CSERIES

CS100

Airport planning publication
APP

BD500-3AB48-22000-00
Issue No. 008

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Publication No.: BD500-3AB48-22000-00

Manufacturer:

BOMBARDIER

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Applicable to: All

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Highlights

Issue 008

The listed changes are introduced in Issue 008, dated 2016-11-17, of this publication.

Data module code	Reason for change
BD500-A-J00-00-00-20AAA-018A-A	Changed Data Module To update title, correspondence, and acronym paragraph.

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Technical Publications Comment form

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Publication information

*Aircraft type:		*Aircraft model:	*Publication Module Code (PMC):
*Publication title/Issue:	*Media Type: ☐ Paper ☐ Web ☐ Disk	*Data Module Code (DMC):	*DMC issue date:
Data module title:		Originator's reference number:	

*Comments:

Reason for change:

Reference data provided: ☐Yes ☐ No Description:

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Change record

Check in the following record that all earlier changes has been incorporated.

Issue	Incorporated Date	by (signature)	Issue	Incorporated Date	by (signature)
001	Jul 29/2014	Initial issue	026		
002	Dec 19/2014	BCSG	027		
003	Sep 15/2015	BCSG	028		
004	Sep 24/2015	BCSG	029		
005	Mar 08/2016	BCSG	030		
006	Apr 20/2016	BCSG	031		
007	May 20/2016	BCSG	032		
008	Nov 17/2016	BCSG	033		
009			034		
010			035		
011			036		
012			037		
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022			047		
023			048		
024			049		
025			050		

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List of effective data modules

The listed documents are included in Issue 008, dated 2016-11-17, of this publication.

C = Changed data module
N = New data module

Document title	Data module code		Issue date	No. of pages	Applicable to
Airport Plannng Publication (APP) - Introduction	BD500-A-J00-00-00-20AAA-018A-A	C	2016-11-10	3	All
Aircraft description - Technical data	BD500-A-J00-00-00-12AAA-030A-A		2016-02-23	32	All
Aircraft performance - Technical data	BD500-A-J00-00-00-13AAA-030A-A		2015-09-01	14	All
Ground maneuvering - Technical data	BD500-A-J00-00-00-19AAA-030A-A		2016-03-04	25	All
Terminal servicing - Technical data	BD500-A-J00-00-00-18AAA-030A-A		2016-05-02	41	All
Operating conditions - Technical data	BD500-A-J00-00-00-17AAA-030A-A		2016-03-16	11	All
Pavement data - Technical data	BD500-A-J00-00-00-11AAA-030A-A		2016-05-09	15	All
Derivative aircraft - Technical data	BD500-A-J00-00-00-22AAA-030A-A		2015-09-01	1	All
Scaled drawings - Technical data	BD500-A-J00-00-00-21AAA-030A-A		2015-09-01	2	All

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The listed documents are included in Issue 008, dated 2016-11-17, of this publication.

Document title	Data module code	Issue date	Applicable to
Airport Plannng Publication (APP) - Introduction	BD500-A-J00-00-00-20AAA-018A-A	2016-11-10	All
Aircraft description - Technical data	BD500-A-J00-00-00-12AAA-030A-A	2016-02-23	All
Aircraft performance - Technical data	BD500-A-J00-00-00-13AAA-030A-A	2015-09-01	All
Ground maneuvering - Technical data	BD500-A-J00-00-00-19AAA-030A-A	2016-03-04	All
Terminal servicing - Technical data	BD500-A-J00-00-00-18AAA-030A-A	2016-05-02	All
Operating conditions - Technical data	BD500-A-J00-00-00-17AAA-030A-A	2016-03-16	All
Pavement data - Technical data	BD500-A-J00-00-00-11AAA-030A-A	2016-05-09	All
Derivative aircraft - Technical data	BD500-A-J00-00-00-22AAA-030A-A	2015-09-01	All
Scaled drawings - Technical data	BD500-A-J00-00-00-21AAA-030A-A	2015-09-01	All

Applicable to: All

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List of terms

Maximum cargo volume	The maximum space available for cargo.
Maximum design Landing Weight (MLW)	Maximum weight for landing as limited by aircraft strength and airworthiness requirement.
Maximum design Take-Off Weight (MTOW)	Maximum weight for take off as limited by aircraft strength and airworthiness requirements. This includes weight of fuel for taxi and run-up.
Maximum design Taxi Weight (MTW)	Maximum weight at which an aircraft can move safely on the ground. This includes the fuel for these displacements and the takeoff run.
Maximum design Zero Fuel Weight (MZFW)	Maximum weight permitted before usable fuel and other usable agents must be loaded in defined sections of the aircraft, as limited by strength and airworthiness requirements.
Maximum seating capacity	The maximum number of passengers permitted based on certification requirements.
Operational Weight Empty (OWE)	Weight of structure, power plant, furnishings, systems, unusable fuel and other items of equipment that are a necessary part of a particular aircraft configuration. Also included are certain standard items, personnel, equipment and supplies necessary for full operations, but does not include usable fuel or payload.
Usable fuel	Fuel available for aircraft propulsion and the Auxiliary Power Unit (APU).

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Airport Plannng Publication (APP) - Introduction

Applicability: Model: CS100

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Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Scope of the publication

The Airport Planning Publication (APP), prepared by Bombardier Aerospace (BA), contains general data on the airport facilities, ramp, and runway areas necessary to operate the Bombardier commercial aircraft model BD-500-1A10 (CS100).

Since operational practices vary among airlines, specific data should be coordinated with the user airlines prior to facility design. For additional information, please contact BA.

The content of this publication will change as options and aircraft changes occur. Make sure that you refer to the latest release of this publication.

If there is a difference between the data contained in this publication and that given by the local regulatory authority, the data from the local regulatory authority must be obeyed.

2 Publication organization

This publication is divided into six sections:

- Aircraft description
- Aircraft performance
- Ground maneuvering

- Terminal servicing
- Operating conditions
- Pavement data

3 Dimensions and weight

Linear dimensions given in this publication are in inches. The metric equivalents are given in parentheses ( ).

Weight measures is given in pound (lb) with the metric equivalent in parentheses ( ).

4 Correspondence

The publications change request form is available online and is used to request technical changes to rectify any errors, omissions, or procedural inconsistencies (if applicable), etc. using the Bombardier Navigator Interactive Electronic Technical Publication (IETP) application.

5 Translation of publication

If all or part of this publication is translated, the official version is the English language version by Bombardier Aerospace Commercial Aircraft.

6 Standard term definitions

Maximum design Taxi Weight (MTW)	Maximum weight at which an aircraft can move safely on the ground. This includes the fuel for these displacements and the takeoff run.
Maximum design Landing Weight (MLW)	Maximum weight for landing as limited by aircraft strength and airworthiness requirement.
Maximum design Take-Off Weight (MTOW)	Maximum weight for take off as limited by aircraft strength and airworthiness requirements. This includes weight of fuel for taxi and run-up.
Operational Weight Empty (OWE)	Weight of structure, power plant, furnishings, systems, unusable fuel and other items of equipment that are a necessary part of a particular aircraft configuration. Also included are certain standard items, personnel, equipment and supplies necessary for full operations, but does not include usable fuel or payload.
Maximum design Zero Fuel Weight (MZFW)	Maximum weight permitted before usable fuel and other usable agents must be loaded in defined sections of the aircraft, as limited by strength and airworthiness requirements.
Maximum cargo volume	The maximum space available for cargo.
Maximum seating capacity	The maximum number of passengers permitted based on certification requirements.

Usable fuel Fuel available for aircraft propulsion and the Auxiliary Power Unit (APU).

7 Acronyms

The first time an acronym is used it will be defined, and all subsequent uses will be in blue. When you mouse over the acronym the definition will appear. Acronyms are not plural in this publication.

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Aircraft description - Technical data

Applicability: Model: CS100

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Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Aircraft characteristics

1.1 Introduction

This data module contains general data about the Bombardier CSeries model BD-500-1A10 (CS100) characteristics. The structural weight limits, such as maximum ramp weight, and zero fuel weight are dependent on configuration. Refer to each aircraft's specified Weight and Balance Manual (WBM) BD500-3AB48-22100-00 and weight and balance report for structural limits and other weight information.

Refer to Table 2 for the aircraft characteristics.

Refer to Table 3 for the system fluid capacities.

Refer to Table 4 for the service fluid capacities.

1.2 Aircraft characteristics

Table 2 Aircraft characteristics

Description	**CS100**
Engines	2 Pure Power™ PW1519G[1]
Mode	Passenger
Standard seating capacity	120
Maximum Ramp Weight (MRW)	135,000 lb (61 235kg)
Maximum Take-Off Weight (MTOW)	134,000 lb (60 781kg)
Maximum Landing Weight (MLW)	115,500 lb (52 390 kg)

Description	CS100
Operating Weight Empty (OWE)	77,650 lb (35 221 kg)
Maximum Zero Fuel Weight (MZFW)	111,000 lb (50 349 kg)
Maximum fuel tank capacity	5,790 USG (21 918 L)
Unusable fuel	180 lb (82 kg)
Maximum cargo volume - Overhead bins	280 ft³ (7,93 m³)
1 Optional engine models: PW1521G and PW1524G	

1.3 System fluid capacities

Table 3 System fluid capacities

Description	Volume	Weight
Engine fluids calculated with 7.7 lb/US gal (0,920 kg/L)		
Engines oil tank at 60 °F	12.9 US gal (49,0 L)	99 lb (44,9 kg)
Lines and internal engine oil	3.3 US gal (12,6 L)	26 lb (11,8 kg)
Total	16.2 US gal (61,6 L)	125 lb (56,7 kg)
APU fluids calculated with 7.7 lb/US gal (0,920 kg/L)		
APU	3.3 US gal (12,3 L)	25 lb (11,3 kg)
Hydraulic fluids at 77°F (25 °C) low density 8.43 lb/US gal (1,01 kg/L)		
System 1 reservoir	4.98 US gal (19 L)	41.98 lb (19.04 kg)
System 2 reservoir	4.33 US gal (16 L)	36.50 lb (16.55 kg)
System 3 reservoir	3.46 US gal (13 L)	29.17 lb (13.23 kg)
Total	12.77 US gal (48 L)	107.65 lb (48.82 kg)
Hydraulic fluids at 77°F (25 °C) high density 8.86 lb/US gal (1,06 kg/L)		
System 1 reservoir	4.98 US gal (18.85 L)	44.12 lb (20.01 kg)
System 2 reservoir	4.33 US gal (16.39 L)	38.36 lb (17.40 kg)
System 3 reservoir	3.46 US gal (13.10 L)	30.65 lb (13.90 kg)
Total	12.77 US gal (48.34 L)	113.13 lb (51.31 kg)

1.4 Service fluid capacities

Table 4 Service fluid capacities

Description	Volume	Weight
Potable water at 60 °F (15,5 °C)		
Galley/Lavatory tank	42.0 US gal (159,0 L)	350.5 lb (159.0 kg)
Chemical toilet fluid at 60 °F (15,5 °C)		
Waste tank	38.0 US gal (144,1 L)	350 lb (158,8 kg)

2 Aircraft dimensions

2.1 General aircraft dimensions

This section contains general data about the aircraft dimensions.

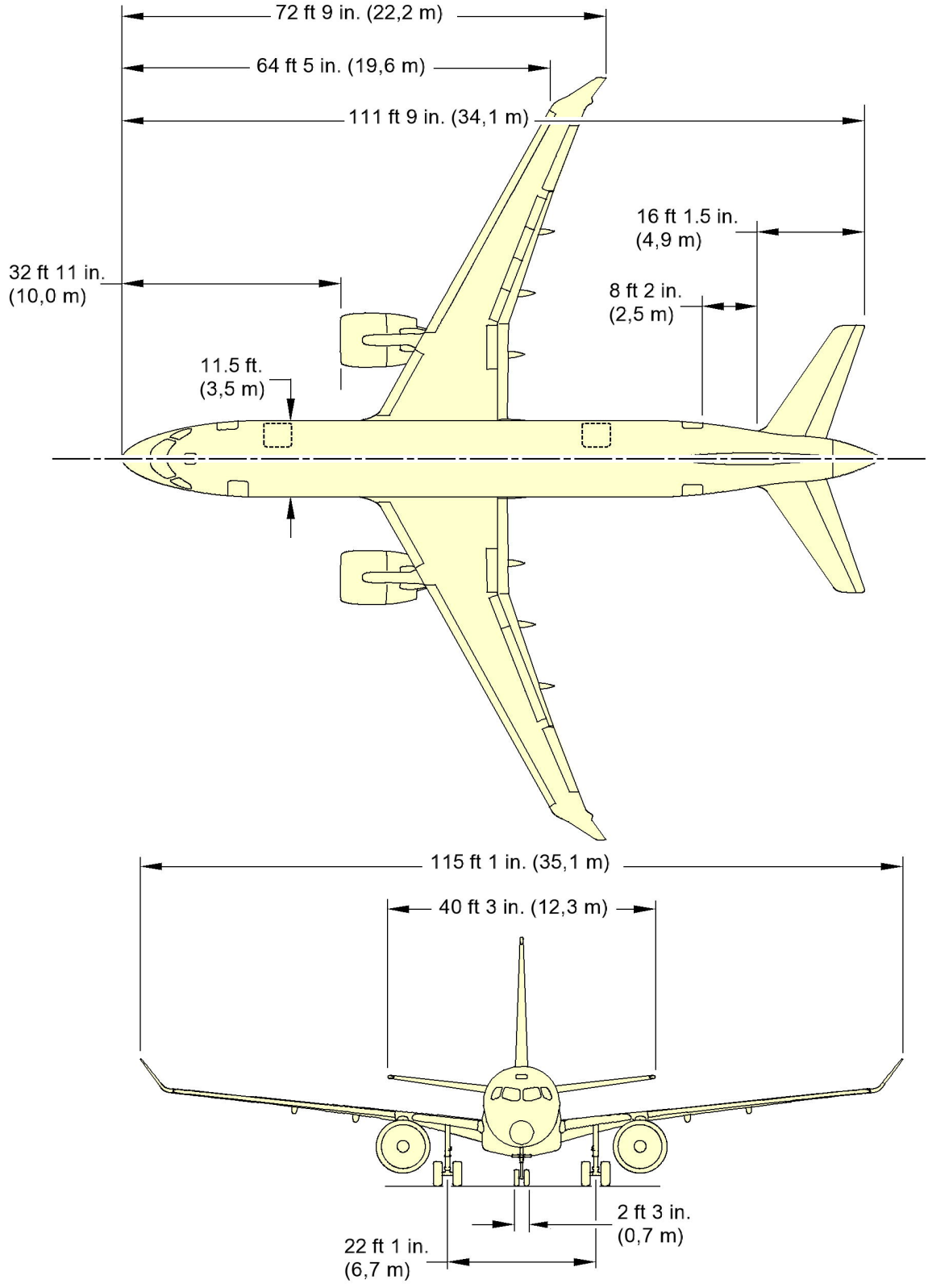

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Figure 1 General aircraft dimensions - (Sheet 1 of 2)

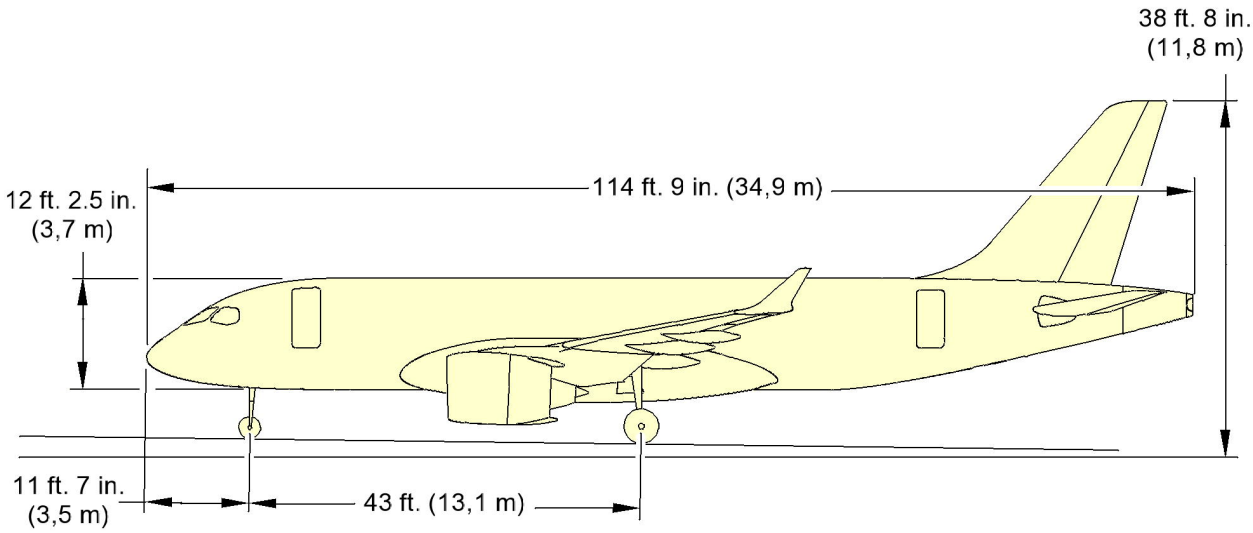

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Figure 1 General aircraft dimensions - (Sheet 2 of 2)

2.2 General aircraft area

Table 5 General aircraft area

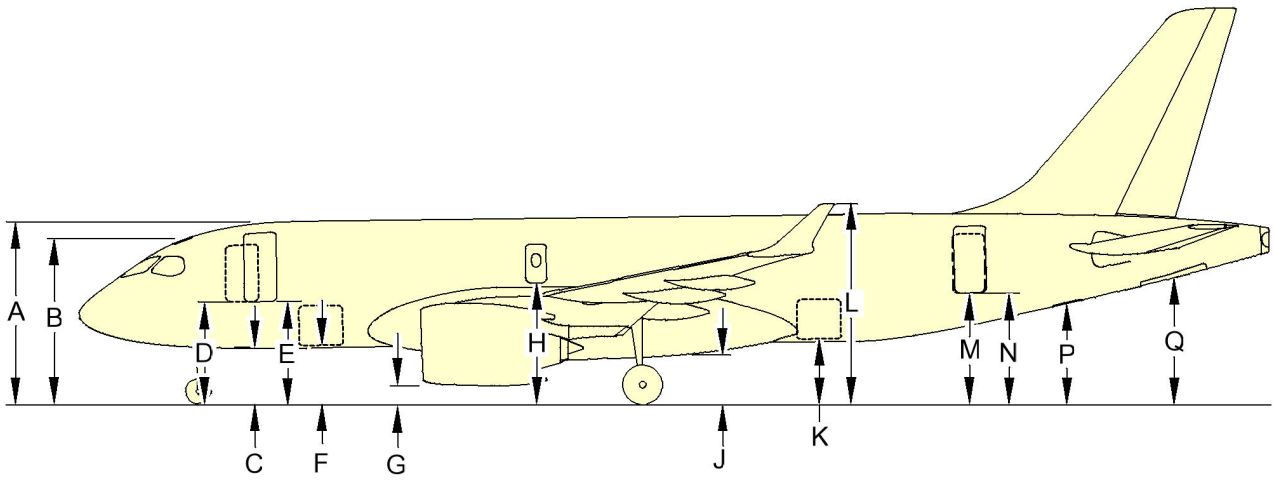
Description	CS100
ESDU wing area (including ailerons, flaps, spoilers and area within the fuselage)	1209 ft² (112.3 m²)
Total horizontal stabilizer area (horizontal tail area and elevator area)	395 ft² (36.6 m²)
Total vertical stabilizer area (vertical tail area and rudder area)	304 ft² (28.2 m²)

3 Ground clearances

This section gives the height of various points of the aircraft, above the ground.

Dimensions in the tables are approximate and will vary with tire type, weight and balance and other special conditions.

3.1 Ground clearances



Dimensions	Minimum	Maximum
A	17 ft 5 in.(5,3 m)	17 ft 10 in.(5,4 m)
B	15 ft 8 in.(4,8 m)	16 ft 2 in.(4,9 m)
C	5 ft 3 in.(1,6 m)	5 ft 8 in.(1,7 m)
D	9 ft 9 in.(3,0 m)	10 ft 2 in.(3,1 m)
E	9 ft 9 in.(3,0 m)	10 ft 2 in.(3,1 m)
F	5 ft 6 in.(1,7 m)	5 ft11in.1,8 m)
G	1 ft 7 in.(0,5 m)	2 ft 0 in.(0,6 m)
H	11 ft 6 in.(3,5 m)	11 ft 11 in.(3,5 m)
J	4 ft 8 in.(1,4 m)	5 ft 1 in.(1,5 m)
K	6 ft 1 in.(1,8 m)	6 ft 7 in.(2,0 m)
L	19 ft 1 in.(5,8 m)	19 ft 18 in.(6,0 m)
M	10 ft 6 in.(3,2 m)	11 ft 2 in.(3,4 m)
N	10 ft 6 in.(3,2 m)	11 ft 2 in.(3,4 m)
P	9 ft 0 in.(2,8 m)	10 ft 1 in.(3,1 m)
Q	11 ft 8 in.(3,6 m)	12 ft 7 in.(3,8 m)

NOTES

Vertical clearances shown are the greatest possible variations in attitude due to the variation of aircraft weight and center of gravity.

ICN-BD500-A-J000000-A-3AB48-21709-A-001-01

Figure 2 Ground clearances

4 Layout of passenger compartment accommodation

The passenger compartment includes the galley area, lavatory, and passenger seating area. The galleys and utility areas are isolated from the passenger area by partitions and curtains. Refer to Fig. 3.

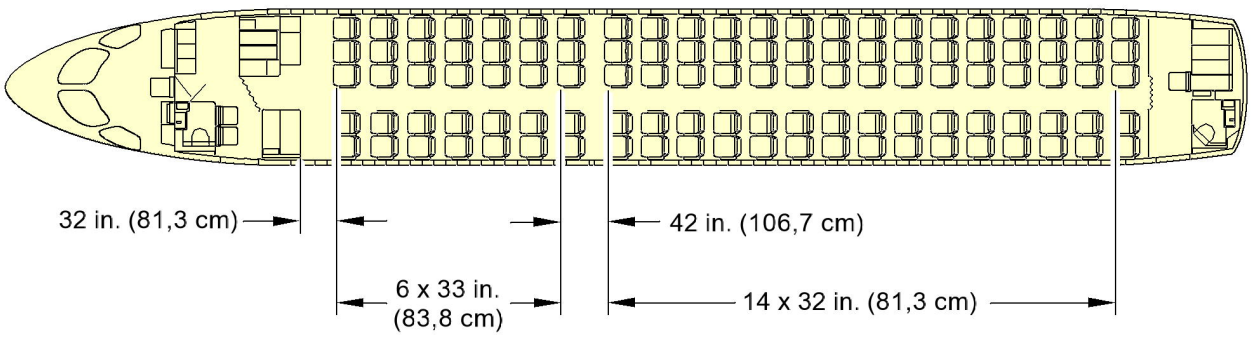


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Figure 3 Layout Of Passenger Accommodation (LOPA)

5 Passenger cross-section

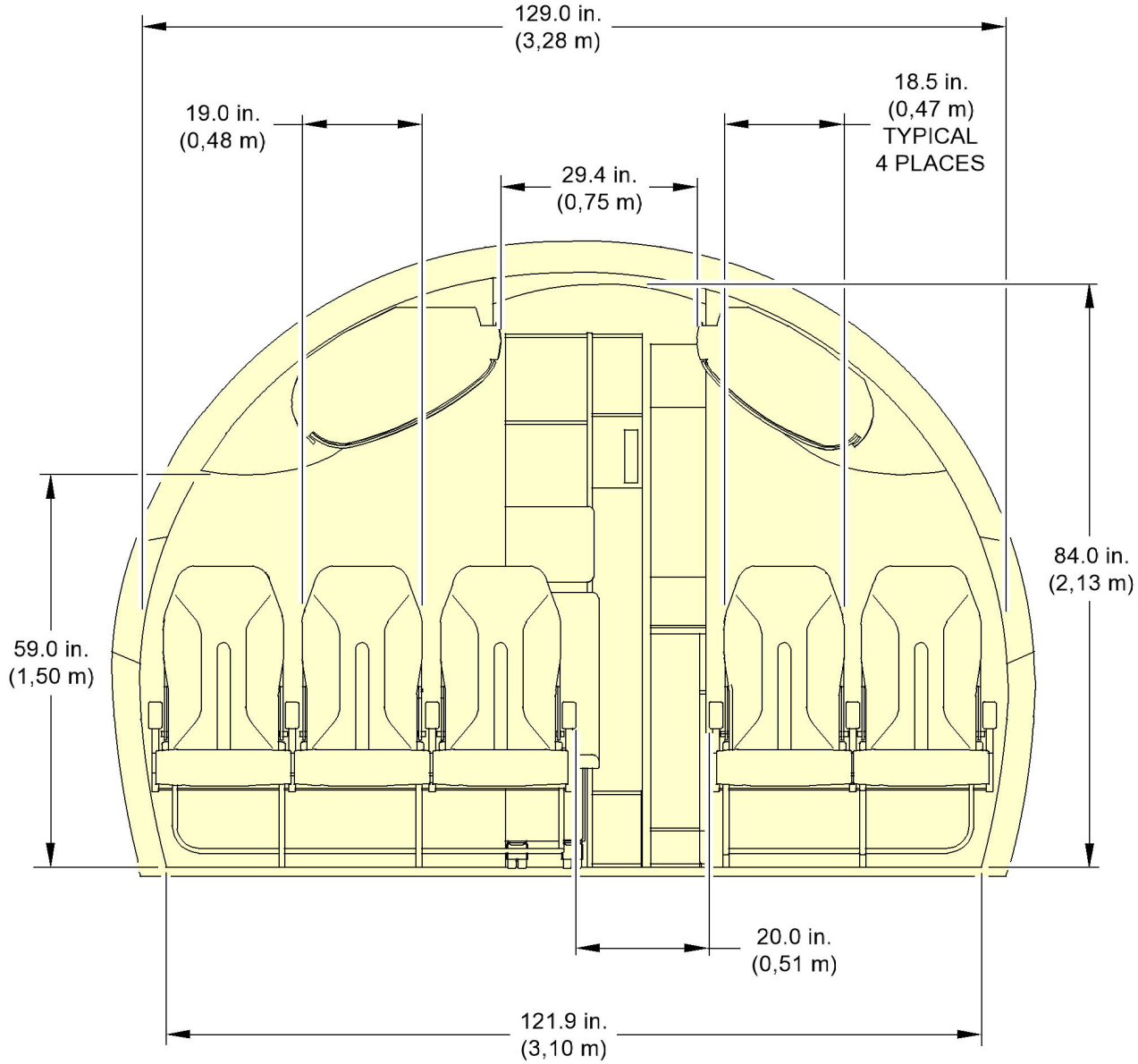

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Figure 4 Passenger cross-section (economy class)

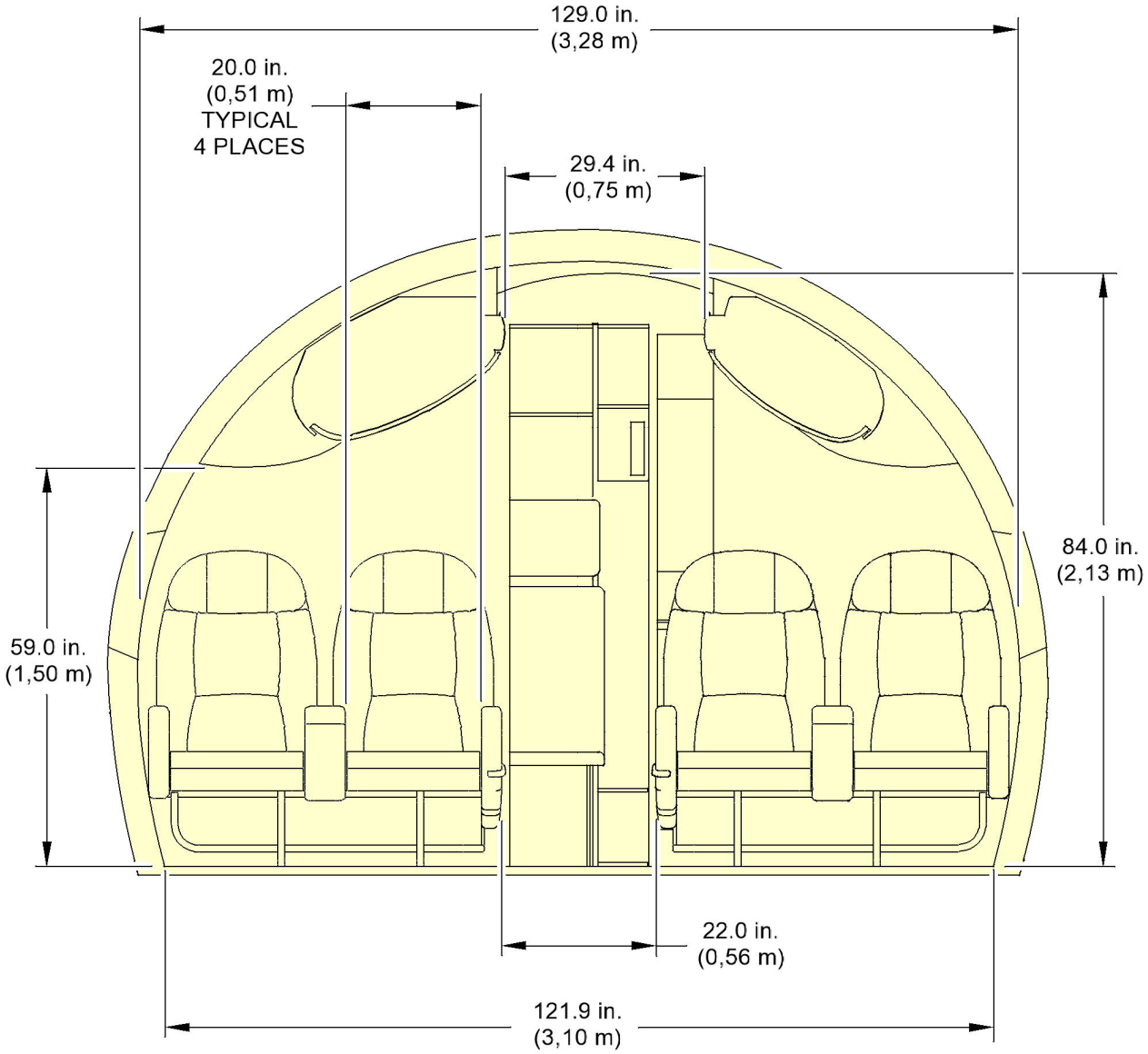

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Figure 5 Passenger cross-section (optional business class)

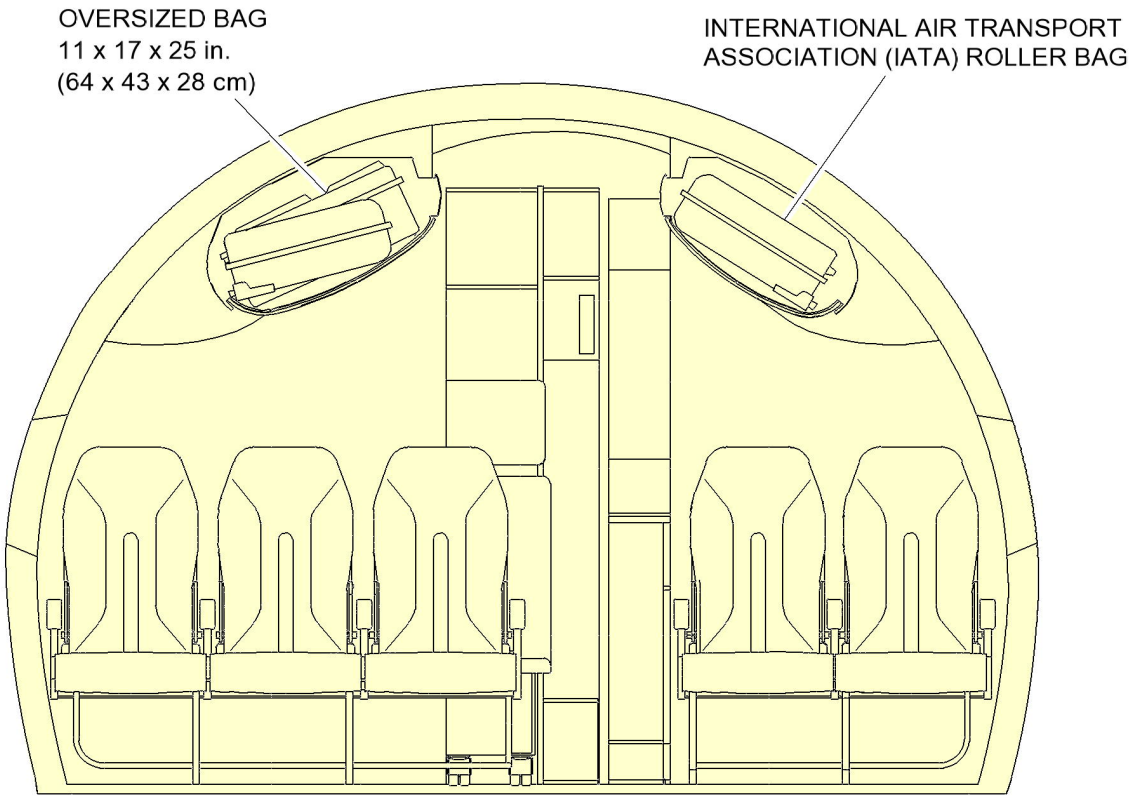

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Figure 6 Overhead stowage bins

6 Cargo compartment

Two under-floor cargo compartments are provided, each with a dedicated outward-opening access door. The forward compartment is positioned between the forward equipment compartment and the Environmental Control System (ECS) distribution bay. The aft compartment is positioned between the mid equipment compartment and the water system bay. Refer to Fig. 7.

Both compartments are furnished with heavy duty floor panels and sidewall linings and are sealed to meet the requirements of a Class C compartment. Decompression and ventilation panels are provided as well. The compartment linings also incorporate provisions for compartment lighting, smoke detector, and fire extinguish.

The combined maximum weight loading of the cargo compartment is 8,390 lb (3 806 kg).

6.1 Cargo door nets

Protective nets are provided at the door area of each cargo compartment to prevent baggage from fouling the door due to in-flight shifting of the loads. Refer to Fig. 8.

6.2 Volumes – Cargo compartment

The estimated volume of the cargo compartments is based on geometric volume and accounts for the unusable area in the vicinity of the cargo doors. Table 6 lists the estimated wet volume of the cargo compartments.

Table 6 Cargo compartment volumes

Description	CS100
Cargo compartments (wet total)	839 ft³ (23.7 m³)
Fwd cargo compartment	365 ft³ (10.3 m³)
Aft cargo compartment	474 ft³ (13.4 m³)

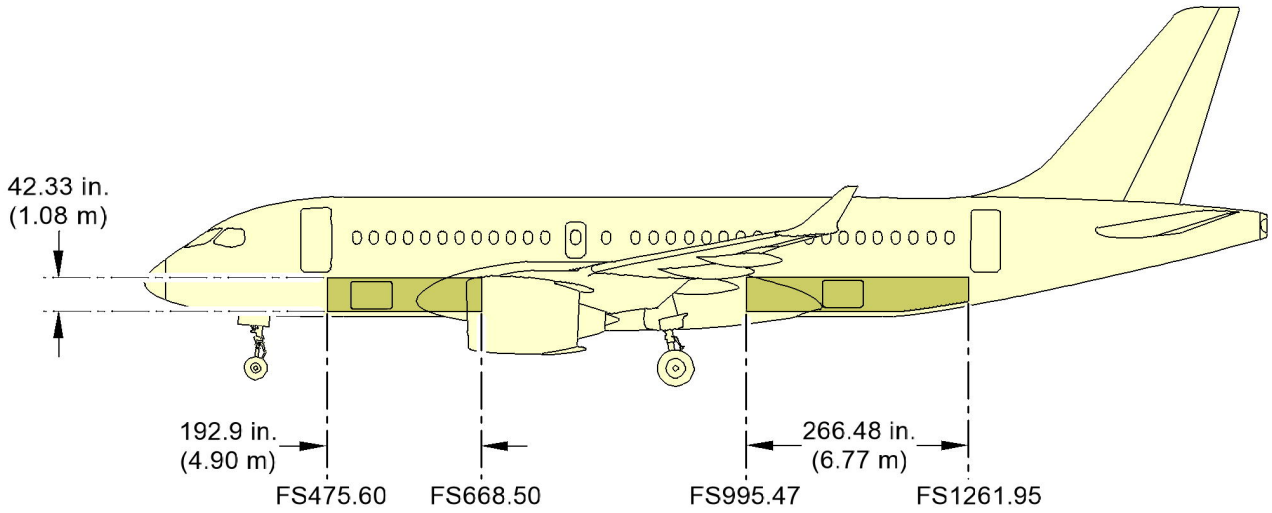

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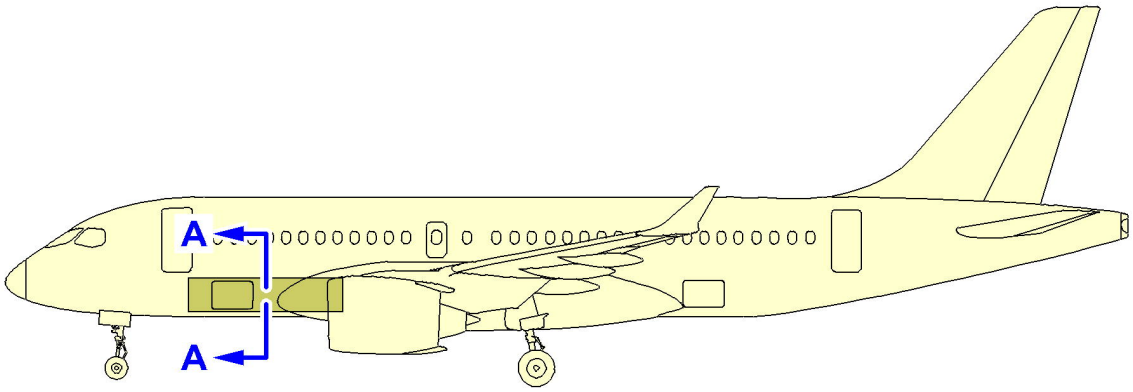
Figure 7 Aircraft cargo side view - (Sheet 1 of 3)



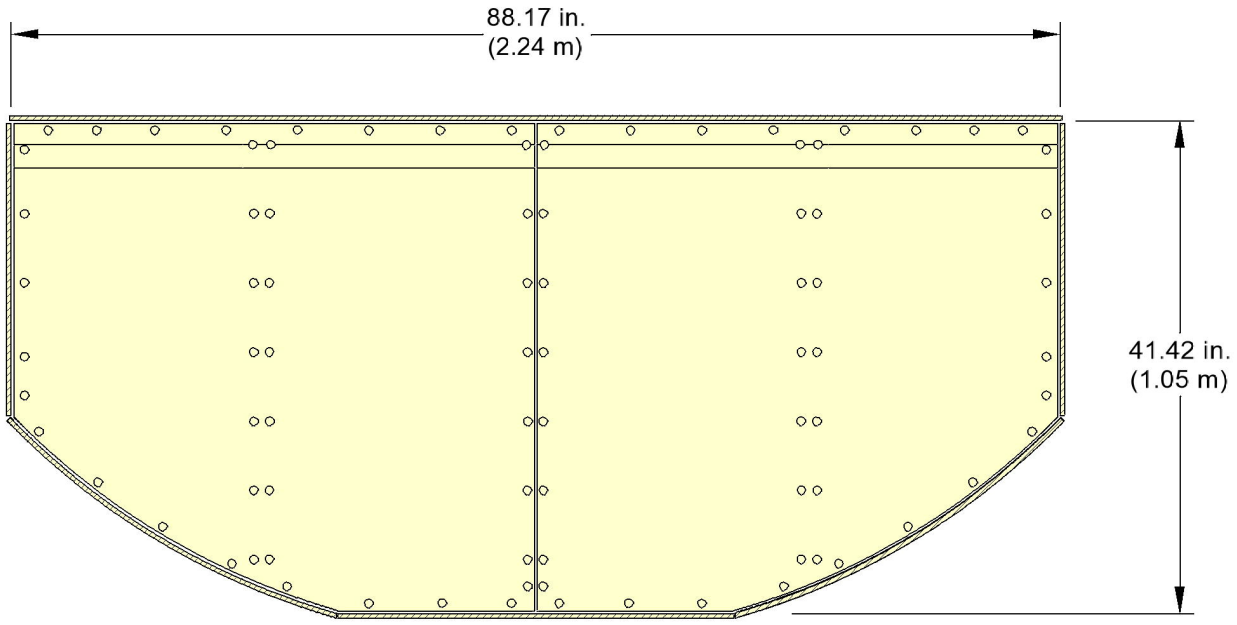


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Figure 7 Aircraft cargo side view - (Sheet 2 of 3)

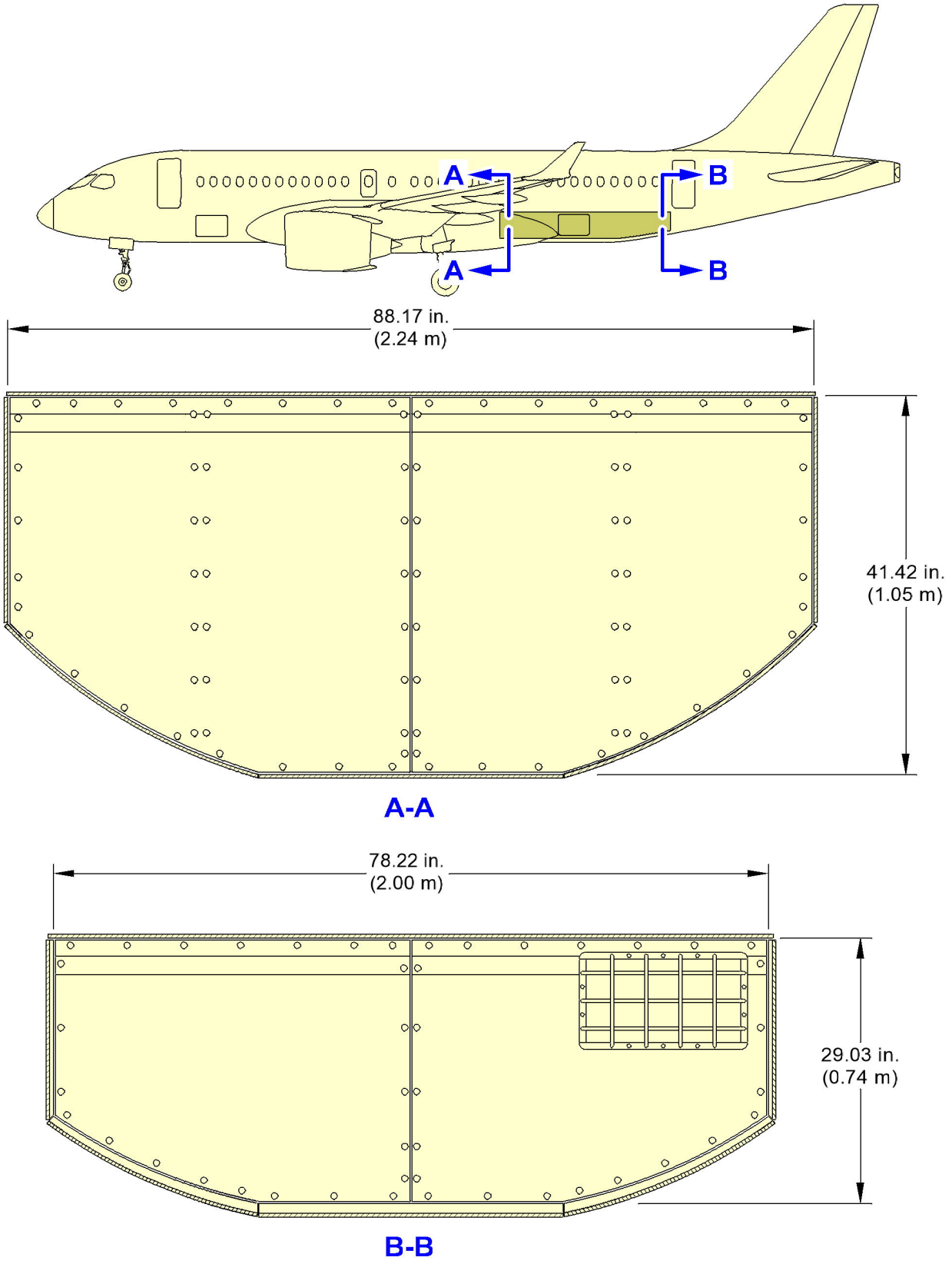

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Figure 7 Aircraft cargo side view - (Sheet 3 of 3)

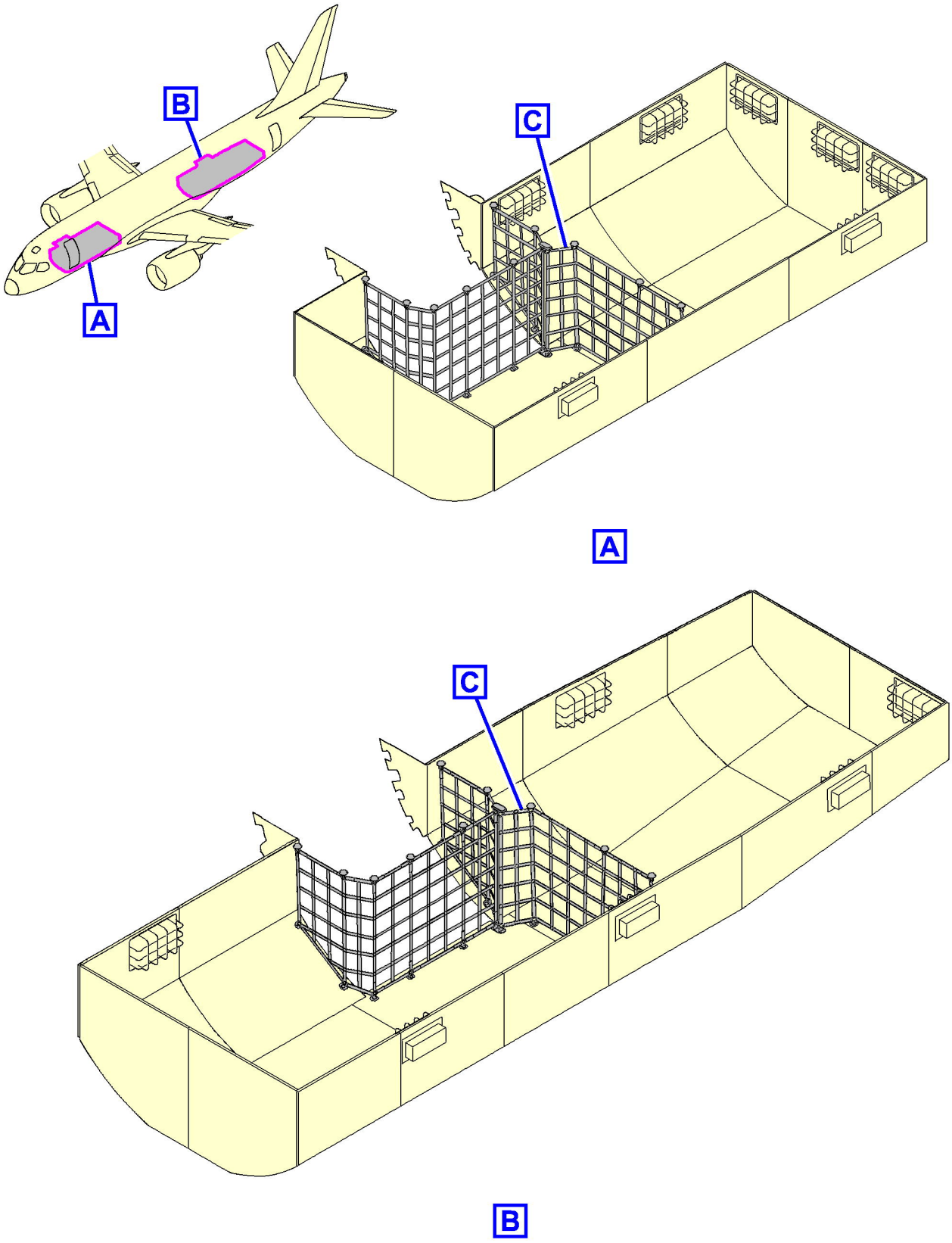

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Figure 8 Cargo nets - (Sheet 1 of 2)

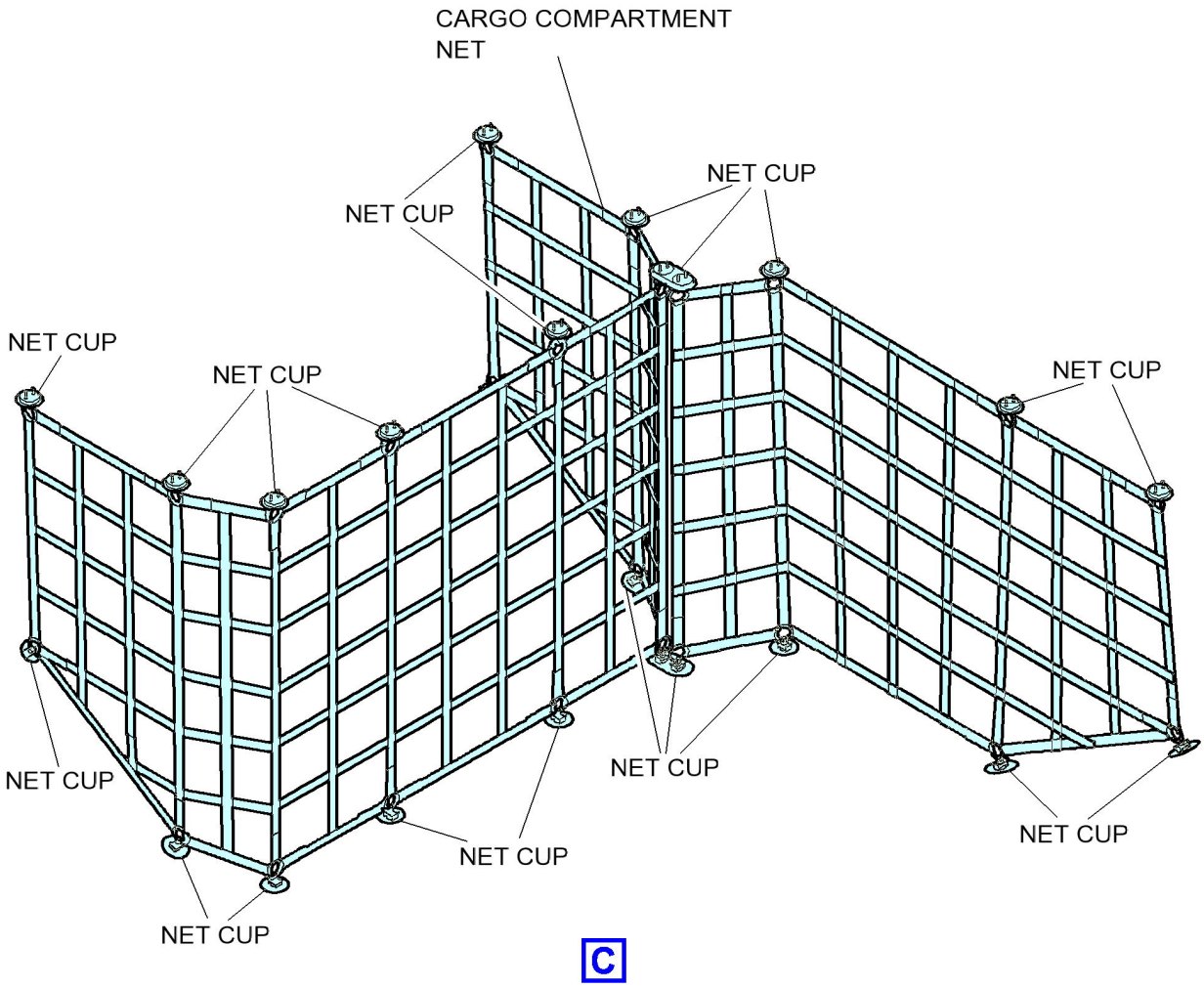

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Figure 8 Cargo nets - (Sheet 2 of 2)

7 Door clearances and clear opening dimensions

A general description of the doors is as follows:

7.1 Passenger/Crew

Two semi-plug type doors on the left side of the aircraft provide access for passengers and crew. Door 1L is considered the primary entrance while door 2L provides a secondary entrance available for passenger loading/unloading as well as ground servicing.

Each door is classified as a type C floor level exit. Due to the sill height, every door incorporates an emergency evacuation slide system. In addition each one translates outwards from closed position, supported by a hinged arm to rest in open position.

Every door is operable from the exterior and interior of the aircraft and features an inspection window to allow verification of the outside conditions from the interior. The exterior operating handle has a linear motion and is interconnected to a vent flap system to provide pressure equalization between the aircraft and the ambient air prior to be opened.

Each door is fully lined and insulated to meet thermal and noise performance requirements.

For Passenger/Crew doors distance from the nose, refer to Fig. 10. For door dimensions, refer to Table 7. For forward passenger door opening and clearances, refer to Fig. 11. For aft passenger door opening and clearances, refer to Fig. 12.

7.2 Emergency exit

The over-wing emergency exits are type III semi-plug type doors.

The exits are provided with an operating handle with removable cover and are fitted with a standard sized passenger compartment window. Each door is fully lined and insulated to meet thermal and noise performance requirements.

The door rotates upwards from the closed position, supported by a hinged arm to rest in open position. The door opening sequence is automatically supported by the energy stored in its own mechanism.

For emergency access to the passenger compartment, the doors may be opened from an exterior handle.

Due to the exit path height from the ground, an off-wing evacuation slide system is provided.

For over-wing emergency exits distance from the nose, refer to Fig. 10. For doors dimensions, refer to Table 7.

7.3 Flight compartment emergency exit

The flight compartment is outfitted with a single, inward-opening overhead escape hatch.

7.4 Cargo doors

Access doors are provided to allow cargo compartment loading and unloading.

The semi-plug forward and aft cargo doors are identical components, each hinged along the top edge of its frame.

Each door incorporates an exterior lock/unlock handle with linear motion that is interconnected to a vent flap system and provide pressure equalization between the aircraft and the ambient air prior to be opened.

An actuation system with a switch panel is provided for each door to facilitate opening and closing.

Each door is fully lined and insulated to meet thermal and noise performance requirements.

For cargo doors distance from the nose, refer to Fig. 10. For doors dimensions, refer to Table 7. For forward cargo door opening and clearances, refer to Fig. 13. For aft cargo door opening and clearances, refer to Fig. 14.

7.5 Service doors

Two semi-plug type doors are provided on the right side of the aircraft to provide access for the forward (door 1R) and aft (door 2R) galley service areas.

Each door is classified as a type C floor level exit. Due to the sill height, each door incorporates an emergency evacuation slide system.

Each door translates outwards from the closed position, supported by a hinged arm and stabilizing system, to rest parallel to the fuselage in the open position.

Each door is operable from the exterior and interior of the aircraft and features an inspection window to allow verification of the outside conditions from the interior. The exterior operating handle has a linear motion and is interconnected to a vent flap system to provide pressure equalization between the aircraft and the ambient air prior to be opened.

Each door is fully lined and insulated to meet thermal and noise performance requirements.

For service doors distance from the nose, refer to Fig. 10. For service doors dimensions, refer to Table 7. For forward service door opening and clearances, refer to Fig. 15. For aft service door opening and clearances, refer to Fig. 16.

7.6 Forward avionics bay door

A plug-type door is provided in the forward fuselage to gain access to the pressurized forward equipment compartment. The door is fitted with a stowable operating handle.

For forward equipment compartment door distance from the nose, refer to Fig. 10. For dimensions, refer to Table 7.

7.7 Mid avionics bay door

A plug-type door is provided in the mid fuselage to gain access to the pressurized mid equipment compartment. The door is fitted with a stowable operating handle.

For mid equipment compartment door distance from the nose, refer to Fig. 10. For dimensions, refer to Table 7.

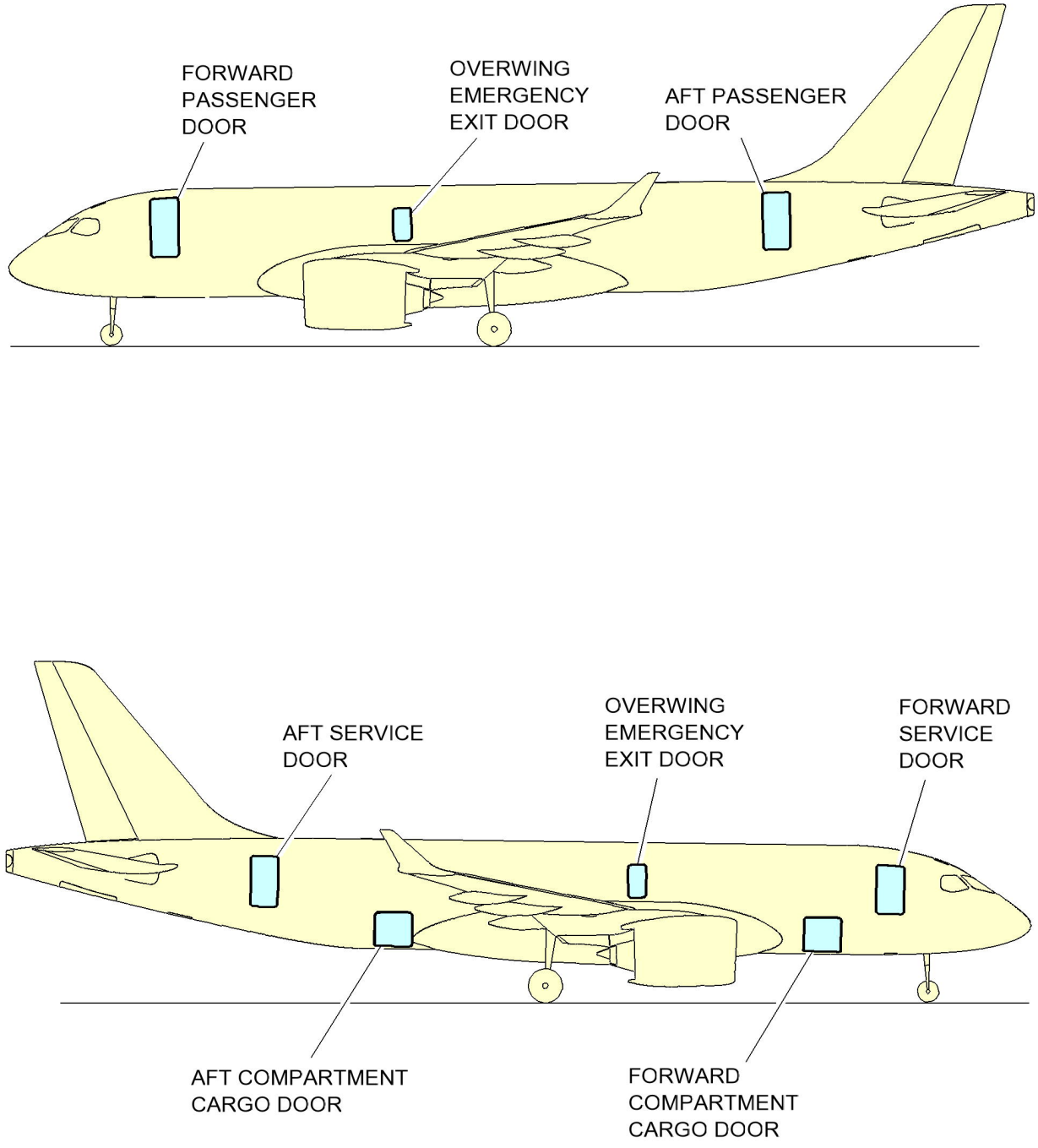
7.8 Aft equipment bay door

A door is provided in the aft fuselage to gain access to the unpressurized aft equipment compartment.

For aft equipment compartment door distance from the nose, refer to Fig. 10. For dimensions, refer to Table 7.

7.9 Doors identification

This section shows a general overview of the doors



ICN-BD500-A-J000000-A-3AB48-23216-A-001-01

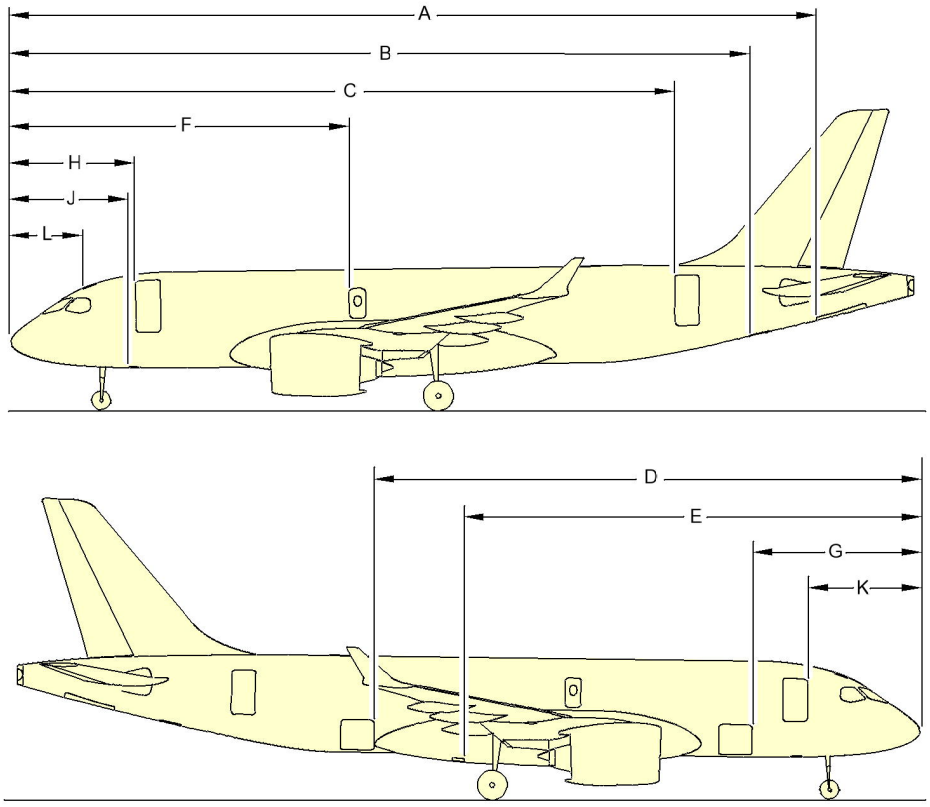
Figure 9 General door location

7.10 Access and exit doors dimensions

Table 7 Access and exit doors dimensions

Door	Height	Width
Main entrance door - Type C exit (door 1L)	6 ft 3in. (1,9 m)	2 ft 6 in. (0,8 m)
Service door - Type C exit (door 1R)	5 ft 0 in. (1,5 m)	2 ft 6 in. (0,8 m)
Aft entrance door - Type C exit (door 2L)	6 ft 0 in. (1,8 m)	2 ft 6 in. (0,8 m)
Service door - Type C exit (door 2R)	5 ft 0 in. (1,5 m)	2 ft 6 in. (0,8 m)
Forward avionics bay door	2 ft 8 in. (0,81 m)	3 ft 8 in. (1,1 m)
Mid avionics bay door	2 ft 8 in. (0,81 m)	3 ft 8 in. (1,1 m)
Aft equipment bay door	3 ft 6 in. (1,08 m)	1 ft 11 in. (0,6 m)
Forward cargo compartment door	2 ft 8 in. (0,81 m)	3 ft 8 in. (1,1 m)
Aft cargo compartment door	2 ft 8 in. (0,81 m)	3 ft 8 in. (1,1 m)
Over-wing emergency exit	3 ft 6 in. (1,08 m)	1 ft 11 in. (0,59 m)
Flight compartment emergency exit	22 in. (0,559 m)	20 in. (0,508 m)

7.11 Door distance from nose



Dimensions	CS100
A	102 ft 4 in. (31,2 m)
B	93 ft 10 in. (28,6 m)
C	84 ft 4 in. (25,7 m)
D	69 ft 4 in. (21,1 m)
E	58 ft 0 in. (17,7 m)
F	43 ft 0 in. (13,11 m)
G	21 ft 4 in. (6,5 m)
H	15 ft 10 in. (4,8 m)
J	15 ft 0 in. (4,6 m)
K	14 ft 3 in. (4,3 m)
L	9 ft 2 in. (2,8 m)

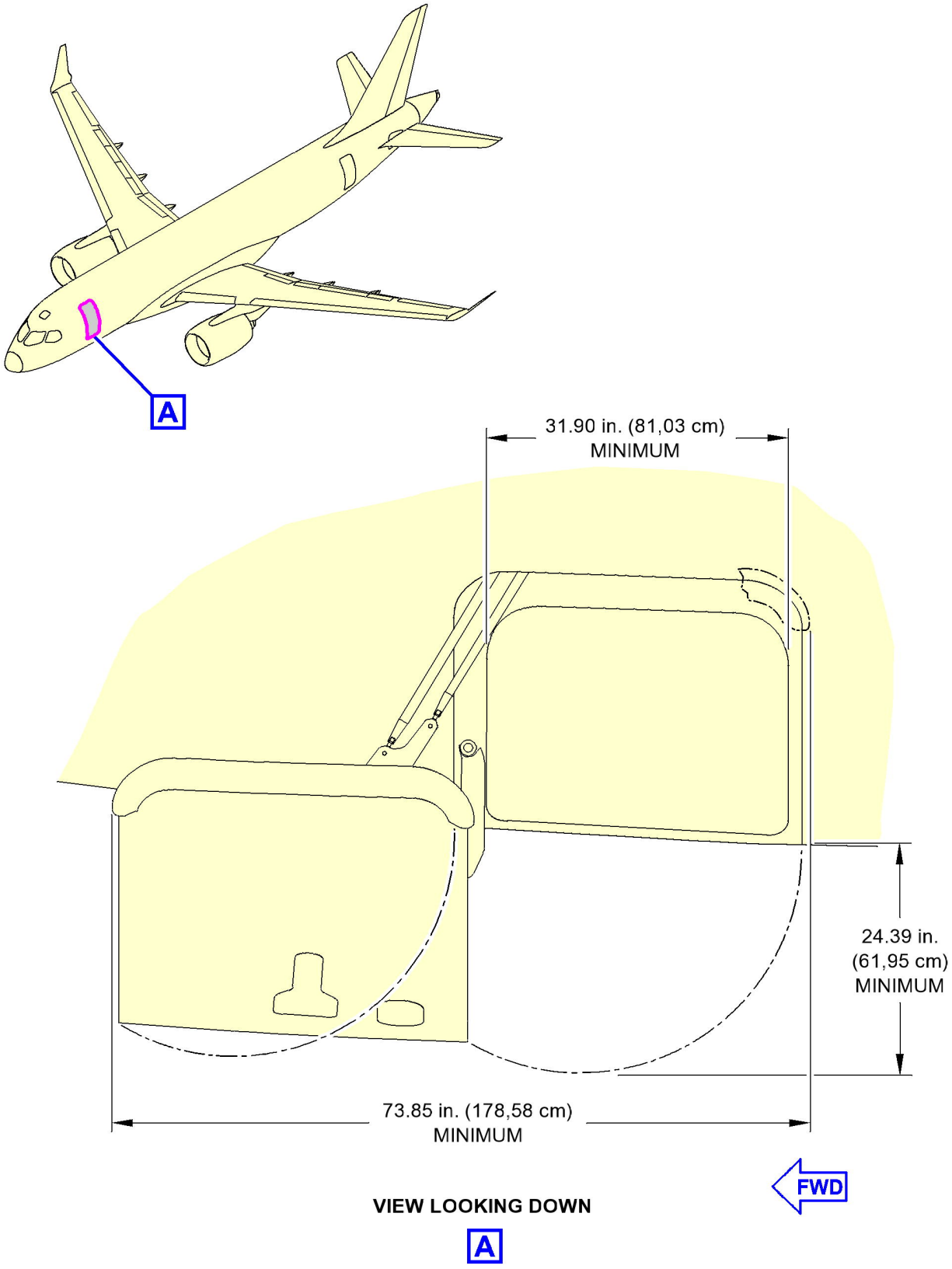
NOTES

The values shown are the greatest possible variations in attitude due to the variation of aircraft weight and gravity.

ICN-BD500-A-J000000-A-3AB48-21712-A-001-01

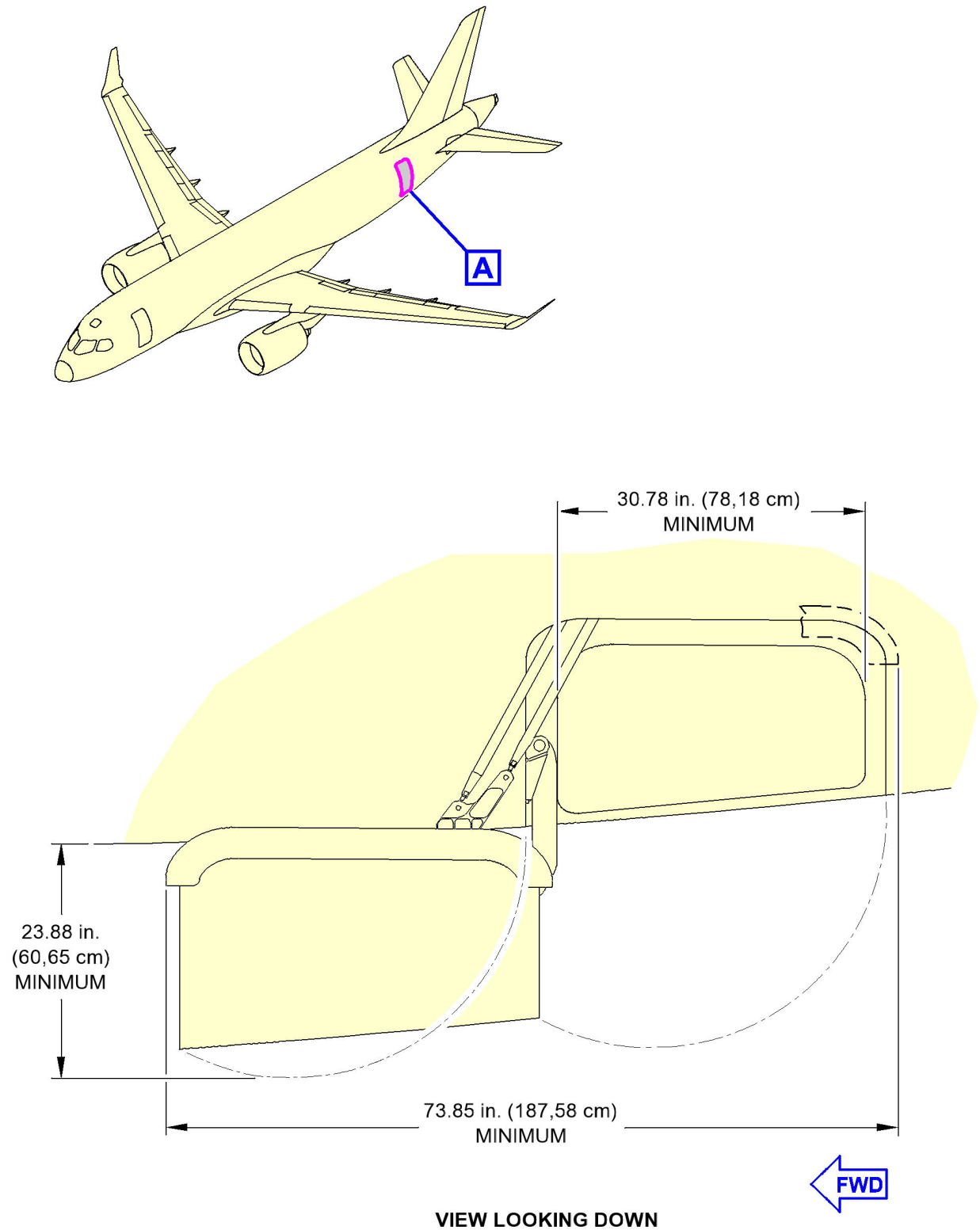
Figure 10 Door distance from nose

7.12 Door opening and clearance



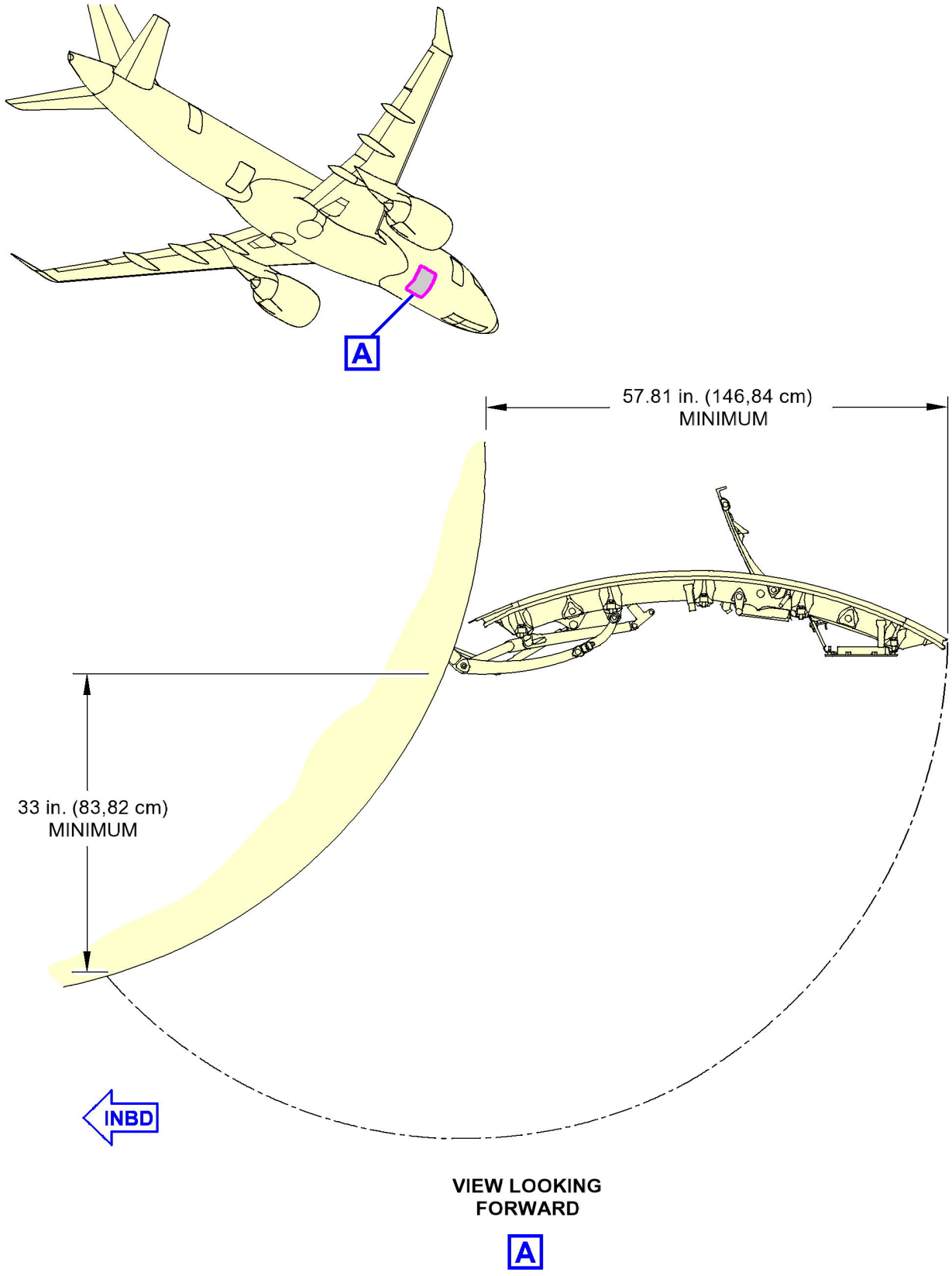
ICN-BD500-A-J061100-A-3AB48-00103-A-003-01

Figure 11 Forward passenger door opening and clearances



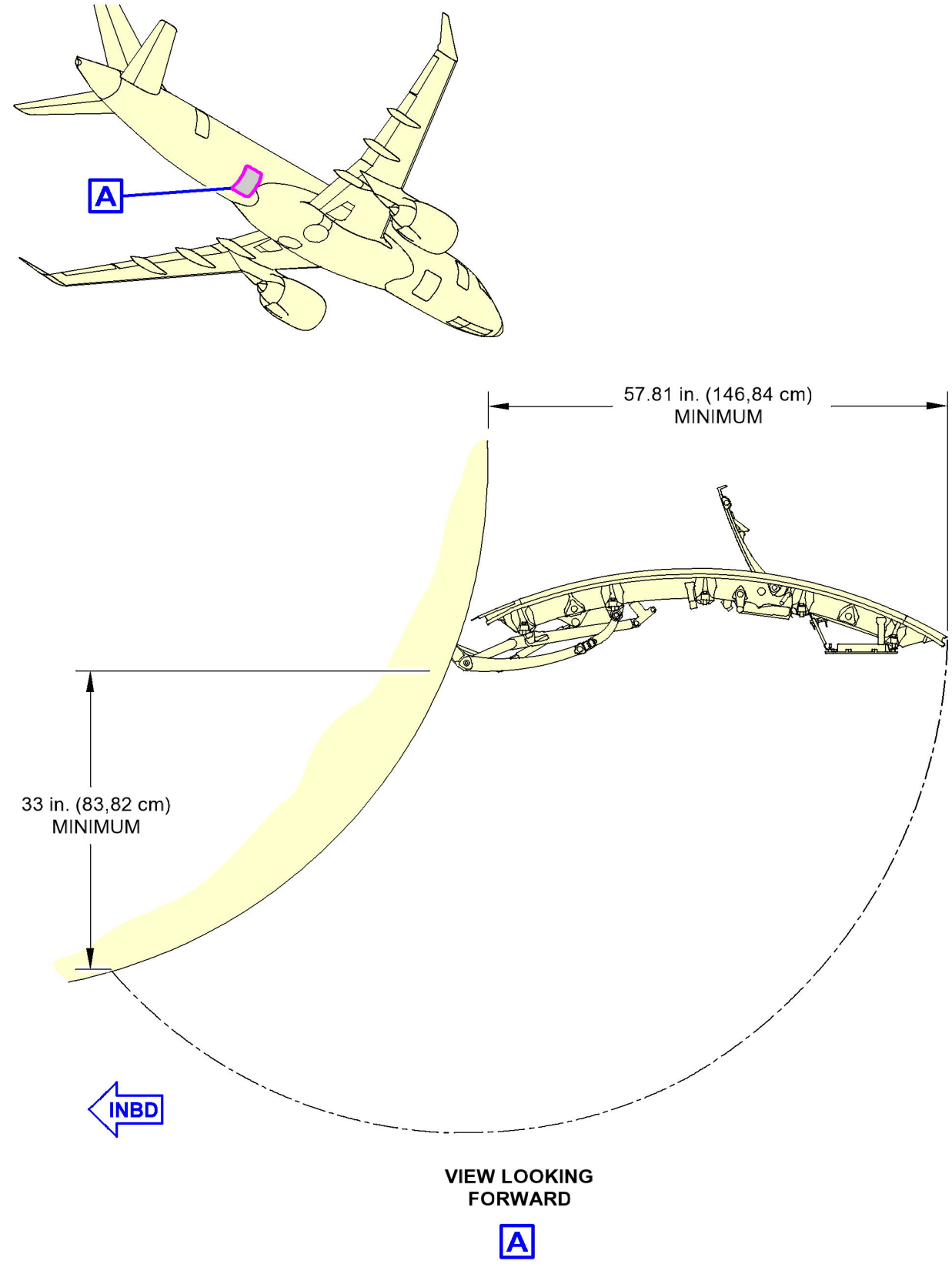
ICN-BD500-A-J061100-A-3AB48-00104-A-003-01

Figure 12 Aft passenger door opening and clearances



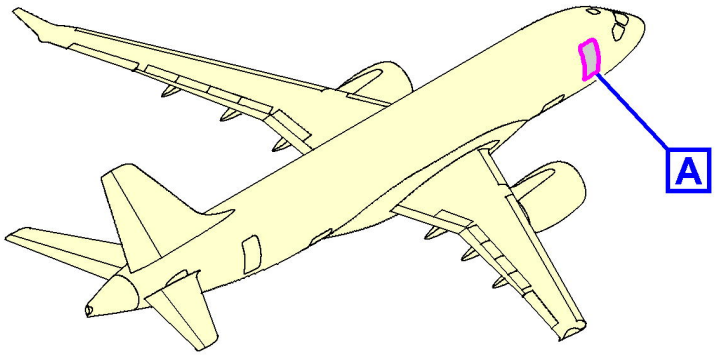
ICN-BD500-A-J061100-A-3AB48-00102-A-002-01

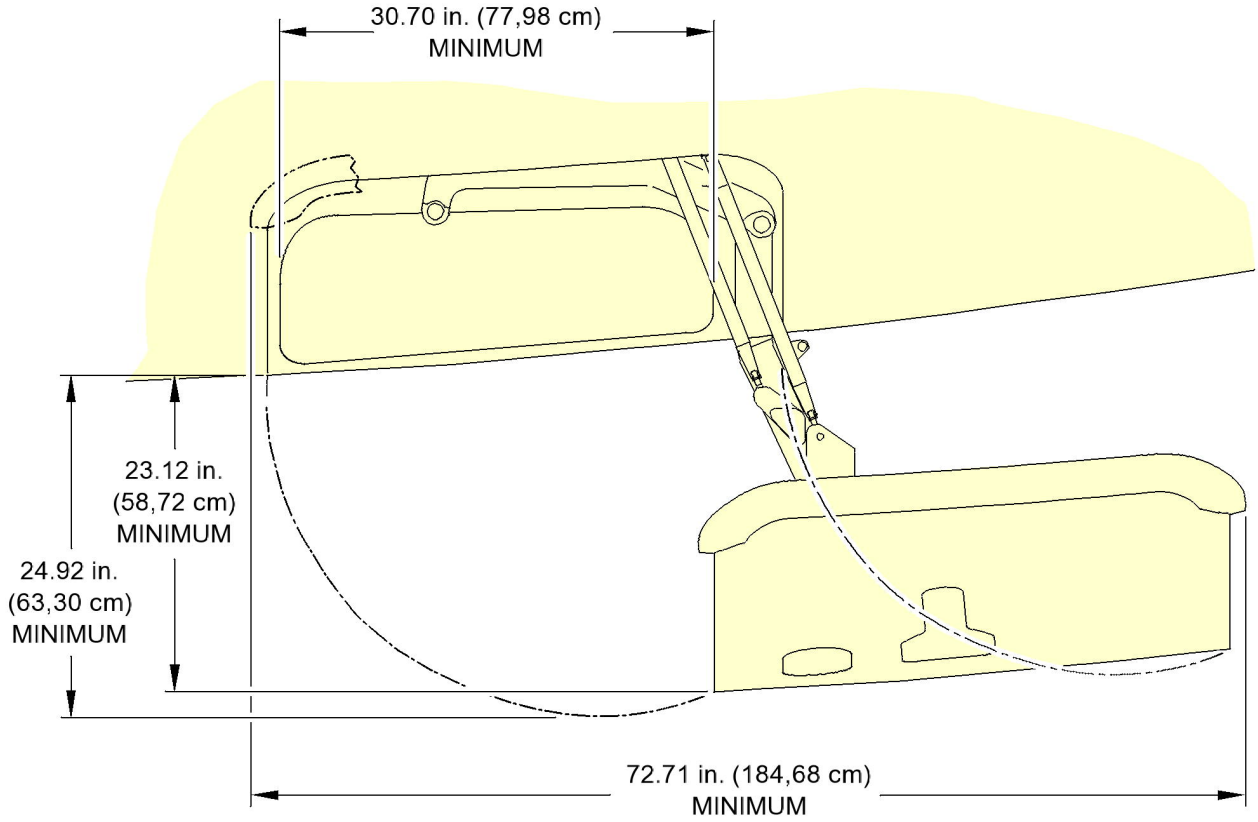
Figure 13 Forward cargo compartment door opening and clearances



ICN-BD500-A-J061100-A-3AB48-00101-A-002-01

Figure 14 Aft cargo compartment door opening and clearances



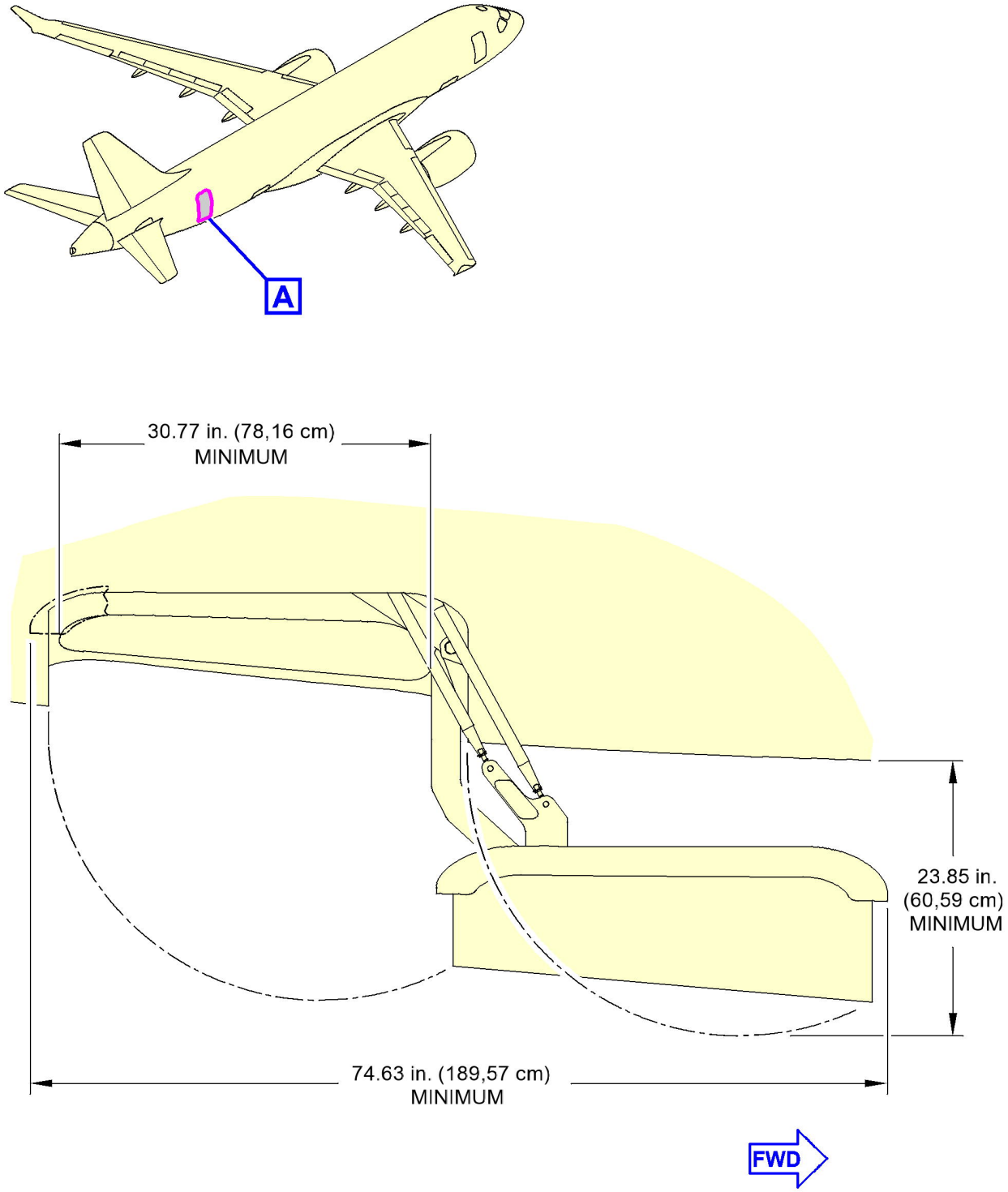


VIEW LOOKING DOWN

A

ICN-BD500-A-J061100-A-3AB48-00106-A-002-01

Figure 15 Forward service door opening and clearance



ICN-BD500-A-J061100-A-3AB48-00105-A-002-01

Figure 16 Aft service door opening and clearances

CSERIES

Aircraft performance - Technical data

Applicability: Model: CS100

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Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Introduction

This data module gives data about:

- Payload/Range
- Takeoff field length requirements
- Landing field length requirements
- Landing reference speed

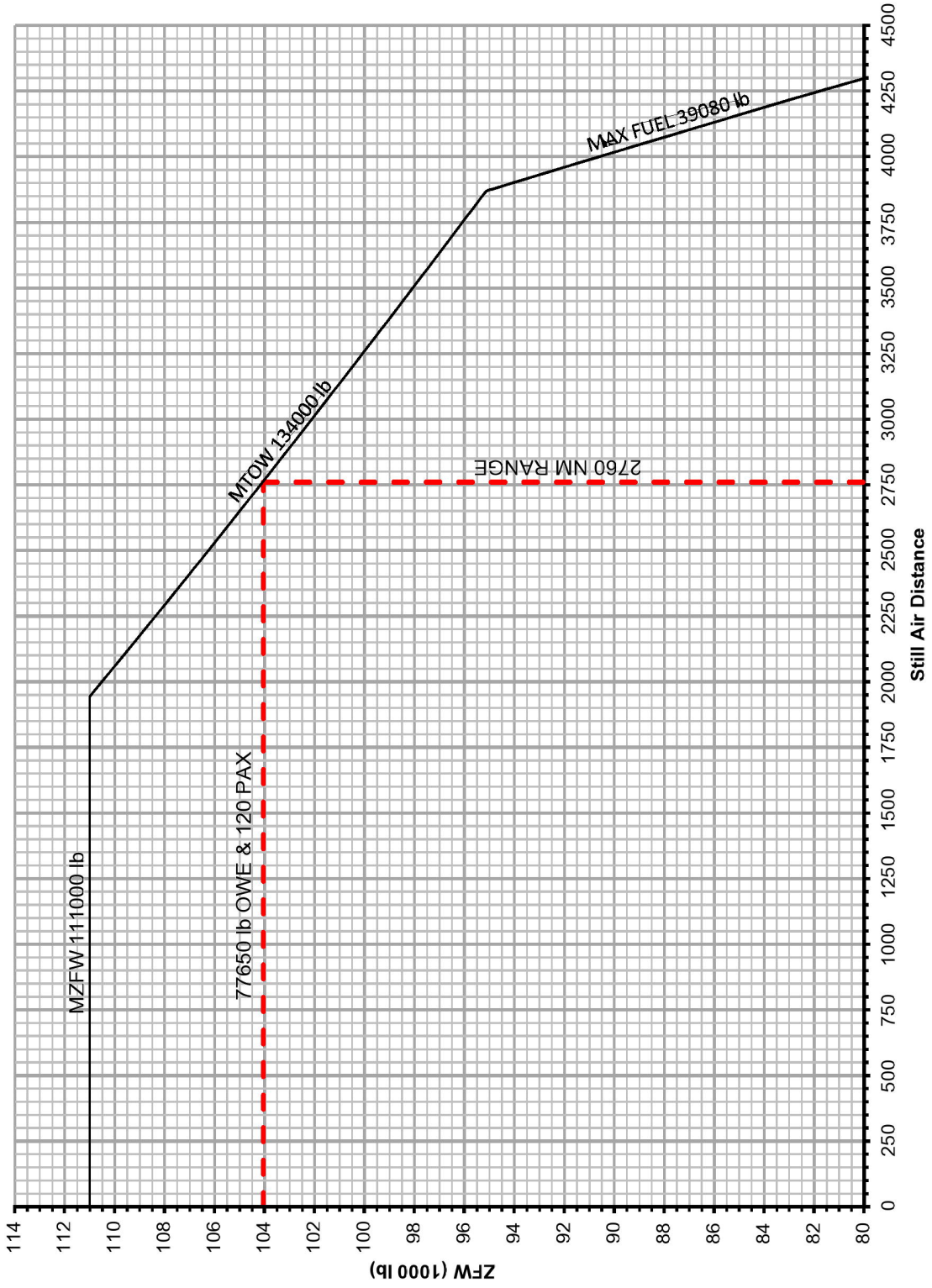
The table below provides standard day temperature for pressure altitudes.

Table 2 Standard day temperature chart

Altitude		Standard day temperature	
Feet (ft.)	Meters (m)	ºF	ºC
0	0	59	15
2000	610	51.9	11
4000	1220	44.7	7.1
6000	1830	37.6	3.1
8000	2440	30.5	-0.8
10000	3050	23.3	-4.8

2 Payload/Range

This section gives information about the payload/range at ISA conditions.



ICN-BD500-A-J000000-A-3AB48-23899-A-002-01

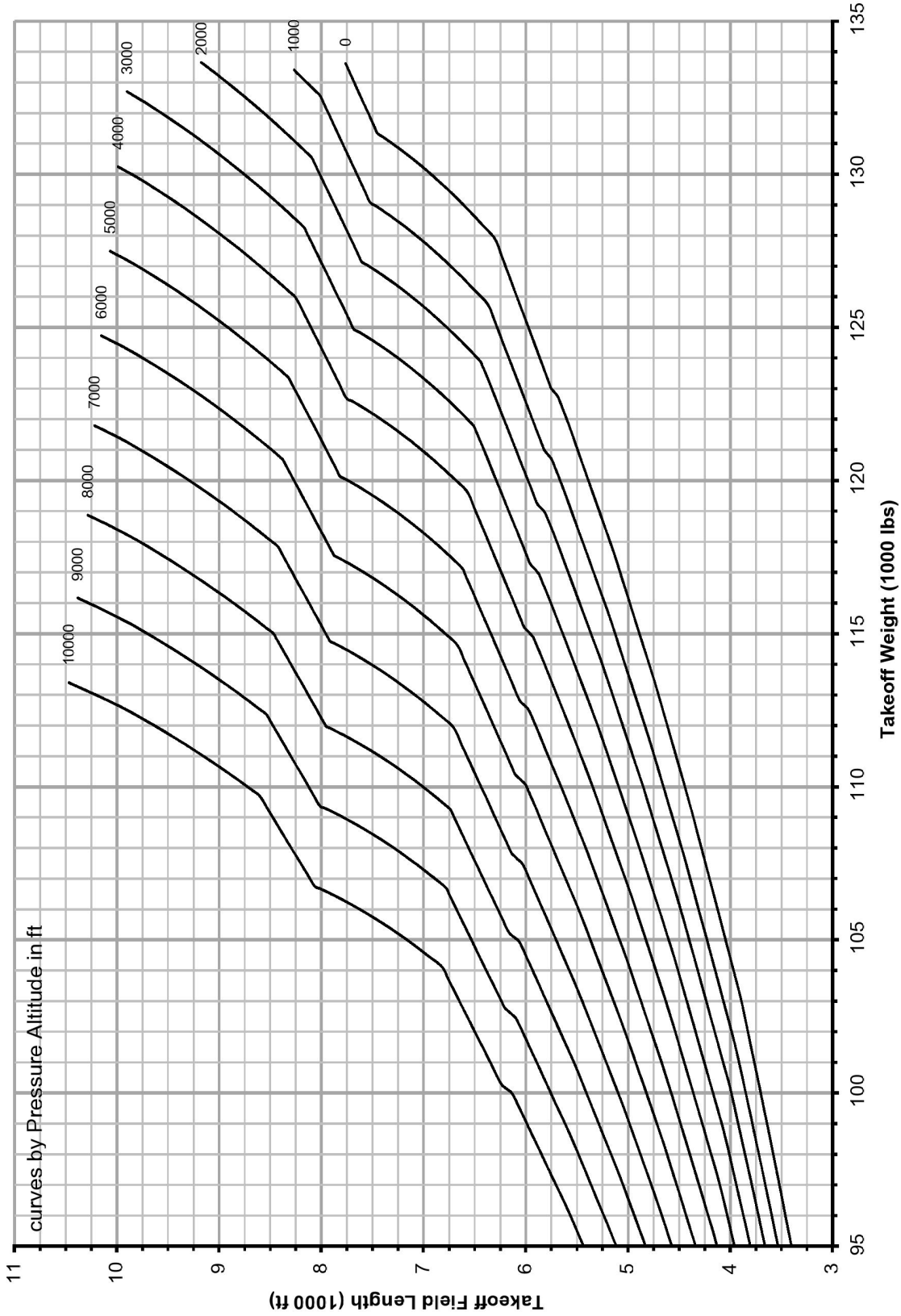
Figure 1 Zero Fuel Weight (ZFW) vs Range ISA

3 Takeoff field length requirements

For more information about aircraft performance, refer to the Aircraft Flight Manual (AFM) BD500–3AB48–22200-00.

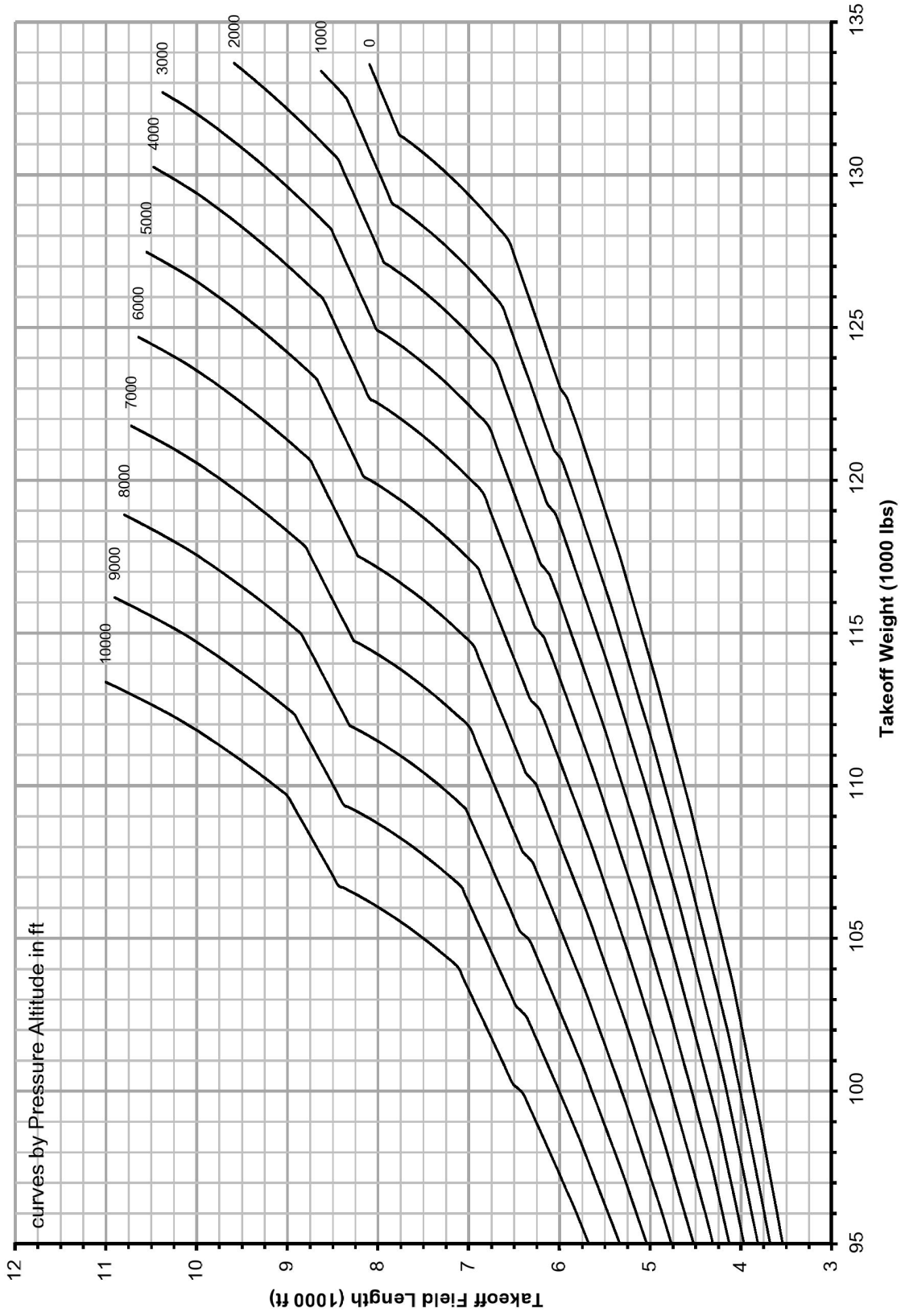
For aircraft performance and field length requirements refer to:

- Fig. 2 for the takeoff field length ISA - PW1519G.
- Fig. 3 for the takeoff field length ISA +15°C - PW1519G.
- Fig. 4 for the takeoff field length ISA - PW1521G.
- Fig. 5 for the takeoff field length ISA +15°C - PW1521G.
- Fig. 6 for the takeoff field length ISA - PW1524G.
- Fig. 7 for the takeoff field length ISA +15°C - PW1524G.



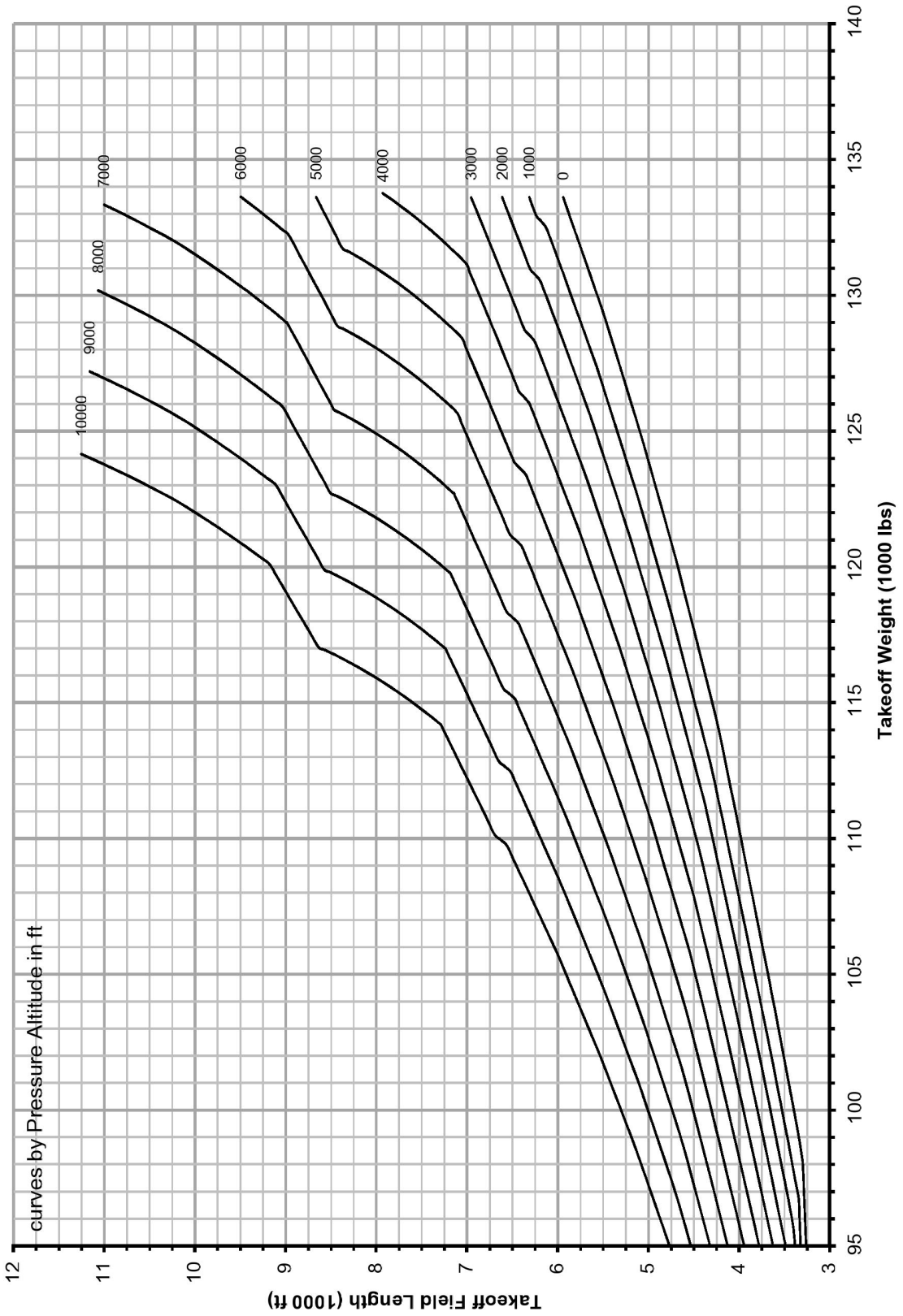
ICN-BD500-A-J000000-A-3AB48-01753-A-002-01

Figure 2 Takeoff field length - ISA - PW1519G



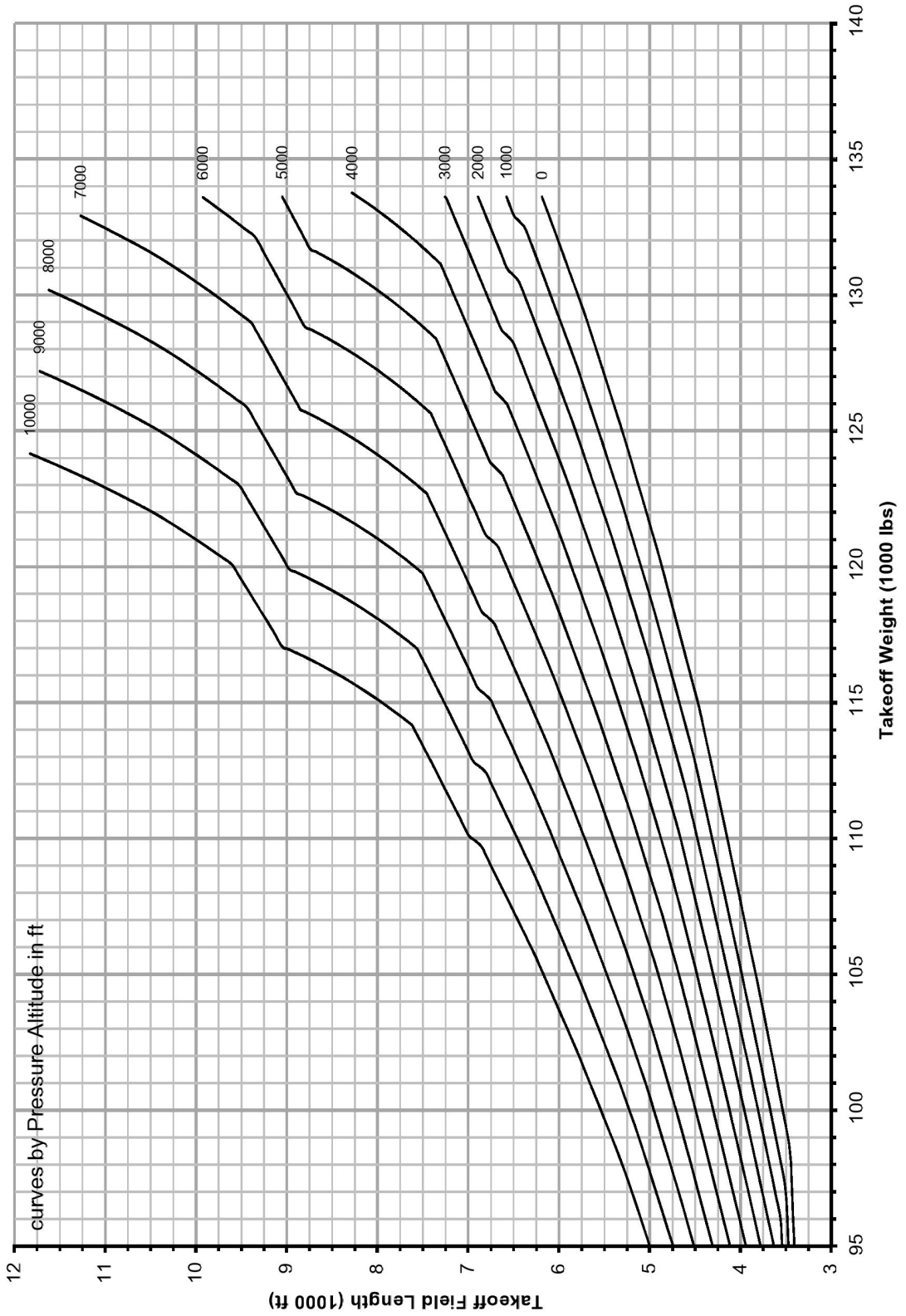
ICN-BD500-A-J000000-A-3AB48-01754-A-002-01

Figure 3 Takeoff field length ISA +15°C - PW1519G



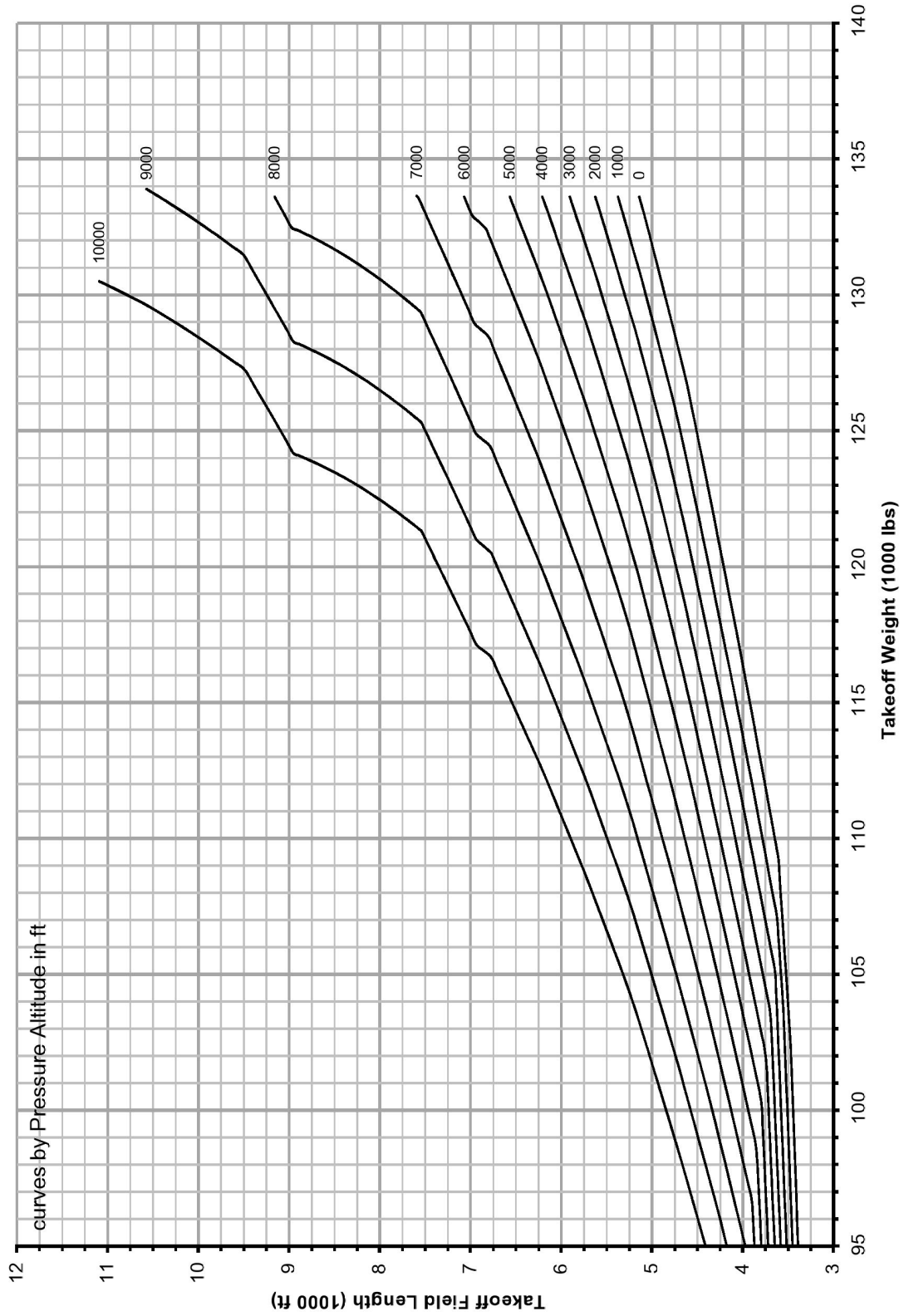
ICN-BD500-A-J000000-A-3AB48-29045-A-001-01

Figure 4 Takeoff field length ISA - PW1521G



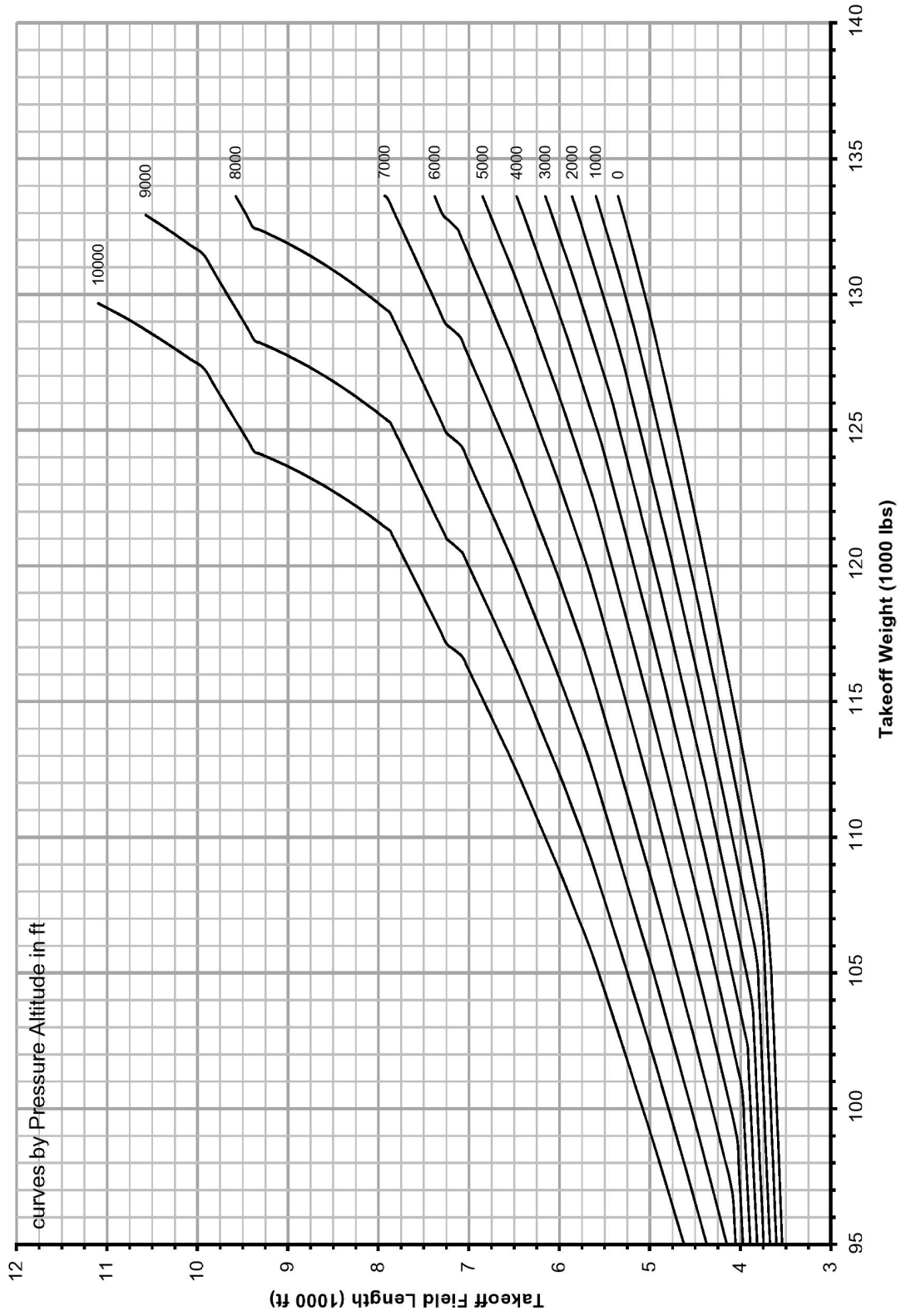
ICN-BD500-A-J000000-A-3AB48-29046-A-001-01

Figure 5 Takeoff field length ISA +15°C - PW1521G



ICN-BD500-A-J000000-A-3AB48-29047-A-001-01

Figure 6 Takeoff field length ISA - PW1524G



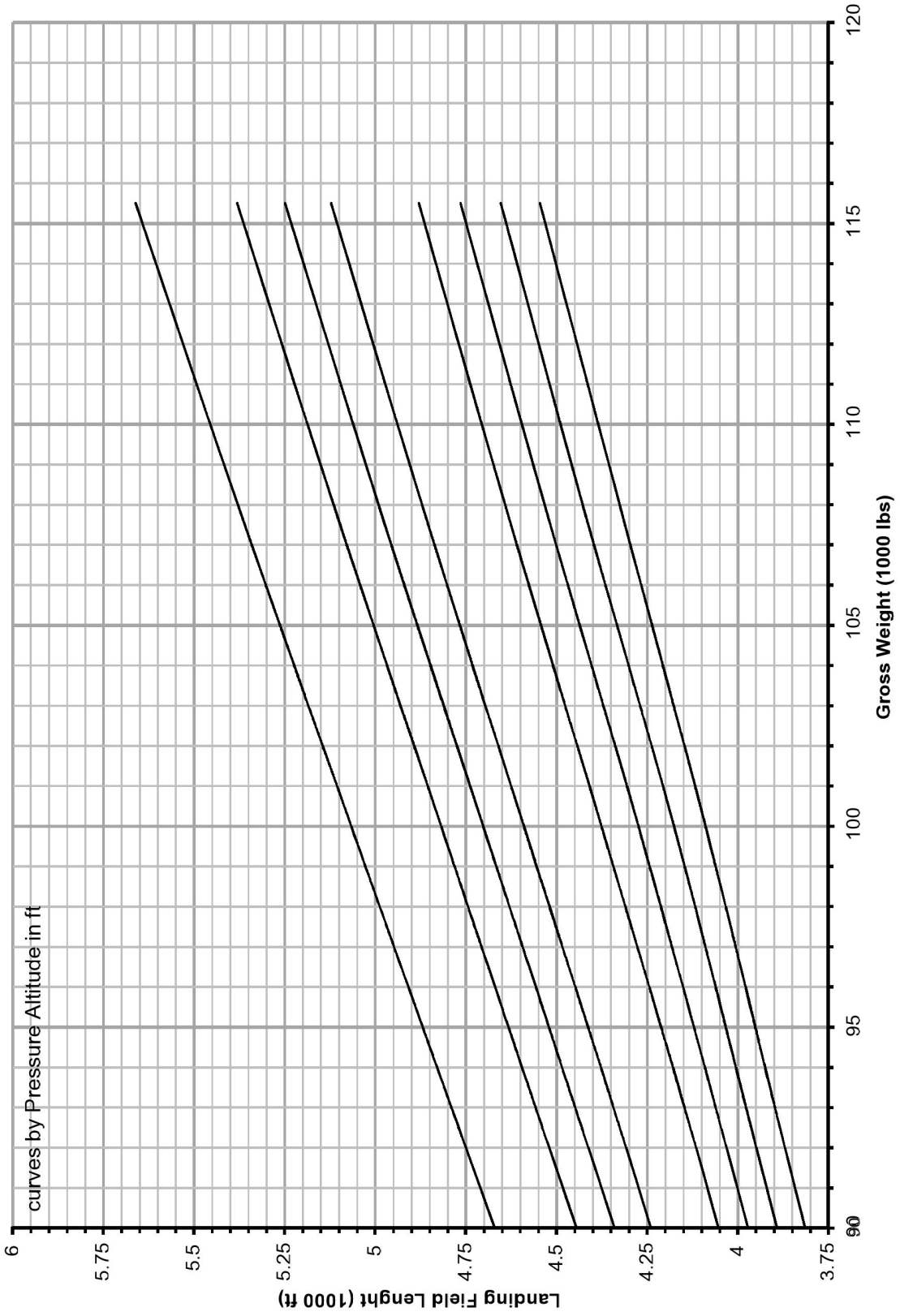
ICN-BD500-A-J000000-A-3AB48-29048-A-001-01

Figure 7 Takeoff field length ISA +15°C - PW1524G

4 Landing field length requirements

For more information about landing field, refer to the AFM BD500-3AB48-22200-00.

For landing field length requirements refer to Fig. 8.

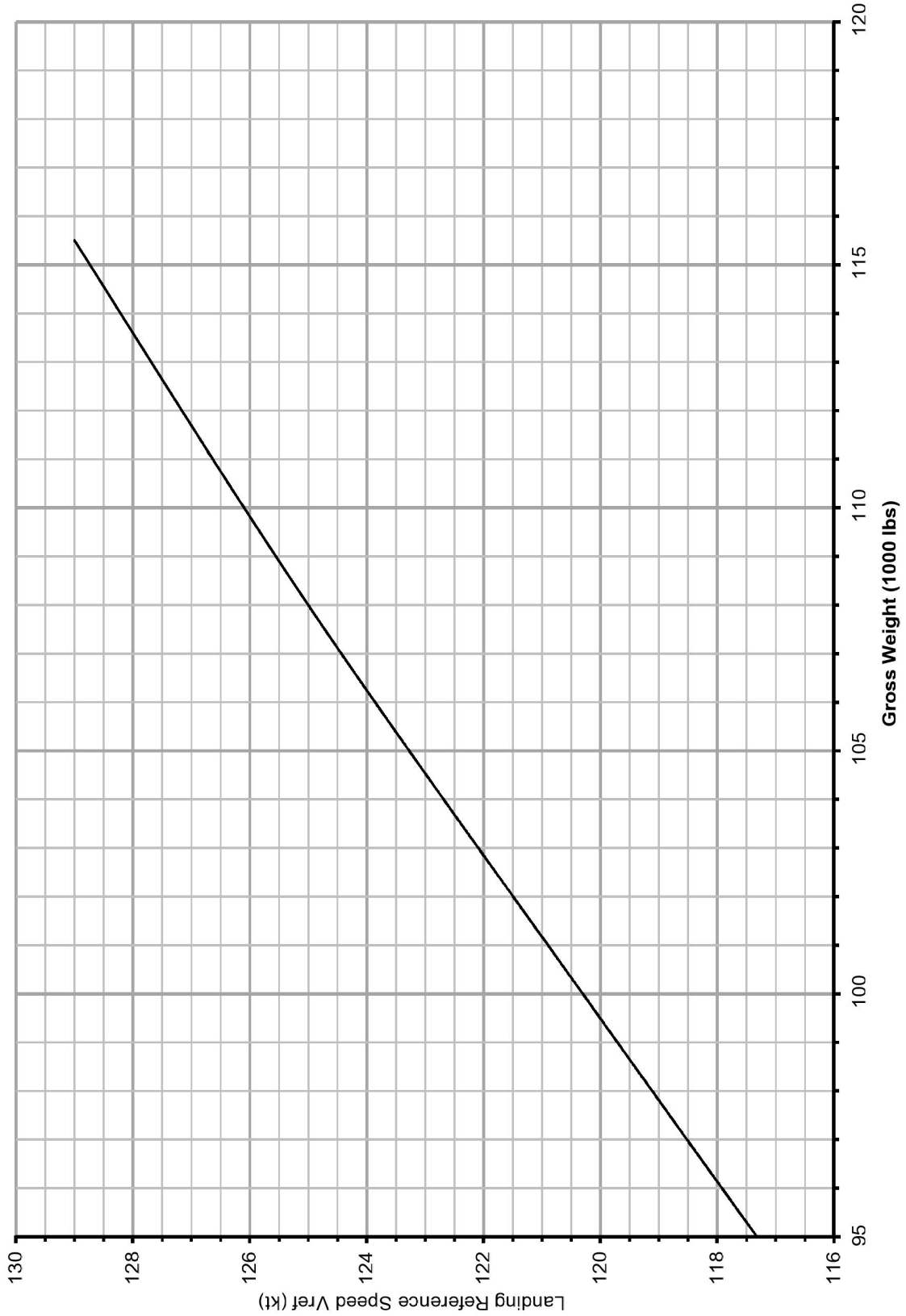


ICN-BD500-A-J000000-A-3AB48-01757-A-002-01

Figure 8 Landing field length - Dry runway

5 Landing reference speed

This section gives information about the landing reference speed.



ICN-BD500-A-J000000-A-3AB48-23901-A-002-01

Figure 9 Landing reference speed

CSERIES

Ground maneuvering - Technical data

Applicability: Model: CS100

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References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Turning radii

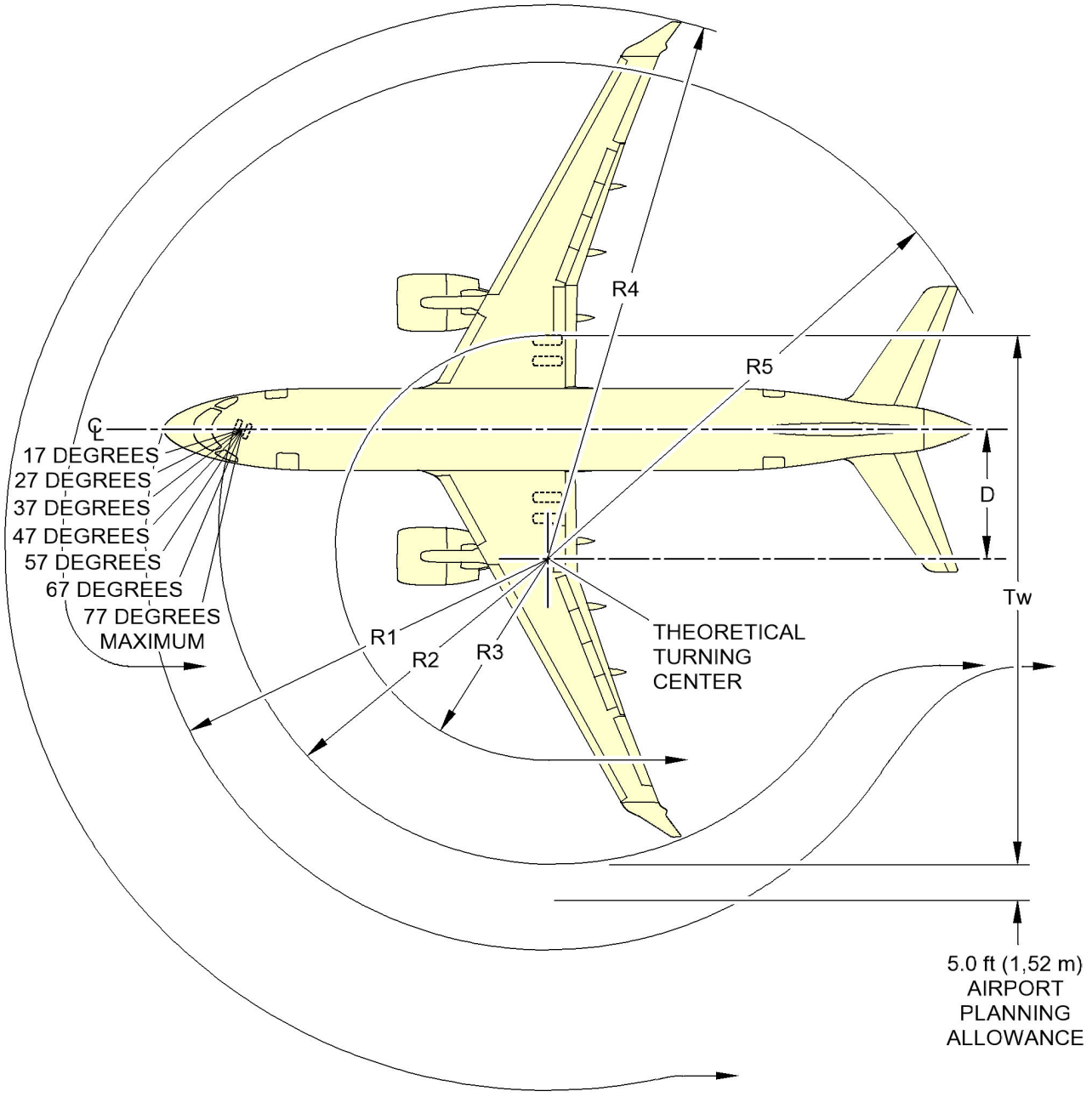
1.1 Introduction

This data module contains data about the aircraft turning capability and maneuvering characteristics on the ground. The data is based on aircraft performance in good conditions of operation. Thus, the values must be considered theoretical and used only as an aid. Refer to Table 2 for the values to use with Fig. 1 for the turn radii with 3 degree slip angle.

1.2 Landing gear turning radii, including minimum turning radii

Table 2 CS100 turning radii for various nose wheel angles

Turning angle (in degrees) with 3 degree tire slip	Turning center to aircraft center line (D)	Nose tip (R1)	Nose gear outside face (R2)	Main gear outside face (R3)	Wing tip (R4)	Empennage tip (R5)	Minimum theoretical pavement width for 180 degrees turn (Tw= R2+ R3)
17	140 ft 7 in. (42,85 m)	150 ft 8 in. (45,92 m)	148 ft 1 in. (45,14 m)	153 ft 9 in. (46,87 m)	198 ft 9 in. (60,58 m)	170 ft 7 in. (51,99 m)	301 ft 10 in. (92,00 m)
27	84 ft 4 in. (25,71 m)	100 ft 3 in. (30,55 m)	95 ft 9 in. (29,18 m)	97 ft 7 in. (29,73 m)	142 ft 10 in. (43,55 m)	119 ft 2 in. (36,33 m)	193 ft 4 in (58,92 m)
37	57 ft 0 in. (17,38 m)	78 ft 8 in (23,97 m)	72 ft 6 in. (22,10 m)	70 ft 3 in. (21,40 m)	115 ft 10 in. (35,31 m)	96 ft 2 in. (29,32 m)	142 ft 9 in. (43,50 m)
47	40 ft 1 in. (12,21 m)	67 ft 4 in (20,53 m)	59 ft 10 in. (18,24 m)	53 ft 3 in. (16,24 m)	99 ft 2 in. (30,22 m)	83 ft 3 in. (25,37 m)	113 ft 1 in. (34,48 m)
57	27 ft 11 in. (8,51 m)	60 ft 11 in. (18,56 m)	52 ft 4 in. (15,95 m)	41 ft 1 in. (12,53 m)	87 ft 3 in. (26,59 m)	74 ft 11 in. (22,84 m)	93 ft 5 in. (28.48 m)
67	18 ft 3 in. (5,56 m)	57 ft 2 in. (17,41 m)	47 ft 9 in. (14,56 m)	31 ft 5 in. (9,58 m)	77 ft 10 in. (23,72 m)	69 ft 2 in. (21,08 m)	79 ft 2 in. (24.14 m)
77	9 ft 11 in. (3,03 m)	55 ft 1 in. (16,78 m)	45 ft 2 in. (13,77 m)	23 ft 1 in. (7,04 m)	69 ft 9 in. (21,26 m)	64 ft 11 in. (19,79 m)	68 ft 4 in. (20.82 m)



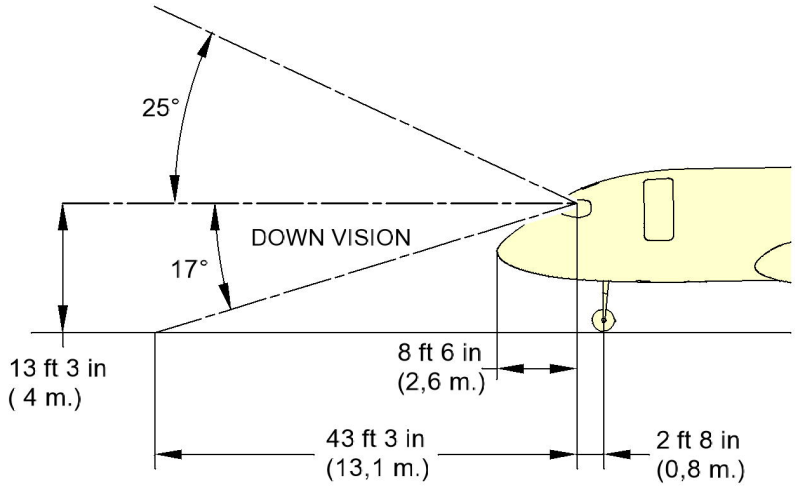
ICN-BD500-A-J092001-A-3AB48-00068-A-001-01

Figure 1 Turn radii

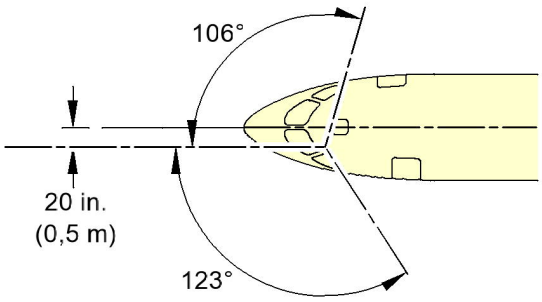
2 Visibility from cockpit in static position

This section contains data about the visibility from cockpit in static position.

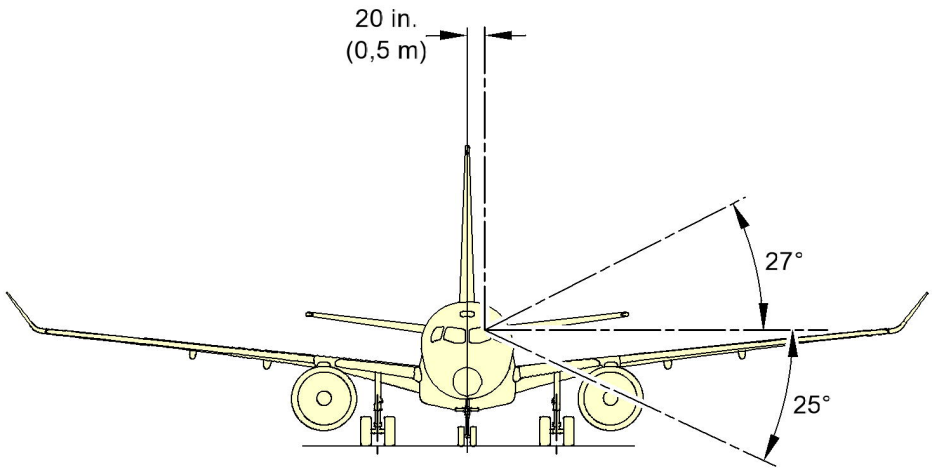
To see the diagram, refer to Fig. 2.



VISUAL ANGLES IN VERTICAL PLANE THROUGH PILOT'S EYE POSITION



VISUAL ANGLES IN HORIZONTAL PLANE THROUGH PILOT'S EYE POSITION



VISUAL ANGLE IN A PLANE PERPEDNDICULAR TO LONGITUDINAL AXIS THROUGH PILOT'S EYE POSITION

NOTES

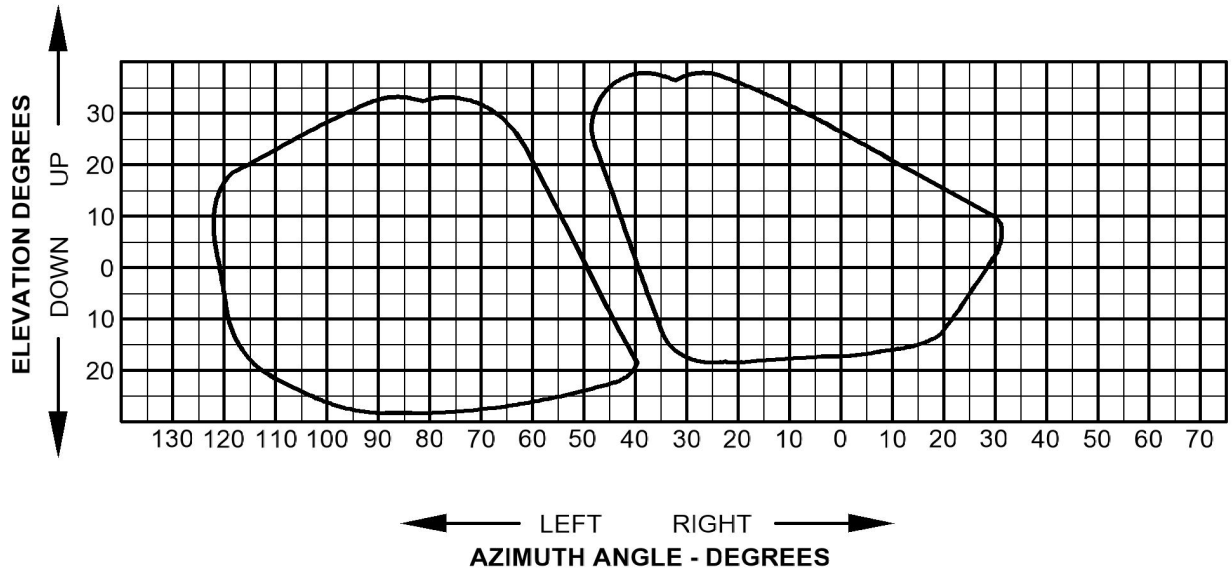
1. Not to be used for landing approach visibility.
2. Not scale.

ICN-BD500-A-J000000-A-3AB48-22579-A-001-01

Figure 2 Visibility from cockpit in static position

2.1 Clear areas of vision

To see the diagram, refer to Fig. 3.



ICN-BD500-A-J092001-A-3AB48-00119-A-001-01

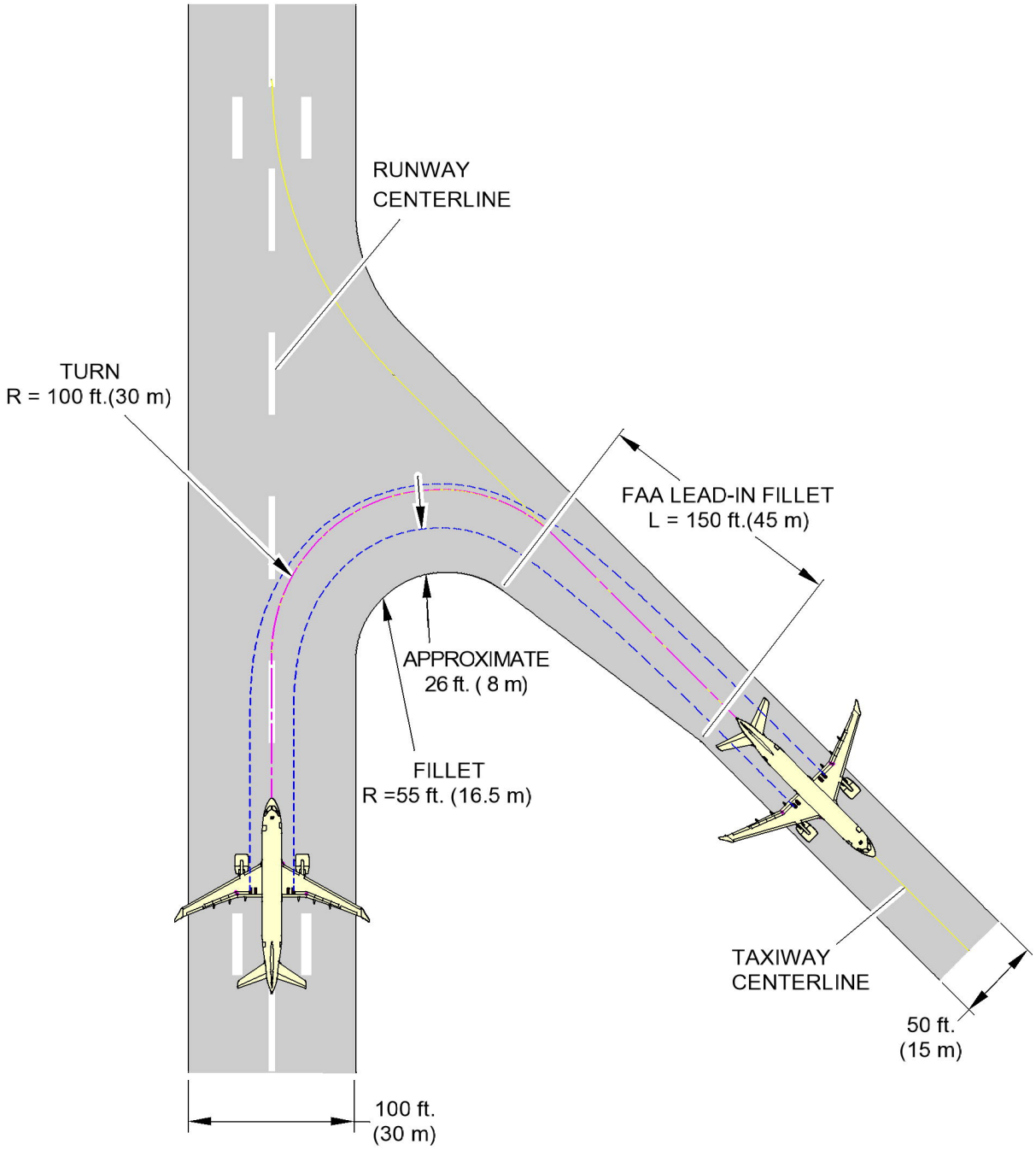
Figure 3 Clear areas of vision

3 Runways and taxiways turn paths

This section contains data about the runways and taxiways turn paths.

3.1 More than 90° turn - Runway to taxiway - Cockpit over centerline method

To see the diagram, refer to Fig. 4.



LEGEND

Nose gear.
Main gear.

NOTE

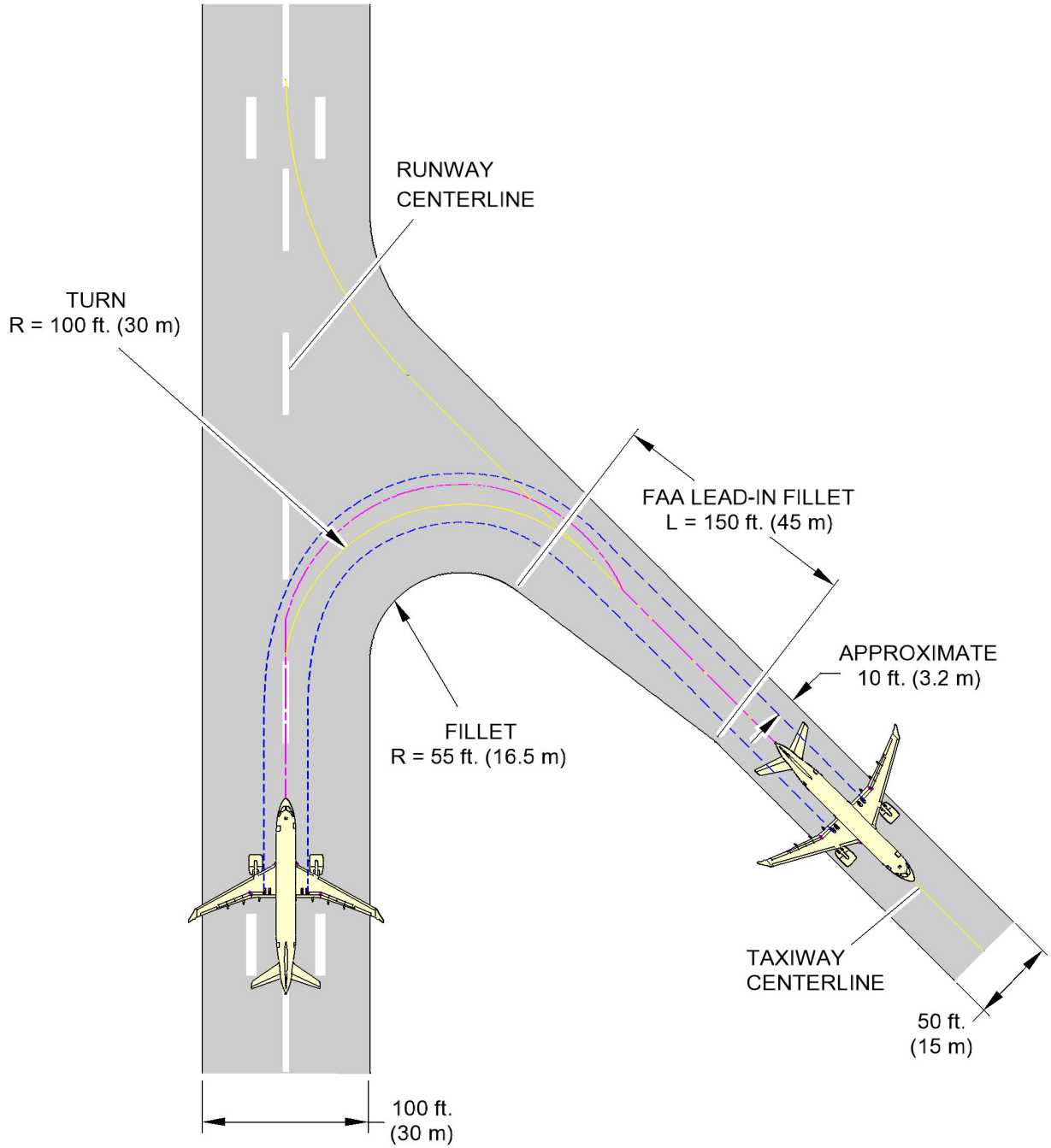
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-22068-A-001-01

Figure 4 More than 90° turn - Runway to taxiway - Cockpit over centerline method

3.2 More than 90° turn - Runway to taxiway - Oversteering method

To see the diagram, refer to Fig. 5.



LEGEND

Nose gear.
Main gear.

NOTE

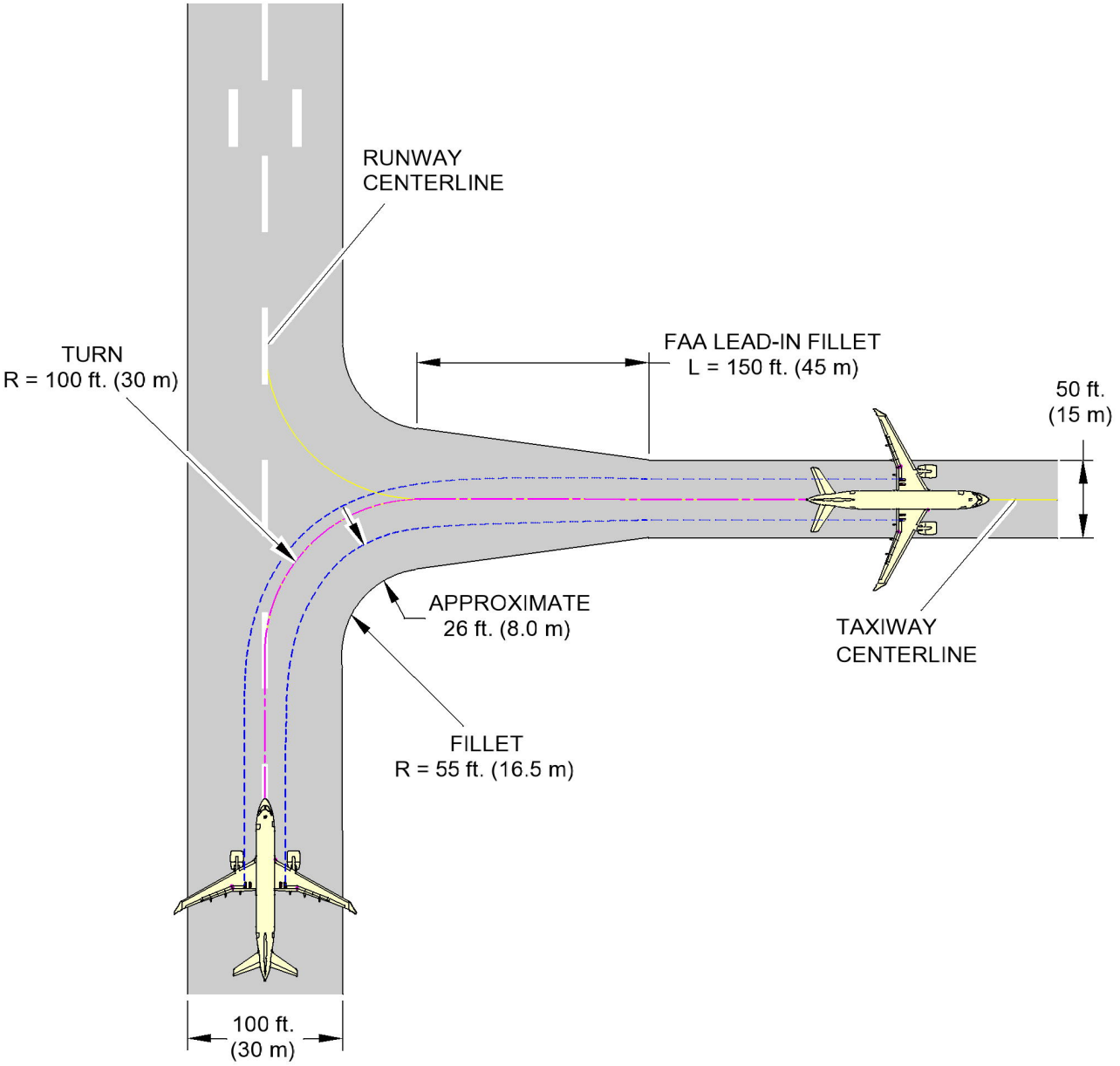
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-22553-A-001-01

Figure 5 More than 90° turn - Runway to taxiway - Oversteering method

3.3 90° turn - Runway to taxiway - Cockpit over centerline method

To see the diagram, refer to Fig. 6.



LEGEND

Nose gear.
Main gear.

NOTE

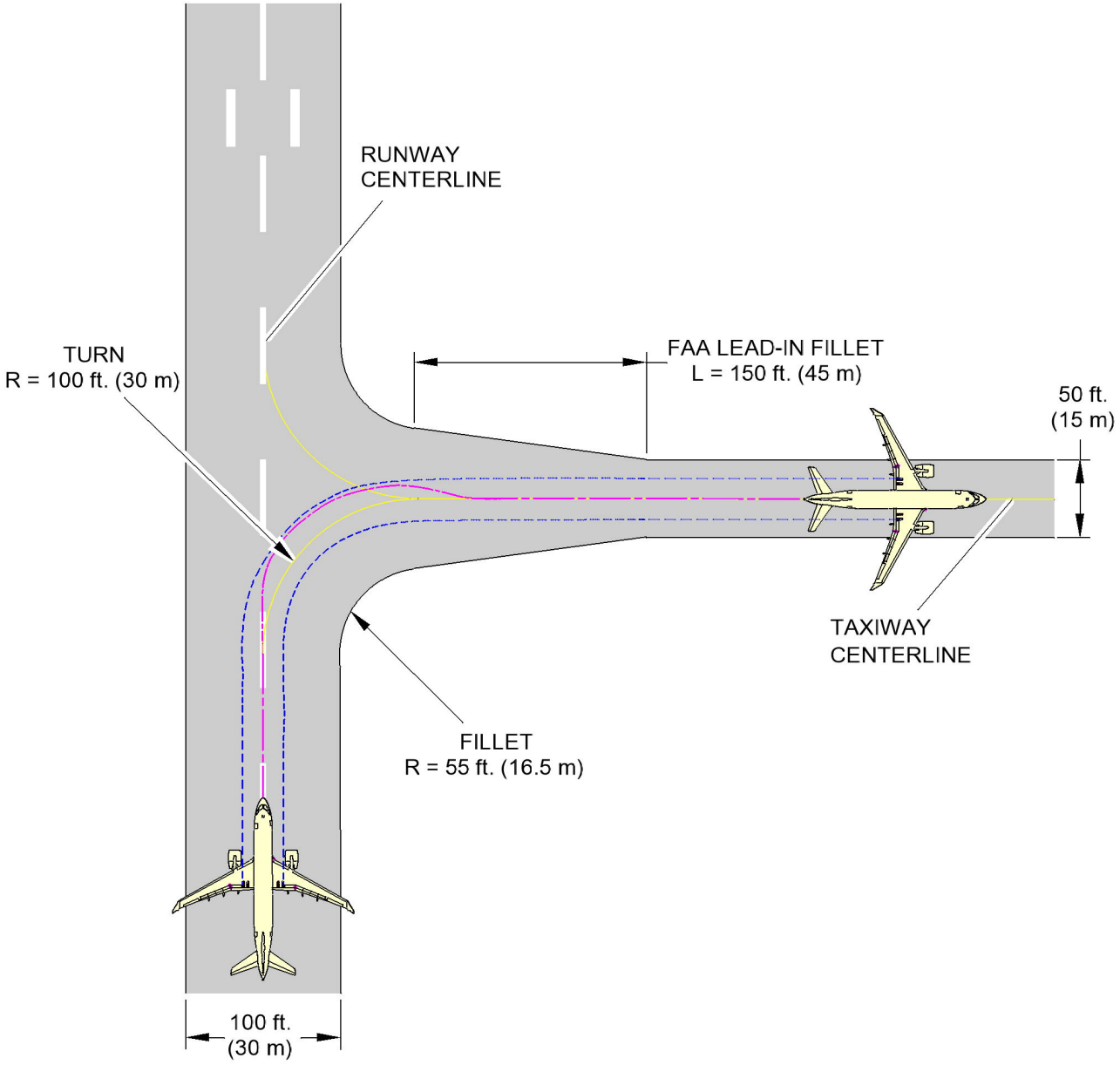
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-22065-A-001-01

Figure 6 90° turn - Runway to taxiway - Cockpit over centerline method

3.4 90° turn - Runway to taxiway - Oversteering method

To see the diagram, refer to Fig. 7.



LEGEND

Nose gear.
Main gear.

NOTE

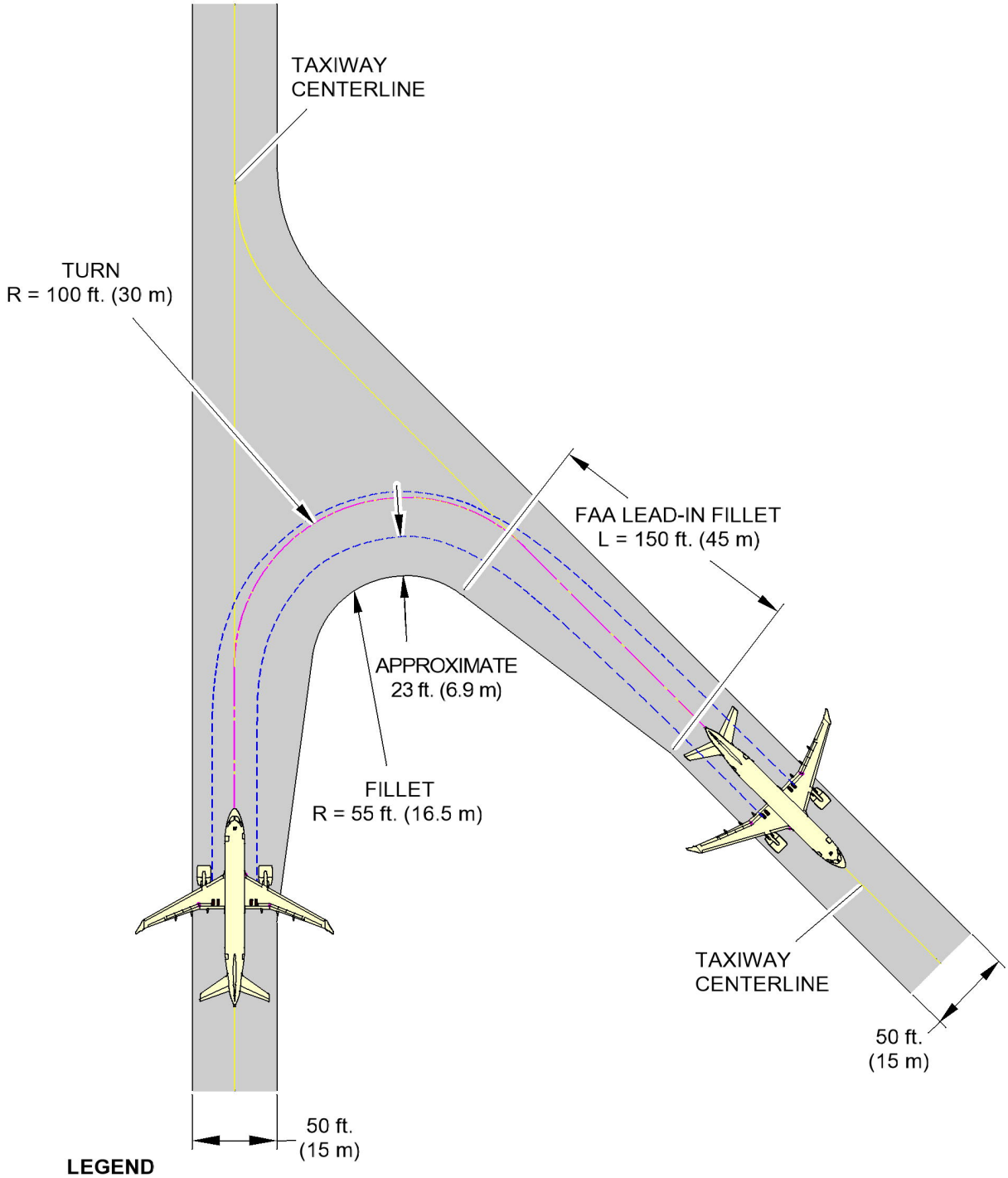
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-22555-A-001-01

Figure 7 90° turn - Runway to taxiway - Oversteering method

3.5 More than 90° turn - Taxiway to taxiway - Cockpit over centerline method

To see the diagram, refer to Fig. 8.



LEGEND

Nose gear.
Main gear.

NOTE

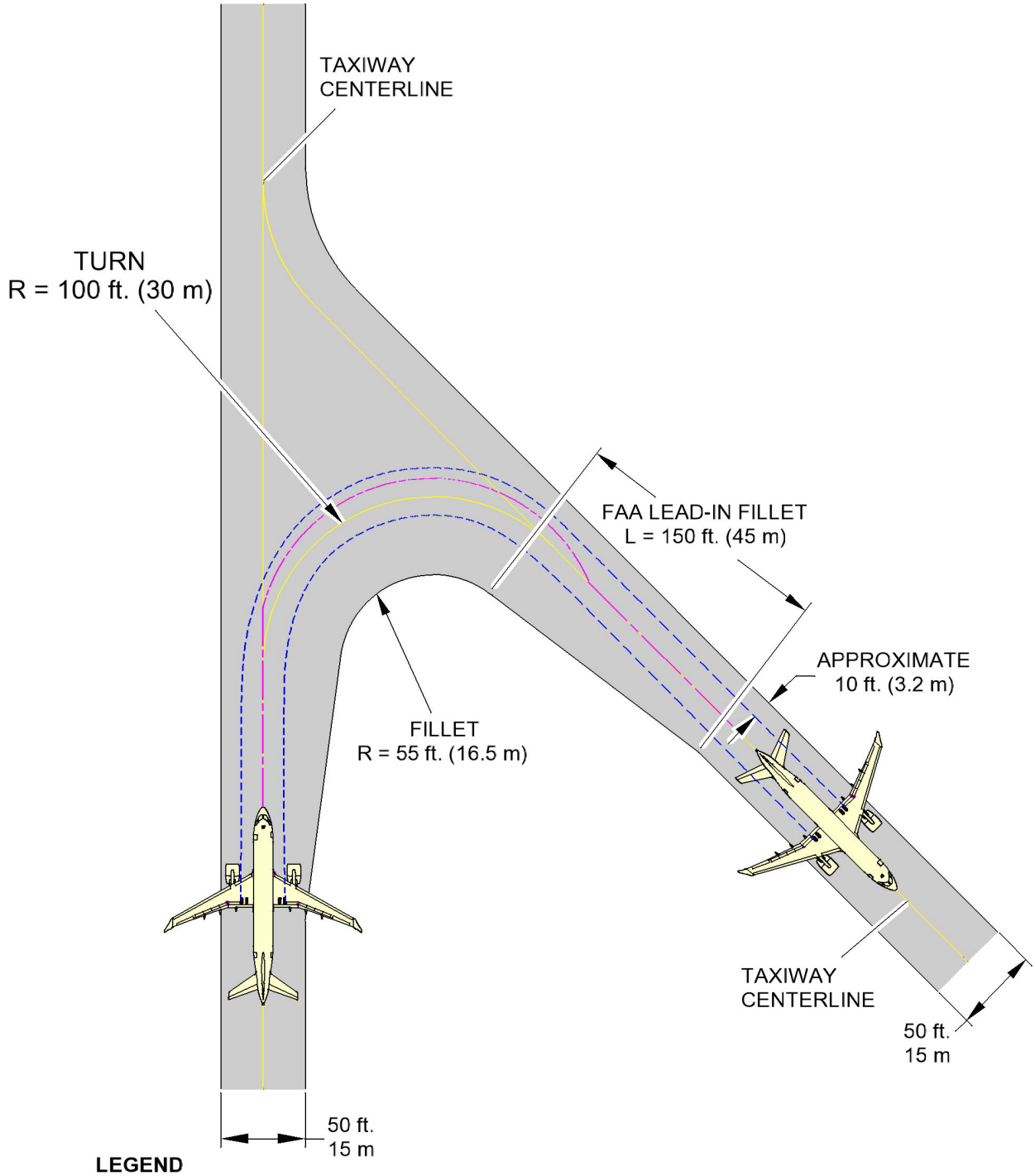
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-22069-A-001-01

Figure 8 More than 90° turn - Taxiway to taxiway - Cockpit over centerline method

3.6 More than 90° turn - Taxiway to taxiway - Oversteering method

To see the diagram, refer to Fig. 9.



LEGEND

Nose gear.
Main gear.

NOTE

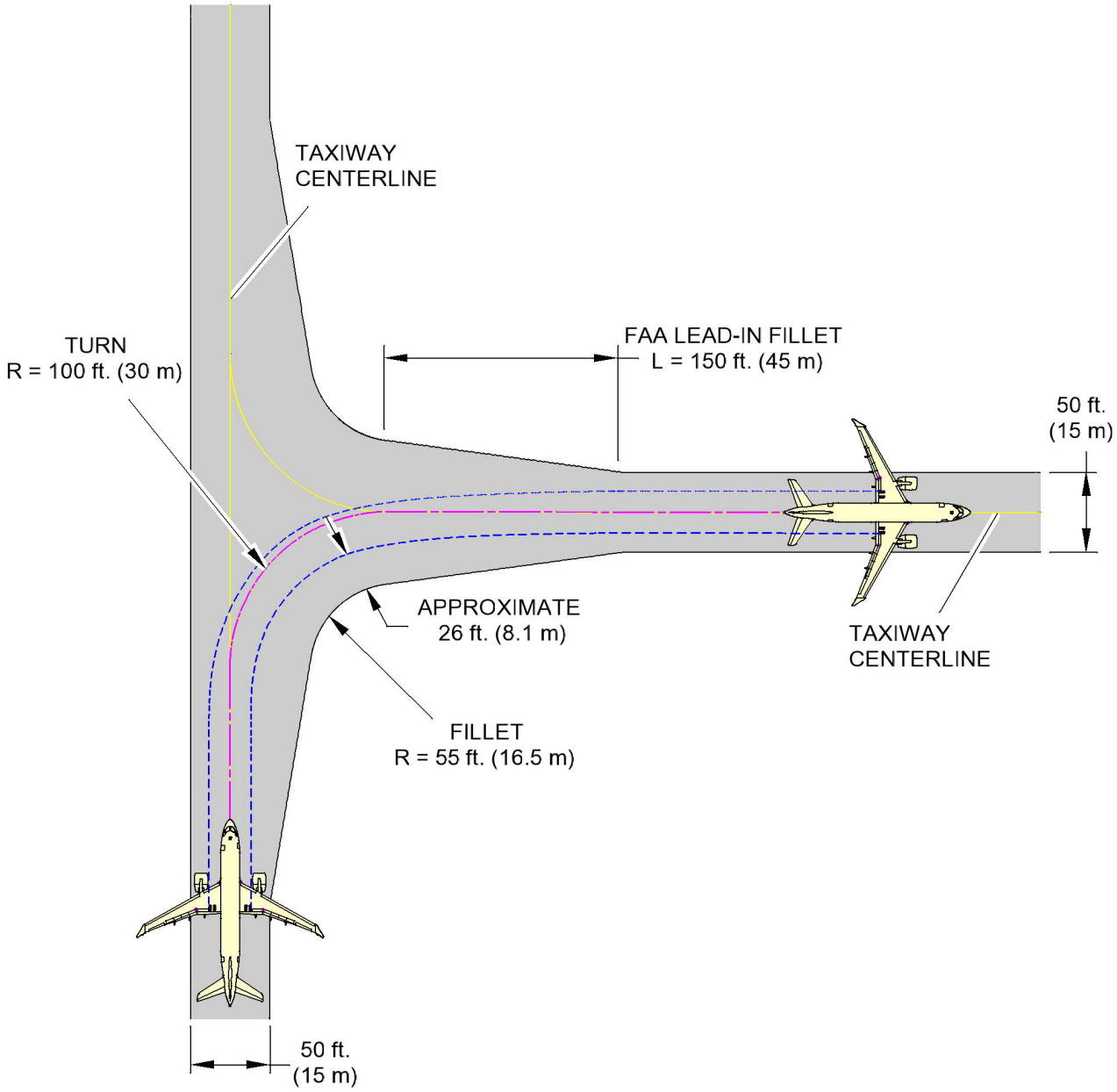
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-22552-A-001-01

Figure 9 More than 90° turn - Taxiway to taxiway - Oversteering method

3.7 90° turn - Taxiway to taxiway - Cockpit over centerline method

To see the diagram, refer to Fig. 10.



LEGEND

Nose gear.
Main gear.

NOTE

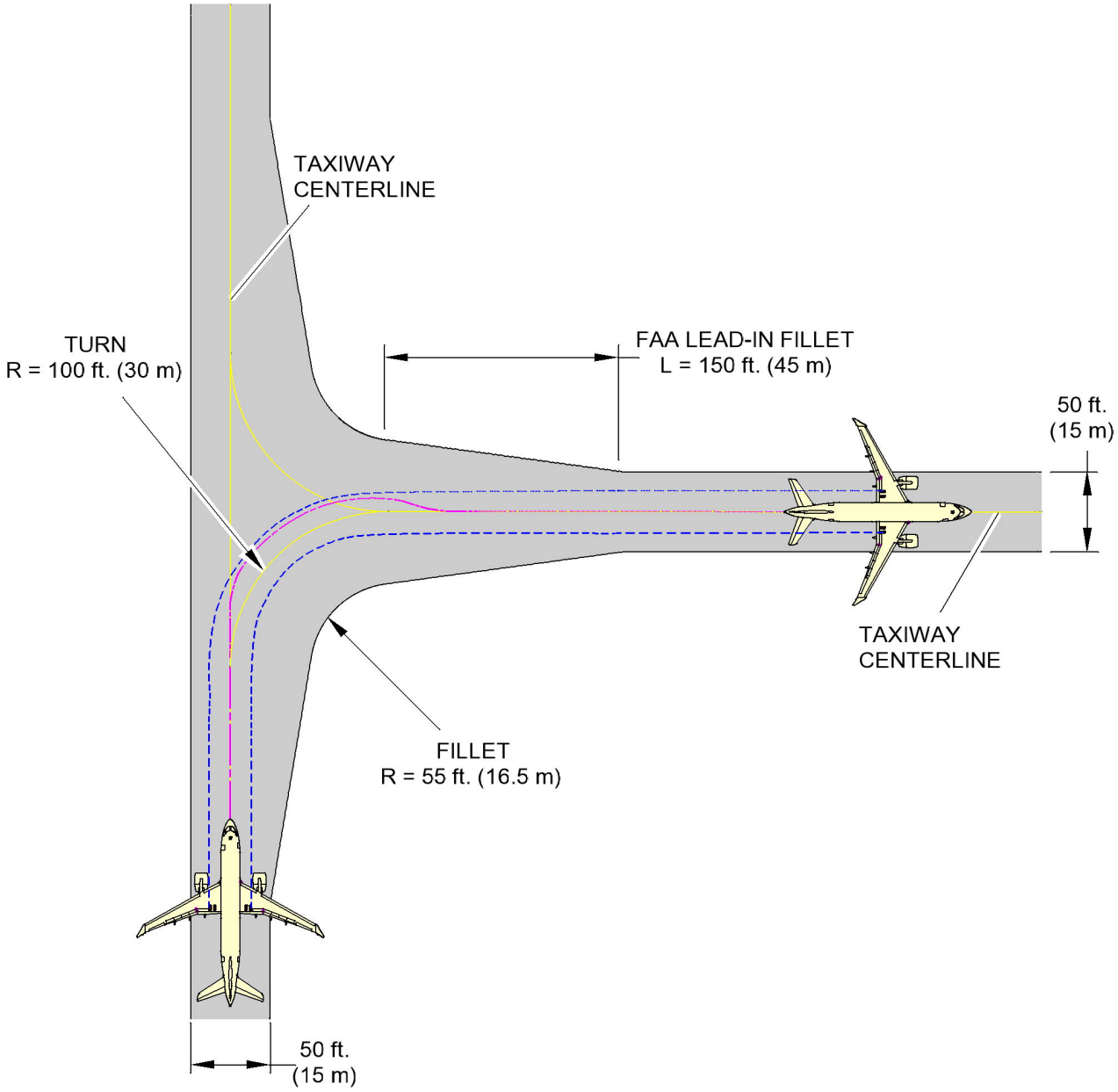
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-22066-A-001-01

Figure 10 90° turn - Taxiway to taxiway - Cockpit over centerline method

3.8 90° turn - Taxiway to taxiway - Oversteering method

To see the diagram, refer to Fig. 11



LEGEND

Nose gear.
Main gear.

NOTE

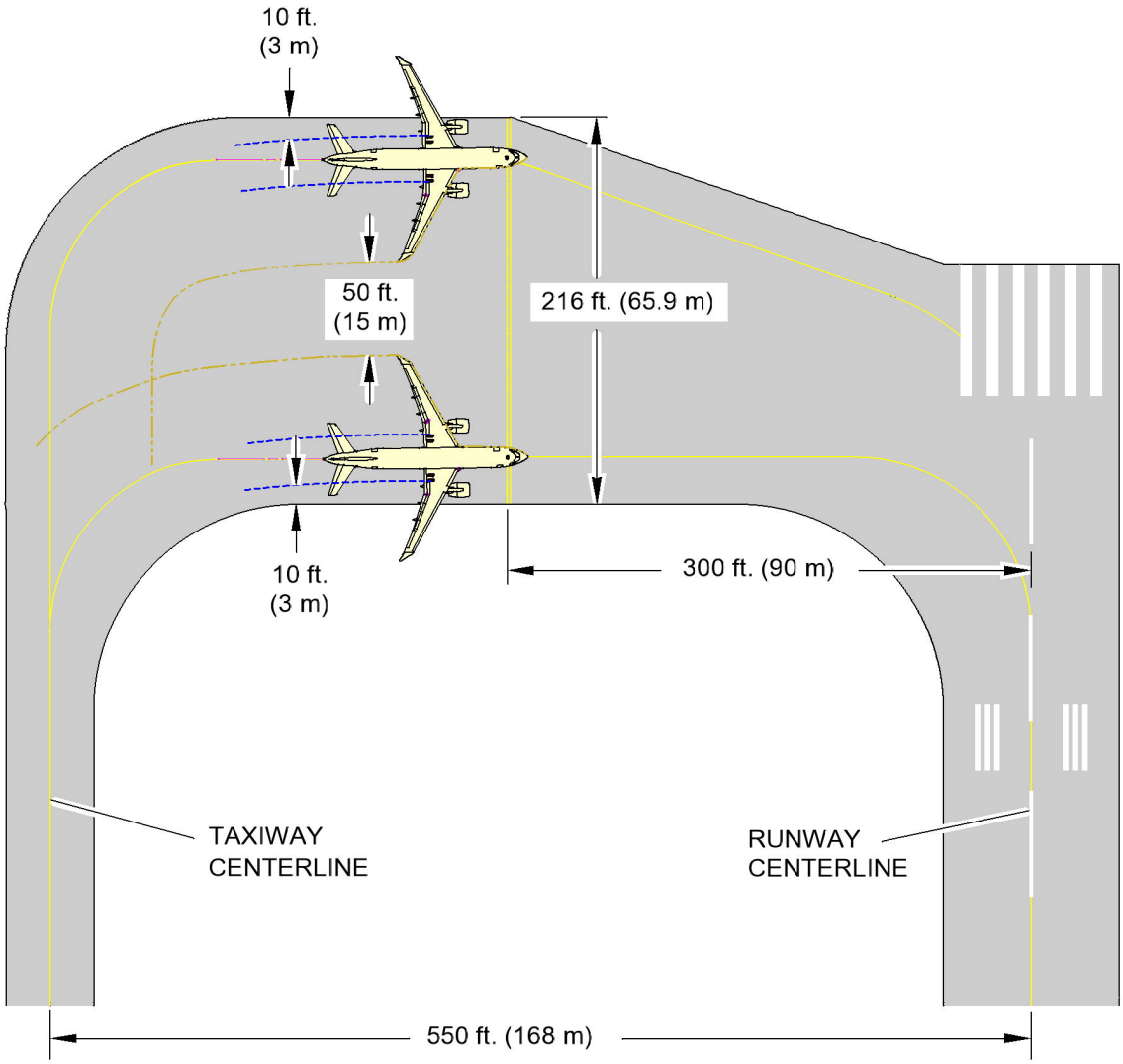
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-22554-A-001-01

Figure 11 90° turn - Taxiway to taxiway - Oversteering method

3.9 Runway holding bay (Apron)

To see the diagram, refer to Fig. 12.



LEGEND

Nose gear.
Main gear.

NOTE

Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-22067-A-001-01

Figure 12 Runway holding bay (Apron)

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CSERIES

Terminal servicing - Technical data

Applicability: Model: CS100

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References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Introduction

This data module contains data related to the preparation of an aircraft for flight from a terminal. This data is provided to show the general types of tasks involved in terminal operations. Each airline has different operating conditions and practices, which can result in changes in the operating procedures and time intervals to do the tasks specified. Because of this, requirements for ground operations should be approved with the specified airline(s) before ramp planning is started. This section presents the following topics:

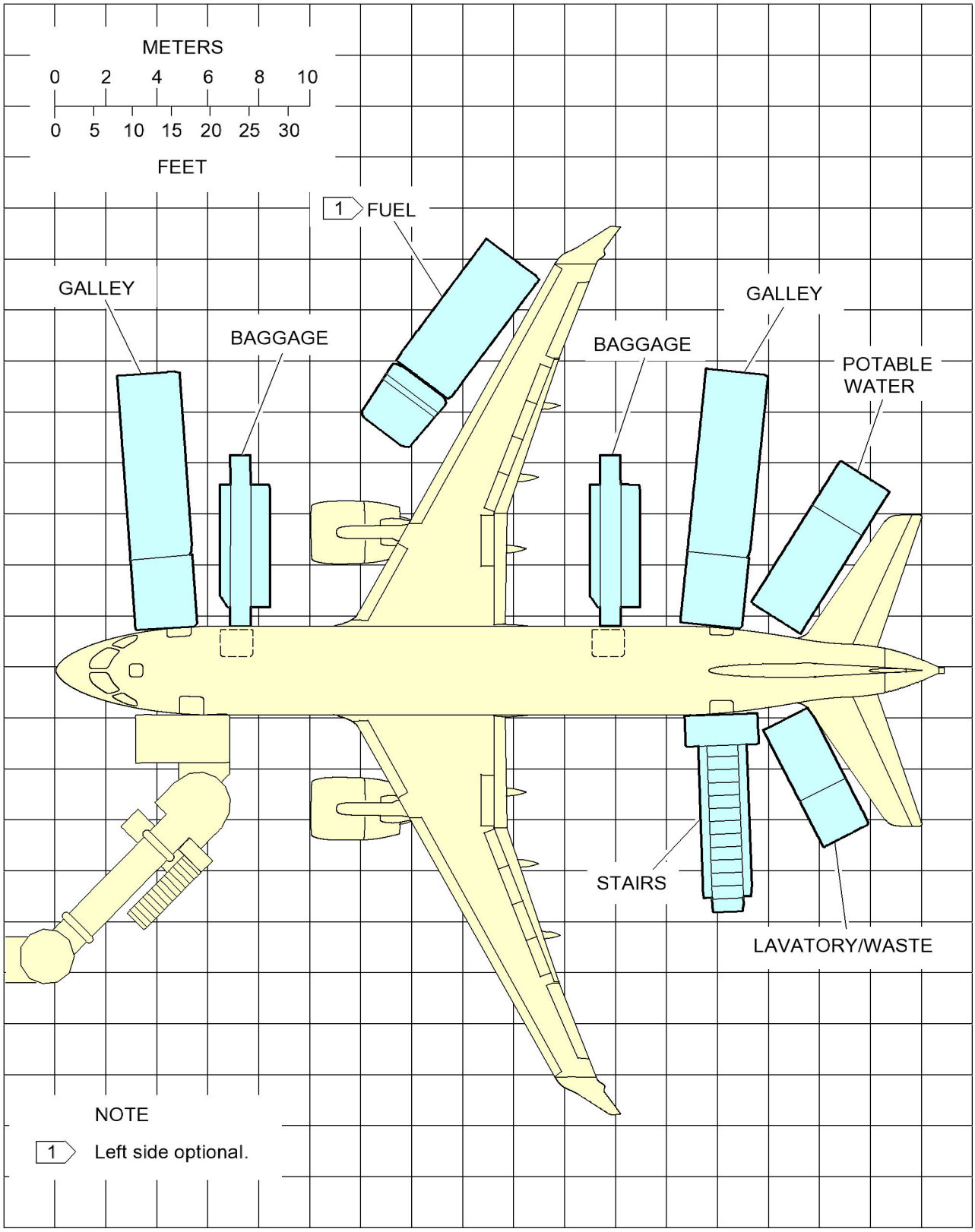
- Aircraft servicing arrangement
- Terminal operations
- Ground servicing connections
- Ground electrical power requirements
- Ground pneumatic power requirements – Engine starting
- Preconditioned airflow requirements – Air conditioning
- Ground towing requirements

Note

All applicable procedures and limitations are provided in the Aircraft Maintenance Publication (AMP) BD500-3AB48-10200-00.

1.1 Aircraft servicing arrangement

Refer to Fig. 1 for the aircraft servicing arrangement.



ICN-BD500-A-J000000-A-3AB48-21739-A-001-01

Figure 1 Aircraft servicing arrangement

1.2 Terminal operations

Refer to Fig. 2 for the turnaround station operations.

The turnaround time analysis is based on the following parameters:

- 100% Pax/baggage exchange
- 94 passengers (85% load factor) / 1 class / 1 door
- 2 Galley service trucks
- Water/Waste servicing is sequential
- Cabin servicing during available time
- Passenger deplane rate is 18 per minute per door
- Passenger boarding rate is 12 per minute per door
- 2 bulk-loading belt-loaders
- 45 bags forward, 67 bags aft (1.2 x 4 cubic feet (1.2 X 0.11 Cubic meter) per passenger)
- Bag loading/unloading rates are 10 and 15 bags per minute
- Fuel loaded via one refuel/defuel adapter
- Refuel adapter rate at 50 PSI (344.74 kPa) is as follows:

  1 When refueling tree (3) tanks simultaneously (the center tank and two wing tanks), the refuel rate is 260 gpm (984 L/min).

  2 When refueling two (2) wing tanks, the refuel rate is 140 gpm (530 L/min).

  3 When refueling the center tank only, the refuel rate is 140 gpm (530 L/min).

- Mission range is 1200 nmi (2222.4 km)
- Refueling performed while deplaning/boarding.

Note

All equipment is assumed to function properly and weather condition to be normal. This data is provided to illustrate the general scope and type of operations involved in a terminal gate environment. Varying operating practices and circumstances may result in different task sequences and durations.

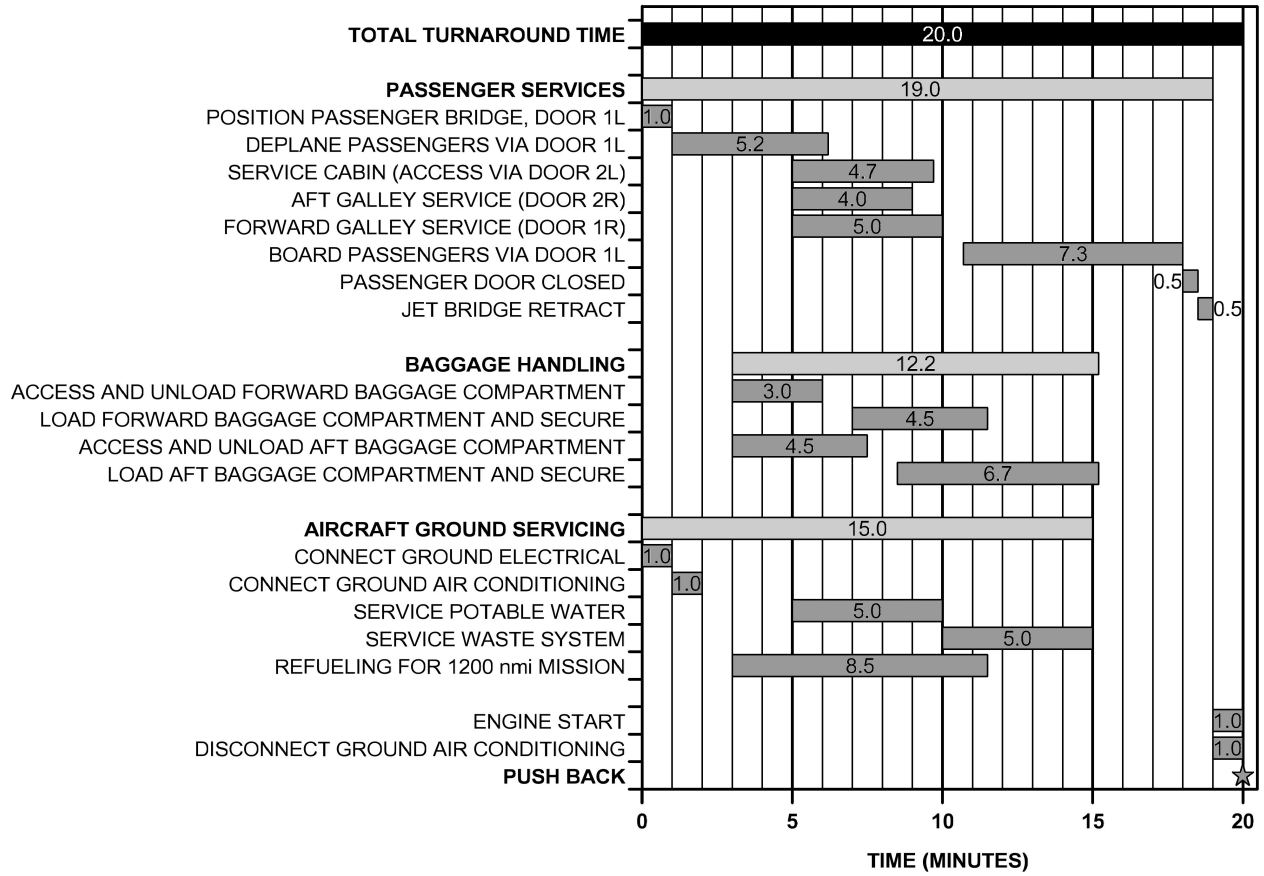


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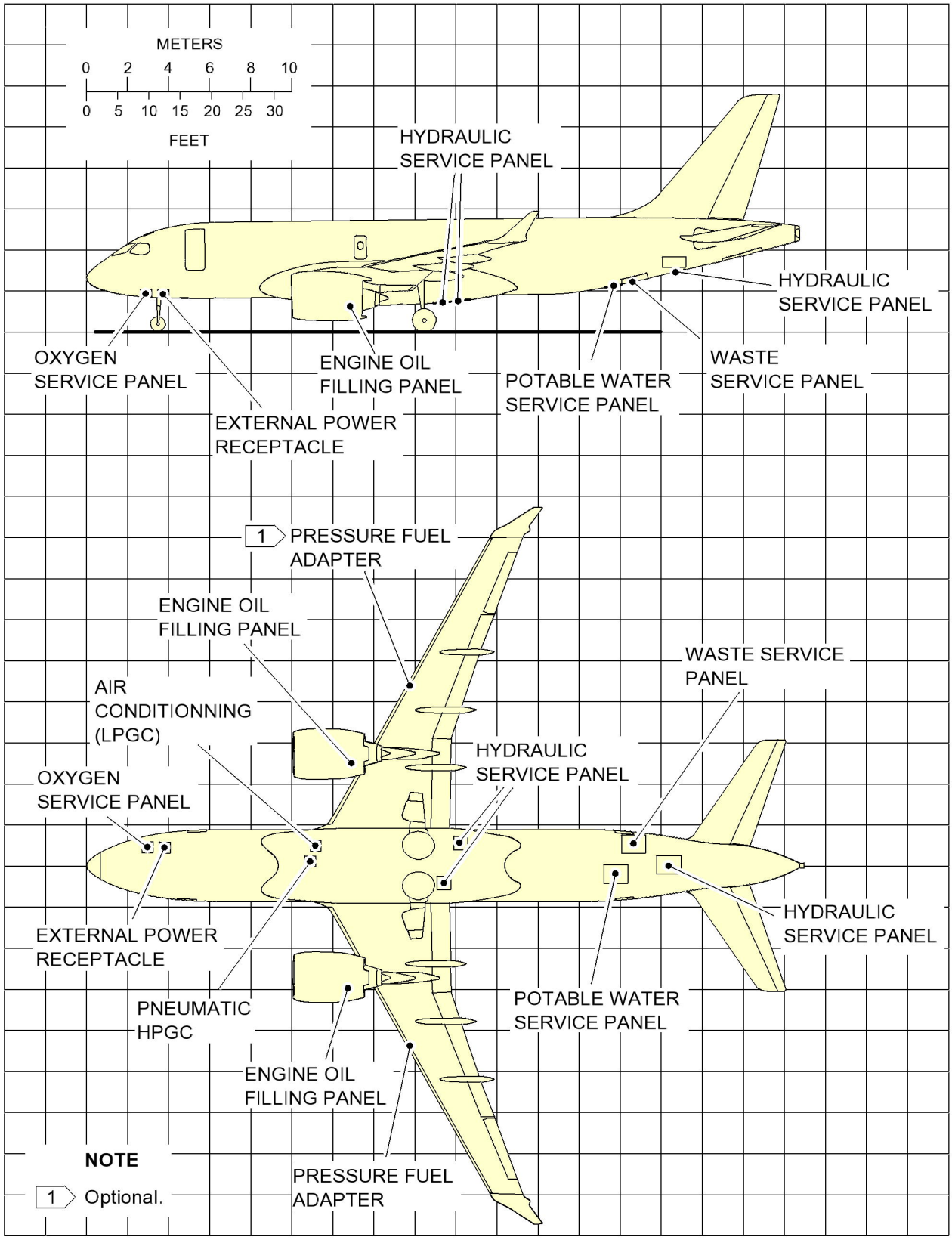
Figure 2 Turnaround time analysis

1.3 Ground servicing connections

Refer to Fig. 3 for the ground servicing connection points. For servicing procedures, refer to the AMP.

All servicing points are designed and positioned to consider accessibility and compatibility with industry standard vehicles and other Ground Support Equipment (GSE). All applicable procedures and limitations are provided in the AMP.



ICN-BD500-A-J000000-A-3AB48-21914-A-001-01

Figure 3 Ground servicing connections

Table 2 Hydraulic system

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
System # 1 Access door 195CB	60.96 (18,58)	-	3.93 (8,20)	5.82 (1,77)
System # 2 Access door 195AB	58.543 (17,84)	2.795 (0,85)	-	5.57 (1,70)
System # 3 Aft equipment bay door	95.12 (28,99)	On centerline of the aircraft		8.77 (2,67)

Note

All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.

Technical specifications

- Nominal pressure: 3000 Pounds per Square Inch (PSI) (206.84 Bar)
- Fitting connectors
  - Fitting dimension: Draining: 4 in (10,16 cm)
  - Fitting dimension: Rinsing: 1 in (2,54 cm)

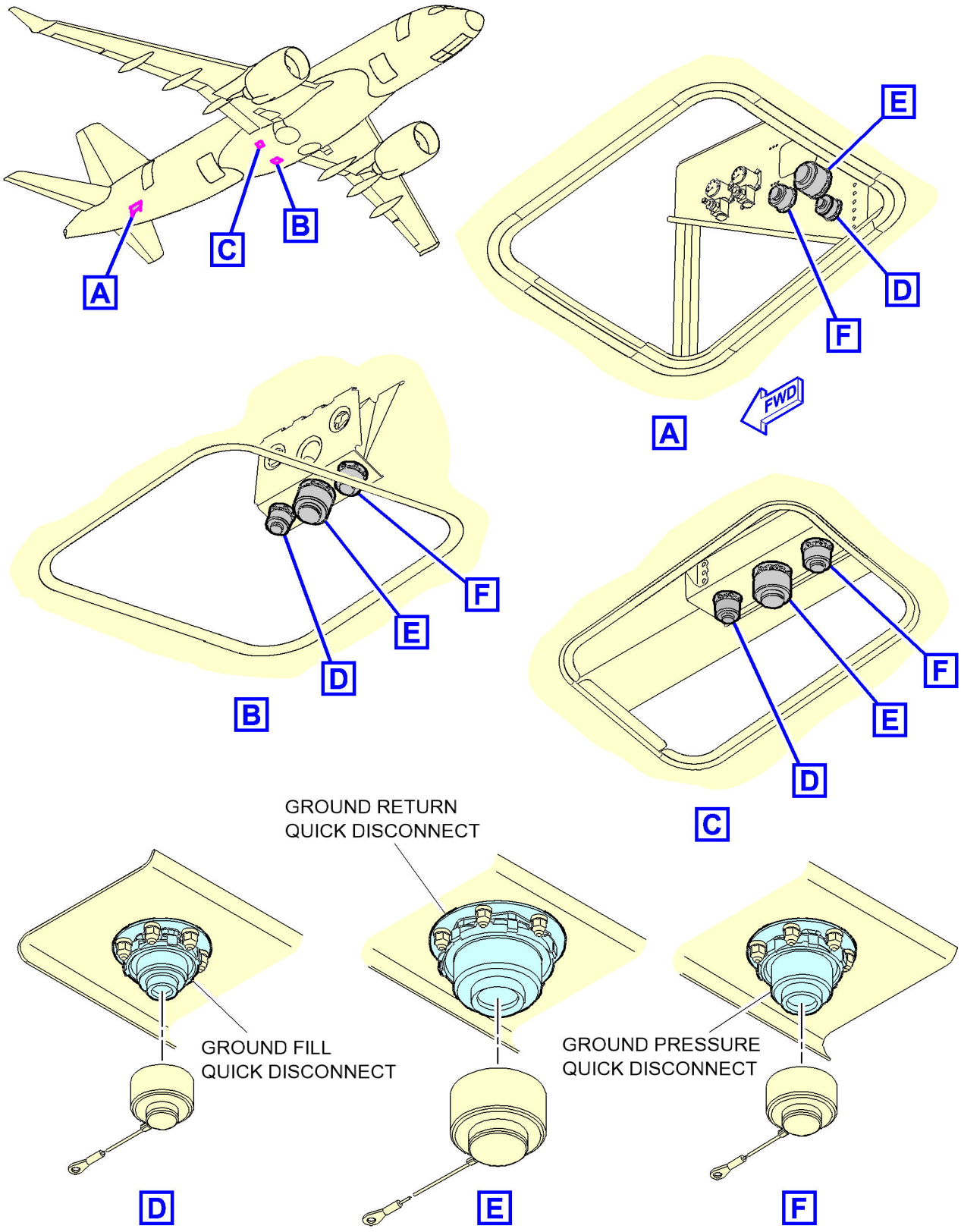


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Figure 4 Ground servicing system

Table 3 Hydraulic system - Accumulator charging

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
Aft equipment bay door	95.12 (28,99)	On centerline of the aircraft		8.77 (2,67)

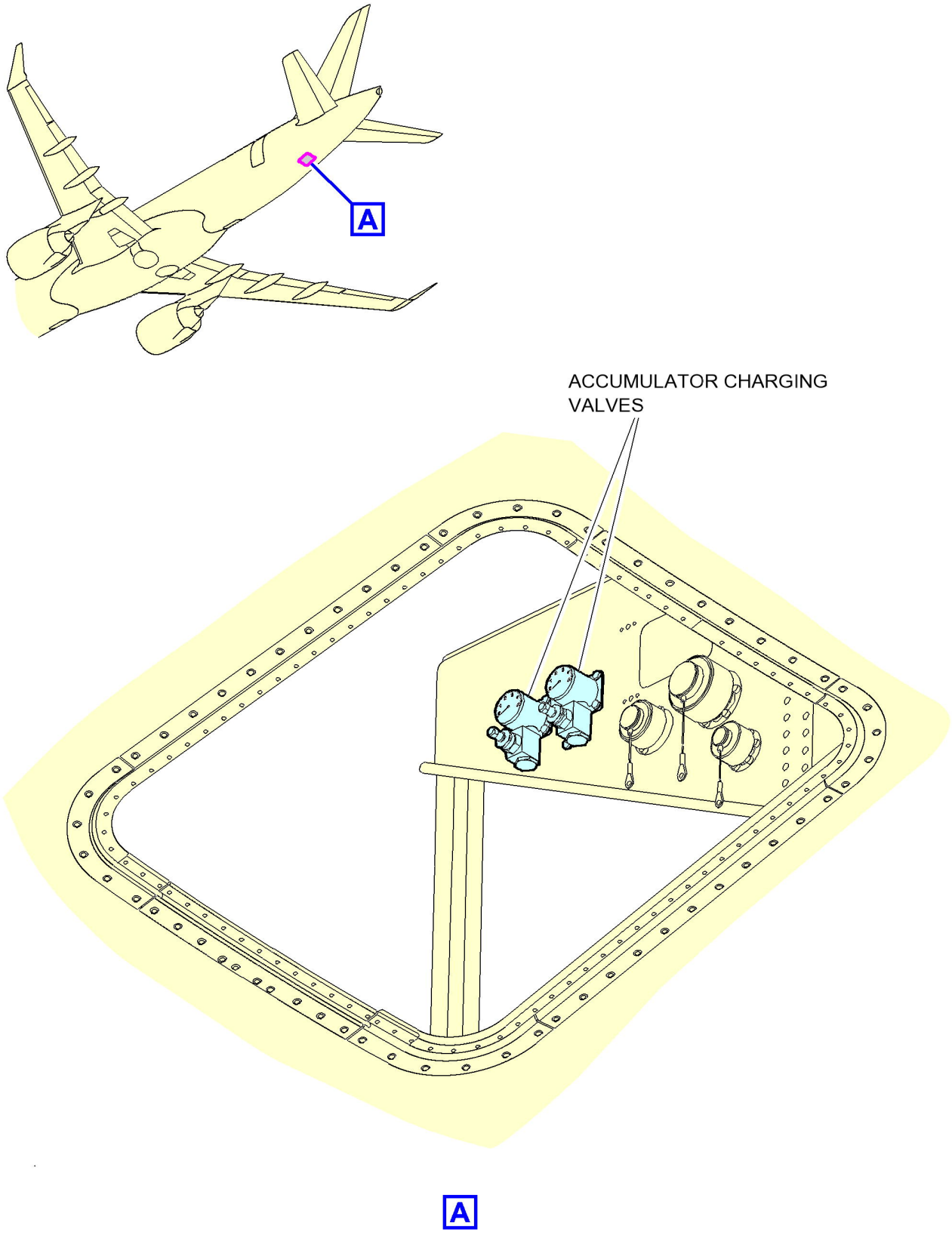
Note

All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.

Technical specifications

- Operating pressure: 3000 Pounds per Square Inch Gage (PSIG) (206.84 Bar)
- Accumulator pressure gauge range: 0 to 5000 PSIG (344.74 Bar)
- Gauge accuracy: ±75 PSIG (5.17 Bar)



ICN-BD500-A-J000000-A-3AB48-22071-A-001-01

Figure 5 Accumulator charging valves

Table 4 Waste system

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
Access door 146BR	86.80 (26,46)	-	1.21 (0,37)	7.14 (2,18)

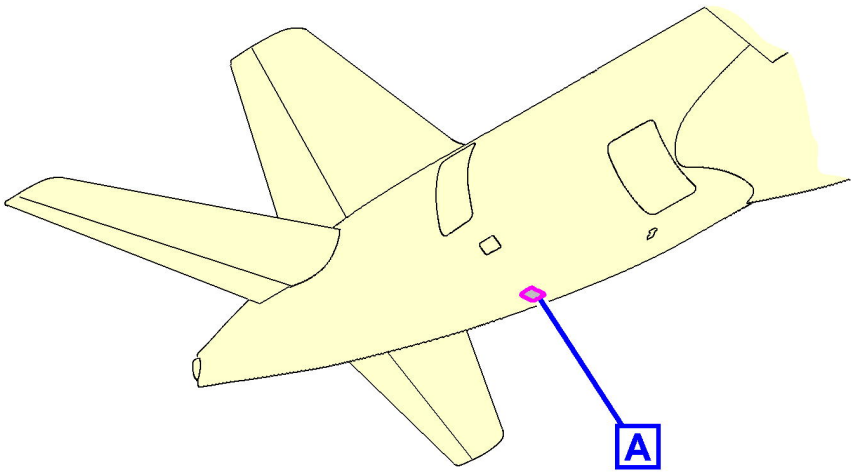
Note

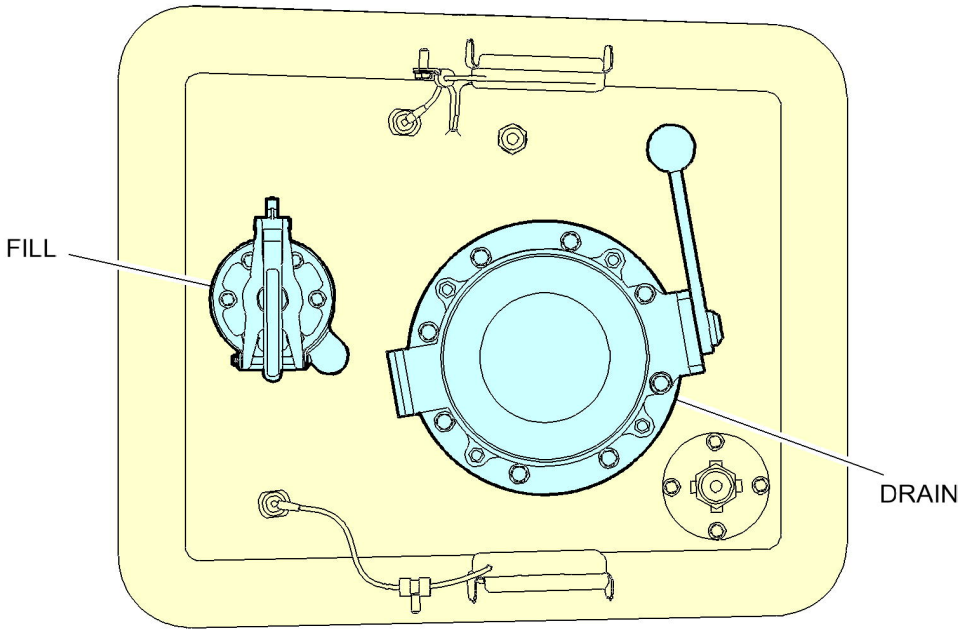
All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.

Technical specifications

- Usable volume: 143.85 L (38 US gal)
- Fitting connectors
  - Fitting dimension: Draining: 4 in (10,16 cm)
  - Fitting dimension: Rinsing: 1 in (2,54 cm)





WASTE ACCESS PANEL

A

ICN-BD500-A-J000000-A-3AB48-22008-A-001-01

Figure 6 Waste system access panel

Table 5 Potable water system

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
Access door 146CR	84.75 (25,83)	3.661 (1,11)	-	7.75 (2,36)

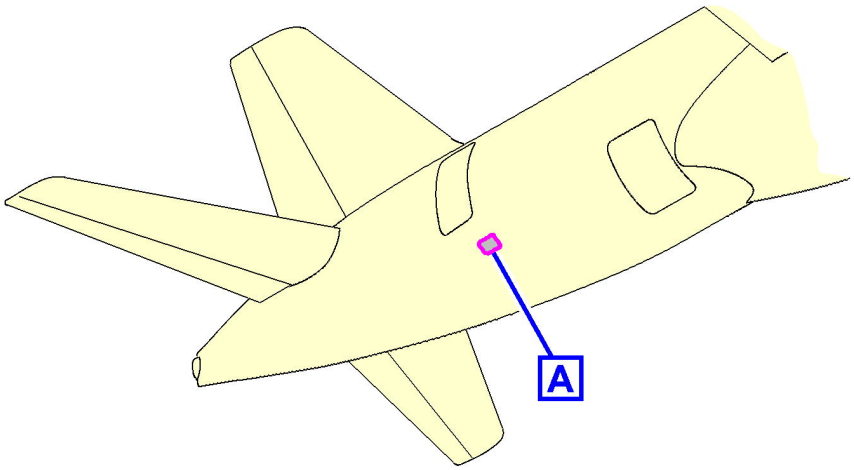
Note

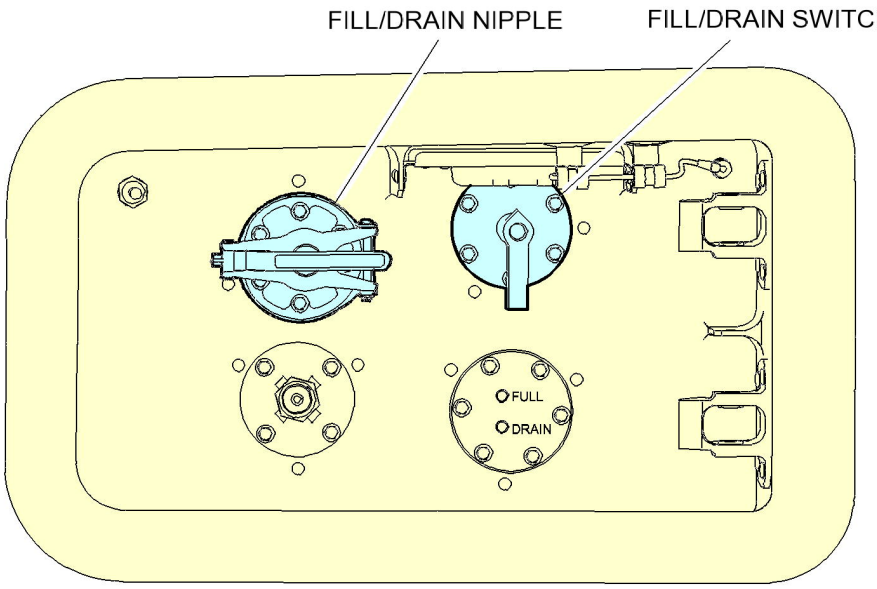
All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.

Technical specifications

- Usable volume: 158.99 L (42 US gal)
- Fitting dimension: Filling/Draining: 3/4 inch (1,905 cm)





POTABLE WATER SERVICE PANEL

A

ICN-BD500-A-J000000-A-3AB48-22007-A-001-01

Figure 7 Potable water system service panel

Table 6 Pneumatic system

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
Low Pressure Ground Connection (LPGC) Access door 191BB	37.76 (11,51)	-	4.33 (1,32)	5.30 (1,61)
High Pressure Ground Connection (HPGC) Access door 191AB	37.38 (11,39)	-	1.30 (0,40)	4.62 (1,41)

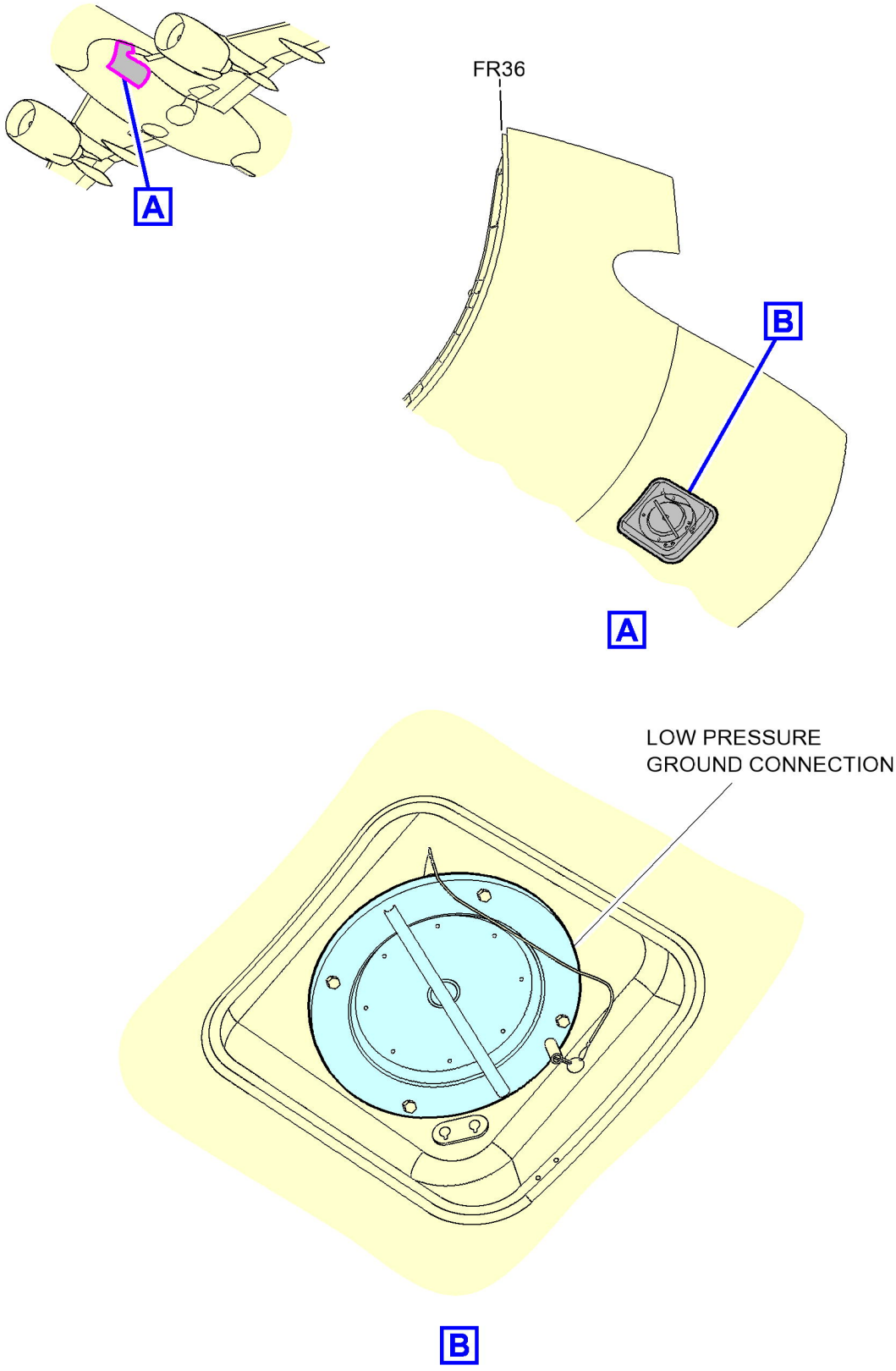
Note

All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.

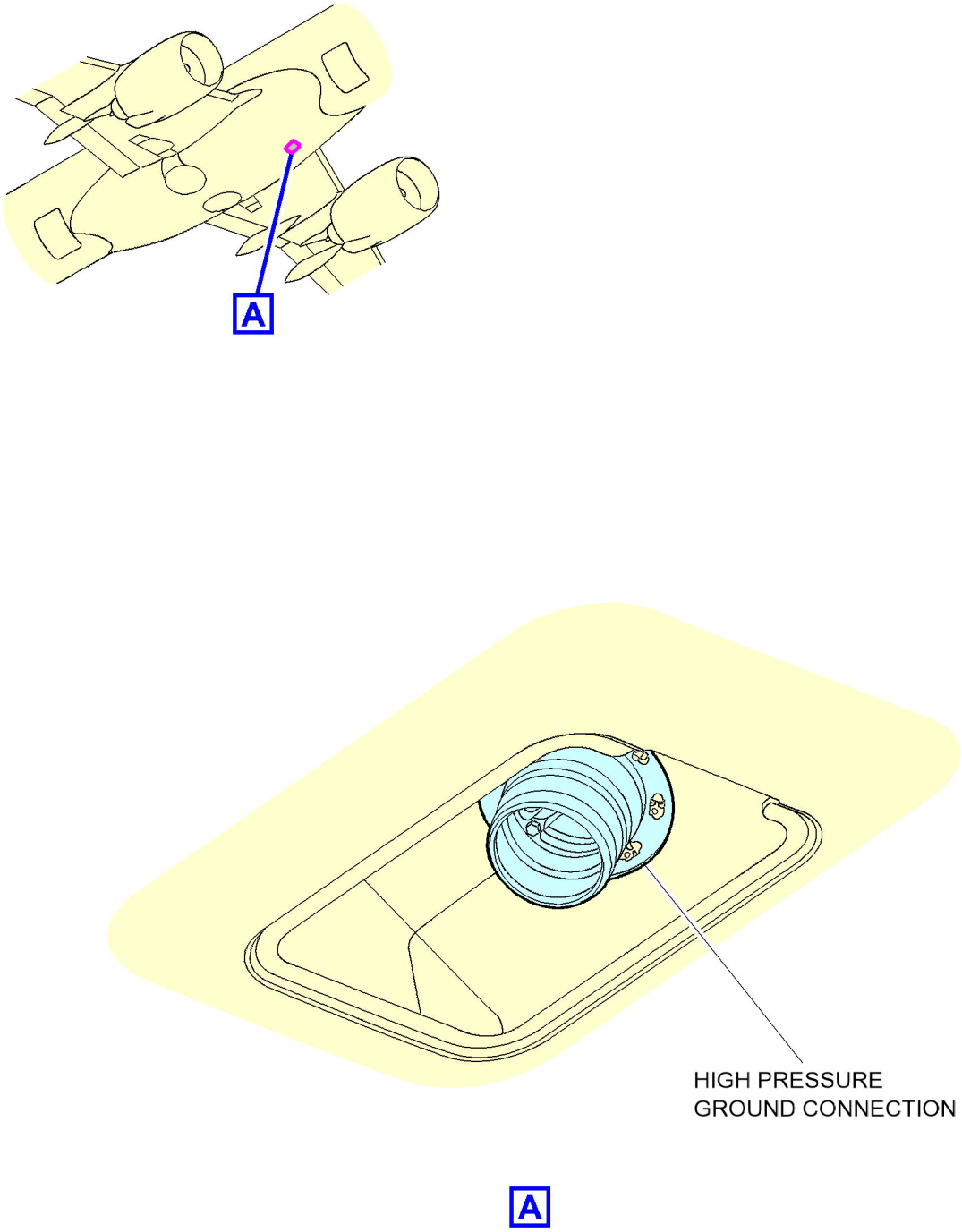
Technical specifications

- **LPGC Spec**
  - Discharge pressure range: [0.7 to 1.0 PSIG (Max)] or [0.05 to 0.07 bar (Max)]
  - Temp range: [41 °F to 122 °F Max] or [5 °C to 50 °C Max]
  - Max airflow: 125 lb/min
  - Fitting dimension: 8 in (20,32 cm)
  - LP Ground Cart Standard pneumatic connection per ISO 1034 or MS 33562
- **HPGC Spec**
  - Bleed pressure range: [30 to 45 PSIG (Max)] or [2.07 to 3.10 bar (Max)]
  - Bleed temperature range: [338 °F to 450 °F] or [170 °C to 232 °C]
  - Airflow range: 100 lb/min to 140 lb/min
  - Fitting dimension: 3 in (7,62 cm)
  - HP Ground Cart Standard pneumatic connection per ISO 2026 or MS 33740



ICN-BD500-A-J212100-C-3AB48-19016-A-001-01

Figure 8 Low pressure ground system



ICN-BD500-A-J361500-C-3AB48-15114-A-001-01

Figure 9 High pressure ground system

Table 7 Electrical System

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
Access door 115DL	11.71 (3,57)	-	2.68 (0,82)	6.37 (1,94)

Note

All distances are approximate.

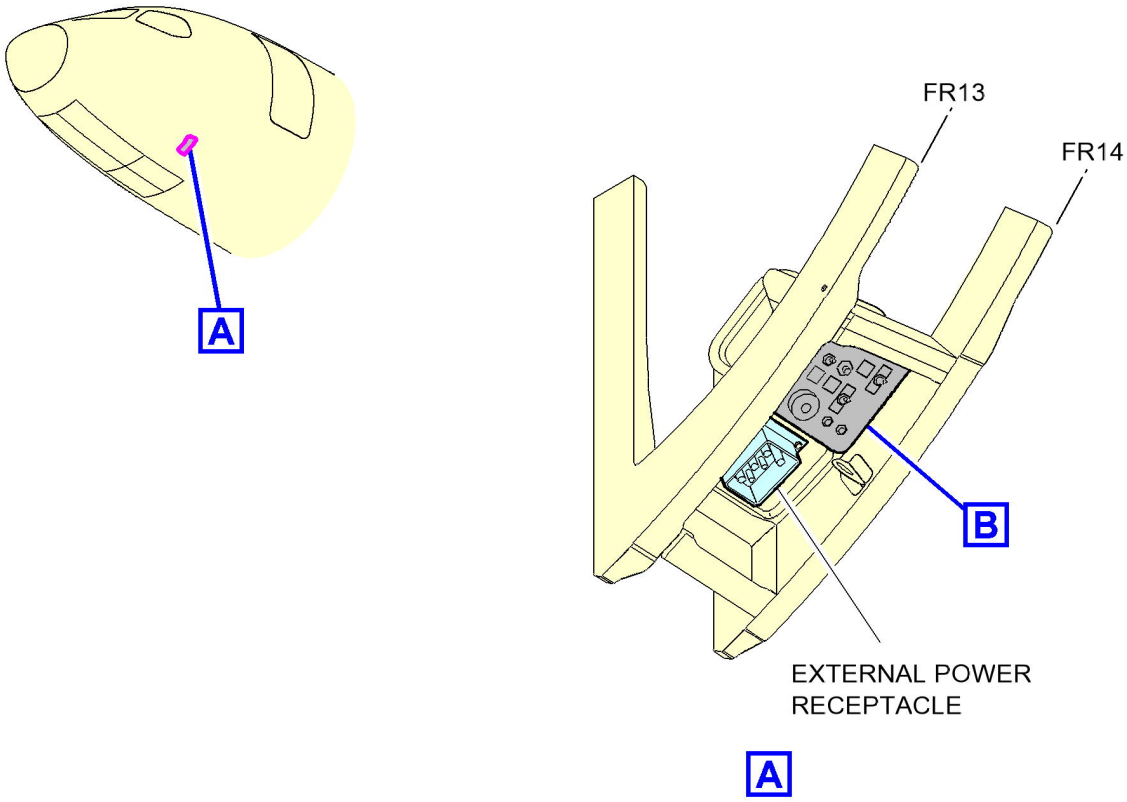
All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.

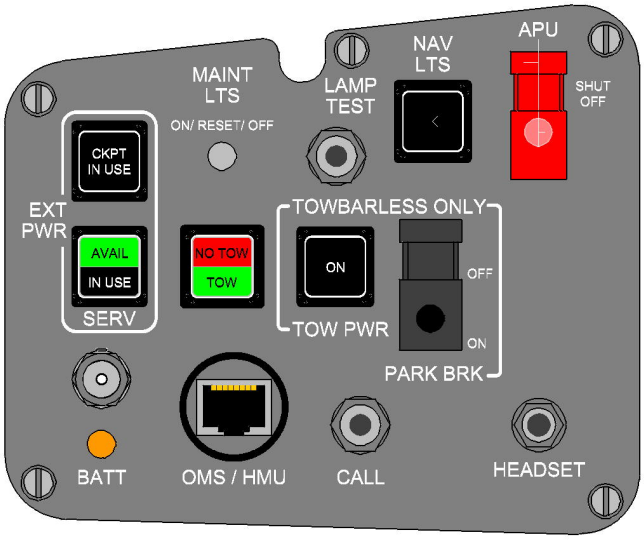
Technical specifications

- Power supply: 115 Volts Alternating Current (AC) External Power Receptacle

Note

For more specification about the electrical system, refer to section 1.4 - Ground electrical power requirements.





ELECTRICAL/TOWING SERVICE PANEL

B

ICN-BD500-A-J000000-A-3AB48-22070-A-001-01

Figure 10 Electrical service panel

Table 8 Oxygen system

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
Access door 115CL	10.20 (3,11)	-	2.60 (0,79)	6.44 (1,96)

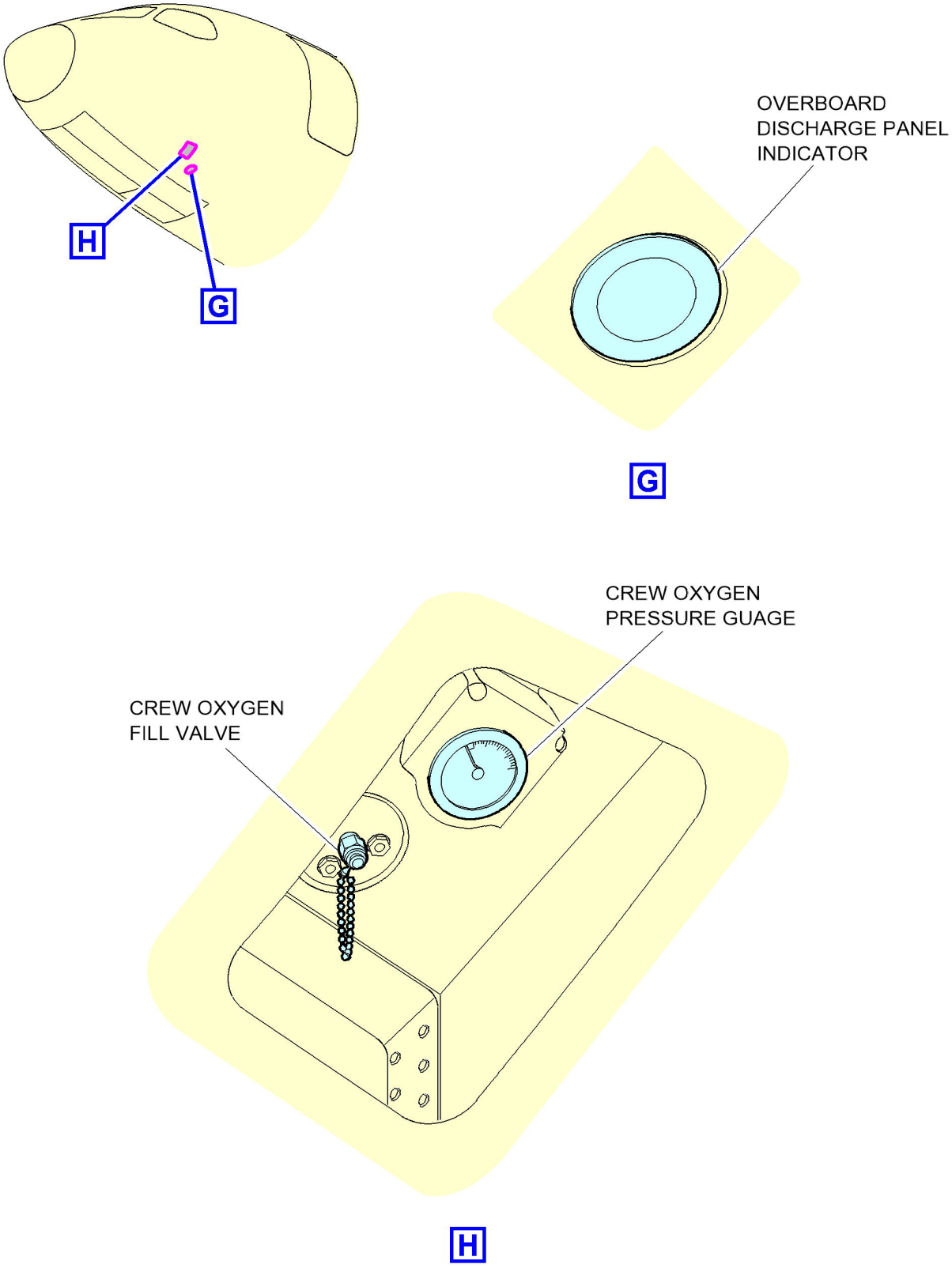
Note

All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.

Technical specifications

- Nominal working pressure: 1850 PSIG (128 bar)
- Capacity: 77 ft.³ (2180 L)



ICN-BD500-A-J351100-C-3AB48-20623-A-001-01

Figure 11 Crew oxygen system

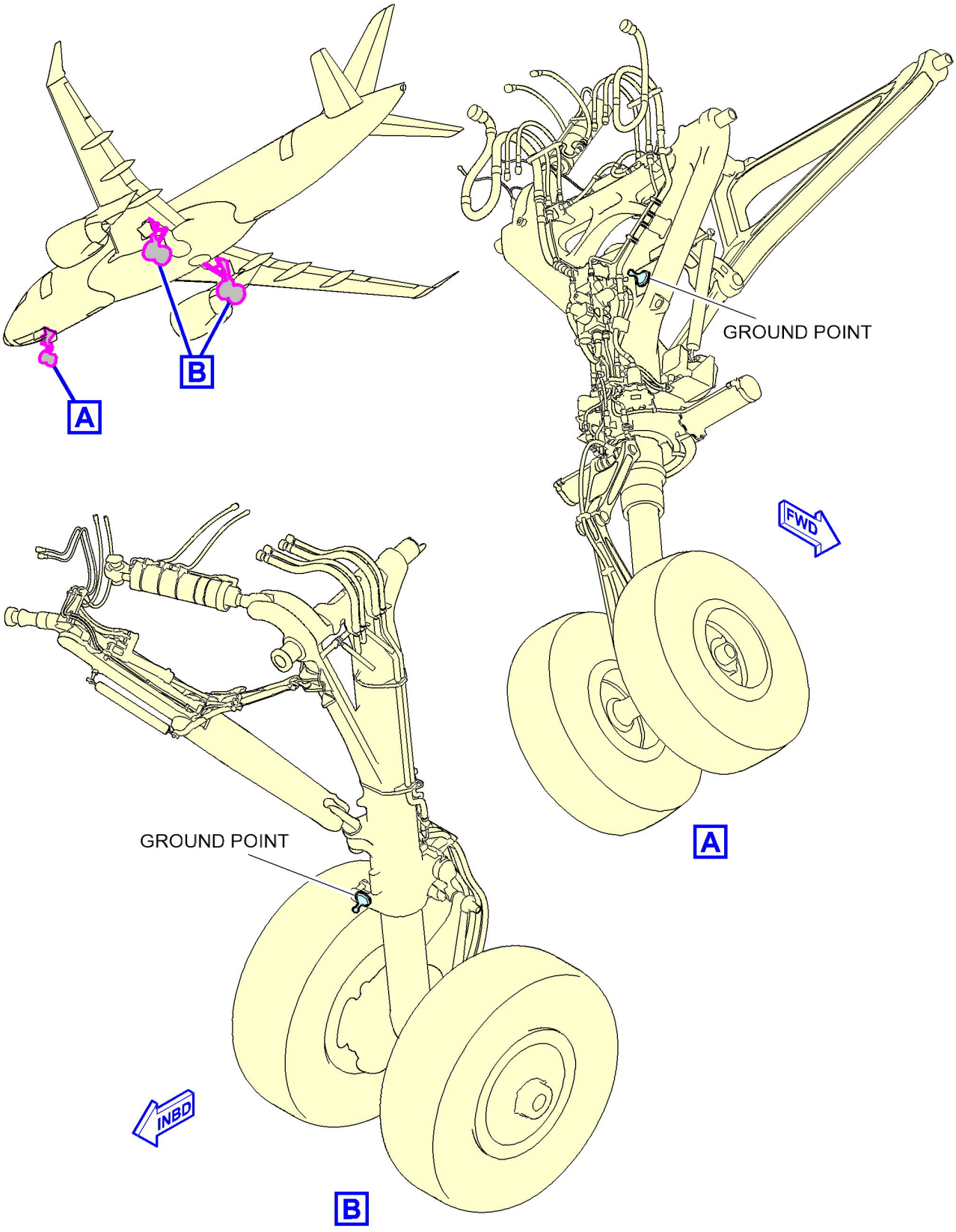
Table 9 Grounding points

Access	Aft of nose ft (m)	Position from aircraft Centerline RH side ft (m)	Mean height from ground ft (m)	LH side ft (m)
Nose Landing Gear (NLG) leg	11.73 (3,58)	On aircraft centerline	5.00 (1,51)	
Left Main Landing Gear (MLG) leg	53.23 (16,23)	-	10.75 (3,27)	2.85 (0,87)
Right MLG leg	53.23 (16,23)	10.75 (3,27)	-	2.85 (0,87)
Right MLG leg	53.23 (16,23)	10.75 (3,27)	-	2.85 (0,87)
LH Refuel/Defuel Access door 621FB (Optional)	51.32 (15,64)	-	27.31 (8,32)	10.93 (3,33)
RH Refuel/Defuel Access door 521FB Fig. 13	51.32 (15,64)	27.31 (8,32)	-	10.93 (3,33)

Note

All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.



ICN-BD500-A-J000000-A-3AB48-22049-A-001-01

Figure 12 Landing gears grounding points

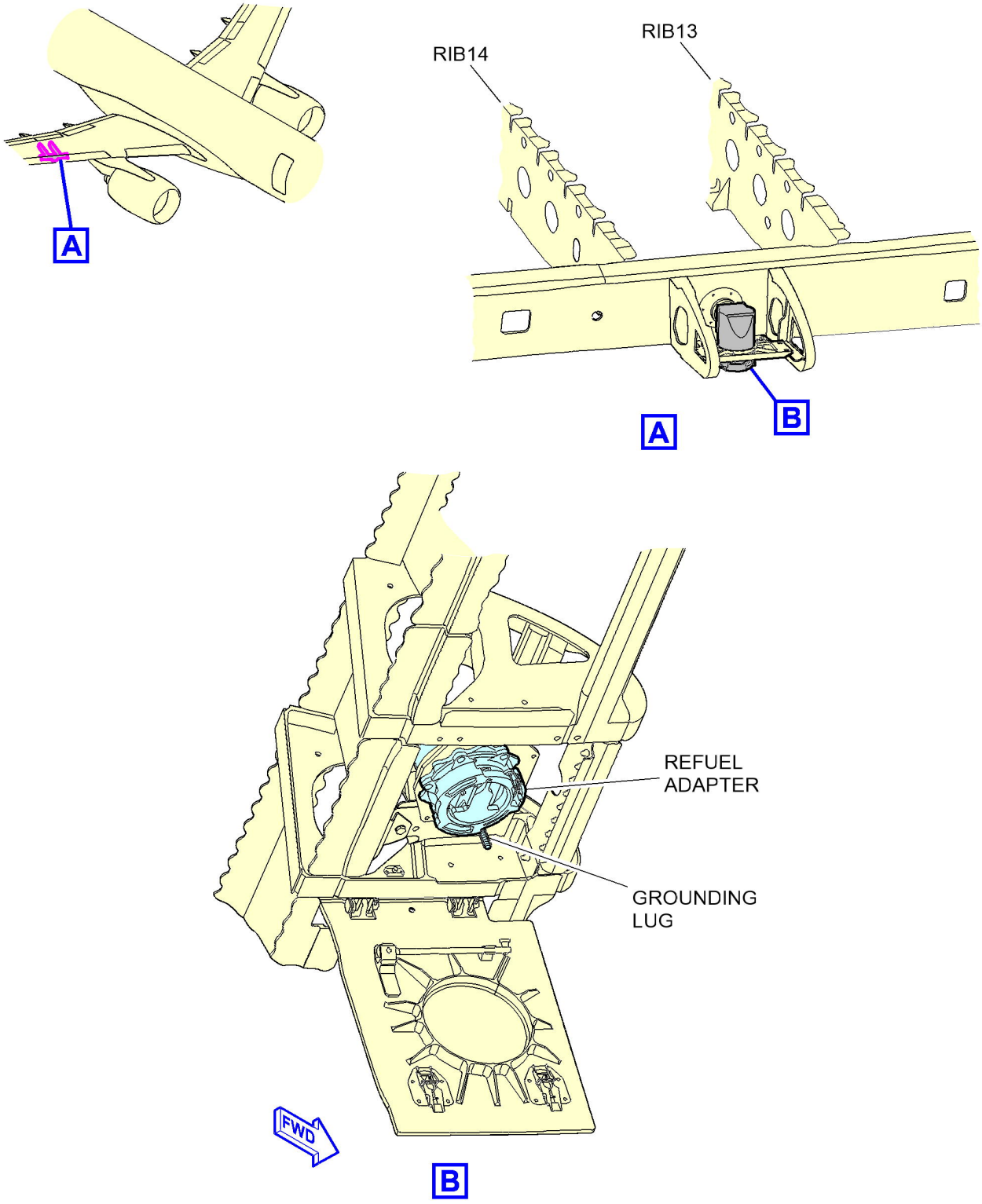
Table 10 Fuel system Refuel/Defuel adapter

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
LH Refuel/Defuel Access door 621FB (Optional)	51.32 (15,64)	-	27.31 (8,32)	10.93 (3,33)
RH Refuel/Defuel Access door 521FB	51.32 (15,64)	27.31 (8,32)	-	10.93 (3,33)

Note

All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.



NOTES

1. Refuel adapter is optional on the left side.

ICN-BD500-A-J000000-A-3AB48-22099-A-002-01

Figure 13 Refuel adapter and grounding point

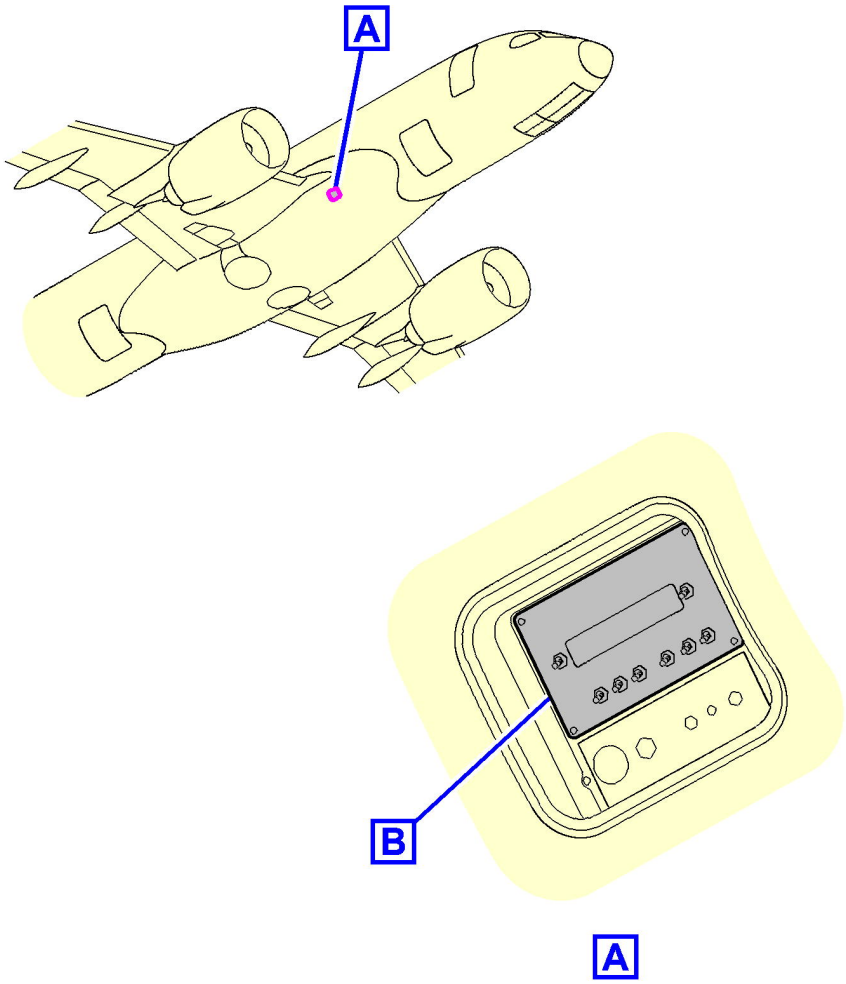
Table 11 Fuel system control panel

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
Access door 192AB	35.76 (10.9)	4.98 (1,52)	-	6.12 (1,86)

Note

All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.



ICN-BD500-A-J282300-C-3AB48-12260-A-001-01

Figure 14 Refuel/Defuel system

Table 12 Oil system

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
Engine Oil Filling Cap Access door (LH) 475CR (RH) 485CR	35.76 (10.9)	19.60 (5.97)	16.16 (4.93)	5.50 (1,68)

Note

All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.

Technical specifications

- Oil tank capacity: 25.7 L (6.8 US gal)

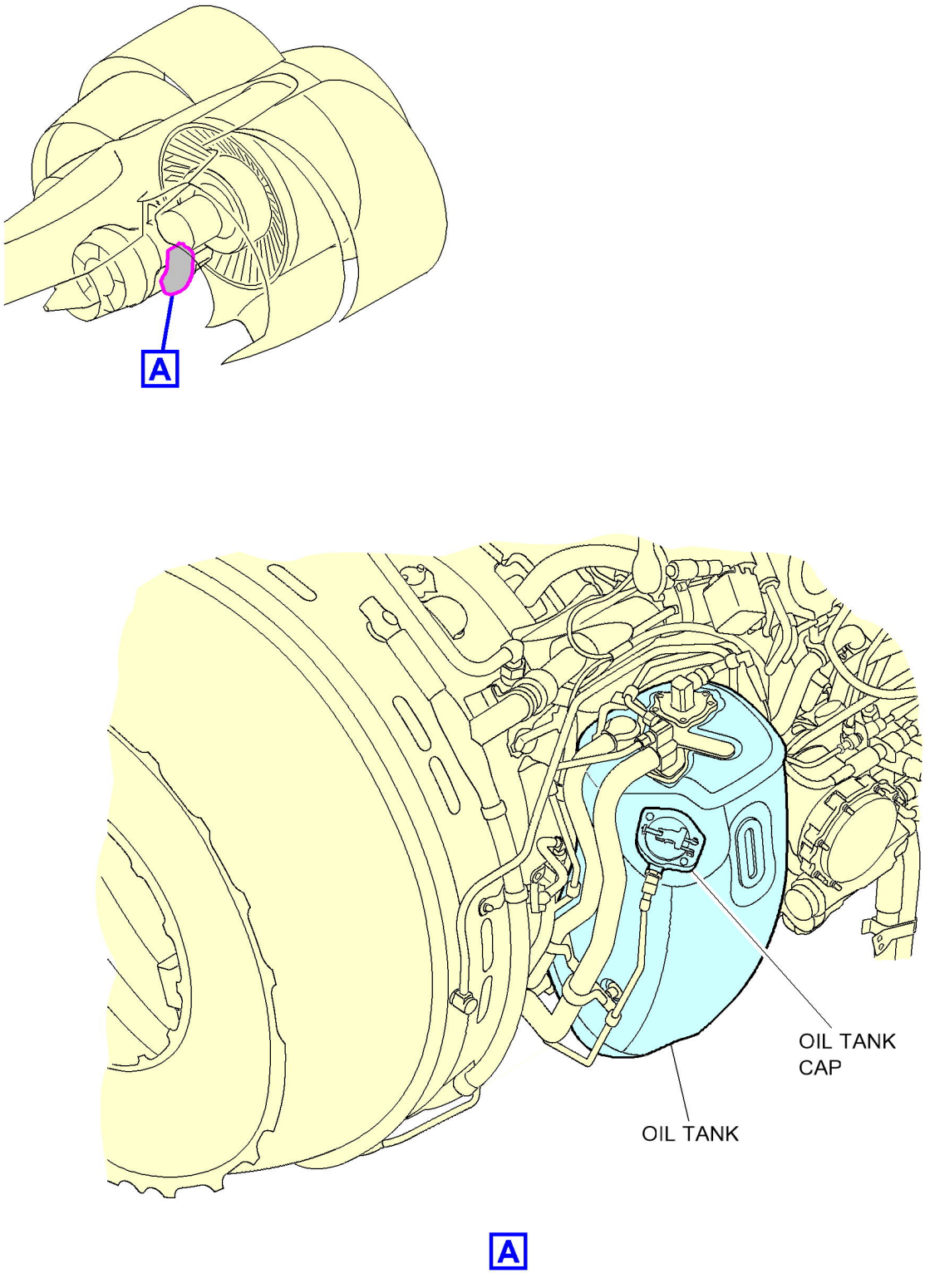


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Figure 15 Oil storage system

1.4 Ground electrical power requirements

1.5 Ground electrical power requirements

The external power system is used to connect AC electrical power from a ground cart. There are no provisions to connect DC power from an external ground cart. External AC can be used to power the complete AC distribution system or only those buses that provide power to the passenger compartment.

Note

It is recommended to use ground cart standard 75 KVA and higher. Using ground cart 60 KVA standard can lead to the EICAS nuisance messages.

Refer to Table 13 for the external AC power requirements data.

Refer to Table 14 for the external power quality limitations data.

Refer to Table 15 for overcurrent protection ampere versus time delay.

Refer to Table 16 for overvoltage protection versus time delay.

Table 13 External AC power requirements

Voltage	Frequency
115 ± 5 V	400 ± 15 Hz

Table 14 External power quality limitations

Parameter	Setting limit	Response time
Overcurrent	Table 15	
Overvoltage (highest phase)	Table 16	
Redundant Overvoltage (highest phase)	130 ± 3.3 V	0.75 ± 0.055 sec
Undervoltage	107 ± 2.0 V (lowest phase) or 108.5 ± 2.0 V (3 phase average)	4.5 ± 0.5 sec
Overfrequency	418 ± 2 Hz	4.5 ± 0.5 sec
Underfrequency	382 ± 2 Hz	4 ± 0.5 sec
Phase sequence	A-B-C	0.1 sec
Open sequence	Lowest phase 15 ± 5 A and other phase greater than 30 ± 5 A	2.0 ± 0.5 sec

Table 15 Overcurrent protection ampere versus time delay

Current A	Time (s)
230 ± 12	300

Current A	Time (s)
336 ± 12	11.75
337 ± 12	11.05
346 ± 12	9.4
355 ± 12	8.2
370 ± 12	6.75
380 ± 12	6.1

Table 16 Overvoltage protection versus time delay

Voltage (V)	Time (s)
123	0.6
124	0.5
132	0.3
141	0.14
146	0.1
151	0.05

1.6 Engine starting pneumatic power requirements

The ground air supply requirements for engine starting are shown in Table 17.

Conditions:

- Time allowed during start (to starter cutout) is 90 seconds
- Time-to-IDLE on ground is 45 seconds minimum
- No bleed air extraction is permitted during start sequence

Table 17 Ground pneumatic power requirements – Engine starting

ATS requirements	Inlet Pressure	Airflow
ISA day	45 PSIG 45 Pounds per Square Inch Absolute (PSIA)	150 lb/min 68,04 kg/min

1.7 Ground pneumatic power requirements

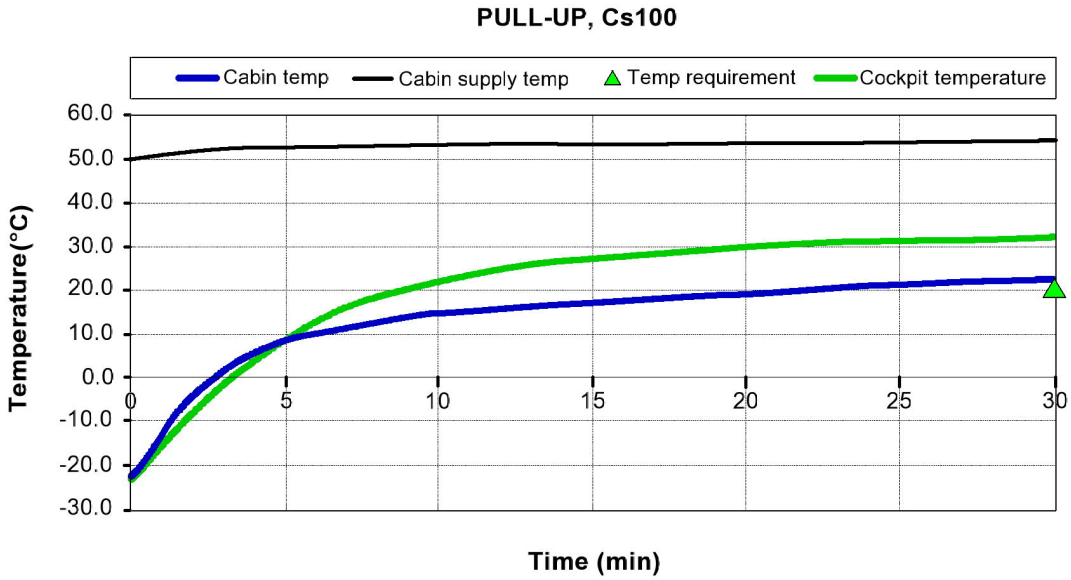
1.7.1 Heating

This section provides the ground pneumatic power requirements for heating the cabin with specific conditions.

Refer to Fig. 16 for heating pull-up graphic.

Table 18 Ground air supply requirements for heating (Pull up)

Requirements	Pressure	Airflow	Temperature
To heat cabin to 69.8 °F (21 °C) within 30 minutes Conditions - Outside air temperature: -40 °F (-40 °C) - Initial cabin and cockpit temperature: -9.4 °F (-23 °C) - Cockpit, FWD & AFT CABIN Temp Selector: Full Hot (86 °F (30 °C)) - Recirculation fan: On - Trim air: On - No passenger	31 PSIG (45.7 PSIA)	203 lb/min (92,1 kg/min)	280 ºF (138 ºC)



ICN-BD500-A-J000000-A-3AB48-22378-A-001-01

Figure 16 Ground pneumatic requirements - Heating

Table 19 Ground air supply requirements for heating at a steady state

Requirements	Pressure	Airflow	Temperature
Conditions - Outside air temperature: -40 °F (-40 °C) - Steady state Cockpit & Cabin temperature: 75.2 °F (24 °C) - Cockpit, FWD & AFT CABIN Temp Selector: Mid selection (75.2 °F (24 °C)) - Recirculation fan: On - Trim air: On - 15 passengers	25.4 PSIG (40.1 PSIA)	166 lb/min (73.3 kg/min)	253 ºF (123 ºC)

1.7.2 Cooling

This section provides the ground pneumatic power requirements for cooling the cabin with specific conditions.

Refer to Fig. 17 for the cooling pull-down graphic.

Table 20 Ground air supply requirements for cooling (Pull down)

Requirements	**Pressure**	**Airflow**	**Temperature**
To cool cabin to 80.6 °F (27 °C) within 30 minutes Conditions - Outside air temperature: 104 °F (40 °C) - Initial cabin and cockpit temperature: 114.8 °F (46 °C) - Cockpit, FWD & AFT CABIN Temp Selector: Full Cold (64.4 °F (18 °C)) - Recirculation fan: On - Trim air: On - No passenger	38 PSIG (52.7 PSIA)	140 lb/min (63,5 kg/min)	437 ºF (225 ºC)

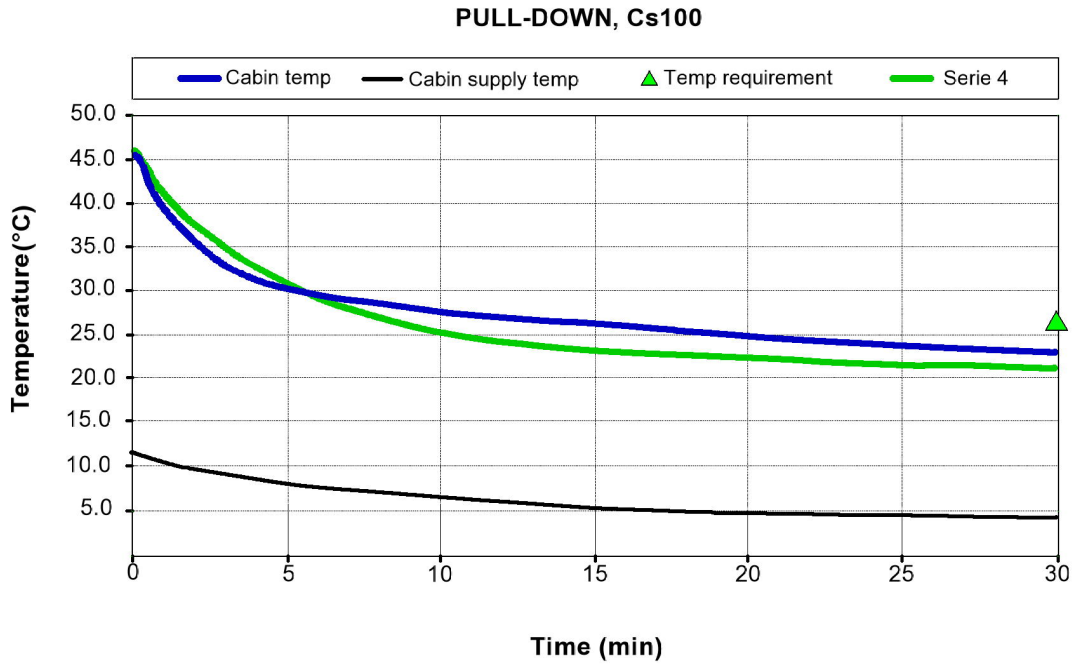


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Figure 17 Ground pneumatic requirements - Cooling

Table 21 Ground air supply requirements for cooling at a steady state

Requirements	Pressure	Airflow	Temperature
Conditions - Outside air temperature: 104 °F (40 °C) - Steady state Cockpit & Cabin temperature: 75.2°F (24 °C) - Cockpit, FWD & AFT CABIN Temp Selector: Mid selection (75.2 °F (24 °C)) - Recirculation fan: On - Trim air: On - 130 passengers	31 PSIG (45.7 PSIA)	203 lb/min (92,1 kg/min)	280 ºF (138 ºC)

1.8 Preconditioned airflow requirements

The ground air supply requirements for air conditioning and airflow requirements are shown in Table 22 for the LPGC.

Table 22 Preconditioned airflow requirements

Requirements	**Pressure**	**Airflow**	**Temperature**
To cool cabin to 75.2 °F (24 °C) Conditions - Outside air temperature is 104 °F (40 °C) - Recirculation fan is on - 130 passenger	0.6 PSIG (15.2 PSIA) (4.1 kPa g)	125 lb/min (54.4 kg/min)	41 ºF (5 ºC)
To heat cabin to 75.2 °F (24 °C) Conditions - Outside air temperature is -40 °F (-40 °C) - Recirculation fan is on - 15 passenger	0.6 PSIG (15.2 PSIA) (4.1 kPa g)	125 lb/min (54.4 kg/min)	104ºF (40ºC)

1.9 Ground towing requirements

The aircraft is designed for towing and pushing with a tractor and tow bar as well as with selected tow bar-less ground handling vehicles.

For towing and pushing operations, controls are provided to accommodate the following conditions:

- Aircraft not powered (see note below):
  A control panel is provided on the left side of the aircraft by the nose NLG. A push-button on the control panel can be toggled to engage power to begin the towing sequence (Navigation lights are lit automatically). The parking brake can be deactivated by way of a switch located on this panel. Annunciation lights on the NLG indicate when the parking brake is deactivated and the aircraft is ready for towing.

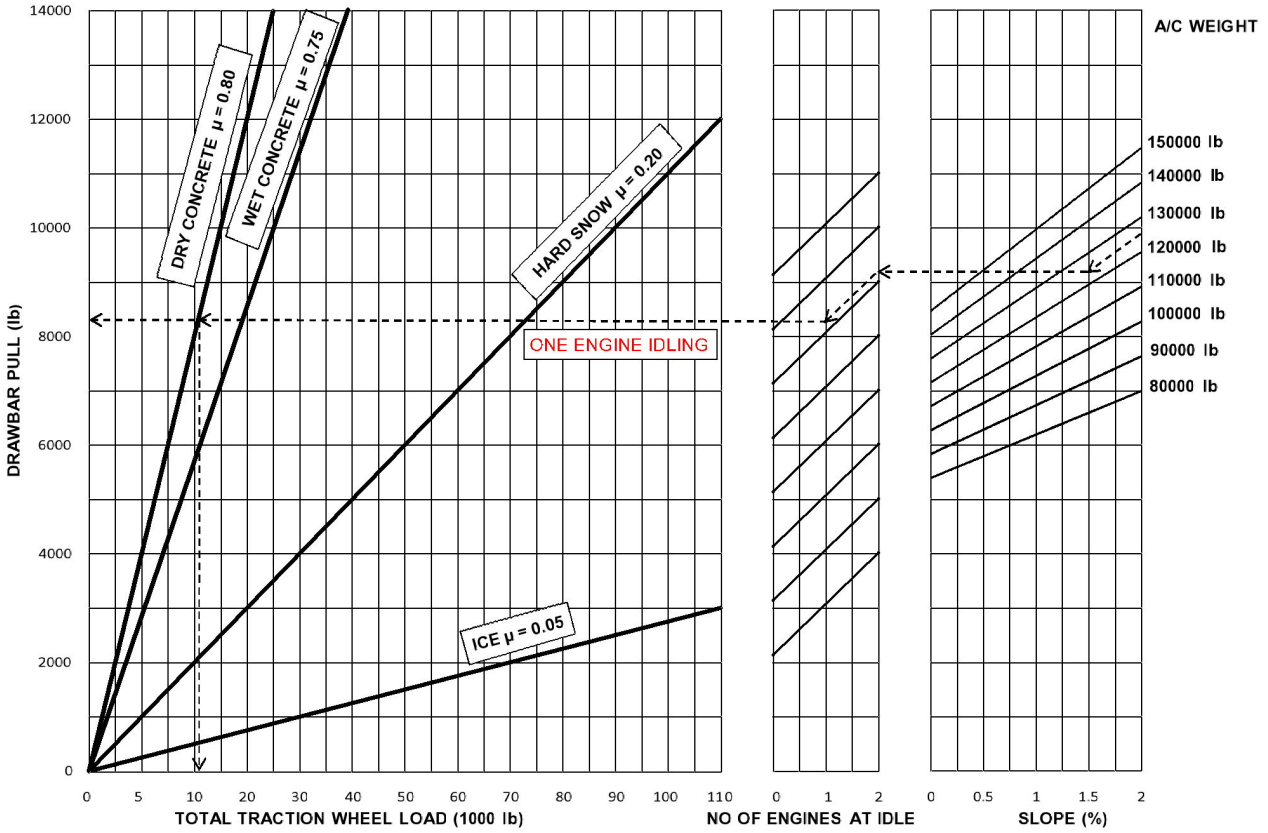
Note

Availability of the controls to facilitate towing the aircraft with the flight deck vacant does not constitute an approval to conduct such operations.

- Aircraft powered, and flight deck occupied:
  Two separate controls, one to deactivate the nose wheel steering, and one to deactivate the parking brake, are located in both the flight deck and on the control panel located in the vicinity of the nose landing gear. Headset jacks are provided on this control panel to allow for communication between personnel on the flight deck and on the ground. Annunciation lights on the control panel indicate when the aircraft is ready for towing.

With the torque links connected, towing up to ±130° nose wheel angle is possible.

The ground towing requirements are described in the illustration below.



NOTES

1. Unusual breakaway conditions not reflected.
2. Estimated for rubber - tired tow vehicles.
3. Coefficient of friction (μ) approximate.
4. Example: At an aircraft gross weight of 125000lbs (56699 Kg), an uphill slope of 1.5%, with one engine ON and with a dry concrete surface, the corresponding draw bar pull or push required is 8000 lbf (35.6 kN) and the total tractor weight of approximately 10 500 lbs (4762 Kg).

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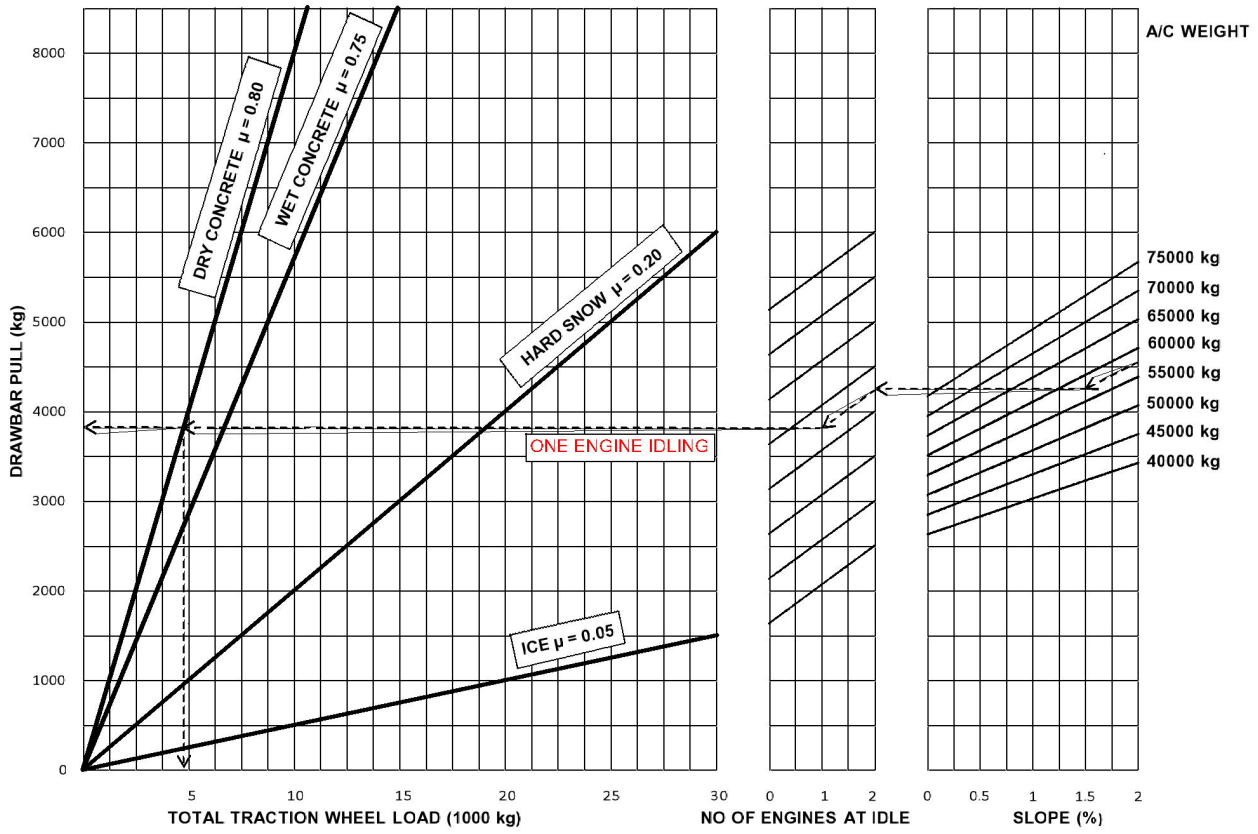
Figure 18 Ground towing requirements (imperial unit)



NOTES

1. Unusual breakaway conditions not reflected.
2. Estimated for rubber - tired tow vehicles.
3. Coefficient of friction (μ) approximate.
4. Example: At an aircraft gross weight of 125000lbs (56699 Kg), an uphill slope of 1.5%, with one engine ON and with a dry concrete surface, the corresponding draw bar pull or push required is 8000 lbf (35.6 kN) and the total tractor weight of approximately 10 500 lbs (4762 Kg).

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Figure 19 Ground towing requirements (metric unit)

For more information related to towing, refer to the AMP.

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CSERIES

Operating conditions - Technical data

Applicability: Model: CS100

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References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Introduction

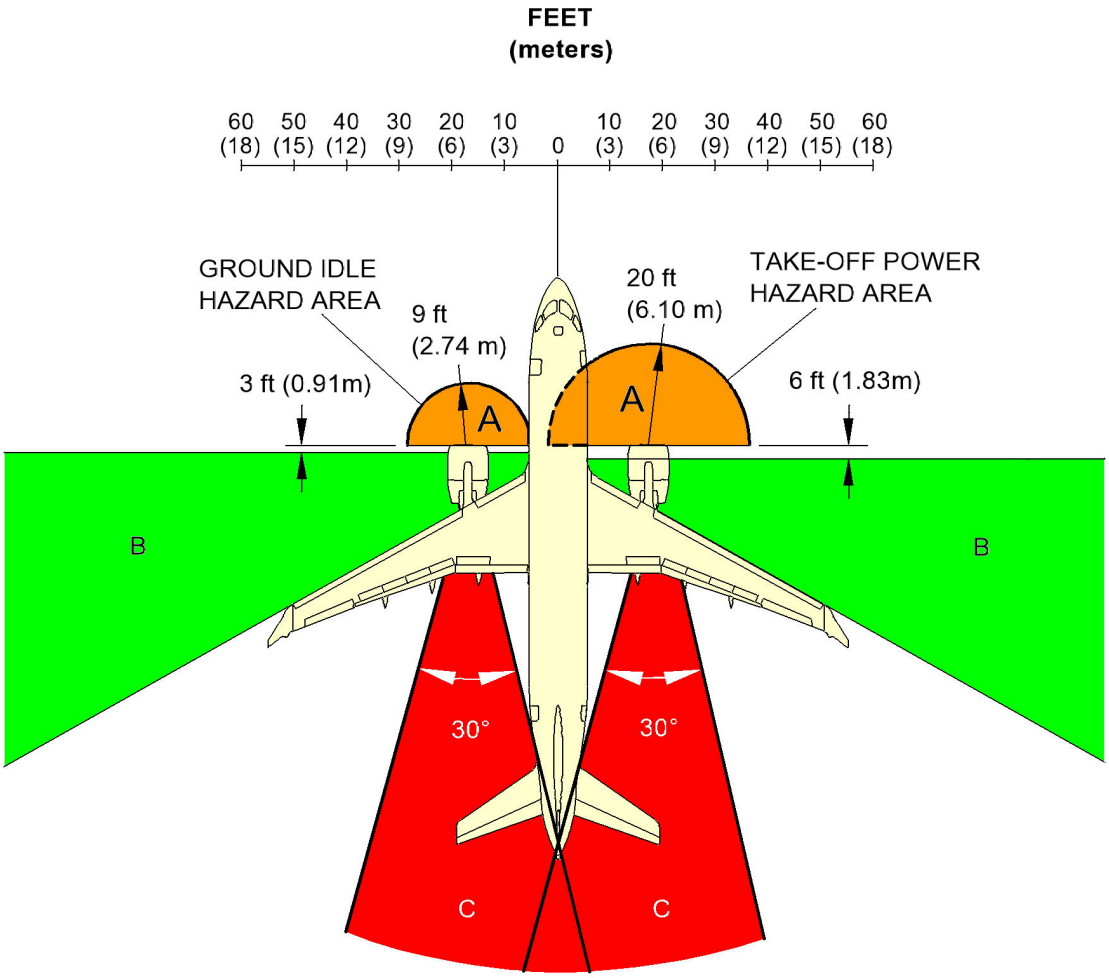
This data module gives data on the engine noise levels and the intake and exhaust dangerous areas during normal operations. This section is divided into the subsections that follow:

- Engine dangerous areas
- Engine exhaust velocities and temperatures
- Auxiliary Power Unit (APU)
- Engine noise levels

Aircraft operating conditions and noise are important to airport and community planners. While an airport is a major element in a community transportation system and is vital to it's growth, it must be a good neighbor. This can only be accomplished with proper planning. Because aircraft noise extends beyond the boundaries of the airport, it is vital to consider the impact on surroundings communities.

2 Engine dangerous areas

This section contains information about the danger areas of engines during a ground run up. Refer to Fig. 1 for danger areas of engines.



LEGEND

AREA A	Intake suction danger area.
AREA B	Entry corridor.
AREA C	Exhaust danger area (Aft of exhaust nozzle): 200 ft (61 m) - ground idle (20 kt headwind). 600 ft (183 m) - take off power (20 kt headwind).

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Figure 1 Engine dangerous areas

3 Engine exhaust velocities and temperatures

This section shows the estimated engine exhaust plume velocity and temperature profiles during idle, breakaway, and maximum takeoff conditions.

The exhaust plume profiles are provided from the engine nozzle exit plane, assuming sea level, static, ISA condition, without any wind and bleed extraction. They do not take into account an engine-to-engine variation or engine deterioration and do not account for interaction with the fuselage, ground or other engine plume.

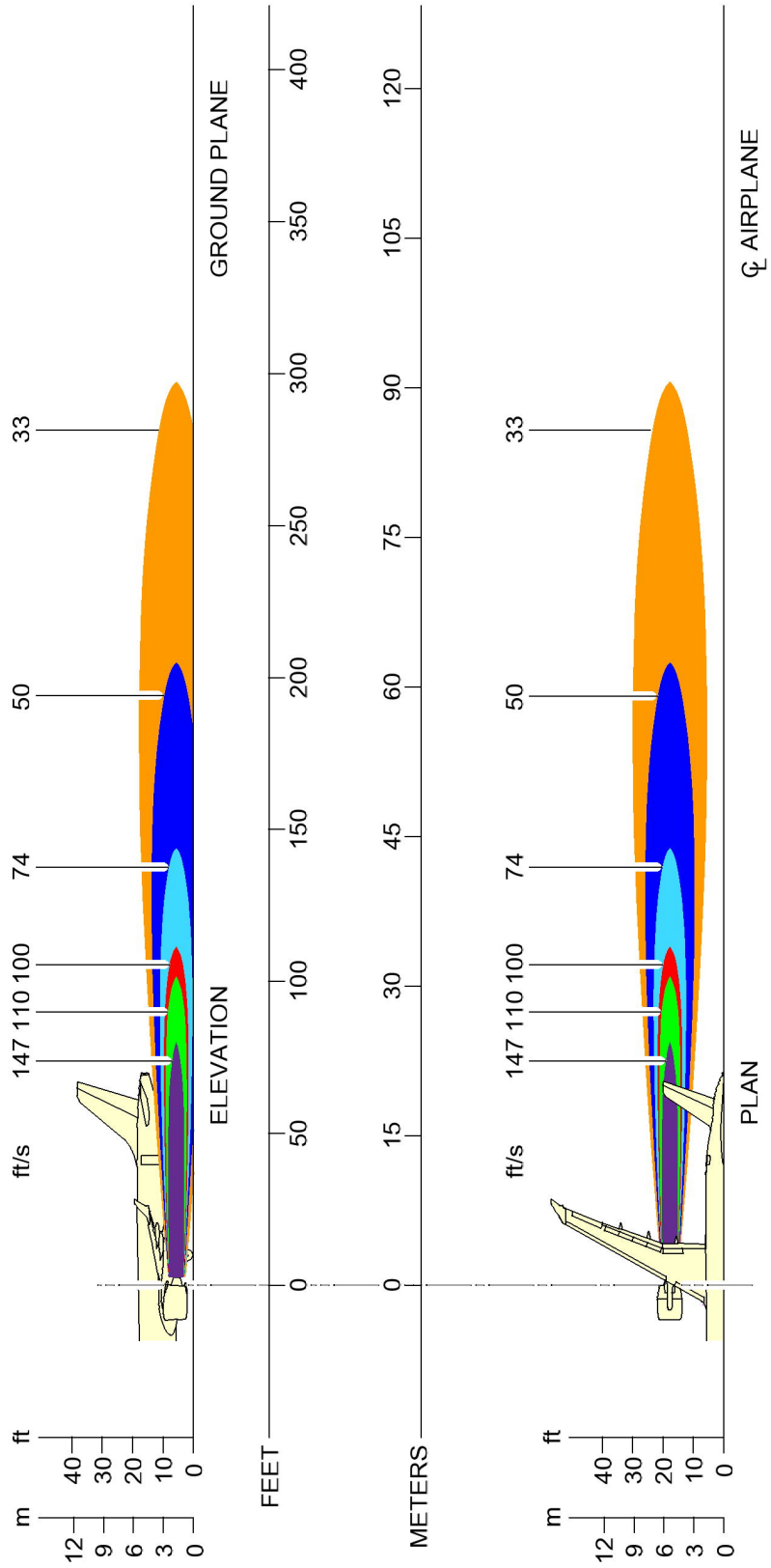

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Figure 2 Exhaust plume velocity profile / CS100 Break-away thrust 2970 lbf

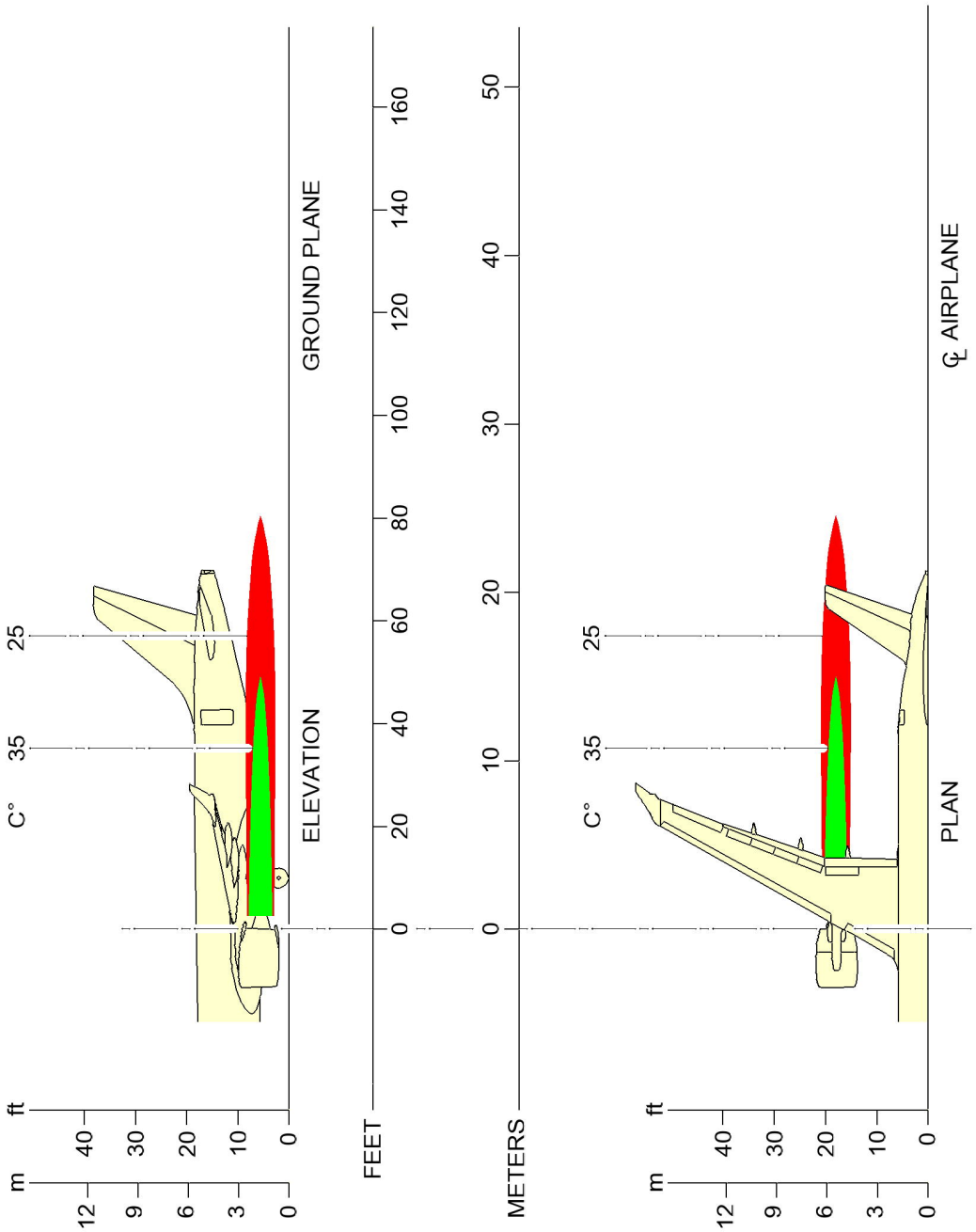

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Figure 3 Exhaust plume temperature profile / CS100 Break-away thrust 2970 lbf

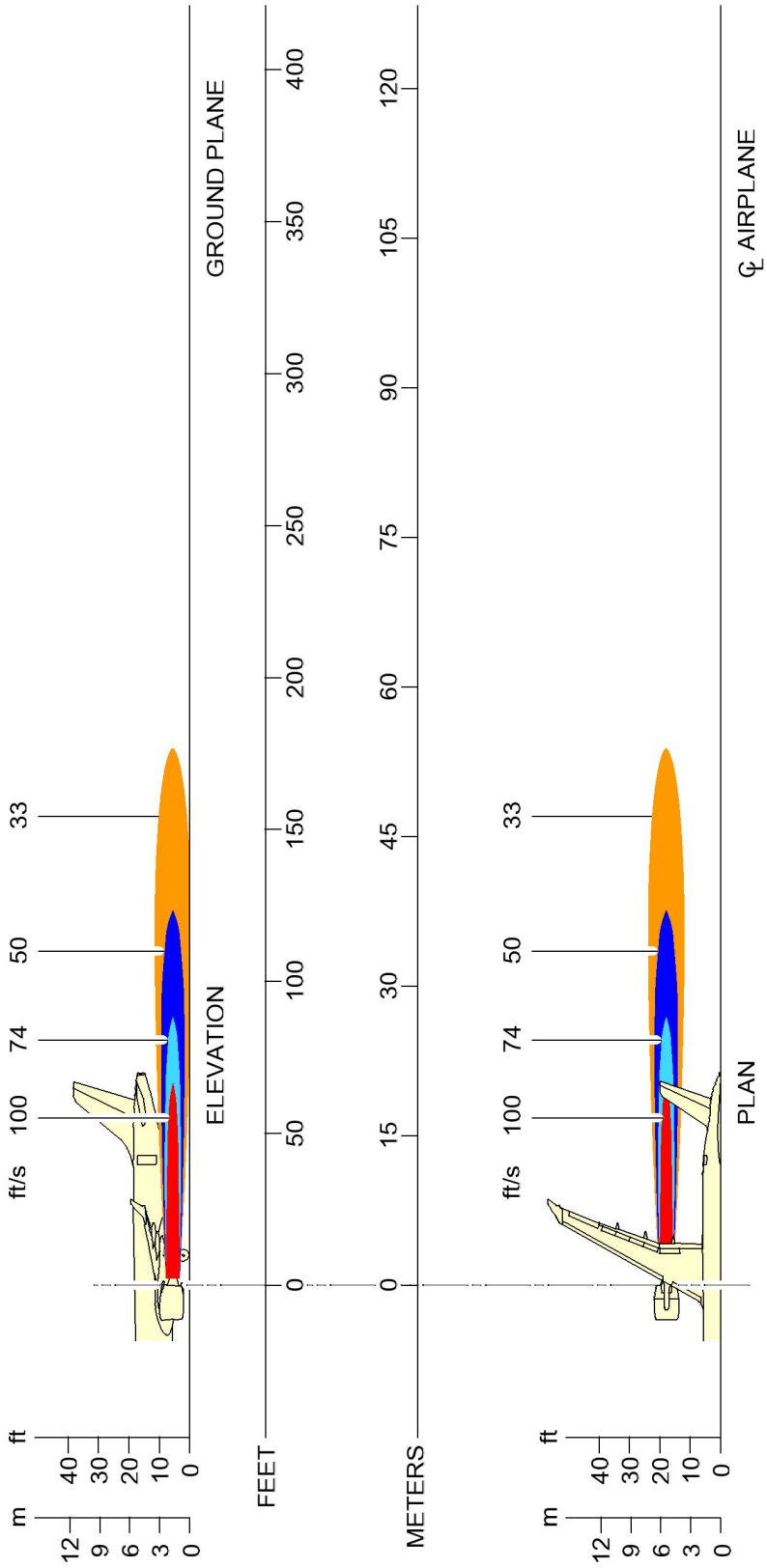

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Figure 4 Exhaust plume velocity profile / Ground idle

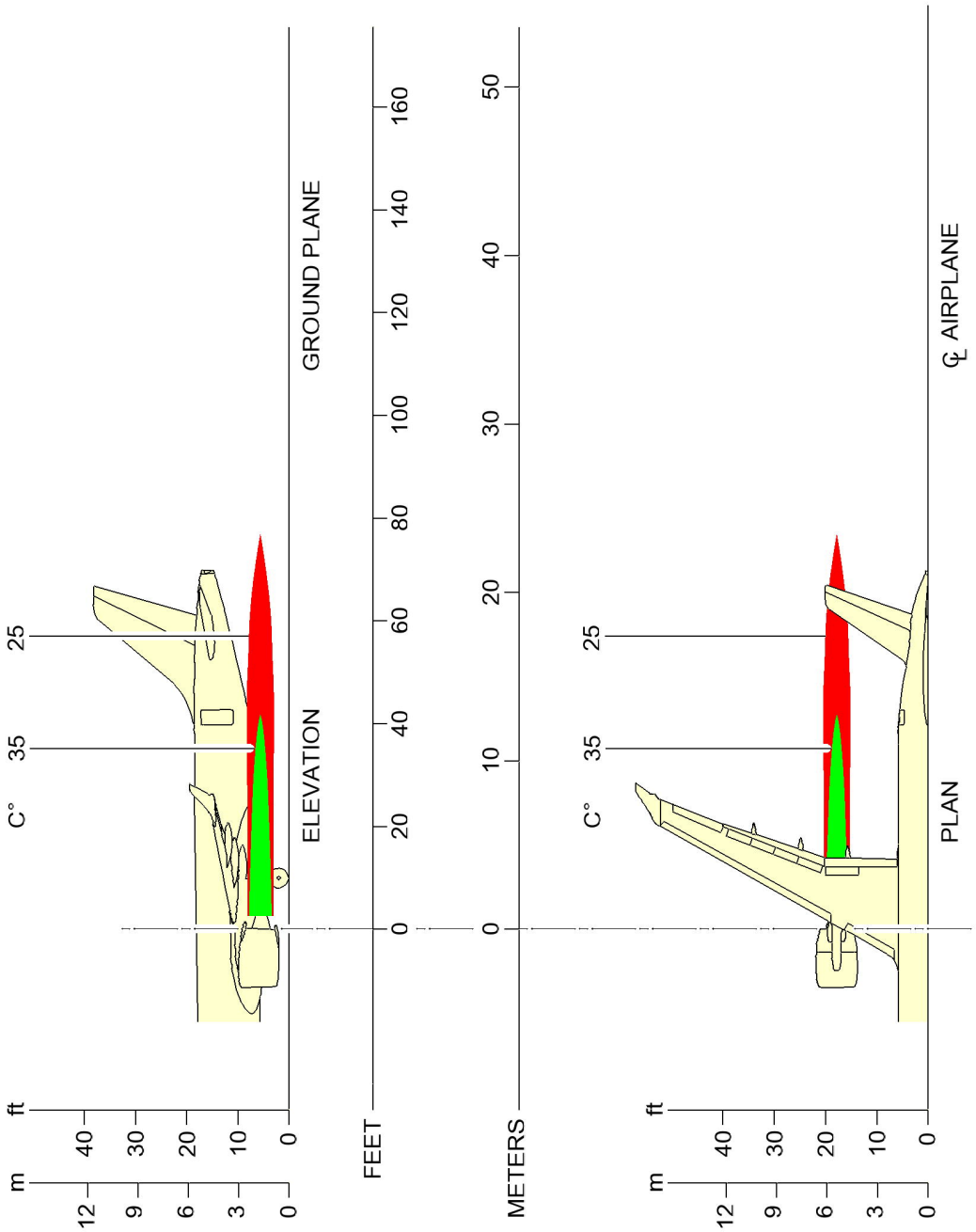

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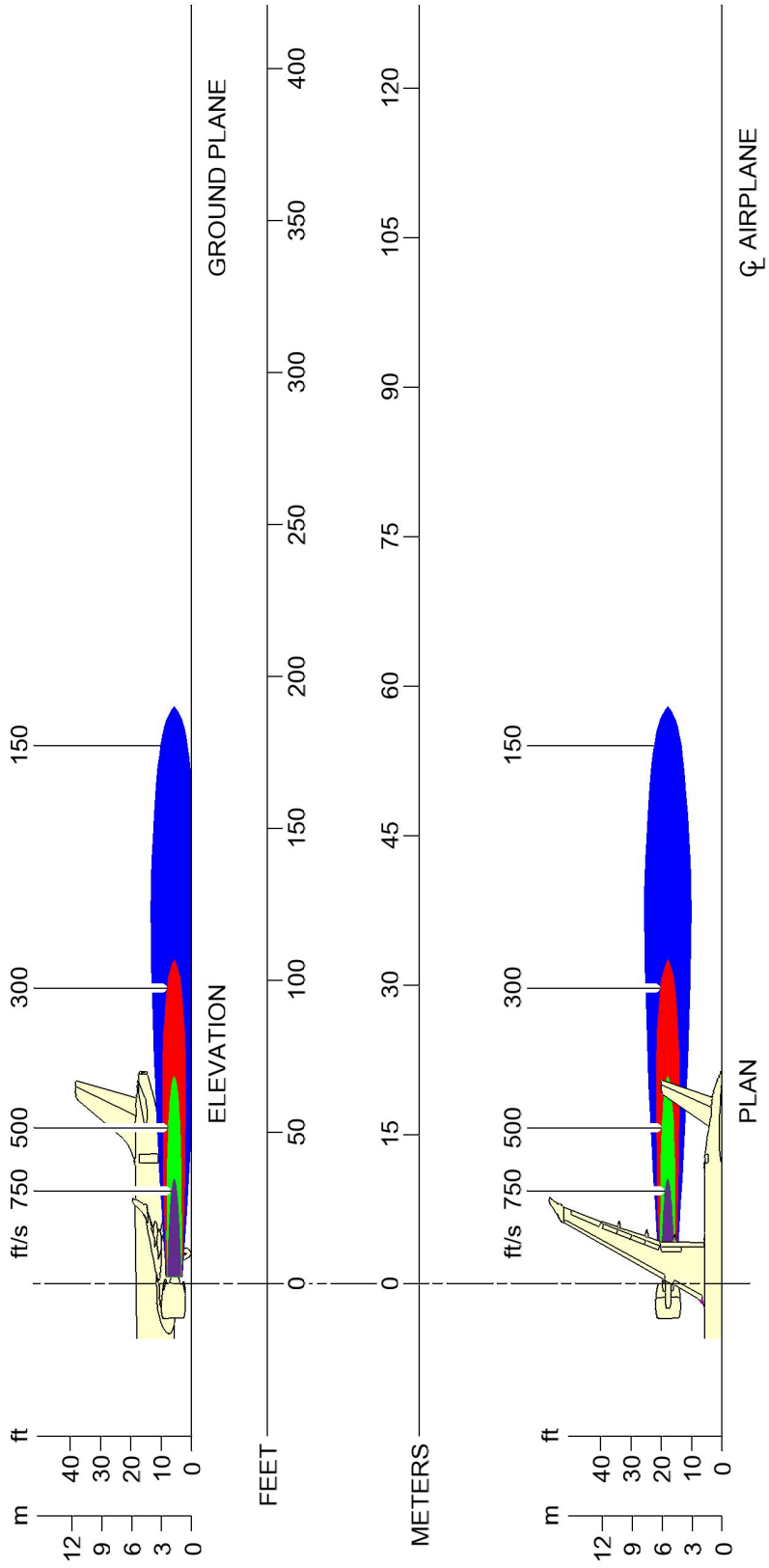
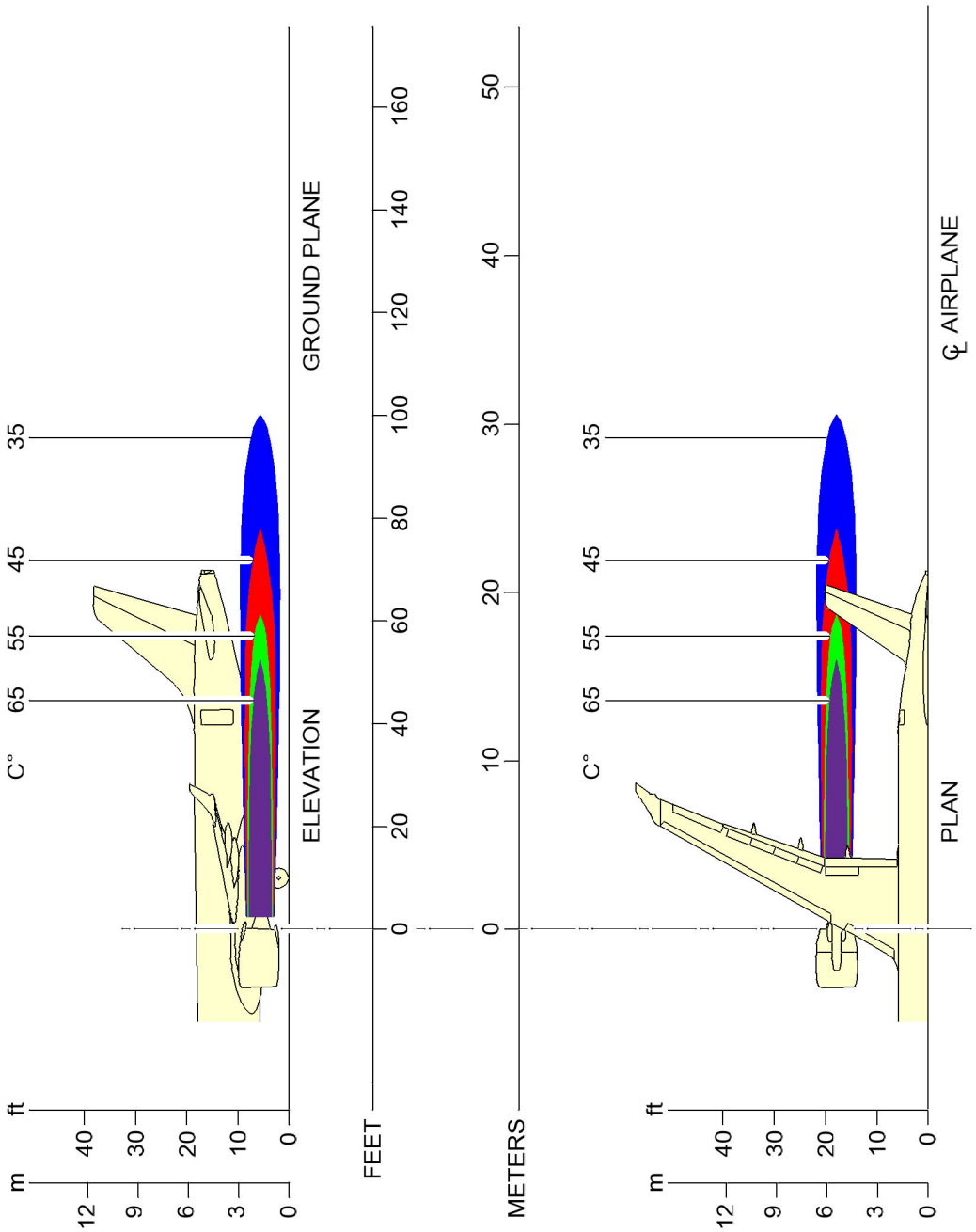
Figure 5 Exhaust plume temperature profile / Ground idle



ICN-BD500-A-J000000-A-3AB48-27921-A-001-01

Figure 6 Exhaust plume velocity profile / Maximum take-off at sea level static



ICN-BD500-A-J000000-A-3AB48-27922-A-001-01

Figure 7 Exhaust plume temperature profile / Maximum take-off at sea level static

4 Auxiliary Power Unit (APU)

This section will be updated when new data will be available.

5 Engine noise levels

The community noise levels must agree with FAR 36 Stage 3, ICAO Annex 16, Chapter 4, Chapter 516.

Refer to Table 2 for the demonstrated Effective Perceived Noise levels (EPNdB), limits, and the relative difference (margin of compliance) for the engines.

Table 2 Engine noise levels

Engine <option code>	Weights		Measurement Points			Margins (EPNdB)	Margin Requirement (EPNdB)
	MTOW <option code>	MLW <option code>	Description	Noise Limit (EPNdB)	Measured Level (EPNdB)		
PW1524G <72210003>	134,000 lb (60,781 kg) <13000170>	115,500 lb (52,390 kg) <1300270>	Approach	99.9	91.9	8.0	0
			Lateral	96.0	87.9	8.1	0
			Flyover	90.4	79.0	11.4	0
			Sum of smallest two individual margins:			16.1	2
			Sum of all individual margins:			27.5	10

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CSERIES

Pavement data - Technical data

Applicability: Model: CS100

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References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Introduction

This data module contains data related to the pavement design specifications, including aircraft footprints, pavement loading during standard operations, and aircraft/pavement rating systems. Also given are the flotation classification for different weights, fixed tire pressure, and aft Center of Gravity (CG), with the Aircraft Classification Number (ACN) methods.

This section is divided into the subsections that follow:

- ACN
- Landing gear footprint
- Maximum pavement load
- Landing gear loading on pavement

Note

Runway strength data shown in this publication is derived from available information and is a realistic estimate of capability at an average level of activity. It is not intended as a maximum allowable weight or as an operating limitation. Many airport pavements are capable of supporting limited operations with gross weights in excess of published figures. Permissible operating weight, insofar as runway strengths are concerned, are a matter of agreement between the owner and user.

For more information about the Pavement Classification Number (PCN), please contact the concerned airport authority.

1.1 Aircraft Classification Number (ACN) / Pavement Classification Number (PCN) Introduction

1.1.1 Aircraft Classification Number (ACN)

The ACN value is a number which expresses the relative structural effect of an aircraft on different pavement types for specified standard subgrade strengths in terms of a standard single wheel load.

An aircraft will have eight (8) ACN numbers for any given aircraft weight and tire pressure: four (4) for flexible pavement and four (4) for rigid pavement.

1.1.2 Pavement Classification Number (PCN)

The PCN value is a number which expresses the relative load carrying capacity of a pavement in terms of a standard single wheel load.

An airport determined and published PCN can be compared with an aircraft's ACN. An aircraft that has an ACN equal to or less than the PCN of a given pavement can operate without restriction on the pavement. (Ref. International Civil Aviation Organization (ICAO) State Letter AN411.1.17−8019. Ref. US FAA Advisory Circular 150153355 15/06/83).

For example, if the published airport PCN is 52/R/B/Y/T, it means that the aircraft ACN must be less than 52 for rigid pavement type, with medium subgrade strenght, and the tire pressure of the aircraft must be less than 145 psi (1.0 MPa). The PCN also shows that the value was arrived at through a technical review.

Table 2 Airport method to show Pavement Classification Number (PCN).

Pavement type	Pavement type	Tire pressure category psi (MPa)	Evaluation
R = Rigid F = Flexible	A = High B = Medium C = Low	W = No limit X = To 254 (1.75) Y = To 181 (1.25)	T = Technical U = Using aircraft

Pavement type	Pavement type	Tire pressure category psi (MPa)	Evaluation
	D = Ultra Low	Z = To 73 (0.5)	

Table 3 Subgrade strength categories

Subgrade categories	Flexible pavement		Rigid pavement	
	Characterization	CBR range	Characterization	k-Value Range
A	CBR 15	Above 13	k = 150MN/m3 (550 pci)	Above 120MN/m3 (442pci)
B	CBR 10	From 8 to 13	k = 80MN/m3 (300 pci)	From 60 to 120 MN/m3 (221 to 442pci)
C	CBR 6	From 4 to 8	k = 80MN/m3 (300 pci)	From 25 to 60 MN/m3 (92 to 221pci)
D	CBR 3	Below 4	k=20MN/m3 (75pci)	Below 25 MN/m3 (92pci)

2 Aircraft Classification Number (ACN) results

Refer to Fig. 1 for the ACN results for rigid pavement and Fig. 2 for the ACN results for flexible pavement.

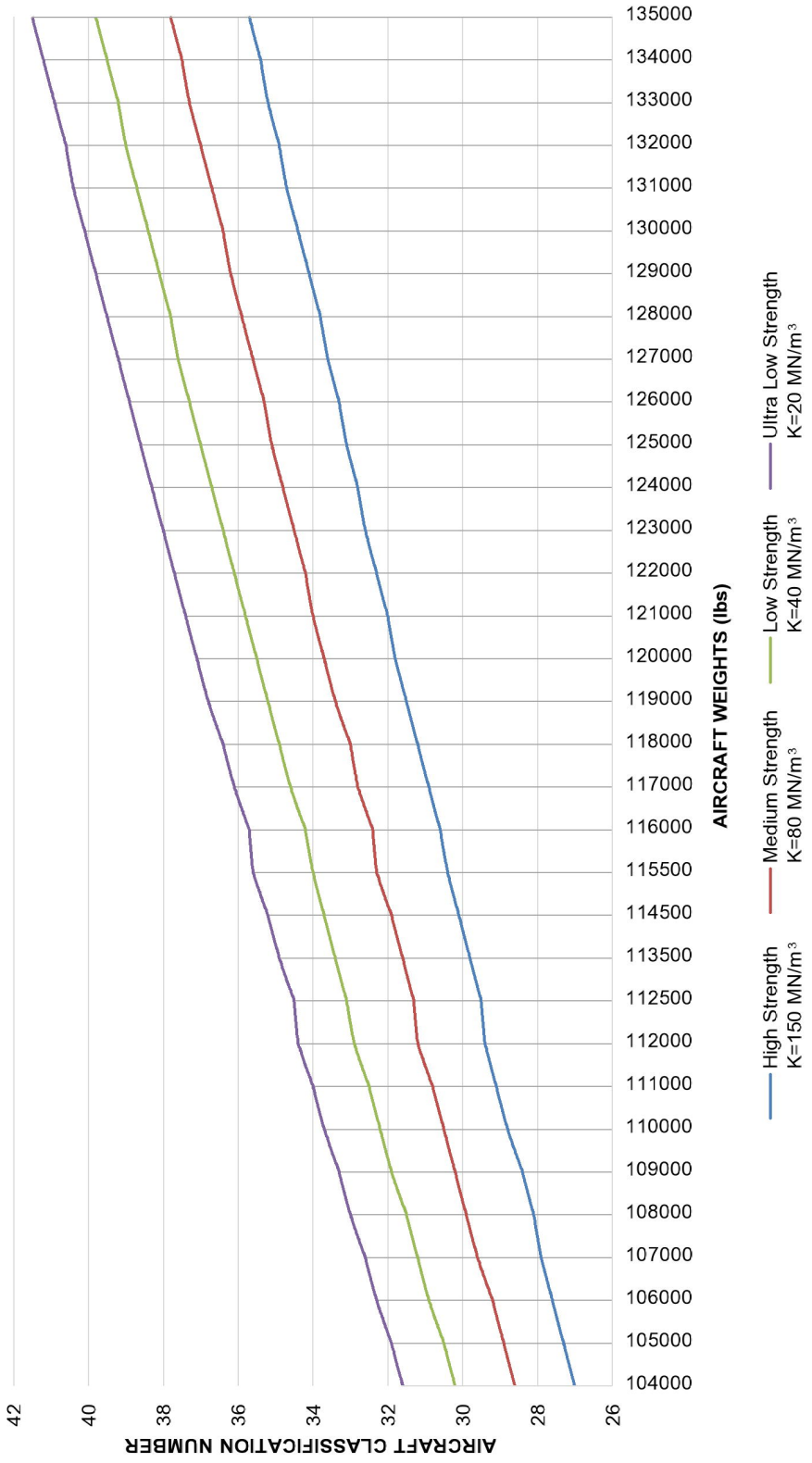

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Figure 1 ACN results - Rigid pavement - (Sheet 1 of 2)

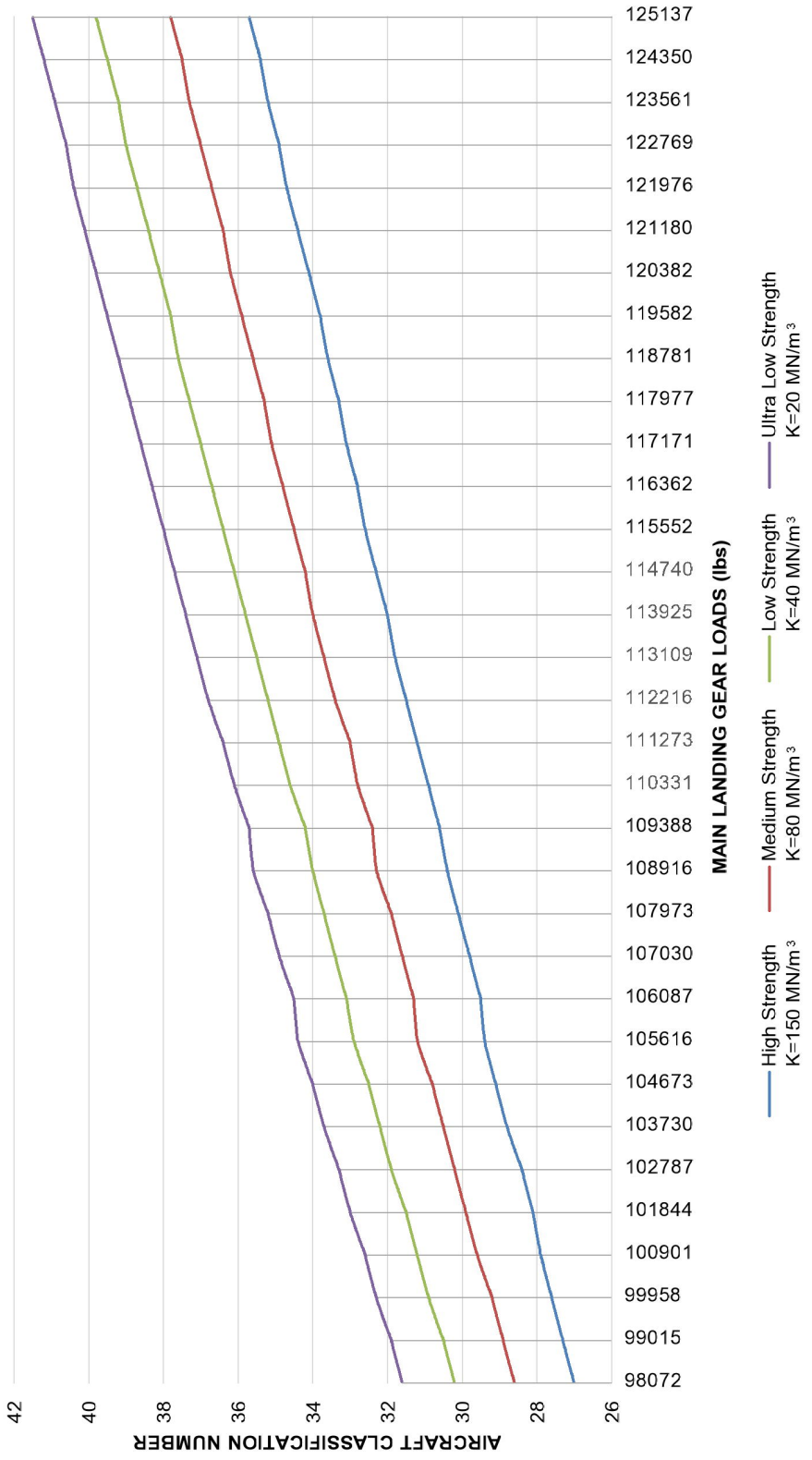

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Figure 1 ACN results - Rigid pavement - (Sheet 2 of 2)

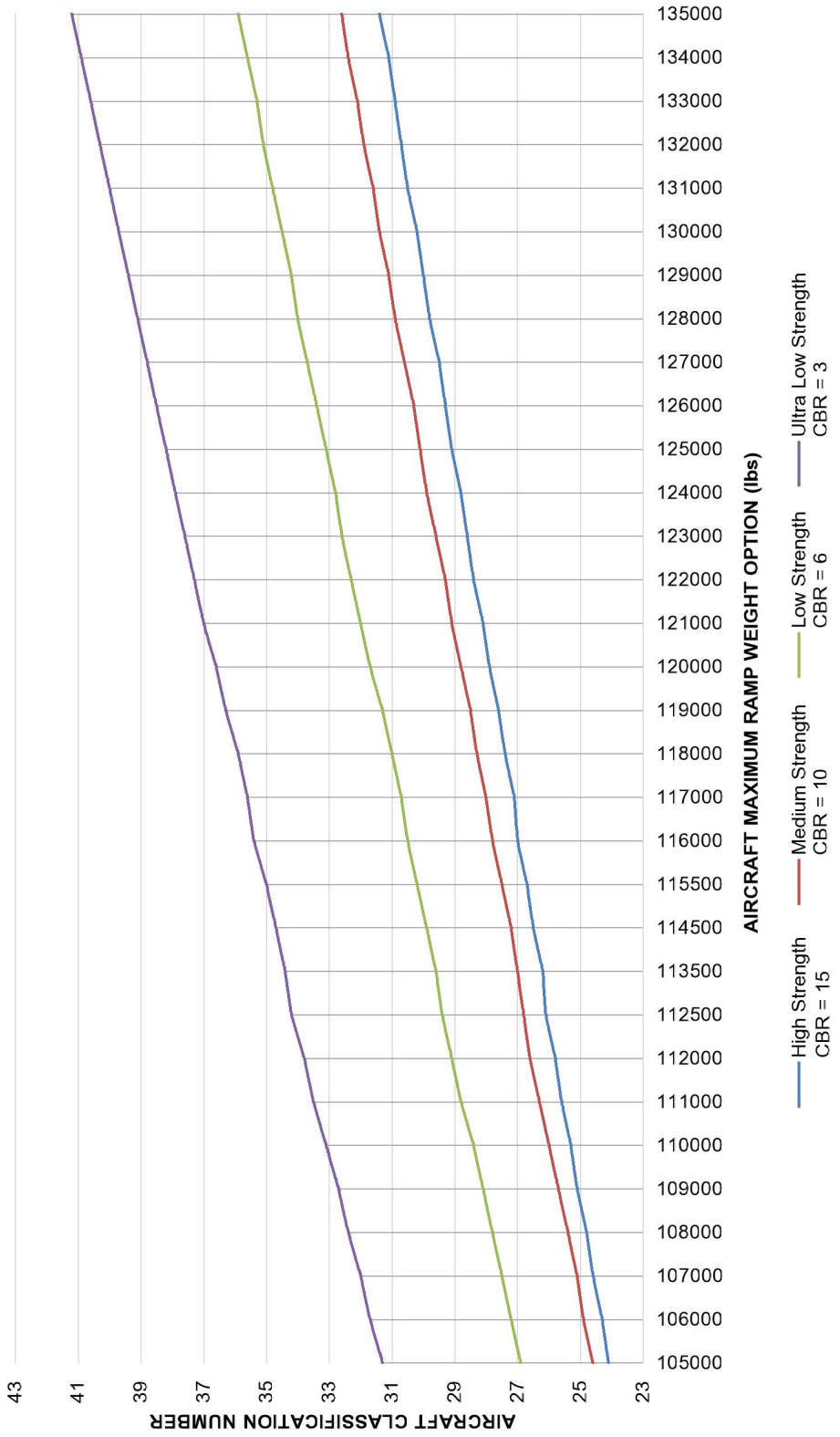

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Figure 2 ACN results - Flexible pavement - (Sheet 1 of 2)

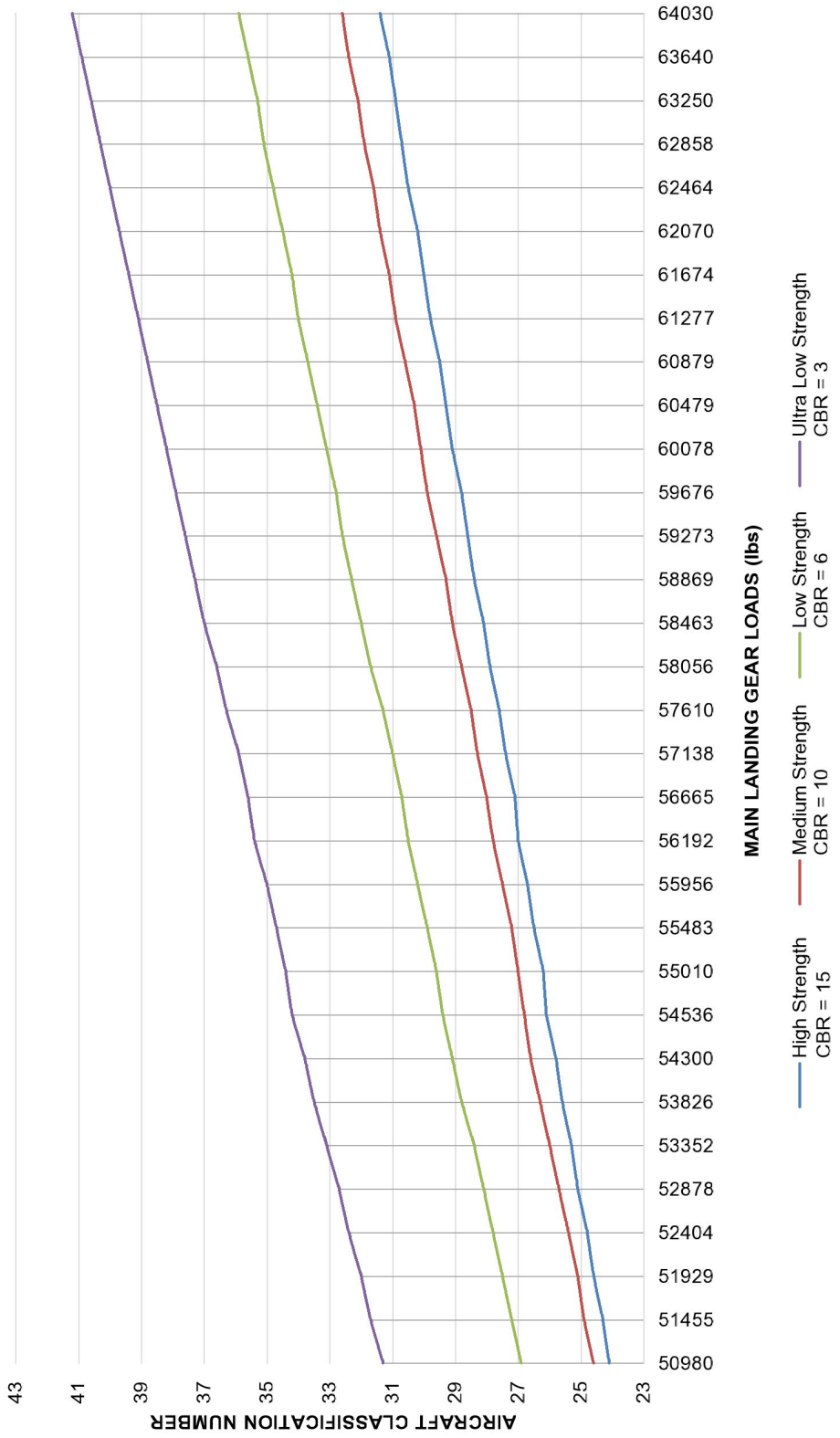

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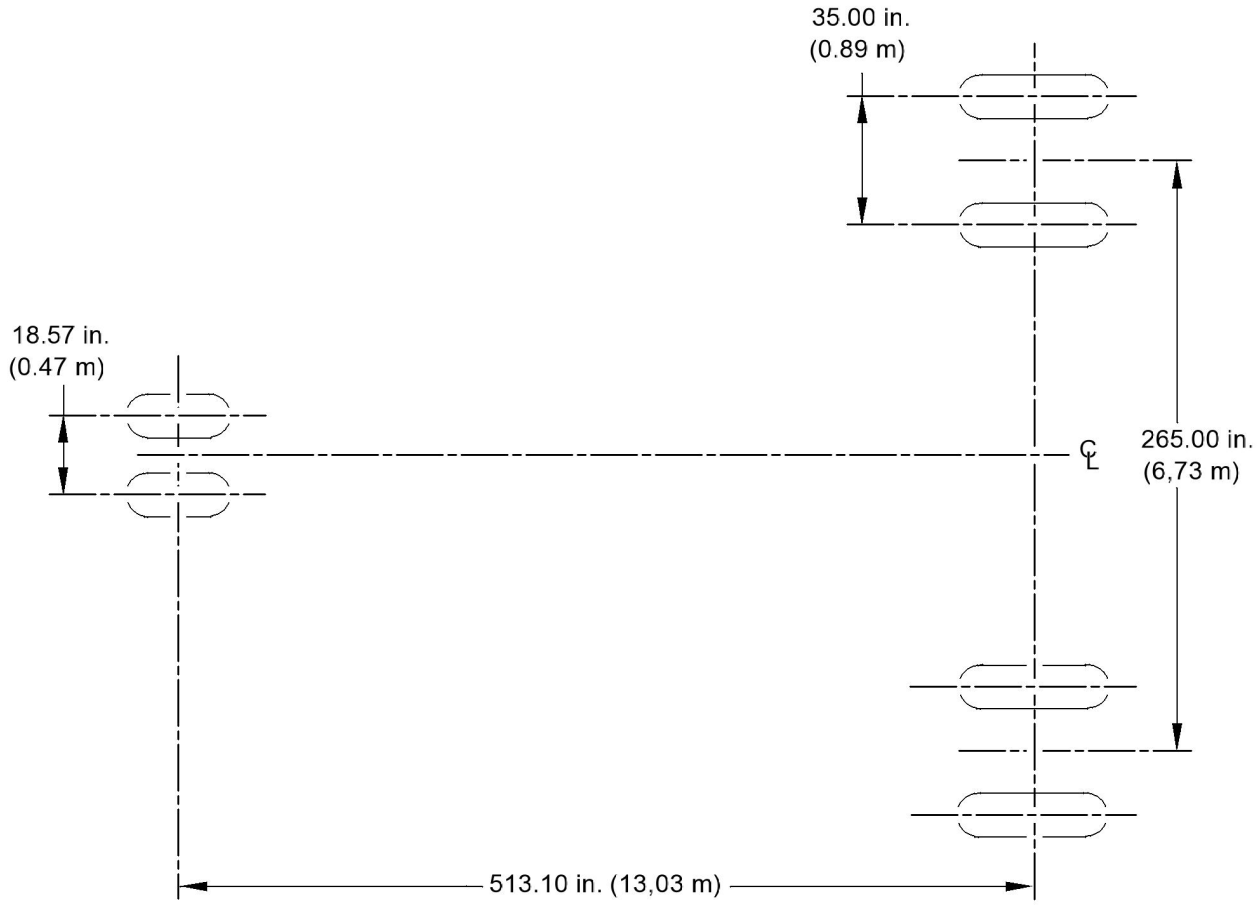
Figure 2 ACN results - Flexible pavement - (Sheet 2 of 2)

3 Landing gear footprint

Refer to Fig. 3 for the landing gear footprint.

Table 4 Landing gear footprint

Aircraft (A/C) code	A-B-C-D-E-F-G-H-I-J-K-L-M-N
Percentage of weight on main gear group	Refer to section 4
Nose gear tire size	27 x 8.5 R12 16 PR
Nose gear tire pressure	146 PSIG (10 Bar)
Main gear tire size	H42 x 15.0 R21 26 PR
Main gear tire pressure	189 PSIG (13.0 Bar)



NOTE

Not to scale.

ICN-BD500-A-J000000-A-3AB48-21628-A-002-01

Figure 3 Landing gear footprint

4 Maximum pavement loads

The maximum pavement load is given at different Maximum Ramp Weight (MRW) load to cover the multiple possible operations usage of the aircraft by the operators.

Table 5 Maximum pavement loads

1	2		3		4	
			VNG		VMG (per strut)	
A/C code	MRW		Static Load at most Forward (FWD)CG [1]		Static Load at MAXAft (AFT)CG [2]	
	lb.	kg	lb.	kg	lb.	kg
A	117,000	53 070	14,012	6 356	55,141	25 011
B	118,000	53 524	14,044	6 370	55,612	25 225
C	119,000	53 977	14,075	6 384	56,083	25 439
D	120,000	54 431	14,104	6 397	56,523	25 639
E	121,000	54 885	14,131	6 410	56,931	25 824
F	122,000	55 338	14,157	6 422	57,338	26 008
G	123,000	55 792	14,182	6 433	57,744	26 192
H	124,000	56 245	14,205	6 443	58,149	26 376
I	125,000	56 699	14,227	6 453	58,552	26 559
J	126,000	57 153	14,247	6 462	58,955	26 741
K	127,000	57 606	14,265	6 471	59,356	26 924
L	128,000	58 060	14,283	6 478	59,757	27 105
M	129,000	58 513	14,298	6 486	60,156	27 287
N	130,000	58 967	14,312	6 492	60,555	27 467
O	131,000	59 421	14,325	6 498	60,952	27 648
P	132,000	59 874	14,336	6 503	61,349	27 827
Q	133,000	60 328	14,346	6 507	61,744	28 007
R	134,000	60 781	14,354	6 511	62,138	28 185
S	135,000	61 235	14,361	6 514	62,532	28 364

1

2

1 V (NG) Maximum Vertical Nose Gear Ground Load at most FWDCG

2 V (MG) Maximum Vertical Main Gear Ground Load at most AFTCG

V (NG) Maximum Vertical Nose Gear Ground Load at most FWDCG for the respective A/C code are as follow:

- A: MRW equals 117,000 lb. FWDCG equals 14.2% Mean Aerodynamic Chord (MAC) at A/C weight equals 117,000 lb.
- B: MRW equals 118,000 lb. FWDCG equals 14.4% MAC at A/C weight equals 118,000 lb.
- C: MRW equals 119,000 lb. FWDCG equals 14.7% MAC at A/C weight equals 119,000 lb.
- D: MRW equals 120,000 lb. FWDCG equals 15% MAC at A/C weight equals 120,000 lb.
- E: MRW equals 121,000 lb. FWDCG equals 15.2% MAC at A/C weight equals 121,000 lb.
- F: MRW equals 122,000 lb. FWDCG equals 15.5% MAC at A/C weight equals 122,000 lb.
- G: MRW equals 123,000 lb. FWDCG equals 15.7% MAC at A/C weight equals 123,000 lb.
- H: MRW equals 124,000 lb. FWDCG equals 16% MAC at A/C weight equals 124,000 lb.
- I: MRW equals 125,000 lb. FWDCG equals 16.3% MAC at A/C weight equals 125,000 lb.
- J: MRW equals 126,000 lb. FWDCG equals 16.5% MAC at A/C weight equals 126,000 lb.
- K: MRW equals 127,000 lb. FWDCG equals 16.8% MAC at A/C weight equals 127,000 lb.
- L: MRW equals 128,000 lb. FWDCG equals 17% MAC at A/C weight equals 128,000 lb.
- M: MRW equals 129,000 lb. FWDCG equals 17.3% MAC at A/C weight equals 129,000 lb.
- N: MRW equals 130,000 lb. FWDCG equals 17.5% MAC at A/C weight equals 130,000 lb.
- O: MRW equals 131,000 lb. FWDCG equals 17.8% MAC at A/C weight equals 131,000 lb.
- P: MRW equals 132,000 lb. FWDCG equals 18.1% MAC at A/C weight equals 132,000 lb.
- Q: MRW equals 133,000 lb. FWDCG equals 18.3% MAC at A/C weight equals 133,000 lb.
- R: MRW equals 134,000 lb. FWDCG equals 18.6% MAC at A/C weight equals 134,000 lb.
- S: MRW equals 135,000 lb. FWDCG equals 18.8% MAC at A/C weight equals 135,000 lb.

.

V (MG) Maximum Vertical Main Gear Ground Load at most AFTCG for the respective A/C code are as follow:

- A: MRW equals 117,000 lb. AFTCG equals 35.8% MAC at A/C weight equals 117,000 lb.
- B: MRW equals 118,000 lb. AFTCG equals 35.8% MAC at A/C weight equals 118,000 lb.
- C: MRW equals 119,000 lb. AFTCG equals 35.8% MAC at A/C weight equals 119,000 lb.
- D: MRW equals 120,000 lb. AFTCG equals 35.6% MAC at A/C weight equals 120,000 lb.
- E: MRW equals 121,000 lb. AFTCG equals 35.3% MAC at A/C weight equals 121,000 lb.
- F: MRW equals 122,000 lb. AFTCG equals 34.9% MAC at A/C weight equals 122,000 lb.
- G: MRW equals 123,000 lb. AFTCG equals 34.5% MAC at A/C weight equals 123,000 lb.
- H: MRW equals 124,000 lb. AFTCG equals 34.2% MAC at A/C weight equals 124,000 lb.
- I: MRW equals 125,000 lb. AFTCG equals 33.8% MAC at A/C weight equals 125,000 lb.
- J: MRW equals 126,000 lb. AFTCG equals 33.4% MAC at A/C weight equals 126,000 lb.
- K: MRW equals 127,000 lb. AFTCG equals 33.1% MAC at A/C weight equals 127,000 lb.
- L: MRW equals 128,000 lb. AFTCG equals 32.7% MAC at A/C weight equals 128,000 lb.
- M: MRW equals 129,000 lb. AFTCG equals 32.4% MAC at A/C weight equals 129,000 lb.
- N: MRW equals 130,000 lb. AFTCG equals 32% MAC at A/C weight equals 130,000 lb.
- O: MRW equals 131,000 lb. AFTCG equals 31.6% MAC at A/C weight equals 131,000 lb.
- P: MRW equals 132,000 lb. AFTCG equals 31.3% MAC at A/C weight equals 132,000 lb.
- Q: MRW equals 133,000 lb. AFTCG equals 30.9% MAC at A/C weight equals 133,000 lb.
- R: MRW equals 134,000 lb. AFTCG equals 30.6% MAC at A/C weight equals 134,000 lb.
- SMRW equals 135,000 lb. AFTCG equals 30.2% MAC at A/C weight equals 135,000 lb.

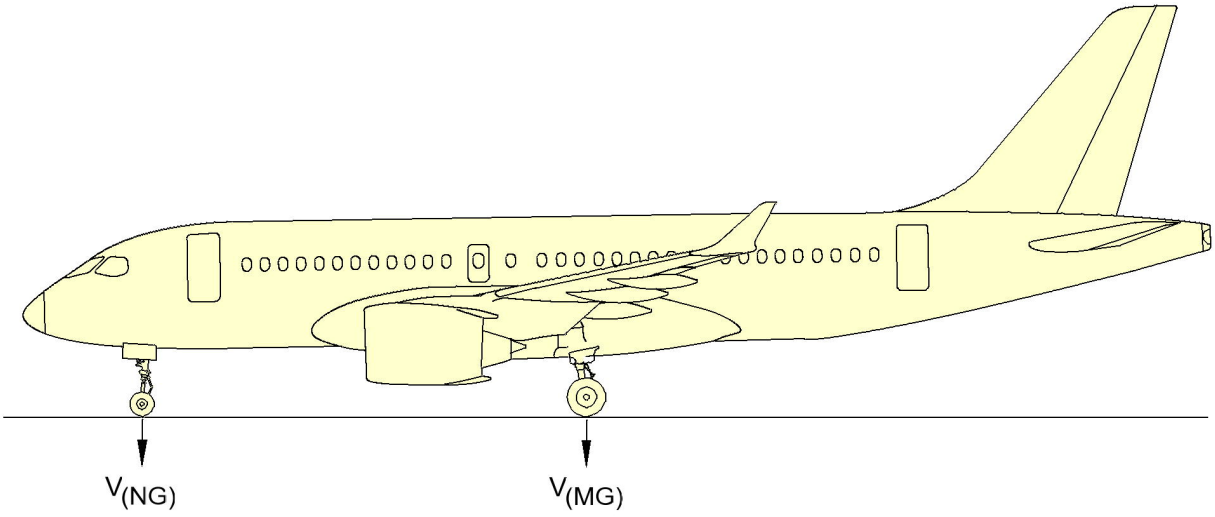


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Figure 4 Maximum pavement load - CS100

5 Landing gear loading on pavement

This section gives the landing gear loading on pavement.

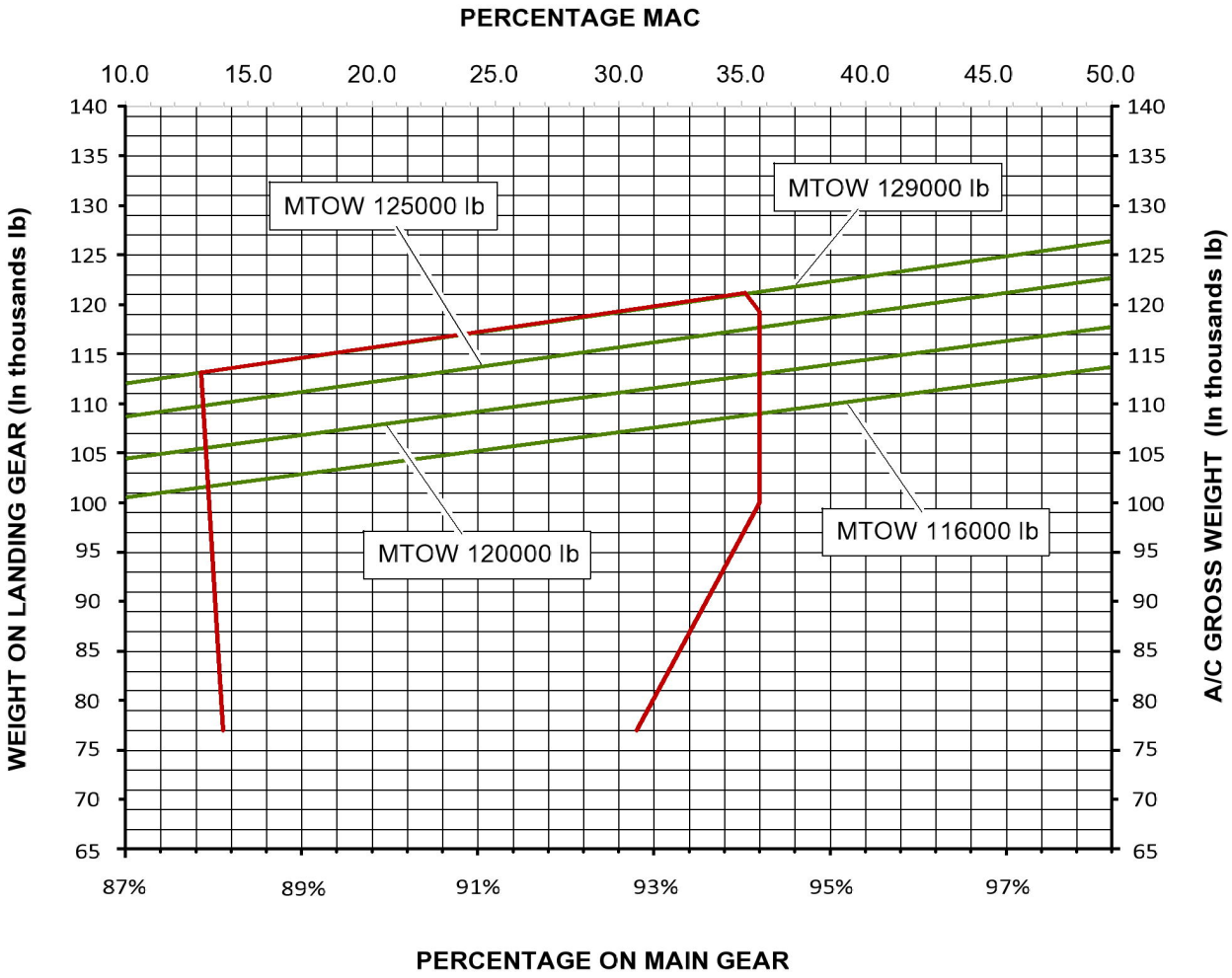

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Figure 5 Landing gear loading on pavement

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CSERIES

Derivative aircraft - Technical data

Applicability: Model: CS100

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Table 1 References

Data Module/Technical Publication	Title
None	

Description

This section will be updated if new derivatives of the BD-500-1A10 (CS100) model are manufactured.

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CSERIES

Scaled drawings - Technical data

Applicability: Model: CS100

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Table 1 References

Data Module/Technical Publication	Title
None	

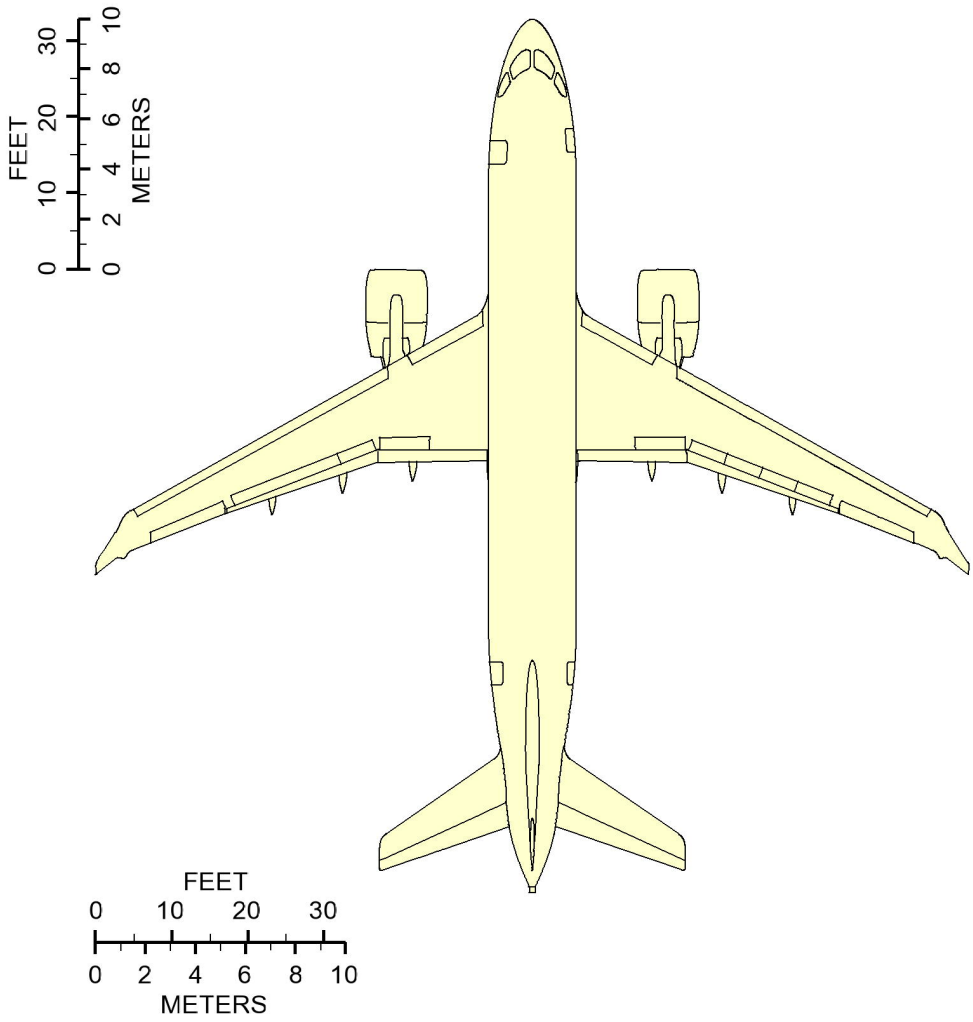
Description

1 Introduction

This data module contains the scaled drawings for the Bombardier CSeries model BD500–1A10 (CS100).

It can be used to plan and to verify runway, ramp, and maintenance facility layouts.

Refer to Fig. 1 for the scaled drawing.



NOTES

1. Scale: 1 in. = 25 ft (1 cm = 3 m)
2. When printing this illustration, make sure to adjust for proper scaling.

ICN-BD500-A-J000000-A-3AB48-23312-A-001-01

Figure 1 Scaled drawing