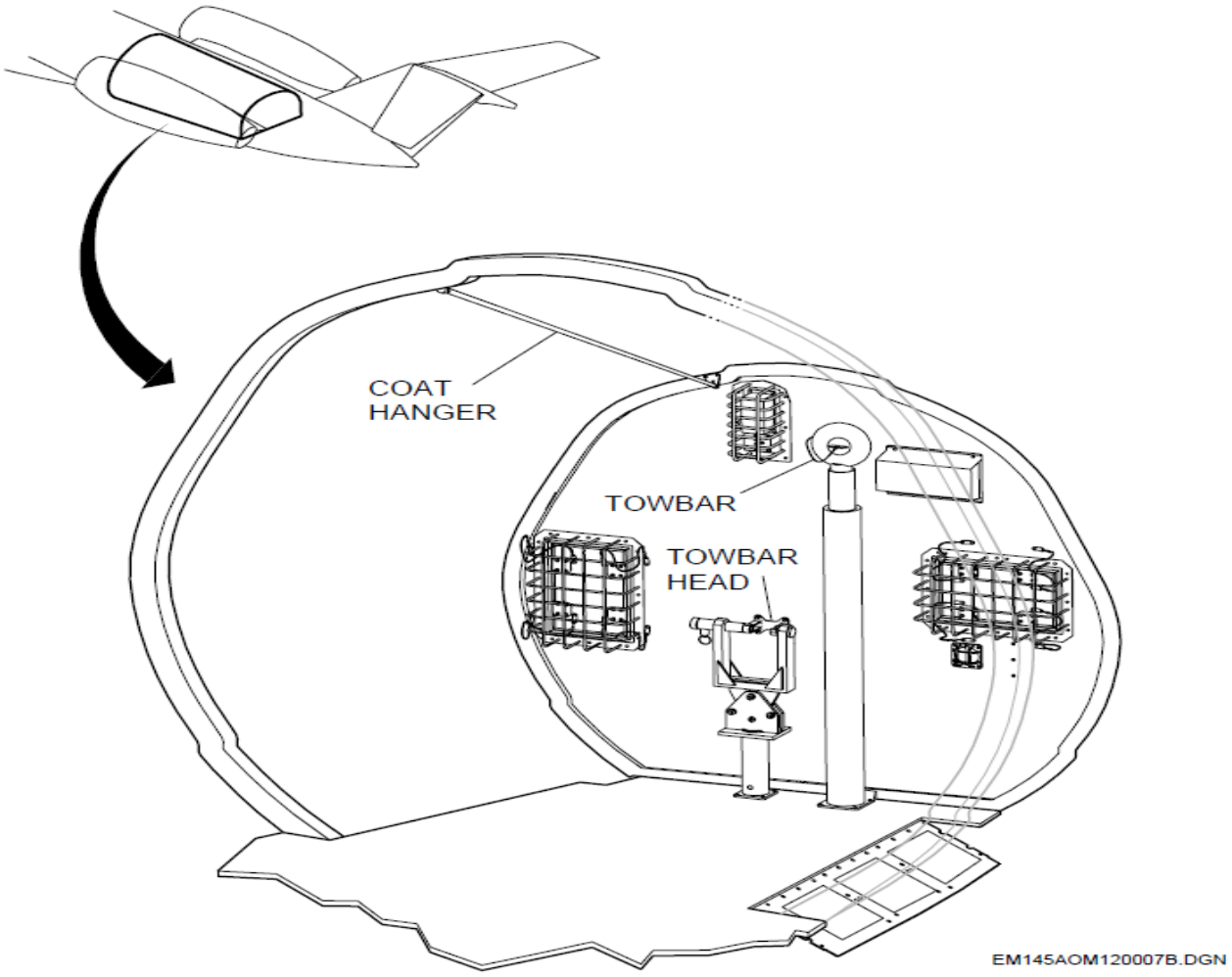
EXTERNAL DIMENSIONS



General guidelines are provided herein related to the ground handling and servicing of the airplane.

TOWING

Ground towing is normally accomplished by using ground support equipment (towbar and towbar head attachment) coupled to the landing gear.
For airplane EMB-135BJ SN 1001 and on the towbar and towbar head are stowed in the baggage compartment



TOWBAR AND TOWBAR HEAD LOCATION FOR AIRPLANES S/N 1001 AND ON

The maximum recommended wind speeds for airplane Towing, Pivoting, Turning and Taxi are:

RUNWAY	WEIGHT – kg (lb)		
	13000 (28660)	18500 (40786)	22270 (49096)
	WIND SPEED (KIAS)		
DRY	55	64	65
WET	47	54	60
SNOW COVERED	32	37	41
ICE COVERED	21	24	27

TOWING PREPARATION

The following precautions apply when towing the airplane:

− Tow the airplane with the hydraulic system 1 and 2 depressurized.

In case it is suspected that Emergency/Parking Brake has no accumulator charge to supply power for an eventual actuation, turn electric hydraulic pump #2 for a few seconds and then turn electric hydraulic pump off again.

NOTE: Turning on an electric hydraulic pump using batteries only can discharge the batteries. The use of the APU generator to supply electrical power is recommended.

CAUTION: TOW THE AIRPLANE WITH THE HYDRAULICSYSTEM 1 DEPRESSURIZED, TO PREVENT STEERING SYSTEM FROM BEING ACTUATED. IF IT IS NECESSARY TO TOW THE AIRPLANE WITH THE SYSTEM 1 PRESSURIZED, KEEP THE STEERING DISENGAGED.

− Disengage the steering system through the Steering Disengage Button located on the control wheel (pilot or copilot). The STEER INOP message appears on the EICAS.

− During the towing operations, a person properly trained must stay in the cockpit to set the emergency/parking brake, if necessary. Make sure that the landing gear safety pins are correctly installed

TOWING OPERATION

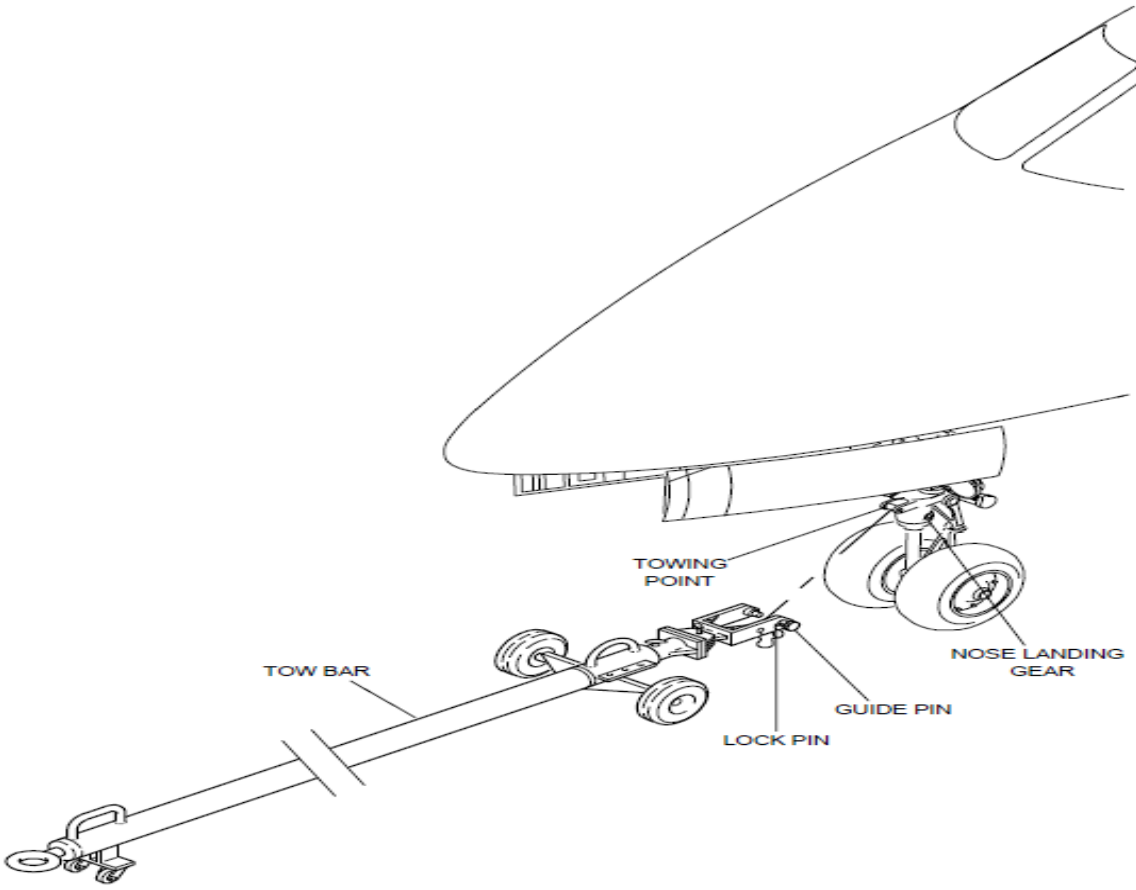
Towing operation is accomplished following the steps below:

− Remove the lock pin from the guide pin on towbar assemblies.
− Install towbar on the nose landing gear.
− Put the guide pin into the towing point of the nose landing gear.
− Lock the guide pin with the lock pin.
− Install the other side of towbar assemblies to the tractor.
− Remove the wheel chocks.
− Release the emergency/parking brake.

After towing operation is finished:

− Apply the emergency/parking brake or install the wheel chocks, as required.
− Make sure that landing gear safety pins are correctly installed.
− Make sure that nose wheel displacement is below the maximum operational limit.
− Remove towbar.
− Remove the lock pin from the guide pin on the towbar assembly.
− Remove the guide pin from the towing point of the nose landing gear.
− Remove the towbar assembly from the nose landing gear.

NOTE: Steering handle actuation with nose wheels beyond their operational limits may cause damage to the nose wheel steering system.


TOWING POINT
NOSE LANDING GEAR
TOW BAR
GUIDE PIN
LOCK PIN

PARKING

Make sure there is a minimum distance from other parked airplane to permit the airplane movement and that there is a minimum distance of 4.5 meters between APU exhaust port and an adjacent airplane fuel tank vent.

NOTE: - The airplane must be sheltered in a hangar when there are wind speeds higher than 65 kt.

Normal parking is performed according to the procedure below:

- Make sure that the safety pins are installed to each landing gear.

CAUTION: IF THE RELATED LANDING GEAR SAFETY PINS ARE NOT INSTALLED, INJURY TO PEOPLE AND/OR DAMAGE TO THE AIRPLANE/EQUIPMENT MAY OCCUR.

NOTE: Before parking the airplane, move it approximately three meters in a straight line to remove all torsional stresses applied to the landing gear components and tires during a turn.
- Ground the airplane.
- If there is ice or snow in the parking area, put mat, thick sand or other applicable material under the tires, to prevent them from freezing.

CAUTION: IF THE BRAKES ARE TOO HOT, DO NOT APPLY PARKING BRAKES UNTIL THEY ARE COOLER. THIS WILL PREVENT BRAKE DISCS FROM BONDING.

- Set the emergency/parking brake.
- Retract the flaps if they are extended.
- Set the gust lock lever.
- Put the chocks against the landing gear wheels.
- To prevent the courtesy light from discharging the battery, pull the COURTESY LIGHT (A22) circuit breaker.
- Install the covers to the pitot tubes, total-air-temperature (TAT) sensor, tail cone, nose cowl, ice detector, engine/APU air intakes and exhaust nozzles, and anemometrical static ports.

RETURN TO SERVICE

- Remove the chocks from the landing gear wheels.
- Remove the covers from the pitot tubes, TAT sensor, tail cone, nose cowl, ice detector, engine/APU air intakes and exhaust nozzles, and anemometrical static ports.
- Make sure that the control handle of the landing gear is at the down position.
- Make sure that the safety pins are installed to each landing gear.

CAUTION: MAKE SURE THE SAFETY PINS ARE REMOVED BEFORE TAXYING THE AIRPLANE FOR TAKEOFF.

MOORING

Mooring is necessary when the weather conditions are bad or unknown. The area where the airplane is to be parked in and moored must be paved and level, with ground tiedown anchors available.

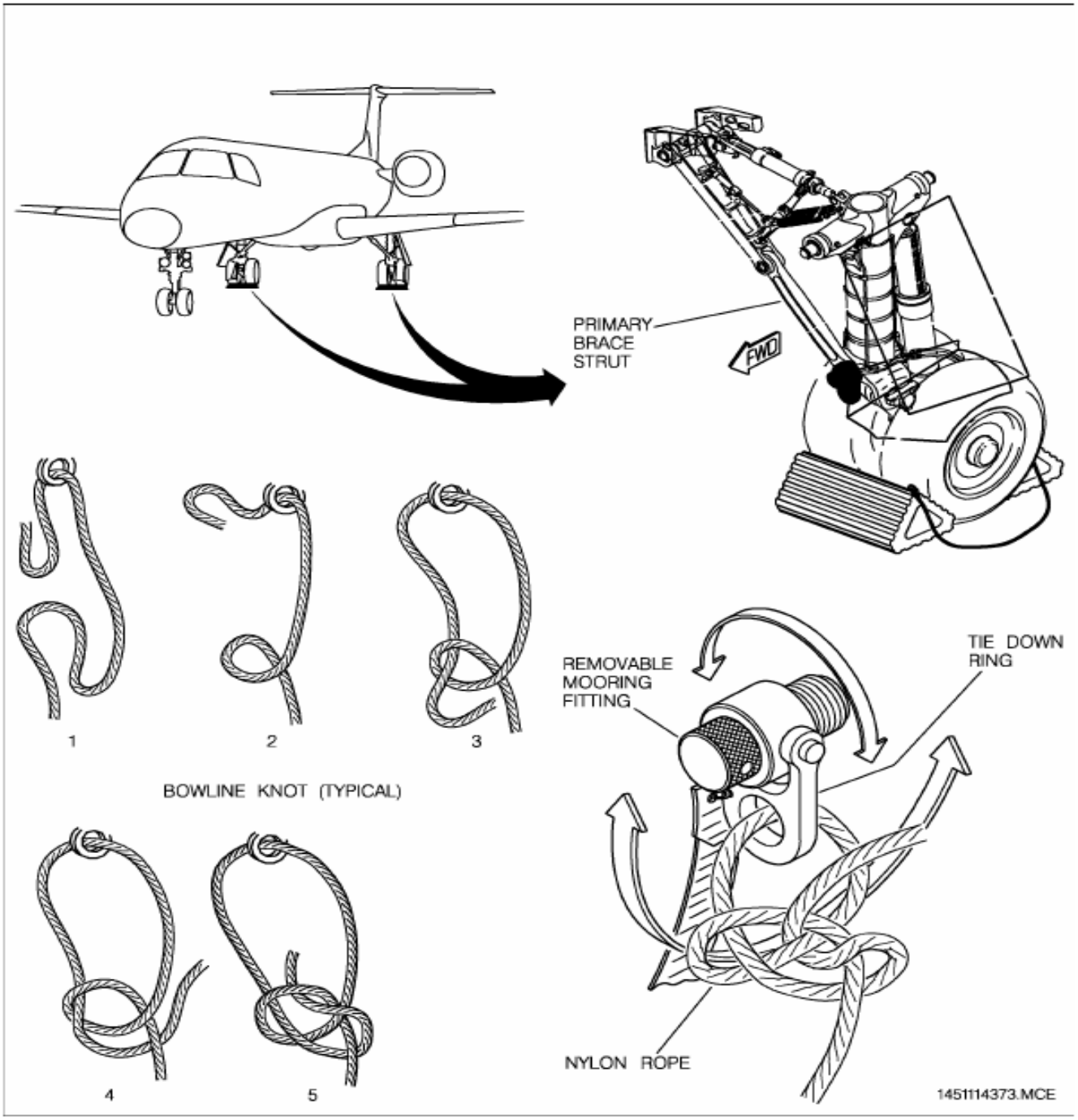
The following table gives the surface conditions and wind velocities at which mooring is necessary;

Wind Limitation Table

Surface Condition	Wind Velocity
Ice	30 Kt
Snow	50 Kt
Wet Concrete	55 Kt
Dry Concrete	60 Kt

To moor the airplane, proceed as follows:

- Tow the airplane to a parking area where there are tiedown anchors available.
- Carry out the normal parking procedure.
- Install the tiedown rings (two), one in each primary brace strut of the main landing gear.
- Attach a nylon rope to the tiedown ring with a bowline knot, and then attach the other end of the rope to the tiedown anchor on the ground by knotting it with a bowline knot.



MOORING THE AIRPLANE

DEICING AND ANTI-ICING

Application of deicing and anti-icing fluid must be done by trained and qualified personnel. It is the pilot's responsibility to decide whether or not to accept the airplane for flight.

Deicing is required to clean airplane surfaces contaminated by ice, snow, frost or slush. Anti-icing is required to prevent ice accumulation. If both anti-icing and deicing are required, the procedure may be performed in either one or two-step process depending on weather conditions, available equipment, available fluids and the holdover time.

WINGS

Apply the fluid from the tip inboard to the root, sweeping from the leading edge in the aft direction. No frozen contamination is allowedon the wing upper surface. A 3 mm (1/8 inch) frost layer is permitted on the underwing surfaces.

HORIZONTAL STABILIZER

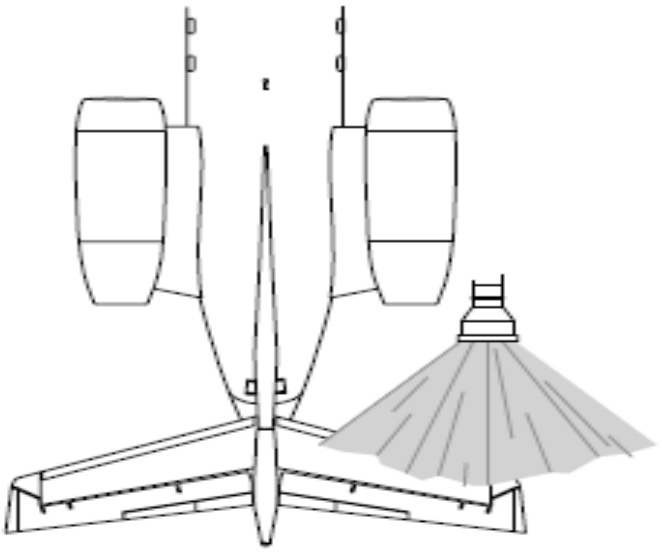
It is recommended to set Pitch Trim to any position between 0° and full nose down to prevent APU soft Foreign Object Damage (FOD) ingestion. The best spray is straight in relation to the airplane centerline, in the aft direction (see figure). This is applicable when spraying either over or under the stabilizer surface.

Straight spraying (cleaning from the stabilizer tip to the root), will make the fluid flow aft, away from the leading-edge area. Spray angles up to 45° are acceptable (see figure), provided the stabilizer is set to full nose down.

Back spraying (from trailing edge to leading edge – see figure) is not recommended as it will make spray flow forward and drip from the leading edge into the APU.

Side spraying (90° in relation to airplane centerline) has also proved to flow fluid into the APU, either when cleaning the upper or the lower side of the stabilizer.

Cross spraying the upper side of the stabilizer (truck positioned on the left side of the airplane, aiming the spray the right elevator/stabilizer –see figure) has been proven also to be very effective in removing contaminants and preventing fluids from flowing down into the APU.



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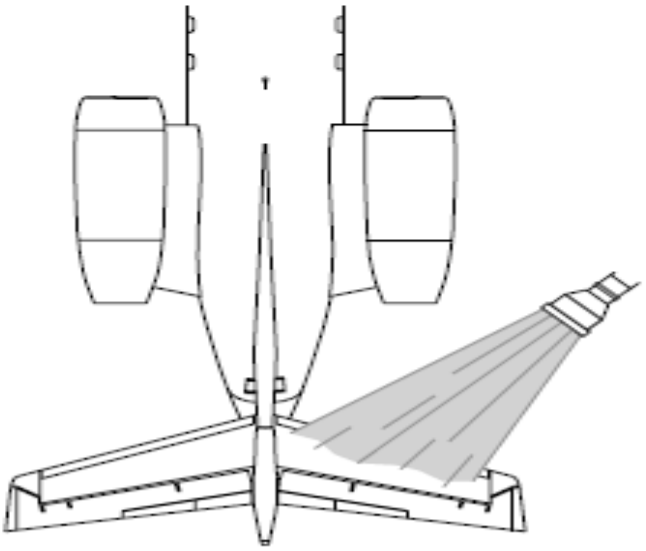
STRAIGHT APPLICATION IN RELATION TO AIRPLANE CENTERLINE



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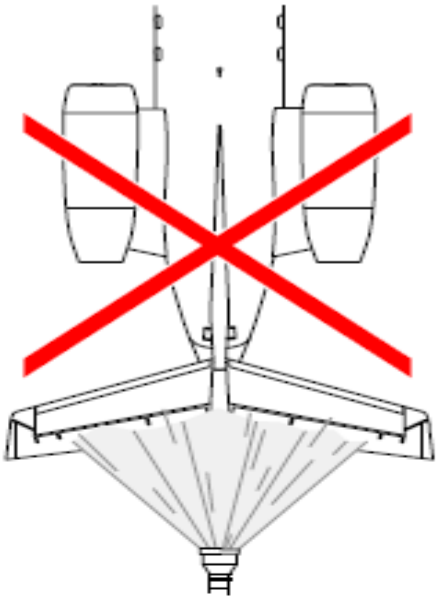
45° FLUID APPLICATION



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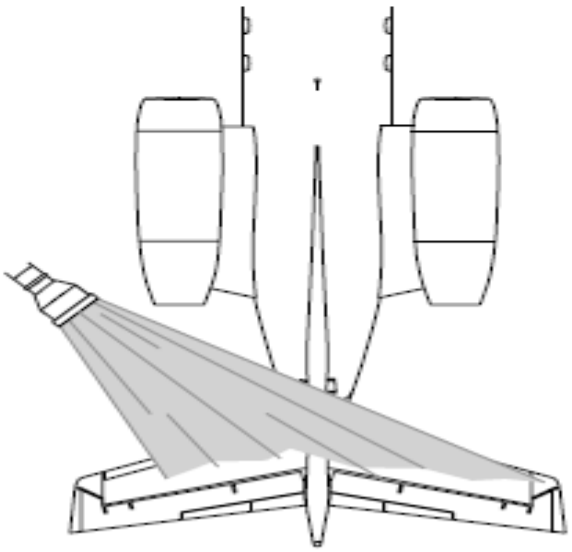
BACK SPRAYING



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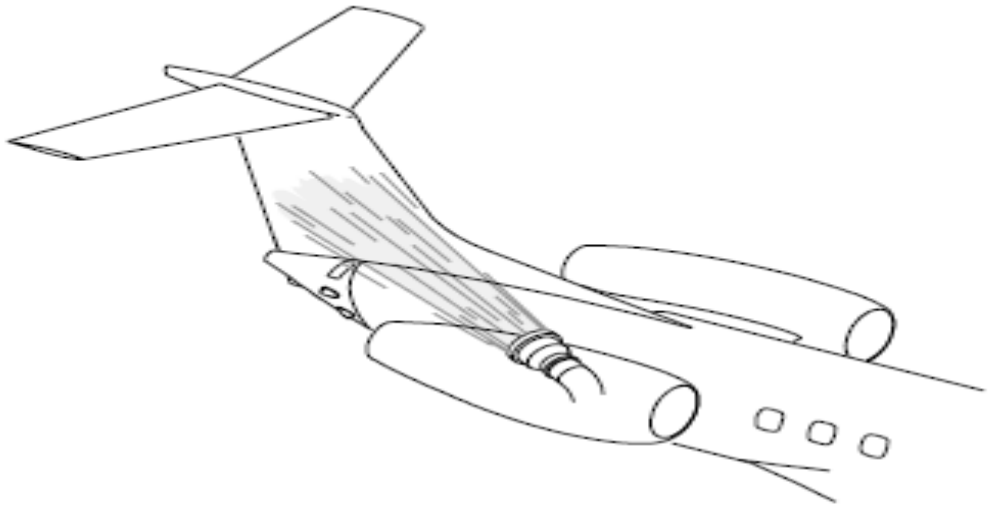
CROSS SPRAYING APPLICATION

VERTICAL STABILIZER

Apply the fluid at a low, side angle (see figure), to prevent fluid spills into the APU. The rudder should be in the neutral position. Application on the rudder surface can also cause the fluid to be ingested by the APU. For the vertical surfaces the application should start at the top and then work down.



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SPRAYING ON THE VERTICAL STABILIZER AND RUDDER

FUSELAGE

Remove all snow accumulated on the nose to avoid snow blowing back during takeoff and restricting pilot's visibility. Fluid should be sprayed along the top centerline of the fuselage and then outboard, letting the fluid cascade down and across the windows. Fluid must not be sprayed directly onto windows and window seals, doors and doors seals, air conditioning scoops or NACA air inlets. A thin layer of hoar frost on the fuselage is permitted, but only to the point you can still see the airplane markings. Check the APU air inlet and surrounding area to ensure that it is clear of ice or snow prior to APU starting. Fluid applied close to inlet area may be ingested and cause flameout and result in APU internal parts damage.

Landing gear and wheel bays – application of fluid in this area must be kept to a minimum. Do not allow water or fluid mixture spray on wheels and brakes to avoid damage to carbon brakes. For this part of the airplane, it is preferable to clear snow or slush using a brush.

ENGINES

Deposits of snow should be mechanically removed from engine intakes using either brooms, soft hand scrapers or rubber scrappers.
Frozen deposits adhering to either the lower surface of the intake or to the fan blades should be removed by the applying hot air or by the use of a gentle fan spray of heated deicing fluid. To ensure the safety of ground personnel and passengers, this should be carefully coordinated with the flight crew.
It is also important to examine and remove all ice attached to the surface close to the pitot and static sensors, static ports, TAT probes,
AOA sensors, and ice detectors. However, deicing or anti-icing fluid should not be applied directly to these devices. The fluids should be sprayed along the top of the sensors, allowing the fluid to cascade down across the sensor and deice it.

FUELING

PRESSURE REFUELING

Pressure refueling is performed by accessing an adapter and a panel located on the right wing-to-fuselage fairing. The adapter is assembled with a valve operated by the opening movement of the fueling nozzle shut-off valve, which is manually controlled. It is possible to refuel the wing tanks only or the wing plus auxiliary (fuselage) tanks.

NOTE: In cold weather it is necessary to drain the fuel tanks prior to refueling. Drain the fuel tanks again prior to departure, if the airplane has been parked for more than 2 hours.

− Open refueling access door on the right side of the fuselage.
− Hold the access door with the Hold-Open Rod (if installed).
− Make sure that the WING tank refueling lights are extinguished.
− Make sure that the FUS 1 and FUS 2 refueling lights are illuminated.
− Make sure that the DEFUELING light is extinguished.
− Make sure that the FUS ISOLATION lights are illuminated.
− Make sure that the SELECTED-fuel-quantity indicator shows zero.

WING ONLY REFUELING

− Set the tanks selection toggle switch in WING ONLY position.
− Set the quantity selection toggle switch to WING position.
− Test the quantity indicator.
− Make sure that WING quantity selection light is illuminated.
− Set the desired wing tank fuel quantity.
− Remove the protection cover from the pressure refueling adapter.
− Connect the fuel nozzle to the pressure refueling adapter.
− Pressurize the system (35-50 psig).

NOTE: To shorten the refueling time during the airplane pressure refueling procedure, the pressure can be raised up to approximately the maximum pressure of 50 psi.

− Make sure that WING, FUS 1 and FUS 2 tank refueling lights are illuminated and the refueling flow is stopped.
− Set the REFUELING switch to the OPEN position and make sure that the WING refueling lights are extinguished.
− Make sure that the WING refueling lights illuminate, when the desired fuel level is reached.

NOTE: For airplanes equipped with High Level Exceeding Indication, if the "STOP RFL" red light illuminates, stop immediately the refueling operation relieving the pressure of the fueling source and refer to the HLEI dispatch procedure.
− Set the REFUELING switch to the CLOSED position.
− Make sure that the selected quantity was fueled.
After the refueling has been completed:
− Remove the fuel nozzle from the pressure refueling adapter.
− Install the protection cover to the pressure refueling adapter.
− Deenergize the airplane if necessary.

WING + FUS TANKS REFUELING

− Set the selection toggle switch in WING + FUS position.
− Make sure that FUS 1 and FUS 2 tanks refueling lights are extinguished.
− Make sure that FUS ISOLATION lights are extinguished.
− Test the quantity indicator to each tank (FUS 1, FUS 2 and WING).
− Make sure that respective quantity selection light is illuminated.
− Set the desired FUS 1 or/and FUS 2 and WING fuel quantity, in this order.

NOTE: - Set the wing tank fuel quantity above 4800 kg (10580 lb).
The fuel quantity selection switch must be kept in WINGposition before starting the refueling operation and until theend of wing refueling.
- It is recommended to refuel FUS 1 and FUS 2 systems withthe same fuel quantity. However, an asymmetric refueling of the Auxiliary Tanks may be performed as far as it is assured that the airplane's CG is kept within the CG envelope presented in the Limitations Section during all flight phases.

NOTE: - The maximum allowed fuel load in each auxiliary system is:
- Airplanes S/N up to 591 and Pre-Mod. SB 145LEG-28-
0010: 1460 kg (3219 lb), with 800 kg (1764 lb) in the forward tank and 660 kg (1455 lb) in the aft tank.
- Airplanes S/N 625 and on or Post-Mod. SB 145LEG-28-
0010: 1570 kg (3461 lb), with 900 kg (1984 lb) in the forward tank and 670 kg (1477 lb) in the aft tank.
After completing the previous steps:
− Remove the protection cover from the pressure refueling adapter.
− Connect the fuel nozzle to the pressure refueling adapter.
− Pressurize the system (35-50 psig).

NOTE: - Verify the refueling pressure. The correct refueling pressure assures the proper system functioning.
- To shorten the refueling time during the airplane pressurerefueling procedure, the pressure can be raised up to approximately the maximum pressure of 50 psi.
− Make sure that WING, FUS 1 and FUS 2 tank refueling lights are illuminated and the refueling flow has stopped.
− Set the REFUELING switch to the OPEN position and make sure that the WING refueling lights are extinguished and the FUS 1 and
FUS 2 refueling lights remain illuminated, indicating that wing refueling has started.
− Make sure that the WING refueling lights are illuminated and the
FUS 1 and FUS 2 refueling lights are extinguished, when wing refueling is completed and the refueling of the auxiliary tanks starts.
− Make sure that the FUS 1 and FUS 2 refueling lights illuminate, when the desired fuel level is reached.

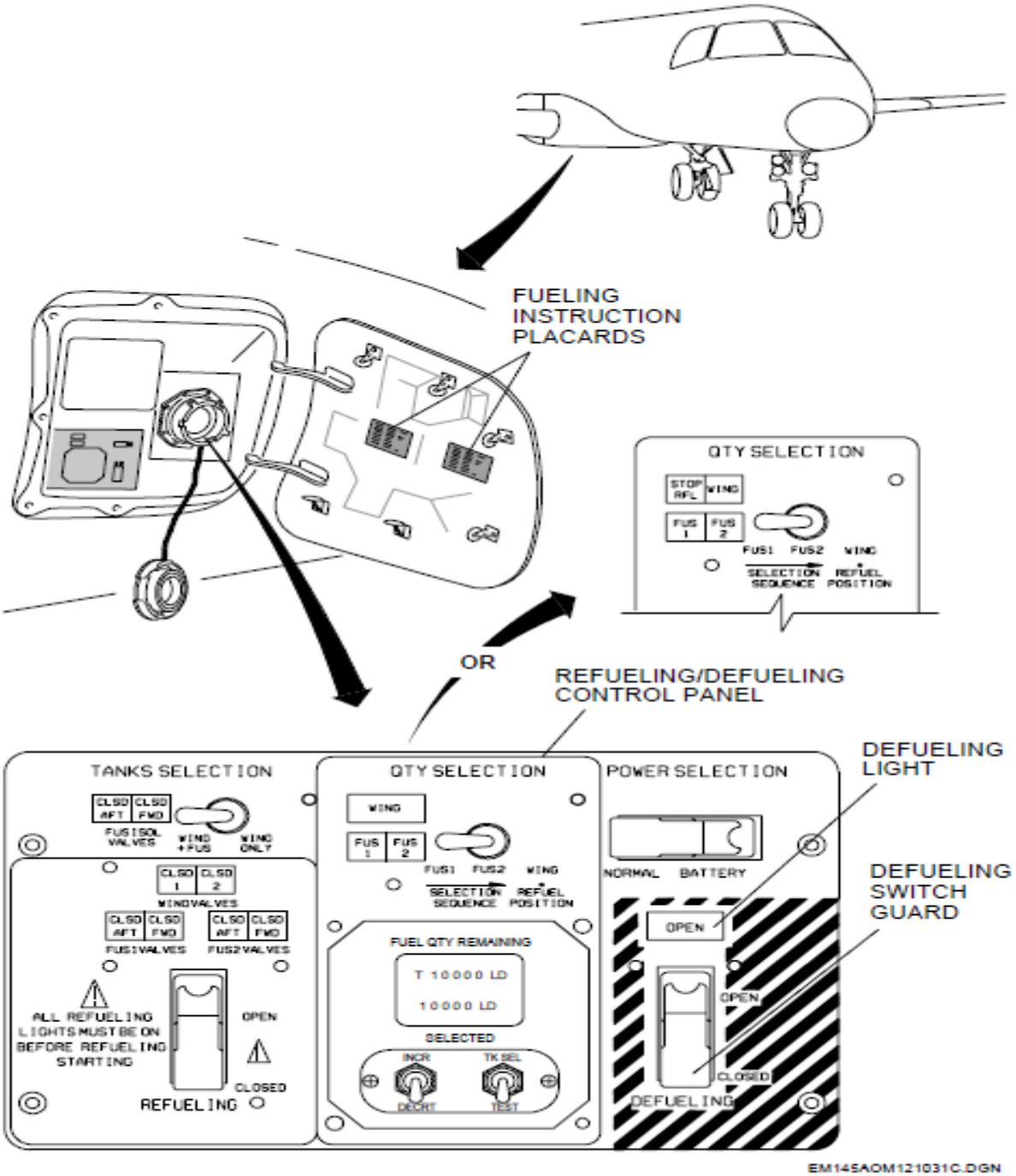
NOTE: For airplanes equipped with High Level Exceeding Indication, if the "STOP RFL" red light illuminates, stop immediately the refueling operation relieving the pressure of the fueling source and refer to the HLEI dispatch procedure.
− Set the REFUELING switch to the CLOSED position.
− Set the tanks selection toggle switch to WING ONLY position.
NOTE: Make sure about the correct refueling pressure.

After the refueling has been completed:
− Remove the fuel nozzle from the pressure refueling adapter.

− Install the protection cover to the pressure refueling adapter.
− Set the WING+FUS/WING ONLY switch to the WING ONLYposition.
− Make sure that the FUS ISOL VALVES lights are on.
− Deenergize the airplane if necessary.
− Check the Wing and FUS Tanks fuel quantities and imbalance (refer to Section 1-01-36 Fuel System Limitations for approvedvalues).
If refueling cannot be accomplished (system stops refueling):
− Use the WINGS TO AUXILIARY TANKS – FUEL TRANSFER
OPERATION Procedure in order to refuel the auxiliary tanks, transferring fuel from wings to fuselage tanks. Check the Wing and
FUS Tanks fuel quantities and imbalance (refer to Section 1-01-36
Fuel System Limitations for approved values).
− Set the Tanks Selection toggle switch to WING ONLY position and restart the wing refueling procedure to their maximum capacity.
NOTE: If the Power Selection switch has been used at the BATTERY position, set it back to the NORMAL position and close the switch guard.
− Remove the grounding cable from the airplane.

WARNING: MAKE SURE THAT ALL THE SWITCH GUARDS ON THE REFUELING PANEL ARE IN THE CLOSED POSITION.

− Close access door.



REFUELING/DEFUELING CONTROL PANEL

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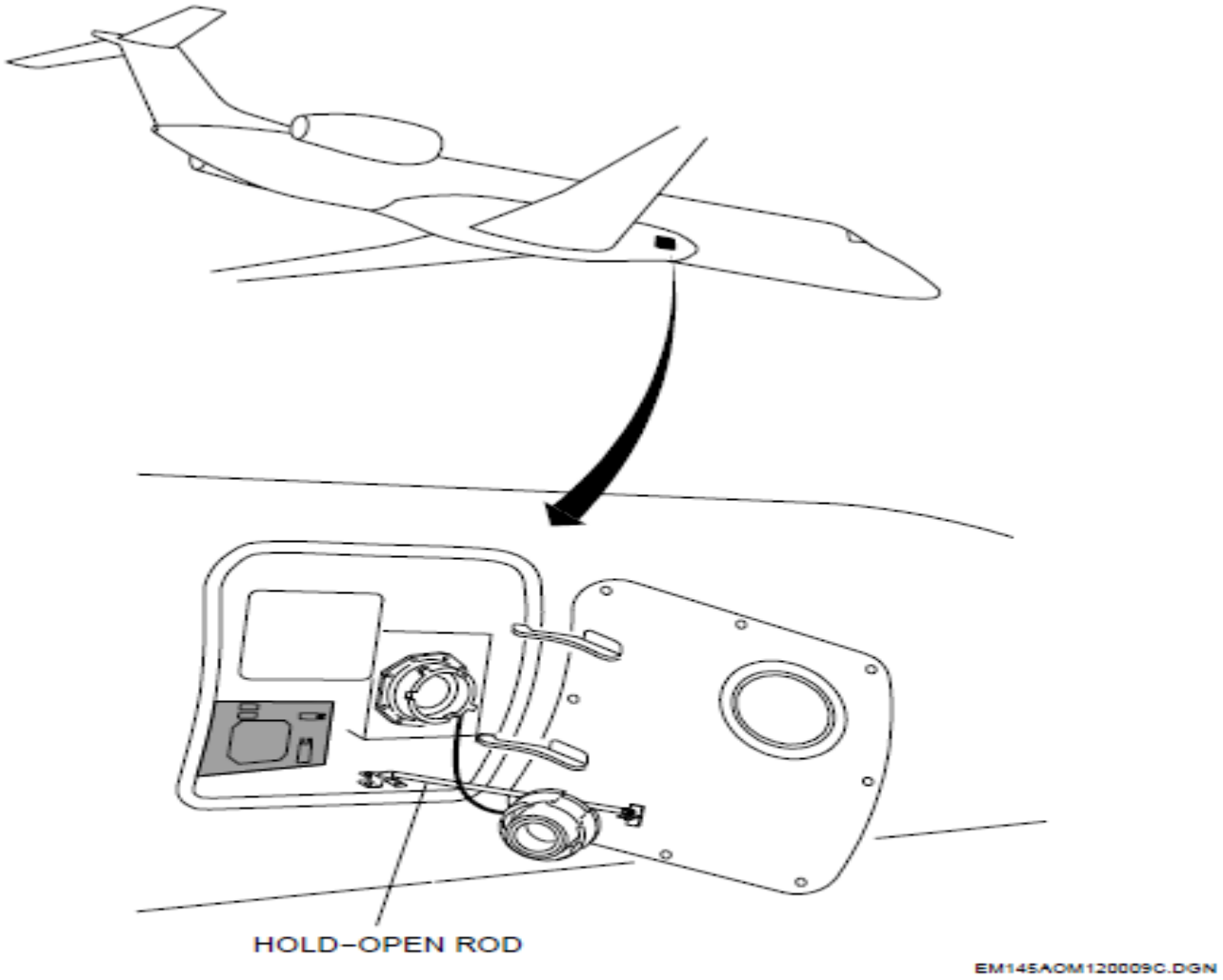
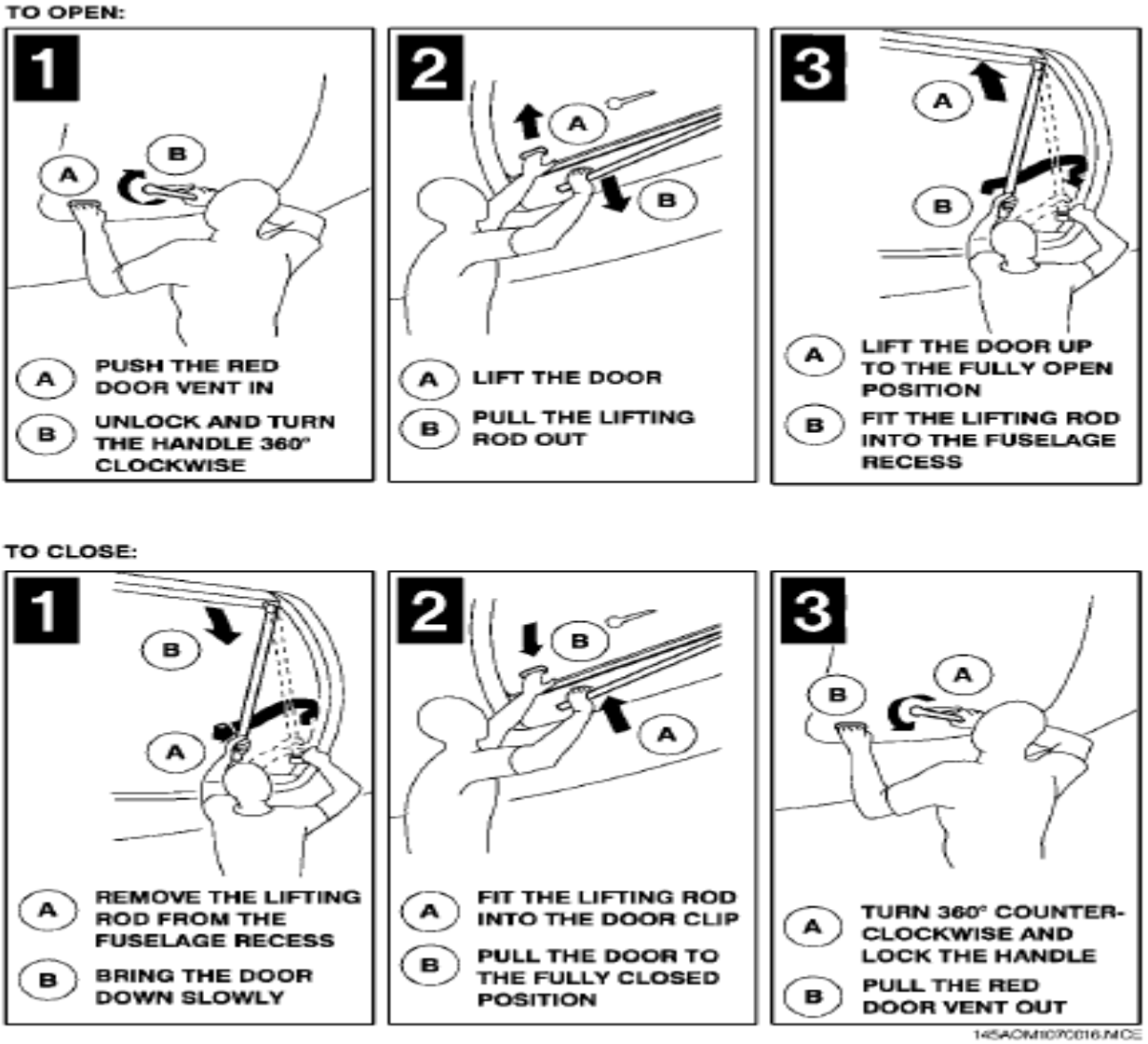


REFUELING/DEFUELING ACESS DOOR HELD BY HOLD-OPEN ROD

LOADING

BAGGAGE DOOR

The baggage door, located on the rear left side of the fuselage, is 1.00 meter (39.4 in) wide and 1.11 meters (43.7 in) high.
The baggage door is manually operated from the outside. The initial opening movement (displacement of the door inward) and final closing and latching movement (displacement of the door outward) are achieved by means of a door locking mechanism controlled by an external handle which is stowed in the lower half of the door.



BAGGAGE COMPARTMENT

DESCRIPTION

The baggage compartment is located in the rear part of the fuselage.
The EMB-135BJ is fitted with a “class-C” baggage compartment.
Airplanes with the “class-C” baggage compartment have the following systems installed:
− Baggage Compartment Smoke Detection System.
− Baggage Compartment Fire Extinguishing System.
− Baggage Compartment Ventilation System.
Although no dedicated temperature control is available (the “class-C” baggage compartment is heated by passenger cabin air flowing into it), the baggage ventilation system provides an adequate environment for carrying live animals in the compartment.
The following cargo nets may be installed in the baggage compartment:
− One Baggage Door Anti-Blockage Barrier.
− One Cargo Arresting Net (vertical restraint).

EMB-135BJ BAGGAGE COMPARTMENT LIMITS
Baggage Compartment Available Volume ..... 6.8 m3 (240 cu.ft)
Maximum Floor Distributed Load..... 390 kg/m2 (80 lb/ft2)
Total Maximum Capacity for all airplanes,
except S/N 867, 880, 901, 910 and 919..... 454 kg (1000 lb)
Total Maximum Capacity for airplanes
S/N 867, 880, 901, 910 and 919 ..... 500 kg (1102 lb)

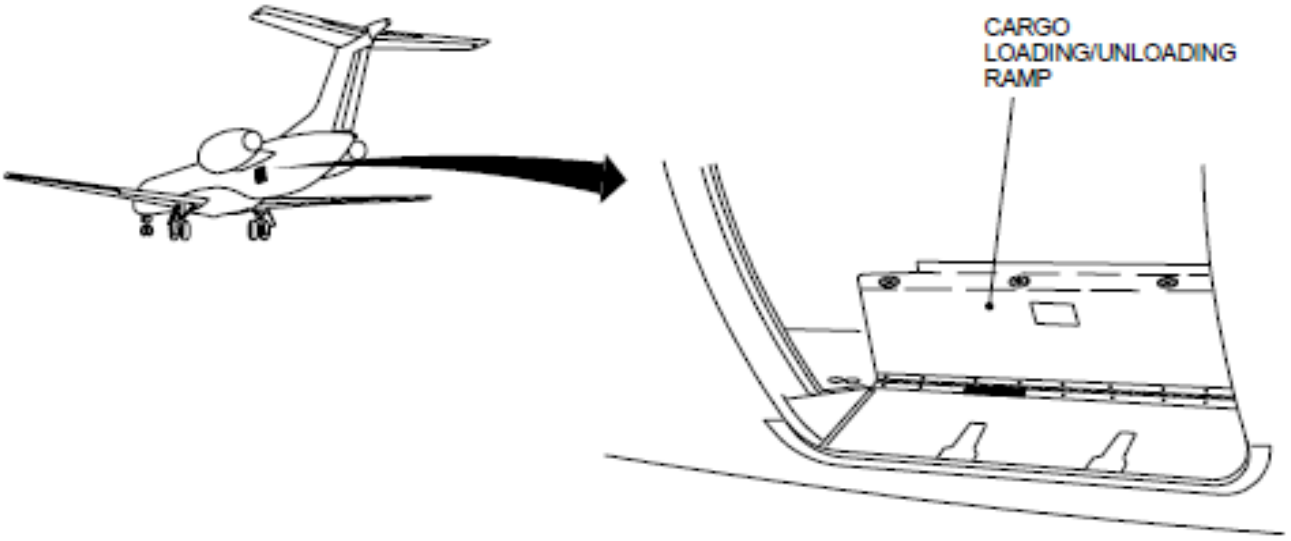
BAGGAGE COMPARTMENT ACCESS DOOR
The Baggage Compartment Access Door is installed in the aft lavatory bulkhead which separates the passenger cabin from the baggage compartment.
The door has a peephole (one way into the baggage area) and a latch mechanism which allows to be opened from within the baggage compartment.

BAGGAGE AND CARGO LOADING

Baggage and cargo should be equally distributed in the baggage compartment to avoid load concentration. High density volumes must be tied down, unless the floor distributed load is less than 125 kg/m2 (25.6 lb/ft2). Volumes with sharp edges should be fixed to the floor or conveniently protected to prevent vertical and lateral movements, in order to prevent structural damages.
To load the baggage compartment with the maximum capacity of 454 kg (500 kg for airplanes S/N 867, 880, 901, 910 and 919), no more than two persons can be at the airplane cone, one inside the baggage compartment and the other inside the rear electronic compartment.

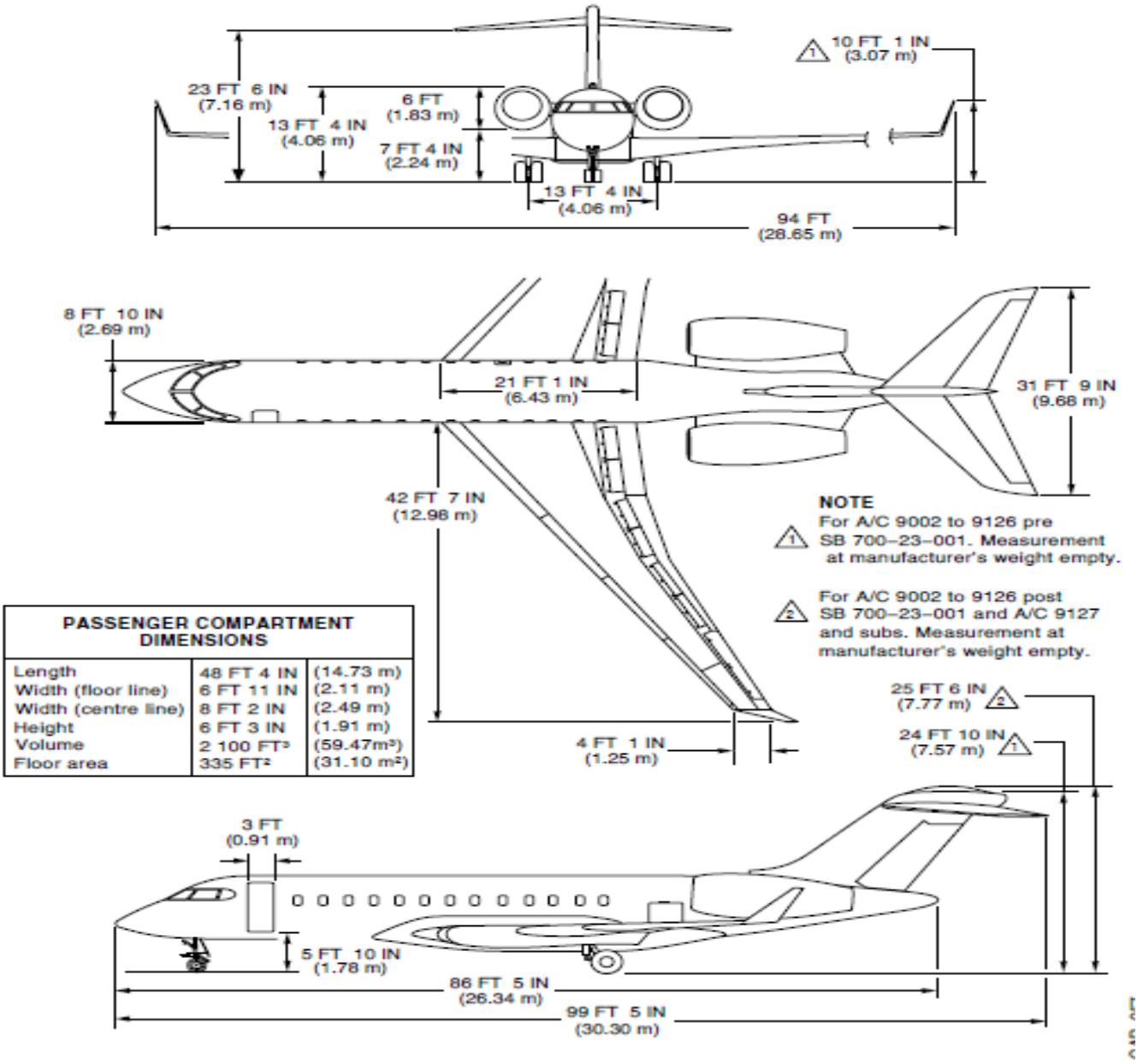
CAUTION: IF THE CONDITIONS ABOVE ARE NOT OBSERVED, AIRPLANE TILTING (TAIL DOWN) MAY OCCUR.

Before loading or unloading the baggage compartment, the Cargo Loading/Unloading Ramp (also known as Door Jamb Barrier) must be lowered in order to protect the baggage door latching mechanism.



3. BOMBARDIER GLOBAL 6000 / XRS

AIRCRFAT DIMENSIONS



Global Express, Global XRS and Global 6000 – Aircraft Basic Dimensions & Ground Clearances

TOWING

This section contains instructions and procedures to tow the aircraft and to do taxiing operations with engine power.

General Description

You can tow or push the aircraft with a towing tractor when it is not possible to move the aircraft with its power. You can tow the aircraft with a tow bar that attaches to the axle of the nose landing gear. A minimum of two persons are necessary to tow the aircraft. Five persons are necessary to tow the aircraft in small areas.

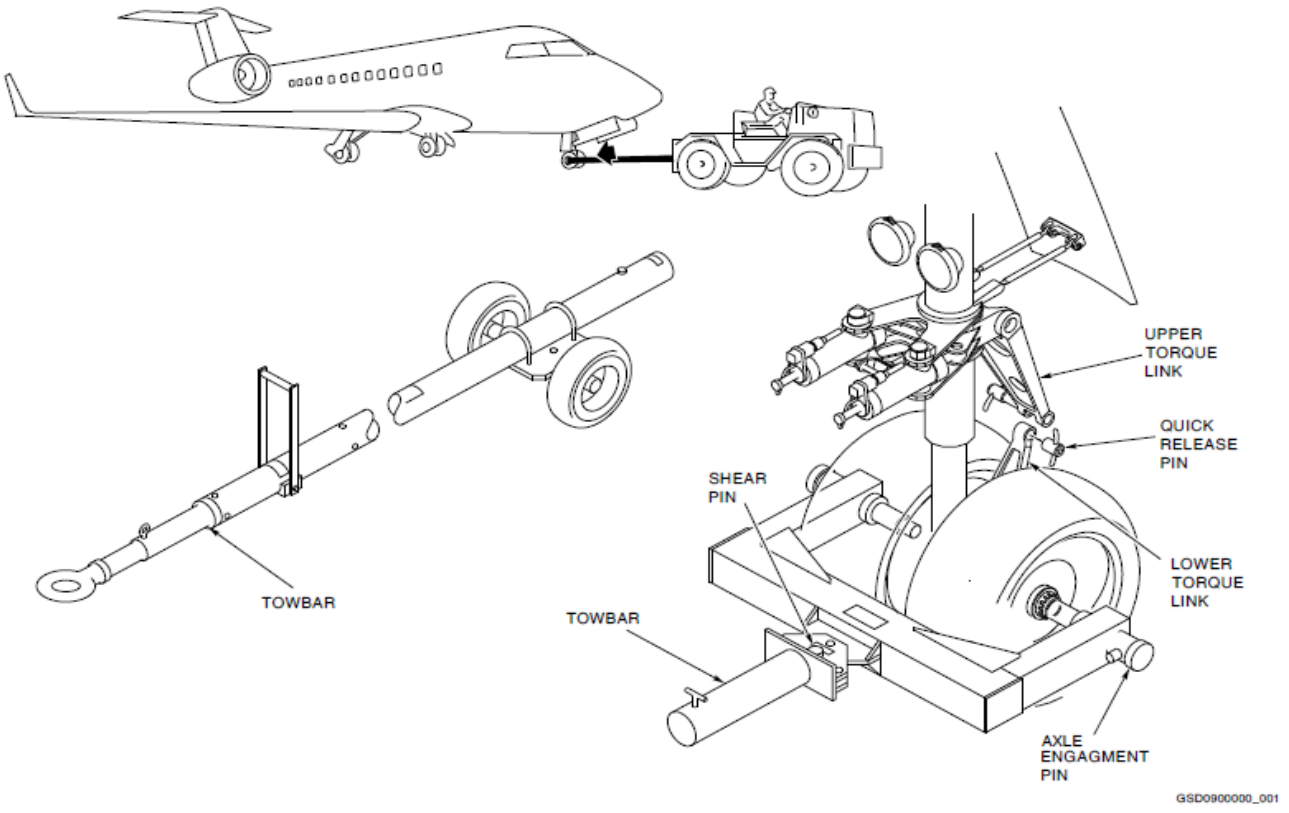
You must taxi the aircraft with a person in the pilot's seat. The person moves the aircraft with the use of the engine power, the brakes and the nosewheel steering.
This section has the two parts that follow:
− Towing
− Taxiing.

You can push or tow the aircraft with the tow bar connected to the axle of the nose landing gear and to the tow tractor. The nosewheel steering system must be off. When you tow the aircraft, you must disconnect the steering torque arms to let the nosewheel turn freely. When you push back the aircraft, you must disconnect the steering torque arms. When you disconnect the steering torque arms, you can turn the nosewheel 360 degrees. You pull the two quick−disconnect handles to disconnect the torque arms
You connect the tow bar to the axle of the nose landing gear and to the tow tractor. The nosewheel steering system must be off. The turn angle of the nosewheel must not be more than 70 degrees when you connect the steering torque arms.

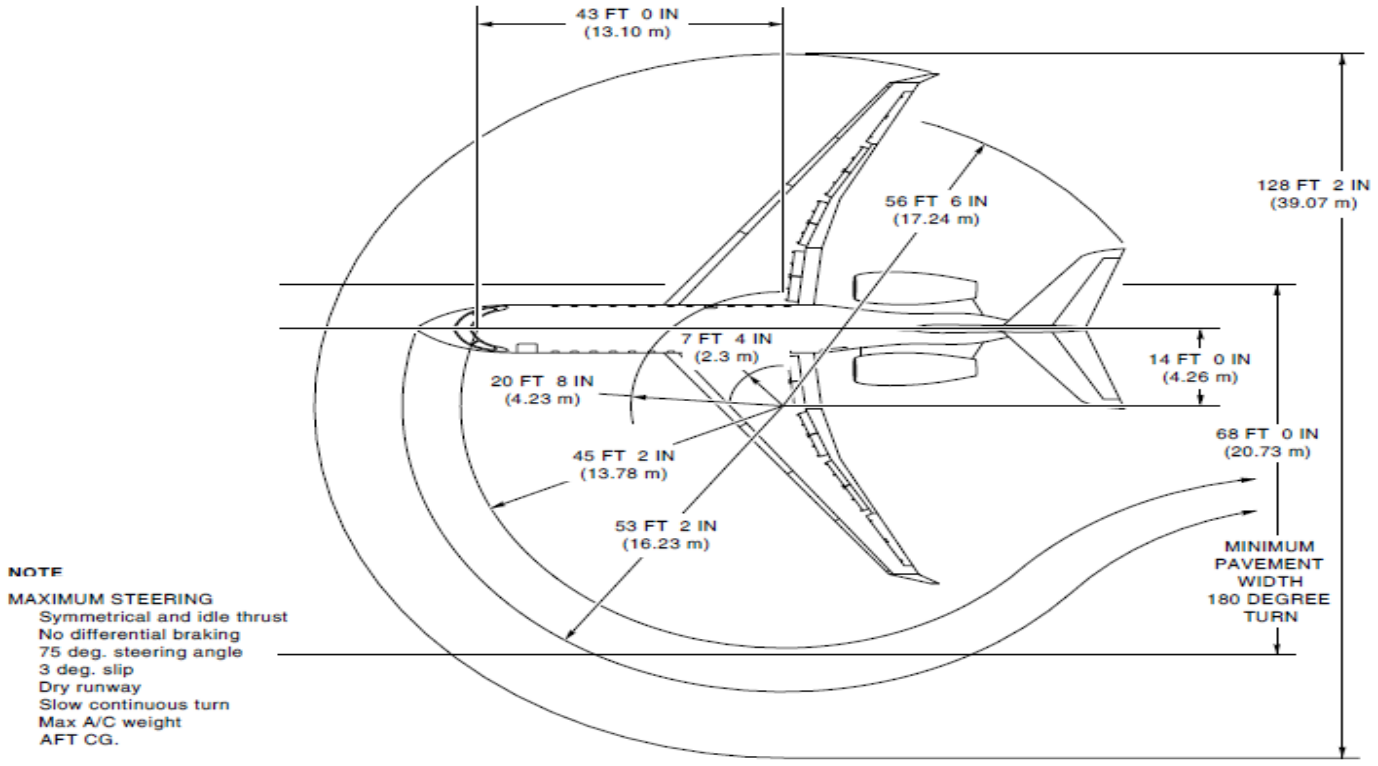
The equipment necessary for a towing operation are as follows:
− Tow tractor
− Main wheel chocks
− Tow bar − standard or collapsible
− Two headsets with extension cords

You can tow the aircraft with the standard tow bar or with the collapsible tow bar which you find in the aft equipment compartment. The collapsible tow bar is a telescopic type that you extend and lock with a pin to prepare the tow bar for use. Both tow bars attach to the nosewheel with a tow head that engages with the holes in the ends of the nosewheel axle.
A shear pin installed in the tow bar gives the aircraft protection from too much tow force. The shear pin will break if the push or pull force is more than the safe limit.

The minimum towing crew has two persons. One person operates the towing vehicle and one person operates the aircraft brakes in the flight compartment. You use the aircraft brakes only in an emergency.



Towing of the Aircraft



Aircraft Towing Radius

Job Set−Up

(1) Obey all the safety precautions that follow during the towing procedure:

(a) Obey all the electrical/electronic safety precautions
(b) Make sure that the tires are correctly inflated.
(c) Make sure that the nose−landing−gear shock strut is correctly filled.
(d) Make sure that the nose landing−gear (NLG) lockpin is installed.
(e) Make sure that the main landing−gear (MLG) lockpins are installed.
(f) Make sure that the nosewheel steering system is not armed.
WARNING:

STAY AWAY FROM THE TORQUE LINK WHEN YOU RELEASE THE HANDLE. THE TORQUE LINK IS SPRING-LOADED AND
WILL MOVE UP QUICKLY WHEN YOU PULL THE RELEASE HANDLE. IF YOU DO NOT OBEY THIS SAFETY PRECAUTION, YOU CAN CAUSE INJURY TO PERSONS.

g) Disconnect the torque links as follows:
NOTE: When the torque links are disconnected, there is no limitations on the turn angle.

CAUTION: THE NOSE WHEEL SHOCK STRUT MUST BE COMPRESSED SUFFICIENTLY TO ENSURE THAT THE WHEEL CENTERING CAMS REMAIN DISENGAGED DURING GROUND MANEUVERS. IF THE SHOCK STRUT IS UNDER SERVICED OR BOUNCES AT LARGE CASTOR ANGLES, DAMAGE MAY OCCUR TO THE STEERING CENTERING CAMS OR SHOCK STRUT INTERNAL.

1 Pull the two quick−disconnect handles at the same time.

CAUTION: MAKE SURE THE LOWER TORQUE LINK IS NOT PUSHED UP. IF THE LOWER TORQUE LINK IS UP, IT CAN COME IN CONTACT WITH THE SHOCK STRUT ASSEMBLY. THIS CAN CAUSE DAMAGE TO THE AIRCRAFT.

2 Disconnect the top torque link from the lower torque link. Make sure the lower torque link is not pushed up.

(i) Make sure that the landing gear selector−handle is in the DN position.
(j) Make sure that all external servicing equipment is disconnected from the aircraft.
(k) Make sure that the ground wire is disconnected from the aircraft.
(l) The minimum number of persons in the crew are as follows:
1 When you tow the aircraft in open areas, two persons are necessary.

NOTE: One person operates the tow vehicle (tug).
The other person is the brake operator and operates thebrakes in the flight compartment when there is an emergency stop.

2 If you tow the aircraft in confined areas, five persons are necessary.

NOTE: One person operates the tug.
Two persons, one at each wing end, are positioned to make sure that there is sufficient clearance for the wing ends.
One person makes sure that the tail of the aircraft has sufficient clearance.
The other person is the brake operator and operates the brakes in the flight compartment when there is an emergency stop.

(m) Make sure the person who operates the tug can hear, speak to or get signals from the other persons on the crew.

NOTE: The person who operates the tug controls the tow operation.
(n) If you tow the aircraft in low visibility, the ground crew must have light wands to give signals.
(o) Make sure that there is a crew member in the flight compartment to operate the parking brake in an emergency.

CAUTION: OBEY THE PRECAUTIONS THAT FOLLOW WHEN YOU TOW THE AIRCRAFT:

- MAKE SURE THAT THE NOSE-LANDING-GEAR SHOCK STRUT IS CORRECTLY FILLED BEFORE YOU DISCONNECT THE TORQUE LINKS.

- MAKE SURE THAT THE TORQUE LINKS OF THE NOSE LANDING GEAR ARE DISCONNECTED. IF THE AIRCRAFT IS PUSHED BACK IN A STRAIGHT LINE, THE TORQUE LINKS CAN STAY CONNECTED.
- KEEP THE TURNS AS LARGE AS POSSIBLE. MAKE ONLY SLOW CHANGES TO SPEED AND/OR DIRECTION.
- MAKE SURE THAT THE LOAD ON THE NOSE LANDING GEAR IS NOT LESS THAN 1900 LB (862 KG) AND THAT THE C OF G OF THE AIRCRAFT IS WITHIN THE C OF G ENVELOPE LIMITS. IF NECESSARY, MAKE A BALLAST OR FUEL ADJUSTMENT TO GET THE CORRECT LOAD. IF YOU DO NOT DO THIS, YOU CAN DISCONNECT OR DAMAGE THE STEERING MECHANISM AND/OR CAUSE THE AIRCRAFT TO TIP OVER.

IF YOU DO NOT OBEY THESE PRECAUTIONS, DAMAGE TO THE AIRCRAFT AND EQUIPMENT CAN OCCUR.

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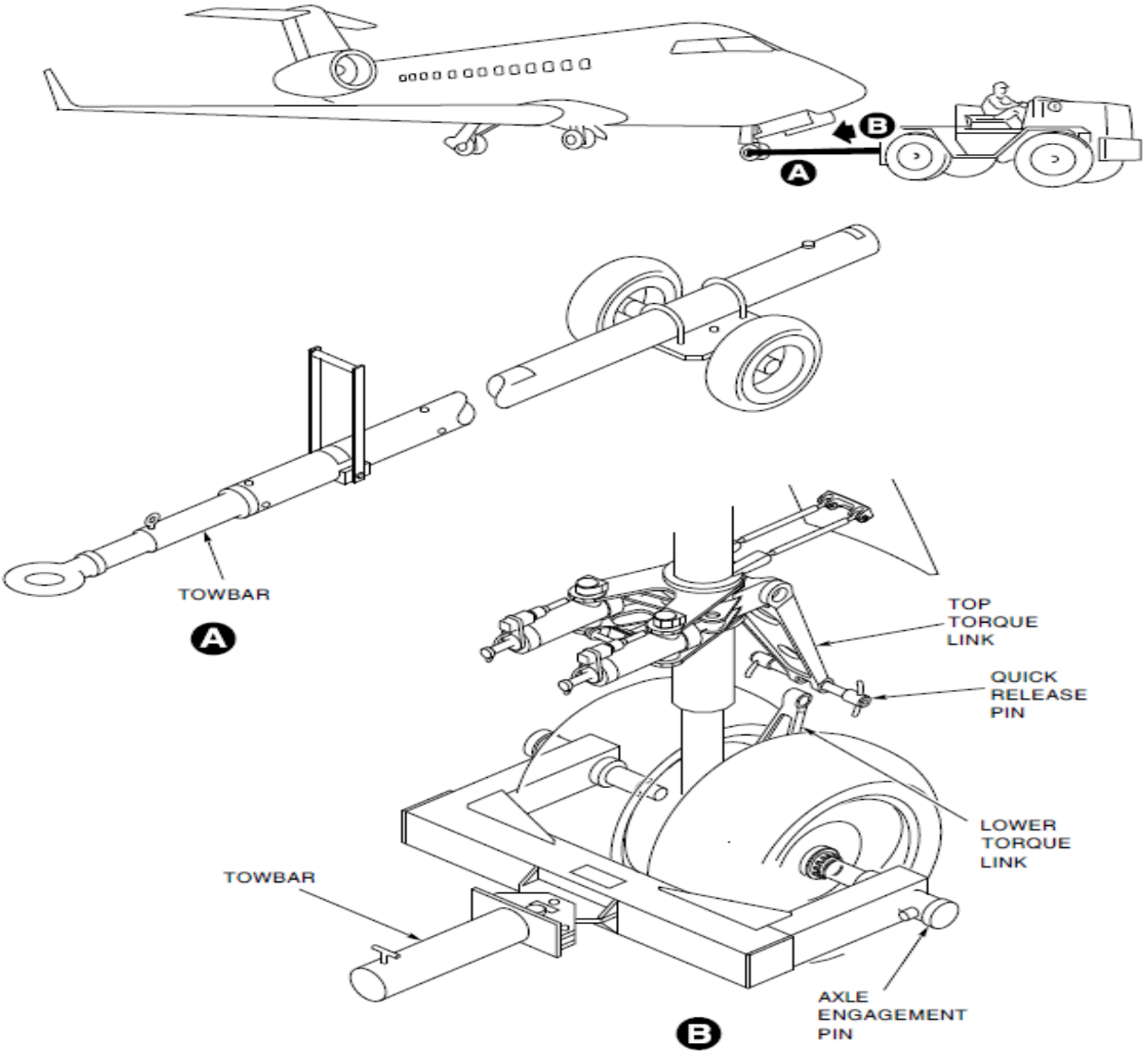

B
A
TOWBAR
A
TOP
TORQUE
LINK
QUICK
RELEASE
PIN
LOWER
TORQUE
LINK
TOWBAR
AXLE
ENGAGEMENT
PIN
B

Towing of the Aircraft with the Towbarless Vehicle

Job Set−Up

(1) Obey all the electrical/electronic safety precautions
(2) Make sure that the tires are correctly inflated.
(3) Make sure that the nose−landing−gear shock strut is correctly filled.
(4) Make sure that the nose landing−gear (NLG) lockpin is installed.
(5) Make sure that the main landing−gear (MLG) lockpins are installed.
(6) Make sure that the nose wheel scissors links are disconnected.
(7) Make sure that the nosewheel steering system is not armed.
(8) Make sure that brake accumulator No. 3 is sufficiently pressurized as follows:
(a) In the flight compartment, on the ELECTRICAL control panel, set the BATT MASTER switch to ON.
(b) On the EICAS, on the HYDRAULIC synoptic page, make sure that the INBD BRAKE hydraulic system pressure is a minimum of 1100 psi
(7584.28 kPa) and the No. 3 hydraulic system quantity is a minimum of
20%.
NOTE: You can pull the parking brake handle six times before you must pressurize the brake accumulator No. 3 again.
(c) If necessary, pressurize the accumulator as follows:
1 Pressurize the No. 3 hydraulic system
2 On the hydraulic synoptic page, make sure that the INBD BRAKES pressure indication shows 3000 psi.
3 Release pressure in the No. 3 hydraulic system
(d) In the flight compartment, on the ELECTRICAL control panel, set the
BATT MASTER switch to OFF.

(9) Make sure that the landing gear selector−handle is in the DN position.
(10) Make sure that all external servicing equipment is disconnected from the aircraft.
(11) Make sure that the ground wire is disconnected from the aircraft.

WARNING: PERSONNEL REQUIREMENTS ARE STRONGLY RECOMMENDED. ALL DEVIATIONS RELATED TO THE NUMBER OF PEOPLE ARE STRONGLY DISCOURAGED. IN CASES WHERE SCHEDULE OR LOCATION IMPOSE A NEED FOR COMPLETING A TOWING OPERATION WITH LESS THAN THE RECOMMENDED PERSONNEL SUCH OPERATION MUST BE PERFORMED WITH EXTREME CAUTION. BOMBARDIER'S RECOMMENDATION IS TO STAFF SUCH OPERATIONS PER THIS MANUAL.

(12) The minimum number of persons in the crew is as follows:
(a) When you tow the aircraft in open areas, two persons are necessary.

NOTE: One person operates the tow vehicle (tug).

The other person is the brake operator and operates the brakes in the flight compartment when there is an emergency.

(b) If you tow the aircraft in confined areas, five persons are necessary.

NOTE: One person operates the tow vehicle (tug).
Two persons are put at wing tips, one at each wing tip, to make sure that there is sufficient clearance for the wing tips.
One person makes sure that the tail of the aircraft has sufficient clearance.
The other person is the brake operator and operates the brakes in the flight compartment.
(c) Make sure the person who operates the tug can speak with and hear the other persons of the crew.

NOTE: The person who operates the tug controls the towing operation.

(13) If you tow the aircraft in low visibility, the ground crew must use light wands to give signals.
(14) Make sure that there is a crew member in the flight compartment to operate the parking brake in an emergency.

Procedure

CAUTION: OBEY THE PRECAUTIONS THAT FOLLOW WHEN YOU TOW THE AIRCRAFT:
- MAKE SURE THAT THE NOSE-LANDING-GEAR SHOCK STRUT IS CORRECTLY FILLED BEFORE YOU DISCONNECT THE
TORQUE LINKS.
- MAKE SURE THAT THE TORQUE LINKS OF THE NOSE LANDING GEAR ARE DISCONNECTED.
- KEEP THE TURNS AS LARGE AS POSSIBLE.
- MAKE ONLY SLOW CHANGES TO SPEED AND/OR DIRECTION.
- MAKE SURE THAT THE LOAD ON THE NOSE LANDING GEAR IS NOT LESS THAN 1900 LB (862 KG) AND THAT THE C OF G OF THE AIRCRAFT IS WITHIN THE C OF G ENVELOPE LIMITS. IF NECESSARY, MAKE A BALLAST OR FUEL ADJUSTMENT TO GET THE CORRECT LOAD. IF YOU DO NOT DO THIS, YOU CAN DISCONNECT OR DAMAGE THE STEERING MECHANISM AND/OR CAUSE THE AIRCRAFT TO TIP OVER. IF YOU DO NOT OBEY THESE PRECAUTIONS, DAMAGE TO THE AIRCRAFT AND EQUIPMENT CAN OCCUR.

To tow the aircraft with the towbarless vehicle (tug), do one of the steps that follow:
(a) For a completed aircraft, it is possible that a tail heavy condition can occur during towing Do one of the steps that follow, as applicable:
− Install the four fly away boxes in the aircraft
− Install the two fly away boxes with the two ground−handling ballast boxes inside the aircraft; or
− Install the nose ballast weight

(b) For an aircraft not completed internally (green aircraft), a tail heavy condition usually occurs during towing. Do one of the steps that follow, as applicable:
− Install the four fly away boxes in the aircraft
− Install the two fly away boxes with the two ground−handling ballast boxes inside the aircraft; or
− Install the nose ballast weight

WARNING: STAY AWAY FROM THE TORQUE LINK WHEN YOU RELEASE THE HANDLE. THE TORQUE LINK IS SPRING-LOADED AND WILL MOVE UP QUICKLY WHEN YOU PULL THE RELEASE HANDLE. IF YOU DO NOT OBEY THIS SAFETY PRECAUTION, YOU CAN CAUSE INJURY TO PERSONS.

(2) Disconnect the torque links as follows:
NOTE: When the torque links are disconnected, there is no limitations on the turn angle.

CAUTION: THE NOSE WHEEL SHOCK STRUT MUST BE COMPRESSED SUFFICIENTLY TO ENSURE THAT THE WHEEL CENTERING CAMS REMAIN DISENGAGED DURING GROUND MANEUVERS. IF THE SHOCK STRUT IS UNDER SERVICED OR BOUNCES AT LARGE CASTOR ANGLES, DAMAGE MAY OCCUR TO THE STEERING CENTERING CAMS OR SHOCK STRUT INTERNAL.

NOTE: Before you disconnect the steering torque links, measure the length if chrome that shows on the nosewheel strut. The chrome that shows should be a minimum of 3 in (7.6 cm) and a maximum of 12 in (30.4 cm)
(a) Pull the two quick−disconnect handles at the same time.
(b) Disconnect the top torque link from the lower torque link

(3) Connect a headset to the service interphone unit.
(4) In the flight compartment, do the steps that follow:
(a) Set the parking brake
(b) Tell the tug operator that the parking brake is set.
(5) Remove all the wheel chocks.
(6) Visually examine the winch strap for possible damage and replace it if necessary.

NOTE: Replace the winch strap for a new one when it shows evidence of excessive wear.
NOTE: Replace the winch strap as per the manufactures operator manual recommendation.
(7) Visually examine the strut strap and its protective sleeve for possible damage and clean it if necessary.
NOTE: Replace the strut strap as per the manufactures operator manual recommendation. Replace the strut strap any time it shows evidence of excessive wear. Examine the protective sleeve on the strut strap.
Make sure it is free from grease, dirt or grit that can cause damage to the piston chrome surface. Sheepskin or braided nylon protective sleeve worn through or abrasive materials can cause damage to the piston chrome surface.

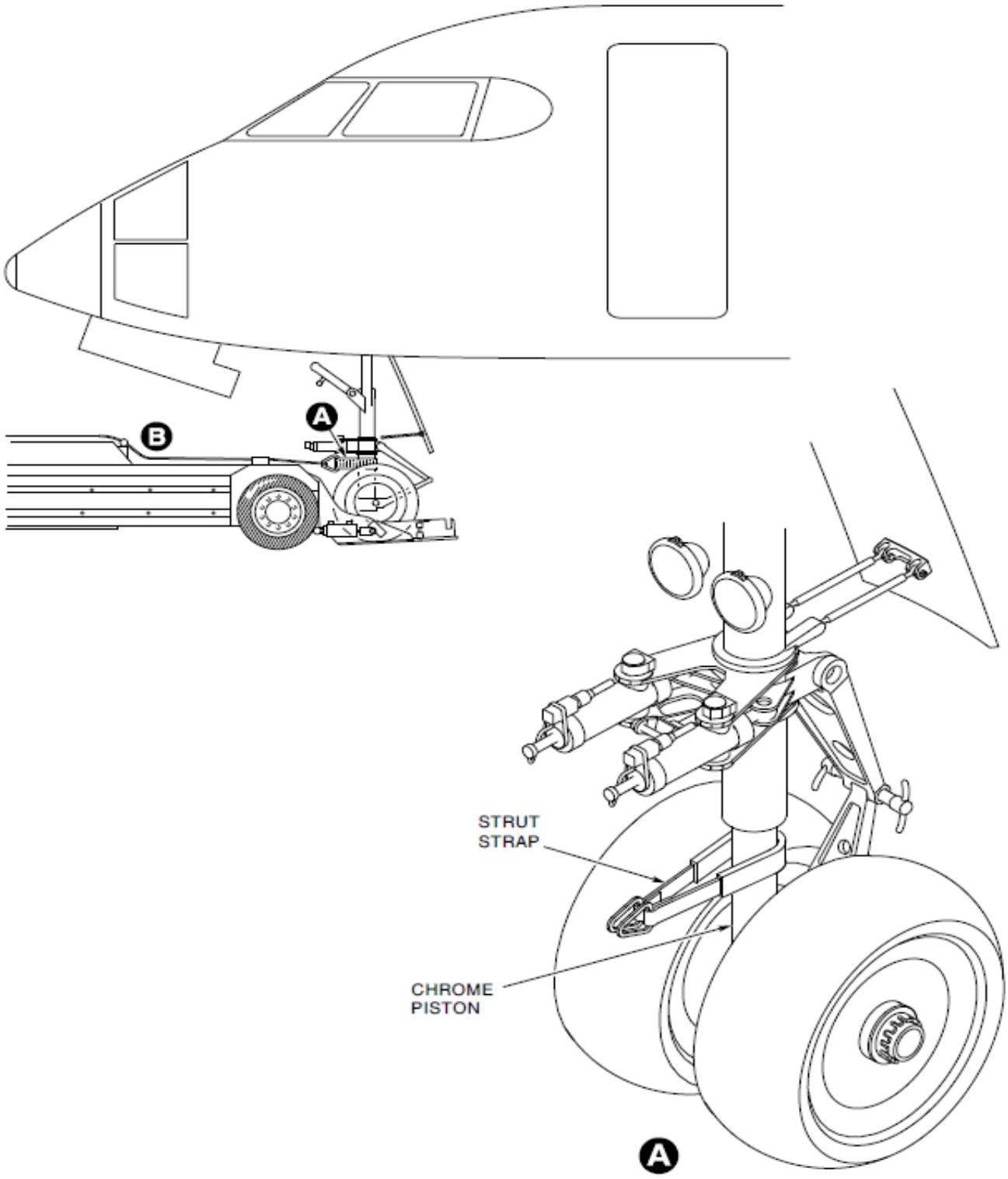
(8) Move the tug to 3 ft (1 m) or less from the aircraft wheels. Make sure that the tug is in line with the nose wheels.
(9) Stop the tug and lower the nose wheel cradle to 1 in (2.54 cm) above the ground.

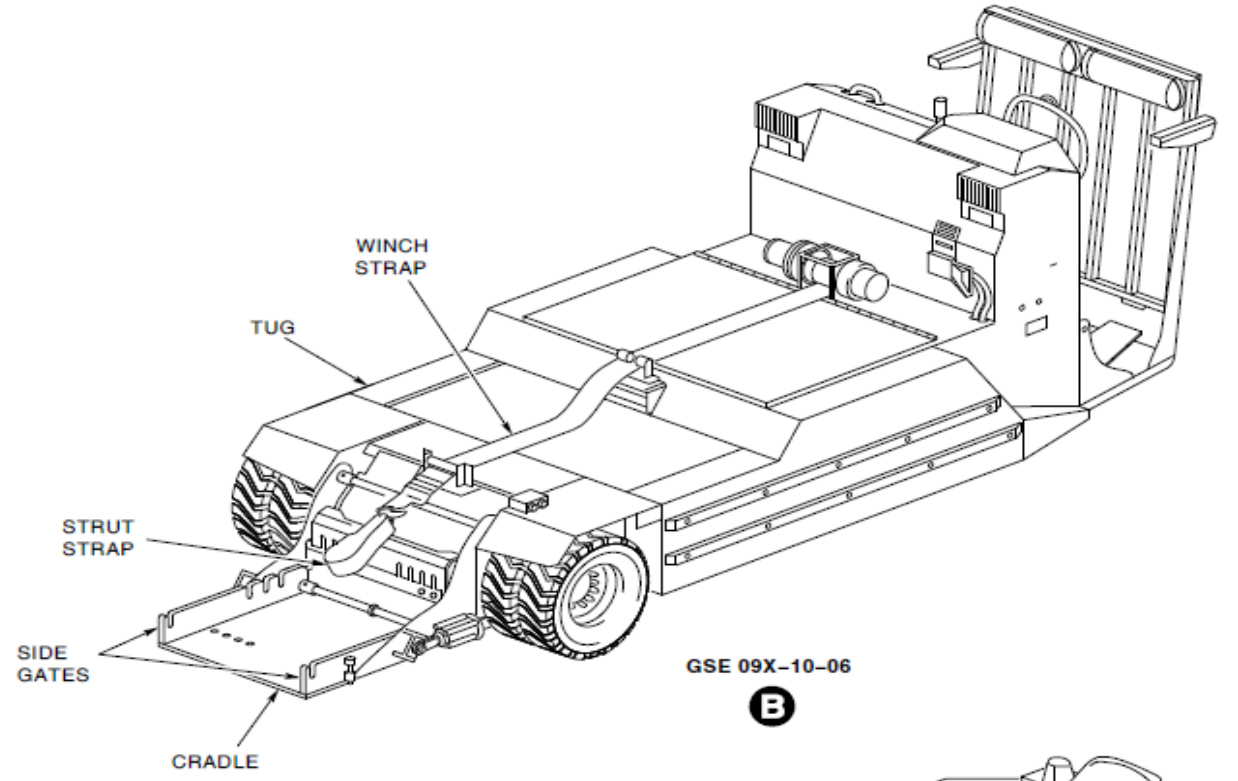
CAUTION: DO NOT PUT THE STRUT STRAP AROUND THE OUTER CYLINDER WHEN YOU TOW OR PUSH BACK THE AIRCRAFT WITH A TOWBARLESS VEHICLE. YOU CAN CAUSE DAMAGE TO THE NOSE LANDING GEAR.

(10) Put the strut strap around the chrome piston of the NLG strut. If part of the strut strap is not on the piston, make sure that the shock strut has been serviced correctly.
(11) Attach the winch strap to the "D" rings of the strut strap.
NOTE: Make sure that the strut strap is the correct length as follows:
− The "D" rings and the winch strap hook do not come in contact with the winch drum
− The "D" rings and the winch strap hook do not come in contact with the nose−landing−gear.
(12) In the flight compartment, do the steps that follow:
(a) Release the parking brake
(b) Tell the tug operator that the parking brake is released.
(13) Pull the aircraft on the cradle with the winch until the tire operates the winch cut−off and is tightly held against the stop.
(14) Make sure that the protruding parts on the nose landing gear stay clear of the cradle and the tug body.
(15) Lift the cradle sufficiently until it is approximately 3 in (7.62 cm) above the pavement surface.
NOTE: The pavement surface must be free from obstacles.
NOTE: Towing on an irregular surface of more than 1 in (2.54 cm), including hangar entrance is not permitted.
(16) Make sure that the winch/strut strap tension is tight but lets approximately 0.50 in (1.27 cm) of downward movement of the strap when it is manually pushed.
(17) Close the passenger door, as applicable.
NOTE: Towing the aircraft with the passenger door open or removed is permitted, but you must obey the speed limit and make sure that you do not have sudden stops and starts.
(18) Slowly tow the aircraft forward at a speed of not more than 5 mph (8 km/h).
NOTE: Use only the tug to control the towing speed and not the aircraft brakes.
NOTE: You must stop the towing operation immediately if the aircraft nosewheel− assembly position is different from the cradle position.
This can show that a torque force is transmitted to the steering system. If this condition occurs, you must examine the NLG tires and
NLG wheels as well as the steering system. Monitor the tire chine and the wheel bead.
NOTE: Do not stop the aircraft in a turn if it is not necessary.
(19) If necessary, push back the aircraft at a speed of not more than 3 mph (5 km/h).
NOTE: Control the towing speed using only the tug, not the aircraft brakes.
NOTE: You must stop the towing operation immediately if the aircraft nosewheel− assembly position is different from the cradle position.
This can show that a torque force is transmitted to the steering system. If this condition occurs, you must examine the NLG tires and
NLG wheels as well as the steering system. Monitor the tire chine and the wheel bead.
NOTE: Do not stop the aircraft in a turn if it is not necessary.

(20) If the aircraft is turned before it is parked, move it forward or rearward in a straight line for a short distance.
(21) When the aircraft is in the correct position, stop the aircraft with the tug.
(22) Lower the cradle.
(23) In the flight compartment, do the steps that follow:
(a) Set the parking brake
(b) Tell the tug operator that the parking brake is set.
(24) Put the wheel chocks forward and aft of the MLG wheel assemblies.
(25) Disconnect the winch strap from the NLG strut.
(26) Slowly move the tug away from the aircraft.

WARNING: MAKE SURE THE WHEEL CHOCKS ARE PUT AT THE NOSE AND MAIN WHEEL/TIRE ASSEMBLIES. MOVEMENT OF THE AIRCRAFT CAN CAUSE INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.
(27) Put the wheel chocks forward and aft of the NLG wheel assembly.
(28) Install the ground wire.
(29) Release the parking brake as necessary
(30) Connect the torque links as follows:
(a) Pull out and hold the two quick−disconnect handles.
(b) Align the pivot of the top torque link with the pivot of the lower torque link.
(c) Release the quick−disconnect handles.
(d) Make sure that the two quick−disconnect pins engage fully with the pivot of the lower torque link.


B
A
STRUT
STRAP
CHROME
PISTON
A



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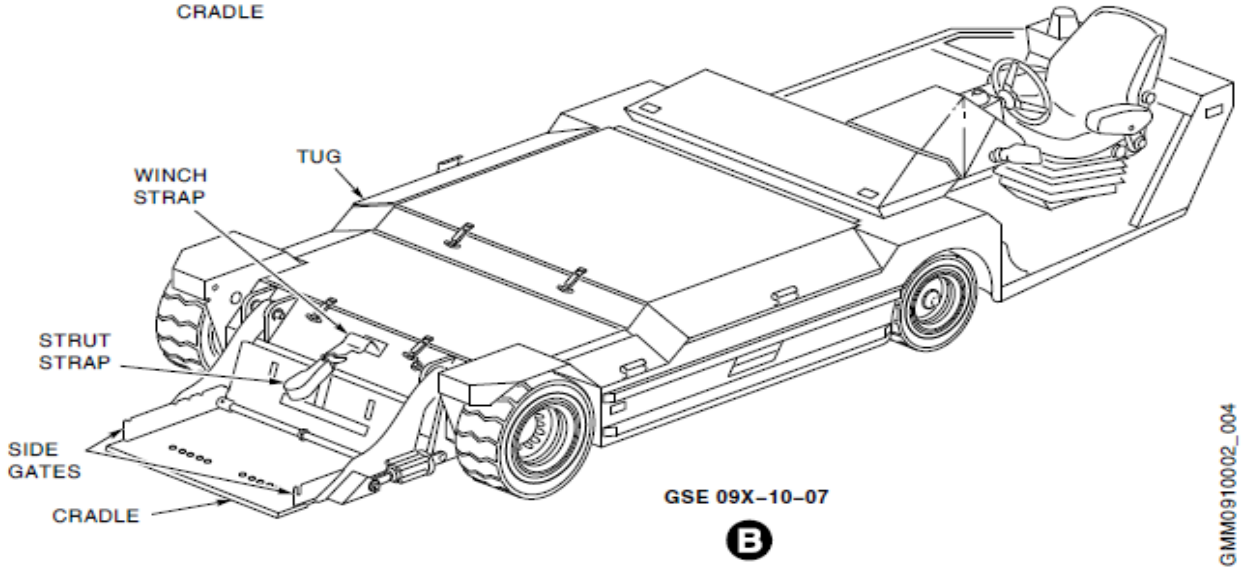

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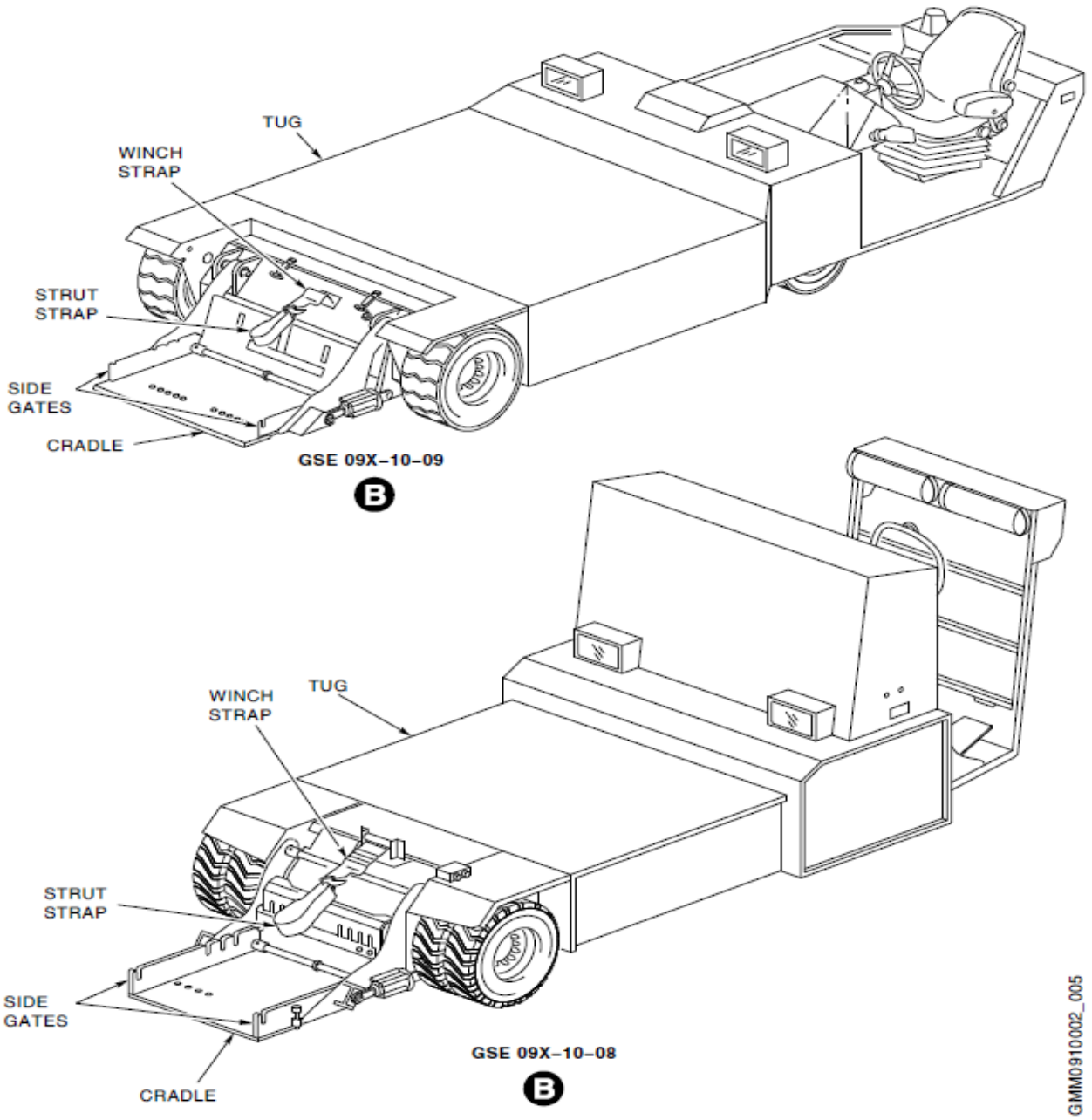


Towbarless Vehicle – Maintenance Practices

PARKING

This section has data on parking and storage of the aircraft. The aircraft is usually parked or put in storage when it is not in use for a long time.

When the aircraft is parked, or put in storage, some precautions are necessary to prevent damage to the aircraft. Wheel chocks must be installed when the aircraft is parked. Covers and plugs must be installed to keep contamination and foreign objects out of the different locations of the aircraft. Parking and storage of the aircraft include the procedures that follow:

− Parking
− Covers and Plugs
− Storage
− Power Plant Preservation
− Auxiliary Power Unit (APU) Preservation.

Parking

The aircraft is usually parked temporarily for regular servicing or maintenance. No preservation procedure is necessary. The safety precautions that follow are necessary:

− Installation of all ground lockpins
− Installation of the wheel chocks
− Release the parking brake
− The flight controls are placed at neutral
− All access doors/panels are closed
− Set all master switches and controls (in the flight compartment) to off or to a neutral condition
− Ground the aircraft
− Installation of all applicable covers and plugs.

All of these precautions must be completed when the aircraft is put in the standard configuration for maintenance.

When the aircraft is parked, you must install the safety equipment that follow:

− Ram air− turbine (RAT) lockpin
− Nose− landing− gear (NLG) ground lockpin
− Main−landing−gear (MLG) ground lockpins
− Wheel chocks
− Ground wires
− Covers and plugs.

Covers and Plugs

Covers and plugs are installed to keep contamination and foreign objects out of the openings on the external surfaces of the aircraft. Covers are also available for the tires, windshields, probes and engine nacelles to prevent damage that weather or accidents cause.

Storage

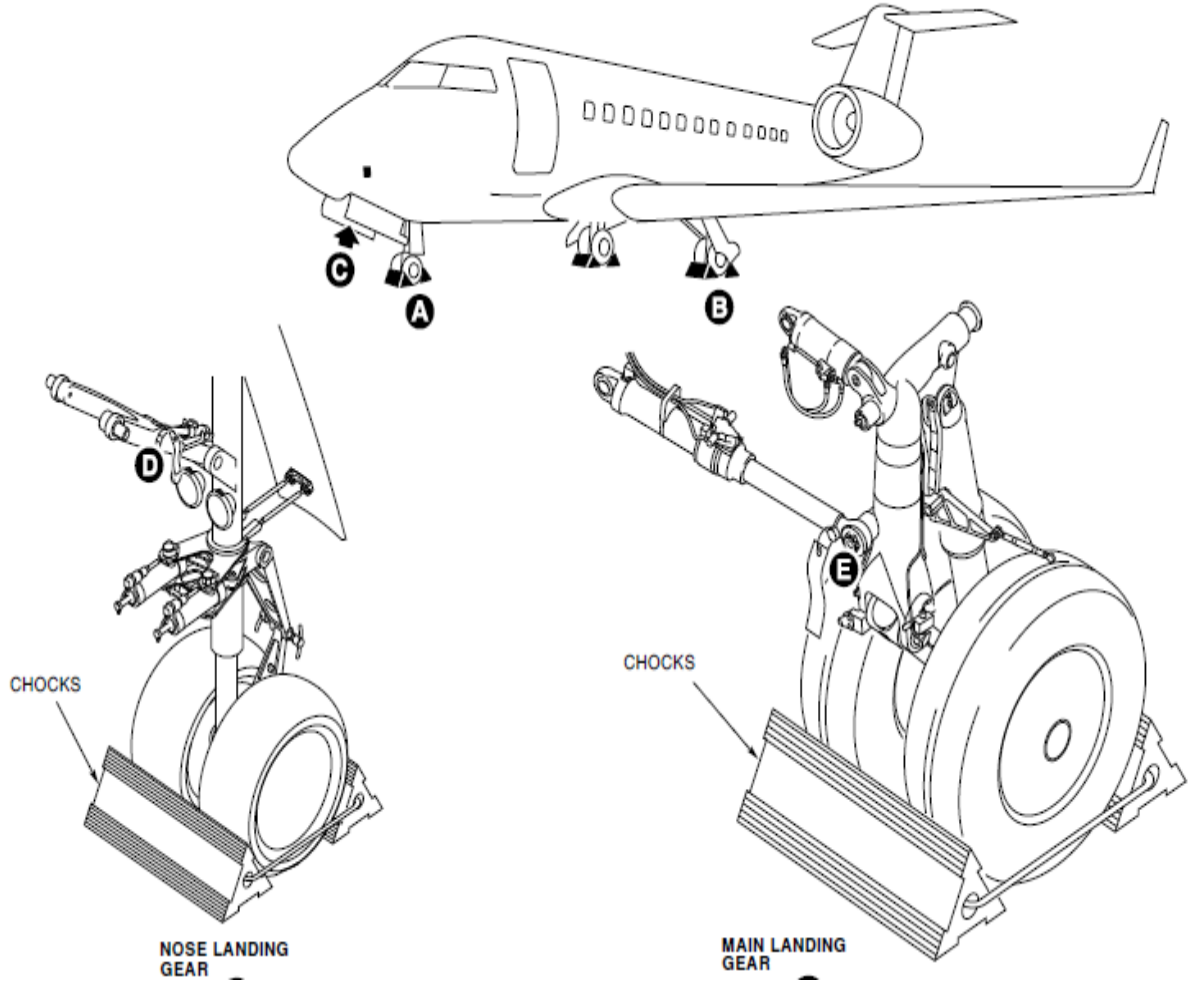
After you park the aircraft for a long time, or remove it from storage, it is necessary to prepare the aircraft operation. You must clean, lubricate, do visual checks and operational

Power Plant Preservation

Before you put the power plant in storage, you must preserve the power plant to prevent damage to the unit. Preservation of the power plant is the application of some protective agents to the unit to prevent contamination or corrosion of the unit and its associated equipment.

APU Preservation

Before you put the APU in storage, you must preserve the APU to prevent damage to the unit. Preservation of the APU is the application of some protective agents to the unit to prevent contamination or corrosion of the unit and its associated equipment.



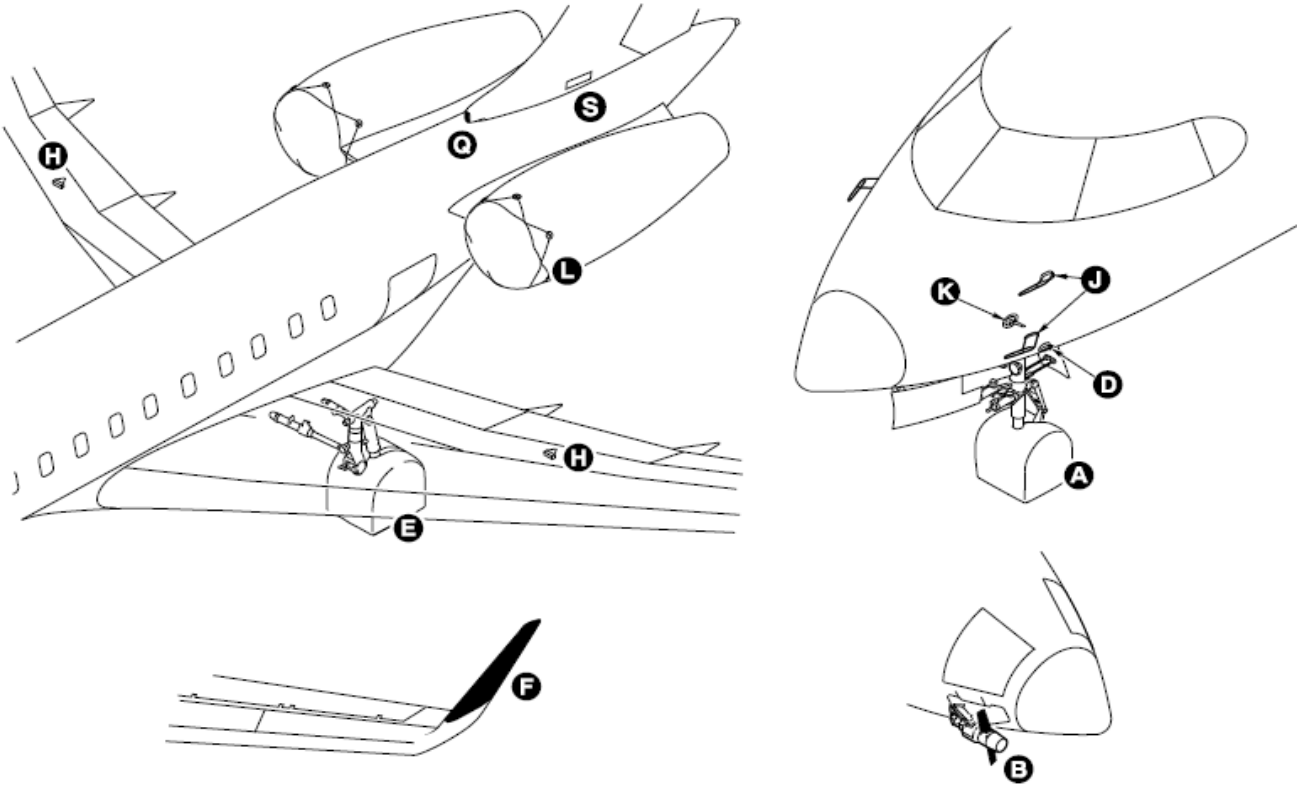
COVERS AND PLUGS

Introduction
This section has data on the different covers and plugs that are available for the aircraft.
You install covers and plugs to keep contamination and foreign objects out of the different openings on the external surfaces of the aircraft. Covers are also available for the tires, windshields, probes and engine nacelles to prevent damage that weather or accidents cause.

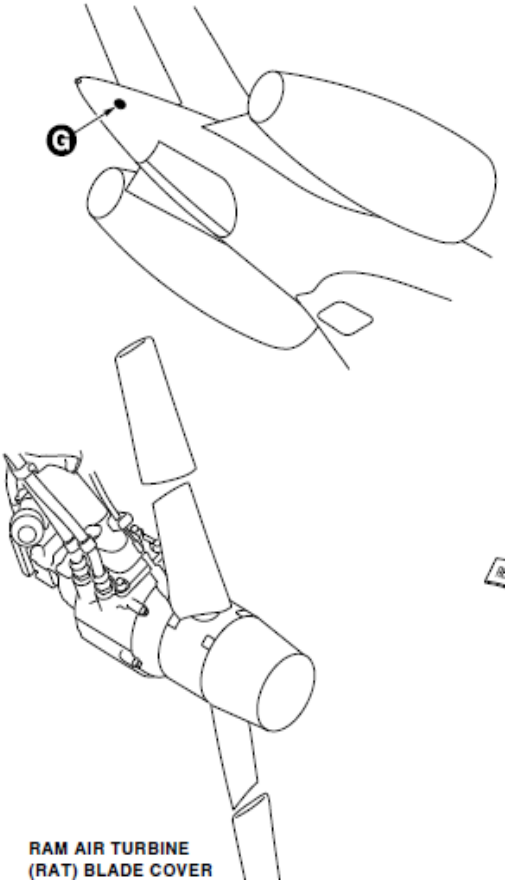
General Description

The covers available for protection against damage are as follows:
− Two power plant (left and right) cover sets
− One ram air intake plug
− Two angle−of−attack (AOA) (left and right) transducer vane covers
− Two pitot head covers
− Two fuel vent blanking covers
− One nose wheel cover
− Two ice−detection probe covers
− Two main wheel covers
− Two winglet covers
− One windshield cover
− Two ram−air−turbine (RAT) blade covers
− One auxiliary−power−unit (APU) surge duct−cover.
− Two ram air bypass inlets plugs.
The covers and plugs available to keep contamination and foreign objects out of the external openings are as follows:
− Two environmental−control−unit (ECU) exhaust plugs
− One APU exhaust plug
− Two precooler exhaust (left and right) plugs
− Two thermal anti−ice (TAI) outlet−grill−covers
− Four ventilation inlet covers.
The covers and plugs are necessary to keep foreign objects (rain, ice, snow, dust, birds, insects and other types of contamination) out of the different openings on the external surfaces of the aircraft. Covers are also available for the tires, windshields, probes, and engine nacelles to prevent accidental damage or damage caused by the weather.

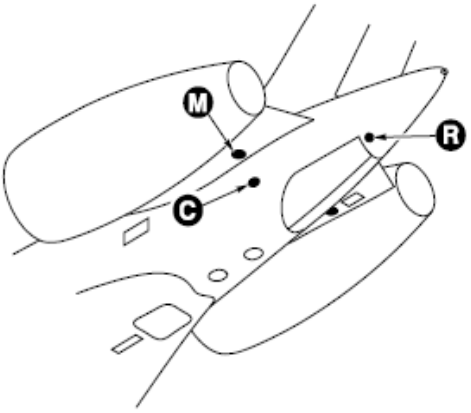
Some, but not all of the covers and plugs include a tag with the applicable warning placard. If the cover or plug does not contain a tag, install the applicable tag as necessary.



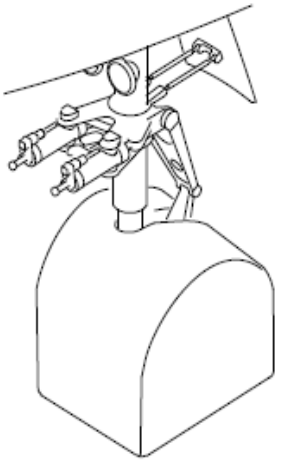
Covers and Plugs



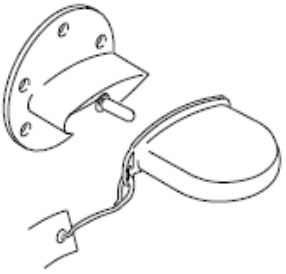
RAM AIR TURBINE
(RAT) BLADE COVER



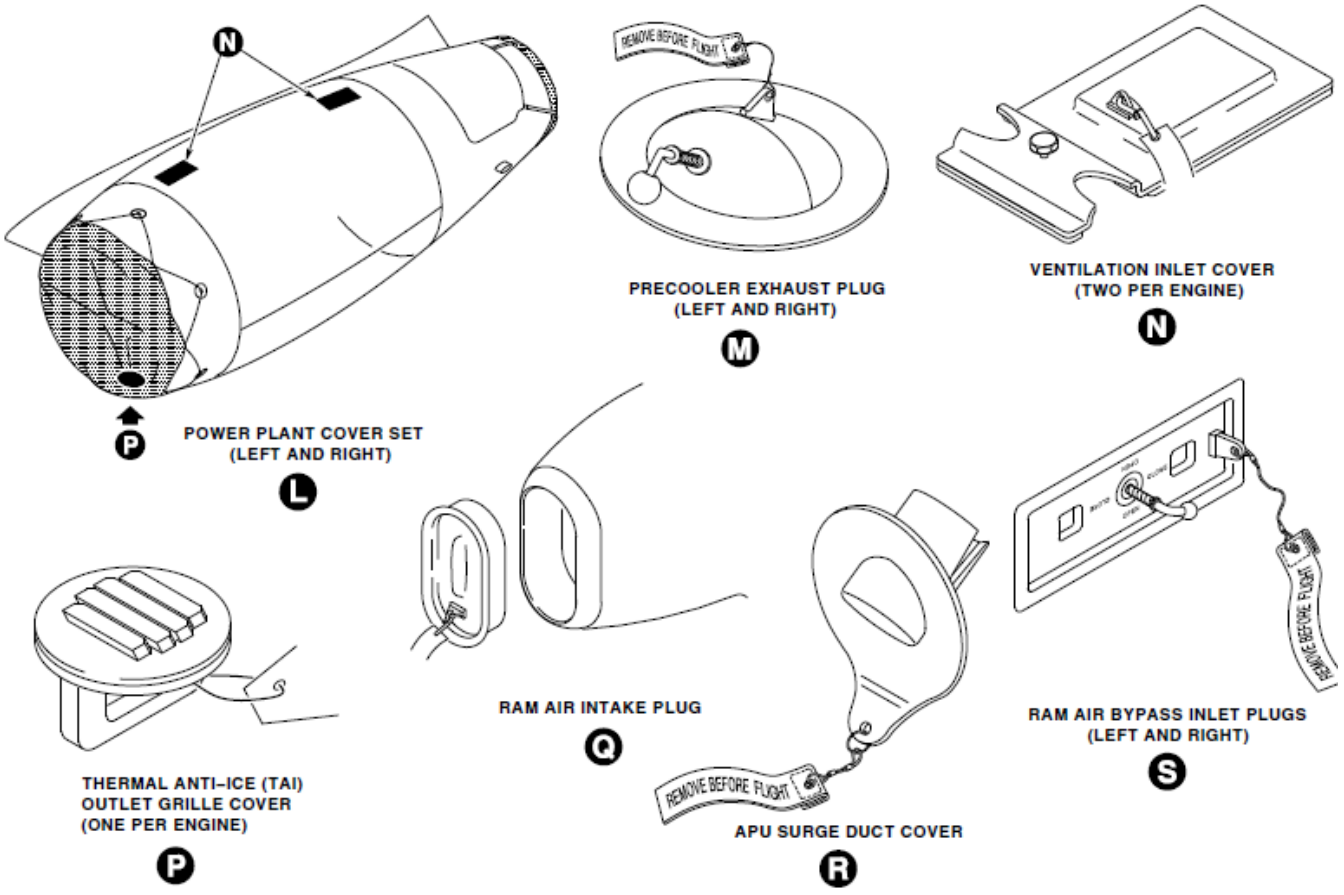
ENVIRONMENTAL CONTROL
UNIT (ECU) EXHAUST PLUG

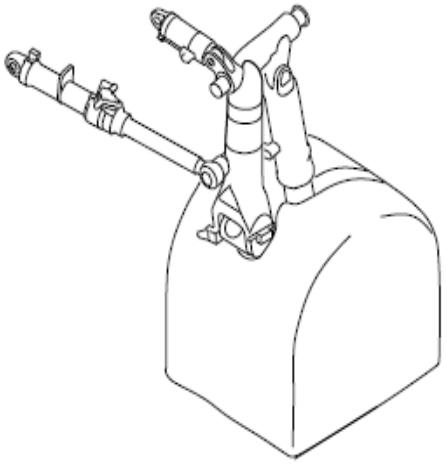


NOSE WHEEL COVER
A

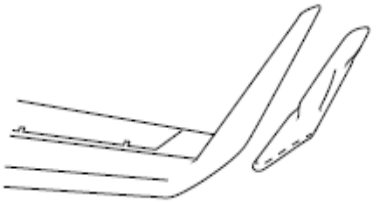


ICE DETECTION PROBE COVER


N
P
POWER PLANT COVER SET
(LEFT AND RIGHT)
L
REMOVE BEFORE FLIGHT
PRECOOLER EXHAUST PLUG
(LEFT AND RIGHT)
M
VENTILATION INLET COVER
(TWO PER ENGINE)
N
THERMAL ANTI-ICE (TAI)
OUTLET GRILLE COVER
(ONE PER ENGINE)
P
RAM AIR INTAKE PLUG
Q
REMOVE BEFORE FLIGHT
APU SURGE DUCT COVER
R
REMOVE BEFORE FLIGHT
RAM AIR BYPASS INLET PLUGS
(LEFT AND RIGHT)
S

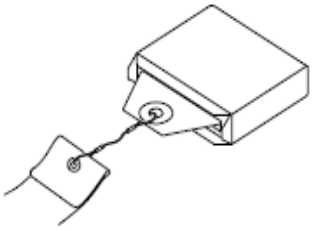


MAIN WHEEL COVER
E

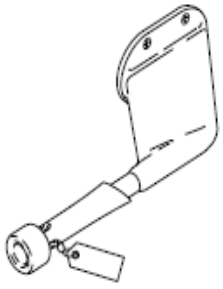


WINGLET COVER
F

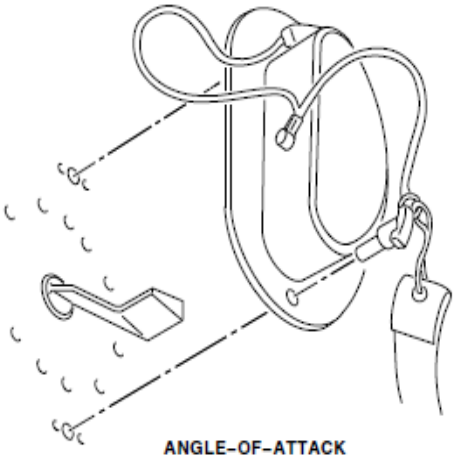
APU EXHAUST PLUG
G



FUEL BLANKING VENT
COVER (LEFT AND RIGHT)



PITOT HEAD COVER



ANGLE-OF-ATTACK
TRANSDUCER VANE COVER
(LEFT AND RIGHT)

MOORING

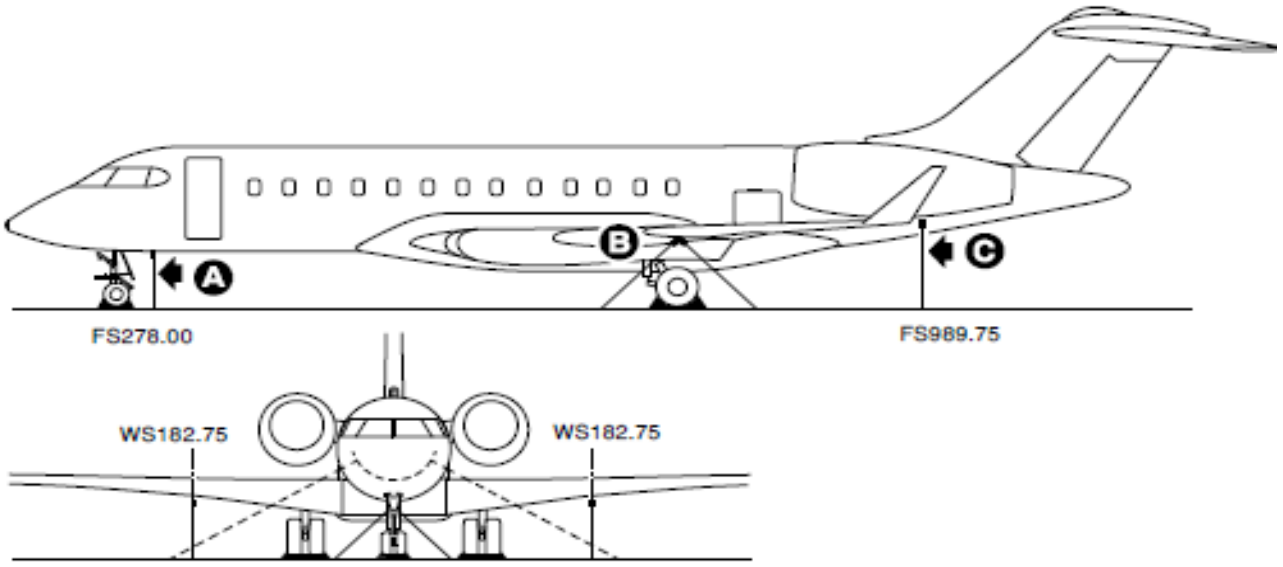
Job Set−Up

(1) Park the aircraft above the ground tie−down points and obey the conditions that follow, as applicable:
(a) Make sure there are two ground mooring points below each aircraft mooring point.
(b) Attach D shackles or equivalent to the ground mooring points below the nose, wing and rear fuselage mooring attachment points, and attach the relevant cable tension turnbuckles to the shackles at the ground mooring points.
(c) Make sure the angles for the nose and wing mooring points are as follows:
− Each ground mooring point gives the cable and picket lines a 45 degree angle in relation to the ground.
(d) Make sure the angles for the rear fuselage mooring points are as follows:
− Each ground mooring point gives the cable and picket lines a 30.25 degree angle in relation to the ground.

Procedure

(1) Do the mooring of the aircraft as follows:
(a) Install the mooring kit as follows:
1 Remove the nylon plug (8) from the nose jack point (1).
2 Remove the nylon plugs (10) from the wing jack points (9).
3 Remove the nylon plugs (2) from the mooring points (4) at the rear fuselage.
4 Install the jack pad (5) with the mooring adapter plate (6) on the nose jack point (1).
5 Tighten the jack pad (5).
6 Install the jack pads (5) with the mooring adapter plates (6) on the wing jack points (9).
7 Tighten the jack pad (5).
8 Install the mooring tie−down rings (3) on the mooring points (4) at the rear fuselage.
9 Tighten the mooring tie−down rings (3).
10 Attach the cable (7) from the ground mooring points to the mooring tie−down rings (3).
11 Attach the cable (7) from the ground mooring points to the mooring adapter plates (6).
12 Tighten the turnbuckles on the cables (7) by hand.
(2) If the aircraft is exposed to heavy rain, do the steps that follow:
(a) Remove the four lower screws from the apron access panel
(b) If no water exits, re−install the screws.
(c) If water exits, do as follow:
1 Remove all the other screws from the apron access panel
2 Remove the apron access panel (432BT/442BT).
3 Drain the water completely from the fire box.
4 Dry the fire box cavity.
5 If corrosion is observed, record and report to Bombardier Aerospace by Phone at:
Customer Response Center (CRC)
Local and International: 514−855−2999

North America only: 1−866−JET−1247 (1−866−538−1247) Toll
Free ore−mail at:
SRPSA@aero.bombardier.com
OR contact the Rolls Royce (RR) Field Service Representative to raise a
TV request directly to RR.
6 Install the apron access panel (432BT/442BT) with the screws.
E. Close−Out
(1) Remove all tools, equipment, and unwanted material from the work area.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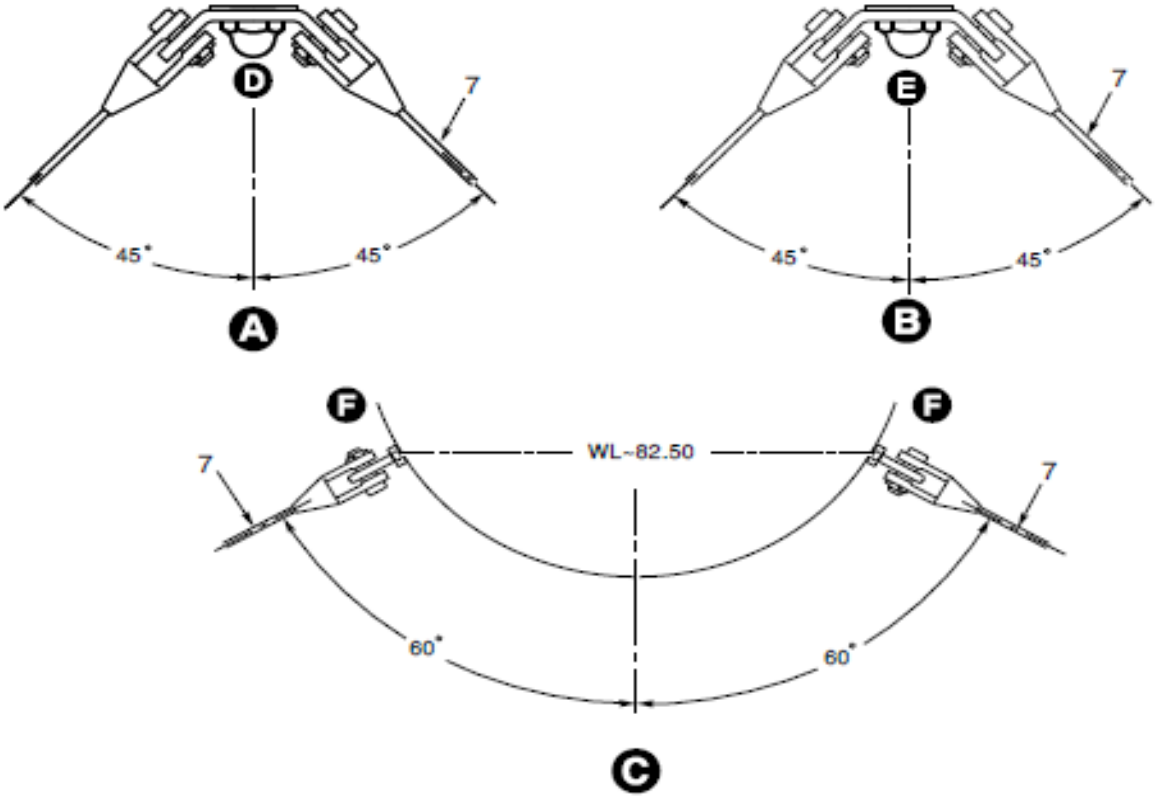
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DE-ICING

Job Setup

(1) Examine the aircraft and its surfaces for contamination of frost, snow, and ice.

WARNING: OBEY THE PRECAUTIONS THAT FOLLOW WHEN YOU USE THE DE-ICING/ANTI-ICING FLUIDS:

- USE SAFETY GOGGLES
- PUT ON PROTECTIVE CLOTHING
- DO NOT LET THE FLUID TOUCH YOUR SKIN, EYES, AND MOUTH
- OBEY THE MANUFACTURER'S INSTRUCTIONS
- GET MEDICAL AID IF THE DE-ICING/ANTI-ICING FLUIDS GET IN YOUR MOUTH OR EYES, OR IF IRRITATION OCCURS.

DE-ICING/ANTI-ICING FLUID IS POISONOUS AND CAN CAUSE INJURY TO PERSONS.

PUT THE SAFETY DEVICES, WARNING SIGNS AND WARNING PLACARDS IN POSITION BEFORE YOU START A PROCEDURE ON
OR NEAR:
- FLIGHT CONTROLS
- FLIGHT CONTROL SURFACES
- COMPONENTS THAT MOVE.

MAKE SURE THAT PERSONS AND EQUIPMENT ARE NOT NEAR THE FLIGHT CONTROL SURFACES. FLIGHT CONTROL MOVEMENT CAN CAUSE INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

Procedure
(1) Do the de−icing/anti−icing, 1−step procedure as follows:
(a) Do not spray the de−icing/anti−icing fluid directly at or into the aircraft
Components that follow:
− Ice detectors
− Windshields
− Side windows
− Passenger compartment windows
− Pitot/static probes
− Total air temperature (TAT) probes
− Static pressure ports
− Antennas
− Winglets
− Engine intake and exhaust ports
− Engine thrust reversers
− Fuel drains
− Wheels and brakes

− Waste water and condensation drains
− Ram air intake
− Auxiliary power unit (APU) inlet and exhaust areas
− Emergency door handles
− Door and window seals
− Landing gear
− Bleed−air overboard exhausts.

WARNING: **MAKE SURE YOU DO NOT APPLY TOO MUCH DEICING/ANTI-ICING FLUID ON THE AIRCRAFT. THIS FLUID CAN COLLECT ON THE GROUND AND CAN BE DANGEROUS FOR THE GROUND CREW AND THE OPERATION OF VEHICLES.**

CAUTION: CLEAR ICE IS NOT EASILY SEEN. IF WEATHER CONDITIONS ARE CONDUCIVE TO THE FORMATION OF CLEAR ICE, EXAMINE THE AIRCRAFT SURFACES. DO AN INSPECTION BY TOUCH TO MAKE SURE THERE IS NO CLEAR ICE ON THE AIRCRAFT.

Apply the de−icing/anti−icing fluid mixture as follows:

NOTE: Make sure you apply the anti−icing mixture equally to both sides of the aircraft. If necessary, use a broom to remove loose ice and snow.

(a) Apply de−icing/anti−icing to the horizontal stabilizer as follows:

NOTE: Make sure that there is no ice, snow, and other unwanted material in the elevators travel area.

1 Start at the outboard of the stabilizer and work inboard.
2 Spray the stabilizer from the leading edge to the trailing edge.

(b) Start at the top of the vertical stabilizer, and apply the de−icing/anti−icing fluid.
NOTE: Make sure that there is no ice, snow, and other unwanted material in the rudder travel area.

(c) Apply de−icing/anti−icing to the fuselage as follows:
1 Spray the fuselage from the forward section to the aft section.
2 Spray the fuselage from the top center to the bottom.
NOTE: Do not spray de−icing/anti−icing fluid directly on the windows.

(d) Apply de−icing/anti−icing fluid to the wings as follow:
1 Start at the outboard of the wing and work to the inboard of the wing.
2 Spray the wing from the leading edge to the trailing edge.
NOTE: Make sure that there is no ice, snow, and other unwanted material in the ailerons, flaps, and slats travel area.

(e) In the flight compartment, on the overhead panel set the RIGHT and LEFT WINDSHIELD HEAT to the ON position.
(f) On the overhead panel, on the ANTI−ICE control panel set the LCOWL and the RCOWL to ON.
(3) Use a no−lint cloth to remove the de−icing/anti−icing fluid leakage from the aircraft components where protection is not wanted.

(4) Do a visual inspection of the aircraft components and areas as follow:
(a) Make sure that the pitot static tubes are clear of snow, frost, ice, and unwanted material.
(b) Make sure that the EVS lens is clear of snow, frost, ice, and unwanted material.
(c) Make sure that the static pressure ports are clear of snow, frost, ice, and unwanted material.
(d) Make sure that all the doors are clear of are clear of snow, frost, ice, and unwanted material.
(e) Make sure that all the flight control surfaces and travel areas are clear of snow, frost, ice, and unwanted material.
(f) Make sure that the main and nose landing gears and bays are clear of snow, frost, ice, and unwanted material.
(g) Make sure that the engine and APU intakes and exhausts are clear of snow, frost, ice, and unwanted material.
(h) Make sure that all inlets, exhausts, and drains are clear of snow, frost, ice, and unwanted material.
(i) Make sure unwanted fluids are clear from spaces between stabilizers, elevators, tabs, hinge areas and crevices on the aircraft surfaces

Aircraft De−Icing/Anti−Icing, 2−Step Procedure

Job Setup (1) Examine the aircraft and its surfaces for contamination of frost, snow, and ice.

Procedure (1) Do the de−icing/anti−icing,
2−step procedure as follows:
(a) **Do not spray** the de−icing/anti−icing fluid directly at or into the aircraft components that follow: − Ice detectors − Windshields − Side windows − Passenger compartment windows − Pitot/static probes − Total air temperature (TAT) probes − Static pressure ports − Antennas − Winglets − Engine intake and exhaust ports − Engine thrust reversers − Fuel drains − Wheels and brakes − Waste water and condensation drains − Ram air intake − Auxiliary power unit (APU) inlet and exhaust areas − Emergency door handles − Door and window seals − Landing gear − Bleed−air overboard exhausts

Apply the de−icing/anti−icing fluid mixture as follows: **NOTE**: Make sure you apply the anti−icing mixture equally to both sides of the aircraft. If necessary, use a broom to remove loose ice and snow. (a) Do not spray the de−icing/anti−icing fluid directly at or into the aircraft components that follow: − Ice detectors − Windshields − Side windows − Passenger compartment windows
− Pitot/static probes − Total air temperature (TAT) probes − Static pressure ports − Antennas − Winglets − Engine intake and exhaust ports − Engine thrust reversers − Fuel drains − Wheels and brakes − Waste water and condensation drains − Ram air intake − Auxiliary power unit (APU) inlet and exhaust areas − Emergency door handles − Door and window seals − Landing gear − Bleed−air overboard exhausts

(b) Apply de−icing/anti−icing to the horizontal stabilizer as follows:

NOTE: Make sure that there is no ice, snow, and other unwanted material in the elevators travel area.

1 Start at the outboard of the stabilizer and work inboard.
2 Spray the stabilizer from the leading edge to the trailing edge.

(c) Start at the top of the vertical stabilizer and work down.
NOTE: Make sure that there is no ice, snow, and other unwanted material in the rudder travel area.

(d)Apply de−icing/anti−icing fluid to the fuselage as folows:

1 Spray the fuselage from the forward section to the aft section.
2 Spray the fuselage from the top center and then outboard. NOTE: Do not spray de−icing/anti−icing fluid directly onto the windows.

(e) Apply de−icing/anti−icing fluid to the wings as follow:
1 Start at the outboard of the wing and work inboard.
2 Spray the wing from the leading edge to the trailing edge.
NOTE: Make sure that there is no ice, snow, and unwanted materia

(f) In the flight compartment, on the overhead panel set the RIGHT and LEFT WINDSHIELD HEAT to the ON position.
(g) On the overhead control panel, on the ANTI−ICE control panel set the LCOWL and RCOWL to the ON position.

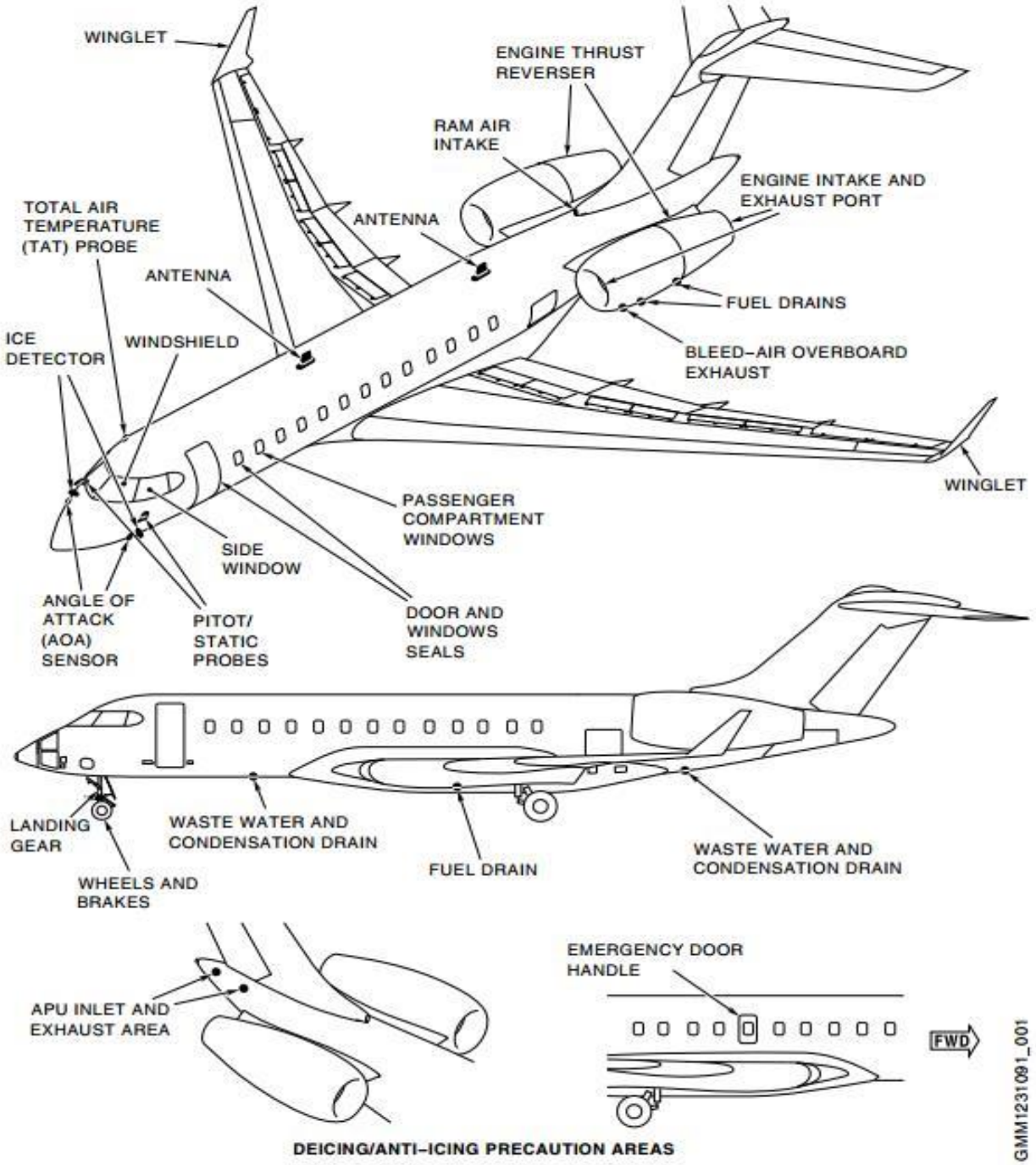
WARNING: DO NOT TOUCH THE COLD SURFACES OF THE AIRCRAFT WITH YOUR BARE HANDS. ALWAYS USE APPROVED PROTECTION. COLD METAL SURFACES CAN CAUSE TISSUE DAMAGE AND INJURY TO PERSONS.

(3) Do a visual inspection of the aircraft components/areas that follow:
(a) Make sure that the pitot static tubes are clear of snow, frost, ice, and unwanted material.
(b) Make sure that the static pressure ports are clear of snow, frost, ice, and unwanted material.
(c) Make sure that the EVS lens is clear of snow, frost, ice, and unwanted material.
(d) Make sure that all the doors are clear of are clear of snow, frost, ice, and unwanted material.
(e) Make sure that all the flight control surfaces and their travel areas are clear of snow, frost, ice, and unwanted material.
(f) Make sure that the main and nose landing gears and bays are clear of snow, frost, ice, and unwanted material.
(g) Make sure that the engine intakes and exhausts are clear of snow, frost, ice, and unwanted material.
(h) Make sure that all inlets, exhausts, and drains are clear of snow, frost, ice, and unwanted material.
(i) Make sure unwanted fluids are clear from spaces between stabilizers, elevators, tabs, hinge areas and crevices on the aircraft surfaces.

Aircraft De−Icing/Anti−Icing, Standard Practices

Make sure that all loose snow is removed from the aircraft before you do the de−icing/anti−icing procedures;

Do not point the spray of de−icing/anti−icing fluid directly into the areas that follow: − Ice detectors − Windshields − Side windows − Passenger compartment windows − Door and window seals − Pitot/static probes − Total air temperature (TAT) probes − Angle of attack (AOA) sensors − Static pressure ports − Antennas − Winglets − Engine intake and exhaust ports − Engine thrust reversers − Fuel drains − Wheels and brakes − Waste water and condensation drains − Ram air intake − Auxiliary power unit (APU) inlet and exhaust areas − Emergency door handles, − Landing gear − Bleed−air overboard exhausts.



DEICING/ANTI–ICING PRECAUTION AREAS

FUELLING

Pressure Refueling

Job Set−Up

(1) Obey all fuel−system safety precautions
(2) Move the wheel chocks approximately 6.0 in (152.4 mm) forward and aft of the tires (main landing gear and nose landing gear).
NOTE: You need to do this to easily remove the wheel chocks. It is possible for the tires to expand from the weight of the fuel.

(3) Make sure that you remove all personnel and equipment from below the aircraft.
(4) Make sure that the aircraft is on level ground.
NOTE: If the aircraft is not level, it will result in uneven fuel loads. This can cause fuel to come out of the NACA scoop.
(5) Make sure that the fuel tender and the aircraft are correctly grounded
(6) Connect the electrical power to the aircraft (TASK 24−00−00−861−801).
NOTE: During refueling procedures, do not change sources of power used
(APU to battery, battery to aircraft electrical system, etc.
(7) In the AUTO Refuel Mode, make sure the throttle quadrant L Engine and R
Engine switches are set to OFF.
(8) CAIMS is not ACTIVE.
(9) Open the REFUEL/DEFUEL PANEL access door (142AR).
(10) Turn on the RDCP and the FMQGC will complete the BITE test.
(11) Do the operational test of the pressure relief valves
(12) Do the operational test of the center tank pressure−relief−valve
(13) Do the operational test of the vent system
(14) Make sure the fuel system conditions that follow are obeyed before you begin the refuel procedures:
(a) LH and RH wing fuel load imbalance is less than 1100 lbs (498.95 kg)
NOTE: During refueling procedures, do not change sources of power used (APU to battery, battery to aircraft electrical system, etc.).

(b) Make sure power to the RDCP is not turned OFF while refueling and the aircraft is in a weight−on−wheels (WOW) configuration.
(c) Make sure the pre−selected fuel load allocations in the Auto

(c) Make sure the pre−selected fuel load allocations in the Auto Mode are within the limits as follows: (Specific conditions and quantities are shown in the Fuel Load Allocation Logic Tables that follow.)
1 LH and RH wing tanks fuel quantity is not greater then 250 lbs (113.40 kg) more than the wing tanks target allocation.
2 Center tank fuel quantity is not greater than 750 lbs (340.19 kg) more than center wing tank target allocation.

NOTE: If the CTR tank quantity is more than the CTR tank target allocation, but is not more than 750 lbs (340.19 kg), the excess fuel in the CTR tank will be deducted from the wings quantity so the total pre−selected fuel load is notnexceeded.
3 If the pre−selected total fuel quantity is less than full wing quantity, make sure the aft or center tank fuel quantity is less than 250 lbs (113.40 kg).
4 The forward tank fuel quantity is not greater than 250 lbs (113.40 kg) more than the forward fuel tanks target allocation.
NOTE: Quantities in the tables that follow are based on Standard Density of 6.75 lbs/US gallon at 15° C, rounded off to the nearest 50 lbs (25 kg). Fuel loads will vary as a result of density change, which is directly affected by temperature changes.
NOTE: The tables that follow are for reference only and should not be considered limiting, since the density value is calculated throughout the refueling process and could differ from the Standard Density as explained above.
NOTE: FWD tank does not have dedicated quantity indication. FWD tank fuel load is incorporated into the CTR tank quantity indication.

Procedure
To do the pressure refueling in the automatic mode with the external or internal REFUEL/DEFUEL panel, do the steps that follow:

NOTE: It is recommended that you use only the MANUAL REFUEL mode to refuel the aircraft to the maximum capacity.

Connect the fuel tender to the aircraft as follows:
1 Remove the cap from the refuel/defuel adapter.
2 Connect the fuel nozzle ground to the aircraft grounding point.
3 Connect the fuel nozzle to the refuel/defuel adapter.
4 Set the fuel pressure on the fuel tendr to no more than50 psig

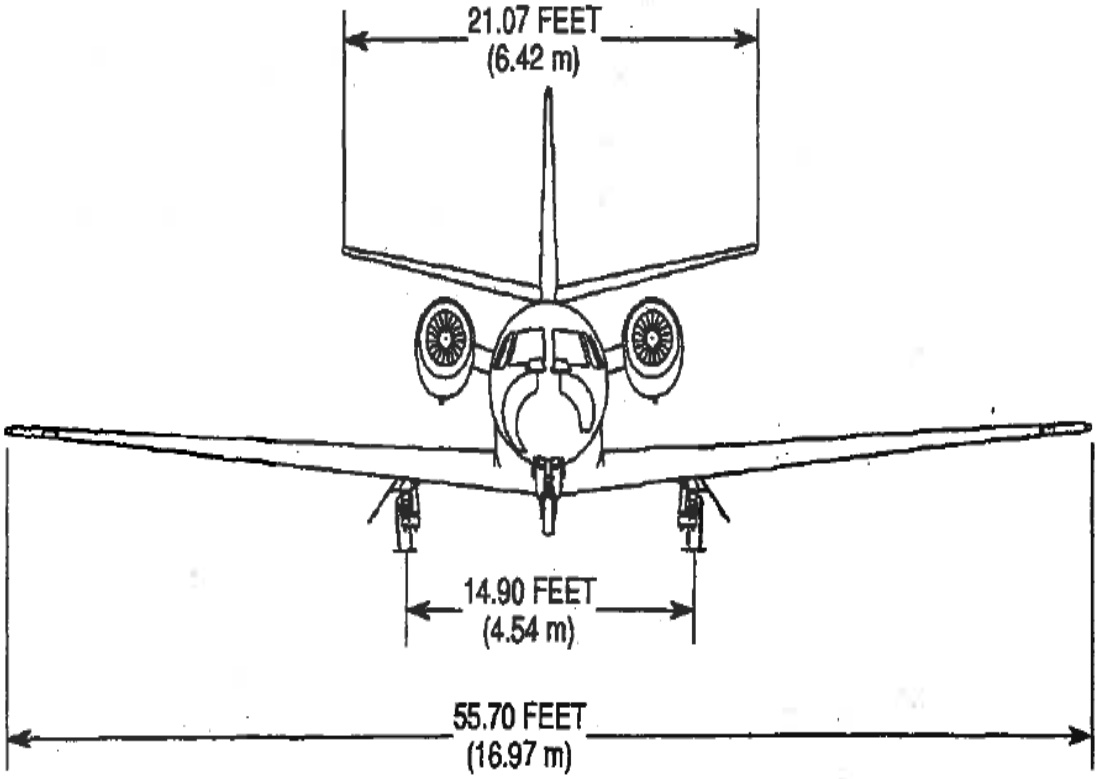
d) Refuel the aircraft as follows:
1 Set the MANUAL/AUTO switch as follows:
NOTE: When the MANUAL/AUTO switch is set to a REFUEL position, a BITE test starts. The BITE test is completed when the fuel quantities for each tank show in the display.
a To refuel the wing and center fuel tanks only, set the switch to the AUTO/REFUEL NO AFT position.
NOTE: If the refuel mode is changed and one of the R/D SOV switches is set to OPEN, the RDCP will show INHIB until all SOV switches are set to CLOSED. Refueling or defueling can be started by setting the SOV OPEN, as necessary.
b To refuel the wing, center and aft fuel tanks, set the switch to the AUTO/REFUEL position.
2 Make sure that a fuel quantity shows in the display for each tank and in the TOTAL display. The fuel quantity in the TOTAL and PRESEL displays must be the same.
3 Use the INCR/DECR switch to set the quantity of fuel in the PRESEL display.
4 Set the START/STOP/SOV TEST switch to START.
NOTE: The START message shows in PRESEL window and alternates with the preselected quantity.
5 Make sure that the fuel quantity increases on the display while you add fuel.

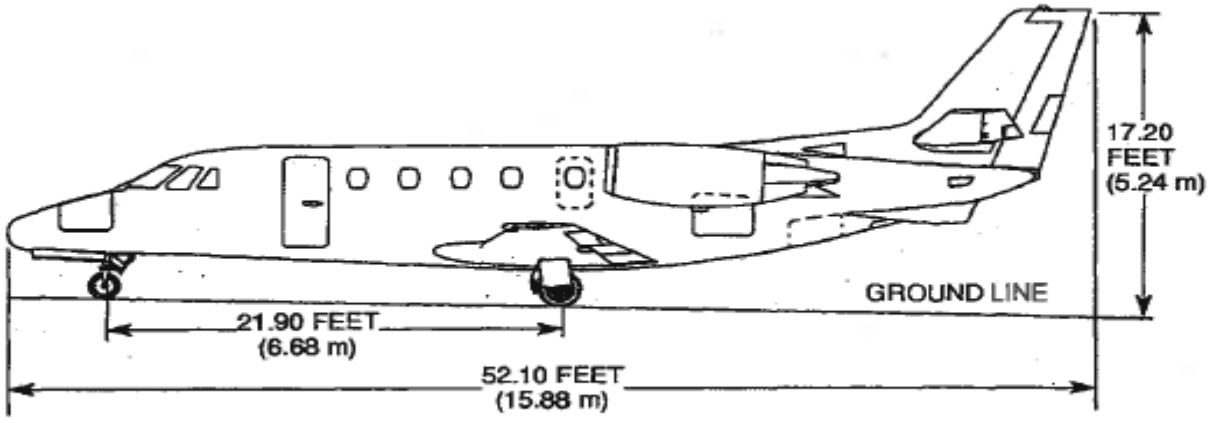
When the pressure refueling procedure is completed, do the step that follows:

1 Set the MANUAL/AUTO switch to the OFF position.
(g) Disconnect the fuel tender from the aircraft as follows:
1 Set the fuel pressure on the fuel tender to 0 psig (0 kPa).
2 Disconnect the fuel nozzle from the refuel/defuel adapter.
3 Disconnect the fuel nozzle ground from the aircraft grounding point.
4 Install the cap on the refuel/defuel adapter.

4. CESSNA CITATION XL / S

AIRCRAFT DIMENSIONS





TOWING

Towing of the airplane is normally accomplished through the nose gear axle, using a yoke type tow bar and a tow vehicle.

During the towing operation, the vehicle operator must ensure that the turning limits of the nose gear are not exceeded, Expeeding the turning angle will shear the steering gear attaching bolts.

During nose gear wheel towing, all turning is accomplished through the tow bar.

If the airplane is off the runway or taxiway in sand, soft ground or mud, towing may be accomplished with the aid of cables or ropes attached to each main gear towing adapter. When towing is accomplished by attaching cables or ropes to the main landing gear assemblies, steering is accomplished 'through the rudder pedals.

A qualified person may be stationed in the airplane during towing operations to be prepared for hazardous conditions as follows:

(1) Tow bar breaks or becomes detached between the airplane and the towing vehicle.
(2) In congested areas, station wing and/or. tail walkers to ensure adequate clearance between:
airplane and adjacent equipment and structures.

C. Safety Precautions for Towing

CAUTION: THE MAXIMUM NOSE GEAR TOWING TURNING· ANGLE LIMIT IS 90 DEGREES EITHER SIDE OF CENTER. NOSE GEAR FORCED BEYOND THE TOWING STOP (90-DEGREE LIMIT) WILL SHEAR BOLTS ATIACHING STEERING GEAR ASSEMBLY TO CYLINDER.

CAUTION: WHEN TOWING THE AIRPLANE, ENSURE THE RECOMMENDED TOW BAR IS USED. ALSO, TO ENSURE INTEGRITY OF THE TOW BAR FOR OPERATIONAL USE, PERFORM A PERIODIC INSPECTION OF THE TOW BAR FOR CRACKS AND CONDITION.

(1) Ensure the tow bar and Vehicle are secured properly to the airplane.
(2) Do not operate engine(s) during towing operations.·
(3) Always tow the aircraft at a walking speed., avoiding quick stops and starts,
(4) Always utilize someone walking at each wing tip and tail section to ·guard against collision.
Maintain visual or communication contact between walking crew members(s) and the brake/ vehicle operator(s
(5) Do not turn nose gear beyond black turn limit decals while towing. Turning beyend 90 degree'S can damage nose gear turning stop •

(6) Never permit anyone to enter or leave the airplane or ride on the external portions of the airplane while it is moving.
(7) ·Remove chocks just prior to towing.
(8) Disconnect grounding .cabie prior to towing.
(9) Raise main entrance door out of the full extended position prior to towing to provide adequate ground clearance during towing. After towing operation, ensure· entrance door is fully extended prior to stepping on the door.
(10) When disconnecting the tow bar, do not allow tow bar to fall on the nose gear fork.

. **Nose Gear/Main Gear Towing**

NOTE: It is permissible to disconnect the nose gear torque links and tie them up to clear each other and the tire. The nose wheel then may be rotated beyond the black limit marks, and eliminate the fear of damaging the nose gear centering mechanism or steering stops.

A. **Nose Gear Towing** (Refer to Figure)

(1) Attach and secure tow bar to upper fork buckets on nose landing gear.
(2) Connect tow bar to towing vehicle.
(3) Station person in pilot seat.

NOTE: The airplane may be towed without entering the airplane if the parking brake is not set. Towing can be accomplished with the control locks engaged. When towing the airplane with the control locks engaged, to prevent unnecessary loads on the control system, limit the nose wheel turning angle to approximately 60 degrees. When extreme turning angles are required, release the control lock system.

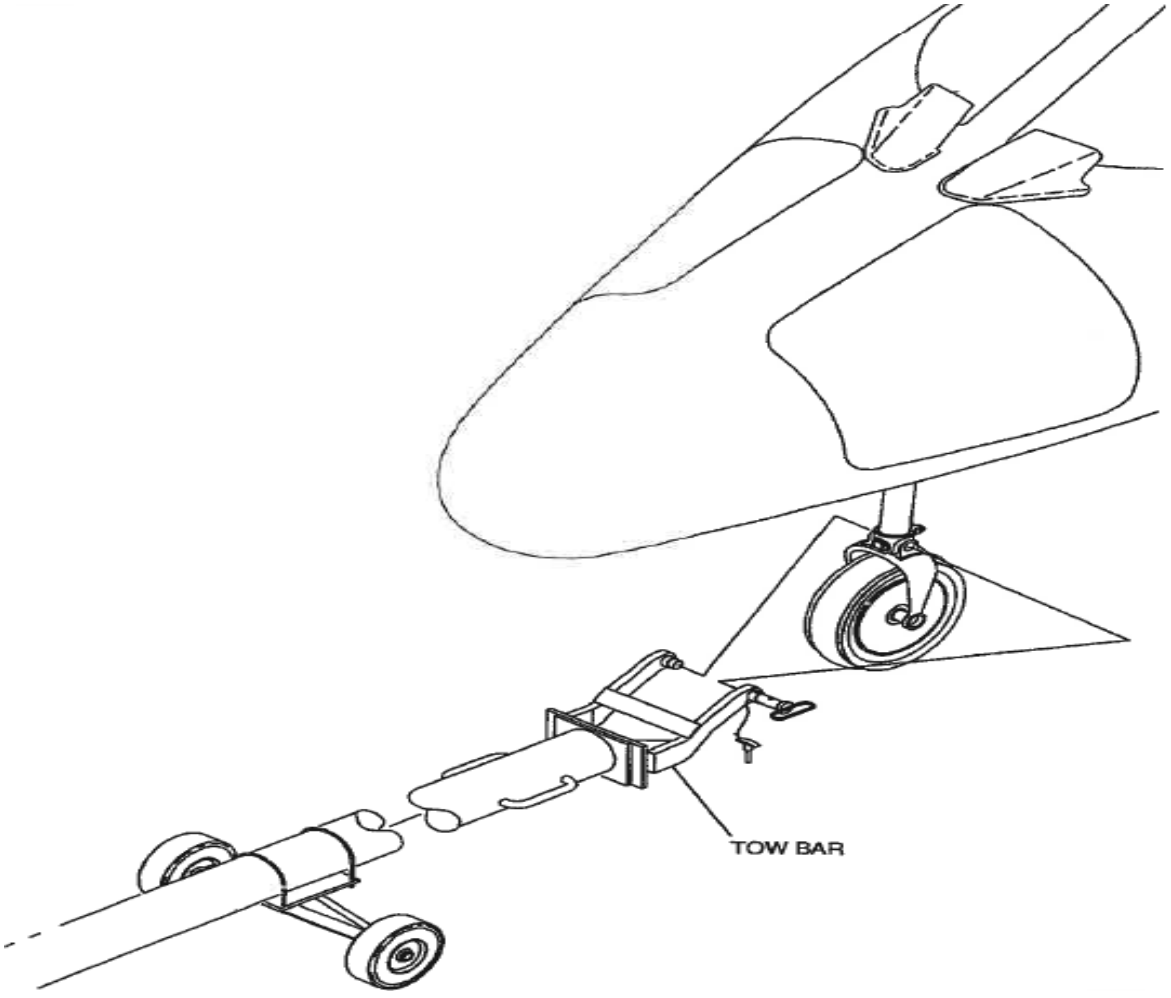
(4) Ensure that wheel chocks, static ground cables and mooring ropes are removed.
(5) Disengage control lock.
(6) Disengage parking brake.
(7) If area is congested; station wing and/or tail walkers to check clearance between airplane and adjacent equipment or structures.

CAUTION: DO NOT TURN NOSE LANDING GEAR WHEEL BEYOND 90 DEGREES FROM CENTERED POSITION IN EITHER DIRECTION OR DAMAGE TO THE TURNING STOP WILL RESULT.

(8) Tow airplane. making smooth starts and stops with towing vehicle.
(9) When towing operation is complete, center nose wheel, engage parking brake, lock controls, chock. wheels, -connect static ground cables and remove tow bar from airplane. Also, connect the nose gear torque· links if they were disconnected.

Main Gear Towing

(1) Station person in pilots seat
(2) Install towing adapters on main gear.
(3) Attach two cables to towing adapters and towing vehicle. Ensure cables are of sufficient length to clear airplane, and that towing vehicle is on hard surface.
(4) Remove wheel chocks, mooring cables, static ground cables, parking brakes and control lock.
(5) Steer the airplane with the rudder pedals. Brake airplane smoothly and evenly using airplane brakes.
(6) When towing is complete, center nose wheel, lock controls, set parking brakes, chock airplane wheels and connect static ground cables.
(7) Disconnect tow cables and remove towing adapters.



PARKING

This sub-chapter describes and provides maintenance instructions for parking and mooring the airplane on aprons where necessary mooring accommodations are available

Airplane parking procedures are similar to those for other airplanes having tricycle landing gear.
The wheels are chocked, parking brake and control lock engaged, and the airplane ground cables attached. Under normal weather conditions, the airplane may be parked and headed in a direction that will facilitate servicing without regard to prevailing winds.

Parking procedures are generally used during good weather conditions. If bad weather conditions exist, or are expected, the airplane must be moored

Parking

A. General Procedures.
(1) Position airplane on level surface.

CAUTION: **DO NOT SET THE PARKING BRAKE WHILE BRAKES ARE HOT SINCE IRREGULAR FRICTION SURFACE MIXTRANSFER CAN RESULT IN BRAKE CHATTER, NOISE AND VIBRATION.**

(2) Set parking brake and control lock.
(3) Chock main gear wheels.
(4) Connect static ground cable to airplane.
(5) Install proteclive covers as determined *by* expected weather conditions
(6) Close foul weather window and doors as necessary.

STORAGE

Zero to Seven Days

A. Engine may be left In an inadive state, with no preservation protection required; provided, engine is sheltered, humidity is not excessively high and engine is not subject to extreme temperature changes which would produce condensation.

B. Fuel Airplane.
(1) Fill wing tanks.

Seven to Thirty Days

A. Engines.
(1) Engines inactive up to 30 days require no preservation; provided, all engine openings are sealed off and relative humidity in engine is maintained at less than 40 percent. This can be accomplished by placing a desiccant in engine exhaust jet pipe.

NOTE: Ensure that the desiccant is kept off all engine parts by placing It on racks.

B. Fuel Airplane.
(1) Fill wing tanks.

C. Battery..
(1) Disconnect battery.

D. Tires.
(1) Rotate wheel every two weeks. Rotate 100 degrees clockwise using the valve ste.m for a reference point

Thirty to Ninety Days

A: Engines.

(1) Engines inactive longer than 30 days, but not exceeding 90 days, need only to have the fuel system preserved, engine intake and exhaust openings covered and desiccant and humidity indicators installed.

B. Engine Fuel System.

(1) Engines inactive for periods exceeding 30 days should have their fuel system inhibited as follows: (a) Close manual fuel supply shutoff valve and disconnect fuel inlet line to fuel pump.

(b) Disconnect bypass fuel line from flow dMder unit to fuel control unit and primary and secondary fuel lines to fuel manifold, at flow divider unit.

(c) Connect a suitable oil supply line to the fuel pump and supply slushing oil, Specification MIL-0-6081, Grade 1010, at a pressure of 5 to 25 PSI and a temperature of at least 60°

CAUTION: **EXTREME CARE MUST BE TAKEN TO PREVENT FOREIGN MATERIAL FROM BEING DRAWN INTO THE ENGINE FUEL SYSTEM. THE EQUIPMENT MUST BE PROVIDED WITH SUITABLE FILTERS OR STRAINERS, NO COARSER THAN A 10 MICRON RATING. NEVER ALLOW SLUSHING OIL TO ENTER ENGINE.**

(d) With L Ignition, R. Ignition circuit breakers on left circuit breaker panel and IGN PWR circuit breaker in the aft junction box disengaged and the throttle lever in the IDLE position, carry out a 30-Second motoring cycle. Ensure that slushing oil is coming from the open primary connection. During the motoring run, the throttle lever should be moved from IDLE to CUT OFF position, then back to IDLE position; this will ensure that slushing oil passes through the bypass section of the starting control unit.

(e} Cap off primary and bypass connections on the starting control unit and carry out a second motoring run. Check that slushing oil Is now coming from the secondary fuel connection on the starting control unit.

{f) Following the motoring runs, disconnect and remove slushing oil supply; remove caps from bypass and primary connections on start control unit and reconnect all lines.

(g) Tag throttle lever with date of preservation and a warning stating the inadvisability of cranking engine.

C. Fuel Airplane.
(1) Fill wing tanks.

D. Battery.
(1) Disconnect battery.

NOTE: If battery is left in the airplane, regular servicing will be required to prevent discharge.If battery is removed from the airplane, check it regularly for state of charge.

E. Tires.
(1) Rotate wheels every two weeks. Rotate 100 degrees clockwise using the valve stem for a reference point.

F. Upholstery and Carpet.
{1) If airplane Is stored in a high humidity area, protect the upholstery and carpet in the cabin area against fungus and mildew. Refer to Cabin Upholstery and Carpet Storage for High Humidity Areas.

Ninety Days and Over

A. Engines.
(1) Engines inactive for periods exceeding 90 days must, in addition to 30 to 90 *day* procedures, have engine oil drained.

B. Engine Fuel System.
(1) For preservation of engine fuel system, refer to Engine Fuel System.

C. Engine Oil System.
(1) Drain engine oil. Refer to Chapter 12, Engine Oil System - Servicing. Allow the oil to drain to a slow drip for approximately one-half hour.
{2) Install and close all previously opened drains. (3) Tag oil filler cap with date of preservation.

D. Fuel Airplane.
I (1) Fillwing tanks.

E. Battery.
{1) Disconnect battery and remove from airplane.

F. Tires.
{1) Rotate wheels every 30 days. Rotate 100 degrees clockwise using the valve stem for a referencen point.

MOORING

A Mooring airplane to the parking apron is accomplished by tying down at main gear and nose gear. With airplane headed into wind, tie down using hemp rope or equivaler:rt around gear.

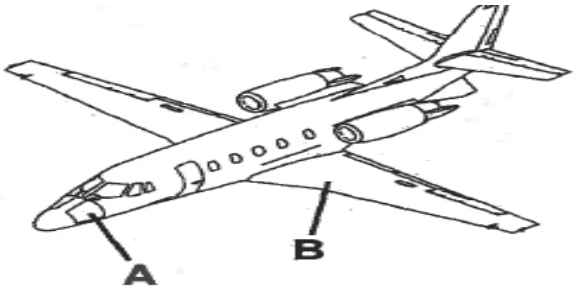
B. Mooring procedures are used during extended parking and expected adverse surface wind.
Park airplane on level surface.
Set parking brake and engage the surface control. gust locks

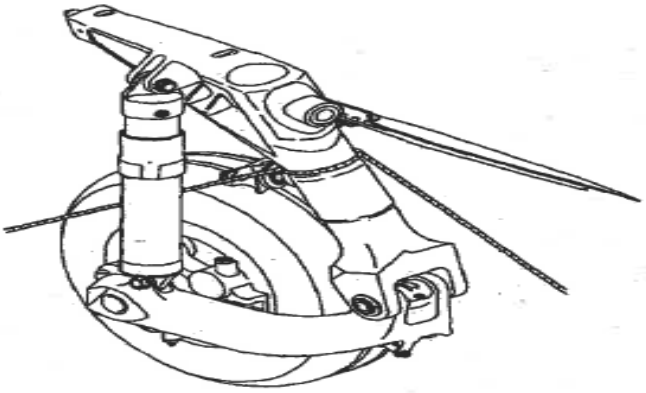
NOTE: Do not set parking brakes for extended parking.

Chock main wheels and secure forward and aft chocks together.

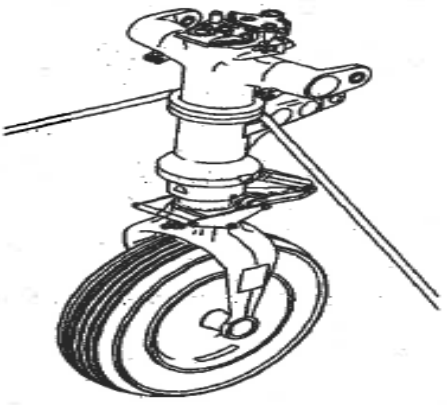
Connect static ground cable.
Install protective covers
Attach ropes to main landing gear and nose landing gear and secure to parking apron.

NOTE: Do not wrap rope around hydraulic lines or electrical wiring when securing the gear strut.





DETAIL B
MAIN GEAR



DETAIL A
NOSE GEAR

DE-ICING

All critical components (wings, control surfaces and engine inlets as an example) should be free of snow, ice or frost before takeoff. The deicing process is intended to restore the airplane to a clean configuration so that neither aerodynamic characteristics nor mechanical interference from contaminants will occur

Deicing and anti-icing fluids are both aqueous solutions which work by lowering the freezing point of water in either the liquid or crystal phase, thus delaying the onset of freezing. For this reason, they are referred to as Freezing Point Depressant (FPO) fluids. Deicing fluid is classified as Type I (deicing) or Type II/Type IV (anti-icing). The one-step method of airplane deicing utilizes only Type I fluid. The two-step approach to airplane deicing utilizes Type I fluid to deice the plane, followed rapidly by application of Type II or Type IV fluid to delay the onset of refreezing.

(1) Type I and Type II/Type IV fluids have time limitations before refreezing begins. This time limitation is referred to as "holdover tlrne," and Type II/Type IV anti-icing fluids have a much longer holdover time than Type I deicing fluids. Because holdover time is highly dependent on a number of factors, charts can provide only approximate estimates. Refer to manufacturer's data sheets for holdover times. It remains the responsibility of the flight crew to determine the effectiveness of any deicing or anti-icing procedure.

CAUTION: TYPE I AND TYPE II/TYPE IV FLUIDS ARE NOT COMPATIBLE AND MAY NOT BE MIXED. ADDITIONALLY, MOST MANUFACTURERS PROHIBIT MIXING OF BRANDS WITHIN A TYPE

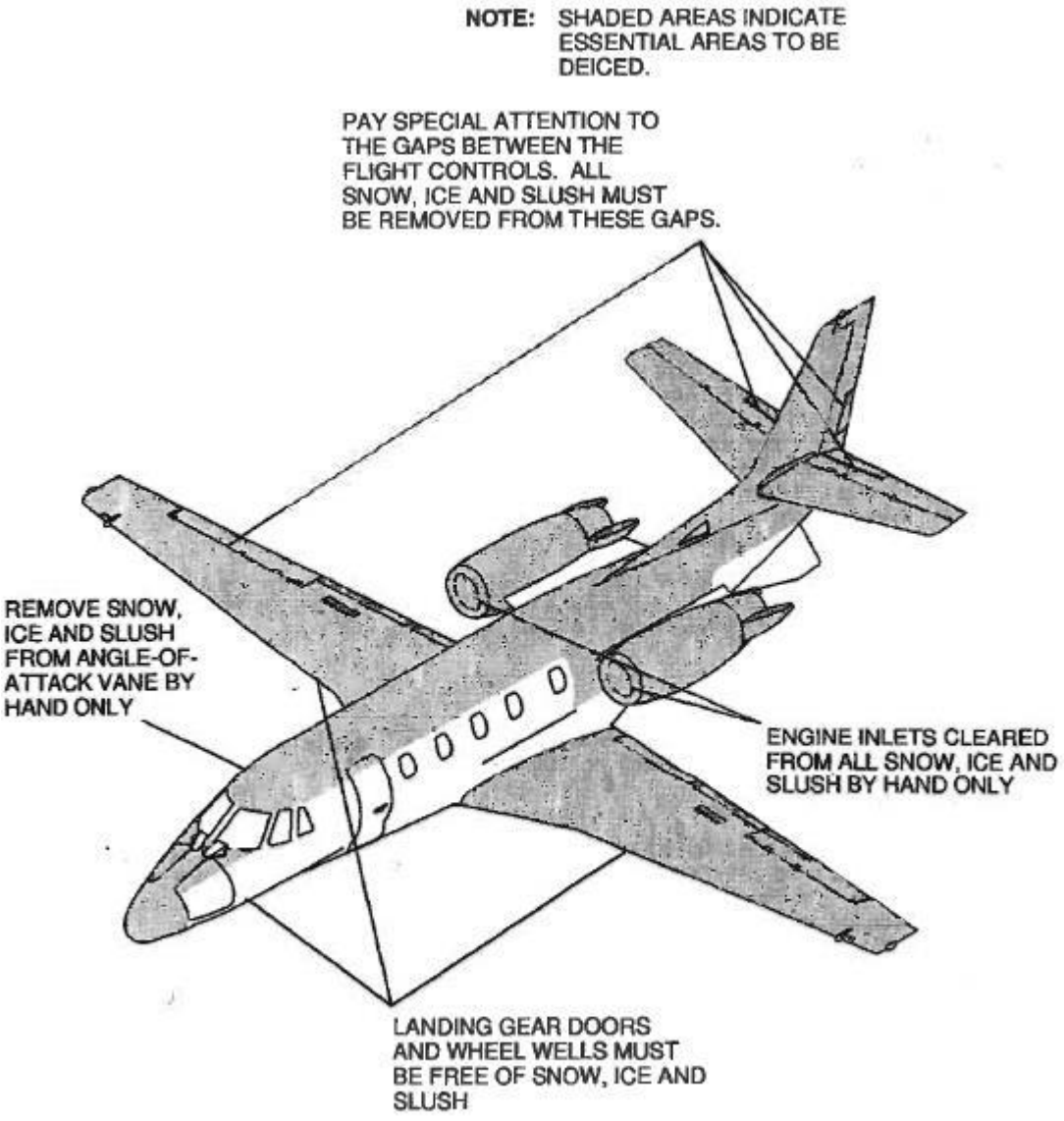
Deicing/Anti·Icing Precautions

A. Before Type I deicing procedures begin, maintenance personnel should familiarize themselves with areas to be sprayed and areas to avoid a direct spray of fluid. Refer to Figures for areas to be sprayed and for application sequence.

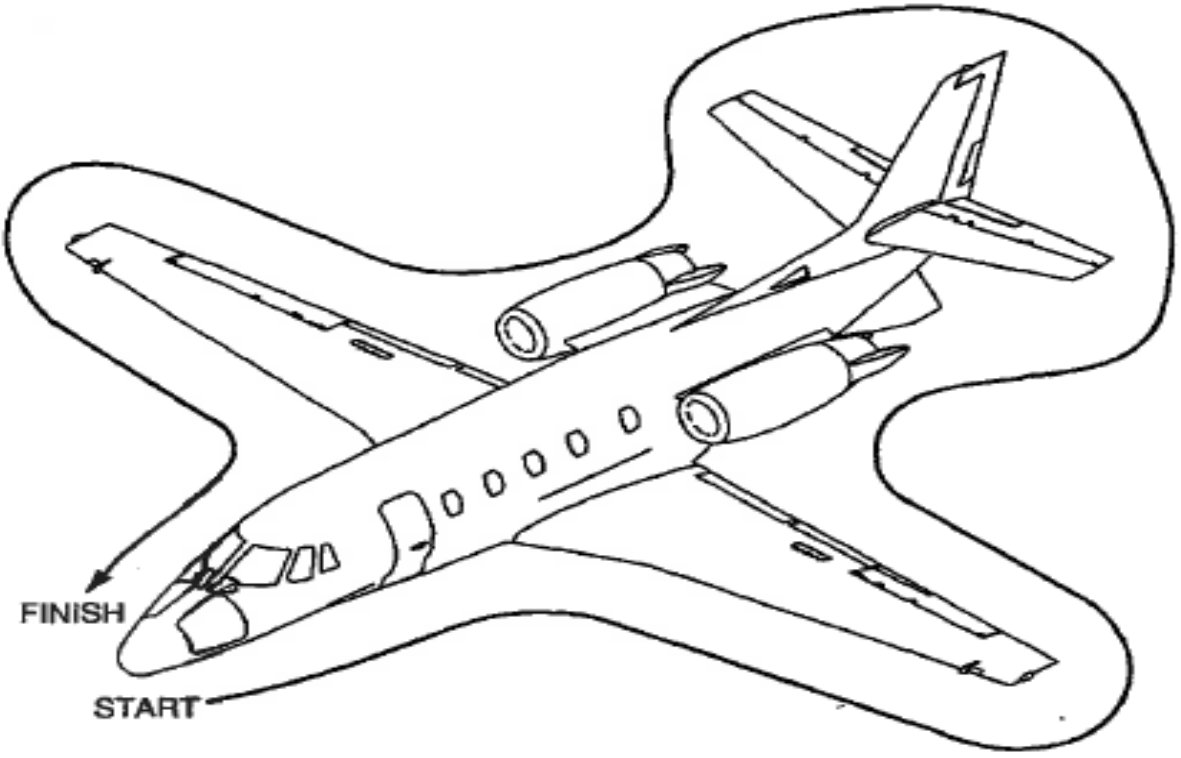
B. Type I deicing fluids should never be used full strength (undiluted). Undiluted glycol fluid is quite viscous below 14°F (-10°C) and can actually produce lift restrictions of about 20 percent. Additionally, undiluted glycol has a higher freezing point than glycol/water mixture.

C. If deicing/anti-icing procedures are performed with engines running, all cabin air intakes and bleed air valves should be turned off.

D. Before Type II or Type IV anti-icing procedures begin, maintenance personnel should familiarize themselves with areas to be sprayed and areas to avoid spraying. Type II or Type *IV* anti-icing is applied primarily to protect wings, control surfaces and fuselage areas ahead of engine inlets to protect engines from possible ice ingestion.


NOTE: SHADED AREAS INDICATE ESSENTIAL AREAS TO BE DEICED.
PAY SPECIAL ATTENTION TO THE GAPS BETWEEN THE FLIGHT CONTROLS. ALL SNOW, ICE AND SLUSH MUST BE REMOVED FROM THESE GAPS.
REMOVE SNOW, ICE AND SLUSH FROM ANGLE-OF-ATTACK VANE BY HAND ONLY
ENGINE INLETS CLEARED FROM ALL SNOW, ICE AND SLUSH BY HAND ONLY
LANDING GEAR DOORS AND WHEEL WELLS MUST BE FREE OF SNOW, ICE AND SLUSH

NOTE: BY STARTING DEICE APPLICATION AT LEFT NOSE, THE PILOT CAN GET A CONSERVATIVE ESTIMATE OF ICE REFORMATION FROM INSIDE THE COCKPIT. SINCE THIS WAS THE FIRST AREA DEICED, IT WILL BE THE FIRST AREA TO EXPERIENCE NEW ICE REFORMATION.



Deicing Procedures

A. Preliminary removal of heavy accumulation of snow may be accomplished using brooms or other similar methods. Exercise caution when brushing around antennas, windows, flight controls, deice boots, probes, vanes and similar obstructions.

B. Refer to Figures for areas to spray, for areas to avoid directly spraying and for sequence of application.

C. If deicing is to be followed by anti-icing, anti-icing should begin immediately after completion of the deicing procedure.

NOTE: It is the heat of the deicing fluid which melts ice and snow. The only function of glycol in the deicing solution is to lower the freezing point of the fluid which remains on the airplane.

D. Spraying Hints For Type I Fluid.

(1) The fluid should be sprayed on the airplane in a manner which minimizes heat loss of fluid to the air. Fluid should be sprayed in a solid cone pattern of large coarse droplets.

(2) Fluid should be sprayed as close as possible to the airplane surfaces, but not closer than approximately 10 feet if a high pressure nozzle is used.

(3) If a thick layer of frozen snow or ice is on the airplane surface. it is better to concentrate a directed spray of heated fluid on one area until that section of the airplane is cleaned. The hot fluid will heat the airplane surface, and the heated surface will helP. to loosen the frozen bond of ice and snow around the cleaned area.

(4) When spraying the wing and tail areas, spray from the tip inboard and from the leading to the trailing edge. This procedure takes advantage of dihedral to aid in fluid dispersion.

(5) Ensure that upper fuselage is cleared to prevent chunks of ice and snow from being ingested into the engine during or after takeoff.

(6) Windshields and windows should not be sprayed directly.

(7) Pitot heads and static ports should not be sprayed directly.

E. Deice the airplane. Refer to Figure for application sequence.

NOTE: Record the time that deicing procedures begin. The length of time that deicing fluids remain effective is known as "holdover time" and is highly dependent on a number of variables. Refer to FAA Tables for Type I deice fluid approximate holdover times.

(1) Deice pilot side nose section and upper fuselage.
(2) Deice cabin fuselage behind pilot side.
(3) Deice left wing.
(4) Deice left fuselage behind wing.
(5) Deice tail section – left side.
(6) Deice tail section – right side.
(7) Deice right fuselage behind wing.
(8) Deice right wing.
(9) Deice cabin fuselage in front of wing.
(10) Deice copilot side nose section and upper fuselage.
(11) If anti-icing fluid is to be applied, skip steps (12) and (13) and proceed to Anti-Icing Procedure. If no anti-icing fluid is applied, refer to steps (12} and (13).
(12) Complete post-deice checks. Refer to Post-Application Checks.
(13) Convey deicing information to flight crew with the following statement: "This airplane has been deiced using Type x deicing fluid with a freezing point of x C. Holdover time began at :

. **Anti-Icing Procedure**

WARNING: TYPE II OR TYPE IV ANTI-ICING FLUIDS SHOULD NEVER BE APPLIED IN DILUTED FORM. IN ADDITION, TYPE II OR TYPE IV ANTI-ICING FLUIDS MUST NEVER BE APPLIED TO PITOT HEADS, ANGLE-OF-ATIACK VANES, CONTROL SURFACES, WINDOWS AND WINDSHIELD, FUSELAGE NOSE, LOWER SIDE OF RADOME, STATIC PORTS, AIR INLETS OR ENGINES.

NOTE: Type II or Type IV anti-icing fluid should be applied within three minutes after deicing is completed due to the limited holdover times of Type I deicing fluid. If Type II or Type IV anti-icing fluid has been applied and the airplane has not been dispatched before new ice has formed, the airplane must be completely deiced again and a second Type II or Type IV anti- icing treatment applied immediately.

NOTE: Record the time anti-icing procedures begin. The length of time an anti-icing fluid remains effective is known as "holdover time". and is dependent on a number of variables. Refer to appropriate manufacturer's information for approximate holdover time of Type II or Type IV anti-ice fluid in undiluted form.

NOTE: Anti- icing fluid is applied to the airplane surface at low pressure to form a thin film on surfaces. Ideally, Type II or Type IV anti-icing fluids should just cover the airplane surfaces without runoff. Type II or Type IV anti-icing fluids are applied only from the wing section aft, and on upper fuselage surfaces ahead of engine inlets.

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(1) Refer to Figures for areas to apply anti-ice fluid, for areas to avoid and for application sequence.
(2) Apply anti-ice fluid to left wing.
(3) Apply anti-ice fluid to left tail section and empennage.
(4) Apply anti-ice fluid to right tail section and empennage.
(5} Apply anti-ice fluid to right wing.
(6) Complete post-application check.
(7) Convey anti-icing intormation to flight crew with the following statement: "This airplane has been anti-iced using Type II or Type IV anti-icing fluid. Holdover time began at "

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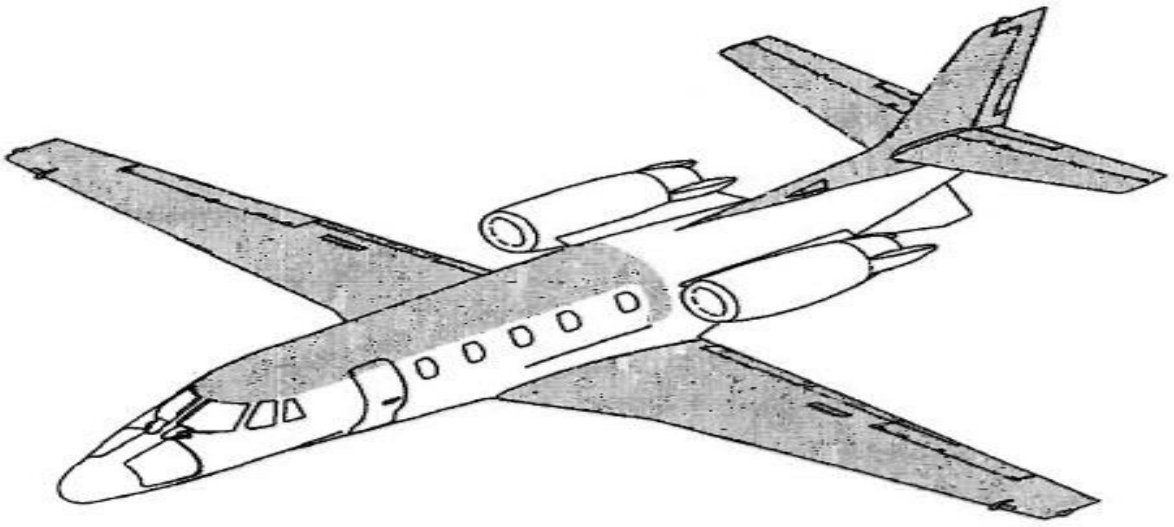
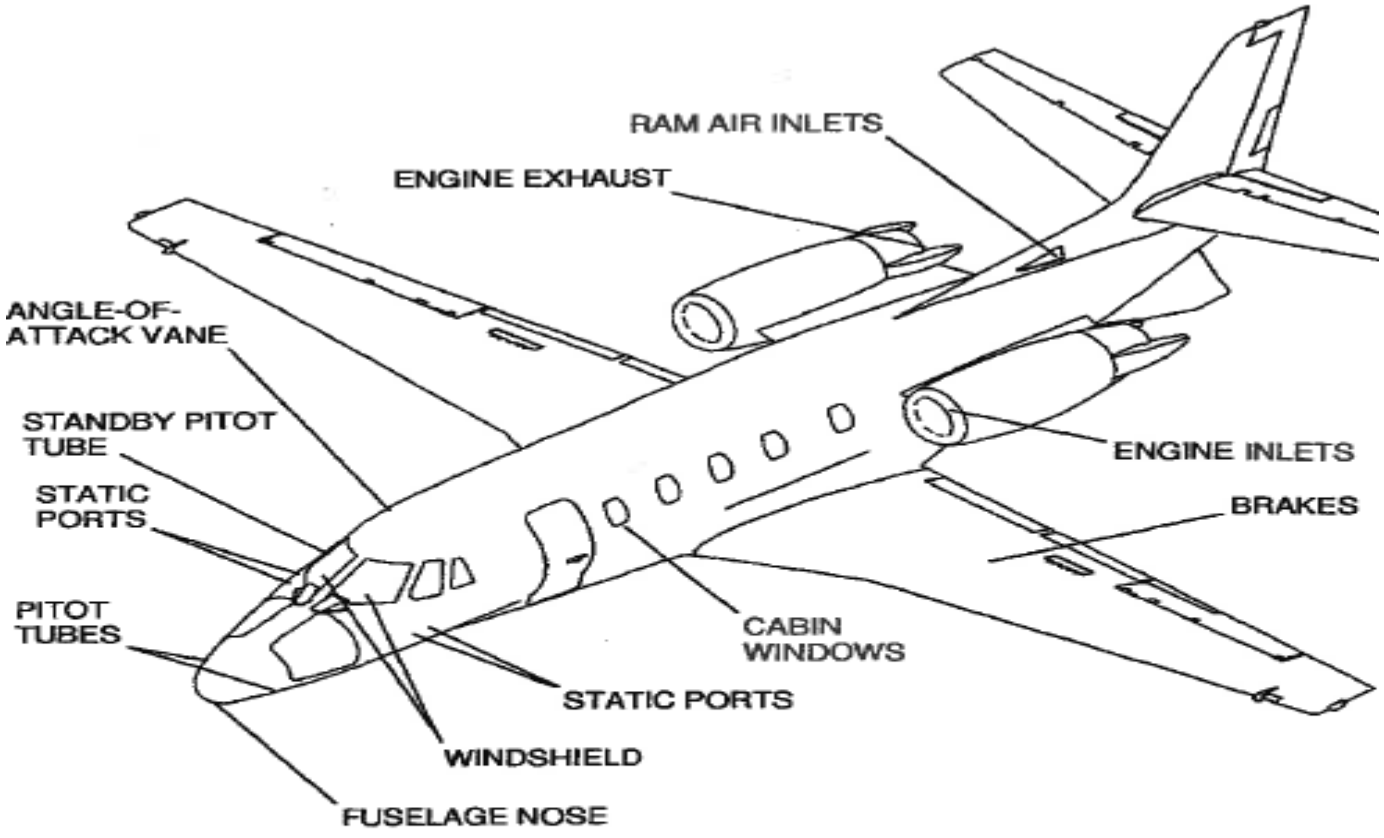
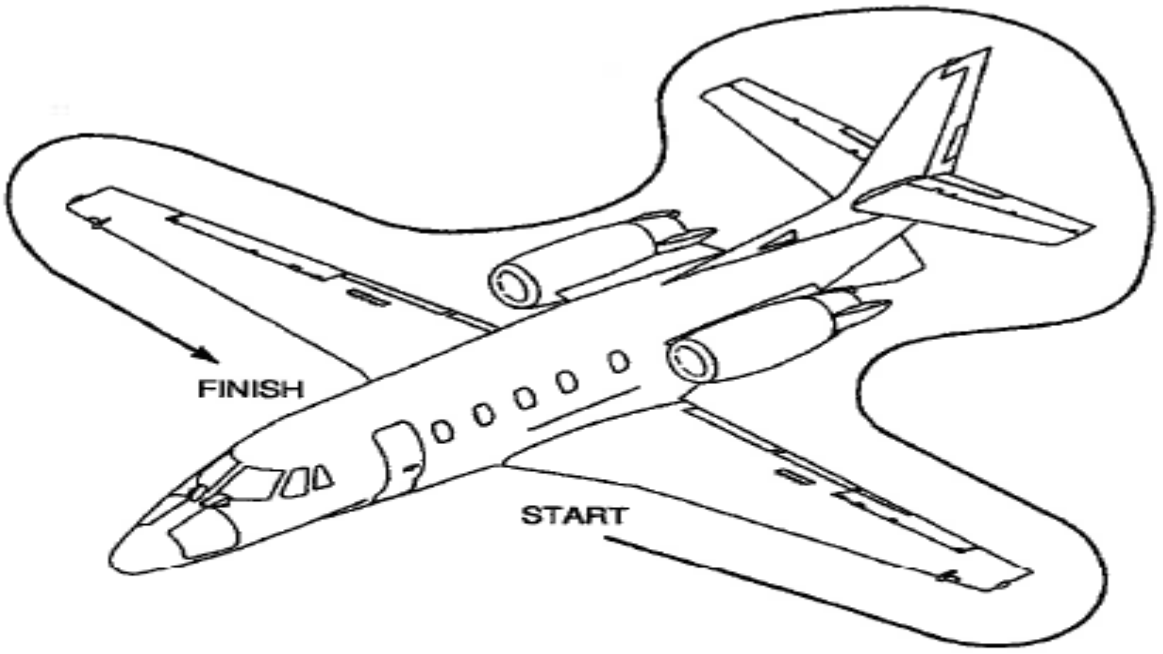
NOTE: THE SHADED AREAS INDICATE AREAS WHERE ANTI-ICE FLUID IS APPLIED. UPPER FUSELAGE IS ANTI-ICED TO PRECLUDE ICE FORMATION WHICH COULD BE INGESTED INTO ENGINE INLETS.





Anti-Ice Fluid Application Prohibited Areas



NOTE: ANTI-ICE FLUID SHOULD BE APPLIED AT LOW PRESSURE TO FORM A THIN FILM ON SURFACES. FLUID SHOULD JUST COVER AIRPLANE WITHOUT RUNOFF.

8. Post-Application Checks

A. After the airplane has been deiced or anti-iced, maintenance personnel should perform a post application check to ensure that all critical areas are free of ice, snow or slush. These critical areas are as follows:

(1) Wing leading edges, upper surfaces and lower surfaces.
(2) Horizontal and vertical stabilizers.
(3) Alf control surfaces and control surface gaps.
(4) Speed brakes and thrust attenuators.
(5) Windshields for clear visibility.
(6) Engine inlets.
(7) All fuselage surfaces ahead of engine inlets.
(8) Antennas.
(9) Angle-of-Attack vanes, pitot heads and static ports.
{10) Fuel tank and fuel cap vents.
(11) Air inlet scoops.
(12) Landing gear, wheel wells and associated cables, pulleys and miscellaneous hardware

Wheel Brake And Main Gear Wheel Well Deicing Procedure

A. Wheel Brake Deicing.

(1) In the event brake freeze-up is encountered from ice forming after the airplane has been parked on the ramp, and full deicing procedures are not required, the following should be accomplished to remove the ice from the brake area.
(a) Utilize a ground heater if available.
(b) Spray or pour isopropyl alcohol on the brakes.
(c) Cycle the brakes asymmetrically while applying engine power.

CAUTION: EXERCISE CARE WHEN USING A GROUND HEATER TO DEICE THE BRAKES IF AIRPLANE IS SETIING ON ICE OR IS IN CLOSE PROXIMITY TO OTHER PARKED AIRPLANES.

(d) In known slush conditions, spraying alcohol on the brakes prior to taxi and takeoff will help prevent brake freeze-up in flight.

B. **Main Gear Wheel Well Deicing**.

NOTE: Follow manufacturer's instructions for best results and economy.

(1) In known slush and ice forming conditions, apply ICEX or similar product in the wheel well area to prevent ice buildup during taxi. Area of primary importance is the main gear door hinge line. Ice buildup in this area will not allow the main gear to lock in the up position.

FUELING

Safety and Maintenance Precautions

A. Safety Precautions.

(1) Ground the fueling/defueling equipment (vehicle or fuel hydrant equipment) to the airplane with designated grounding cable(s). Ensure fueling/defueling equipment is grounded to an approved static ground. Ground the airplane to an approved static ground with grounding cable. Ground fuel nozzle to appropriate ground near the fuel filler. Ground airplane as follows:
(a) Ground airplane first.
(b) Ground vehicle (or hose cart) to the same ground as the airplane.
(c) Bond vehicle (or hose cart) to airplane.
(d} Bond refuel nozzle to airplane

(2) Ensure fire fighting equipment is positioned and immediately available.

(3) Do not wear clothingthat has a tendency to generate static electricity, such as nylon or synthetic fabrics.

(4) Do not wear metal taps on shoes.

(5) The airplane should be in a designated fuel loading/unloading area.

(6) High-wattage, pulse transmitting avionics equipment shall not be operated in the vicinity of the fueling/defueling operation.

B. Maintenance Precautions.

(1) Use designated equipment for fuel loading/unloading to prevent contamination.

(2) Due to the chemical composition of anti-ice additive, improper blending of fuel and anti-icing additive may cause deterioration of the integral fuel tanks interior finish, thus promoting corrosion. It is of paramount importance that proper anti-ice additive blending procedures be followed.

(3) Use authorized type of fuel and anti-ice additive.

(4) During defueHng,ensure anti-ice additive blended fuel and unbtended fuel are not mixed.

4. Fuel Loading

CAUTION: ENSURETHE PROPER GRADE AND TYPE OF FUEL IS USED TO SERVICE THE AIRPLANE. REFERTO FAAAPPROVED AIRPLANE FLIGHT MANUAL FOR A LIST OF APPROVED FUELS.

A. Approved fuels for the Model 560 EXCEL airplane may or may not contain an anti-ice additive. The additive incorporates a biocidal chemical which inhibits growth of fungal and bacterial organisms in fuel storage reservoirs. If fuel reservoirs become contaminated with fungi or bacteria, refer to Chapter 28, Fuel Contamination - Maintenance Practices. Mixing anti-ice additive and fuel during refueling involves the utilization of an aerosol or proportioner dispenser. Refer to Tools and Equipment.

B. Overwing Tank Filling Procedures.

WARNING: OBSERVE ALL SAFETY AND MAINTENANCE PRECAUTIONS WHEN HANDLING FUEL.

WARNING: ENSURE THAT FUEL SUPPLY UNIT IS GROUNDED AND GROUND TO AIRPLANE IS CONNECTED.

(1) Connect fueling nozzle ground to the airplanes grounding receptacle, located on the lower side of the wing, outboard of the filler cap.
(2) Place a protective pad on the wing adjacent to the fuel filler and remove the filler cap.

NOTE: Due to the position of the key holes, lock freezing may be encountered on airplanes with Jocking-typefiller caps. Heating the key prior to inserting it in the lock will normally thaw the lock; however, putting jet fuel, anti-ice spray or liquid into the lock during inclement weather can reduce the freezing possibilities.

(3) Fill airplane wing tanks.

CAUTION: ENSURE FILLER CAP IS SECURED.

(4) Remove fuel nozzle and protective pad; disconnect fueling nozzle ground and install fuel filler cap.

5. Single·Point Pressure Refueling

CAUTION: ENSURE THE PROPER GRADE AND TYPE OF FUEL IS USED TO SERVICE THE AIRPLANE.

A. The single-point refueling control panel is located on the right side of the fuselage facing forward of the wing leading edge. The control panel consists of the refuel/defuel adapter (receptacle) and a refueling precheck panel. For access to the refueling control panel, open the control panel access door.

B. Single-Point Refuel Airplane.

NOTE: Single-point fuel pressure should not exceed 60 PSI maximum.

(1) Verify fire fighting equipment is readily available.
(2) Open the single-point refueling control panel access door.
(3) Prepare the airplane for refueling by properly grounding the airplane and refueling vehicle/equipment together with an approved static grounding source.
(4) Verify airplane fuel vents are not obstructed.
(5) Remove adapter cap.
(6) Insert the refueling nozzle into the receptacle; turn clockwise and latch in place; open nozzle.
(7) Start fuel flow and perform a system precheck to ensure the pilot valves and/or fuel shutoff valves are operating properly.
(a) On the precheck panel, open the left and right precheck valves. Within 10 seconds, the refueling operation should shut down as indicated by the refueling equipment flowmeter or the flow totalizer.

NOTE: Each high lever pilot valve requires a maximum of 3 GPM for precheck. Therefore, fuel flow rate during precheck should be 6 GPM for the left and right wing tanks. It a refueling shutdown does not occur, discontinue the refueling operation and correct the malfunction.

(b) Close the precheck valves and continue the refueling operation.

(8) When the airplane fuel reservoirs become full, the high level pilot valves cause the fuel shutoff valves to close and fuel flow is discontinued automatically. Shut down pumping equipment (vehicle or hydrant equipment).

(9) Verify the airplane fuel reservoirs are fully serviced by operating and checking the fuel quantity indicators.
(10) Disconnect the refueling nozzle from the adapter (receptacle), install adapter cap.
(11) Close and secure the singl~point refueling control panel access door.
(12) Remove all grounding cables and move the airplane or refueling vehicle from the area.

LOADING

Baggage and Cargo Compartment Classifications and Limitations

The aircraft features a tailcone unpressurized and unheated baggage compartment, inaccessible from the cabin.

Capacities as per manufacturer's aircraft documentation:

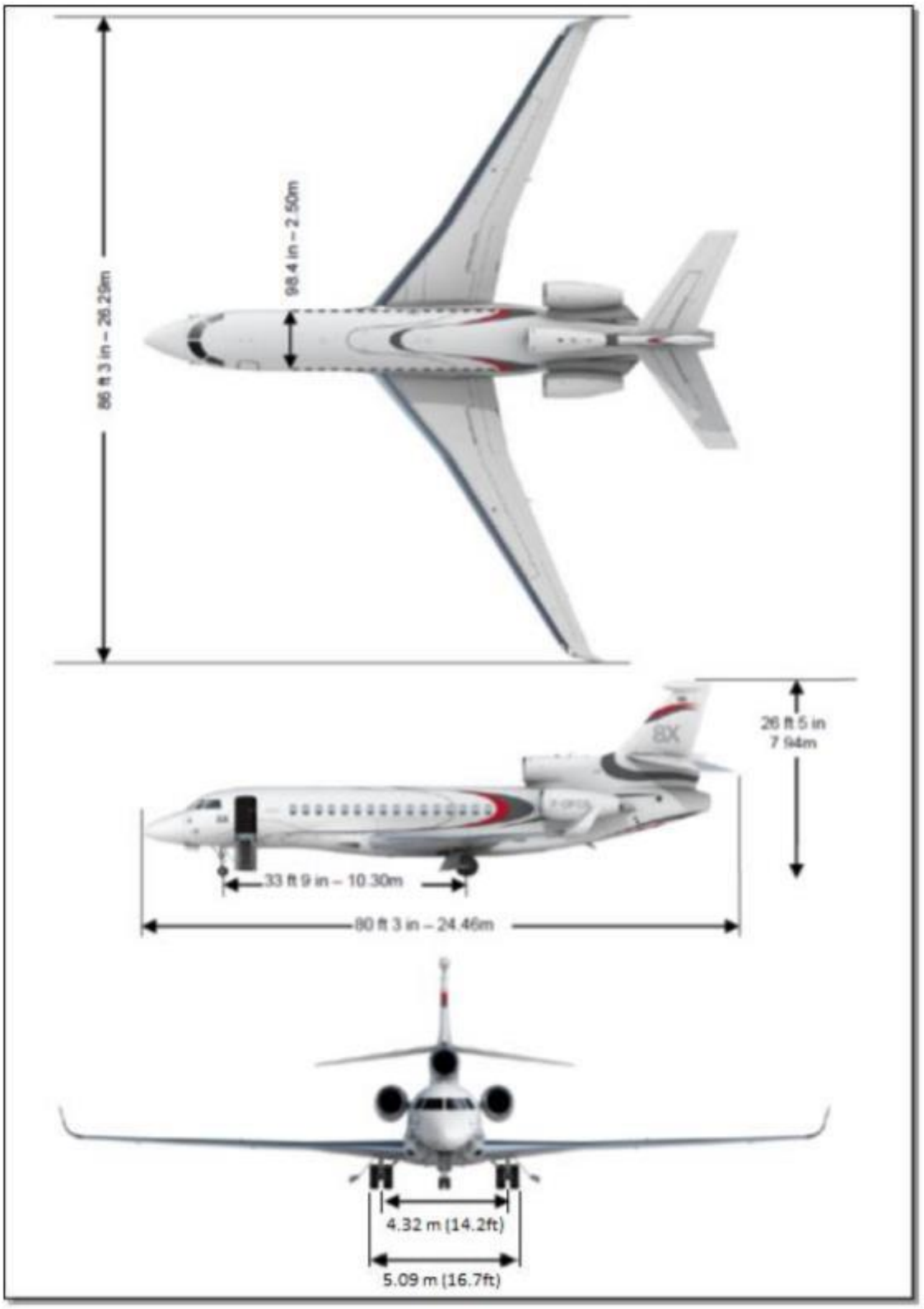
o volume: 2.27 m3

o maximum allowable total load: 318 kg

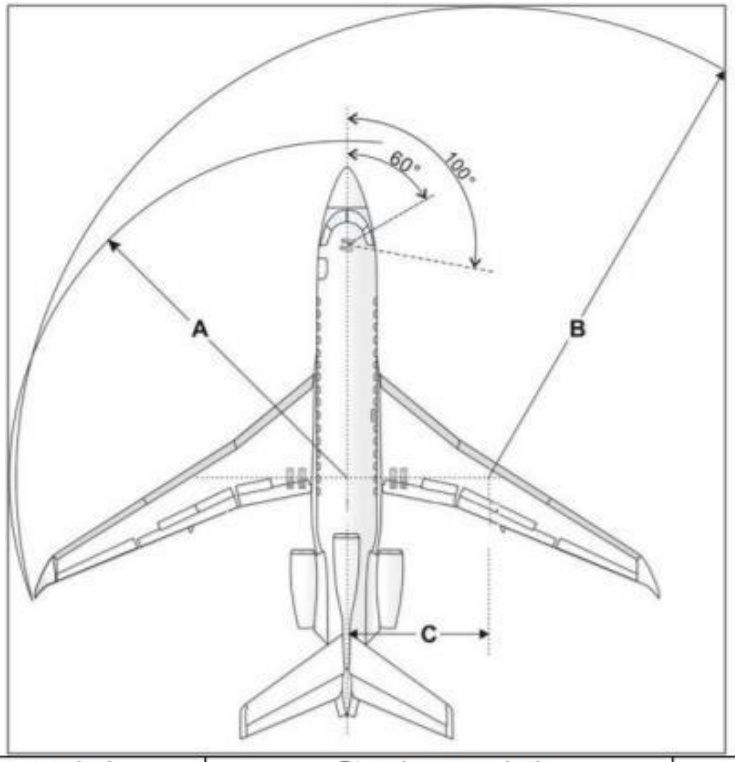
o floor loading limit: 585.90 kg/m2

5. FALCON 8X

Aircraft dimensions



Towing



Steering uncoupled (towing)	Steering coupled (taxiing)	
A : r = 14.11 m / 46.3 ft	**B** : r = 19.75 m / 64.8 ft	**C** : 5.94 m / 19.5 ft
NOTE: The towing bar is specific to the airplane; the onboard bar utilization is limited to 73,200 lb. Towing with a towbarless vehicle is approved provided the appropriate interface tool is used.		

Equipment

The aircraft flyaway kit contains a collapsible tow bar.
On the Falcon 8X, its maximum load is 73,200lbs.

NOTE: 6 wheel chocks and four people are necessary to tow the aircraft with the towing vehicle:
- One operator driving the towing vehicle, -
- One operator in the cockpit, ready to operate the emergency/park brake system if necessary,
-Two operators at the wing tips in charge of checking the clearance from obstacles

– **Connection of the towbar assembly :**

- Install the towbar assembly on the towing lugs.
-Make sure that the towbar locks into position.
- Connect the towbar assembly to the towing vehicle.
- Remove all the ground support equipment and other objects around the aircraft.

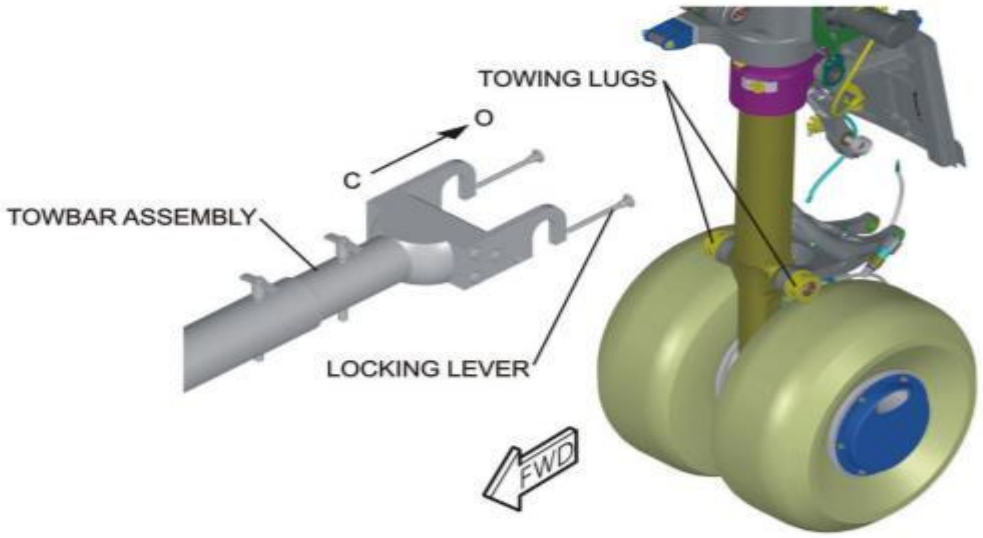
– Remove the wheel chocks.

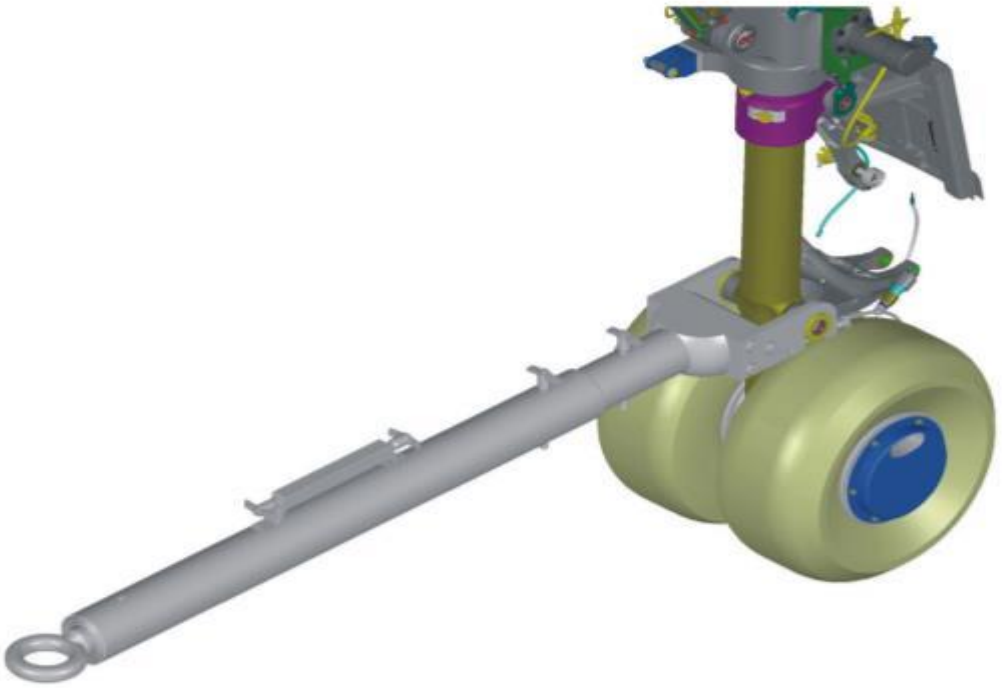
– Release the park brake handle.

– At the end of the towing operation, stop the aircraft with the wheels of the nose landing gear aligned with the aircraft centerline.

– Pull the park brake handle to the first notch.

– Put the wheel chocks in position.


TOWING LUGS
O
C
TOWBAR ASSEMBLY
LOCKING LEVER
FWD



Parking

– Turn the aircraft into the wind.
– Put the wheel chocks in position.
– Move all ground support equipment away from the aircraft.
– Make sure that the horizontal stabilizer is at the 0° position

NOTE

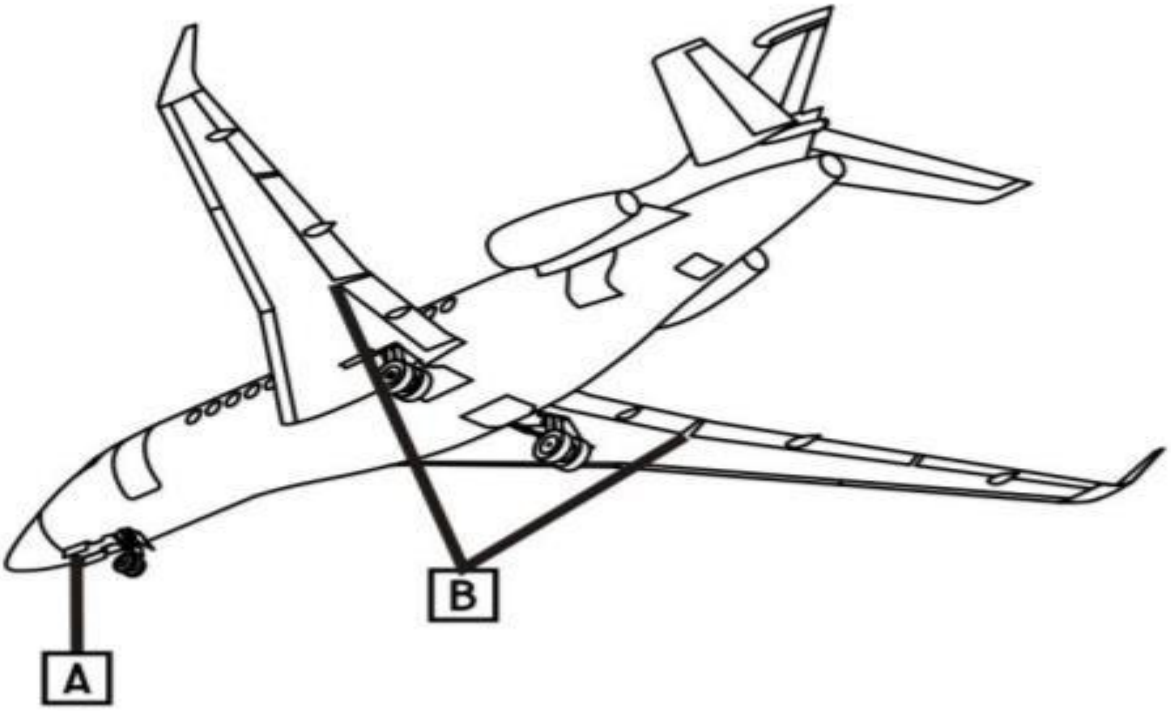
If case of snow, it is mandatory to moor the aircraft at the front mooring point. The snow can accumulate on the wings and on the horizontal stabilizer, and cause the aircraft to tilt rearward. Make sure that the horizontal stabilizer is at the 0° position.

Mooring

The location of the mooring points is as follows:
– one point below frame 1,
– one point below each wing.

If the aircraft is exposed to strong wind, moor the aircraft at the three mooring points. If the aircraft is exposed to snow, moor the aircraft at the mooring point at frame 1.

Do this task during or after the parking of the aircraft


B
A

De-icing

De-icing/anti-icing can be performed with passengers on-board, just before starting.

The APU must not be operated while de-icing/anti-icing is in progress.

It is not recommended to de-ice the airplane with the engines running. If engine operation is required, switch off the air conditioning system.

Do not spray de-icing fluid directly into engine/APU air intakes, exhausts, sensors, vents or drains. Avoid spraying cockpit windshield/windows, radom and nose cone. Any fluid sprayed over these areas must be removed before take-off.

The landing gears, wheels, tires and uplocks must be free of snow, ice or frost.

NOTE: De-icing/anti-icing fluids are harmless to tires and do not cause any damage to the carbon brakes. However, avoid spraying fluid directly onto the brakes, as this may reduce the braking efficiency.

The ground crew in charge of the de-icing/anti-icing process must provide the pilot-in-command with the following instructions:

-Type of treatment
- Fluid concentration in volume
- Treatment starting time
-Type of product used
- Water concentration in volume.
- Date of treatment application.

PFD fluids TYPE I, TYPE II, TYPE III or TYPE IV are approved for airplane de-icing.

For de-icing, use water-diluted fluids (hot water if possible). The sprayed mixture must comply with the values specified in the relevant tables, which enables the crew to check the estimated protection duration

When de-icing, it is possible to repeat spraying, if required, with more concentrated fluid. Wait for a few minutes before spraying again

Anti- icing:

PFD fluids TYPE II, TYPE III or TYPE IV are approved for airplane anti-icing.

Prefer using pure type II, III or IV fluid

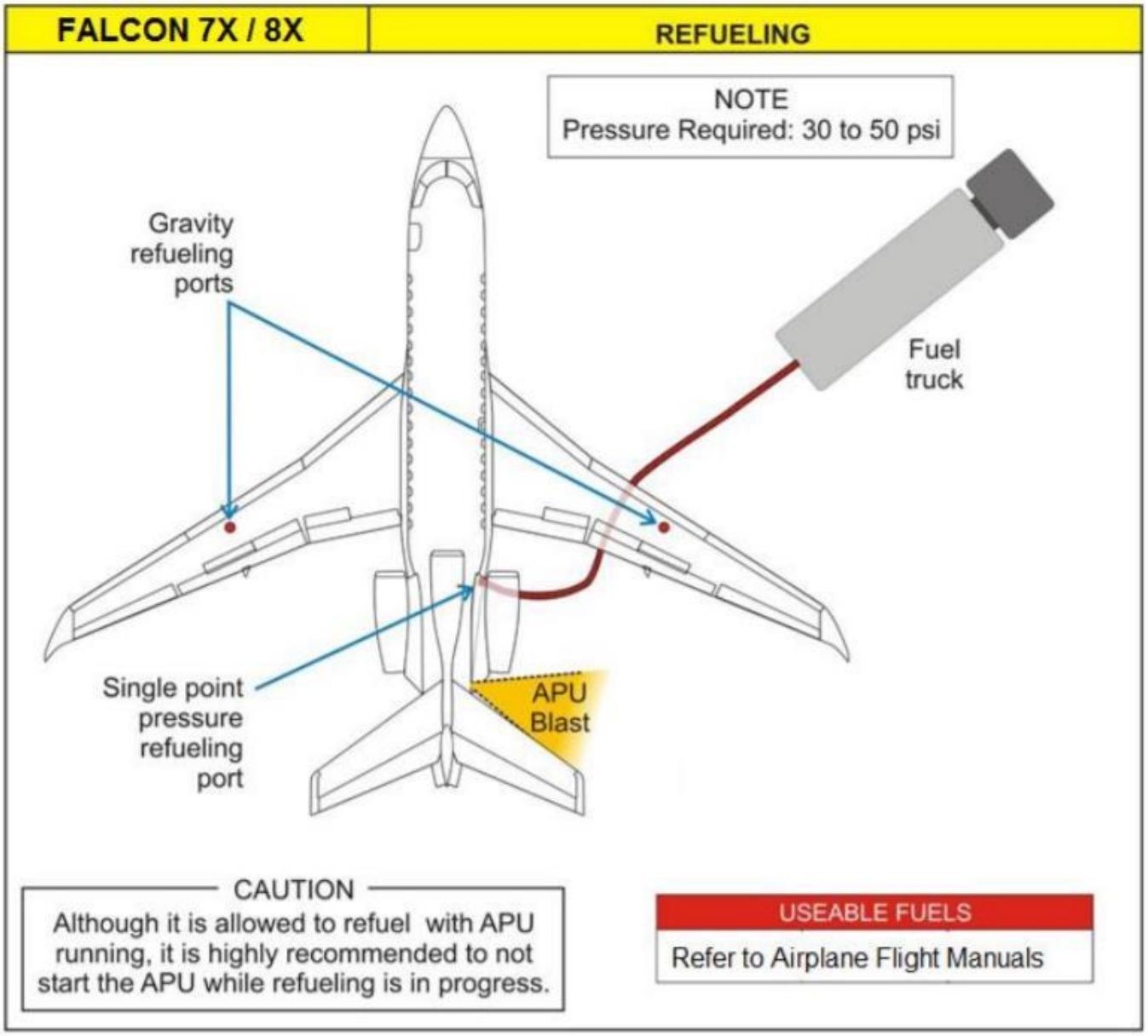
WARNING It is forbidden to perform two successive anti-icing operations on an airplane which has not flown inbetween. This may induce a critical overload for the airplane.

If an aircraft which has been anti-iced does not fly, it must be cleaned through washing-down or through dei-cing if the ambient temperature does not allow washing.

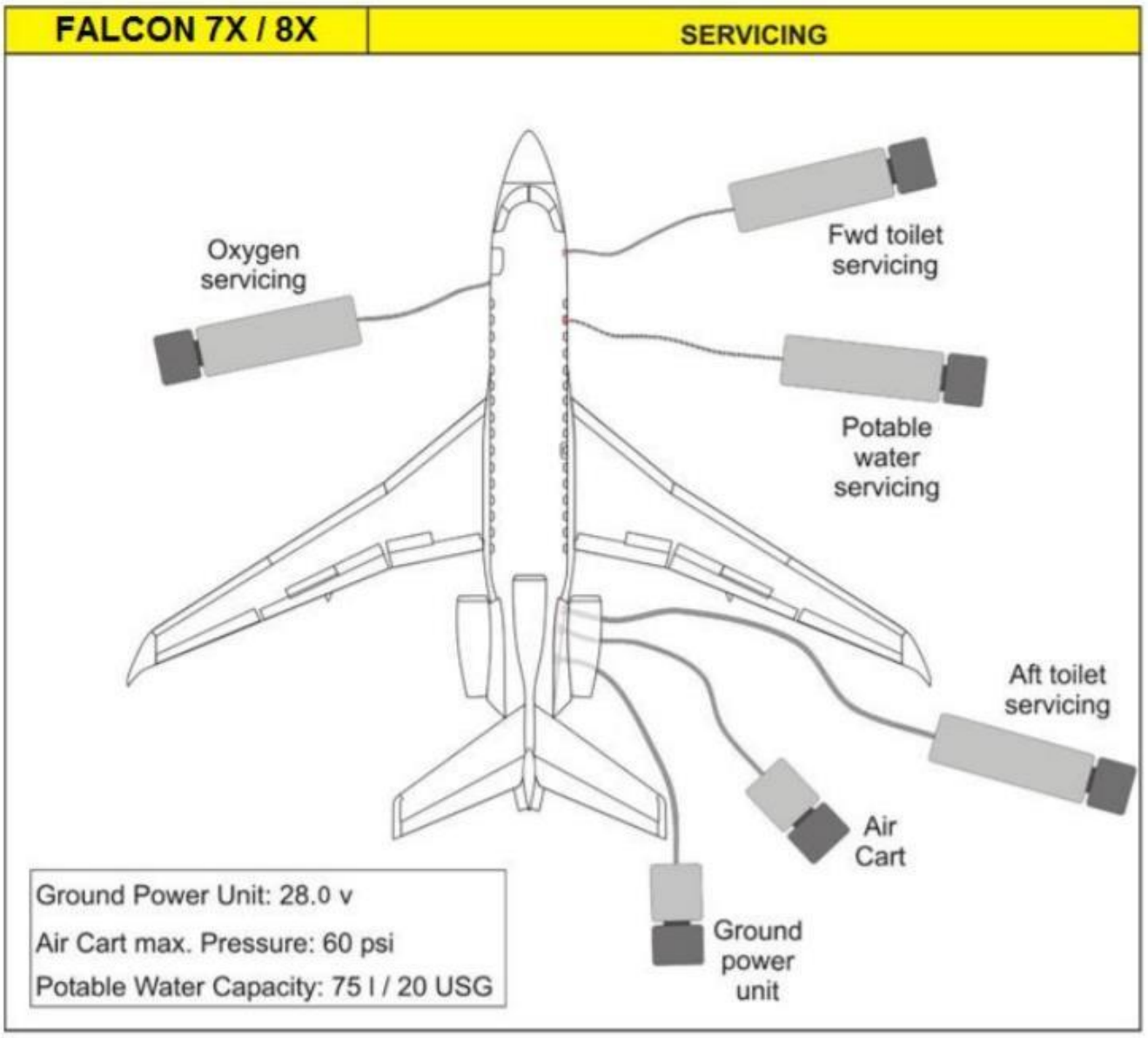

FALCON 7X / 8X
GROUND DEICING RECOMMENDATIONS
No direct spraying

Fueling

The airplane may be pressure- or gravity-refueled or defueled.



Servicing


FALCON 7X / 8X
SERVICING
Oxygen servicing
Fwd toilet servicing
Potable water servicing
Aft toilet servicing
Air Cart
Ground power unit
Ground Power Unit: 28.0 v
Air Cart max. Pressure: 60 psi
Potable Water Capacity: 75 l / 20 USG

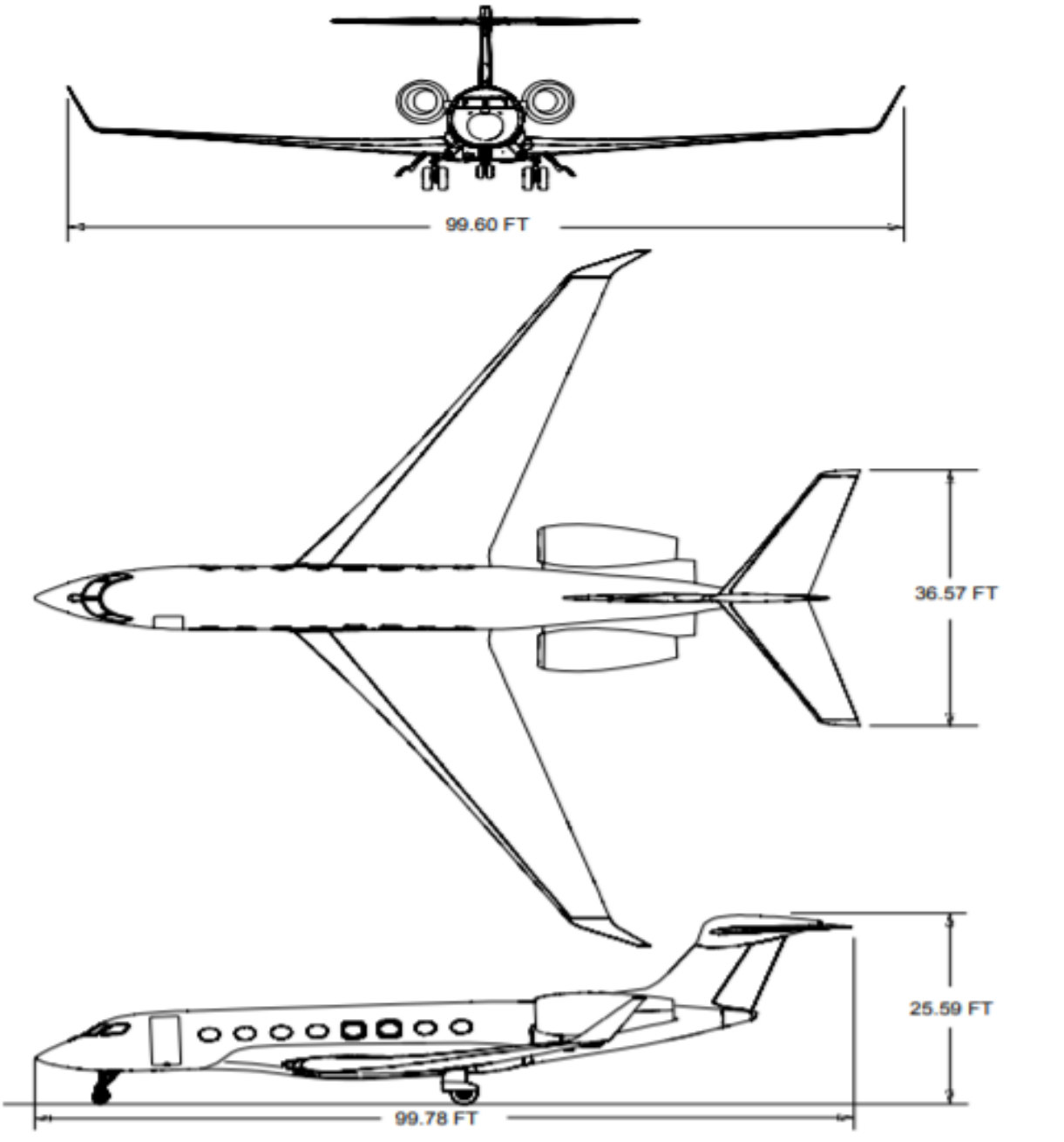
Loading

LOADING			F7X	F8X
Maximum Passengers			19	
Cargo in baggage compartment	Maximum weight	Lb	2,000	
		Kg	907	
	Maximum Load	Lb/m²	661	
		Lb/ft²	61	
		kg/m²	300	
Galley floor maximum Load		Lb/m²	882	
		Lb/ft²	82	
		kg/m²	400	
Cabin and servicing compartment maximum load		Lb/m²	441	
		Lb/ft²	41	

		kg/m²	200
Passenger door	Maximum weight	Lb	1,200
		Kg	560
	Maximum weight on one step	Lb	440
		Kg	200
Maximum Payload		Lb	5,990
		Kg	2,717

Gulfstream 650

Aircraft dimensions



Towing

1 - Nose Landing Gear Towing With Towbar

NOTE: Towing procedures are basically the same as those used for other aircraft equipped with tricycle landing gear. Gulfstream aircraft may be towed forward or be pushed aft on hard surfaces using Gulfstream approved towbars attached to nose gear. Provisions for forward towing are provided by bushings pressed into both ends of hollow nose gear axle fitting. Forward towing is accomplished with specially designed towbars and towing vehicles.

For towing an aircraft in wet or dry conditions up to a maximum ramp weight of 100,000 pounds, tow vehicle shall have a minimum drawbar pull of 12,000 pounds and a minimum manufacturer's rated tow capacity of 120,000 pounds. For towing an aircraft in wet or dry conditions at a reduced aircraft weight of up to a maximum of 83,500 pounds, tow vehicle shall have a minimum drawbar pull of 10,000 pounds and a minimum manufacturer's rated tow capacity of 100,000 pounds. For all ice and snow conditions, refer to tow vehicle manufacturer's recommendations for revising towing capacity and tow vehicle configuration required.

A. Preparation

1 Prepare aircraft for safe ground maintenance
2 Ensure main landing gear and nose landing gear safety pins are installed.
3 disconnect Tire Pressure Monitoring System (TPMS) cable from aircraft and store on upper torque arm assembly dummy connector.
4 Install TPMS protective caps on upper connectors (one TPMS protective cap is on scissors and one is at nose wheel steering actuator).
(e) Remove steering safety (pip) pin from upper torque arm and steering collar unit as follows:
(a) Remove safety lanyard for pip pin from landing gear structure.
(b) Remove safety pin from right side of pip pin.
(c) Depress pip pin plunger. Remove pip pin from nose wheel steering upper torque arm and steering unit collar.

NOTE: Nose wheel steering upper torque arm is spring-loaded to lie forward. This prevents torque arm from falling back while aircraft is being towed.

5 Slowly lower nose wheel steering upper torque arm.

6 Insert and inspect pip pin in steering collar unit as follows:
(a) Ensure balls work freely when plunger is depressed.
(b) Ensure balls cannot be moved when plunger is released.
(c) Discard pip pin that fail this inspection.
CAUTION: TO PREVENT POSSIBLE DAMAGE TO AIRCRAFT, SECURE PIP PIN IN NOSE WHEEL STEERING COLLAR.
(d) Insert pip pin in nose wheel steering collar unit.
(e) Inspect for position of locking balls by attempting to withdraw pip pin without depressing plunger.

WARNING: VISUALLY INSPECT NOSE GEAR SHOCK STRUT FOR MINIMUM OF 2 INCHES AND MAXIMUM OF 9 INCHES EXTENSION FROM STOP TO BOTTOM OF GLAND NUT PRIOR TO TOWING THE AIRCRAFT. EXCEEDING MINIMUM / MAXIMUM EXTENSION MAY CAUSE SERIOUS INJURY TO PERSONNEL AND EXTENSIVE DAMAGE TO AIRCRAFT.

7) Verify dimension X is within specified limits of 2 inches minimum extension and 9 inches maximum extension from stop to bottom of gland nut

(a) If dimension X is not within limits, do not tow aircraft until corrected.
(b) If aircraft has not been refueled / defueled, consider adding or removing fuel to enable change in gross weight to lower or raise aircraft.
(c) If dimension X still is incorrect, inflate / deflate nose strut as required

B. **Procedure**

CAUTION: DO NOT ATTEMPT TO TOW AIRCRAFT WITH TOWBARS THAT ARE NOT APPROVED FOR USE ON THIS AIRCRAFT. USE OF TOWBARS OTHER THAN APPROVED TOWBARS MAY RESULT IN DAMAGE TO AIRCRAFT OR EQUIPMENT. IF TOWBAR IS NOT EQUIPPED WITH SHEAR PROTECTION, EXTREME CARE SHALL BE TAKEN TO ENSURE MAXIMUM TOWING LOAD IS NOT EXCEEDED.

(1) Connect towbar to nose landing gear axle.
(2) Connect towbar to towing vehicle. (
3) Disconnect ground wire from aircraft to ground.
(4) Position a qualified person in cockpit during all towing operations to watch for hazardous conditions and to stop aircraft in event towbar becomes disengaged from towing vehicle.

NOTE: It is desirable to establish communication between tow vehicle operator and person in cockpit.

(5) Check hydraulic brake accumulator gage in cockpit for available brake pressure.

NOTE: With a fully charged accumulator (3000 psi) up to six full applications of parking and emergency brake systems are available.

(6) If cockpit gage indicates less than 3000 psi minimum required pressure, select AUX PUMP switch to ON to replenish hydraulic brake pressure.
(7) Select AUX PUMP switch to OFF / ARM after brake accumulator is fully charged.
(8) Ensure flight control surfaces will not move.

NOTE: Gust lock is provided by hydraulic pressure on this aircraft.
(9) Stow tail compartment ladder and close door.
(10) Remove aircraft chocks.
(11) Ensure landing gear is free of obstructions.
(12) Release parking brake.
(13) Position wing and tail walkers as necessary to ensure clearance between aircraft and adjacent structure equipment
(14) Tow aircraft in low gear only, making smooth starts and stops with towing vehicle.
(15) When destination is reached, apply aircraft parking brake.
(16) Install chocks in front and behind left and right main landing gear tires.
(17) Connect ground wire from aircraft to ground.
(18) Disconnect towbar from towing vehicle.

(19) Install steering pip pin as follows:

(a) If necessary, release parking brake.

(b) Depress plunger on pip pin handle and remove from steering collar unit.

(c) Using towbar, move nose wheels to align holes of nose wheel steering upper torque arm and steering collar unit.

(d) Install pip pin by depressing plunger and inserting pin into nose wheel steering upper torque arm and steering unit from left to right.

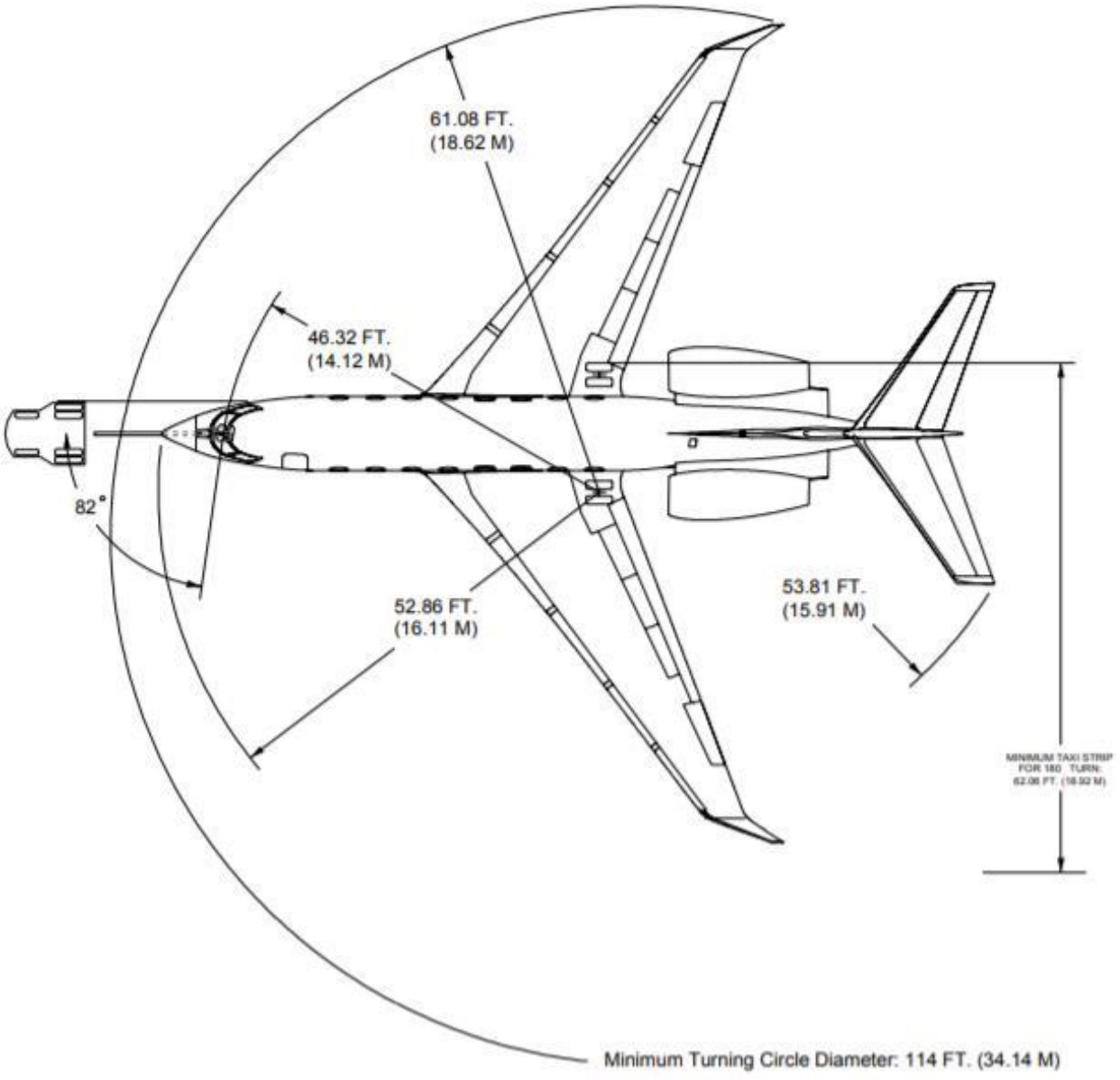
(e) Inspect for position of locking balls by attempting to withdraw pip pin without depressing plunger.

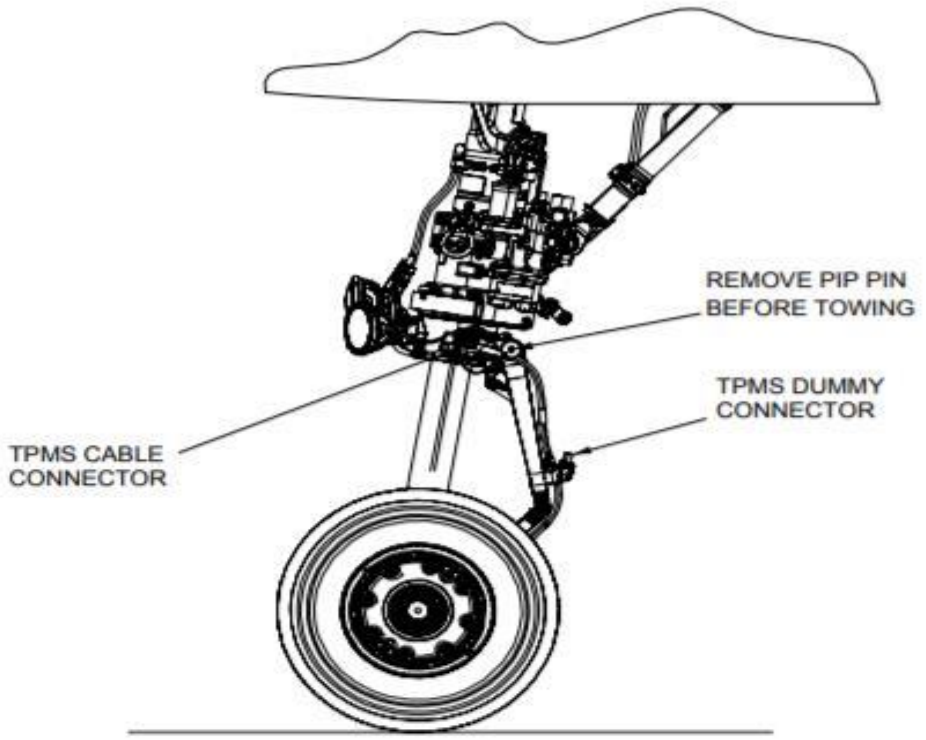
(20) Secure pip pin by connecting safety lanyard to landing gear structure.

(21) Install safety pin in right side of pip pin.

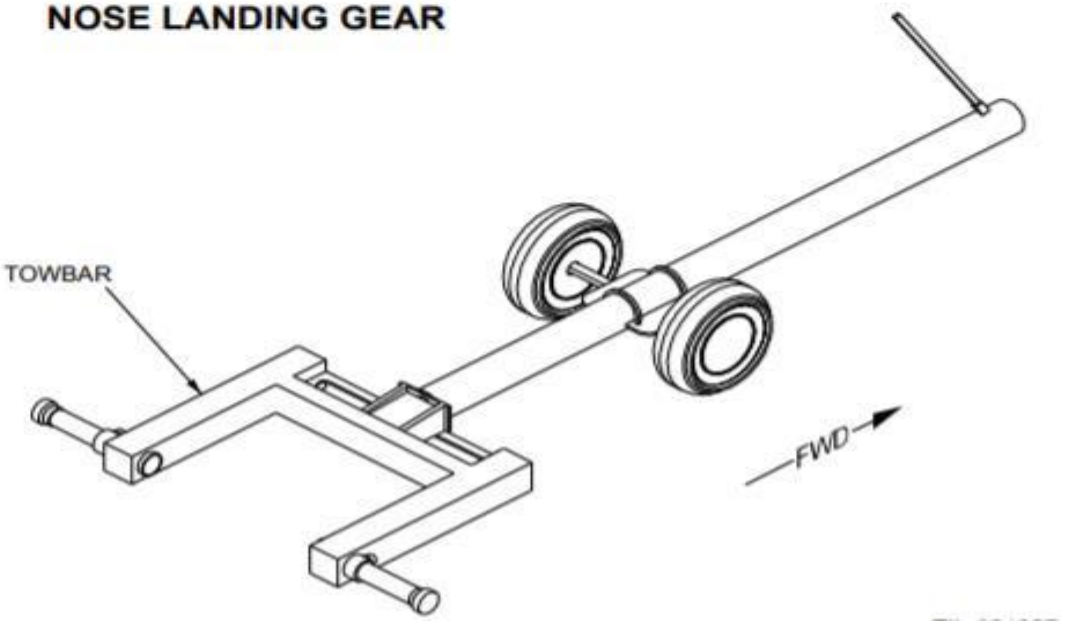
(22) Connect TPMS to aircraft removed in Step 1.A

(23) Disconnect towbar from nose landing gear axle.


61.08 FT.
(18.62 M)
46.32 FT.
(14.12 M)
82°
52.86 FT.
(16.11 M)
53.81 FT.
(15.91 M)
MINIMUM TAXI STRIP
FOR 180 TURN:
62.06 FT. (18.92 M)
Minimum Turning Circle Diameter: 114 FT. (34.14 M)



NOSE LANDING GEAR



2. Nose Landing Gear Towing Without Towbar

NOTE: The Jetporter electric towbarless tug lifts up the aircraft nose landing gear onto a tray and moves the aircraft without the use of a towbar. Towing procedures are basically the same as those used for other aircraft equipped with tricycle landing gear

A. Preparation

1- Prepare aircraft for safe ground maintenance
2- Ensure main landing gear and nose landing gear safety pins are installed.
3- Disconnect the tire pressure monitoring system cable from aircraft and store on upper torque arm assembly dummy connector
4- Remove steering safety (pip) pin from upper torque arm and steering collar unit as follows:
(a) Remove safety lanyard for pip pin from landing gear structure.
(b) Remove safety pin from right side of pip pin.
(c) Depress pip pin plunger. Remove pip pin from nose wheel steering upper torque arm and steering unit collar.
5- Slowly lower nose wheel steering upper torque arm
6 Insert and inspect pip pin in steering collar unit as follows:
(a) Ensure balls work freely when plunger is depressed.
(b) Ensure balls cannot be moved when plunger is released.
(c) Discard pip pins that fail this inspection.
NOTE: Inserting pip pin in power steering unit after torque arm has been disconnected will keep pip pin from being lost or damaged while aircraft is being towed.
(d) Insert pip pin in nose wheel steering collar unit.
(e) Inspect for position of locking balls by attempting to withdraw pip pin without depressing plunger

WARNING: VISUALLY INSPECT NOSE GEAR SHOCK STRUT FOR MINIMUM OF 2 INCHES AND MAXIMUM OF 9 INCHES EXTENSION FROM STOP TO BOTTOM OF GLAND NUT PRIOR TO TOWING THE AIRCRAFT. EXCEEDING MINIMUM / MAXIMUM EXTENSION MAY CAUSE SERIOUS INJURY TO PERSONNEL AND EXTENSIVE DAMAGE TO AIRCRAFT

7 - Verify dimension X is within specified limits of 2 inches minimum extension and 9 inches maximum extension from stop to bottom of gland nut

(a) If dimension X is not within limits, do not tow aircraft until corrected.
(b) If aircraft has not been refueled / defueled, consider adding or removing fuel to enable change in gross weight to lower or raise aircraft
(c) If dimension X still is incorrect, inflate / deflate nose strut66 as required

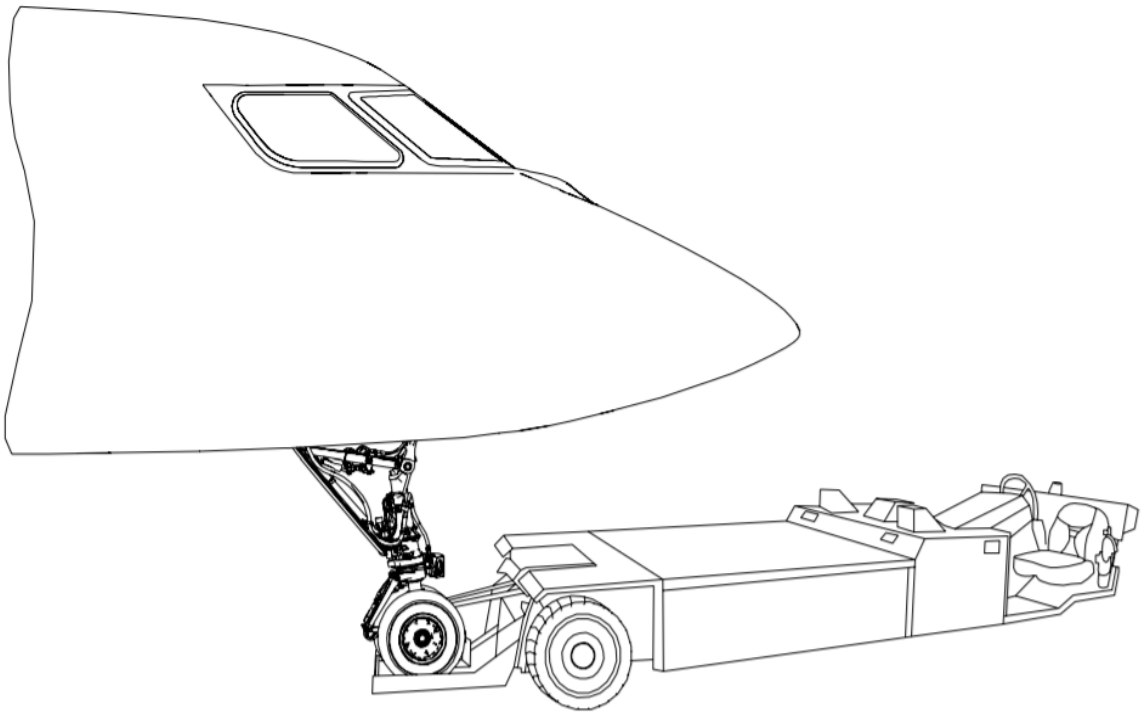
B. Procedure

(1) Disconnect ground wire from aircraft to ground.
(2) A qualified person shall be stationed in cockpit during all towing operations to watch for hazardous conditions and to stop aircraft in event aircraft becomes disengaged from towing vehicle.
NOTE: It is desirable to establish communication between tow vehicle operator and person in cockpit.

3 Check hydraulic brake accumulator gage in cockpit for available brake pressure.

NOTE: Six full applications of parking and emergency brake system may be made with a fully charged accumulator (3000 psi).

(4) If cockpit gage indicates less than 3000 psi minimum required pressure, press AUX PUMP switch to ON to replenish hydraulic brake pressure.
(5) Depress AUX PUMP switch to OFF / ARM after brake accumulator is fully charged.
(6) Ensure flight control surfaces will not move.
(7) Stow tail compartment ladder and close door.
(8) Using Jetporter electric towbarless tug, lift aircraft nose landing gear and secure to tug
9) Remove aircraft chocks.
(10) Ensure landing gear is free of obstructions.
(11) Release parking brake
(12) Position wing and tail walkers as necessary to ensure clearance between aircraft and adjacent structure equipment
(13) Tow aircraft, making smooth starts and stops with towing vehicle.
NOTE: Tow in low gear only.
(14) When destination is reached, apply aircraft parking brake.
(15) Install chocks in front and behind left and right main landing gear tires.
(16) Connect grounding wire from grounding point to aircraft.
(17) Install steering pip pin as follows:
(a) Depress plunger on pip pin handle and remove pip pin from steering collar unit.
(b) Using Jetporter electric towbarless tug, move nose wheels to align holes of nose wheel steering upper torque arm and steering collar unit.
(c) Install pip pin by depressing plunger and inserting pin into nose wheel steering upper torque arm and power steering unit from left to right.
(d) Inspect for position of locking balls by attempting to withdraw pip pin without depressing plunger.
(18) Secure pip pin by connecting safety lanyard to landing gear structure.
(19) Install safety pin in right side of pip pin.
(20) Disconnect the tire pressure monitoring system cable from dummy connector and attach to aircraft.
(21) Using Jetporter electric towbarless tug, lower nose landing gear and release from tug.



Parking

Prepare aircraft for safe ground maintenance;

Set PARK BRAKE after brakes have cooled to ambient temperature

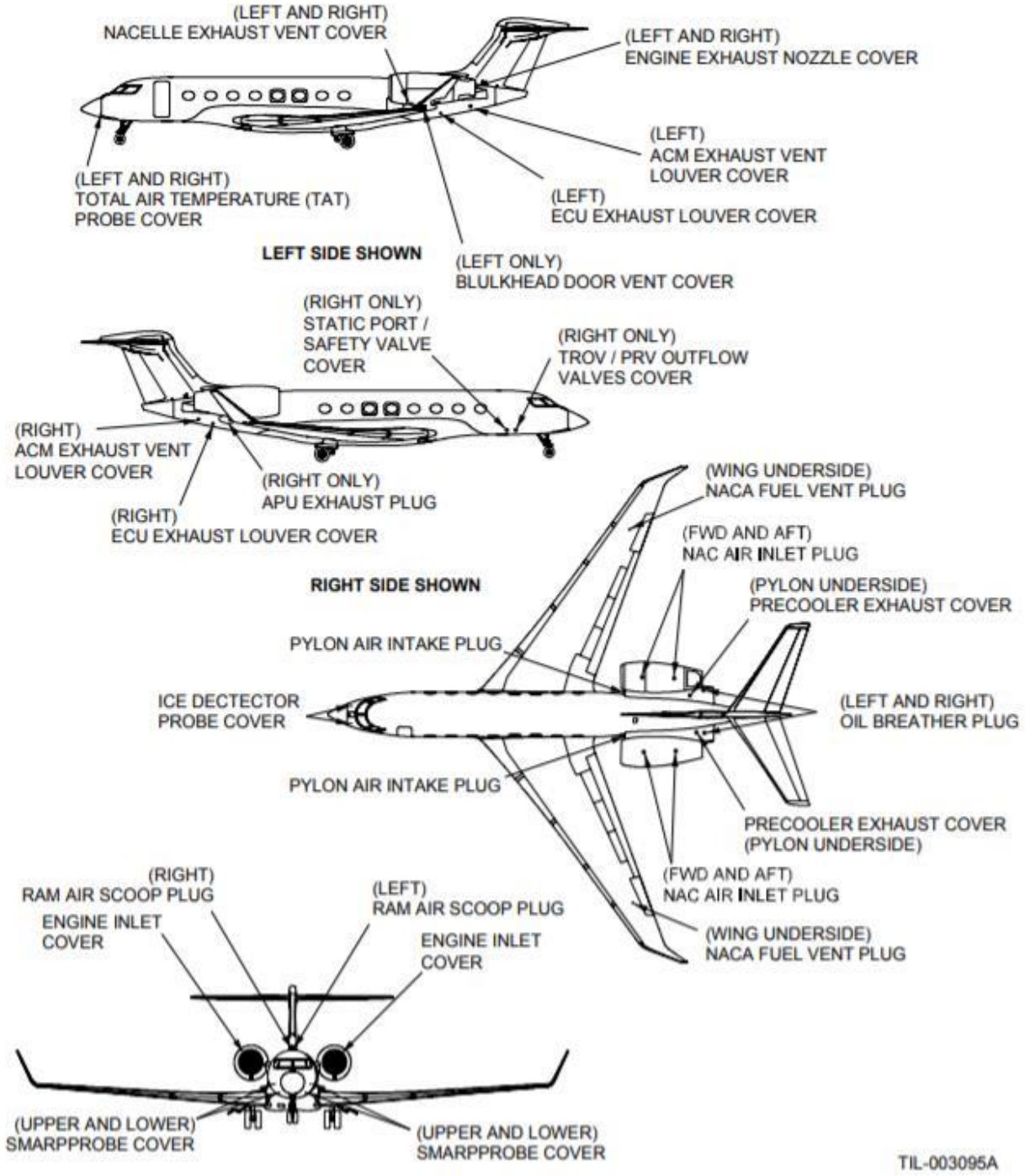
If aircraft is left unattended for a period longer than one overnight stay or if weather conditions make it advisable, install all protective covers

(1) Check BRAKE ACCUM PRESS gage in main wheel well on each side for an indication of at least 700 psig.

CAUTION: DO NOT SET BRAKES PERMANENTLY WHILE THEY ARE IN A HEATED CONDITION.

(2) Set parking brakes by pulling PARK BRAKE handle in cockpit.
(3) Chock main landing gear wheels forward and aft.
(4) Release parking brake after wheel chocks are in place.
(5) Place horizontal stabilizer in zero position.
(6) Install all protective plugs and covers.
(7) Install caution signs, safety pins and red streamers, as required.

(8) Install Ram Air Turbine (RAT) control lockout pin in RAT handle in cockpit.
(9) Close, latch and lock main and baggage doors, as required.



Storage

Flight ready storage

-perform as following:

(a) Purge, drain, flush and clean water and waste systems and other fluids from tanks, galley and lavatories
(b) Install wheel chocks on forward and rear faces of main wheels
(c) Install tie-down lines, if required.
(d) Apply electrical power to aircraft
(e) Cycle flight controls and engine controls.
(f) Place flaps at 0°.
(g) Place horizontal stabilizer in zero position.
(h) Remove electrical power from aircraft
(i) Install all protective plugs and covers. See Figure 303.
(j) Install caution signs, safety pins and red streamers, as required.
(k) Inspect hand-held fire bottles for weight and pressure prior to storage.
(l) If aircraft is inactive 5 days or more, remove battery disconnects
(m) Pull, tag and safety clip the following circuit breakers:

NOMENCLATURE	PANEL	LOCATION
CB1	Forward emergency battery	LEER
CB1	UPS battery	REER
CB1	AFT emergency battery	Baggage EER

(n) If aircraft storage is 30 days or more, perform complete aircraft lubrication
(o) Shut valves to oxygen bottles.
(p) Inspect components in wheel well areas for corrosion.
(q) Apply corrosion inhibiting compound

Short Term Storage

NOTE: Short term storage is defined as a condition of aircraft not intended on being flown for a period up to 6 months. An aircraft of this type is not necessarily considered to be flight ready.

Aircraft Preparation : - Prepare aircraft for safe ground maintenance
- Clean toilets and waste water systems by flushing and draining

Prior to storage perform the following:

(a) Purge, drain flush and clean water and waste systems and other fluids from tanks, galley and lavatories
(b) Install wheel chocks on forward and rear faces of main wheels.
(c) Install tie-down lines, if required.
(d) Apply electrical power to aircraft
e) Cycle flight controls and engine controls.
(f) Place flaps at 0°.
(g) Place horizontal stabilizer in zero position.
(h) Remove electrical power from aircraft.
(i) Install all protective plugs and covers.
(j) Install caution signs, safety pins and red streamers, as required.
(k) Inspect hand-held fire bottles for weight and pressure prior to storage.
(l) Shut valves to oxygen bottles.
(m) Inspect components in wheel well areas for corrosion.
(n) Apply corrosion inhibiting compound.
(o) Completely cover tires and brakes.
(p) Cover nose wheel steering unit, including taxi lights and wheel well openings.
(q) Select ON / OFF switch on front of battery pack to OFF position.
(r) If aircraft is to be stored for 5 days or more, remove battery disconnects from the batteries
(s) If aircraft is to be inactive for more than 5 days, perform the following:
(t) Pull, tag and safety clip the following circuit breakers:

NOMENCLATURE	PANEL	LOCATION
CB1	Forward Emergency Battery	LEER
CB1	UPS Battery	REER
CB1	AFT Emergency Battery	Baggage EER

Long Term Storage

Prior to storage, perform the following:
(a) Cycle all flight controls and airstair door prior to storage to ensure operation.
(b) Fuel System 1 Purge aircraft fuel tanks with nitrogen gas
2 Install plugs and attach red streamers on defueling drains, outboard wing vent plugs and fuel gravity filler with warning not to be opened while tanks are inerted.

(c) Lubrication – as mentioned in the aircraft manual

(d) Controls

1 Perform the following:
2 Place flaps to 0°.
3 Place horizontal stabilizer in zero position

4 Preparation of powerplant and engine fuel system is to be done in accordance with G650 Aircraft Maintenance Manual.
5 Fire Extinguishing System - Inspect all hand fire extinguishers for weight and pressure prior to storage.
6 Environmental Control and Oxygen System - Preserve APU engine for storage
- Remove oxygen bottle(s) and service
- Install all protective plugs and covers
- Install caution signs, safety pins and red streamers, as required

(e) Towing, Parking and Mooring

NOTE: Use tie-down lines and ropes, as required for mooring; however, in event aircraft is not tied down and severe weather is imminent (wind exceeding 30 knots), aircraft shall be moved to a safe location

1 If possible, choose area for storage away from runways, taxiways and other areas where dust and dirt from prop wash and jet exhaust may be a problem. Aircraft shall be moored heading into prevailing wind direction and mooring provisions shall take into consideration possibility of high winds.

2 Availability of towing equipment and servicing facilities shall be considered in picking time for placing aircraft in storage area. Lubrication, preservation, cleaning, servicing and installation of covering and seals may be performed before aircraft is towed to storage site. Drainage of aircraft systems, other equipment and draining / inerting of fuel system are best performed at storage site.

3 Jack aircraft to relieve WOW when feasible. If facilities are not available for blocking, place chocks forward and aft of each wheel with each pair of chocks tied together with rope, wood cleats or any other means which will prevent the chocks from slipping away from tires. Sandbags may be used for aircraft moored on steel mates

4 Ensure good electrostatic ground is available and aircraft is properly connected to it.

(f) Landing Gear

1 Install all ground safety devices.
2 Check for leaks and correct, as required.
3 If aircraft is to be stored on jacks for more than 90 days, preserve shock struts as follows:
a Deflate main and nose landing gear shock struts.
b Do not inflate struts during storage unless aircraft is to be moved.
c Prior to moving aircraft or performing a landing gear functional test, inflate struts with nitrogen
4 Coat exposed portion of piston with hydraulic fluid.
5 Wrap exposed portion of piston with creped greaseproof paper and secure with cloth backed adhesive tape.
6 6 Protect preserved strut with loose fitting waterproof paper or canvas boot

(g) Tire Care

NOTE: The preferred method is to equip aircraft with unserviceable tires and bearings. Tire pressure does not need to be checked in this case. Equip aircraft with serviceable tires and bearings prior to flight.
1 Check tires for proper inflation prior to storage.
2 Tires and brakes should be completely covered.

(h) Nose Wheel Steering Unit

1 Cover nose wheel steering unit, including taxi lights.
2 Cover wheel well openings.

(i) Hydraulic Fluid System
1 Inspect hydraulic lines and components for leaks. Repair as required.
2 Service reservoir to proper level

(j) Batteries
1 Check cockpit switches for proper operation.
2 Select ON / OFF switch on front of battery pack to OFF position.
3 Remove the batteries from aircraft
4 Batteries shall be discharged, shorted and stored at room temperature

(k) Electronic Equipment
The following electronic equipment shall be removed from aircraft, boxed and stored in a secured, environmentally controlled area:
a All quick disconnect equipment (not maintenance acquisition units) mounted in electronic equipment racks.
b All electronic equipment mounted in cockpit sides and pedestal.
c All similar equipment installed by outfitter or operator.

(l) Exterior Protection
1 Touch up painted surfaces with both primer and paint areas where needed. These finishes shall be equivalent to original finish materials.
2 Apply a compatible preservative coating to cabin windows (a wax coating is sufficient).

NOTE: If aircraft is scheduled for repair, maintenance or will be stored where windows will be subjected to possible abrasive damage, clean external surfaces thoroughly and apply layer of paper or equivalent.

(m) Interior Protection

1 Remove debris such as paper, rags, oil, water, etc.
2 Clean interior in accordance with outfitters recommendations to remove dirt and organic matter. Allow interior to air dry completely before storing aircraft.
4 Clean toilets and waste water systems by flushing and draining
5 Purge, drain flush and clean water and waste systems and other fluids from tanks, galley and lavatories
6 Install dust covers as needed. Use only cloth or other porous materials. Do not use plastic film.
7 Cover (not airtight) all exterior openings to prevent entry of rodents, birds, etc

(n) Final Inspection Before Storage
1 Prior to final storage, inspect wings, aft fuselage, wheel wells, tail surfaces and all moveable control surfaces for entrapped water or other fluids. Pools of hydraulic fluid shall be cleaned up as they may cover trapped water.

Aircraft Mooring

NOTE: If wind is expected to exceed 30 knots, aircraft should be housed. If housing aircraft or flying aircraft to a safe location is not possible, the following procedure shall be used.

For mooring, use tie-down line that meets the following requirements:
- Line diameter - 1 1/2 inch minimum
- Line material - High modulous polyethylene rope or ultra-high molecular weight polyethylene

Ensure minimum tensile strength of tie-down rope is suitable for the weight of aircraft
Prevailing weather conditions and wind speed will determine number of tie-down ropes

(1) Space aircraft from other aircraft or structures so minimum clearance around aircraft is equivalent maximum length +15 feet.
(2) Park aircraft on level ground, with nose into projected wind direction
(3) Attach tie-down lines to mooring rings on both main and nose gear. NOTE: Prevailing weather conditions and wind speed will determine number of tie-down lines.
(4) Ensure main and baggage doors are latched and locked and landing gear doors are closed.

Aircraft Deicing / Anti-icing

DO NOT MOVE AIRCRAFT WITH HEAVY ACCUMULATION OF SNOW OR ICE

(1) Deicing / anti-icing shall be accomplished using either one or two step process. Deicing / anti-icing fluid application is as follows:
NOTE: Standard practice is to deice and if required, anti-ice before takeoff.

(a) The one step process is application of heated, diluted deicing / anti-icing fluid, both to remove frost, snow and / or ice and provide very limited anti-icing protection.
This protection may be enhanced by use of cold fluids or by use of techniques to cool heated fluid during deicing process. A technique commonly used is spraying a final coat of deicing fluid using a very fine mist in arched trajectory to cool fluid before contact. This produces a thicker fluid film to enhance anti-icing effectiveness.
Care should be exercised when using this technique to ensure that freezing has not occurred within fluid previously applied. Refer to Cold Weather Operations Manual for typical applications.

(b) The two step process involves both deicing and anti-icing.
First, the deicing step is accomplished by using hot water or hot mixture of FPD and water. Ambient weather conditions and type of accumulation to be removed shall be considered in determining which deicing fluid to use.
Second, the anti-icing step involves applying full strength Type I or stronger mixture of SAE or ISO Type II and water at cooler temperatures than Step 1. to critical surfaces. If heated water alone is used in deicing process, second step shall be accomplished before refreezing occurs, generally within 3 minutes after beginning of deicing step.

(2) Snow Removal Procedure

(a) **Precautions**

1 Observe all general conditions and precautions provided in Aircraft Deicing / Antiicing Procedure, General Conditions and Precautions section.

2 Personnel sweeping snow from wings or stabilizer should work from support stands placed near the aircraft. If required to be on aircraft, use safety harnesses, as necessary, to board aircraft surfaces. Rubber or fabric foot wear shall be worn to aid in preventing personnel from slipping and sliding off support stands or aircraft surfaces.

3 Do not use isopropyl alcohol on rubber or plastic components. Use only approved solution for snow and ice removal / cleaning.

4 Do not use isopropyl alcohol on windows or above window line on fuselage. Alcohol causes crazing and cracking of acrylic windows.

5 Do not move aircraft with heavy accumulation of snow or ice. If access to rear cabin is necessary, it is advisable to position tail support stand under aft fuselage.

6 Remove all snow accumulations on fuselage forward of windshield. Snow may blow back and restrict pilots visibility. Avoid damage to pitot tubes.

7 Avoid damaging antennas and static wicks and other protuberances when cleaning upper surfaces of fuselage and stabilizers.

8 Avoid damage to wing or empennage control surfaces with implements used for snow removal. Do not use tools to scrape, scratch or chip snow / ice from surfaces or from between fixed and movable surfaces and / or components. Do not loosen snow by striking aircraft surfaces or damage may result.

9 Avoid using deicing solution for snow removal. Dilution of deicing solutions with melted snow will result in weak mixture refreezing and creating icing condition more difficult to remedy.
10 Avoid excessive deicing fluid flow to prevent further accumulation on wings and control surfaces when use of deicing solutions is justified for removal of snow or ice. Use special care to prevent flushing of slush into areas forward of control surfaces.
11 Avoid temperatures in excess of 200°F (93.3°C) when heating surfaces and / or components.
12 Use care not to direct high-pressure air on honeycomb surfaces.
13 Apply externally ducted heat carefully to window areas. High temperatures on cold windows will crack or craze windows.
14 In applications of heat for deicing purposes, care shall be exercised to avoid overheat damage to painted surfaces, rubber, hoses, acrylic or fiberglass in landing gear and wheel well area.
15 Remove heat source immediately after surfaces are dry and mechanisms are functioning normally.
16 When using heated air for snow removal or general warm up, exercise care not to overheat structure or components

b) **Technique**

1 Immediately following snow fall, aircraft should be cleaned to prevent melting snow from freezing to surface and interior areas into which water may flow.
2 Before heating cabin, ensure as much snow as possible has been removed from upper fuselage.
3 Remove as much snow as possible with soft bristle brushes and brooms. When cleaning wings and horizontal stabilizer surfaces, sweep maximum amount of snow possible over leading edge and tips. Avoid sweeping snow over control surfaces or trailing edge. Use care when cleaning around static wicks.
4 Snow accumulations may be removed from fuselage and upper wing surfaces by working a length of cotton rope back and forth over surface. Use extreme caution not to damage antennas, pitot tubes, winglets and static wicks. Always pull snow accumulation over wing leading edge and not over control leading edges.
5 Clean engine cowls, pylons and cowling openings free of accumulations. Clean engine / APU inlet and exhaust openings free of accumulations.

6 When using heated air, continue heat application until surface or area is completely dry.
7 Use dry cool compressed air for light, dry snow removal. Direct cool airstream away from openings to prevent packing snow in openings.

NOTE: Ensure all drain holes are open and drain freely. A heating source providing large volume of warm, dry low-pressure air is more effective than small volume of hot high-pressure air and may be used with less danger of overheating.
CAUTION: CHECK ALL PRIMARY SURFACES BY HAND MOVEMENT THROUGH FULL TRAVEL, STOP TO STOP, BEFORE ANY MOVEMENT IS ATTEMPTED BY FLIGHT COMPARTMENT CONTROLS. TRIM AND CONTROL TABS SHOULD BE OPERATED THROUGH FULL RANGE.

8 After completion of snow removal, a complete operational check of primary and secondary flight controls is mandatory. Ensure engine controls and Angle of Attack (AOA) probes operate freely.
9 Ensure passenger and service doorjamb areas are clean and dry. Ensure door seals are dry

(2) Ice / Frost Removal Procedure

(a) Precautions

1 Observe general conditions and precautions provided in Aircraft Deicing / Antiicing Procedure, General Conditions and Precautions section.

CAUTION: DO NOT MOVE AIRCRAFT WITH HEAVY ACCUMULATION OF SNOW OR ICE.

2 Do not use tools to scrape, scratch or chip ice from surfaces or from between fixed and movable surfaces and / or components. Do not loosen ice by beating as damage will result.

3 If snow, slush or ice is suspected in areas forward of control surfaces, clean and dry suspect areas and all control components completely prior to dispatch.

4 If access to rear cabin is necessary, it is advisable to position tail support stand under aft fuselage.

5 When using isopropyl alcohol on main entry door viewport window, wipe off excessive amount to allow unobstructed viewing.

6 Do not use isopropyl alcohol on windows or above window line on fuselage. Alcohol causes crazing and cracking of acrylic windows.

7 Avoid heated air temperatures in excess of 200°F (93.3°C) when heating surfaces.

8 Apply externally ducted heated air carefully around windows. High temperatures on cold windows will crack or craze windows.

9 In applications of heated air, care shall be exercised to avoid overheat damage to painted surfaces, rubber, hoses, acrylic, fiberglass, composite material or components.

10 Remove heated air source immediately after surfaces are dry and mechanisms are functioning normally.

(c) Technique

1 Aircraft shall be inspected thoroughly for iced surfaces, frozen controls / mechanisms, plugged orifices, frozen landing gear components and ice or snow clogged air inlet and outlet ports. Engine / APU inlets and exhaust areas shall be checked for ice before engine start.

2 Remove ice from fuselage areas by application of externally ducted heated air to affected area from large capacity heater units.

NOTE: A heat source providing large volume of warm, dry air is more effective than small volume of hot air and may be used with less danger of overheating.

3 Ice and frost formations should be removed from wings and empennage surfaces by spray application of heated deicing solution. Loosened ice should be swept from surfaces immediately. Residual water should be dried to prevent refreezing.

4 Underwing frost may form between forward and aft wing spars following extended high altitude flight. Wing frosting occurs at ambient temperatures above freezing and may be forerunner of clear ice formation on upper wing. Frost should be melted by refueling with warmer fuel. Removal of underwing frost in excess of 1/8 inch thickness and all frost on leading edges and upper surfaces is recommended. Depending on atmospheric conditions, it is recommended wings be anti-iced before takeoff. **CAUTION: AFTER DEICING WINGS AND EMPENNAGE, CHECK FLAP WELLS FOR SLUSH AND / OR ICE ACCUMULATIONS. ENSURE ALL DRAIN HOLES ARE OPEN.**

5 Ice formation on wings, empennage, landing gear or in wheel well areas may be removed by heat from large capacity heater unit. NOTE: Spraying anti-icing solution on wheels and brakes when slush conditions are encountered will retard ice formation and reduce further ice buildup.

6 Ice formation in control areas forward of control surface can be removed by spraying heated deicing solution.

7 Ice formation in control areas may be removed by using warm air until ice is melted and area is dry. Ensure drain holes are open.

8 Ice formation in engine / APU inlet / exhaust openings may be removed by heat from large capacity heater unit directed into engine / APU. Engine / APU should be started as soon as rotation is made possible**.**

CAUTION: CHECK ALL PRIMARY SURFACES BY HAND MOVEMENT THROUGHOUT FULL TRAVEL, STOP TO STOP, BEFORE ANY MOVEMENT IS ATTEMPTED BY FLIGHT COMPARTMENT CONTROLS. TRIM AND CONTROL TABS SHOULD BE OPERATED THROUGHOUT FULL RANGE.

9 After completion of ice removal, a complete operational check of flight controls is mandatory. Ensure engine controls and AOA probes operate freely.

10 Ensure passenger and service doorjamb areas are clean and dry. Ensure door seals are dry.

(3) Aircraft Deicing Procedure

NOTE: Deicing refers to removal of snow, ice, slush, etc., already accumulated on aircraft.

(a) Precautions

1 Observe general conditions and precautions provided in Aircraft Deicing / Antiicing Procedure, General Conditions and Precautions section.

CAUTION: DO NOT MOVE AIRCRAFT WITH HEAVY ACCUMULATION OF SNOW OR ICE.

2 Fluids improperly used may cause an undesirable and potentially dangerous change in aircraft performance, stability and control.

3 Undiluted premix (NEAT) Type II, Type III or Type IV FPD fluid is not recommended for use on Gulfstream aircraft.

4 Avoid excessive pressure (300 psi or greater) when applying fluid. Pressure should be adjusted to be able to traverse distance from nozzle to aircraft without damaging paint or structure.

5 When operating fluid dispensing equipment for deicing, extreme care shall be exercised in operating truck around aircraft. As a safety precaution, a 10 foot separation between truck and aircraft should be maintained.

6 Never spray deicing fluid or water on or into any air inlet or exhaust area, open tubes or ports (i.e., pitot tubes, static ports, total air temperature probe, AOA probes, vents, engine / APU, etc.). Never spray against trailing edge of wings or control surfaces.

(b) Technique

1 For optimum deicing, requirement is even film of deicing fluid to be applied on all surfaces. Type I and / or Type II fluids should be applied as specified by manufacturer's recommendations or Cold Weather Operations Manual for typical applications. Economical results are obtained by starting on highest part of fuselage, wings, etc. and covering evenly from there toward lower sections.

2 Close doors and windows. Install covers and plugs, as necessary.

3 **Avoid direct spraying** of liquid fluids on or into the following:

- Engine / APU inlet / exhaust openings
- Air intakes / outlets
- Fuel tank vents
- Pitot / static head or ports
- AOA probes

- Total air temperature probe
- Static wicks

4 Remove heavy accumulations of snow or ice.

5 Aircraft shall be sprayed symmetrically, both wings and tail shall be treated and not one side only.

6 If nose of aircraft has been deiced, it will be wiped down with isopropyl alcohol to ensure no fluid runs back on windshield.

7 Closely inspect and clean areas on and under wiper blades.

8 A fine mist of deicing solution, repeated two or three times over affected area, is more effective than a solid stream.

9 Apply deicing fluid to lower surface of ailerons, horizontal stabilizer, elevator and landing gear when wet snow conditions exist or when aircraft will use slushy taxiways or runways.

The following surfaces and areas require special attention during deicing:

a Horizontal stabilizer / elevator - Ensure runoff of fluids is away from elevator balance bay. This prevents melted snow / ice from accumulating in area and refreezing in flight. If possible, place elevator trailing edge down.

b Vertical stabilizer / rudder - Leading edge as well as side panels and rudder should be cleaned of snow / ice accumulation. Gap between rudder and stabilizer should be free of snow / ice accumulation. **CAUTION**: IF APU IS RUNNING DURING SPRAYING OF DEICING FLUIDS, TURN APU AIR OFF. DO NOT SPRAY INTO APU OR RAM AIR INLETS.

c Fuselage - Ensure APU air and ram air inlets are free of accumulations. Avoid spraying heated fluids directly onto cabin and cockpit windows. Ensure radome area is clean.

d Wings - Clean from tip to root. Ensure runoff is away from aileron balance bay area to prevent accumulation of melted snow / ice in area. Ensure leading edge is free of ice. Conduct hands on inspection to verify leading edge, upper and lower surfaces and winglets are clean. If possible, place aileron trailing edge down during deicing procedure

e Engine - Snow / ice removal from inlet and exhaust and cowling should be accomplished using mechanical means (heated air). Check first stage fan blades for freedom of movement. If LP fan does not rotate freely or is iced over, hot air is recommended to deice engine. Do not spray deicing fluid on cowling.

f Landing gear - Tires, wheels, brakes, steering unit, struts, doors, mechanisms and uplocks should be free of snow and ice.

g Main entry door viewport window - Ensure viewport window is free of snow / ice to clearly view outside surrounding area. De-icing / anti-icing should be conducted around viewport window with only approved chemicals that will not cause crazing or cracking.

h Doors - Main door and baggage compartment door seals, hinges and track should be free of snow / ice. Ensure seals are dry and doors operate properly to prevent refreezing in flight.

10 After completion of deicing, a complete operational check of flight controls is mandatory. Ensure engine controls and AOA probes operate freely.

11 Ensure passenger / service doorjamb areas are clean and dry. Ensure door seals are dry.

5) **Aircraft Anti-icing Procedure**

NOTE: Anti-icing refers to preventive treatment of aircraft surfaces to keep ice or snow from accumulating.

(a) Precautions

1 Observe general conditions and precautions provided in Aircraft Deicing / Antiicing Procedure, General Conditions and Precautions section.

2 It is not recommended to use diluted deicing fluid for anti-icing, melting snow will further dilute the solution and refreezing will take place.

3 Fluids improperly used may cause undesirable and potentially dangerous change in aircraft performance, stability and control.

4 Undiluted premix (NEAT) Type II, Type III or Type IV FPD fluid is not recommended for use on Gulfstream aircraft.

5 Avoid excessive pressure (300 psi or greater) when applying fluid. Pressure should be adjusted to be able to traverse distance from nozzle to aircraft without damaging paint or structure.

6When operating fluid dispensing equipment for anti-icing, extreme care shall be exercised in operating truck around aircraft. As a safety precaution, a 10 foot separation between truck and aircraft shall be maintained.

7 Never spray anti-icing fluid on or into any air inlet or exhaust area, open tubes or ports (i.e., pitot tubes, static ports, total air temperature probe, AOA probes, vents, engine / APU, etc.). Never spray against trailing edge of wings or control surfaces.

(b) Technique

1 For optimum anti-icing, requirement is even film of anti-icing fluid applied on all surfaces. Type I and / or Type II fluids should be applied as specified by manufacturer's recommendations or Cold Weather Operations Manual for typical applications. Economical results are obtained by starting on highest part of fuselage, wings, etc. and covering evenly from there toward lower sections.

2 Correct amount of fluid has been applied when fluid just starts to run off.

3 Close doors and windows. Install covers and plugs, as necessary.

4 Avoid direct spraying of liquid fluids on or into the following:

- Engine / APU inlet / exhaust openings
- Air intakes / outlets
- Fuel tank vents
- Pitot / static head or ports
- AOA probes
- Total air temperature probe

5 Aircraft shall be sprayed symmetrically, both wings and tail shall be treated and not one side only.

6 If nose of aircraft has been anti-iced, it shall be wiped down to ensure no fluid runs back on windshield. Closely inspect and clean areas on and under wiper blades.

7If fluid cannot be applied before onset of light frost, anti-icing solution may still be applied and produce expected results.

8 Heavy frozen deposits shall be removed by deicing procedure, followed by application of cold anti-icing solution.

9Concentrated anti-icing fluid, applied prior to onset of frosting condition, may give protection against formation of frost for only 30 minutes to 1 hour or even shorter time depending on frost intensity.

10 Complete protection may be possible all night depending on weather conditions. Under prolonged frosting conditions, it may only be necessary to deice leading edges of wings, horizontal and vertical stabilizers.

CAUTION: CHECK ALL PRIMARY SURFACES BY HAND MOVEMENT THROUGHOUT FULL TRAVEL, STOP TO STOP, BEFORE ANY MOVEMENT IS ATTEMPTED BY FLIGHT COMPARTMENT CONTROLS. TRIM AND CONTROL TABS SHOULD BE OPERATED THROUGHOUT FULL RANGE.

11 After completion of anti-icing, a complete operational check of flight controls is mandatory. Ensure engine controls and AOA probes operate freely.

Pressure Fueling

Verify the following:
• Overboard vents on lower wing are open and unobstructed
• Left and right gravity fueling filler caps on upper wing surface are in place and secure

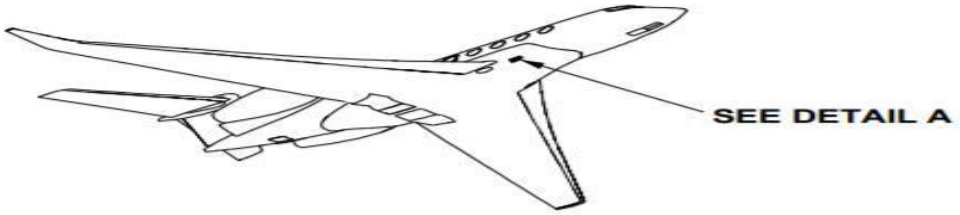
- Connect pressure fueling nozzle electrical ground.
- Connect pressure fueling nozzle to pressure fueling adapte
Apply electrical power to aircraft
In DISPLAY SYSTEM CONTROL section of Cockpit Overhead Panel (COP), select all switches to NORM.
In FUEL SYSTEM section of COP, select switches as follows:
• L PUMPS - ALT switch OFF
• L PUMPS - MAIN switch OFF
• R PUMPS - ALT switch OFF
• R PUMPS - MAIN switch OFF
On COP in REMOTE FUELING section, select SHUTOFF switch to extended
On center aft spar, verify cross-flow and intertank valves are in CL position

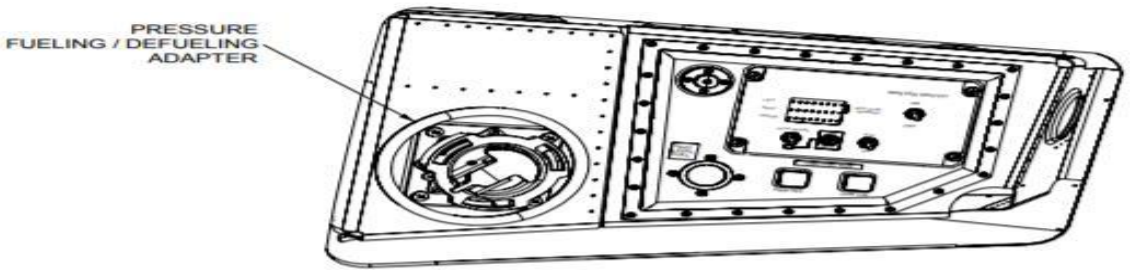
Procedure - Automatic Mode Using Ground Service Control Panel

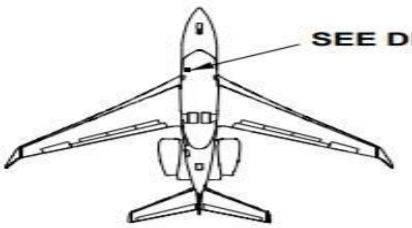
(1) On Ground Service Control Panel (GSCP), located in right WTBF area, comply with the following:
(a) In GND SVC BUS section, select GSB ON switch.
(b) Select MASTER SWITCH to ON position.
NOTE: The word Waiting will be displayed for a few seconds until connection is achieved, then LEFT and RIGHT fuel quantity will be displayed. PRESEL will display the sum of both LEFT and RIGHT indications.

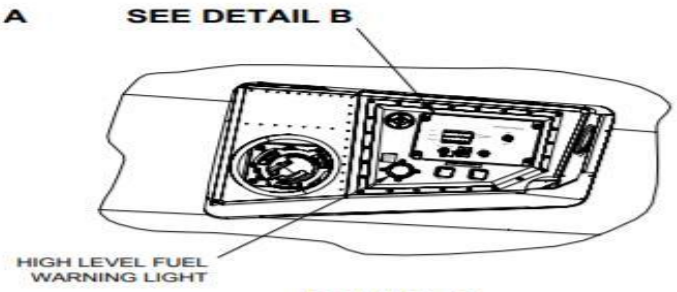
(c) Select BITE switch to BITE position and verify the following:
• HIGH LEVEL FUEL warning light comes on
• No fuel system fault messages are indicated on GSCP display
(d) Select BITE switch to OFF position and verify the following:
• HIGH LEVEL FUEL warning light goes off
• No fuel system fault messages are indicated on GSCP display
(e) Select INCR / DECR switch to a value greater than indicated on fuel quantity indicator PRESEL display.
NOTE: It is not possible to select a value less than what is currently on board.
(f) Select AUTO REFUEL switch to AUTO REFUEL position.
(g) Verify aircraft begins to fuel.
(h) Once fueling stops, verify LEFT and RIGHT fuel quantity indications equal one half of PRESEL quantity indication.
(i) On COP, in FUEL SYSTEM section, comply with the following:
1 Select X FLOW switch to open.
2 Select L PUMPS - ALT and MAIN to on and run boost pumps for approximately 30 - 45 minutes to create an imbalance greater than 1000 lbs and verify Fuel Imbalance (blue) CAS message is displayed.
NOTE: It may take an imbalance of up to 1200 lbs to initiate a CAS message.
3 Select L PUMPS - ALT and MAIN to OFF.
4 Select X FLOW switch to closed.
(j) Select INCR / DECR switch to a value greater than indicated on fuel quantity indicator PRESEL display.
NOTE: It is not possible to select a value less than what is currently on board.
(k) Select AUTO REFUEL switch to AUTO REFUEL position.

(l) Begin fueling using GSCP and verify aircraft begins to fuel left tank only until imbalance is corrected, then that both tanks increase together.
(m) Select AUTO REFUEL switch to OFF position.
(n) In GND SVC BUS section, select GSB OFF switch.
(o) Select MASTER SWITCH to OFF position

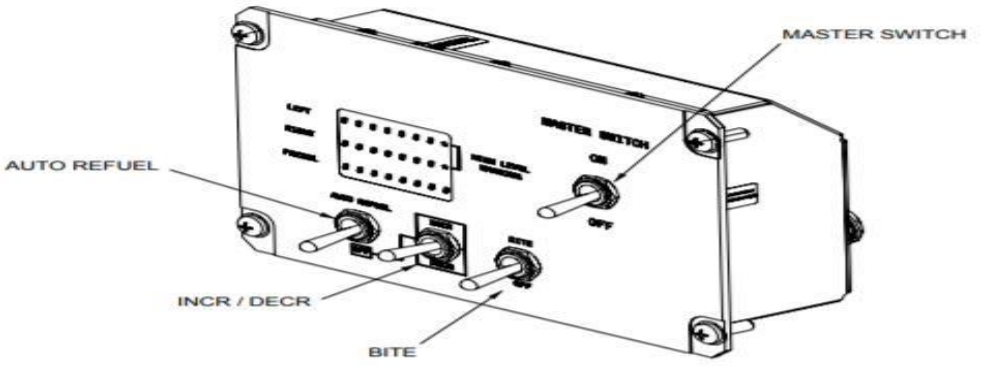








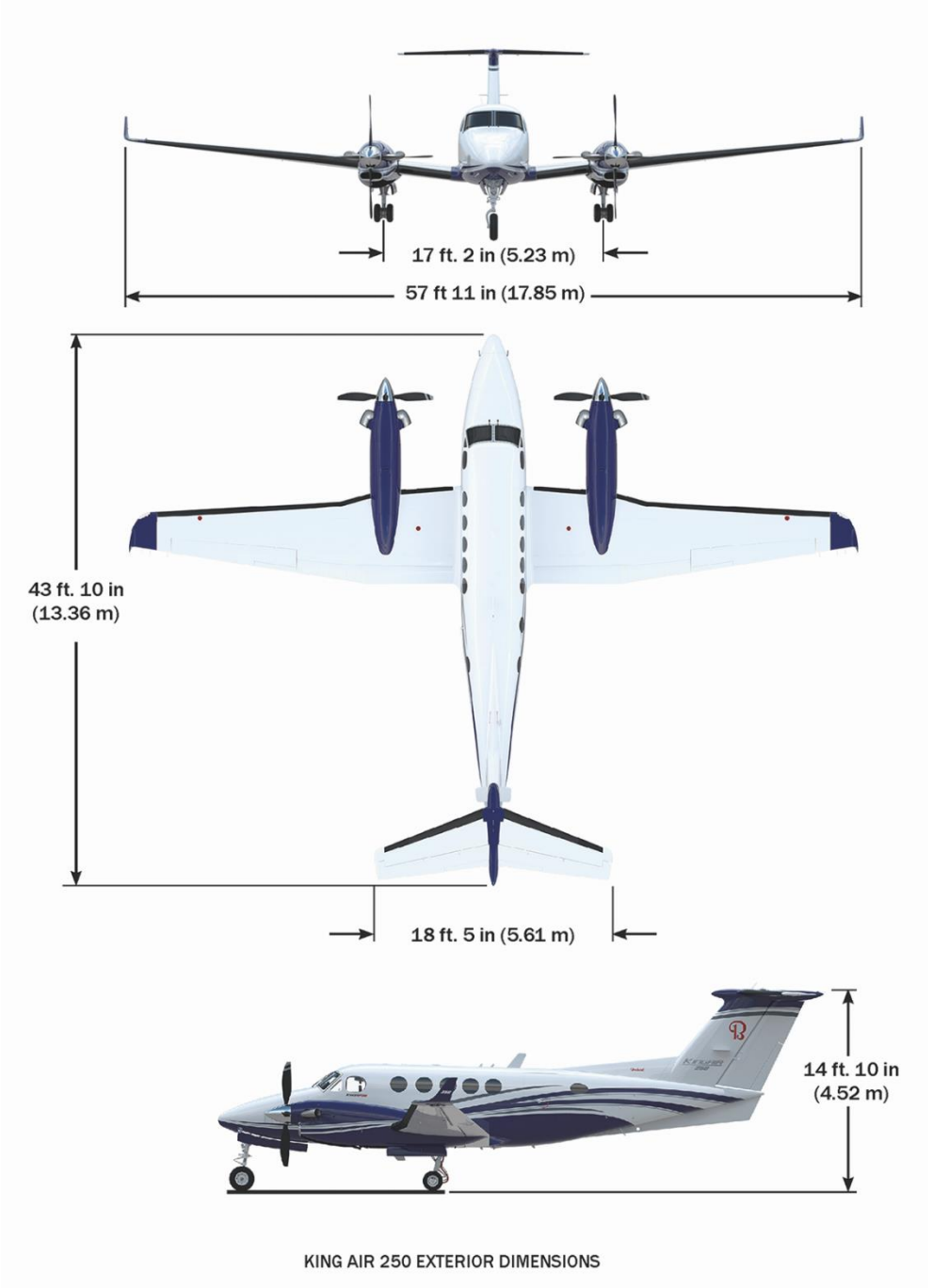
DETAIL A



6. Beechcraft 200 GT

Aeroplane Dimensions

Length	43'' 10'
Height	14'' 10'
Wingspan	57'' 11'
Wheelbase	14'' 11'

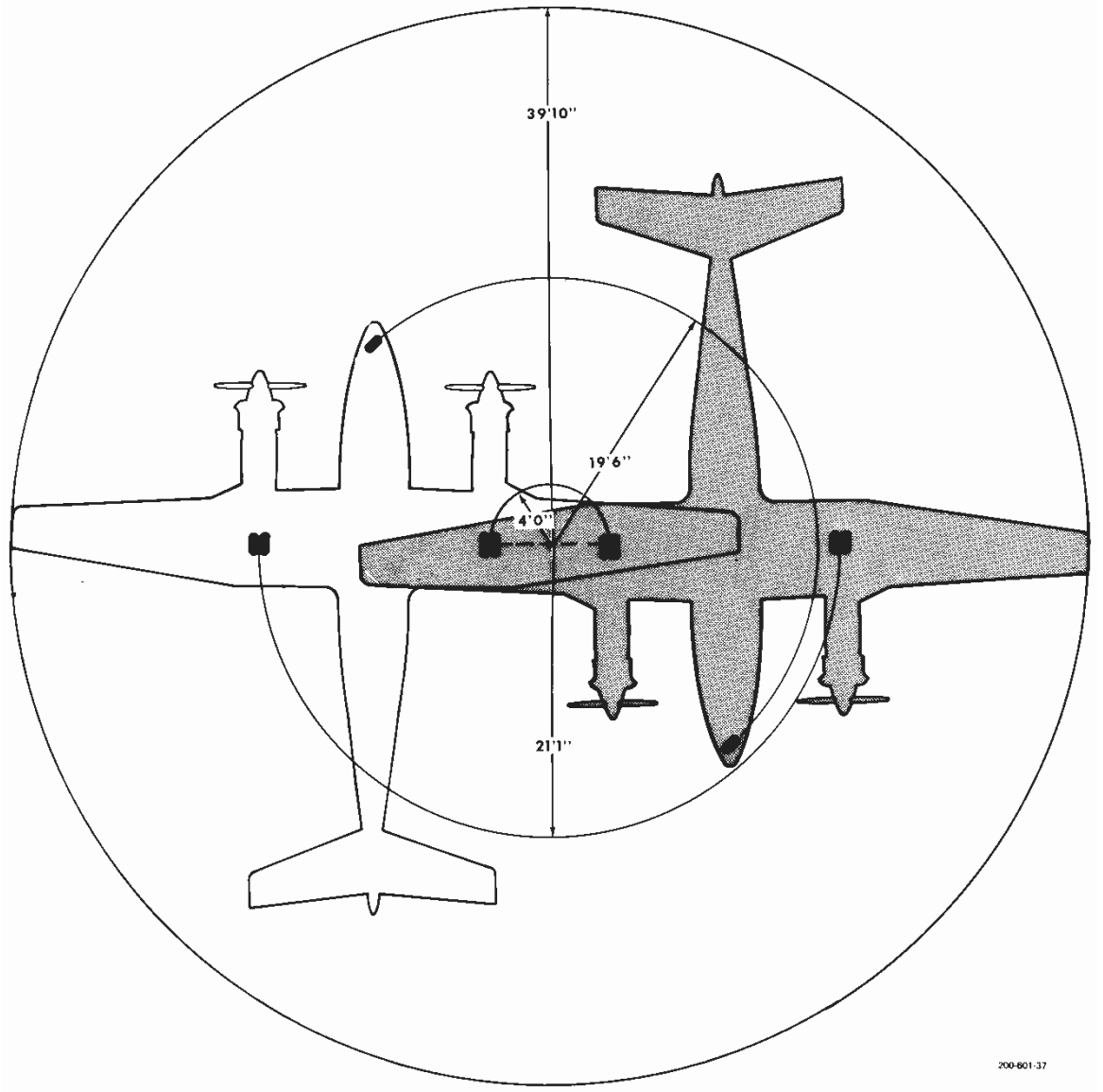


KING AIR 250 EXTERIOR DIMENSIONS

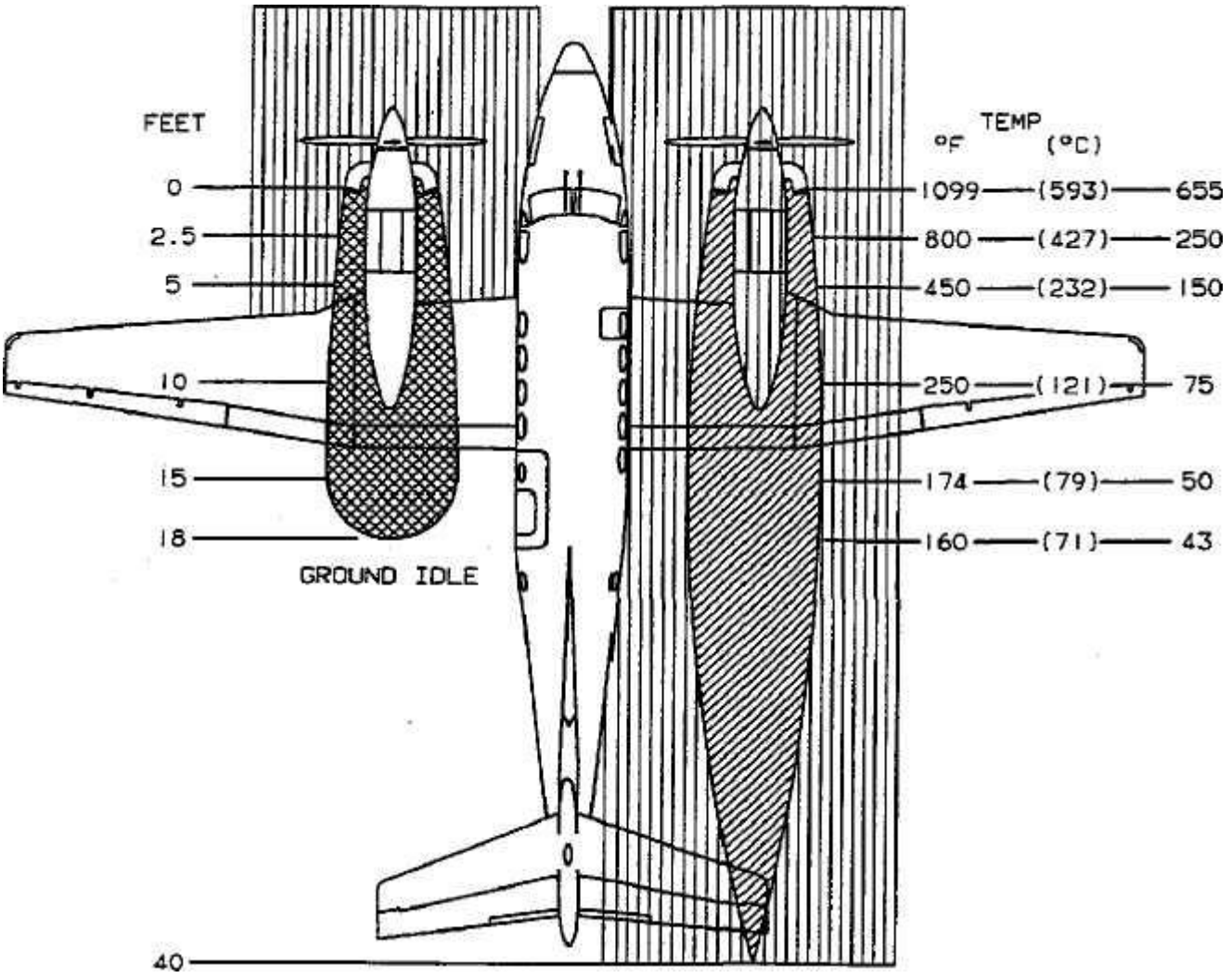
Ground Turning Clearance

Radius for Inside Gear ..... 4 feet 0 inches Radius for Nose Wheel ..... 19 feet 6 inches
Radius for Outside Gear ..... 21 feet 1 inch
Radius for Wing Tip ..... 39 feet 10 inches

Ground Turning Circle



Danger Areas



ICAO Fire

EXHAUST DANGER AREA (GROUND LEVEL)

EXHAUST DANGER AREA (MAXIMUM POWER)

PROPELLER DANGER AREA

Fighting Category

For the B200GT the airport ICAO minimum fire fighting services is category 3.

Ground Handling

TOWING

The tow bar connects to the upper torque knee fitting of the nose strut. The airplane is steered with the tow bar when moving the airplane by hand, or an optional tow bar is available for towing the airplane with a tug. Although the tug will control the steering of the airplane, someone should be positioned in the pilot's seat to operate the brakes in case of an emergency.

Always ensure that the control locks are removed before towing the airplane. Serious damage to the steering linkage can result if the airplane is towed while the control locks are installed. Do not tow the airplane with a flat shock strut.

The nose gear strut has turn limit warning marks to warn the tug driver when turning limits of the gear will be exceeded. Damage will occur to the nose gear and linkage if the turn limit is exceeded. The maximum nose wheel turn angle is 48° left and right. When ground handling the airplane, do not use the propellers or control surfaces as hand holds to push or move the airplane.

Do not exert force on the propellers or control surfaces. Do not place weight on the stabilizers to raise the nose wheel. When towing, limit turns to prevent damage to the nose gear. Do not tow the airplane backward using the tail tie down ring as an attach point.

TIE DOWN

Three mooring eyes are provided: one underneath each wing, and one in the ventral fin. To moor the airplane, chock the wheels fore and aft, install the control locks, and tie the airplane down at all three points. If extreme weather is anticipated, it is advisable to nose the airplane into the wind before tying it down. Install engine inlet and exhaust covers, propeller tie-down boots (one blade down), and pitot mast covers when mooring the airplane.

Windmilling propellers are a SAFETY HAZARD.

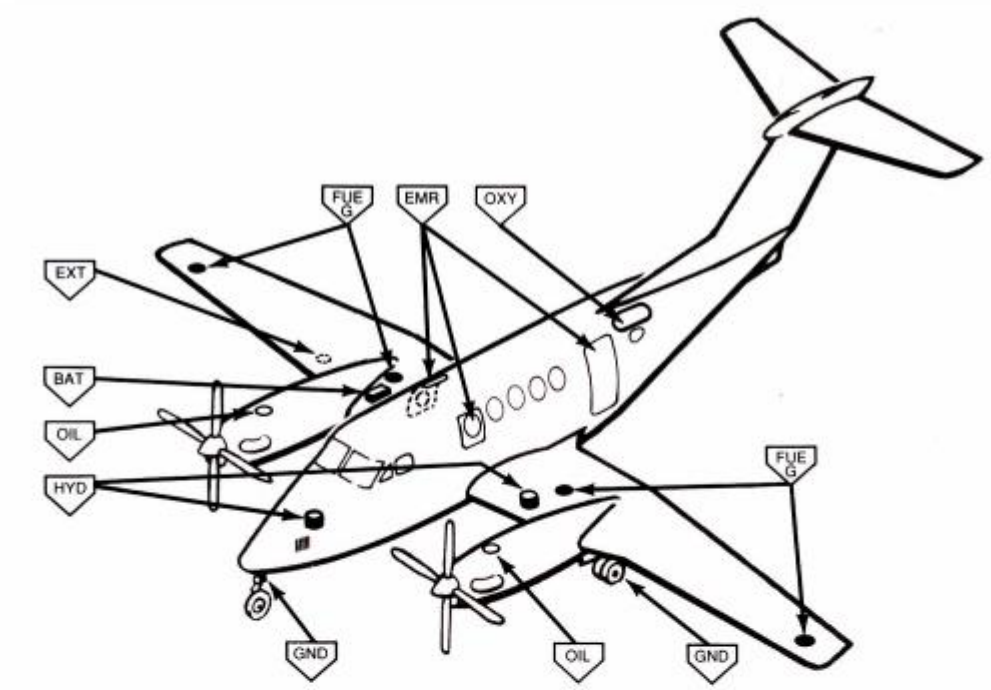
Unrestrained propellers are apt to windmill. Prolonged windmilling at zero oil pressures can result in bearing damage.

JACKING AND LEVELING

The Super King Air B200GT/B200CGT is provided with three jacking points to raise the airplane for servicing. The forward point is on the left side of the nose wheel well opening near the aft end of the nose wheel doors.
The main gear points are on the rear spar just inboard of the nacelle fairing. All three points are easily identified by the placarding JACK PAD adjacent to the jack points. The areas around the jack pads are unobstructed to facilitate the use of jacks. All adapters extend 0.7 inch or more below the structure surface.

Leveling screws are located on the fuselage entrance door frame. Leveling is accomplished with a plumb bob. Jack pad leveling may require the nose-gear shock strut to be secured in the static position to prevent its extension. Wheel weighings can be leveled by varying the amounts of air in the shocks and tires.

SERVICING



SERVICING CODES

AIR	Nitrogen Bottle Servicing	GND	Static Ground Points
ANI	Anti-Ice Fluid Reservoir	HYD	Hydraulic Reservior
BAT	Battery	HOI	Hoisting / Lifting
EMR	Emergency Entrance Or Exits	OIL	Engine Oil
EXT	External Power Receptacle	OXY	Oxygen
FUE G	Fueling Filler Point (gravity)	PAR	Parking Brake

EXTERNAL POWER

The standard AN-type external power receptacle is located underneath the right wing, outboard of the engine nacelle. An overvoltage sensor protects the airplane electrical system from an APU with reversed polarity or excessively high output voltage.

CAUTION: Battery Switch must be ON and all electrical OFF prior to connecting ground power unit plug. Be sure that avionics power is OFF prior to turning the ground power unit ON. Battery must be ON anytime ground power unit is in use. Generator switch must off while using external power. Do not exceed 30 VDC, 1000 ampers momentarily, or 350 ampers for extended periods

Fueling

When filling the airplane fuel tanks, always observe the following:

1. Make sure the airplane is statically grounded to the servicing unit and that the airplane and servicing unit are both grounded to ground.

2. The main filler cap is located on top of the outboard wing section, and the auxiliary filler cap is located on top of the center wing section. Do not rest fuel nozzle in tank filler neck, because this may damage the filler neck.
Do not fill auxiliary tanks unless main tanks are full.

3. Allow a three-hour settle period whenever possible, then drain a small amount of fuel into a container from each drain point. Check fuel at each drain point for contamination.

DEICING AND ANTI-ICING OF AIRPLANES ON THE GROUND

Deicing is the removal of ice, frost, and snow from the airplane's exterior after it has formed. Anti-icing is a means of keeping the surface clear of subsequent accumulations of ice, snow and frost.
Snow and ice on an airplane will seriously affect its performance. Removal of these accumulations is necessary prior to takeoff. Airfoil contours may be altered by the ice and snow to the extent that their lift qualities will be seriously impaired. Ice and snow on the fuselage can increase drag and weight.

SNOW REMOVAL
The removal of frozen deposits by chipping or scraping is not recommended. The best way to remove snow is to brush it off with a squeegee, soft brush, or mop. Exercise care so as not to damage any components that may be attached to the outside of the airplane, such as antennas, vents, stall warning vanes, etc.
Remove loose snow from the airplane before heating the airplane interior; otherwise, at low temperatures, the snow may melt and refreeze to build up a considerable depth of ice. If the airplane has been hangared and snow is falling, coat the airplane surfaces with an anti-icing solution; snow falling on the warm surface will have a tendency to melt, then refreeze.

After snow has been removed from the airplane, inspect the airplane for evidence of residual snow. Special attention should be given all vents, openings, static ports, control surfaces, hinge points, and the wing, tail, and fuselage surfaces for obstructions or accumulations of snow. Check the exterior of the airplane for damage to external components that may have occurred during the snow removal operations.
Control surfaces should be moved to ascertain that they have full and free movement. The landing gear mechanism, doors, wheel wells, uplocks and microswitches should be checked for ice deposits that may impair function.
When the airplane is hangared to melt snow, any melted snow may freeze again if the airplane is subsequently moved into subzero temperatures. Any measures taken to remove frozen deposits while the airplane is on the ground must also prevent the possibility of refreezing of the liquid.

Following snow removal, should freezing precipitation continue, the airplane surface should be treated for anti-icing.

FROST REMOVAL

Frost that may form on the wing fuel tank bottom skins need not be removed prior to flight. Frost that may accumulate on other portions of the wing, the tail surfaces, or on any control surface, must be removed prior to flight. Frost that cannot be removed by wiping with a gloved hand or soft towel must be removed by placing the airplane in a warm hangar or by the application of a deicing fluid. After removal of all frost from the airplane exterior, check all external components for damage that may have occurred during frost removal.

ICE REMOVAL

Moderate or heavy ice and residual snow deposits should be removed with a deicing fluid. No attempt should be made to remove ice deposits or break an ice bond by force.
After completing the deicing process, the airplane should be inspected to ensure that its condition is satisfactory for flight. All external surfaces should be examined for residual ice or snow, special attention should be given all vents, openings, static ports, control surfaces, hinge points, and the wing, tail, and fuselage surfaces for obstructions or accumulations of ice or snow.
Control surfaces should be moved to ascertain that they have full and free movement. The landing gear mechanism, doors, wheel wells, uplocks and microswitches should be checked for ice deposits that may impair function.

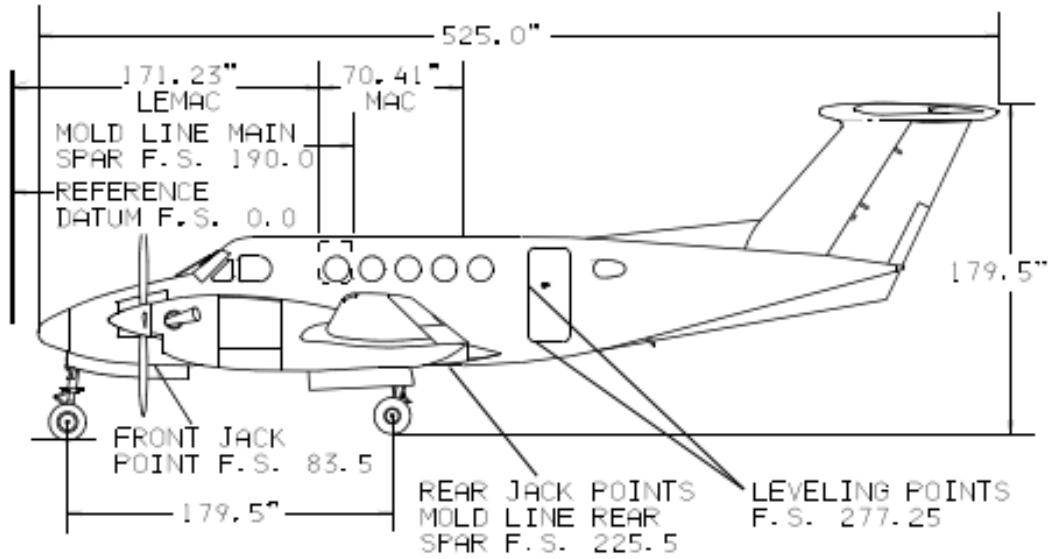
When the airplane is hangared to melt ice, any melted ice may freeze again if the airplane is subsequently moved into subzero temperatures. Any measures taken to remove frozen deposits while the airplane is on the ground must also prevent the possible refreezing of the liquid.
Following ice removal, should freezing precipitation continue, the airplane surface should be treated for anti-icing.

DEICING AND ANTI-ICING FLUID APPLICATION
Airplane deicing fluids may be used diluted or undiluted according to manufacturer's recommendations for deicing. For anti-icing purposes, the fluids should always be used undiluted. Deicing fluids may be applied either heated or unheated. Refer to Section 2, LIMITATIONS, for a listing of approved airplane deicing/anti-icing fluids.

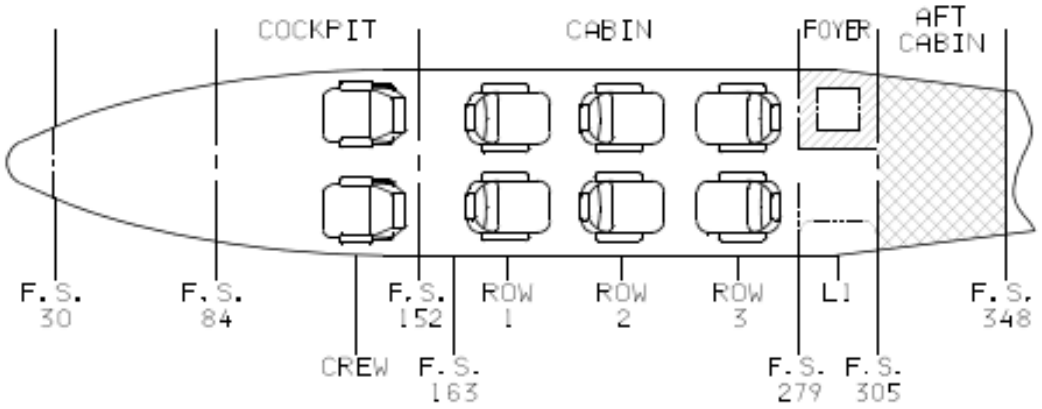
NOTE
Type II and Type IV deicing fluids should only be applied at low pressure by trained personnel with proper equipment.
If a sprayer is not available, deicing fluid may be brushed or painted onto the airplane's surfaces.

LOADING

DIMENSIONAL AND LOADING DATA



STANDARD SEATING

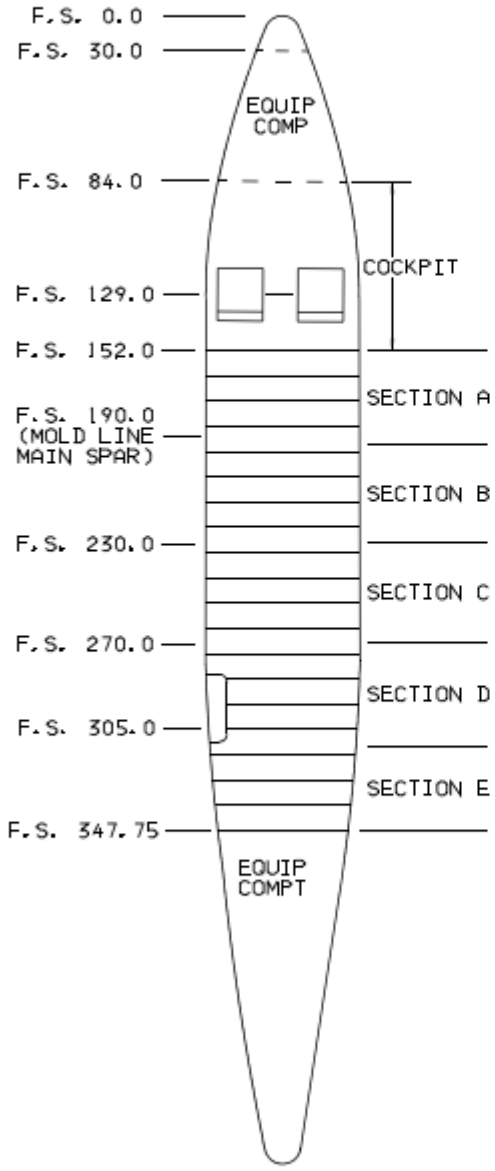


OCCUPANT	CENTROID
CREW	F.S. 129
ROW 1	F.S. 175
ROW 2	F.S. 212
ROW 3	F.S. 259
L1	F.S. 293

CONFIGURATION	BAGGAGE COMPARTMENT	BAGGAGE CAPACITY	CENTROID
SIDE PASSENGER SEAT AND TOILET	*FOYER - 	150	F.S. 293
	AFT CABIN - 	550	F.S. 325

NOTE: * LOADING DATA FOR STANDARD CONFIGURATIONS ONLY. FOYER IS NOT EQUIPPED FOR LOOSE BAGGAGE. CLOTHING ON HANGARS MAY BE HUNG FROM THE ROD PROVIDED.

LOADING DATA
CARGO CONFIGURATION



SECTION	MAXIMUM	CENTROID ARM
A	880 LB	F.S. 171
B	860 LB	F.S. 210
C	830 LB	F.S. 250
D	550 LB	F.S. 288
E	550 LB	F.S. 325

NOTES:

1. ALL CARGO IN SECTIONS A, B, C & D MUST BE SUPPORTED ON AND SECURED TO THE SEAT TRACKS BY AN FAA APPROVED SYSTEM.
2. CONCENTRATED CARGO LOADS IN SECTIONS A, B, C & D MUST NOT EXCEED 200 LB PER SQUARE FOOT & MUST BE SUPPORTED ON THE SEAT RAILS.
3. CARGO IN SECTION E IS TO BE SECURED BY HAWKER BEECHCRAFT CORPORATION FURNISHED BAGGAGE NET, WEBBING, OR STRAPS.
4. FOOTMAN LOOPS IN SECTION E ARE TO BE USED TO SECURE CARGO/BAGGAGE IN THAT AREA ONLY.
5. CONCENTRATED FLOOR LOADINGS CARGO OR BAGGAGE IN SECTION E MUST NOT EXCEED 100 LB PER SQUARE FOOT.
6. ANY EXCEPTIONS TO THE ABOVE PROCEDURES WILL REQUIRE APPROVAL BY A LOCAL FAA OFFICE.

CARGO TIEDOWN PROVISIONS ARE NOT PROVIDED.

BB06C
032781AA