ARJ21

Aircraft Characteristics for Airport Planning

ACAP

Number: TP-E700051

Commercial Aircraft Corporation of China, Ltd.

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ARJ21

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TRANSMITTAL LETTER

2022.07.20

To: All holders of this technical publication.

This revision is applicable to Aircraft Characteristics for Airport Planning.

REVISION DESCRIPTION

For printed technical publications, pages shall be replaced, inserted, deleted or reinstated revised as per the List of Effective Pages (LEP). In the LEP, amendments proceeded by the letters C, N, D and RR refer to Changed, New, Deleted and Reinstated revised. Revised and deleted pages in this revision shall be removed and destroyed.

For electronic manuals, this revision supersedes all previous revisions.

If you receive printed revisions, please confirm that you have received and filed the previous revision. In case of lost or missing items, please contact COMAC for replacement copies.

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Revision Highlights

Data Module	Description of Change	Applicable to
ARJ21-A-00-40-23-00A-021A-A	Revised	
ARJ21-A-19-20-02-09A-04AA-A	Parking and Mooring Content Added, Updated	ALL
	Mooring Point Locations Content Added, Updated	ALL
ARJ21-A-19-20-04-03A-04AA-A	Figure added, updated or deleted	ALL
ARJ21-A-19-20-05-01A-04AA-A	Figure added, updated or deleted	ALL
ARJ21-A-19-20-05-03A-04AA-A	Grounding Points Content Added, Updated	ALL
	Maintenance Panel No.1, 2 and 3 Content Added, Updated	ALL
	No.1 Reservior Content Added, Updated	ALL
	No.2 Reservior Content Added, Updated	ALL
	No.3 Reservior Content Added, Updated	ALL
	Electrical Power System Content Added, Updated	ALL
	Air Conditioning System Content Added, Updated	ALL
	Oxygen System Content Added, Updated	ALL
	Waste System Content Added, Updated	ALL
	Potable Water System Content Added, Updated	ALL
	Oil System Content Added, Updated	ALL
	Starter Oil System Content Added, Updated	ALL
	Pneumatic System Content Added, Updated	ALL
	Fuel System Content Added, Updated	ALL

Data Module	Description of Change	Applicable to
ARJ21-A-19-20-06-03A-04AA-A	Figure added, updated or deleted	ALL
ARJ21-A-19-20-07-02A-04AA-A	Figure added, updated or deleted	ALL

List of Effective Data Modules

This list provides the effective data modules in the current edition of Aircraft Characteristics for Airport Planning.
N = New data module
C = Changed data module
D = Deleted data module
RR = Reinstated revised data module

Data module code	Revision Status	Number of pages	Issue Date
ARJ21-A-00-40-23-00A-001A-A	C	1	2022.07.20
ARJ21-A-00-40-23-00A-021A-A	C	1	2022.07.20
ARJ21-A-00-40-23-00A-023B-A	C	1	2022.07.20
ARJ21-A-00-40-23-00A-00UA-A	C	2	2022.07.20
ARJ21-A-00-40-23-00A-00SA-A	C	2	2022.07.20
ARJ21-A-00-40-23-00A-00TA-A	C	1	2022.07.20
ARJ21-A-00-40-23-01A-01BA-A		1	2021.09.20
ARJ21-A-00-40-23-00A-01BA-A		2	2021.09.20
ARJ21-A-00-10-00-00A-009C-D		1	2022.07.20
ARJ21-A-19-20-01-01A-01BA-A		1	2021.09.20
ARJ21-A-19-20-01-02A-01BA-A		2	2021.09.20
ARJ21-A-19-20-01-03A-01BA-A		1	2021.09.20
ARJ21-A-00-10-00-01A-009C-D		1	2022.07.20
ARJ21-A-19-20-02-01A-04AA-A		2	2021.09.20
ARJ21-A-19-20-02-02A-04AA-A		2	2021.09.20
ARJ21-A-19-20-02-03A-04AA-A		25	2021.09.20
ARJ21-A-19-20-02-04A-04AA-A		3	2021.09.20
ARJ21-A-19-20-02-05A-04AA-A		4	2021.09.20
ARJ21-A-19-20-02-06A-04AA-A		2	2021.09.20
ARJ21-A-19-20-02-07A-04AA-A		21	2021.09.20
ARJ21-A-19-20-02-08A-04AA-A		7	2021.09.20
ARJ21-A-19-20-02-09A-04AA-A	C	3	2022.07.20
ARJ21-A-00-10-00-02A-009C-D		1	2022.07.20
ARJ21-A-19-20-03-01A-03CA-A		1	2021.09.20
ARJ21-A-19-20-03-02A-03CA-A		2	2021.09.20
ARJ21-A-19-20-03-03A-03CA-A		3	2021.09.20

Data module code	Revision Status	Number of pages	Issue Date
ARJ21-A-19-20-03-04A-03CA-A		3	2021.09.20
ARJ21-A-19-20-03-05A-03CA-A		1	2021.09.20
ARJ21-A-00-10-00-03A-009C-D		1	2022.07.20
ARJ21-A-19-20-04-01A-04AA-A		1	2021.09.20
ARJ21-A-19-20-04-02A-04AA-A		1	2021.09.20
ARJ21-A-19-20-04-03A-04AA-A	C	1	2022.07.20
ARJ21-A-19-20-04-04A-04AA-A		1	2021.09.20
ARJ21-A-19-20-04-05A-04AA-A		3	2021.09.20
ARJ21-A-19-20-04-06A-04AA-A		1	2021.09.20
ARJ21-A-00-10-00-04A-009C-D		1	2022.07.20
ARJ21-A-19-20-05-01A-04AA-A	C	1	2022.07.20
ARJ21-A-19-20-05-02A-04AA-A		1	2021.09.20
ARJ21-A-19-20-05-03A-04AA-A	C	23	2022.07.20
ARJ21-A-19-20-05-04A-04AA-A		2	2021.09.20
ARJ21-A-19-20-05-05A-04AA-A		1	2021.09.20
ARJ21-A-19-20-05-06A-04AA-A		2	2021.09.20
ARJ21-A-00-10-00-05A-009C-D		1	2022.07.20
ARJ21-A-19-20-06-01A-04AA-A		6	2021.09.20
ARJ21-A-19-20-06-02A-04AA-A		1	2021.09.20
ARJ21-A-19-20-06-03A-04AA-A	C	3	2022.07.20
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ARJ21-A-19-20-07-01A-04AA-A		2	2021.09.20
ARJ21-A-19-20-07-02A-04AA-A	C	1	2022.07.20
ARJ21-A-19-20-07-03A-04AA-A		1	2021.09.20
ARJ21-A-19-20-07-04A-04AA-A		1	2021.09.20
ARJ21-A-19-20-07-05A-04AA-A		2	2021.09.20
ARJ21-A-19-20-07-06A-04AA-A		2	2021.09.20
ARJ21-A-19-20-07-07A-04AA-A		1	2021.09.20
ARJ21-A-19-20-07-08A-04AA-A		5	2021.09.20
ARJ21-A-19-20-07-09A-04AA-A		5	2021.09.20

Revision Records

Make sure that previous revisions to this manual have been filed.
Enter the date filed and the name of the person filing.

Issue No	Issue Date	Filed date	Filed by

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Introduction

1. General

ARJ21 Aircraft Characteristics for Airport Planning (ACAP) is issued to provide essential characteristics of ARJ21 Aircraft and necessary data which are needed for airport operators and airlines for accomplishment of aircraft facilities planning.

ACAP is helpful for aircraft operators to accomplish airport facilities planning in a short time according to aircraft basic data, performance, ground maneuvering and servicing arrangement provided in this manual.

This manual comprises 7 chapters:

A. Chapter 1: Overview

B. Chapter 2: Aircraft Description

C. Chapter 3: Aircraft Performance

D. Chapter 4: Ground Maneuvering

E. Chapter 5: Terminal Servicing

F. Chapter 6: Operating Conditions

G. Chapter 7: Pavement Data

2. Revision Marks

On the left side of the manual page, a black vertical bar in the margin identifies the modified part. Refer to the revision highlights for the detailed revision reason.

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Symbols and Abbreviations

1. Abbreviations

Table 1 Abbreviations

ACN	Aircraft Classification Number	MG	Main Landing Gear
APR	Auto Power Reserve	MAX	Maximum
APU	Auxiliary Power Unit	MIN	Minimum
BLG	Body Landing Gear	MLW	Maximum Design Landing Weight
CAAC	Civil Aviation Authority of China	MPL	Maximum Payload
CAS	Calibrated Air Speed	MRW	Maximum Ramp Weight
CBR	California Bearing Ratio	MTOW	Maximum Design Takeoff Weight
CG	Center of Gravity	MTW	Maximum Design Taxi Weight
C/L	Centerline	MZFW	Maximum Design Zero Fuel Weight
E-E	Electronic/Electrical Equipment	NLG	Nose Landing Gear
E	Young's modulus	NTO	Takeoff thrust
FR	Frame	OAT	Outside Air Temperature
FWD	Forward	OEW	Operating Empty Weight
GPU	Ground Power Unit	PAX	Passenger
H	Horizontal/Altitude	PCA	Portland Cement Association
GSE	Ground Support Equipment	PCN	Pavement Classification Number
ICAO	International Civil Aviation Organization	R	Right/Radius
IDG	Integrated Drive Generator	RAT	Ram Air Turbine
ISA	International Standard Atmosphere	SLS	Sea Level Static
k	Subgrade Strength	V	Vertical

L	Left	V_{REF}	Landing Reference Speed
LCD	Liquid Crystal Display	W	Weight
LCN	Load Classification Number	MAC	Mean Aerodynamic Chord

2. Symbols

Table 2 Symbols

°	Degree (unit of angle)	lb	Pound
%	Percentage	lbf	Pounds Force
℃	Degree Centigrade	L/min	Litre/Minute
℉	Degree Fahrenheit	m	Meter
bar	Bar (unit of barometric pressure)	m/s	Meter per Second
cm	Centimeter	m^2	Square Meter
deg	Degree (unit of angle)	m^3	Cubic Meter
ft	Foot	min	Minimum
ft/s	Foot per Second	mm	Millimeter
ft/s^2	Foot per Square Second	MN/m^3	Mega Newton per Cubic Meter
ft^2	Square Foot	MPa	Mega Pascal
ft^3	Cubic Foot	MPH	Meter per Hour
in	Inch	nm	Nautical mile
K	Kelvin	pci	Pound per Cubic Inch
kg	Kilogram	psi	Pound per Square Inch
kg/l	Kilogram per Liter	t	Ton
km/h	Kilometer per Hour	US gal	United States Gallon
kt	Knot	qt	Quart
kVA	Kilovolt Ampere	l	Liter

Chapter 1
Overview

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Scope

ARJ21-700 Aircraft Characteristics for Airport Planning(ACAP) is applicable to ARJ21-700STD and ARJ21-700ER. and is issued to provide the necessary data for airport operators and airlines for accomplishment of aircraft facilities planning. Since operational practices vary among scheduled flights, specific data should be coordinated with the using airlines prior to application. Commercial Aircraft Corporation of China, Ltd. (COMAC) should be contacted for any additional information required.

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Introduction

This manual comprises 7 chapters with a Table of Contents (TOC) at the beginning of the manual.

1. Chapter 1 Overview
2. Chapter 2 Aircraft Description

   This chapter contains general dimensional and other basic (family) aircraft data of ARJ21 aircraft.

   It covers:

   - General Characteristics, General Dimensions and Ground Clearances
   - Passenger and Cargo Compartments Arrangement, and Landing Gear Door Arrangement and Dimensions
3. Chapter 3 Aircraft Performance

   This chapter provides the aircraft performance parameters.

   It covers:

   - Payload/Range
   - Takeoff Field Length and Landing Field Length Requirements
   - Reference Landing Speed
4. Chapter 4 Ground Maneuvering

   This chapter provides the aircraft turning capability and maneuvering characteristics on the ground.

   It covers:

   - Aircraft Steering Radius and Cockpit Field of View
   - Runway and Taxiway Turn Paths, and Runway Holding Bay
5. Chapter 5 Terminal Servicing

   This chapter provides information for ground handling and servicing setting and arrangement during ground servicing.

   It covers:

   - Locations and Connections of Ground Servicing Equipment
   - Pneumatic, Ground Air-Conditioning and Preconditioned Airflow Requirements for Engine Starting
6. Chapter 6 Operating Conditions

   This chapter provides information on engine data and engine influence on ambience.

   It covers:

   - Engine Exhaust Velocities and Exhaust Temperatures
   - APU Exhaust Velocities and Exhaust Temperatures
   - Danger Areas of the Engines
7. Chapter 7 Pavement Data

This chapter provides the pavement data and additional pavement diagrams helpful for airport planning.

It covers:

- Landing Gear Footprint
- Maximum Pavement Load and Landing Gear Loading on Pavement
- Flexible and Rigid Pavement Requirements, and Flexible and Rigid Pavement LCN Conversion
- ACN/PCN Reporting System - Flexible and Rigid Pavements

ARJ21-700 Aircraft Description

The ARJ21-700 (Advanced Regional Jet for the 21st Century) is a 70-90 seat advanced regional aircraft of medium or short range, powered by turbofan engines. The aircraft has the layout of five seats for each row, a fuselage in the shape of two circular plane sections, low wings, two Short Duct Separation Flow power plants mounted at the tail of the fuselage, i.e. advanced turbofan engines CF34-10A, a high horizontal tail and tricycle retractable landing gear. The cockpit is designed for a two-member crew. The avionics system features bus technology and LCD panel with integrated display capability. The flight control system is an electrical system controlled through electrical signals and actuated by hydraulic pressure or electromechanics, with international advanced technology. Supercritical wings with larger sweepback angle and integrated winglets are used to obtain higher cruise lift-drag ratio, so as to reduce cruise drag and improve operation economy. ARJ21-700 is the basic aircraft of ARJ21 family, and its passenger basic layout has three types: mixed class with 78 seats, full economy class with 90 seats and premium economy class with 68 seats. To meet the requirements of different regions and different route structures for regional aircraft, the basic aircraft has Standard Range Version (STD) and Extended Range Version (ER).

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Chapter 2
Aircraft Description

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General Characteristics

Maximum Design Taxi Weight (MTW): Maximum weight for ground maneuver as limited by aircraft strength and airworthiness requirements, including fuel consumed during start and taxiing.

Maximum Design Landing Weight (MLW): Maximum weight for landing as limited by aircraft strength and airworthiness requirements.

Maximum Design Takeoff Weight (MTOW): Maximum weight for takeoff as limited by aircraft strength and airworthiness requirements.

Operating Empty Weight (OEW): Manufacturer's empty weight plus weight of operational items (including standard items)

Maximum Design Zero Fuel Weight (MZFW): Maximum weight allowed before usable fuel and other specified usable agents are loaded as limited by aircraft strength and airworthiness requirements.

Maximum Payload (MPL): Maximum design zero fuel weight minus operating empty weight.

Standard Seating Capacity: The number of passengers in full economy type cabin.

Avionics Compartment Volume: Theoretical volume of the space region surrounded by the boundary of E-E bay.

Cockpit Volume: Theoretical volume of the space region surrounded by the boundary of Cockpit.

Maximum Cargo Volume: The maximum space available for cargo.

Usable Fuel: Fuel available for engines with unusable fuel deducted.

		Aircraft Type			
		ARJ21-700 STD		ARJ21-700 ER	
		Full Economy/Mixed	Premium Economy	Full Economy/Mixed	Premium Economy
Maximum Design Taxi Weight	lb	89,464	84,613	96,077	89,905
	kg	40,580	38,380	43,580	40,780
Maximum Design Landing Weight	lb	83,036	81,571	89,187	81,571
	kg	37,665	37,000	40,455	37,000
Maximum Design Takeoff Weight	lb	89,286	84,437	95,900	89,728
	kg	40,500	38,300	43,500	40,700
Operating Empty Weight	lb	55,016	54,895	55,016	54,895
	kg	24,955	24,900	24,955	24,900
Maximum Design Zero Fuel Weight	lb	74,713	72,532	74,713	72,532
	kg	33,890	32,900	33,890	32,900

		Aircraft Type			
		ARJ21-700 STD		ARJ21-700 ER	
		Full Economy/Mixed	Premium Economy	Full Economy/Mixed	Premium Economy
Maximum Payload	lb	19,698	17,637	19,698	17,637
	kg	8,935	8,000	8,935	8,000
Maximum Passenger Capacity	Passenger	90/78	60	90/78	60
Avionics Compartment Volume	ft^3	273.7	273.7	273.7	273.7
	m^3	7.8	7.8	7.8	7.8
Cockpit Volume	ft^3	310.8	310.8	310.8	310.8
	m^3	8.8	8.8	8.8	8.8
Cabin	ft^3	3,918.7	3,918.7	3,918.7	3,918.7
	m^3	111	111	111	111
Maximum Cargo Volume	ft^3	711.4	711.4	711.4	711.4
	m^3	20.1	20.1	20.1	20.1
Usable Fuel Capacity	ft^3	453.5	453.5	453.5	453.5
	m^3	12.8	12.8	12.8	12.8
	US GAL	3,392.5	3,392.5	3,392.5	3,392.5
	L	12,842	12,842	12,842	12,842

NOTE: The operational empty weight in the table is based on the full economy class.

General Dimensions

Aircraft Dimensions	Wing Span (including winglets)	27.29 m (1,074.33 in)
	Height	27.29 m (1,074.33 in)
	Length	33.46 m (1317.44 in)
Wing	Reference Area	79.86 m2(859.60 ft2)
	Aspect Ratio	8.86
Fuselage	Overall Length	30.43 m (1197.99 in)
	Length of FWD Non-barrel Cross Section	5.64 m (222.00 in)
	Length of AFT Non-barrel Cross Section	11.00m (433.00 in)
	Length of Barrel Cross Section	13.79 m (543.00 in)
	Upper Diameter	3.34 m (131.62 in)
	Lower Diameter	3.122 m (122.91 in)
Horizontal Tail	Reference Area	23.22 m2(249.89 ft2)
	Span	10.51 m (413.78 in)
	Aspect Ratio	4.76
Vertical Tail	Reference Area	14.96 m2(161.03 ft2)
	Span	3.505 m (137.99 in)
	Aspect Ratio	0.82

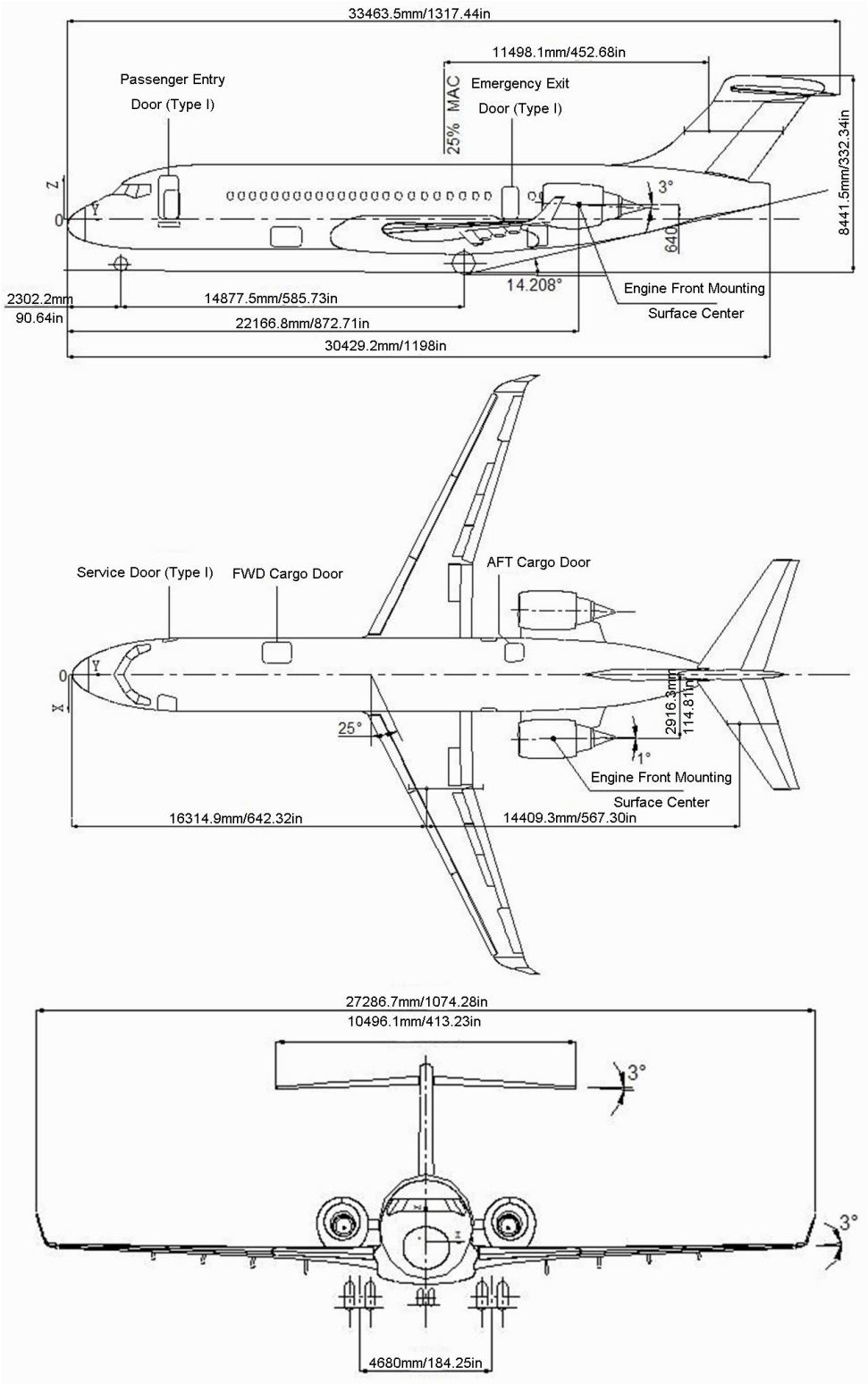

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Figure 1 Three-View Drawing of Aircraft (mm) (Sheet 1 of 1)

Ground Clearances

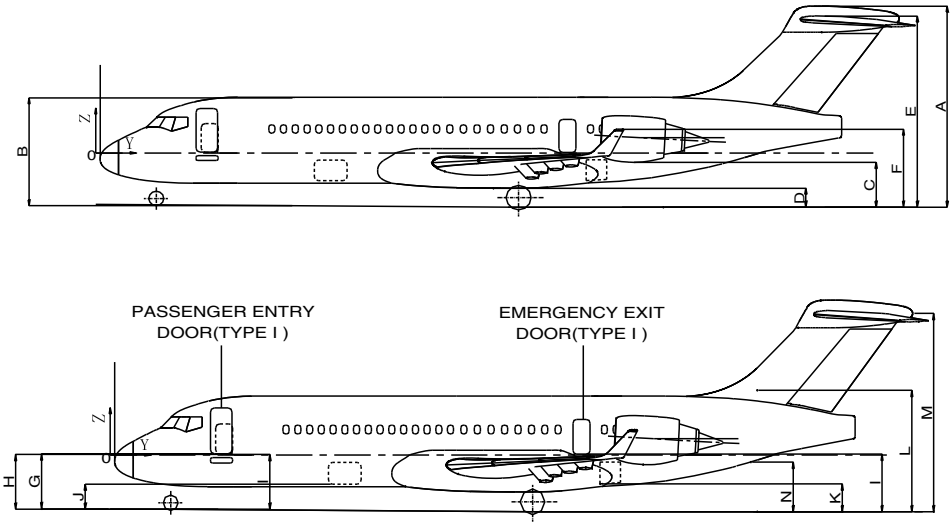

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Figure 1 Ground Clearances (Sheet 1 of 1)

Table 1 Ground Clearances

Dimension No.	Dimension Name	Dimension No.	Dimension Name
A	Ground Clearances of Vertical Tail Highest Point	H	Ground Clearances of Service Door
B	Fuselage Highest Point Ground Clearances	I	Emergency Exit Door Ground Clearances
C	Engine Lowest Point Ground Clearances	J	FWD Cargo Door Ground Clearances
D	Fuselage Lowest Point Ground Clearances	K	AFT Cargo Door Ground Clearances Ground Clearances
E	Horizontal Tail Highest Point Ground Clearances	L	Vertical Tail Root Ground Clearances
F	Wingtip Ground Clearances	M	Horizontal Tail Rear Part Ground Clearances
G	Passenger Entry Door Ground Clearances	N	MID-AFT Fuselage Jacking Point Ground Clearances
Elastic distortion of wing structure is not taken into consideration in F (ground clearance of wing highest point).			

Table 2 Ground Clearances of OEW

	OAT 15°		OAT 0°		OAT -10°	
No.	mm	in	mm	in	mm	in
A	8,606	338.8	8,590	338.2	8,579	337.8
B	4,747	186.9	4,727	186.1	4,713	185.6
C	1,909	75.2	1,891	74.4	1,879	74.0
D	888	35.0	869	34.2	857	33.7
E	8,085	318.3	8,069	317.7	8,058	317.2
F	3,352	132.0	3,334	131.3	3,322	130.8
G	2,461	96.9	2,440	96.1	2,426	95.5
H	2,440	96.1	2,419	95.2	2,405	94.7
I	2,391	94.1	2,372	93.4	2,360	92.9
J	1,213	47.8	1,193	47.0	1,180	46.5
K	1,198	47.2	1,180	46.5	1,168	46.0
L	4,636	182.5	4,619	181.9	4,608	181.4
M	7,955	313.2	7,939	312.6	7,928	312.1
N	1,444	56.9	1,426	56.1	1,415	55.7
	OAT -20°		OAT -30°		OAT -40°	
No.	mm	in	mm	in	mm	in
A	8,568	337.3	8,558	336.9	8,548	336.5
B	4,699	185.0	4,686	184.5	4,672	183.9
C	1,868	73.5	1,856	73.1	1,845	72.6
D	844	33.2	832	32.8	820	32.3
E	8,047	316.8	8,037	316.4	8,027	316.0
F	3,310	130.3	3,299	129.9	3,288	129.4
G	2,412	95.0	2,398	94.4	2,385	93.9
H	2,391	94.1	2,378	93.6	2,364	93.1
I	2,348	92.4	2,337	92.0	2,325	91.5
J	1,167	45.9	1,153	45.4	1,140	44.9
K	1,156	45.5	1,145	45.1	1,133	44.6
L	4,597	181.0	4,586	180.6	4,575	180.1
M	7,918	311.7	7,908	311.3	7,898	310.9
N	1,403	55.2	1,392	54.8	1,381	54.4

Table 3 Ground Clearances at Status of MTW (STD)

No.	OAT 15°				OAT 0°			
	mm	in	mm	in	mm	in	mm	in
	C.G. FWD Limit		C.G. AFT Limit		C.G. FWD Limit		C.G. AFT Limit	
A	8,600	338.6	8,508	335.0	8,583	337.9	8,494	334.4
B	4,643	182.8	4,667	183.7	4,627	182.2	4,650	183.1
C	1,859	73.2	1,817	71.5	1,842	72.5	1,802	70.9
D	810	31.9	799	31.5	794	31.3	783	30.8
E	8,079	318.1	7,987	314.4	8,062	317.4	7,973	313.9
F	3,299	129.9	3,260	128.3	3,282	129.2	3,245	127.8
G	2,311	91.0	2,382	93.8	2,296	90.4	2,365	93.1
H	2,290	90.2	2,361	93.0	2,276	89.6	2,344	92.3
I	2,325	91.5	2,300	90.6	2,309	90.9	2,285	90.0
J	1,092	43.0	1,130	44.5	1,077	42.4	1,114	43.9
K	1,140	44.9	1,107	43.6	1,123	44.2	1,092	43.0
L	4,611	181.5	4,540	178.7	4,595	180.9	4,526	178.2
M	7,967	313.7	7,854	309.2	7,949	313.0	7,840	308.7
N	1,403	55.2	1,350	53.1	1,386	54.6	1,336	52.6
	OAT -10°				OAT -20°			
No.	mm	in	mm	in	mm	in	mm	in
	C.G. FWD Limit		C.G. AFT Limit		C.G. FWD Limit		C.G. AFT Limit	
A	8,572	337.5	8,485	334.1	8,561	337.0	8,476	333.7
B	4,616	181.7	4,639	182.6	4,605	181.3	4,628	182.2
C	1,832	72.1	1,792	70.6	1,821	71.7	1,783	70.2
D	784	30.9	773	30.4	774	30.5	763	30.0
E	8,050	316.9	7,964	313.5	8,039	316.5	7,955	313.2
F	3,272	128.8	3,235	127.4	3,261	128.4	3,226	127.0
G	2,287	90.0	2,353	92.6	2,277	89.6	2,342	92.2
H	2,267	89.3	2,332	91.8	2,257	88.9	2,321	91.4
I	2,299	90.5	2,275	89.6	2,288	90.1	2,265	89.2
J	1,067	42.0	1,103	43.4	1,057	41.6	1,092	43.0
K	1,113	43.8	1,082	42.6	1,102	43.4	1,072	42.2
L	4,584	180.5	4,517	177.8	4,573	180.0	4,507	177.4

M	7,938	312.5	7,832	308.3	7,927	312.1	7,823	308.0
N	1,376	54.2	1,326	52.2	1,365	53.7	1,317	51.9
	OAT -30°				OAT -40°			
No.	mm	in	mm	in	mm	in	mm	in
	C.G. FWD Limit		C.G. AFT Limit		C.G. FWD Limit		C.G. AFT Limit	
A	8,550	336.6	8,468	333.4	8,539	336.2	8,459	333.0
B	4,595	180.9	4,552	179.2	4,584	180.5	4,605	181.3
C	1,811	71.3	1,773	69.8	1,800	70.9	1,764	69.4
D	763	30.0	753	29.6	753	29.6	743	29.3
E	8,029	316.1	7,947	312.9	8,018	315.7	7,938	312.5
F	3,251	128.0	3,216	126.6	3,241	127.6	3,207	126.3
G	2,268	89.3	2,330	91.7	2,258	88.9	2,319	91.3
H	2,247	88.5	2,309	90.9	2,238	88.1	2,298	90.5
I	2,278	89.7	2,256	88.8	2,268	89.3	2,246	88.4
J	1,047	41.2	1,081	42.6	1,037	40.8	1,070	42.1
K	1,092	43.0	1,063	41.9	1,082	42.6	1,053	41.5
L	4,562	179.6	4,499	177.1	4,552	179.2	4,490	176.8
M	7,916	311.7	7,815	307.7	7,905	311.2	7,807	307.4
N	1,354	53.3	1,307	51.5	1,344	52.9	1,298	51.1

Table 4 Ground Clearances at Status of MTW (ER)

	OAT 15°				OAT 0°			
No.	mm	in	mm	in	mm	in	mm	in
	C.G. FWD Limit		C.G. AFT Limit		C.G. FWD Limit		C.G. AFT Limit	
A	8,578	337.7	8,516	335.3	8,562	337.1	8,502	334.7
B	4,626	182.1	4,646	182.9	4,610	181.5	4,630	182.3
C	1,842	72.5	1,810	71.3	1,826	71.9	1,796	70.7
D	797	31.4	792	31.2	782	30.8	777	30.6
E	8,057	317.2	7,995	314.8	8,041	316.6	7,980	314.2
F	3,283	129.3	3,235	127.4	3,267	128.6	3,220	126.8
G	2,306	90.8	2,356	92.8	2,292	90.2	2,340	92.1
H	2,286	90.0	2,341	92.2	2,272	89.4	2,325	91.5
I	2,311	91.0	2,296	90.4	2,295	90.4	2,281	89.8
J	1,084	42.7	1,114	43.9	1,069	42.1	1,098	43.2

K	1,124	44.3	1,104	43.5	1,109	43.7	1,089	42.9
L	4,592	180.8	4,544	178.9	4,576	180.2	4,530	178.3
M	7,943	312.7	7,866	309.7	7,926	312.0	7,852	309.1
N	1,386	54.6	1,351	53.2	1,370	53.9	1,336	52.6
	OAT -10°				OAT -20°			
No.	mm	in	mm	in	mm	in	mm	in
	C.G. FWD Limit		C.G. AFT Limit		C.G. FWD Limit		C.G. AFT Limit	
A	8,551	336.7	8,493	334.4	8,541	336.3	8,484	334.0
B	4,600	181.1	4,619	181.9	4,589	180.7	4,609	181.5
C	1,816	71.5	1,786	70.3	1,806	71.1	1,776	69.9
D	771	30.4	767	30.2	761	30.0	757	29.8
E	8,030	316.1	7,971	313.8	8,020	315.7	7,962	313.5
F	3,257	128.2	3,210	126.4	3,246	127.8	3,201	126.0
G	2,283	89.9	2,330	91.7	2,273	89.5	2,319	91.3
H	2,262	89.1	2,314	91.1	2,252	88.7	2,303	90.7
I	2,285	90.0	2,271	89.4	2,275	89.6	2,261	89.0
J	1,059	41.7	1,087	42.8	1,050	41.3	1,077	42.4
K	1,098	43.2	1,079	42.5	1,088	42.8	1,070	42.1
L	4,565	179.7	4,521	178.0	4,555	179.3	4,511	177.6
M	7,916	311.7	7,843	308.8	7,905	311.2	7,834	308.4
N	1,359	53.5	1,327	52.2	1,349	53.1	1,317	51.9
	OAT -30°				OAT -40°			
No.	mm	in	mm	in	mm	in	mm	in
	C.G. FWD Limit		C.G. AFT Limit		C.G. FWD Limit		C.G. AFT Limit	
A	8,530	335.8	8,475	333.7	8,520	335.4	8,466	333.3
B	4,579	180.3	4,598	181.0	4,569	179.9	4,587	180.6
C	1,796	70.7	1,767	69.6	1,786	70.3	1,758	69.2
D	751	29.6	747	29.4	742	29.2	737	29.0
E	8,009	315.3	7,954	313.1	7,999	314.9	7,945	312.8
F	3,236	127.4	3,191	125.6	3,227	127.0	3,182	125.3
G	2,263	89.1	2,308	90.9	2,254	88.7	2,297	90.4
H	2,243	88.3	2,292	90.2	2,233	87.9	2,282	89.8
I	2,265	89.2	2,252	88.7	2,255	88.8	2,242	88.3

J	1,040	40.9	1,067	42.0	1,030	40.6	1,056	41.6
K	1,078	42.4	1,060	41.7	1,068	42.0	1,051	41.4
L	4,545	178.9	4,502	177.2	4,535	178.5	4,493	176.9
M	7,895	310.8	7,826	308.1	7,884	310.4	7,818	307.8
N	1,339	52.7	1,308	51.5	1,329	52.3	1,299	51.1

Table 5 Ground Clearances at Jacked Status

Dimension No.	Metric mm	Imperial in
A	9,022	355.2
B	5,052	198.9
C	2,266	89.2
D	1,209	47.6
E	8,506	334.9
F	3,706	145.9
G	2,686	105.8
H	2,666	105.0
I	2,728	107.4
J	1,477	58.1
K	1,544	60.8
L	5,027	197.9
M	8,395	330.5
N	1,813	71.4

NOTE: Landing Gear Fully-Extended Status on The Jacks.

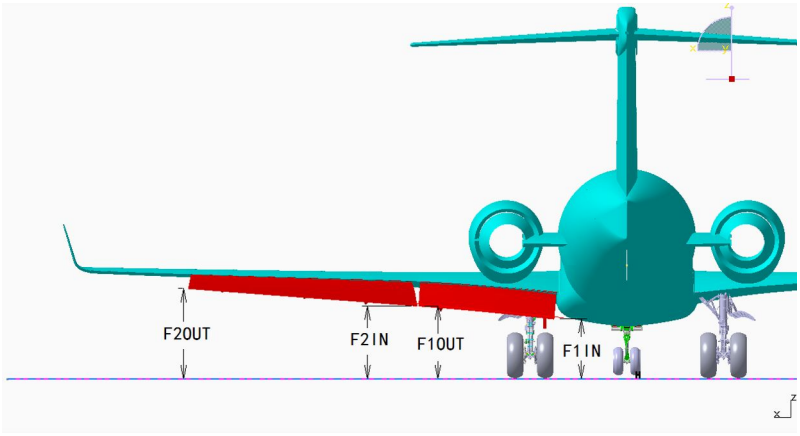

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Figure 2 Ground Clearances at Flap Fully Extended Status of Each Flap (Sheet 1 of 1)

Table 6 Ground Clearances at Flap Fully Extended Status of Each Flap

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
15℃	Flap 1 Inboard (F1IN)	1,048	41.3	965	38.0	950	37.4	979	38.5	958	37.7
	Flap 1 Outboard (F1OUT)	1,366	53.8	1,283	50.5	1,262	49.7	1,297	51.1	1,276	50.2
	Flap 2 Inboard (F2IN)	1,367	53.8	1,284	50.6	1,263	49.7	1,298	51.1	1,277	50.3
	Flap 2 Outboard (F2OUT)	1,786	70.3	1,711	67.4	1,673	65.9	1,726	68.0	1,695	66.7
0℃	Flap 1 Inboard (F1IN)	1,030	40.6	950	37.4	935	36.8	963	37.9	943	37.1
	Flap 1 Outboard (F1OUT)	1,348	53.1	1,267	49.9	1,247	49.1	1,281	50.4	1,261	49.6
	Flap 2 Inboard (F2IN)	1,348	53.1	1,268	49.9	1,248	49.1	1,282	50.5	1,262	49.7
	Flap 2 Outboard (F2OUT)	1,768	69.6	1,695	66.7	1,658	65.3	1,710	67.3	1,680	66.1

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
-10℃	Flap 1 Inboard (F1IN)	1,018	40.1	940	37.0	925	36.4	953	37.5	933	36.7
	Flap 1 Outboard (F1OUT)	1,335	52.6	1,257	49.5	1,237	48.7	1,271	50.0	1,251	49.3
	Flap 2 Inboard (F2IN)	1,336	52.6	1,258	49.5	1,238	48.7	1,272	50.1	1,252	49.3
	Flap 2 Outboard (F2OUT)	1,756	69.1	1,685	66.3	1,649	64.9	1,699	66.9	1,670	65.7
-20℃	Flap 1 Inboard (F1IN)	1,006	39.6	929	36.6	915	36.0	943	37.1	923	36.3
	Flap 1 Outboard (F1OUT)	1,323	52.1	1,247	49.1	1,228	48.3	1,260	49.6	1,241	48.9
	Flap 2 Inboard (F2IN)	1,324	52.1	1,248	49.1	1,228	48.3	1,261	49.6	1,242	48.9
	Flap 2 Outboard (F2OUT)	1,744	68.7	1,675	65.9	1,639	64.5	1,689	66.5	1,660	65.4
-30℃	Flap 1 Inboard (F1IN)	994	39.1	919	36.2	906	35.7	932	36.7	913	35.9
	Flap 1 Outboard (F1OUT)	1,311	51.6	1,237	48.7	1,218	48.0	1,250	49.2	1,231	48.5
	Flap 2 Inboard (F2IN)	1,312	51.7	1,238	48.7	1,219	48.0	1,251	49.3	1,232	48.5
	Flap 2 Outboard (F2OUT)	1,732	68.2	1,665	65.6	1,630	64.2	1,679	66.1	1,650	65.0
-40℃	Flap 1 Inboard (F1IN)	982	38.7	910	35.8	896	35.3	922	36.3	904	35.6
	Flap 1 Outboard (F1OUT)	1,300	51.2	1,227	48.3	1,208	47.6	1,240	48.8	1,221	48.1
	Flap 2 Inboard (F2IN)	1,301	51.2	1,228	48.3	1,209	47.6	1,241	48.9	1,222	48.1
	Flap 2 Outboard (F2OUT)	1,721	67.8	1,655	65.2	1,620	63.8	1,668	65.7	1,641	64.6

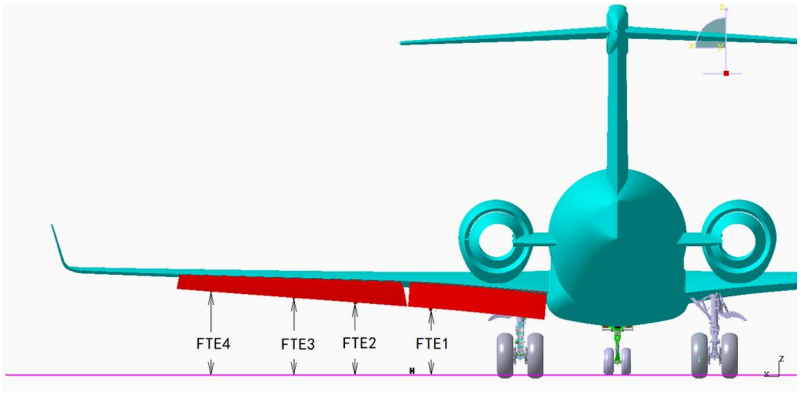

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Figure 3 Ground Clearances at Flap Fully Extended Status of Flap Track Fairing (Sheet 1 of 1)

Table 7 Ground Clearances at Flap Fully Extended Status of Flap Track Fairing

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
15℃	Flap Track 1 (FTE1)	1,250	49.2	1,164	45.8	1,147	45.2	1,177	46.3	1,161	45.7
	Flap Track 2 (FTE2)	1,418	55.8	1,333	52.5	1,312	51.7	1,347	53.0	1,328	52.3
	Flap Track 3 (FTE3)	1,545	60.8	1,463	57.6	1,437	56.6	1,477	58.1	1,455	57.3
	Flap Track 4 (FTE4)	1,699	66.9	1,620	63.8	1,587	62.5	1,635	64.4	1,608	63.3
0℃	Flap Track 1 (FTE1)	1,232	48.5	1,148	45.2	1,132	44.6	1,162	45.7	1,146	45.1
	Flap Track 2 (FTE2)	1,400	55.1	1,318	51.9	1,297	51.1	1,331	52.4	1,313	51.7
	Flap Track 3 (FTE3)	1,527	60.1	1,447	57.0	1,422	56.0	1,461	57.5	1,440	56.7
	Flap Track 4 (FTE4)	1,681	66.2	1,605	63.2	1,573	61.9	1,619	63.7	1,593	62.7

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
-10℃	Flap Track 1 (FTE1)	1,220	48.0	1,138	44.8	1,122	44.2	1,151	45.3	1,136	44.7
	Flap Track 2 (FTE2)	1,387	54.6	1,308	51.5	1,287	50.7	1,321	52.0	1,303	51.3
	Flap Track 3 (FTE3)	1,514	59.6	1,437	56.6	1,412	55.6	1,451	57.1	1,430	56.3
	Flap Track 4 (FTE4)	1,669	65.7	1,594	62.8	1,563	61.5	1,608	63.3	1,583	62.3
-20℃	Flap Track 1 (FTE1)	1,208	47.6	1,128	44.4	1,113	43.8	1,141	44.9	1,126	44.3
	Flap Track 2 (FTE2)	1,375	54.1	1,297	51.1	1,277	50.3	1,310	51.6	1,293	50.9
	Flap Track 3 (FTE3)	1,502	59.1	1,427	56.2	1,402	55.2	1,440	56.7	1,420	55.9
	Flap Track 4 (FTE4)	1,657	65.2	1,584	62.4	1,553	61.1	1,598	62.9	1,573	61.9
-30℃	Flap Track 1 (FTE1)	1,196	47.1	1,118	44.0	1,103	43.4	1,131	44.5	1,116	43.9
	Flap Track 2 (FTE2)	1,363	53.7	1,287	50.7	1,268	49.9	1,300	51.2	1,283	50.5
	Flap Track 3 (FTE3)	1,491	58.7	1,417	55.8	1,392	54.8	1,430	56.3	1,410	55.5
	Flap Track 4 (FTE4)	1,645	64.8	1,574	62.0	1,543	60.7	1,588	62.5	1,564	61.6
-40℃	Flap Track 1 (FTE1)	1,184	46.6	1,108	43.6	1,093	43.0	1,120	44.1	1,106	43.5
	Flap Track 2 (FTE2)	1,352	53.2	1,278	50.3	1,258	49.5	1,290	50.8	1,274	50.2
	Flap Track 3 (FTE3)	1,479	58.2	1,407	55.4	1,383	54.4	1,420	55.9	1,400	55.1
	Flap Track 4 (FTE4)	1,633	64.3	1,564	61.6	1,534	60.4	1,577	62.1	1,554	61.2

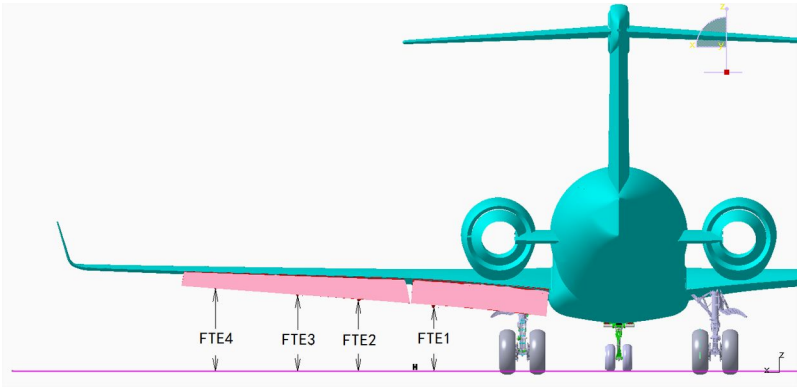

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Figure 4 Ground Clearances at Flap Detent 2 Status of Flap Track Fairing (Sheet 1 of 1)

Table 8 Ground Clearances at Flap Detent 2 Status of Flap Track Fairing

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
15℃	Flap Track 1 (FTF1)	1,285	50.6	1,197	47.1	1,182	46.5	1,211	47.7	1,196	47.1
	Flap Track 2 (FTF2)	1,441	56.7	1,356	53.4	1,335	52.6	1,370	53.9	1,352	53.2
	Flap Track 3 (FTF3)	1,559	61.4	1,476	58.1	1,450	57.1	1,490	58.7	1,469	57.8
	Flap Track 4 (FTF4)	1,708	67.2	1,629	64.1	1,597	62.9	1,644	64.7	1,618	63.7
0℃	Flap Track 1 (FTF1)	1,266	49.8	1,182	46.5	1,167	45.9	1,195	47.0	1,180	46.5
	Flap Track 2 (FTF2)	1,423	56.0	1,340	52.8	1,320	52.0	1,354	53.3	1,337	52.6
	Flap Track 3 (FTF3)	1,540	60.6	1,460	57.5	1,435	56.5	1,474	58.0	1,453	57.2
	Flap Track 4 (FTF4)	1,690	66.5	1,613	63.5	1,582	62.3	1,628	64.1	1,603	63.1

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
-10℃	Flap Track 1 (FTF1)	1,254	49.4	1,172	46.1	1,157	45.6	1,185	46.7	1,170	46.1
	Flap Track 2 (FTF2)	1,411	55.6	1,330	52.4	1,310	51.6	1,343	52.9	1,327	52.2
	Flap Track 3 (FTF3)	1,528	60.2	1,450	57.1	1,425	56.1	1,463	57.6	1,443	56.8
	Flap Track 4 (FTF4)	1,678	66.1	1,603	63.1	1,572	61.9	1,617	63.7	1,593	62.7
-20℃	Flap Track 1 (FTF1)	1,242	48.9	1,162	45.7	1,147	45.2	1,174	46.2	1,160	45.7
	Flap Track 2 (FTF2)	1,399	55.1	1,320	52.0	1,301	51.2	1,333	52.5	1,317	51.9
	Flap Track 3 (FTF3)	1,516	59.7	1,440	56.7	1,416	55.7	1,453	57.2	1,433	56.4
	Flap Track 4 (FTF4)	1,666	65.6	1,593	62.7	1,562	61.5	1,607	63.3	1,583	62.3
-30℃	Flap Track 1 (FTF1)	1,230	48.4	1,152	45.4	1,137	44.8	1,164	45.8	1,150	45.3
	Flap Track 2 (FTF2)	1,387	54.6	1,310	51.6	1,291	50.8	1,323	52.1	1,307	51.5
	Flap Track 3 (FTF3)	1,504	59.2	1,430	56.3	1,406	55.4	1,443	56.8	1,424	56.1
	Flap Track 4 (FTF4)	1,654	65.1	1,583	62.3	1,553	61.1	1,596	62.8	1,573	61.9
-40℃	Flap Track 1 (FTF1)	1,218	48.0	1,142	45.0	1,127	44.4	1,154	45.4	1,140	44.9
	Flap Track 2 (FTF2)	1,375	54.1	1,300	51.2	1,281	50.4	1,312	51.7	1,297	51.1
	Flap Track 3 (FTF3)	1,492	58.7	1,420	55.9	1,396	55.0	1,433	56.4	1,414	55.7
	Flap Track 4 (FTF4)	1,642	64.6	1,573	61.9	1,543	60.7	1,586	62.4	1,563	61.5

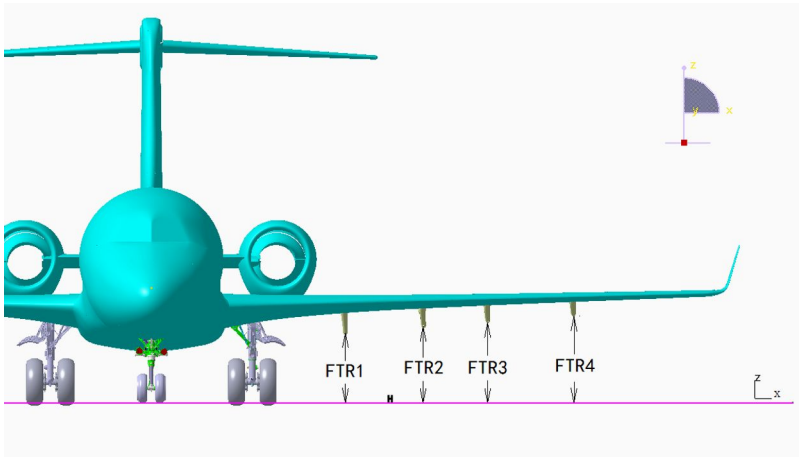

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Figure 5 Ground Clearances at Flap Smooth Status of Flap Track Fairing (Sheet 1 of 1)

Table 9 Ground Clearances at Flap Smooth Status of Flap Track Fairing

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
15℃	Flap Track 1 (FTR1)	1,285	50.6	1,197	47.1	1,182	46.5	1,211	47.7	1,196	47.1
	Flap Track 2 (FTR2)	1,441	56.7	1,356	53.4	1,335	52.6	1,370	53.9	1,352	53.2
	Flap Track 3 (FTR3)	1,559	61.4	1,476	58.1	1,450	57.1	1,490	58.7	1,469	57.8
	Flap Track 4 (FTR4)	1,708	67.2	1,629	64.1	1,597	62.9	1,644	64.7	1,618	63.7
0℃	Flap Track 1 (FTR1)	1,266	49.8	1,182	46.5	1,167	45.9	1,195	47.0	1,180	46.5
	Flap Track 2 (FTR2)	1,423	56.0	1,340	52.8	1,320	52.0	1,354	53.3	1,337	52.6
	Flap Track 3 (FTR3)	1,540	60.6	1,460	57.5	1,435	56.5	1,474	58.0	1,453	57.2
	Flap Track 4 (FTR4)	1,690	66.5	1,613	63.5	1,582	62.3	1,628	64.1	1,603	63.1

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
-10℃	Flap Track 1 (FTR1)	1,254	49.4	1,172	46.1	1,157	45.6	1,185	46.7	1,170	46.1
	Flap Track 2 (FTR2)	1,411	55.6	1,330	52.4	1,310	51.6	1,343	52.9	1,327	52.2
	Flap Track 3 (FTR3)	1,528	60.2	1,450	57.1	1,425	56.1	1,463	57.6	1,443	56.8
	Flap Track 4 (FTR4)	1,678	66.1	1,603	63.1	1,572	61.9	1,617	63.7	1,593	62.7
-20℃	Flap Track 1 (FTR1)	1,242	48.9	1,162	45.7	1,147	45.2	1,174	46.2	1,160	45.7
	Flap Track 2 (FTR2)	1,399	55.1	1,320	52.0	1,301	51.2	1,333	52.5	1,317	51.9
	Flap Track 3 (FTR3)	1,516	59.7	1,440	56.7	1,416	55.7	1,453	57.2	1,433	56.4
	Flap Track 4 (FTR4)	1,666	65.6	1,593	62.7	1,562	61.5	1,607	63.3	1,583	62.3
-30℃	Flap Track 1 (FTR1)	1,230	48.4	1,152	45.4	1,137	44.8	1,164	45.8	1,150	45.3
	Flap Track 2 (FTR2)	1,387	54.6	1,310	51.6	1,291	50.8	1,323	52.1	1,307	51.5
	Flap Track 3 (FTR3)	1,504	59.2	1,430	56.3	1,406	55.4	1,443	56.8	1,424	56.1
	Flap Track 4 (FTR4)	1,654	65.1	1,583	62.3	1,553	61.1	1,596	62.8	1,573	61.9
-40℃	Flap Track 1 (FTR1)	1,218	48.0	1,142	45.0	1,127	44.4	1,154	45.4	1,140	44.9
	Flap Track 2 (FTR2)	1,375	54.1	1,300	51.2	1,281	50.4	1,312	51.7	1,297	51.1
	Flap Track 3 (FTR3)	1,492	58.7	1,420	55.9	1,396	55.0	1,433	56.4	1,414	55.7
	Flap Track 4 (FTR4)	1,642	64.6	1,573	61.9	1,543	60.7	1,586	62.4	1,563	61.5

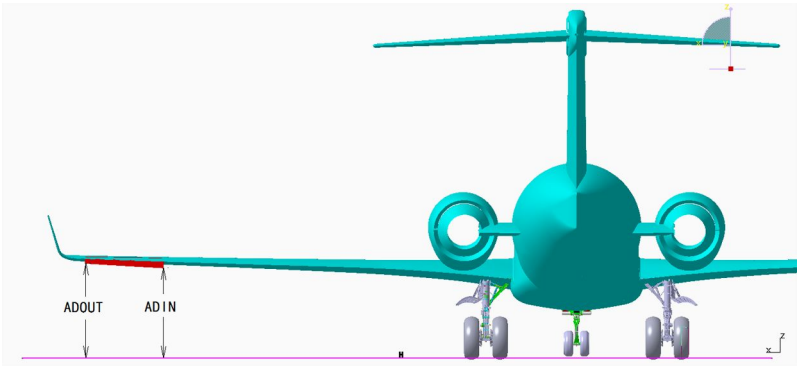

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Figure 6 Ground Clearances at Aileron Down Status (Sheet 1 of 1)

Table 10 Ground Clearances at Aileron Down Status

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
15℃	Aileron Inboard (ADIN)	1,976	77.8	1,901	74.8	1,864	73.4	1,916	75.4	1,886	74.3
	Aileron Outboard (ADOUT)	2,095	82.5	2,022	79.6	1,979	77.9	2,038	80.2	2,003	78.9
0℃	Aileron Inboard (ADIN)	1,958	77.1	1,885	74.2	1,849	72.8	1,900	74.8	1,870	73.6
	Aileron Outboard (ADOUT)	2,077	81.8	2,006	79.0	1,964	77.3	2,022	79.6	1,988	78.3
-10℃	Aileron Inboard (ADIN)	1,946	76.6	1,875	73.8	1,839	72.4	1,889	74.4	1,861	73.3
	Aileron Outboard (ADOUT)	2,065	81.3	1,996	78.6	1,954	76.9	2,011	79.2	1,978	77.9
-20℃	Aileron Inboard (ADIN)	1,935	76.2	1,865	73.4	1,830	72.0	1,879	74.0	1,851	72.9
	Aileron Outboard (ADOUT)	2,053	80.8	1,986	78.2	1,945	76.6	2,000	78.7	1,969	77.5

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
-30℃	Aileron Inboard (ADIN)	1,923	75.7	1,855	73.0	1,820	71.7	1,868	73.5	1,841	72.5
	Aileron Outboard (ADOUT)	2,041	80.4	1,976	77.8	1,935	76.2	1,990	78.3	1,959	77.1
-40℃	Aileron Inboard (ADIN)	1,911	75.2	1,811	71.3	1,845	72.6	1,858	73.1	1,832	72.1
	Aileron Outboard (ADOUT)	2,030	79.9	1,926	75.8	1,966	77.4	1,980	78.0	1,950	76.8

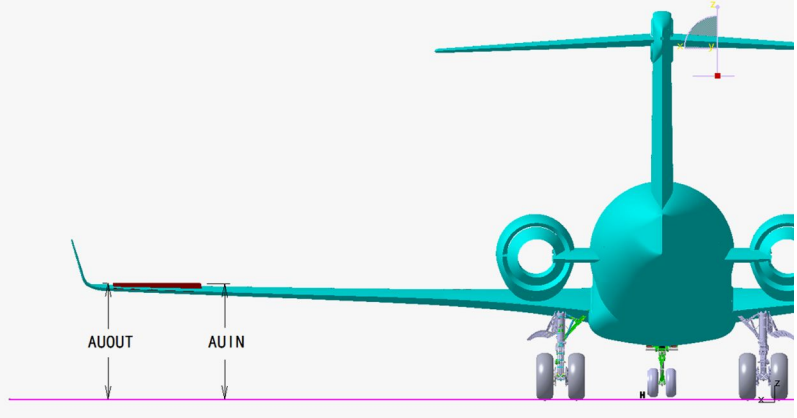

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Figure 7 Ground Clearances at Aileron Raise Status (Sheet 1 of 1)

Table 11 Ground Clearances at Aileron Raise Status

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
15℃	Aileron Inboard (AUIN)	2,324	91.5	2,249	88.5	2,212	87.1	2,264	89.1	2,233	87.9
	Aileron Outboard (AUOUT)	2,339	92.1	2,267	89.3	2,223	87.5	2,282	89.8	2,248	88.5

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
0℃	Aileron Inboard (AUIN)	2,306	90.8	2,233	87.9	2,197	86.5	2,248	88.5	2,218	87.3
	Aileron Outboard (AUOUT)	2,321	91.4	2,251	88.6	2,208	86.9	2,266	89.2	2,233	87.9
-10℃	Aileron Inboard (AUIN)	2,294	90.3	2,223	87.5	2,187	86.1	2,237	88.1	2,208	86.9
	Aileron Outboard (AUOUT)	2,309	90.9	2,241	88.2	2,199	86.6	2,256	88.8	2,223	87.5
-20℃	Aileron Inboard (AUIN)	2,282	89.8	2,213	87.1	2,177	85.7	2,227	87.7	2,198	86.5
	Aileron Outboard (AUOUT)	2,297	90.4	2,231	87.8	2,189	86.2	2,245	88.4	2,213	87.1
-30℃	Aileron Inboard (AUIN)	2,271	89.4	2,203	86.7	2,168	85.4	2,216	87.2	2,189	86.2
	Aileron Outboard (AUOUT)	2,286	90.0	2,220	87.4	2,180	85.8	2,235	88.0	2,203	86.7
-40℃	Aileron Inboard (AUIN)	2,259	88.9	2,158	85.0	2,193	86.3	2,206	86.9	2,179	85.8
	Aileron Outboard (AUOUT)	2,274	89.5	2,170	85.4	2,211	87.0	2,224	87.6	2,194	86.4

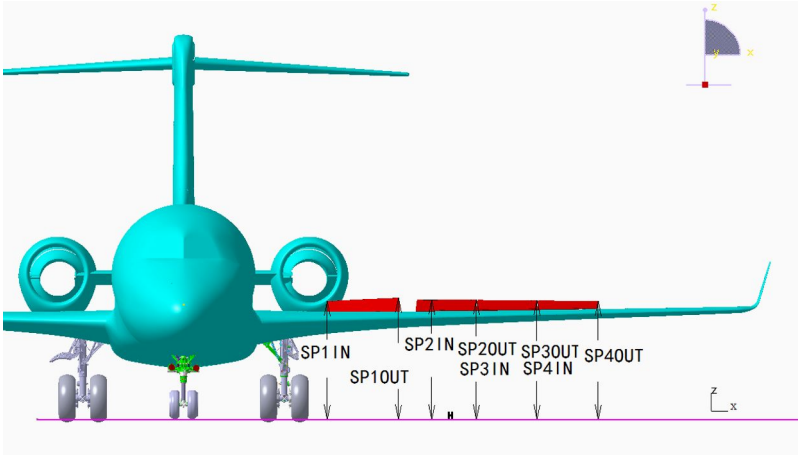

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Figure 8 Ground Clearances at Spoiler Raise Status (Sheet 1 of 1)

Table 12 Ground Clearances at Spoiler Raise Status

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
15℃	No.1 Spoiler Inboard (SP1IN)	2,440	96.1	2,353	92.6	2,339	92.1	2,366	93.1	2,351	92.6
	No.1 Spoiler Outboard (SP1OUT)	2,523	99.3	2,435	95.9	2,419	95.2	2,449	96.4	2,433	95.8
	No.2 Spoiler Inboard (SP2IN)	2,477	97.5	2,390	94.1	2,372	93.4	2,404	94.6	2,388	94.0
	No.2 Spoiler Outboard (SP2OUT)	2,470	97.2	2,386	93.9	2,363	93.0	2,400	94.5	2,380	93.7
	No.3 Spoiler Inboard (SP3IN)	2,470	97.2	2,385	93.9	2,363	93.0	2,399	94.4	2,380	93.7
	No.3 Spoiler Outboard (SP3OUT)	2,454	96.6	2,373	93.4	2,345	92.3	2,387	94.0	2,364	93.1

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
	No.4 Spoiler Inboard (SP4IN)	2,454	96.6	2,372	93.4	2,345	92.3	2,387	94.0	2,364	93.1
	No.4 Spoiler Outboard (SP4OUT)	2,442	96.1	2,363	93.0	2,331	91.8	2,377	93.6	2,351	92.6
0℃	No.1 Spoiler Inboard (SP1IN)	2,421	95.3	2,337	92.0	2,324	91.5	2,350	92.5	2,335	91.9
	No.1 Spoiler Outboard (SP1OUT)	2,504	98.6	2,420	95.3	2,404	94.6	2,433	95.8	2,418	95.2
	No.2 Spoiler Inboard (SP2IN)	2,458	96.8	2,375	93.5	2,357	92.8	2,388	94.0	2,372	93.4
	No.2 Spoiler Outboard (SP2OUT)	2,451	96.5	2,370	93.3	2,348	92.4	2,384	93.9	2,365	93.1
	No.3 Spoiler Inboard (SP3IN)	2,451	96.5	2,370	93.3	2,348	92.4	2,384	93.9	2,365	93.1
	No.3 Spoiler Outboard (SP3OUT)	2,436	95.9	2,357	92.8	2,330	91.7	2,371	93.3	2,349	92.5
	No.4 Spoiler Inboard (SP4IN)	2,436	95.9	2,357	92.8	2,330	91.7	2,371	93.3	2,349	92.5
	No.4 Spoiler Outboard (SP4OUT)	2,423	95.4	2,347	92.4	2,316	91.2	2,361	93.0	2,336	92.0

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
-10℃	No.1 Spoiler Inboard (SP1IN)	2,409	94.8	2,327	91.6	2,314	91.1	2,340	92.1	2,325	91.5
	No.1 Spoiler Outboard (SP1OUT)	2,492	98.1	2,410	94.9	2,394	94.3	2,423	95.4	2,408	94.8
	No.2 Spoiler Inboard (SP2IN)	2,446	96.3	2,365	93.1	2,347	92.4	2,378	93.6	2,362	93.0
	No.2 Spoiler Outboard (SP2OUT)	2,439	96.0	2,360	92.9	2,338	92.0	2,373	93.4	2,355	92.7
	No.3 Spoiler Inboard (SP3IN)	2,439	96.0	2,360	92.9	2,338	92.0	2,373	93.4	2,355	92.7
	No.3 Spoiler Outboard (SP3OUT)	2,424	95.4	2,347	92.4	2,320	91.3	2,360	92.9	2,339	92.1
	No.4 Spoiler Inboard (SP4IN)	2,424	95.4	2,347	92.4	2,320	91.3	2,360	92.9	2,339	92.1
	No.4 Spoiler Outboard (SP4OUT)	2,411	94.9	2,337	92.0	2,306	90.8	2,351	92.6	2,326	91.6
-20℃	No.1 Spoiler Inboard (SP1IN)	2,397	94.4	2,317	91.2	2,304	90.7	2,330	91.7	2,315	91.1
	No.1 Spoiler Outboard (SP1OUT)	2,480	97.6	2,400	94.5	2,384	93.9	2,412	95.0	2,398	94.4
	No.2 Spoiler Inboard (SP2IN)	2,434	95.8	2,355	92.7	2,337	92.0	2,367	93.2	2,352	92.6

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
	No.2 Spoiler Outboard (SP2OUT)	2,427	95.6	2,350	92.5	2,328	91.7	2,363	93.0	2,345	92.3
	No.3 Spoiler Inboard (SP3IN)	2,427	95.6	2,350	92.5	2,328	91.7	2,363	93.0	2,345	92.3
	No.3 Spoiler Outboard (SP3OUT)	2,412	95.0	2,337	92.0	2,311	91.0	2,350	92.5	2,329	91.7
	No.4 Spoiler Inboard (SP4IN)	2,412	95.0	2,337	92.0	2,310	90.9	2,350	92.5	2,329	91.7
	No.4 Spoiler Outboard (SP4OUT)	2,399	94.4	2,327	91.6	2,296	90.4	2,340	92.1	2,316	91.2
-30℃	No.1 Spoiler Inboard (SP1IN)	2,385	93.9	2,307	90.8	2,294	90.3	2,319	91.3	2,305	90.7
	No.1 Spoiler Outboard (SP1OUT)	2,468	97.2	2,390	94.1	2,374	93.5	2,402	94.6	2,388	94.0
	No.2 Spoiler Inboard (SP2IN)	2,422	95.4	2,345	92.3	2,328	91.7	2,357	92.8	2,342	92.2
	No.2 Spoiler Outboard (SP2OUT)	2,415	95.1	2,340	92.1	2,319	91.3	2,352	92.6	2,335	91.9
	No.3 Spoiler Inboard (SP3IN)	2,415	95.1	2,340	92.1	2,318	91.3	2,352	92.6	2,335	91.9
	No.3 Spoiler Outboard (SP3OUT)	2,400	94.5	2,327	91.6	2,301	90.6	2,340	92.1	2,319	91.3

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
	No.4 Spoiler Inboard (SP4IN)	2,400	94.5	2,327	91.6	2,301	90.6	2,340	92.1	2,319	91.3
	No.4 Spoiler Outboard (SP4OUT)	2,388	94.0	2,317	91.2	2,286	90.0	2,330	91.7	2,307	90.8
-40℃	No.1 Spoiler Inboard (SP1IN)	2,373	93.4	2,297	90.4	2,284	89.9	2,309	90.9	2,295	90.4
	No.1 Spoiler Outboard (SP1OUT)	2,456	96.7	2,380	93.7	2,364	93.1	2,392	94.2	2,378	93.6
	No.2 Spoiler Inboard (SP2IN)	2,410	94.9	2,335	91.9	2,318	91.3	2,347	92.4	2,332	91.8
	No.2 Spoiler Outboard (SP2OUT)	2,403	94.6	2,330	91.7	2,309	90.9	2,342	92.2	2,325	91.5
	No.3 Spoiler Inboard (SP3IN)	2,403	94.6	2,330	91.7	2,309	90.9	2,342	92.2	2,325	91.5
	No.3 Spoiler Outboard (SP3OUT)	2,388	94.0	2,317	91.2	2,291	90.2	2,329	91.7	2,310	90.9
	No.4 Spoiler Inboard (SP4IN)	2,388	94.0	2,317	91.2	2,291	90.2	2,329	91.7	2,309	90.9
	No.4 Spoiler Outboard (SP4OUT)	2,376	93.5	2,307	90.8	2,277	89.6	2,320	91.3	2,297	90.4

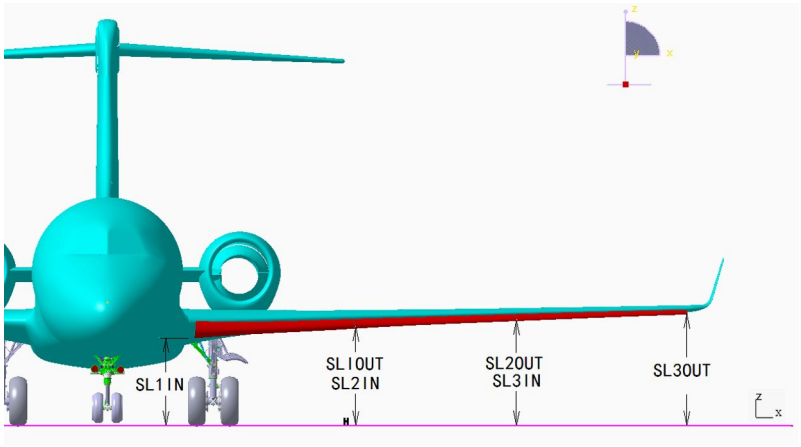

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Figure 9 Ground Clearances at Leading Edge Slat Extended Status (Sheet 1 of 1)

Table 13 Ground Clearances at Leading Edge Slat Extended Status

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
15℃	Slat 1 Inboard (SL1IN)	1,598	62.9	1,490	58.7	1,497	58.9	1,501	59.1	1,512	59.5
	Slat 1 Outboard (SL1OUT)	1,801	70.9	1,702	67.0	1,695	66.7	1,714	67.5	1,713	67.4
	Slat 2 Inboard (SL2IN)	1,801	70.9	1,703	67.0	1,696	66.8	1,715	67.5	1,714	67.5
	Slat 2 Outboard (SL2OUT)	1,967	77.4	1,877	73.9	1,856	73.1	1,891	74.4	1,878	73.9
	Slat 3 Inboard (SL3IN)	1,967	77.4	1,878	73.9	1,856	73.1	1,891	74.4	1,878	73.9
	Slat 3 Outboard (SL3OUT)	2,106	82.9	2,027	79.8	1,989	78.3	2,041	80.4	2,015	79.3

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
0℃	Slat 1 Inboard (SL1IN)	1,579	62.2	1,475	58.1	1,482	58.3	1,486	58.5	1,496	58.9
	Slat 1 Outboard (SL1OUT)	1,782	70.2	1,687	66.4	1,680	66.1	1,699	66.9	1,698	66.9
	Slat 2 Inboard (SL2IN)	1,782	70.2	1,688	66.5	1,680	66.1	1,699	66.9	1,698	66.9
	Slat 2 Outboard (SL2OUT)	1,948	76.7	1,862	73.3	1,841	72.5	1,875	73.8	1,862	73.3
	Slat 3 Inboard (SL3IN)	1,948	76.7	1,862	73.3	1,841	72.5	1,875	73.8	1,863	73.3
	Slat 3 Outboard (SL3OUT)	2,088	82.2	2,011	79.2	1,974	77.7	2,025	79.7	2,000	78.7
-10℃	Slat 1 Inboard (SL1IN)	1,566	61.7	1,465	57.7	1,472	58.0	1,475	58.1	1,485	58.5
	Slat 1 Outboard (SL1OUT)	1,769	69.6	1,677	66.0	1,670	65.7	1,689	66.5	1,687	66.4
	Slat 2 Inboard (SL2IN)	1,770	69.7	1,678	66.1	1,670	65.7	1,689	66.5	1,688	66.5
	Slat 2 Outboard (SL2OUT)	1,936	76.2	1,852	72.9	1,831	72.1	1,864	73.4	1,852	72.9
	Slat 3 Inboard (SL3IN)	1,936	76.2	1,852	72.9	1,831	72.1	1,865	73.4	1,853	73.0
	Slat 3 Outboard (SL3OUT)	2,076	81.7	2,001	78.8	1,964	77.3	2,015	79.3	1,990	78.3
-20℃	Slat 1 Inboard (SL1IN)	1,553	61.1	1,455	57.3	1,461	57.5	1,465	57.7	1,475	58.1
	Slat 1 Outboard (SL1OUT)	1,757	69.2	1,667	65.6	1,660	65.4	1,678	66.1	1,677	66.0
	Slat 2 Inboard (SL2IN)	1,757	69.2	1,668	65.7	1,660	65.4	1,679	66.1	1,678	66.1
	Slat 2 Outboard (SL2OUT)	1,924	75.7	1,842	72.5	1,821	71.7	1,854	73.0	1,842	72.5
	Slat 3 Inboard (SL3IN)	1,924	75.7	1,842	72.5	1,821	71.7	1,854	73.0	1,843	72.6

OAT	Description	Operating Empty Weight		Maximum Taxi Weight - ER				Maximum Taxi Weight - STD			
				FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
	Slat 3 Outboard (SL3OUT)	2,064	81.3	1,991	78.4	1,955	77.0	2,004	78.9	1,980	78.0
-30℃	Slat 1 Inboard (SL1IN)	1,541	60.7	1,445	56.9	1,451	57.1	1,455	57.3	1,464	57.6
	Slat 1 Outboard (SL1OUT)	1,745	68.7	1,657	65.2	1,650	65.0	1,668	65.7	1,667	65.6
	Slat 2 Inboard (SL2IN)	1,745	68.7	1,658	65.3	1,650	65.0	1,669	65.7	1,667	65.6
	Slat 2 Outboard (SL2OUT)	1,912	75.3	1,832	72.1	1,811	71.3	1,844	72.6	1,832	72.1
	Slat 3 Inboard (SL3IN)	1,912	75.3	1,832	72.1	1,811	71.3	1,844	72.6	1,833	72.2
	Slat 3 Outboard (SL3OUT)	2,052	80.8	1,981	78.0	1,945	76.6	1,994	78.5	1,971	77.6
-40℃	Slat 1 Inboard (SL1IN)	1,528	60.2	1,436	56.5	1,441	56.7	1,445	56.9	1,454	57.2
	Slat 1 Outboard (SL1OUT)	1,732	68.2	1,647	64.8	1,640	64.6	1,658	65.3	1,657	65.2
	Slat 2 Inboard (SL2IN)	1,733	68.2	1,648	64.9	1,641	64.6	1,659	65.3	1,657	65.2
	Slat 2 Outboard (SL2OUT)	1,900	74.8	1,822	71.7	1,801	70.9	1,834	72.2	1,822	71.7
	Slat 3 Inboard (SL3IN)	1,900	74.8	1,822	71.7	1,802	70.9	1,834	72.2	1,823	71.8
	Slat 3 Outboard (SL3OUT)	2,040	80.3	1,971	77.6	1,936	76.2	1,984	78.1	1,961	77.2

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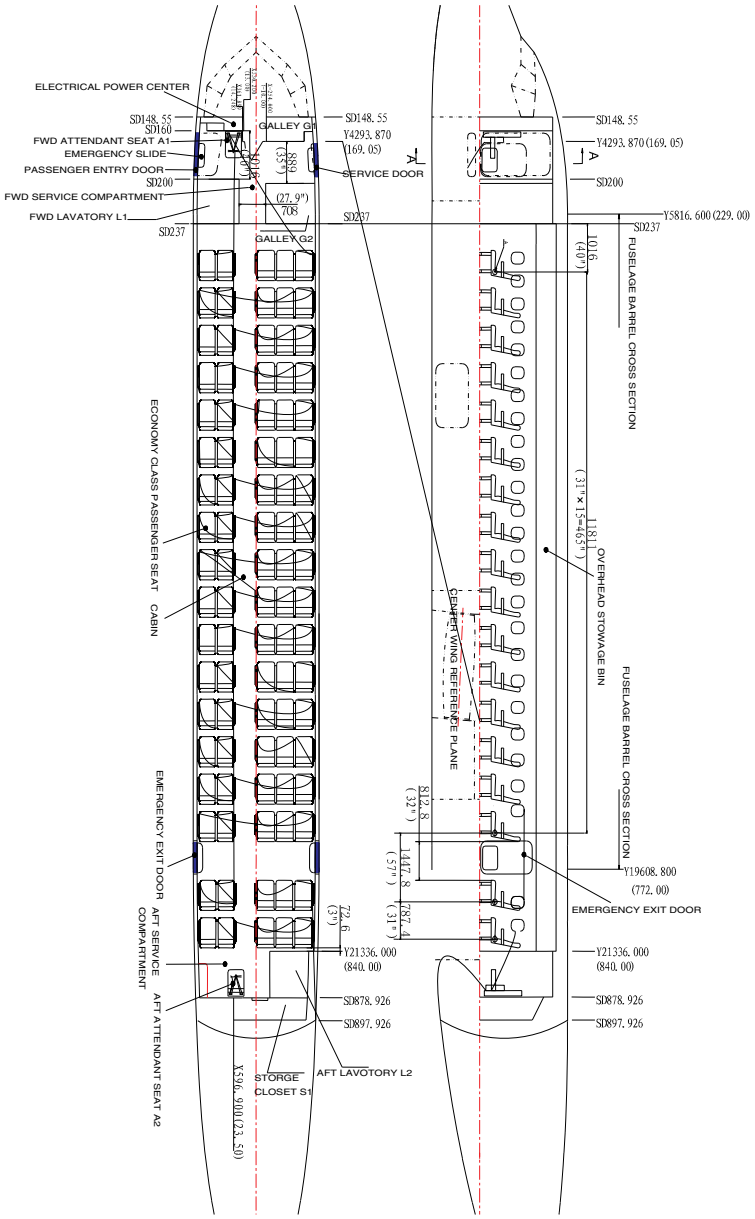
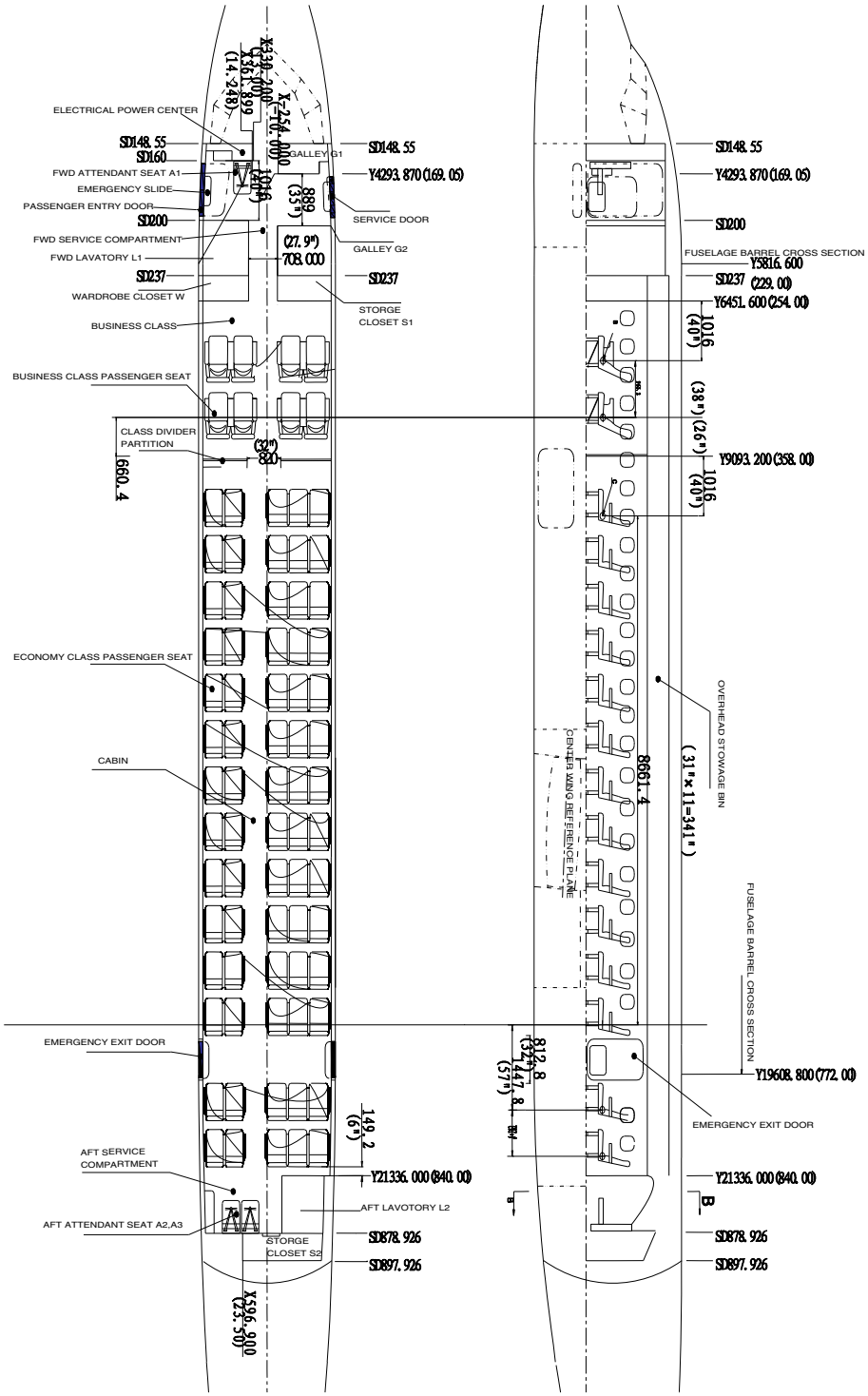
Interior Arrangement



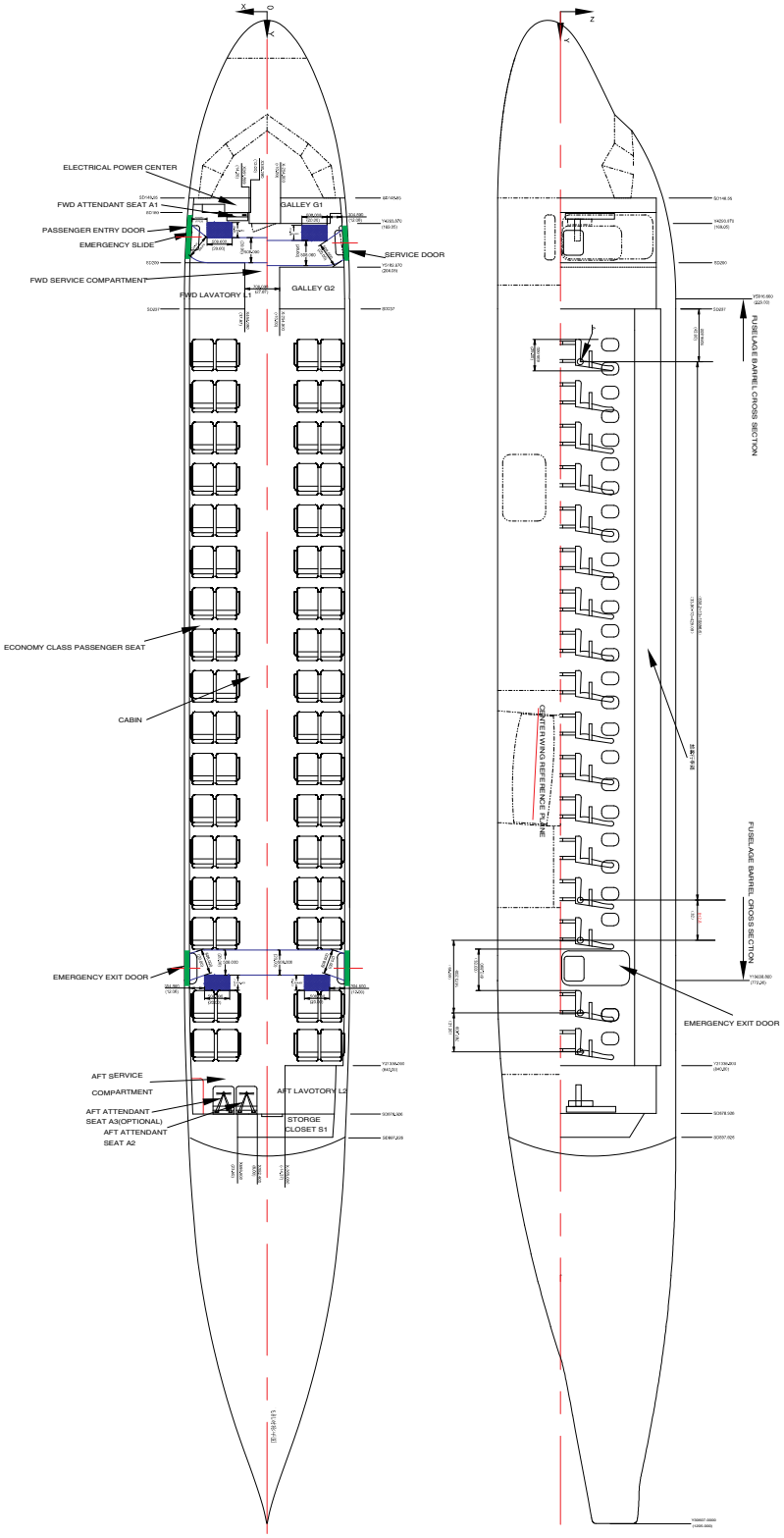
ICN-ARJ21-A-192002-A-SVV19-10704-A-001-01

Figure 1 Interior Arrangement of ARJ21-700 90-Seat Full Economy Class (Sheet 1 of 1)



ICN-ARJ21-A-192002-A-SVV19-10705-A-001-01

Figure 2 Interior Arrangement of ARJ21-700 78-Seat Mixed Class (Sheet 1 of 1)


ELECTRICAL POWER CENTER
FWD ATTENDANT SEAT A1
PASSENGER ENTRY DOOR
EMERGENCY SLIDE
FWD SERVICE COMPARTMENT
GALLEY G1
SERVICE DOOR
FWD LAVATORY L1
GALLEY G2
ECONOMY CLASS PASSENGER SEAT
CABIN
EMERGENCY EXIT DOOR
AFT SERVICE
COMPARTMENT
AFT ATTENDANT
SEAT A3(OPTIONAL)
AFT ATTENDANT
SEAT A2
AFT LAVOTORY L2
STORGE
CLOSET S1
FUSELAGE BARREL CROSS SECTION
CENTERWING REFERENCE PLANE
FUSELAGE BARREL CROSS SECTION
EMERGENCY EXIT DOOR

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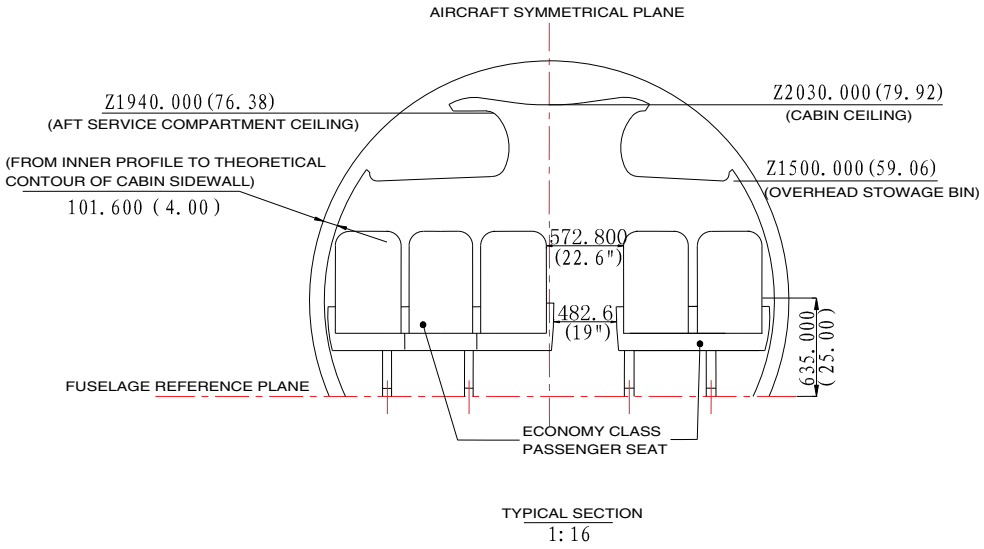
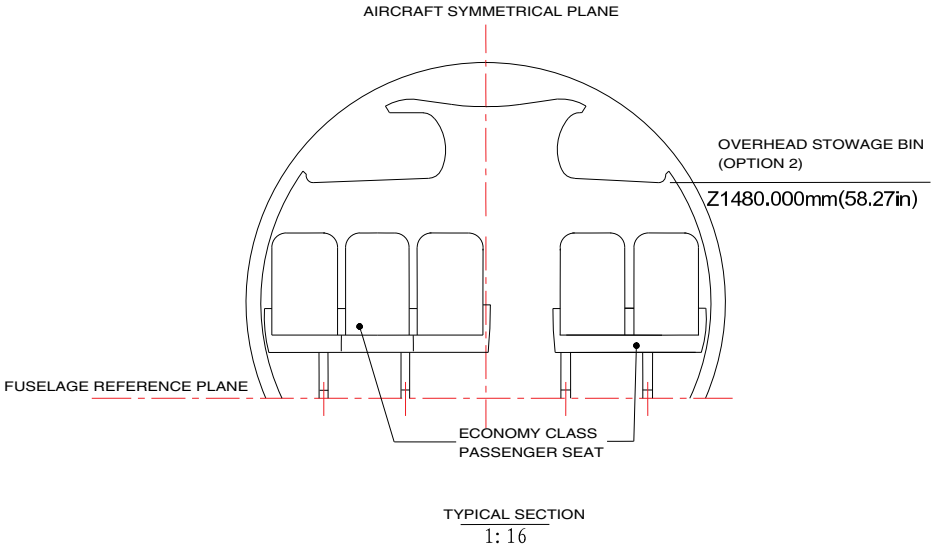
Cabin Cross-Sections



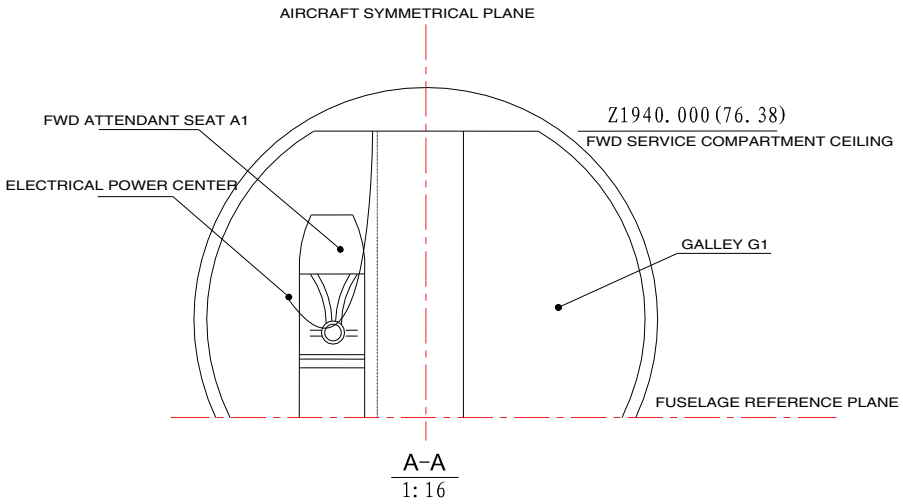
ICN-ARJ21-A-192002-A-SVV19-10707-A-001-01

Figure 1 ARJ21-700 Cabin Cross-Section of 90-Seat Full Economy Class (Sheet 1 of 3)



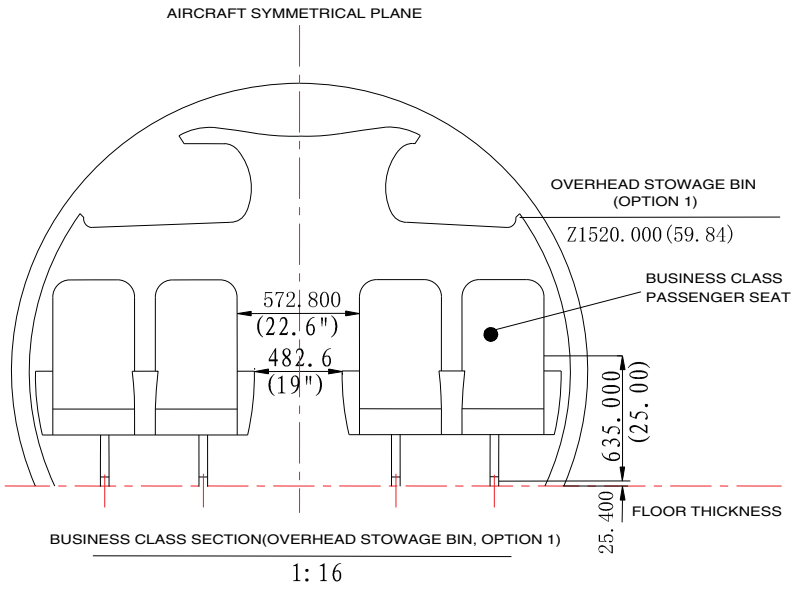
ICN-ARJ21-A-192002-A-SVV19-10708-A-001-01

Figure 1 ARJ21-700 Cabin Cross-Section of 90-Seat Full Economy Class (Sheet 2 of 3)



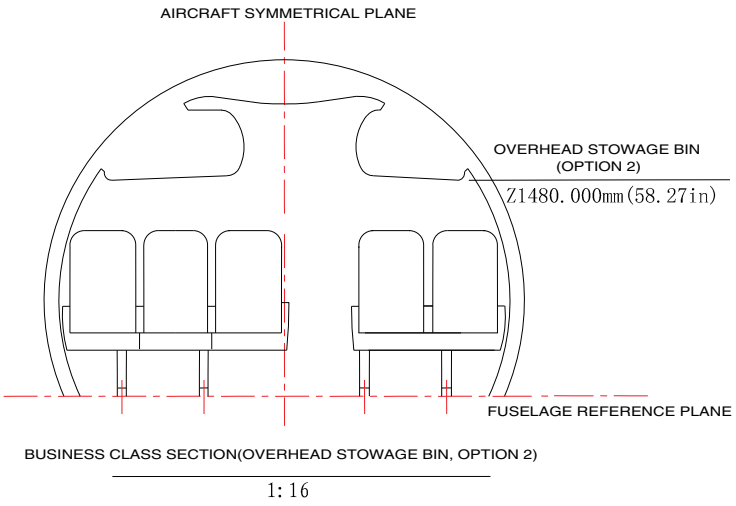
ICN-ARJ21-A-192002-A-SVV19-10709-A-001-01

Figure 1 ARJ21-700 Cabin Cross-Section of 90-Seat Full Economy Class (Sheet 3 of 3)



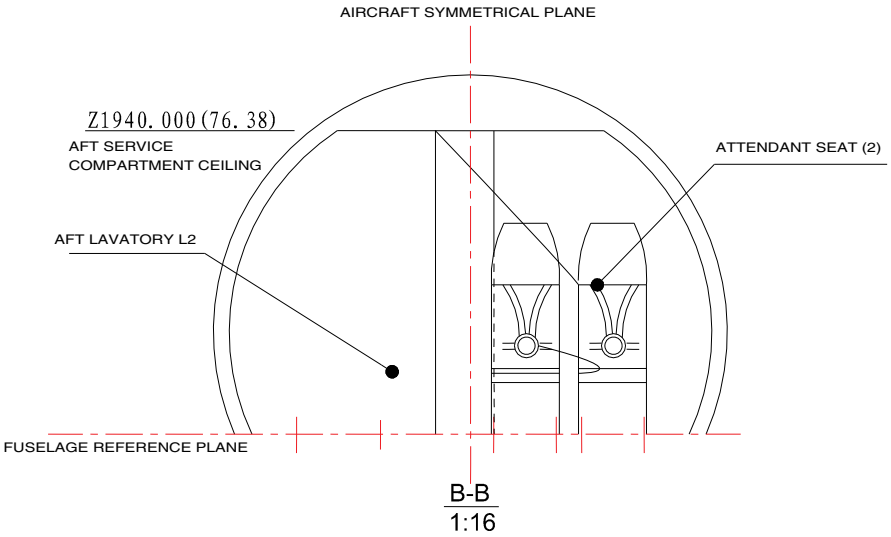
ICN-ARJ21-A-192002-A-SVV19-10710-A-001-01

Figure 2 ARJ21-700 Cabin Cross-Section of 78-Seat Mixed Class (Sheet 1 of 3)



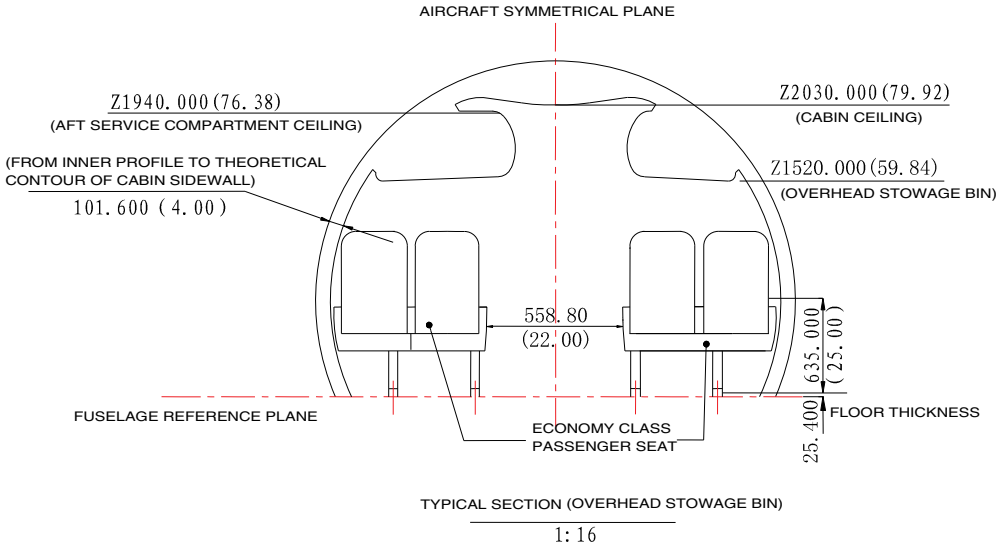
ICN-ARJ21-A-192002-A-SVV19-10711-A-001-01

Figure 2 ARJ21-700 Cabin Cross-Section of 78-Seat Mixed Class (Sheet 2 of 3)



ICN-ARJ21-A-192002-A-SVV19-10712-A-001-01

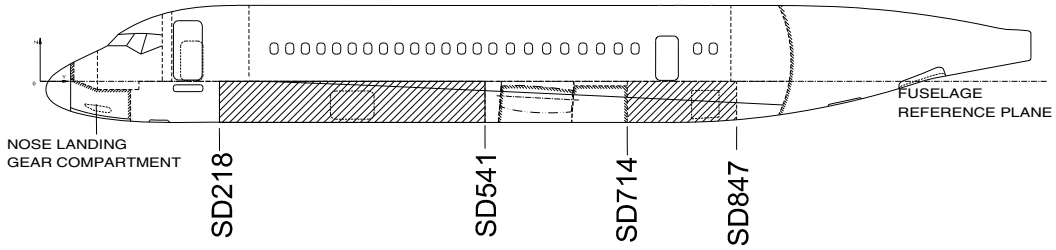
Figure 2 ARJ21-700 Cabin Cross-Section of 78-Seat Mixed Class (Sheet 3 of 3)



ICN-ARJ21-A-192002-A-SVV19-10713-A-001-01

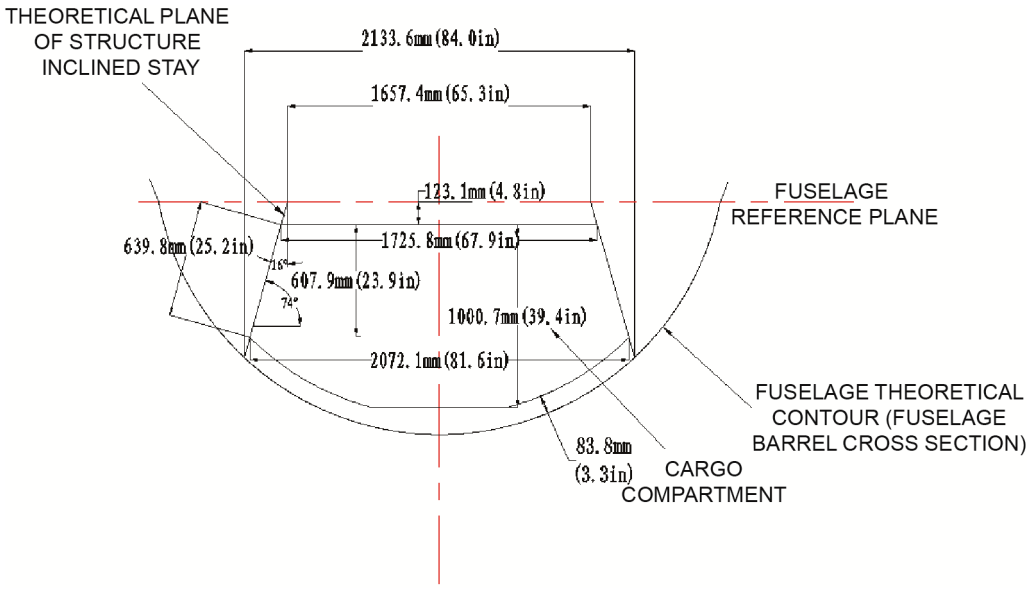
Figure 3 ARJ21-700 Cabin Cross Sections of Premium Economy Class with 68 Seats (Sheet 1 of 1)

Cargo Compartment Data



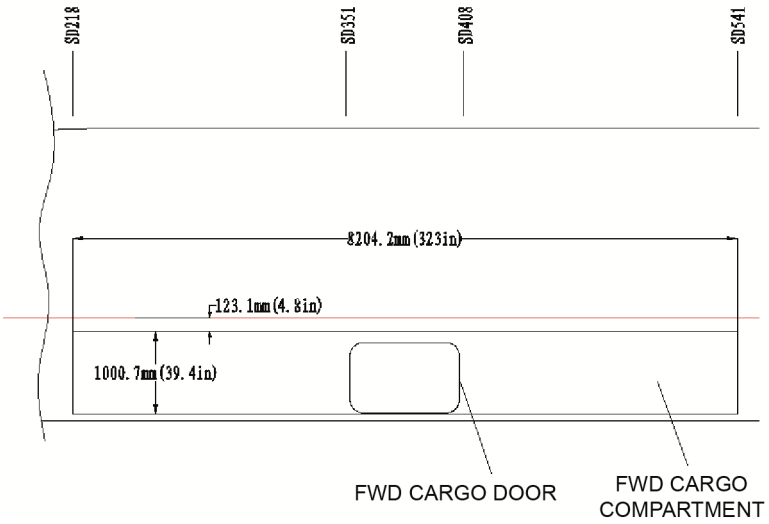
ICN-ARJ21-A-192002-A-SVV19-90806-A-001-01

Figure 1 Locations of ARJ21-700 Cargo Compartment and Cargo Door (Sheet 1 of 1)



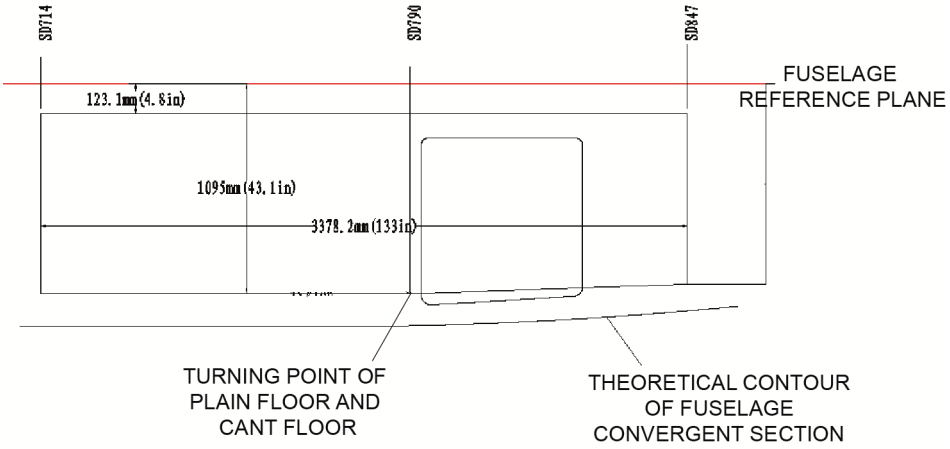
ICN-ARJ21-A-192002-A-SVV19-10714-A-001-01

Figure 2 ARJ21-700 Cargo Compartment Cross-Section (Fuselage Barrel Cross Section) (Sheet 1 of 1)



ICN-ARJ21-A-192002-A-SVV19-90805-A-001-01

Figure 3 Profile of ARJ21-700 FWD Cargo Compartment Side View (Sheet 1 of 1)



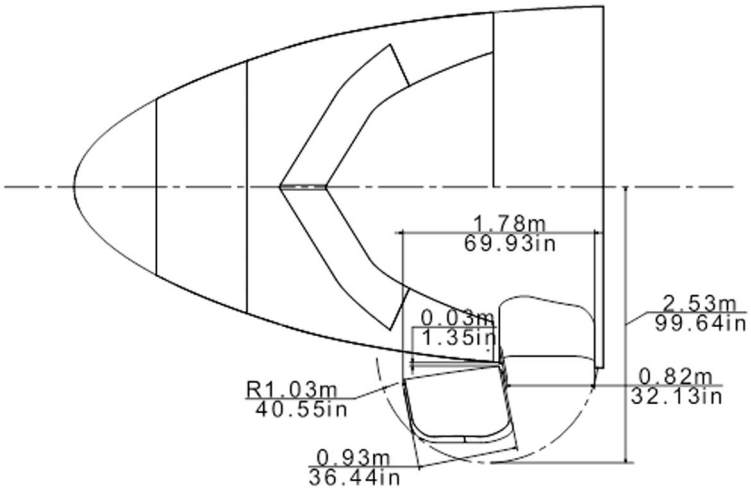
ICN-ARJ21-A-192002-A-SVV19-10715-A-001-01

Figure 4 Profile of ARJ21-700 AFT Cargo Compartment Side View (Sheet 1 of 1)

Table 1 ARJ21-700 Cargo Compartment Data

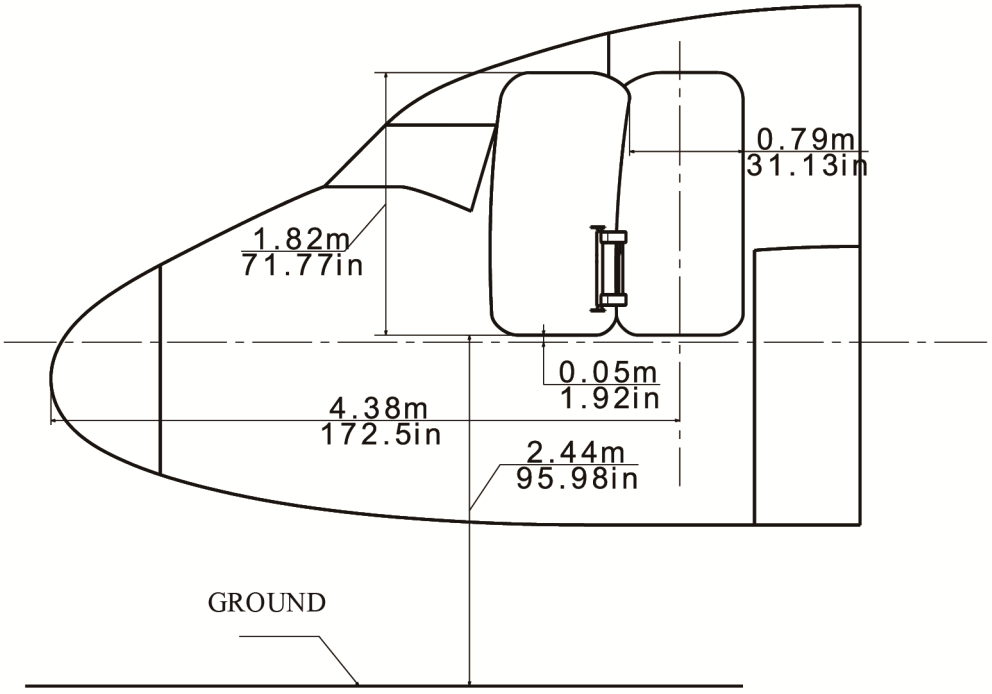
	FWD Cargo Compartment	AFT Cargo Compartment
Capacity	14.643m^3/517.12ft^3	5.502m^3/194.307ft^3

Door Clearances



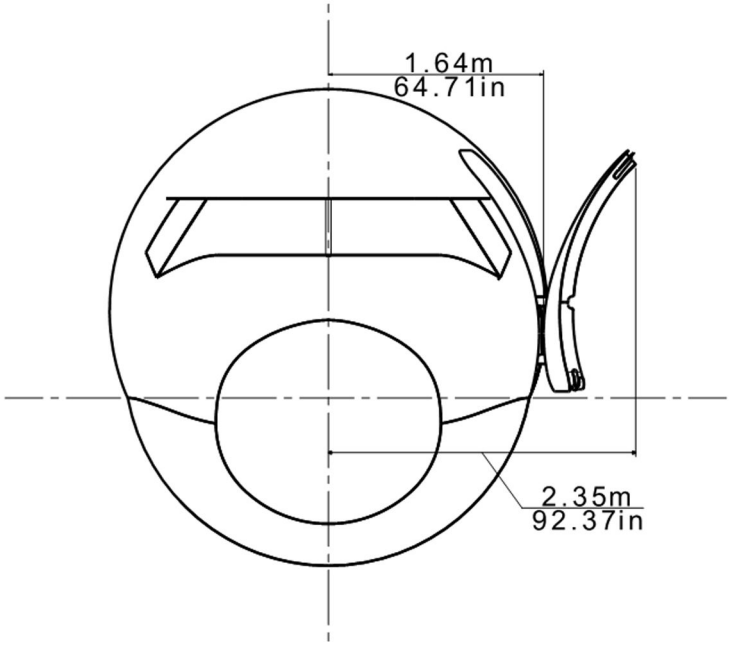
ICN-ARJ21-A-192002-A-SVV19-10716-A-001-01

Figure 1 ARJ21-700 Passenger Entry Door Clearances (Sheet 1 of 3)



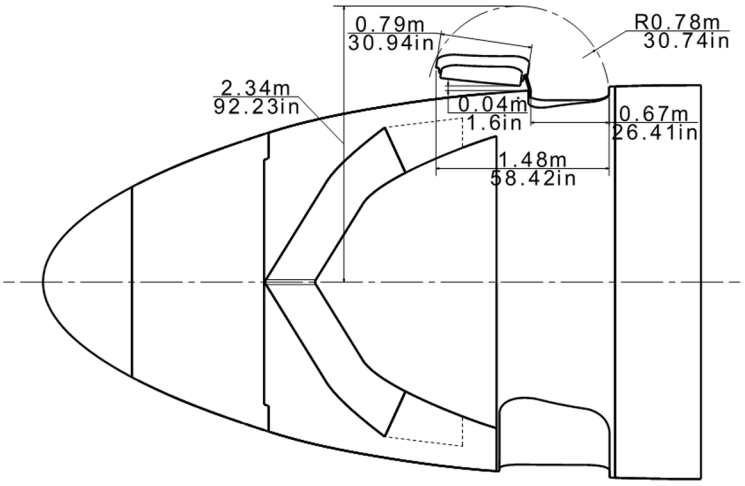
ICN-ARJ21-A-192002-A-SVV19-10717-A-001-01

Figure 1 ARJ21-700 Passenger Entry Door Clearances (Sheet 2 of 3)



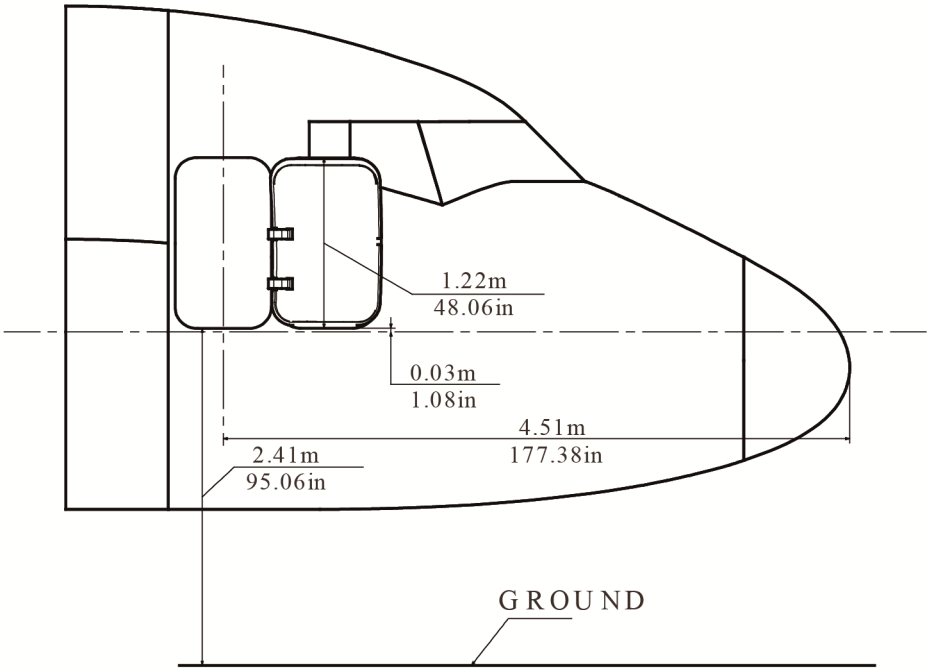
ICN-ARJ21-A-192002-A-SVV19-10718-A-001-01

Figure 1 ARJ21-700 Passenger Entry Door Clearances (Sheet 3 of 3)



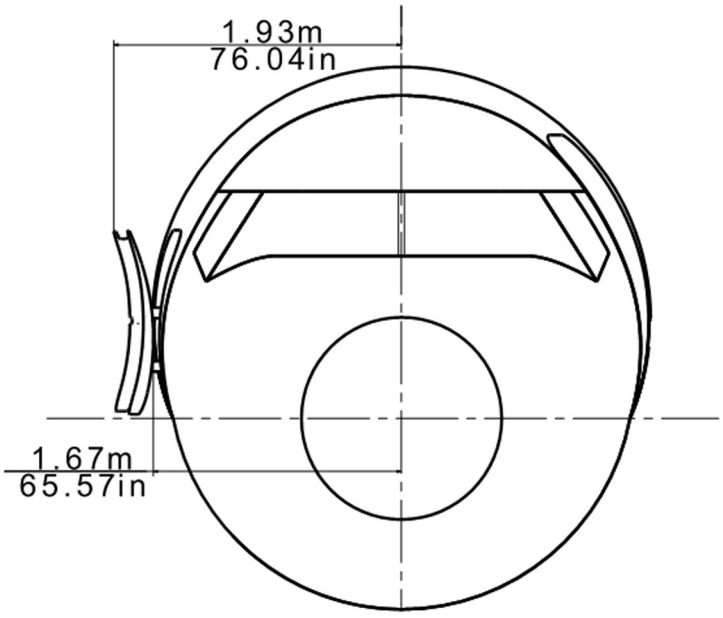
ICN-ARJ21-A-192002-A-SVV19-10721-A-001-01

Figure 2 ARJ21-700 Service Door Clearances (Sheet 1 of 3)



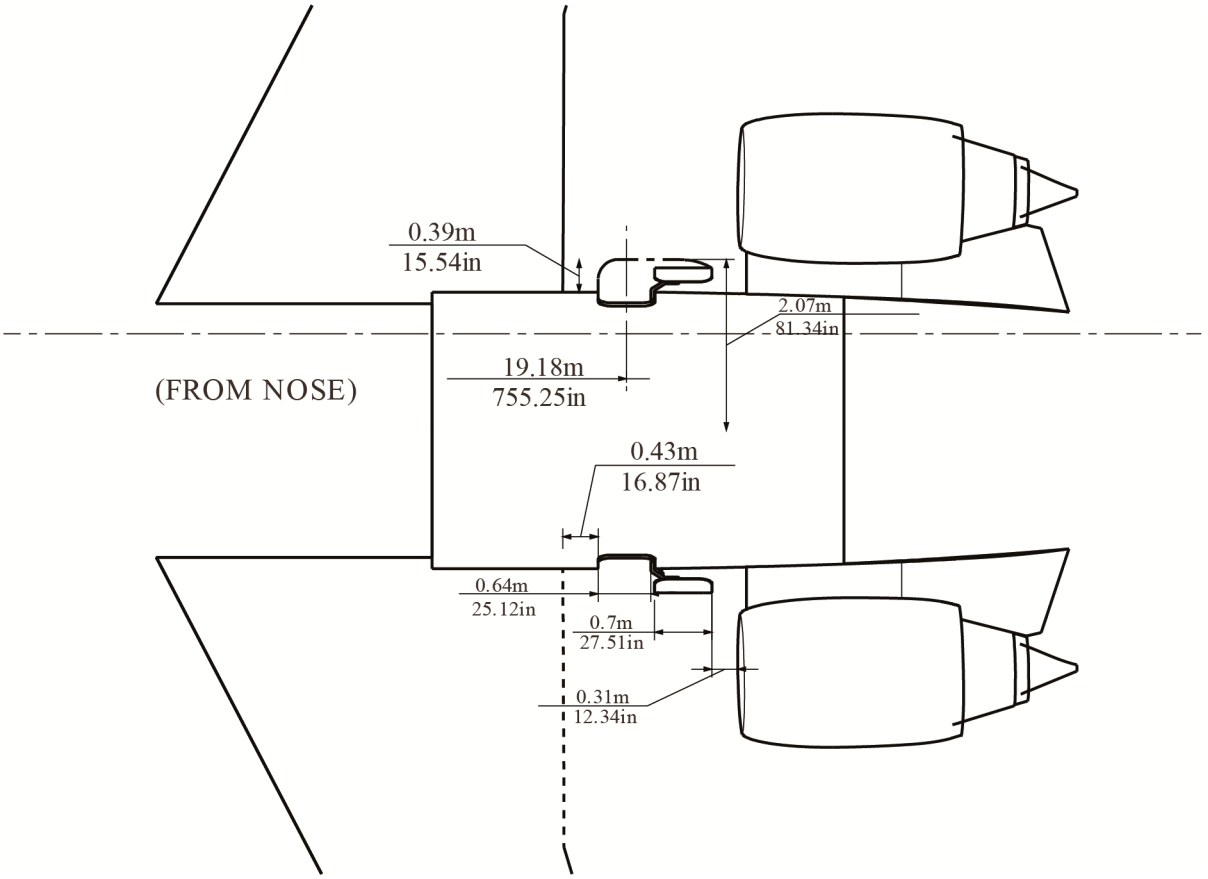
ICN-ARJ21-A-192002-A-SVV19-10722-A-001-01

Figure 2 ARJ21-700 Service Door Clearances (Sheet 2 of 3)



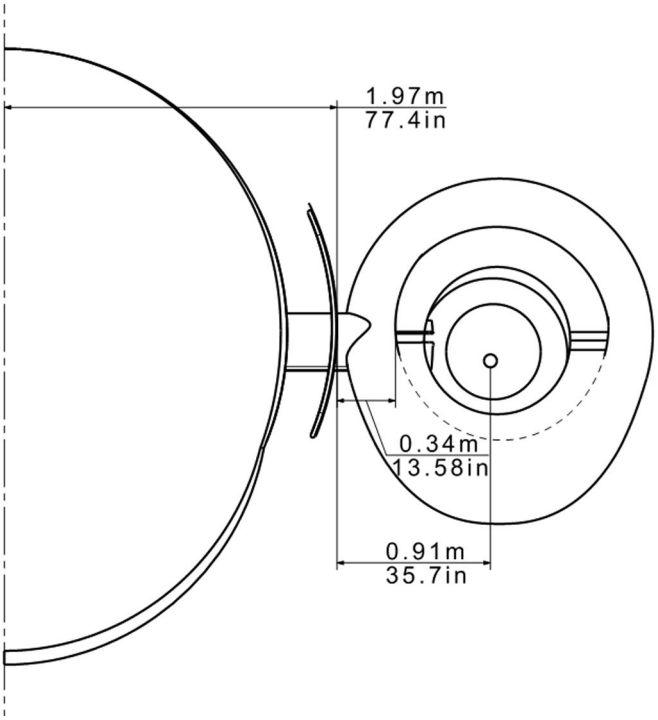
ICN-ARJ21-A-192002-A-SVV19-10723-A-001-01

Figure 2 ARJ21-700 Service Door Clearances (Sheet 3 of 3)



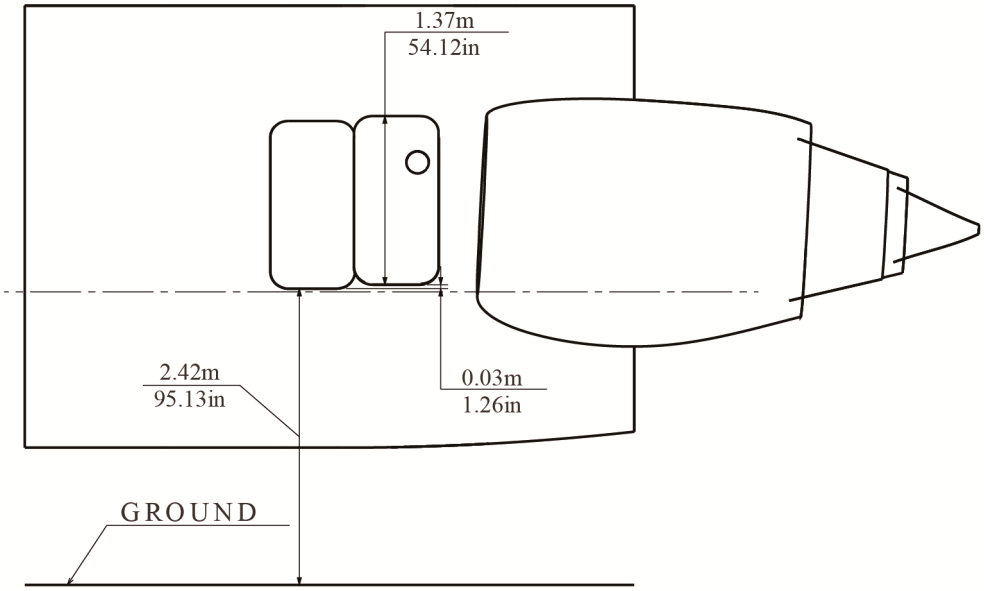
ICN-ARJ21-A-192002-A-SVV19-10724-A-001-01

Figure 3 ARJ21-700 Emergency Exit Door Clearances (Sheet 1 of 3)



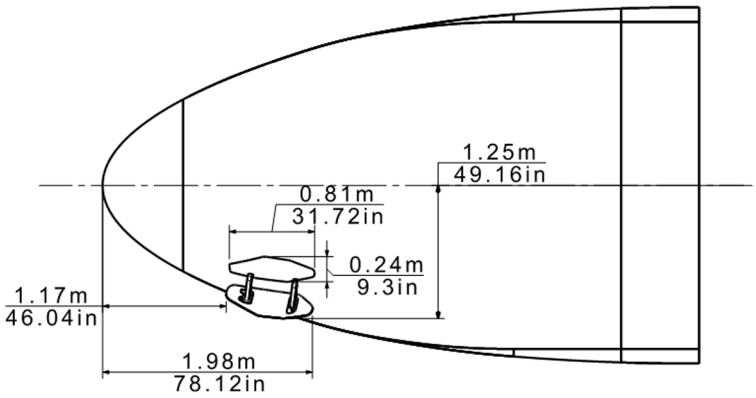
ICN-ARJ21-A-192002-A-SVV19-10725-A-001-01

Figure 3 ARJ21-700 Emergency Exit Door Clearances (Sheet 2 of 3)



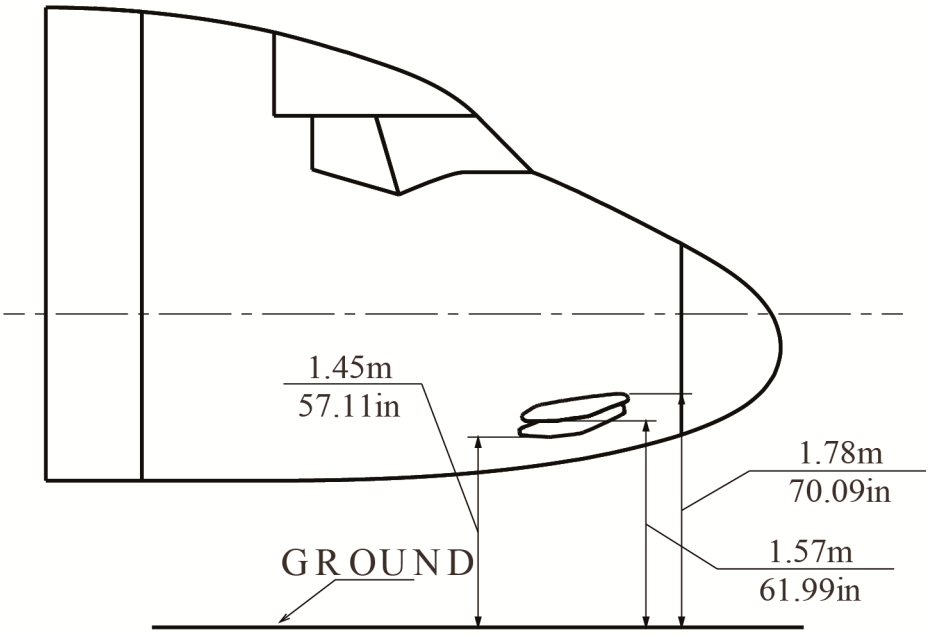
ICN-ARJ21-A-192002-A-SVV19-10726-A-001-01

Figure 3 ARJ21-700 Emergency Exit Door Clearances (Sheet 3 of 3)



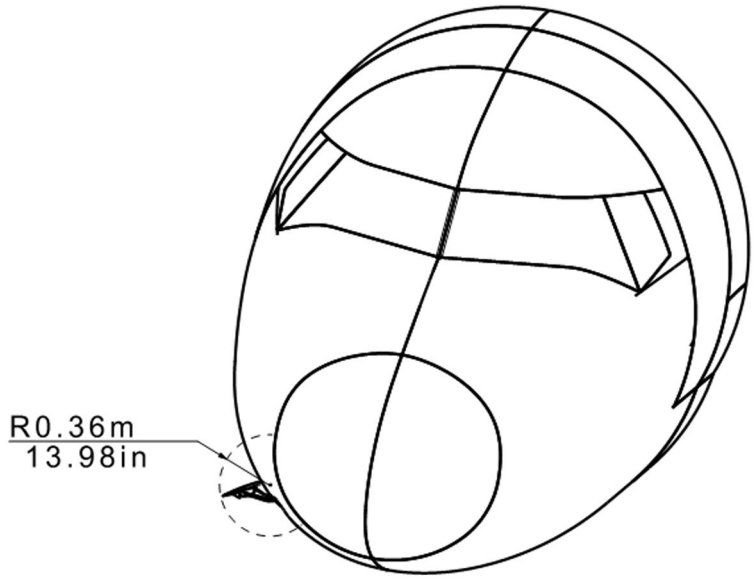
ICN-ARJ21-A-192002-A-SVV19-10729-A-001-01

Figure 4 ARJ21-700 Rat Compartment Door Clearances (Sheet 1 of 3)



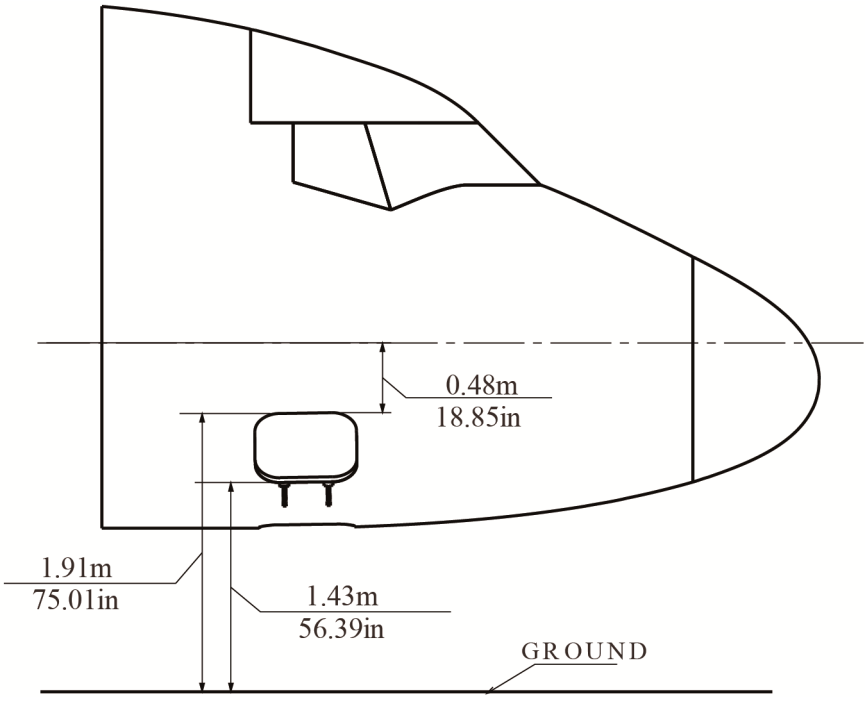
ICN-ARJ21-A-192002-A-SVV19-10730-A-001-01

Figure 4 ARJ21-700 Rat Compartment Door Clearances (Sheet 2 of 3)



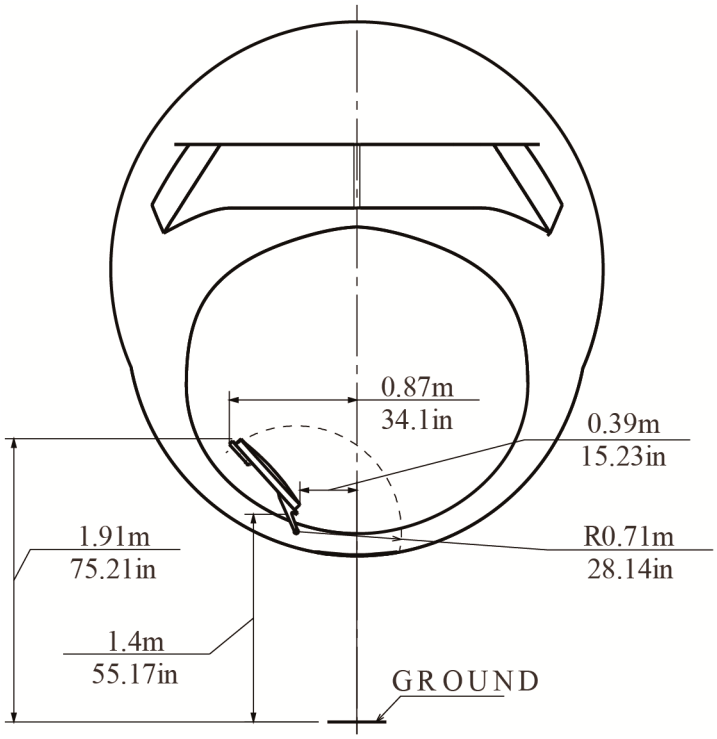
ICN-ARJ21-A-192002-A-SVV19-10731-A-001-01

Figure 4 ARJ21-700 Rat Compartment Door Clearances (Sheet 3 of 3)



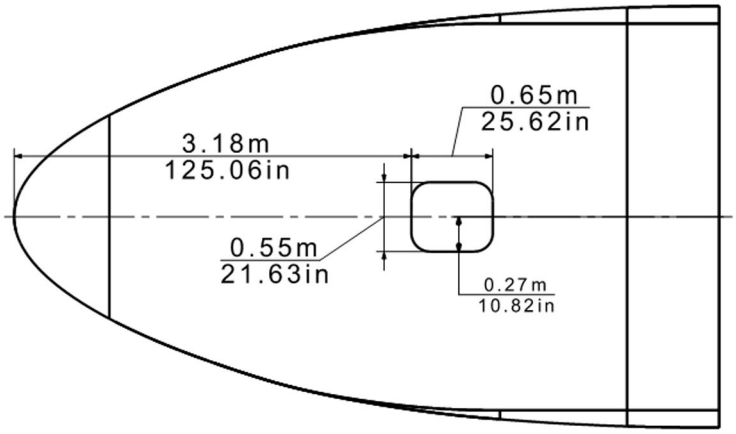
ICN-ARJ21-A-192002-A-SVV19-10732-A-001-01

Figure 5 ARJ21-700 E/E Bay Door Clearances (Sheet 1 of 3)



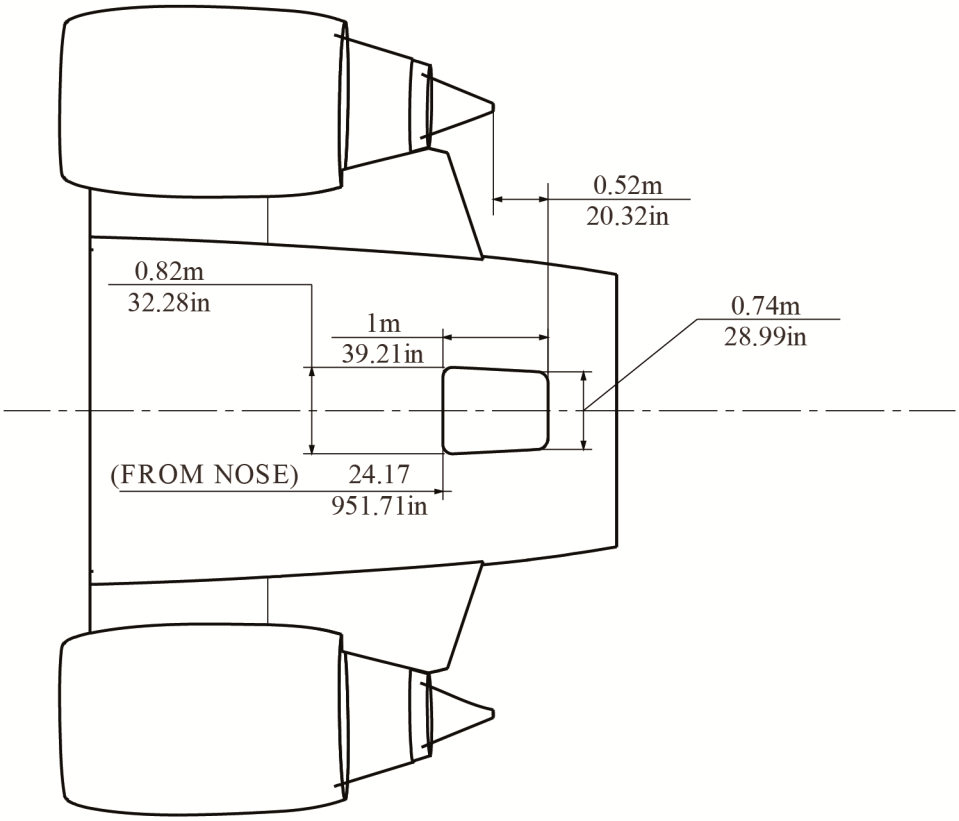
ICN-ARJ21-A-192002-A-SVV19-10733-A-001-01

Figure 5 ARJ21-700 E/E Bay Door Clearances (Sheet 2 of 3)



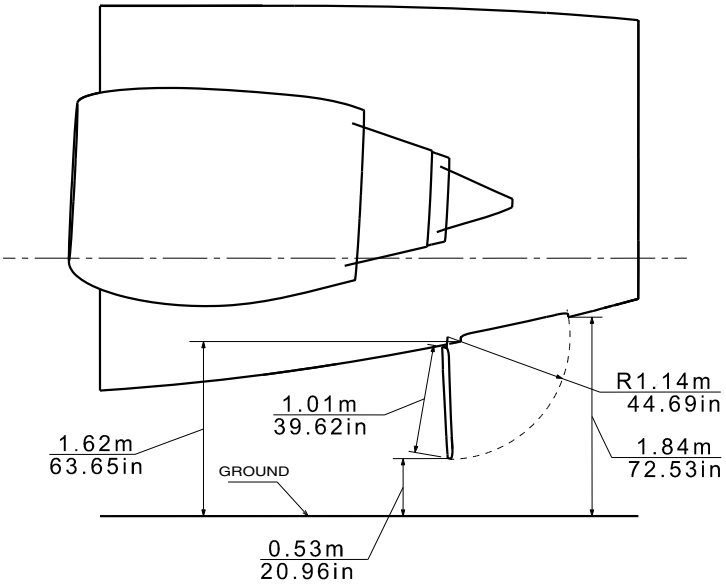
ICN-ARJ21-A-192002-A-SVV19-10734-A-001-01

Figure 5 ARJ21-700 E/E Bay Door Clearances (Sheet 3 of 3)



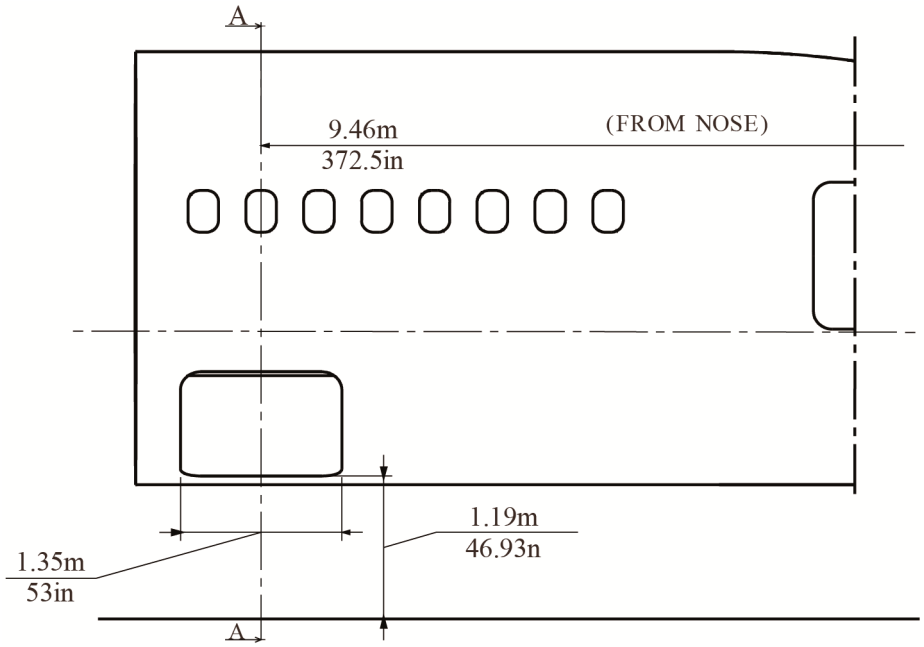
ICN-ARJ21-A-192002-A-SVV19-10735-A-001-01

Figure 6 ARJ21-700 Aft Accessory Compartment Door Clearances (Sheet 1 of 2)



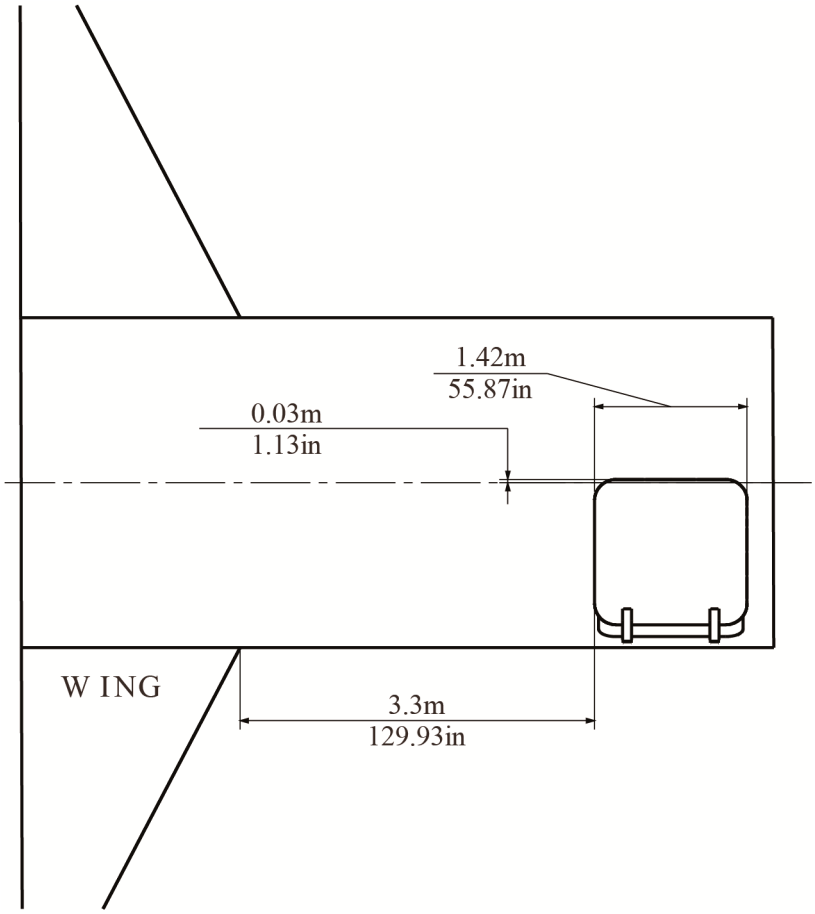
ICN-ARJ21-A-192002-A-SVV19-10736-A-001-01

Figure 6 ARJ21-700 Aft Accessory Compartment Door Clearances (Sheet 2 of 2)



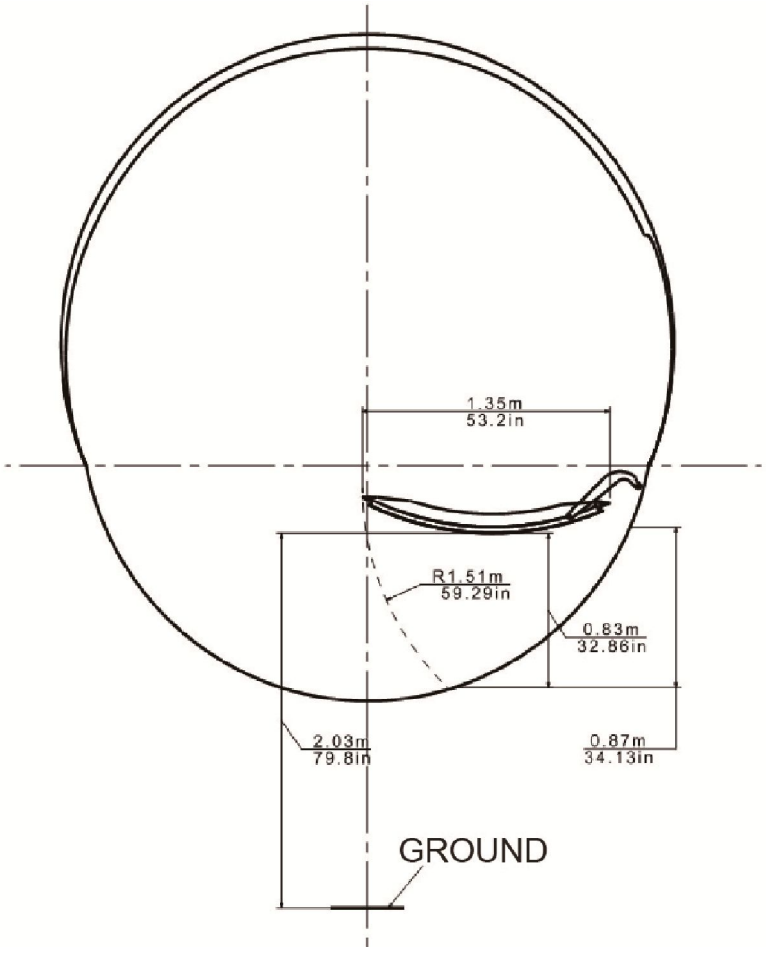
ICN-ARJ21-A-192002-A-SVV19-10737-A-001-01

Figure 7 ARJ21-700 FWD Cargo Door Clearances (Sheet 1 of 3)



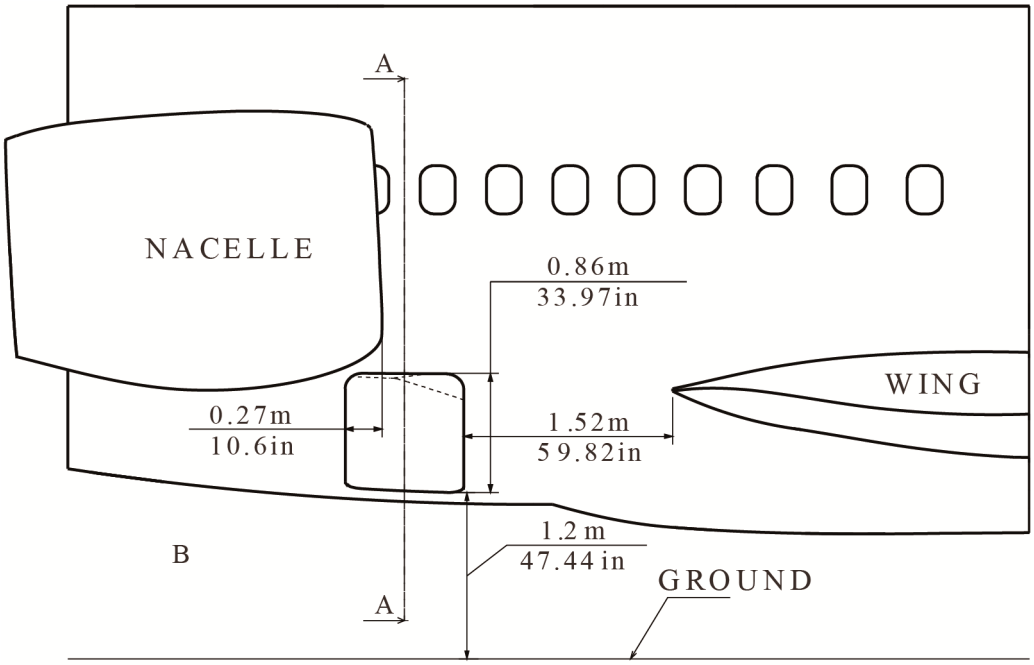
ICN-ARJ21-A-192002-A-SVV19-10738-A-001-01

Figure 7 ARJ21-700 FWD Cargo Door Clearances (Sheet 2 of 3)



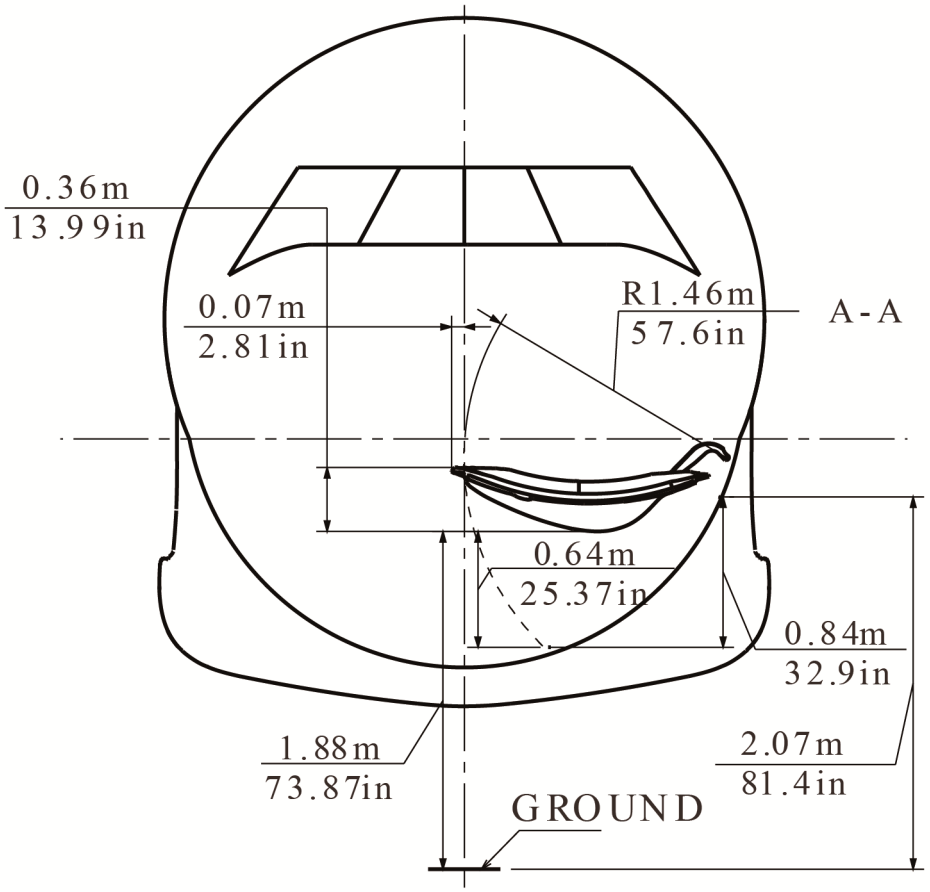
ICN-ARJ21-A-192002-A-SVV19-10739-A-001-01

Figure 7 ARJ21-700 FWD Cargo Door Clearances (Sheet 3 of 3)



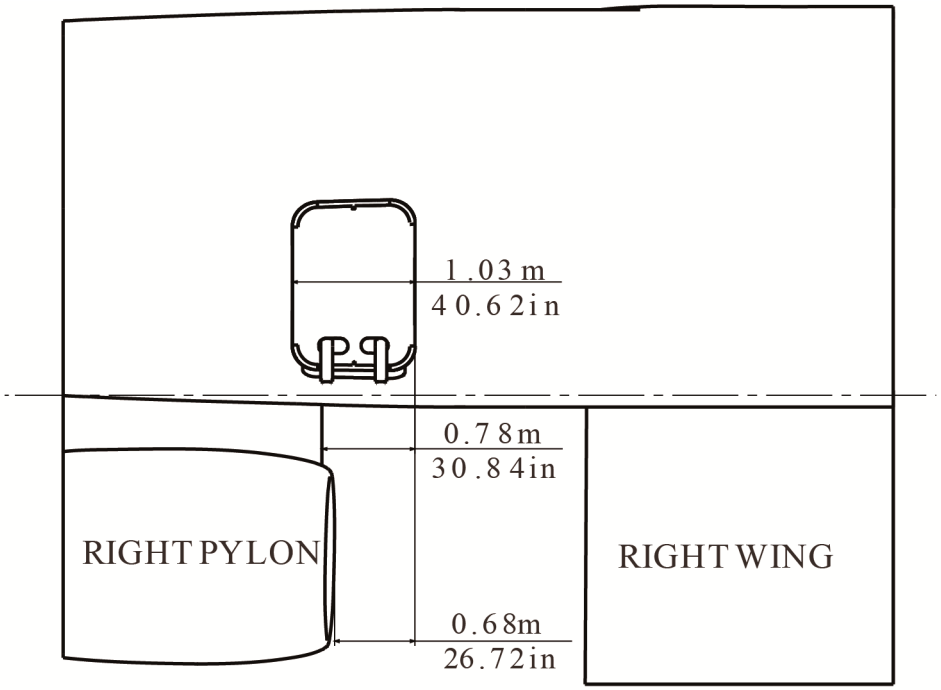
ICN-ARJ21-A-192002-A-SVV19-10740-A-001-01

Figure 8 ARJ21-700 AFT Cargo Door Clearances (Sheet 1 of 3)



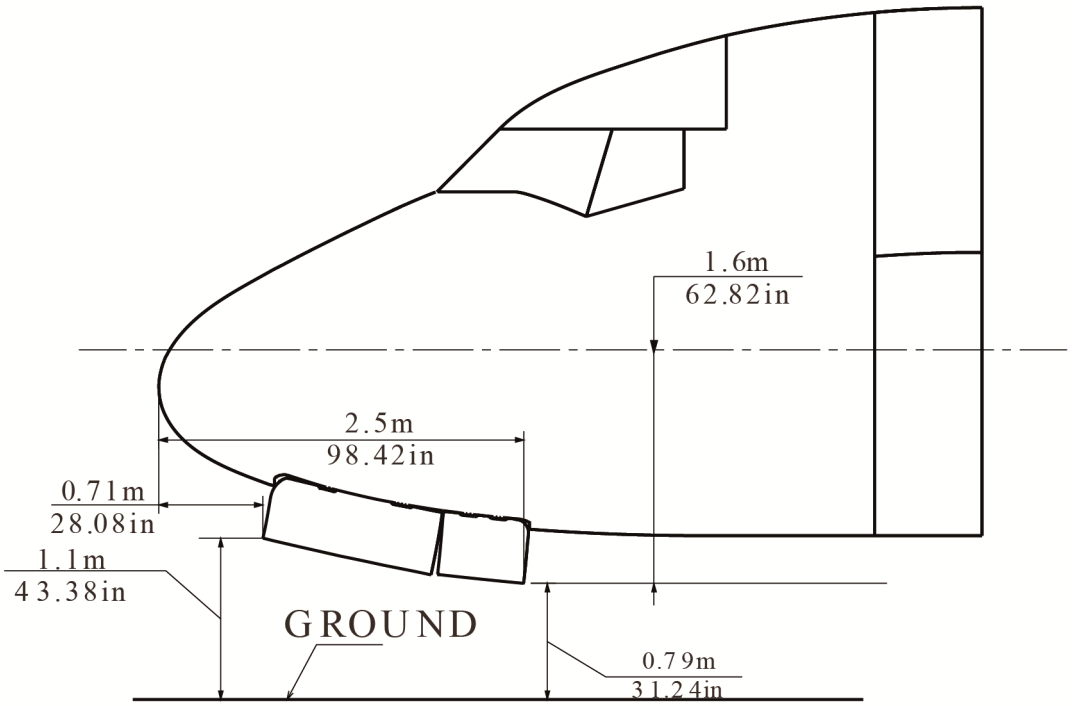
ICN-ARJ21-A-192002-A-SVV19-10741-A-001-01

Figure 8 ARJ21-700 AFT Cargo Door Clearances (Sheet 2 of 3)



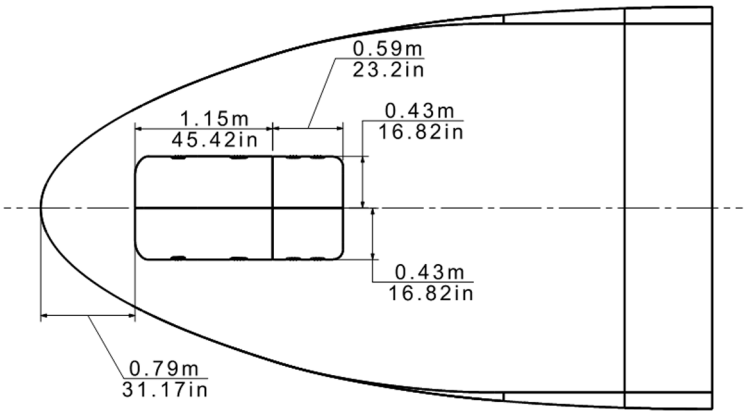
ICN-ARJ21-A-192002-A-SVV19-10742-A-001-01

Figure 8 ARJ21-700 AFT Cargo Door Clearances (Sheet 3 of 3)



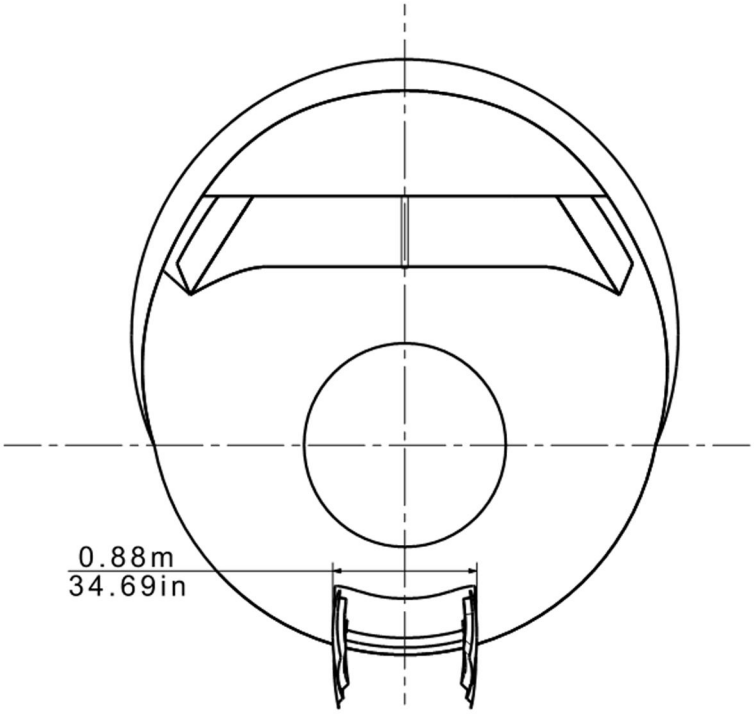
ICN-ARJ21-A-192002-A-SVV19-10743-A-001-01

Figure 9 ARJ21-700 Nose Landing Gear Door Clearances (Sheet 1 of 3)



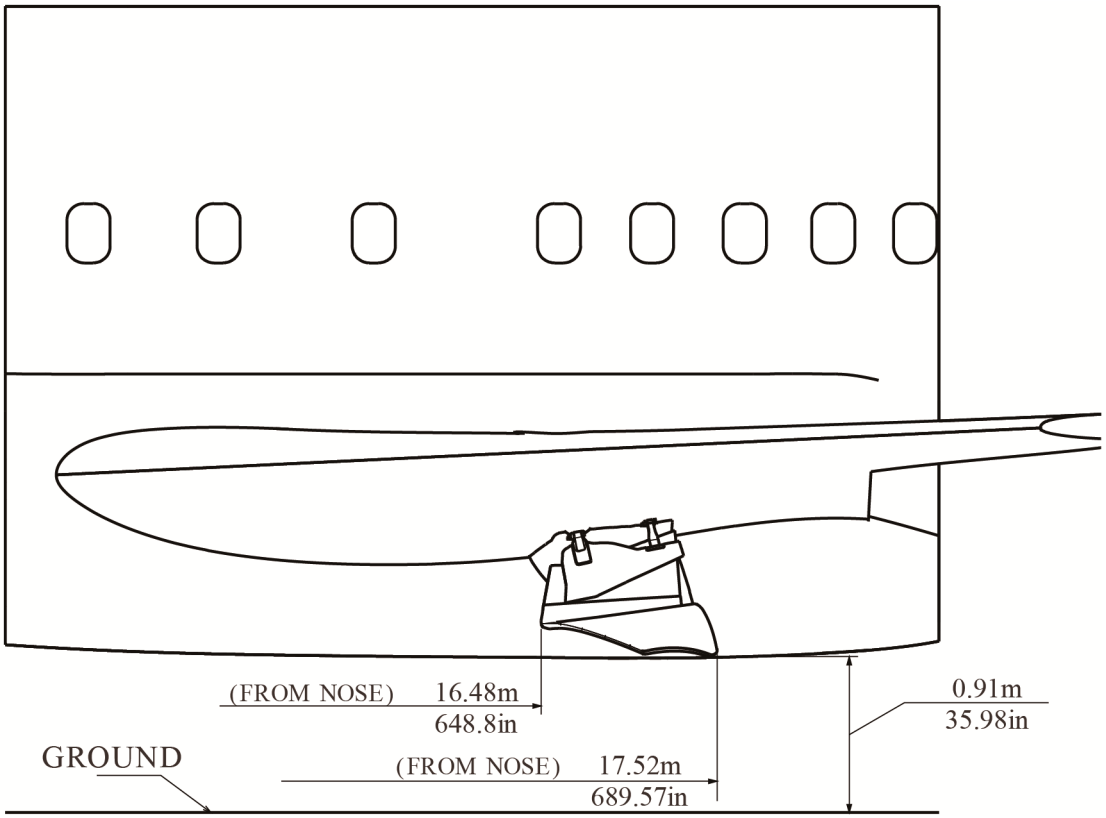
ICN-ARJ21-A-192002-A-SVV19-10744-A-001-01

Figure 9 ARJ21-700 Nose Landing Gear Door Clearances (Sheet 2 of 3)



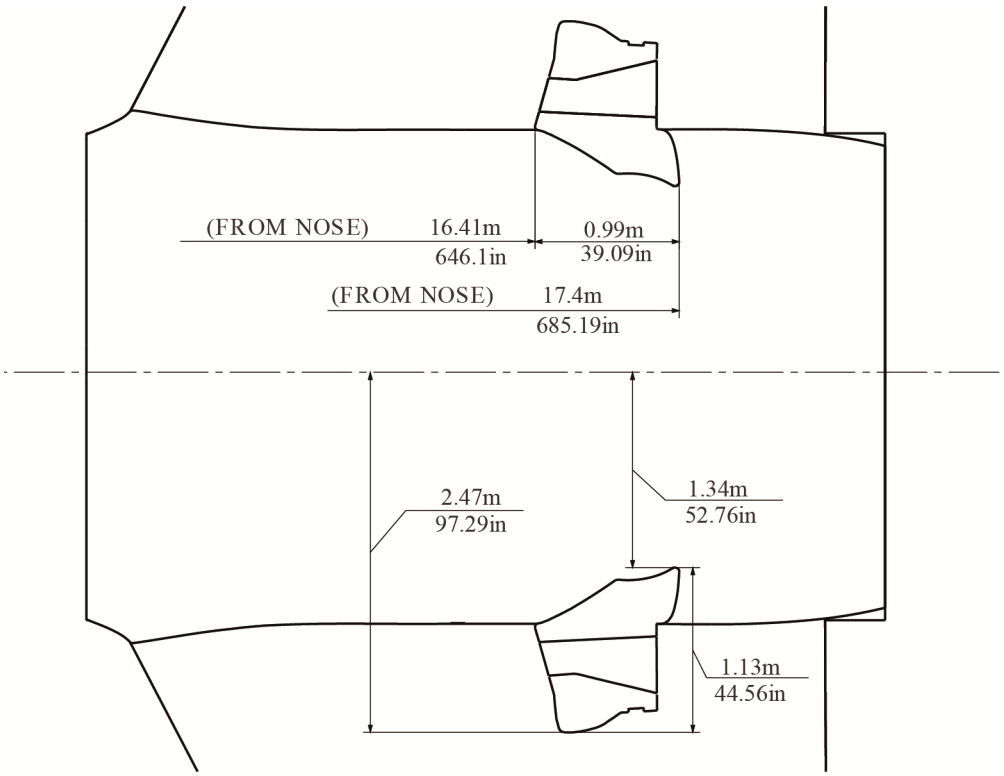
ICN-ARJ21-A-192002-A-SVV19-10745-A-001-01

Figure 9 ARJ21-700 Nose Landing Gear Door Clearances (Sheet 3 of 3)



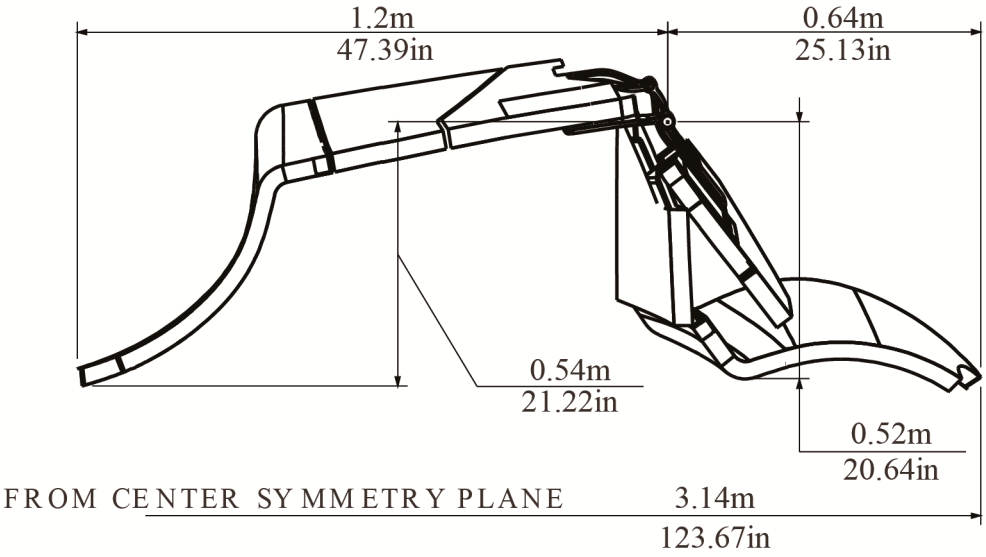
ICN-ARJ21-A-192002-A-SVV19-10746-A-001-01

Figure 10 ARJ21-700 Main Landing Gear Door Clearance (Sheet 1 of 3)



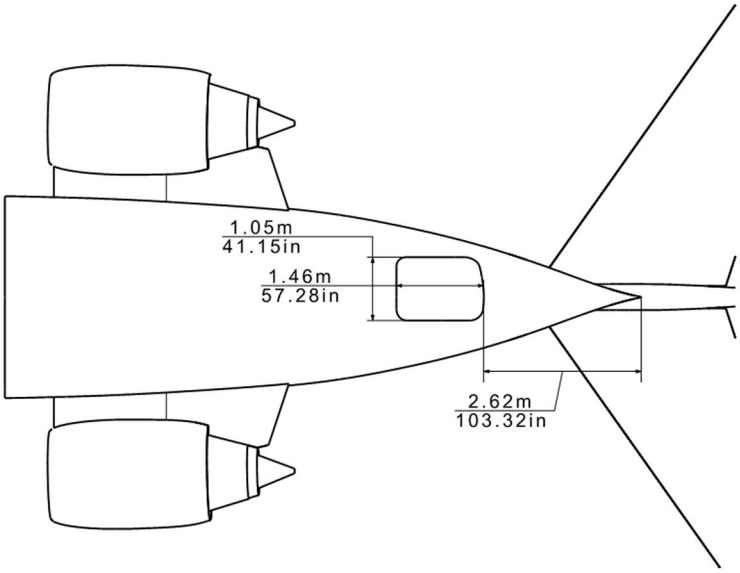
ICN-ARJ21-A-192002-A-SVV19-10747-A-001-01

Figure 10 ARJ21-700 Main Landing Gear Door Clearance (Sheet 2 of 3)



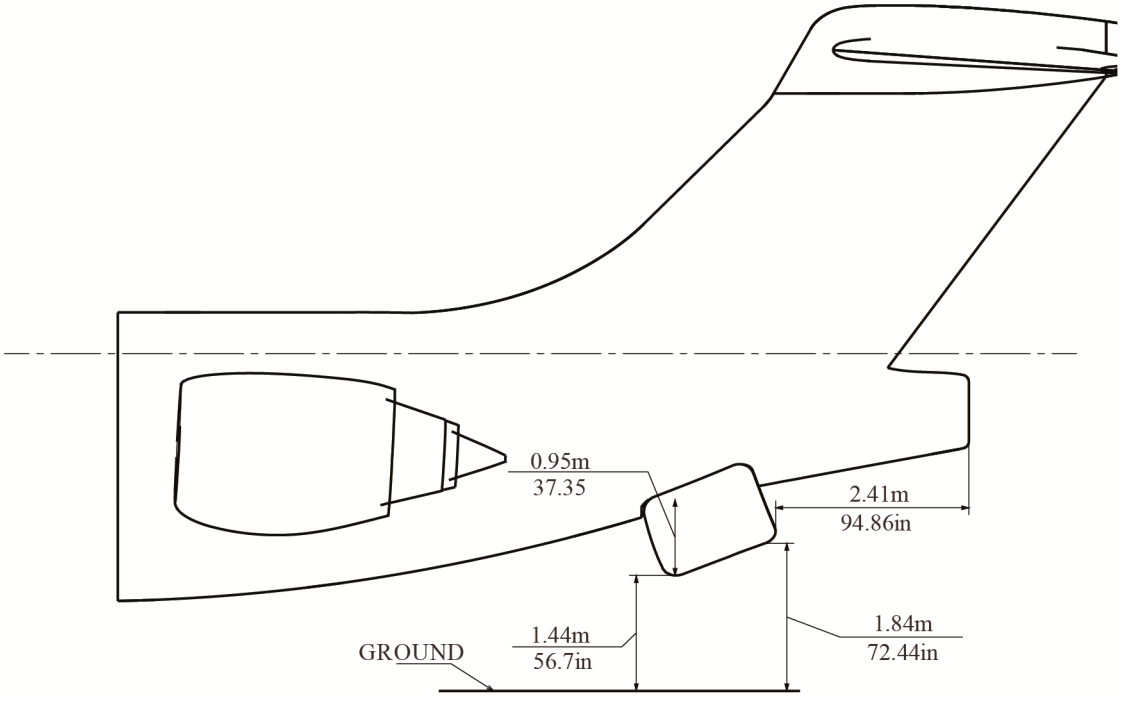
ICN-ARJ21-A-192002-A-SVV19-10748-A-001-01

Figure 10 ARJ21-700 Main Landing Gear Door Clearance (Sheet 3 of 3)



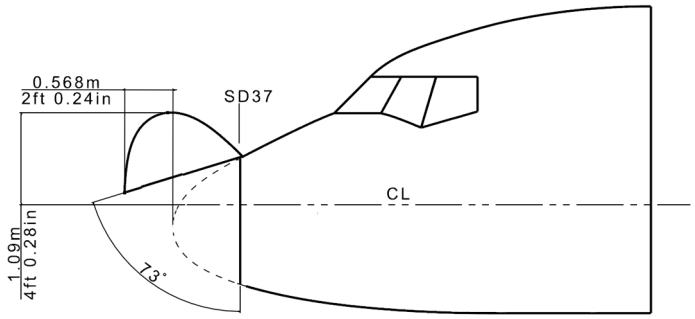
ICN-ARJ21-A-192002-A-SVV19-10749-A-001-01

Figure 11 ARJ21-700 APU Door Clearance (Sheet 1 of 2)



ICN-ARJ21-A-192002-A-SVV19-10752-A-001-01

Figure 11 ARJ21-700 APU Door Clearance (Sheet 2 of 2)



ICN-ARJ21-A-192002-A-SVV19-10753-A-001-01

Figure 12 ARJ21-700 Radome Clearances (Sheet 1 of 1)

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Jacking

1. Jacking for Maintenance

A. General

The aircraft maximum weight for jacking is **33000 kg**(**72753 lb**).

Do not jack the aircraft when the wind speed is above **10 m/s**.

The airplane has three main jacking points and one auxiliary jacking point. The main jacking points are the wing jacking points and the mid-aft body jacking point. The auxiliary jack point is the fwd fuselage jacking point, and is used to make the aircraft stable.

If you will do the complete aircraft jacking, make sure there is a minimum of **50 mm**(**1.97 in**) of tire clearance between the tire and ground surface. If you will retract or extend the landing gear, make sure there is a minimum of **100 mm**(**3.94 in**) of tire clearance between the tire and ground surface.

B. Aircraft Jacking Points

(1) Primary Jacking Points

The aircraft is provided with three primary jacking points:

- One located under the AFT fuselage.
- Two located under the wings (one under each wing).

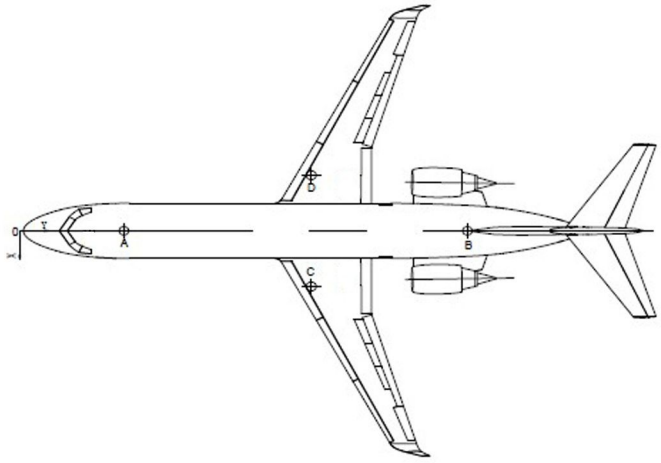
The jack pad of primary jacking points is the spherical jack top in accordance with ISO43-1976 standard, with a radius of **19.1 mm**(**0.75 in**), the top head of the jack adopts the nest structure.

(2) Auxiliary Jacking Points

One located under the FWD fuselage.

Use the three primary jack the aircraft, during jacking, the auxiliary jack under the FWD fuselage without being forced with the aircraft lifting , and play the role of auxiliary support and insurance.

The jack pad of auxiliary jacking points is the spherical jack top in accordance with ISO43-1976 standard, with a radius of **19.1 mm**(**0.75 in**), the top head of the jack adopts the nest structure.



ICN-ARJ21-A-192002-A-SVV19-92265-A-001-01

Figure 1 Location of Jacking Points (Sheet 1 of 1)

Jacking Points		Maximum Permitted Loads (kg/lb)	Jacking Location		
			X(mm/in)	Y(mm/in)	Z(mm/in)
FWD fuselage	A	5969/13159.26	0/0	5507/216.81	-1265/-49.8
AFT fuselage	B	7980/17592.71	0/0	23670931.89	-901/-35.47
Left Wing	C	20333/44826.13	3395/133.67	15134/595.83	-621/-24.45
Right Wing	D	20333/44826.13	-3395/-133.67	15134/595.83	-621/-24.45

NOTE: Safety stay is not used for jacking.

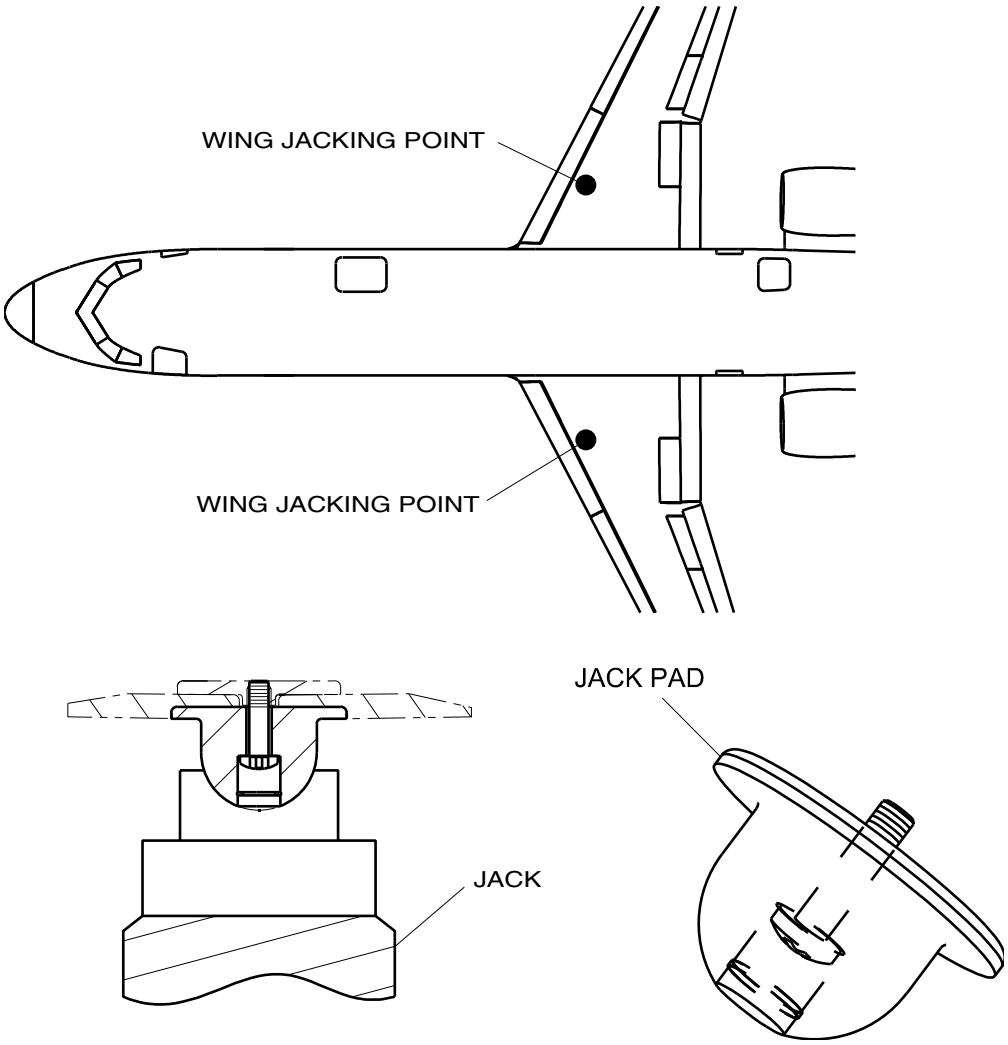


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Figure 2 Wing Jack Point (Sheet 1 of 1)

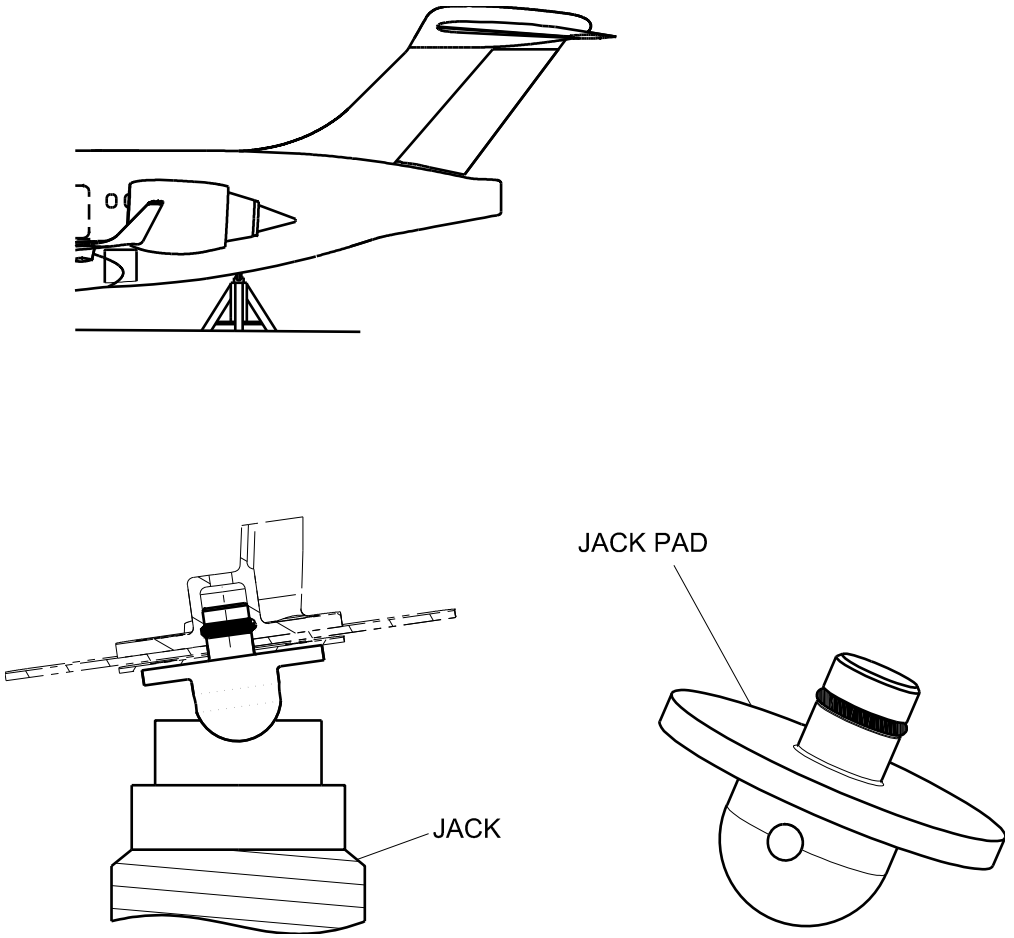

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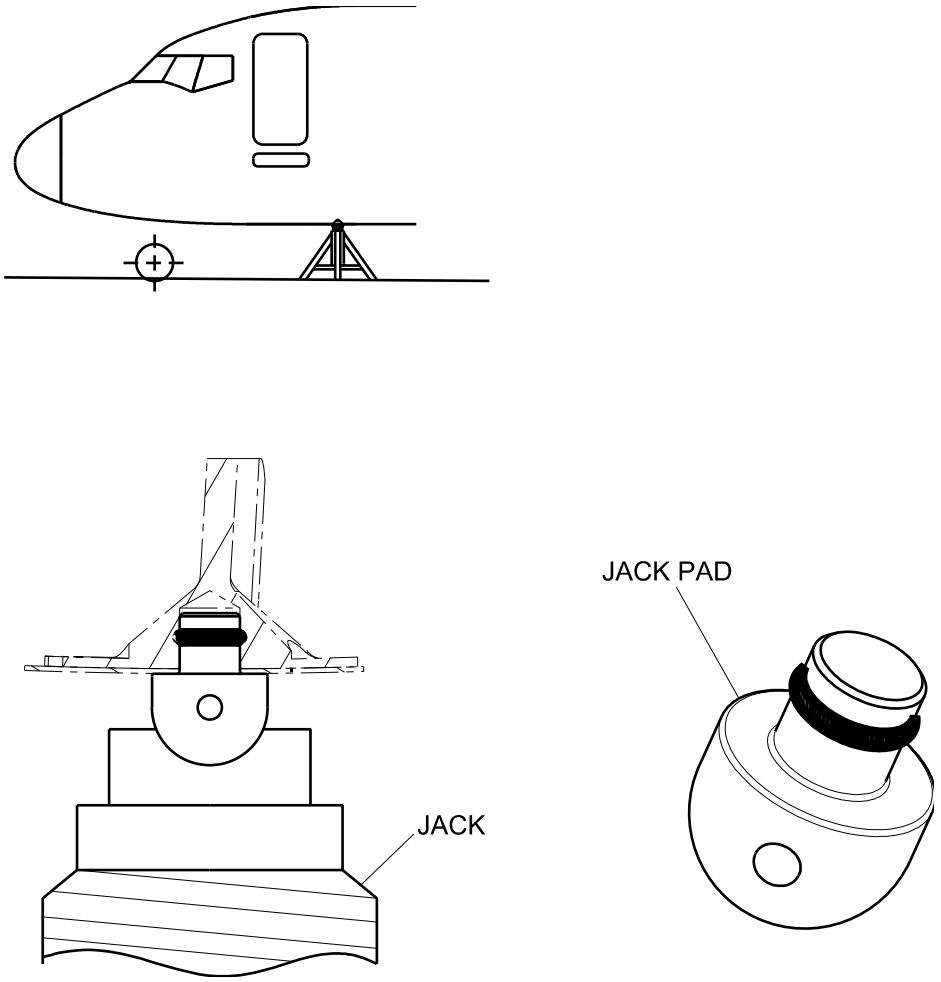
Figure 3 AFT Fuselage Jack Point (Sheet 1 of 1)



ICN-ARJ21-A-192002-A-SVV19-92268-A-001-01

Figure 4 FWD Fuselage Jack Point (Sheet 1 of 1)

2. Jacking of the Landing Gear

The aircraft maximum weight for jacking is **43580 kg**(**96077 lb**), the FWD CG limit is **3%** MAC, the AFT CG limit is **31%** MAC.

Jacking refer to AMM 07 Lifting and Shoring.

When you jack the main landing gear for the maintenance of the wheel and tire or brake assembly, make sure that there is a minimum of **25 mm**(**0.98 in**) of clearance between the main landing gear and the ground.

Follow these safety instructions when you jack the aircraft on the axle jacks:

(1) Jack only one landing gear axle at a time.

(2) Make sure that the aircraft is turned into the wind if it is possible, when it is out of the hangar.

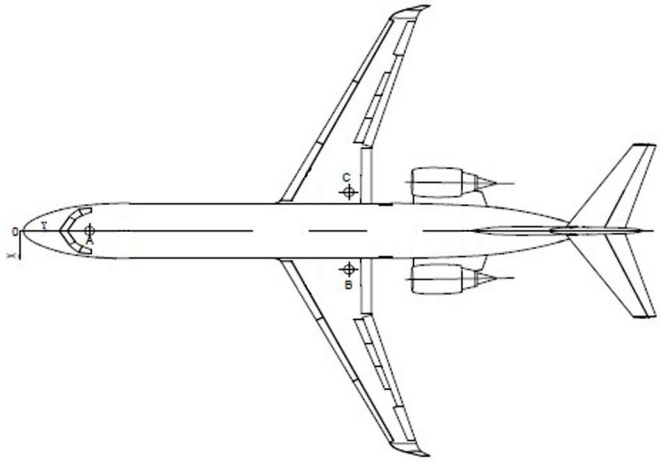


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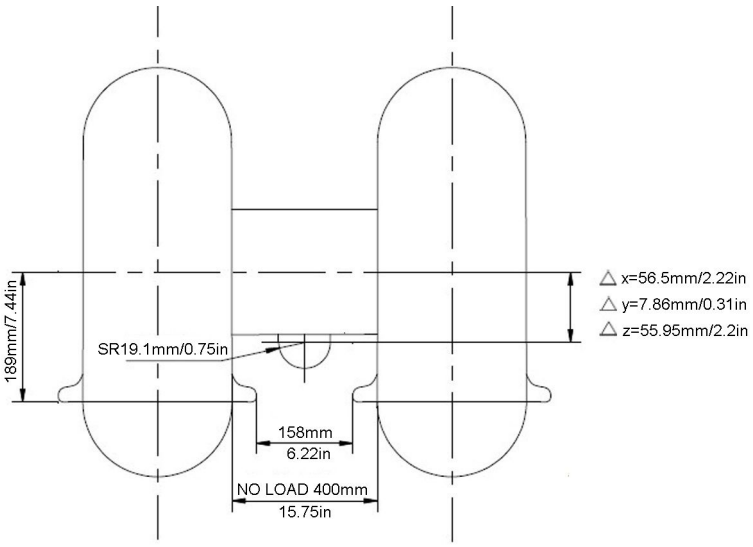
Figure 5 Location of Jacking Points (Sheet 1 of 1)

Jacking Points		Maximum Permitted Loads (kg/lb)	Jacking Location		
			X(mm/in)	Y(mm/in)	Z(mm/in)
Nose Landing Gear	A	6044/13324.6	0	--	--
Left Main Landing Gear	B	27331/60253.92	2340/92.13	--	--
Right Main Landing Gear	C	27331/60253.92	-2340/-92.13	--	--

The jack pad of each landing gear is the spherical jack top in accordance with ISO43-1976 standard, with a radius of **19.1 mm**(**0.75 in**), the top head of the jack adopts the nest structure.



Note: a) Dismensions 189 mm/7.44 in and 158 mm/6.22 in in the figure are mas ured when the tire is deflated and flatttened.
b) Nominal tire diameter is 609.6 mm/ 24 in.

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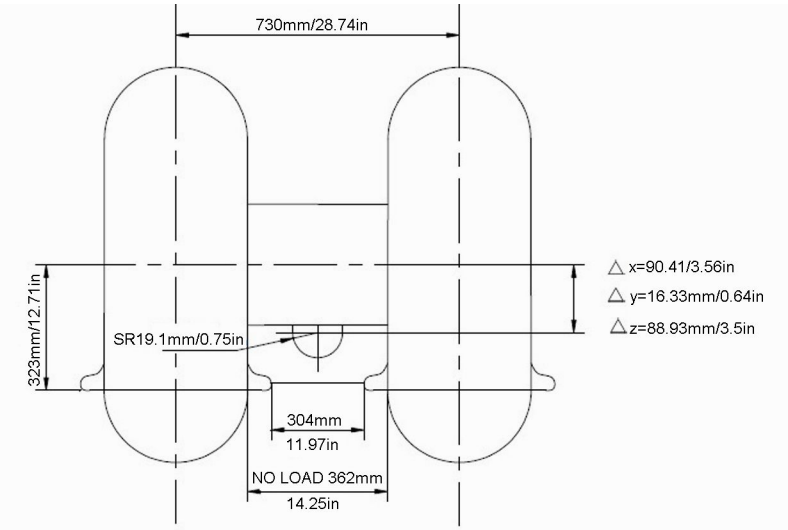
Figure 6 Nose Landing Gear Jacking (Sheet 1 of 1)



NOTE: a)Dimensions 323 mm/12.71 in and 304mm/11.97 in in the figure are measured when the tire is deflated and flattended.
b)Nominal tire diameter is 1016 mm/40 in.

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Figure 7 Main Landing Gear Jacking (Sheet 1 of 1)

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Parking and Mooring

1. Parking and Mooring

When the aircraft is parked, necessary precautions should be taken to ensure the safety of the aircraft and personnel, and these precautions may vary, depending on weather conditions aircraft parking/ mooring duration. In order to protect the aircraft to the maximum extent in severe weather/high wind conditions, the aircraft should be parked in hangar. If there is no hangar for parking the aircraft, the aircraft should be parked windward. If there is no hangar for parking the aircraft, the aircraft should be parked windward. If there is no hangar for parking the aircraft, the aircraft should be parked windward. If there is no hangar for parking the aircraft, the aircraft should be parked windward.

The maximum weight for aircraft parking and mooring is the maximum design taxi weight, the maximum weight for aircraft mooring is the operational empty weight, and the aircraft's CG position shall meet the requirements of the aircraft's CG envelope.

Equipment required for parking the aircraft is as follows:

- Nose Landing Gear Downlock Pin
- Main Landing Gear Ground Lock Pin
- Wheel Chock
- Ground Wire
- Cover, Blanking Cap and Plug

Additional equipment required for mooring the aircraft is as follows:

- Nose Landing Gear Mooring Set
- Main Landing Gear Mooring Set
- Wing Mooring Set
- Mid-Aft Fuselage Mooring Set

Aircraft mooring procedure refer to AMM 10 Parking and Mooring.

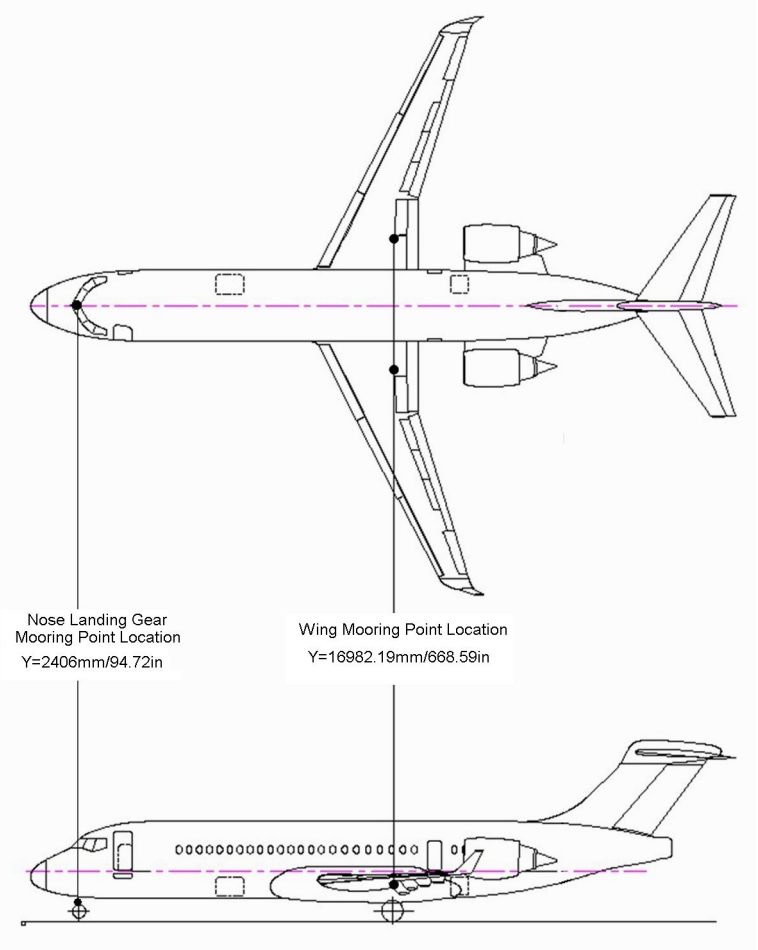
2. Mooring Point Locations

Aircraft left and right wing lower surface each set one mooring point, AFT fuselage set one mooring point, wing and AFT fuselage mooring points set installation holes of mooring fitting.

Aircraft left and right main landing gear mooring points and nose landing gear mooring point each set one mooring point, special mooring lug vertical are set in left and right main landing gear and nose landing gear shock strut.

Table 1 Aircraft Mooring Point Locations

Mooring Point	Mooring Point Locations		
	X(mm/in)	Y(mm/in)	Z(mm/in)
Left Wing Mooring Points	+3291/+129.57	16982/668.59	-632/-24.88
Right Wing Mooring Points	-3291/-129.57	16982/668.59	-632/-24.88
Nose Landing Gear Mooring Points	0	2406/94.72	1380/54.33



ICN-ARJ21-A-192002-A-SVV19-92276-A-002-01

Figure 1 Aircraft Mooring Point Station (Unit: mm) (Sheet 1 of 1)

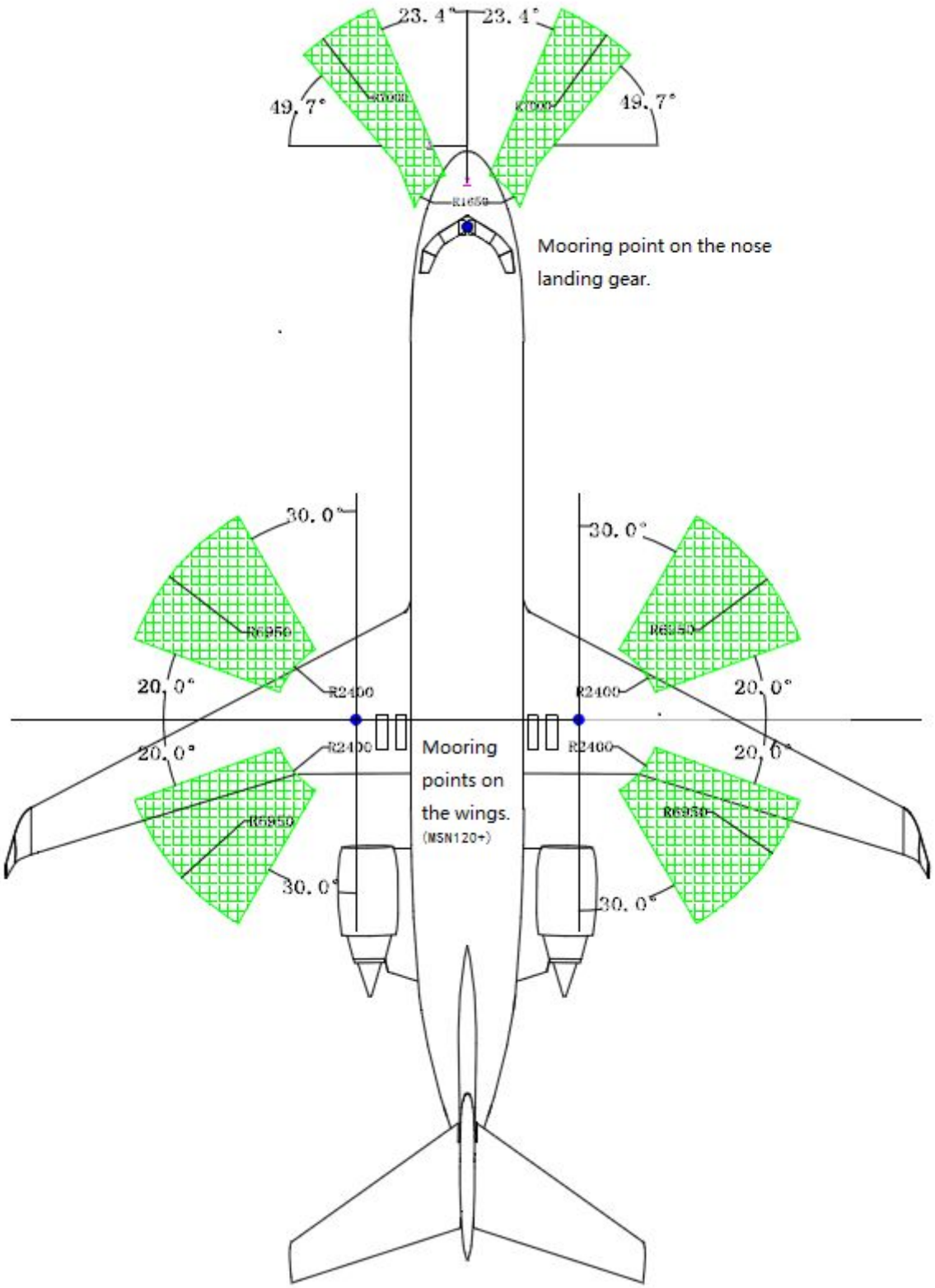


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Figure 2 Available Mooring Ground Anchor Area Diagram (Unit: mm) (Sheet 1 of 1)

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Chapter 3
Aircraft Performacne

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contents

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General

The following table shows Metric and Imperial System conversion of altitudes and temperatures in ISA:

Table 1 Metric and Imperial System Conversion of Altitudes and Temperatures in ISA

Metric and Imperial System Conversion of Altitudes and Temperatures in ISA			
Altitudes Conversion		**Temperature Conversion**	
ft	m	°F	°C
0	0	59.0	15.0
2,000	610	51.9	11.0
4,000	1,219	44.7	7.1
6,000	1,829	37.6	3.1
8,000	2,438	30.5	-0.8
10,000	3,048	23.3	-4.8
12,000	3,658	16.2	-8.8
13,500	4,115	10.9	-11.7

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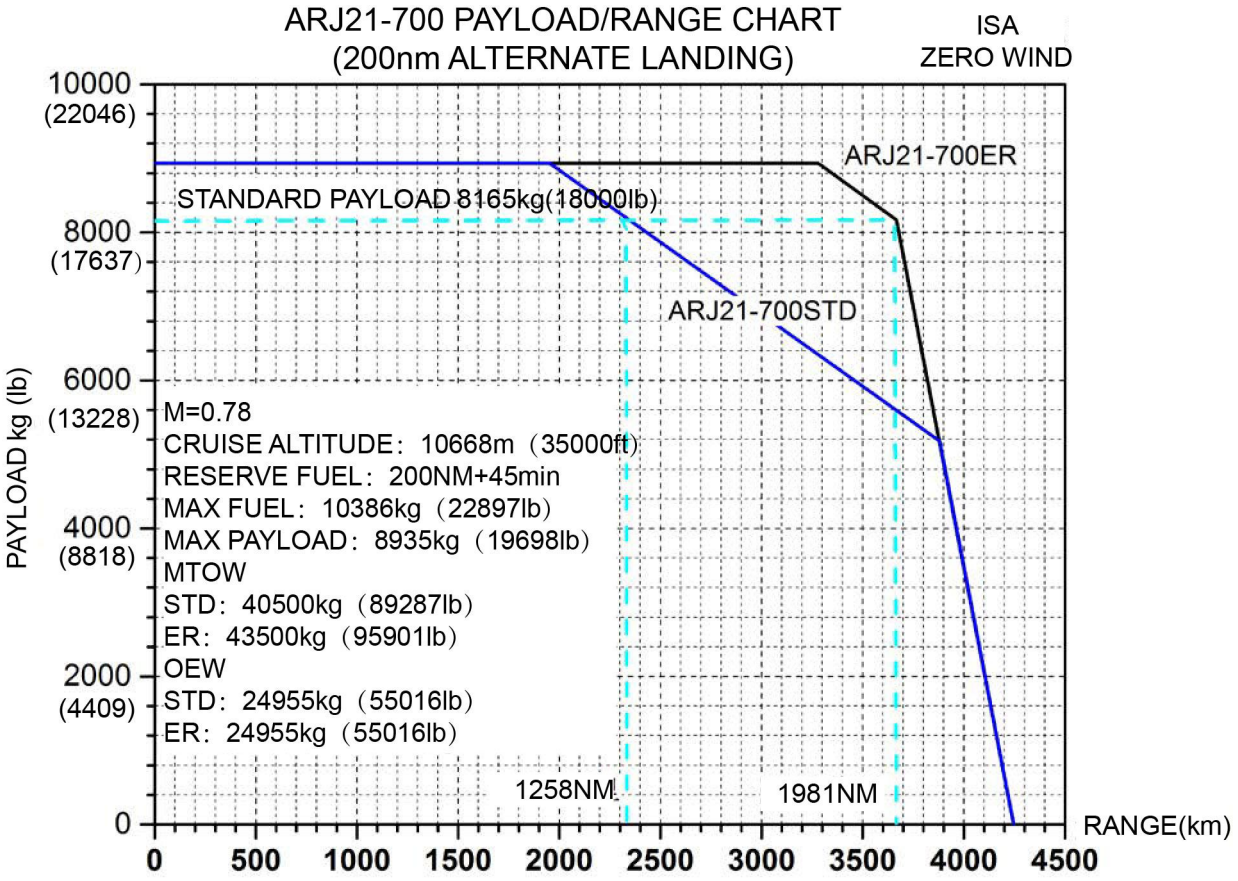
Payload/Range

This section provides the Payload/Range Chart in ISA conditions.

The payload/range capability of ARJ21-700STD and ARJ21-700ER in the regular condition with reserve fuel for 200NM and waiting reserve fuel for 45 minutes are given, and the details are shown in figure 1 and 2.



ICN-ARJ21-A-192003-A-SVV19-10756-A-002-01

Figure 1 ARJ21-700 Payload Range (Full Economy/Mixed Class) (Sheet 1 of 1)

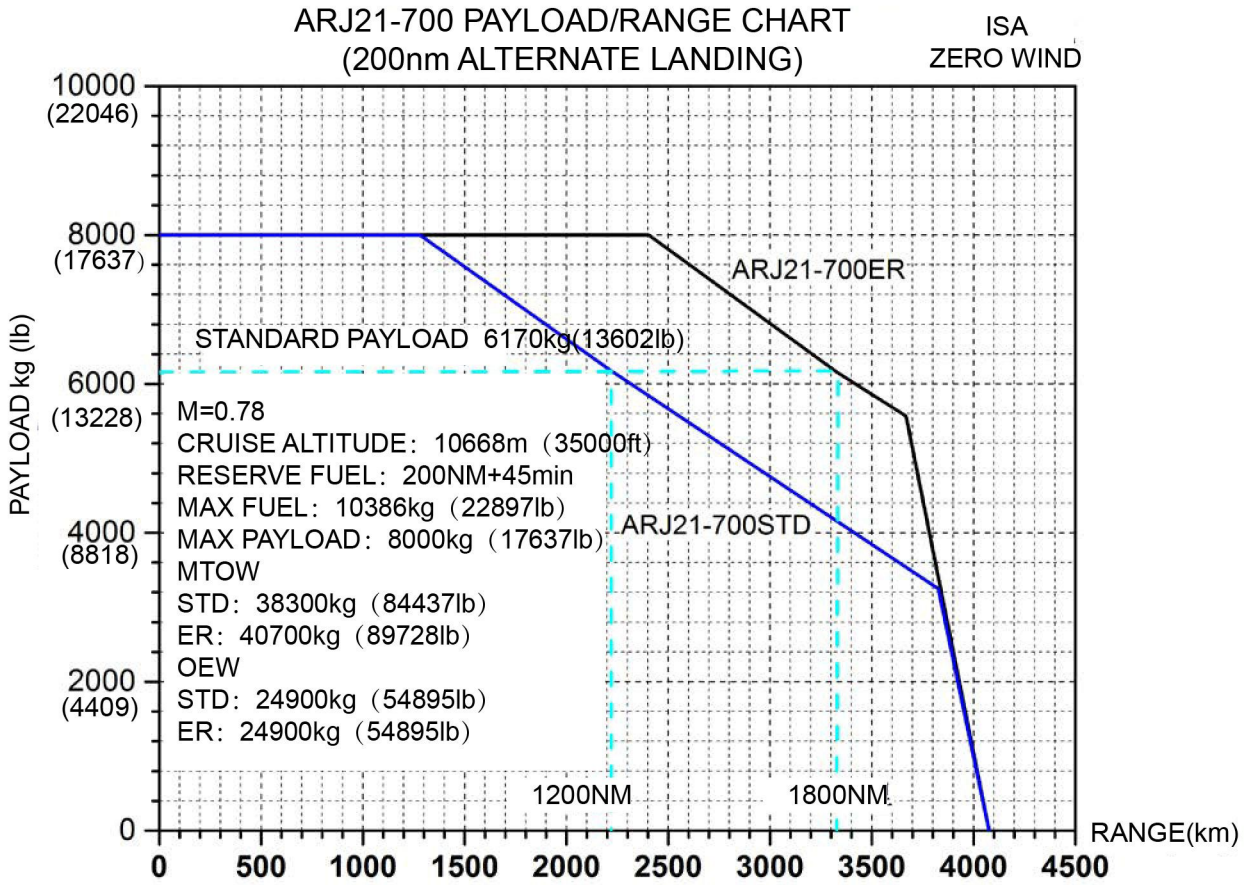


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Figure 2 AR21-700 Payload Range (Premium Economy Class) (Sheet 1 of 1)

Take-Off Field Length

Accelerate-abort distance is determined in accordance with the conditions specified by CCAR25.109, and takeoff distance and takeoff roll distance are determined in accordance with CCAR25.113. The takeoff field length is the longest one among the three data. Refer to Table 1.

1. Calculation Contents and Conditions

The table of takeoff performance covers takeoff field length calculation results at different weights, different airport altitudes and different air temperatures.

A. Calculation Conditions:

(1) Takeoff Flap: Detent 2

(2) Dry Smooth Runway, Zero Wind and No Slope

B. Engine Bleed Air Status:

(1) Double Engine NTO: Air conditioning ON, wing anti-ice and nacelle anti-ice OFF.

(2) Single Engine APR: Air conditioning, wing anti-ice and nacelle anti-ice OFF.

2. Takeoff Field Length Calculation Results

Takeoff performance is calculated in accordance with the chart in Aircraft Flight Manual. For facilitate data query, the table of takeoff field length data is also provided.

Table 1 ARJ21-700 Takeoff Field Length——m(ft)

Weight kg (lb)	ΔT(℃)									
	ISA	ISA+10	ISA+20	ISA+30	ISA+40	ISA	ISA+10	ISA+20	ISA+30	ISA+40
	H=0 m(0 ft)					H=1000 m(3281 ft)				
30500 (67241)	1223 (4012)	1256 (4121)	1279 (4196)	1356 (4449)	1512 (4961)	1319 (4327)	1359 (4459)	1371 (4498)	1525 (5003)	1709 (5607)
31500 (69446)	1232 (4042)	1266 (4154)	1291 (4236)	1438 (4718)	1605 (5266)	1332 (4370)	1372 (4501)	1449 (4754)	1619 (5312)	1816 (5958)
32500 (71650)	1242 (4075)	1276 (4186)	1356 (4449)	1523 (4997)	1701 (5581)	1384 (4541)	1428 (4685)	1534 (5033)	1716 (5630)	1928 (6325)
33500 (73855)	1273 (4177)	1313 (4308)	1433 (4701)	1611 (5285)	1802 (5912)	1463 (4800)	1510 (4954)	1623 (5325)	1817 (5961)	2045 (6709)
34500 (76059)	1341 (4400)	1383 (4537)	1512 (4961)	1702 (5584)	1906 (6253)	1544 (5066)	1594 (5230)	1714 (5623)	1921 (6302)	2166 (7106)
35500 (78264)	1410 (4626)	1456 (4777)	1594 (5230)	1796 (5892)	2015 (6611)	1628 (5341)	1680 (5512)	1809 (5935)	2029 (6657)	2292 (7520)
36500 (80469)	1482 (4862)	1530 (5020)	1678 (5505)	1894 (6214)	2127 (6978)	1714 (5623)	1770 (5807)	1906 (6253)	2142 (7028)	2424 (7953)
37500 (82673)	1556 (5105)	1607 (5272)	1765 (5791)	1995 (6545)	2244 (7362)	1803 (5915)	1862 (6109)	2007 (6585)	2258 (7408)	2561 (8402)

38500 (84878)	1633 (5358)	1686 (5531)	1854 (6083)	2100 (6890)	2366 (7762)	1895 (6217)	1958 (6424)	2112 (6929)	2379 (7805)	2703 (8868)
39500 (87083)	1711 (5614)	1767 (5797)	1947 (6388)	2208 (7244)	2493 (8179)	1990 (6529)	2056 (6745)	2220 (7283)	2505 (8219)	2851 (9354)
40500 (89287)	1792 (5879)	1851 (6073)	2043 (6703)	2321 (7615)	2624 (8609)	2088 (6850)	2158 (7080)	2332 (7651)	2635 (8645)	3006 (9862)
41500 (91492)	1875 (6152)	1937 (6355)	2142 (7028)	2438 (7999)	2761 (9058)	2189 (7182)	2263 (7425)	2447 (8028)	2770 (9088)	3167 (10390)
42500 (93696)	1960 (6430)	2026 (6647)	2244 (7362)	2558 (8392)	2903 (9524)	2293 (7523)	2371 (7779)	2567 (8422)	2910 (9547)	3335 (10942)
43500 (95901)	2049 (6722)	2118 (6949)	2349 (7707)	2684 (8806)	3051 (10010)	2401 (7877)	2484 (8150)	2691 (8829)	3056 (10026)	3520 (11549)
	H=2000 m(6562 ft)					H=2438 m(8000ft)				
30500 (67241)	1418 (4652)	1462 (4797)	1566 (5138)	1756 (5761)	1967 (6453)	1534 (5033)	1583 (5194)	1695 (5561)	1904 (6247)	2138 (7014)
31500 (69446)	1503 (4931)	1551 (5089)	1662 (5453)	1866 (6122)	2094 (6870)	1627 (5338)	1679 (5509)	1800 (5906)	2025 (6644)	2278 (7474)
32500 (71650)	1592 (5223)	1643 (5390)	1762 (5781)	1981 (6499)	2226 (7303)	1724 (5656)	1779 (5837)	1909 (6263)	2151 (7057)	2424 (7953)
33500 (73855)	1683 (5522)	1737 (5699)	1865 (6119)	2100 (6890)	2363 (7753)	1824 (5984)	1883 (6178)	2022 (6634)	2282 (7487)	2577 (8455)
34500 (76059)	1778 (5833)	1836 (6024)	1972 (6470)	2223 (7293)	2507 (8225)	1927 (6322)	1991 (6532)	2139 (7018)	2419 (7936)	2736 (8976)
35500 (78264)	1875 (6152)	1937 (6355)	2082 (6831)	2352 (7717)	2657 (8717)	2034 (6673)	2102 (6896)	2261 (7418)	2562 (8406)	2903 (9524)
36500 (80469)	1976 (6483)	2042 (6699)	2197 (7208)	2486 (8156)	2814 (9232)	2146 (7041)	2217 (7274)	2388 (7835)	2710 (8891)	3077 (10095)
37500 (82673)	2081 (6827)	2151 (7057)	2316 (7598)	2625 (8612)	2977 (9767)	2261 (7418)	2337 (7667)	2519 (8264)	2865 (9400)	3259 (10692)
38500 (84878)	2189 (7182)	2263 (7425)	2439 (8002)	2770 (9088)	3147 (10325)	2380 (7808)	2461 (8074)	2655 (8711)	3026 (9928)	3450 (11319)
39500 (87083)	2301 (7549)	2379 (7805)	2567 (8422)	2920 (9580)	3325 (10909)	2503 (8212)	2589 (8494)	2797 (9177)	3194 (10479)	3649 (11972)
40500 (89287)	2417 (7930)	2499 (8199)	2699 (8855)	3077 (10095)	3511 (11519)	2631 (8632)	2722 (8930)	2944 (9659)	3368 (11050)	3871 (12700)
41500 (91492)	2537 (8323)	2624 (8609)	2837 (9308)	3239 (10627)	3708 (12165)	2764 (9068)	2859 (9380)	3096 (10157)	3551 (11650)	4101 (13455)

42500 (93696)	2661 (8730)	2753 (9032)	2979 (9774)	3409 (11184)	3923 (12871)	2901 (9518)	3002 (9849)	3254 (10676)	3741 (12274)	4342 (14245)
43500 (95901)	2789 (9150)	2886 (9469)	3126 (10256)	3585 (11762)	4146 (13602)	3043 (9984)	3150 (10335)	3419 (11217)	3942 (12933)	4594 (15072)
	H=3000 m(9843ft)					H=4114 m(13500ft)				
30500 (67241)	1691 (5548)	1746 (5728)	1867 (6125)	2098 (6883)	2369 (7772)	2063 (6768)	2134 (7001)	2282 (7487)	2556 (8386)	2918 (9573)
31500 (69446)	1796 (5892)	1855 (6086)	1984 (6509)	2233 (7326)	2527 (8291)	2193 (7195)	2270 (7448)	2429 (7969)	2727 (8947)	3122 (10243)
32500 (71650)	1904 (6247)	1967 (6453)	2106 (6909)	2375 (7792)	2693 (8835)	2330 (7644)	2412 (7913)	2584 (8478)	2907 (9537)	3336 (10945)
33500 (73855)	2016 (6614)	2083 (6834)	2233 (7326)	2523 (8278)	2866 (9403)	2471 (8107)	2559 (8396)	2744 (9003)	3094 (10151)	3562 (11686)
34500 (76059)	2132 (6995)	2204 (7231)	2365 (7759)	2677 (8783)	3048 (10000)	2619 (8593)	2713 (8901)	2912 (9554)	3291 (10797)	3800 (12467)
35500 (78264)	2253 (7392)	2330 (7644)	2502 (8209)	2837 (9308)	3239 (10627)	2773 (9098)	2873 (9426)	3087 (10128)	3497 (11473)	4062 (13327)
36500 (80469)	2378 (7802)	2460 (8071)	2645 (8678)	3005 (9859)	3438 (11280)	2933 (9623)	3039 (9970)	3270 (10728)	3713 (12182)	4340 (14239)
37500 (82673)	2508 (8228)	2595 (8514)	2793 (9163)	3180 (10433)	3647 (11965)	3100 (10171)	3213 (10541)	3460 (11352)	3940 (12927)	4632 (15197)
38500 (84878)	2643 (8671)	2736 (8976)	2947 (9669)	3363 (11033)	3878 (12723)	3274 (10741)	3394 (11135)	3660 (12008)	4177 (13704)	4939 (16204)
39500 (87083)	2783 (9131)	2881 (9452)	3107 (10194)	3554 (11660)	4122 (13524)	3456 (11339)	3583 (11755)	3867 (12687)	4427 (14524)	-
40500 (89287)	2929 (9610)	3032 (9948)	3274 (10741)	3753 (12313)	4376 (14357)	3645 (11959)	3779 (12398)	4084 (13399)	4701 (15423)	-
41500 (91492)	3080 (10105)	3189 (10463)	3448 (11312)	3961 (12995)	4642 (15230)	3841 (12602)	3984 (13071)	4311 (14144)	4988 (16365)	-
42500 (93696)	3237 (10620)	3353 (11001)	3628 (11903)	4187 (13737)	4921 (16145)	4047 (13278)	4198 (13773)	4548 (14921)	-	-
43500 (95901)	3399 (11152)	3522 (11555)	3816 (12520)	4426 (14521)	-	4261 (13980)	4420 (14501)	4795 (15732)	-	-

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Landing Field Length

Landing performance covers landing field length for ARJ21-700 at different weights and different airport altitudes. Refer to Table 1 and 2.

1. Calculation Methods and Conditions

According to CCAR25.125, landing distance is the horizontal distance required for aircraft landing from a 15 (50) height above landing surface to a full stop. To ensure safe landing within available runway length, the required landing field length is the actual landing distance divided by 0.6 in accordance with CCAR121.195. The landing field length given by the calculation meets this requirement. Thrust reverser is not considered in the landing process during calculation.

Landing performance covers landing field length at different weights and different airport altitudes.

Calculation Conditions:

A. Landing Flaps: Detent 3 and 4.

B. Dry Smooth Runway, Zero Wind and No Slope

C. Air Temperature: ISA

D. Deceleration Measure: Use speedbrake and manual brake instead of thrust reverser.

NOTE: Since the effect of different air temperature on landing field length is small, only ISA is considered.

2. Landing Field Length Calculation Results

Table 1 ARJ21-700 Landing Field Length with Flap at Detent 3——m (ft)

Weight kg (lb)	Airport Pressure Altitude						
	0 m (0 ft)	1000 m (3281 ft)	2000 m (6562 ft)	2438 m (8000 ft)	3000 m (9843 ft)	4000 m (13123 ft)	4114 m (13500 ft)
30000 (66139)	1512 (4961)	1629 (5344)	1759 (5771)	1821 (5974)	1906 (6253)	2071 (6795)	2091 (6860)
31000 (68343)	1552 (5092)	1672 (5486)	1807 (5928)	1871 (6138)	1958 (6424)	2128 (6982)	2149 (7051)
32000 (70548)	1591 (5220)	1715 (5627)	1854 (6083)	1920 (6299)	2011 (6598)	2187 (7175)	2208 (7244)
33000 (72753)	1631 (5351)	1758 (5768)	1902 (6240)	1970 (6463)	2063 (6768)	2245 (7365)	2267 (7438)
34000 (74957)	1671 (5482)	1802 (5912)	1950 (6398)	2021 (6631)	2116 (6942)	2304 (7559)	2327 (7635)
35000 (77162)	1711 (5614)	1846 (6056)	1998 (6555)	2071 (6795)	2170 (7119)	2364 (7756)	2388 (7835)
36000 (79366)	1751 (5745)	1890 (6201)	2047 (6716)	2122 (6962)	2224 (7297)	2424 (7953)	2449 (8035)

Weight kg (lb)	Airport Pressure Altitude						
	0 m (0 ft)	1000 m (3281 ft)	2000 m (6562 ft)	2438 m (8000 ft)	3000 m (9843 ft)	4000 m (13123 ft)	4114 m (13500 ft)
37000 (81571)	1791 (5876)	1934 (6345)	2096 (6877)	2173 (7129)	2278 (7474)	2485 (8153)	2510 (8235)
37665 (83037)	1818 (5965)	1964 (6444)	2129 (6985)	2207 (7241)	2315 (7595)	2525 (8284)	2551 (8369)
38000 (83776)	1831 (6007)	1979 (6493)	2145 (7037)	2225 (7300)	2333 (7654)	2546 (8353)	2572 (8438)
39000 (85980)	1872 (6142)	2023 (6637)	2195 (7201)	2277 (7470)	2388 (7835)	2608 (8556)	2635 (8645)
40000 (88185)	1913 (6276)	2068 (6785)	2245 (7365)	2329 (7641)	2444 (8018)	2671 (8763)	2698 (8852)
40455 (89188)	1931 (6335)	2089 (6854)	2268 (7441)	2353 (7720)	2470 (8104)	2699 (8855)	2728 (8950)

Table 2 ARJ21-700 Landing Field Length with Flap at Detent 4——m (ft)

Weight kg (lb)	Airport Pressure Altitude						
	0 m (0 ft)	1000 m (3281 ft)	2000 m (6562 ft)	2438 m (8000 ft)	3000 m (9843 ft)	4000 m (13123 ft)	4114 m (13500 ft)
30000 (66139)	1395 (4577)	1503 (4931)	1625 (5331)	1683 (5522)	1762 (5781)	1916 (6286)	1935 (6348)
31000 (68343)	1431 (4695)	1542 (5059)	1668 (5472)	1728 (5669)	1809 (5935)	1969 (6460)	1989 (6526)
32000 (70548)	1467 (4813)	1582 (5190)	1712 (5617)	1774 (5820)	1858 (6096)	2023 (6637)	2044 (6706)
33000 (72753)	1504 (4934)	1622 (5322)	1756 (5761)	1820 (5971)	1907 (6257)	2078 (6818)	2099 (6886)
34000 (74957)	1540 (5052)	1662 (5453)	1800 (5906)	1866 (6122)	1956 (6417)	2133 (6998)	2154 (7067)
35000 (77162)	1577 (5174)	1703 (5587)	1845 (6053)	1913 (6276)	2006 (6581)	2188 (7178)	2210 (7251)
36000 (79366)	1614 (5295)	1743 (5719)	1890 (6201)	1960 (6430)	2055 (6742)	2244 (7362)	2267 (7438)
37000 (81571)	1651 (5417)	1784 (5853)	1935 (6348)	2007 (6585)	2106 (6909)	2300 (7546)	2324 (7625)
37665 (83037)	1675 (5495)	1811 (5942)	1965 (6447)	2039 (6690)	2139 (7018)	2338 (7671)	2362 (7749)

Weight kg (lb)	Airport Pressure Altitude						
	0 m (0 ft)	1000 m (3281 ft)	2000 m (6562 ft)	2438 m (8000 ft)	3000 m (9843 ft)	4000 m (13123 ft)	4114 m (13500 ft)
38000 (83776)	1688 (5538)	1825 (5988)	1980 (6496)	2055 (6742)	2156 (7073)	2357 (7733)	2382 (7815)
39000 (85980)	1725 (5659)	1866 (6122)	2026 (6647)	2103 (6900)	2207 (7241)	2414 (7920)	2440 (8005)
40000 (88185)	1762 (5781)	1907 (6257)	2072 (6798)	2151 (7057)	2259 (7411)	2472 (8110)	2499 (8199)
40455 (89188)	1779 (5837)	1926 (6319)	2093 (6867)	2173 (7129)	2283 (7490)	2499 (8199)	2526 (8287)

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Landing Reference Speed

Refer to Table 1 and 2 for ARJ21-700 landing reference speed at sea level in ISA. The speeds are calibrated air speeds.

Table 1 ARJ21-700 Landing Reference Speed with Flap Detent 3

W (kg/lb)	30000/66139	31000/68343	32000/70548	33000/72753	34000/74957	35000/77162
VREF(kt)	132	134.2	136.3	138.4	140.5	142.6
W (kg/lb)	36000/79366	37000/81571	38000/83776	39000/85980	40000/88185	40455/89188
VREF(kt)	144.6	146.6	148.6	150.6	152.4	153.3

Table 2 ARJ21-700 Landing Reference Speed with Flap Detent 4

W (kg/lb)	30000/66139	31000/68343	32000/70548	33000/72753	34000/74957	35000/77162
VREF(kt)	124.5	126.6	128.5	130.6	132.6	134.4
W (kg/lb)	36000/79366	37000/81571	38000/83776	39000/85980	40000/88185	40455/89188
VREF(kt)	136.4	138.3	140.1	141.9	143.8	144.5

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Chapter 4
Ground Maneuvering

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General

This chapter provides aircraft turning capability and maneuvering characteristics on the ground. For ease of presentation, these data have been determined from the theoretical limits imposed by the geometry of the aircraft. As such, they reflect the turning capability in favorable operating circumstances. These data should be used only as guidelines for the method of determination of such parameters and for the maneuvering characteristics of this aircraft.

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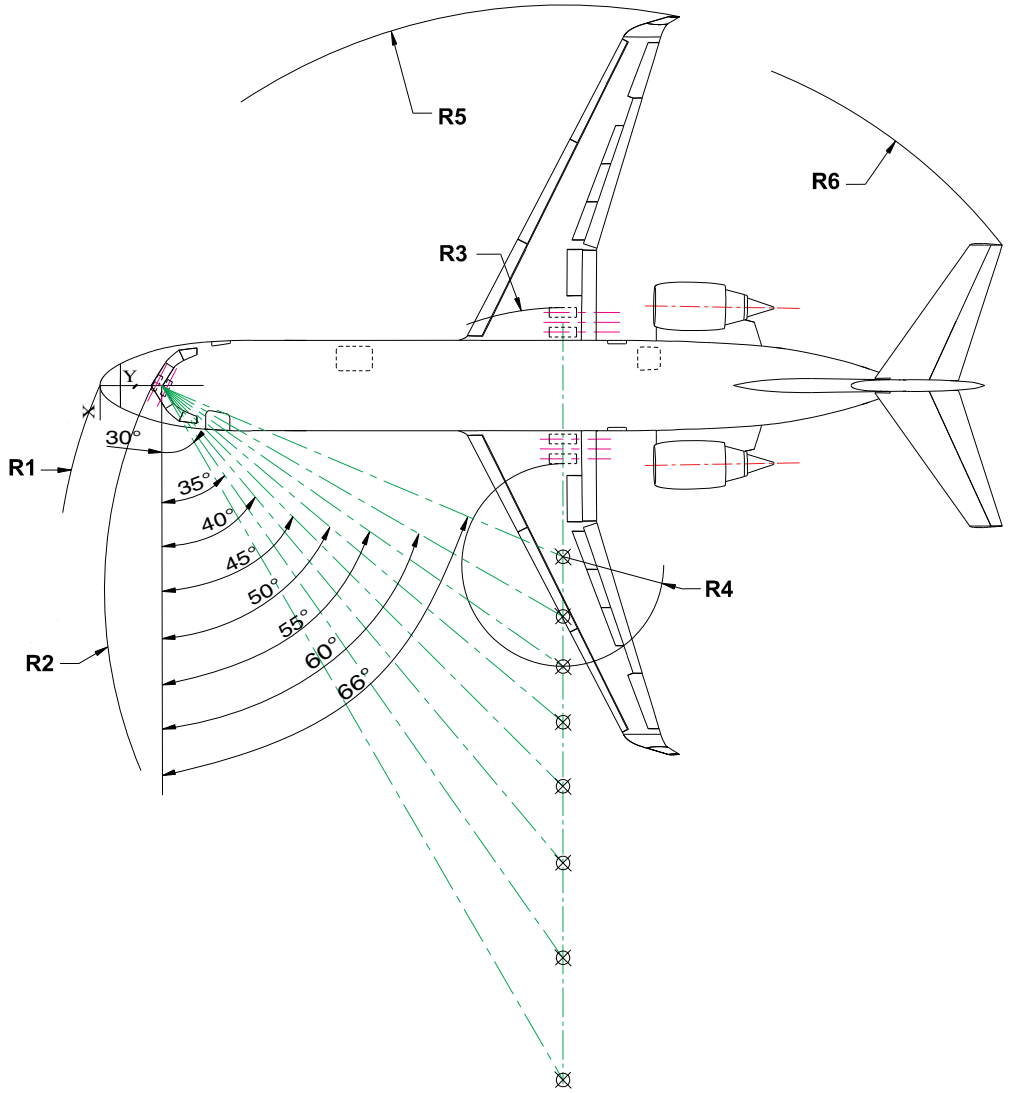
Steering Radius - No Slip Angle



STEERING ANGLE (°)	R1		R2		R3		R4		R5		R6	
	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
30	30.96	101.6	30.08	98.7	28.65	94.0	22.89	75.1	39.63	130.0	34.98	114.8
35	27.31	89.6	26.24	86.1	24.13	79.2	18.36	60.2	35.14	115.3	31.05	101.9
40	24.68	81.0	23.48	77.0	20.61	67.6	14.85	48.7	31.65	103.8	28.11	92.2
45	22.71	74.5	21.34	70.0	17.76	58.3	11.99	39.3	28.83	94.6	25.84	84.8
50	21.22	69.6	19.72	64.7	15.37	50.4	9.60	31.5	26.47	86.8	24.03	78.8
55	20.08	65.9	18.46	60.6	13.30	43.6	7.53	24.7	24.43	80.1	22.56	74.0
60	19.19	63.0	17.48	57.3	11.47	37.6	5.71	18.7	22.63	74.2	21.33	70.0
66	18.40	60.4	16.58	54.4	9.51	31.2	3.74	12.3	20.71	67.9	20.12	66.0

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Figure 1 Steering Radius - No Slip Angle (Sheet 1 of 1)

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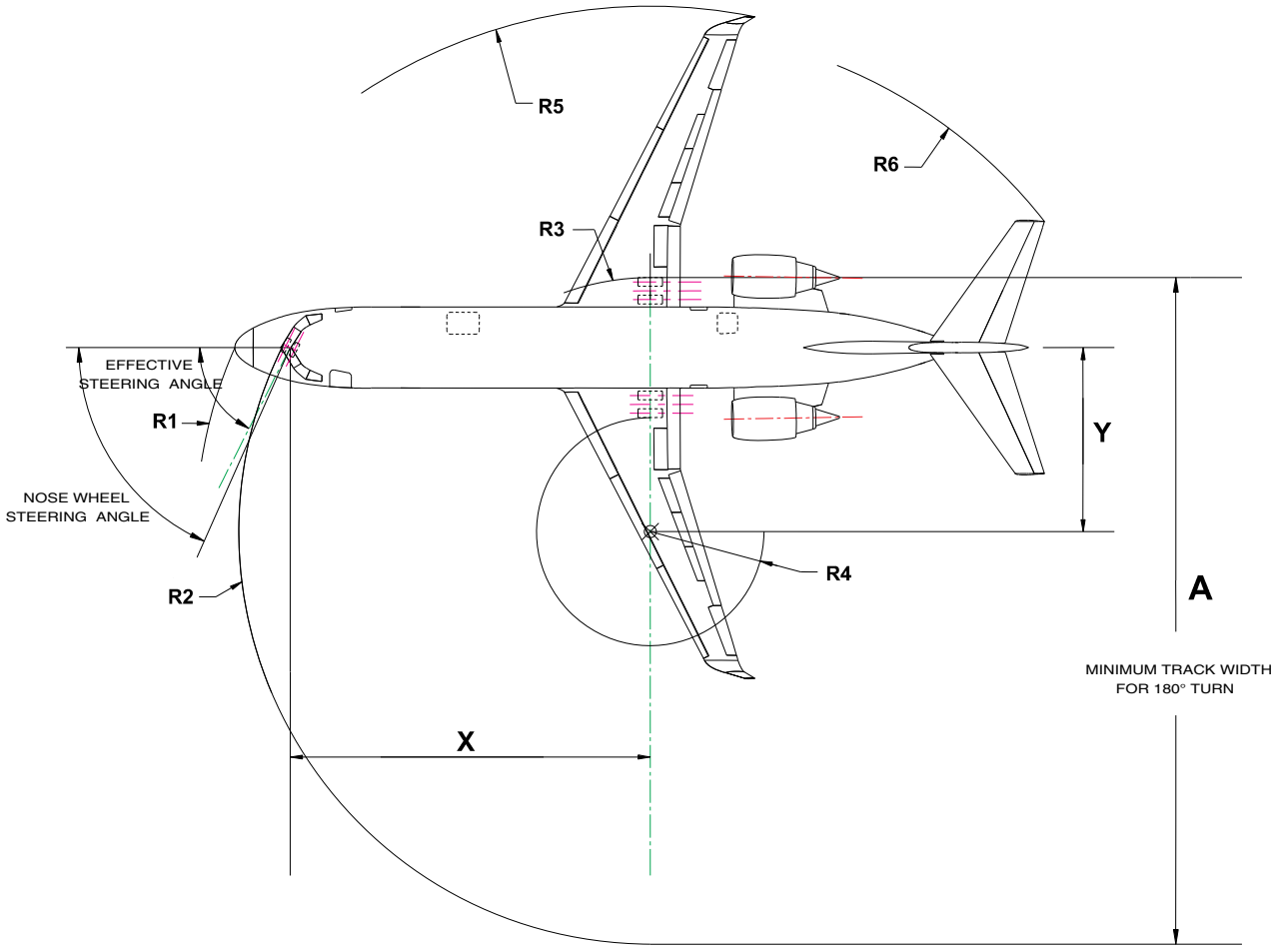
Minimum Turning Radius



EFFECTIVE STEERING ANGLE		X	Y	A	R1	R2	R3	R4	R5	R6
63°	m	14.88	7.58	27.46	18.94	17.00	10.46	4.70	21.62	20.70
	ft	48.8	24.9	90.1	61.5	55.8	34.3	15.4	71.0	67.9

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Figure 1 Ground Minimum Turning Radius (Sheet 1 of 1)

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Cockpit Field of View in Static Status

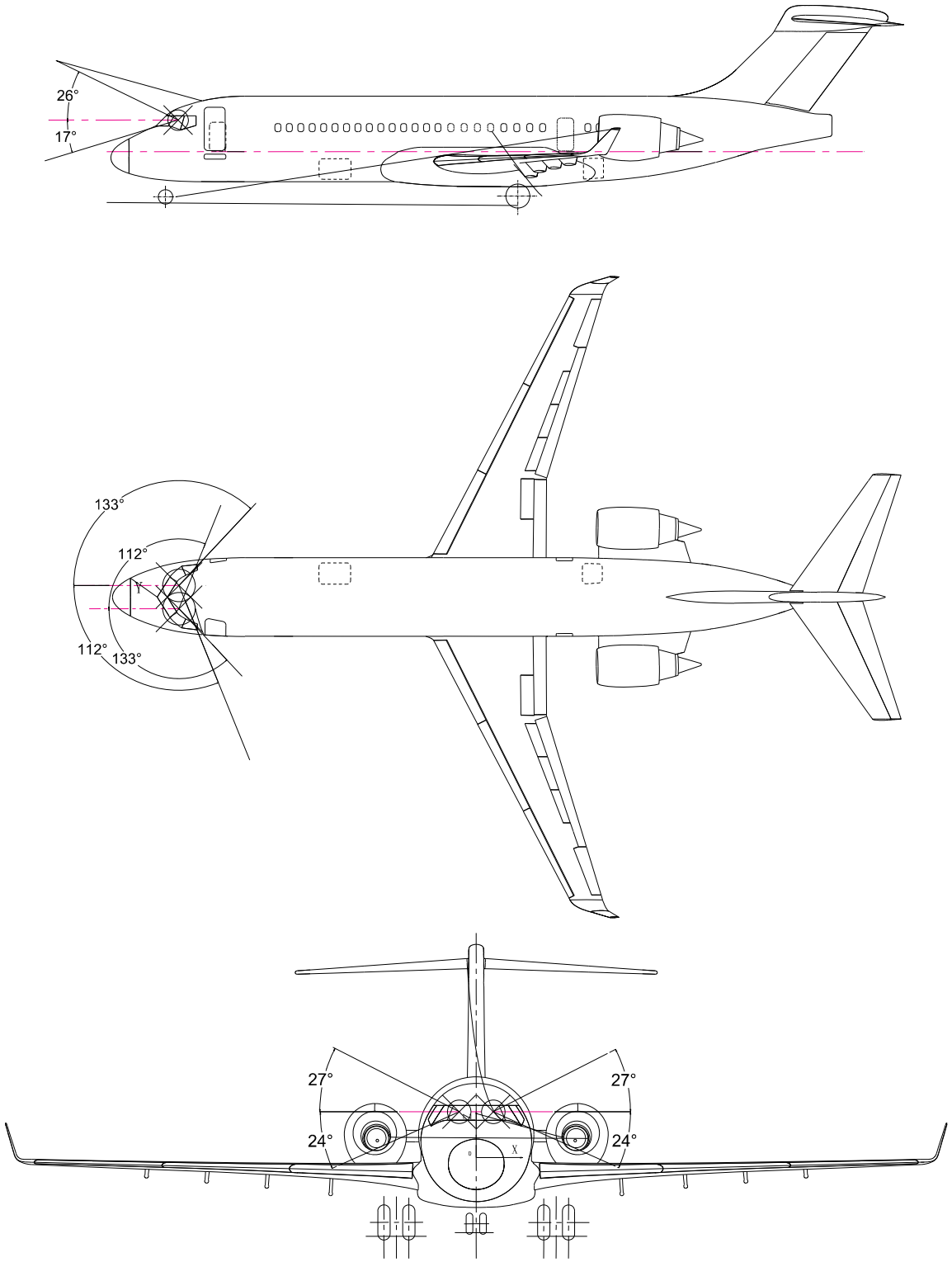

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Figure 1 Cockpit Field of View in Static Status (Sheet 1 of 1)

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Runway and Taxiway Turn Paths

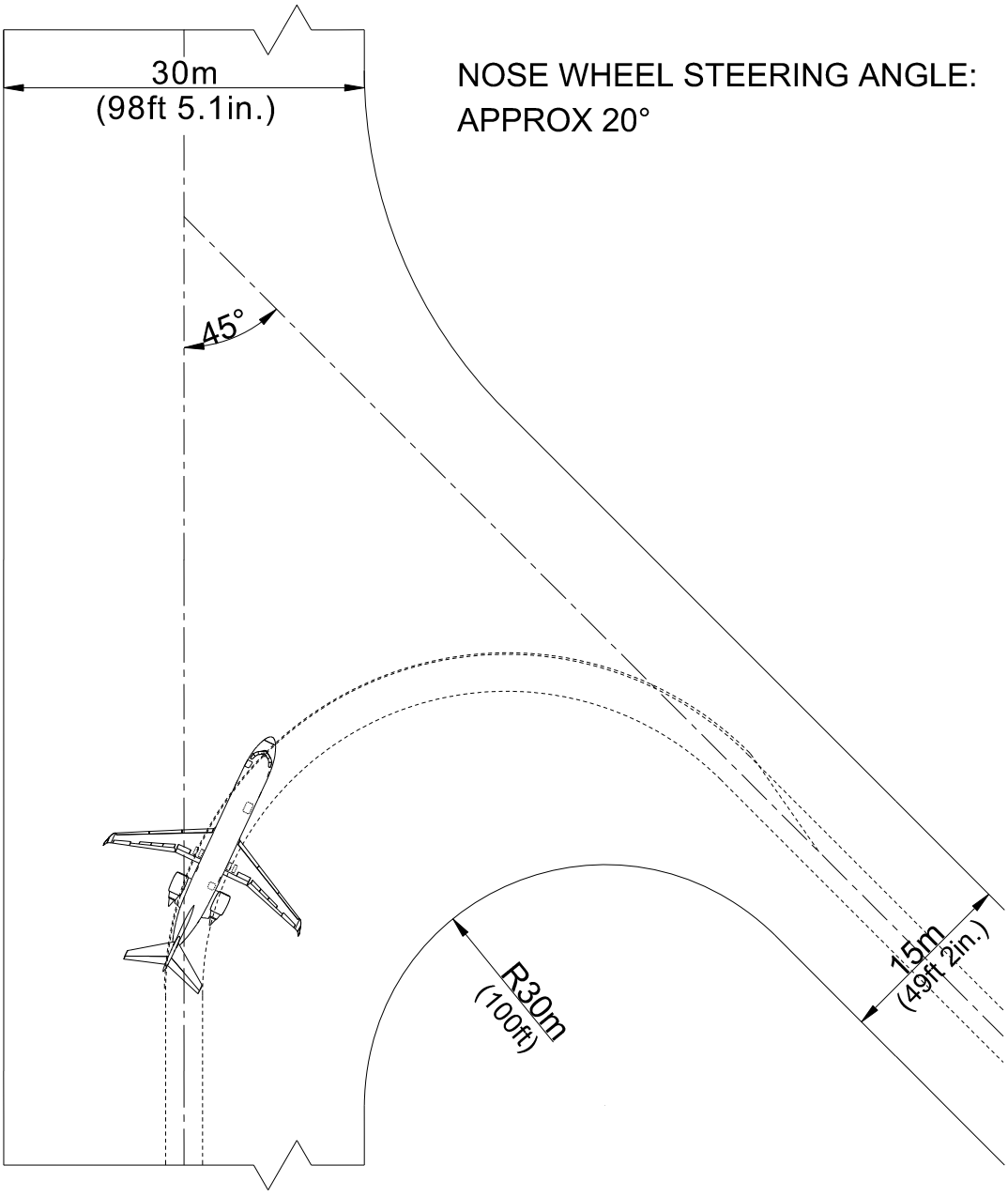

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Figure 1 Runway-To-Taxiway, Less Than 90-Degree Turn (Sheet 1 of 1)

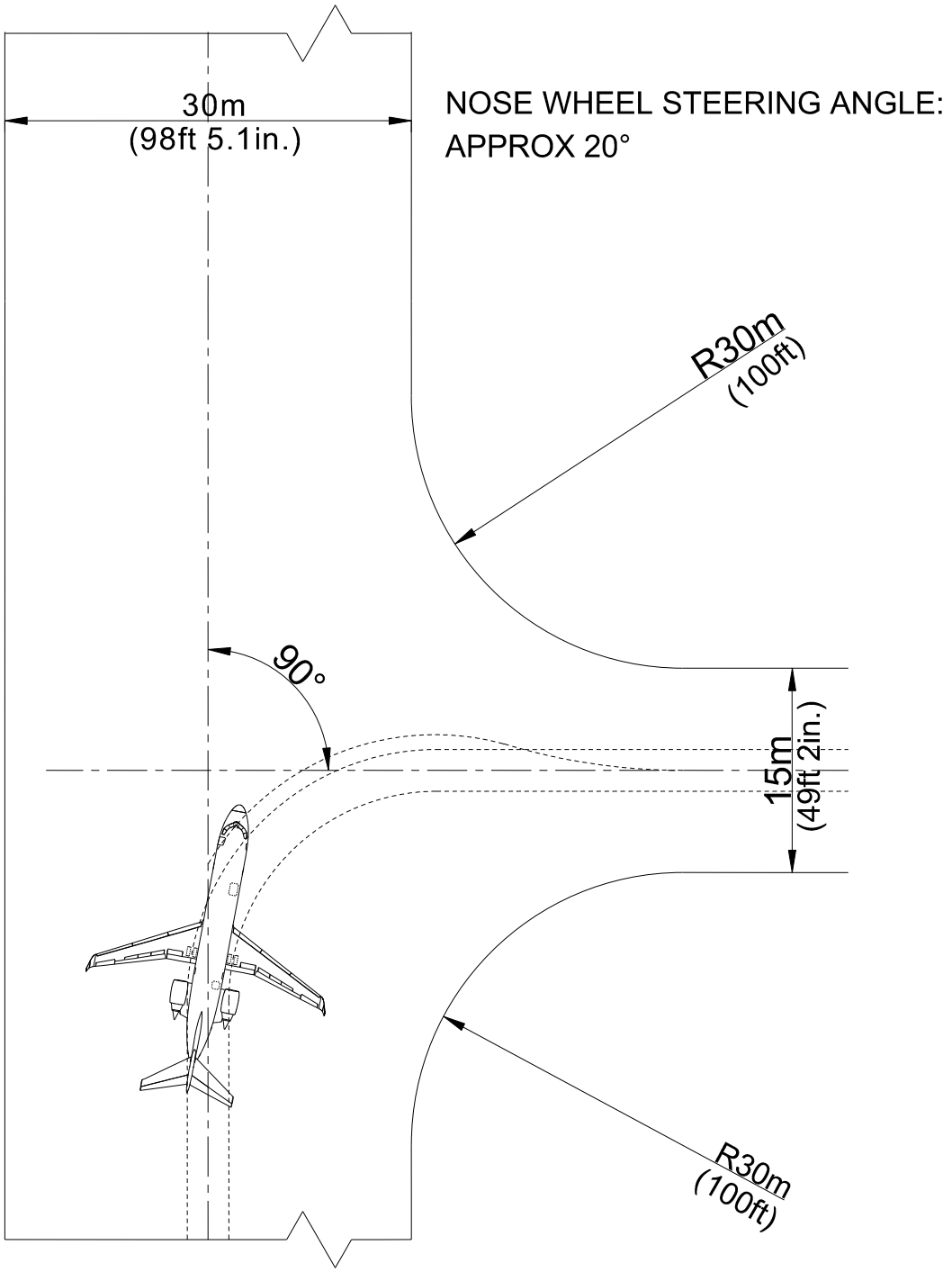

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Figure 2 Runway-To-Taxiway, 90-Degree Turn (Sheet 1 of 1)

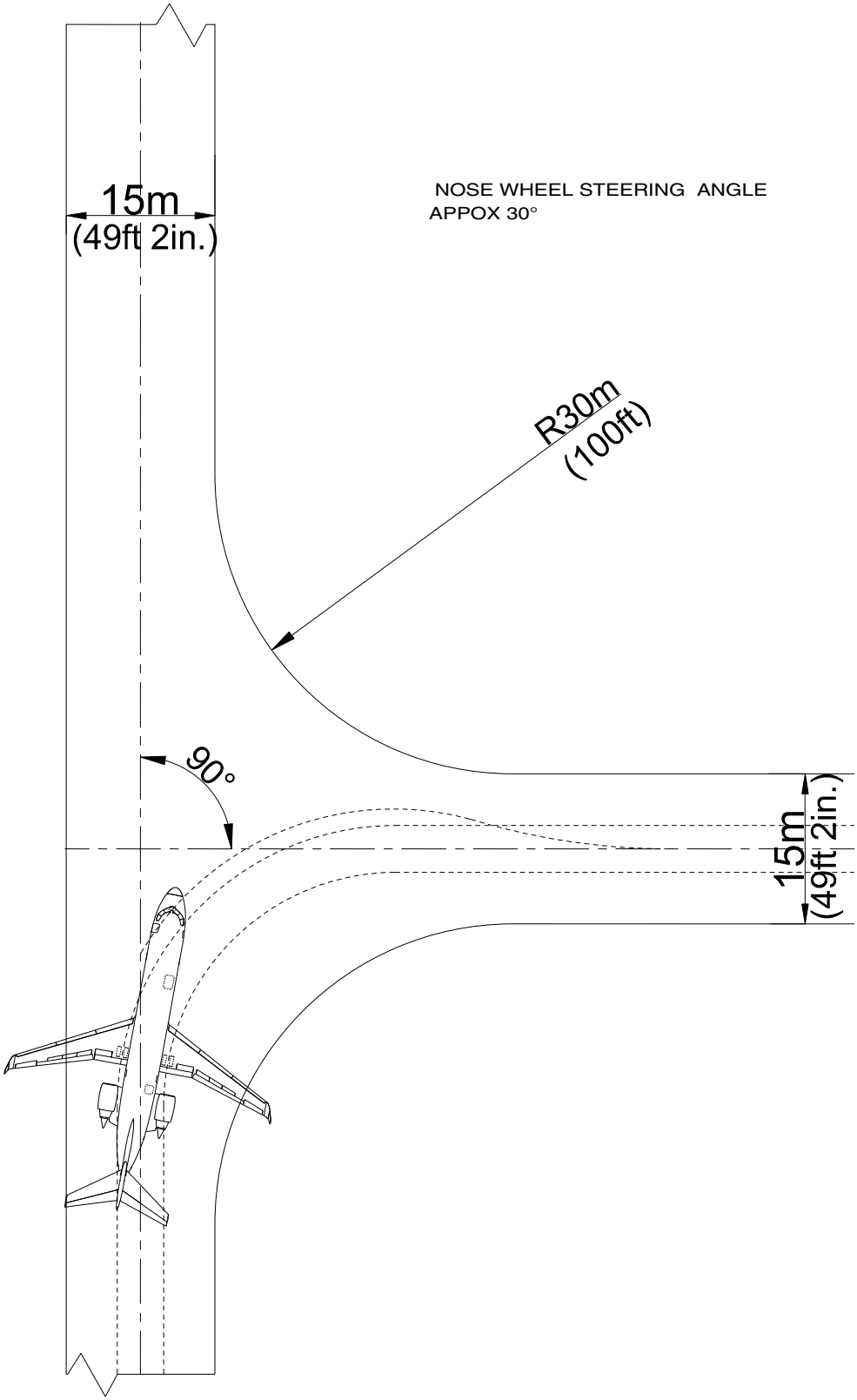

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Figure 3 Taxiway-To-Taxiway, 90-Degree Turn (Sheet 1 of 1)

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Runway Holding Bay

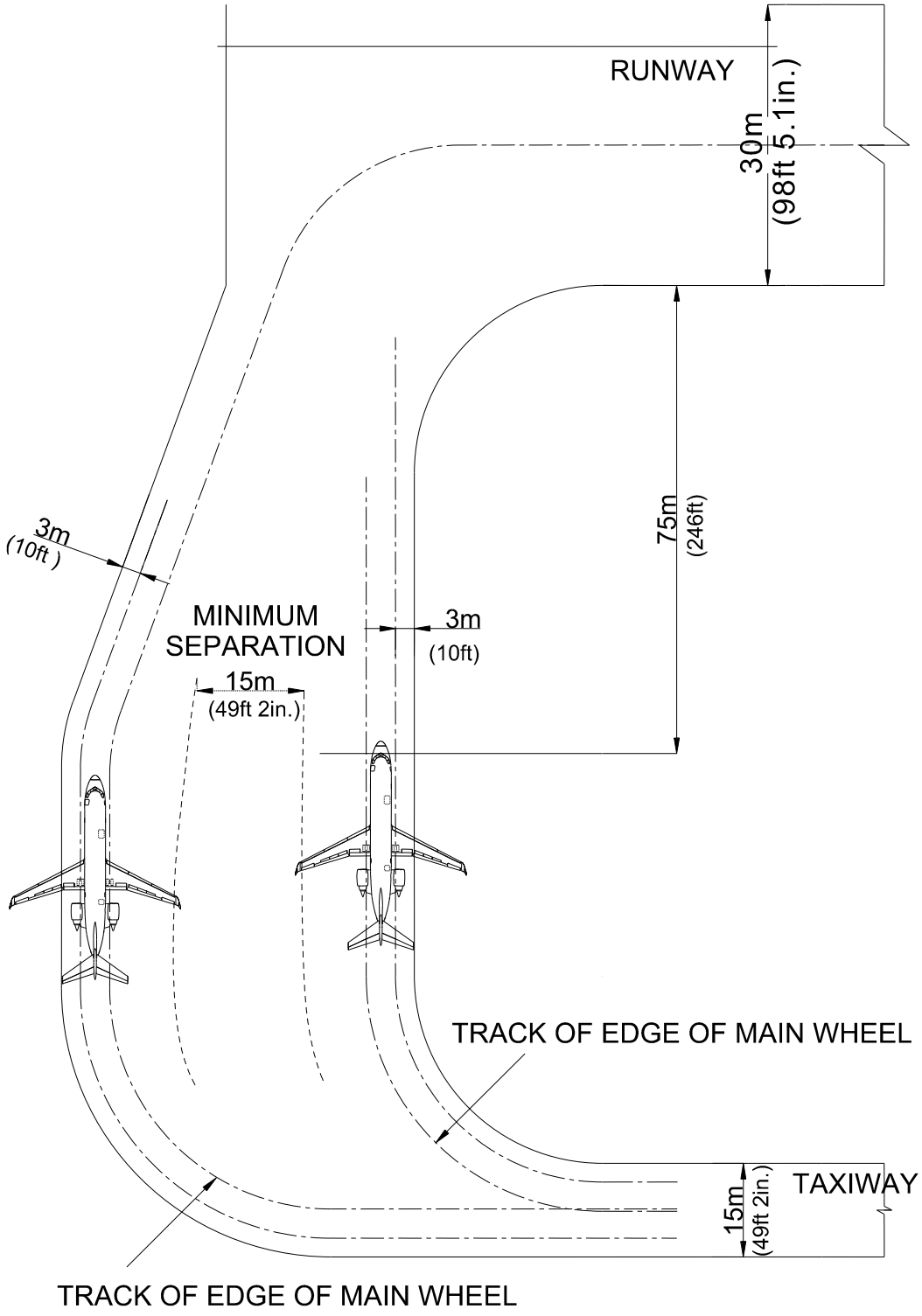

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Figure 1 Runway Holding Bay (Sheet 1 of 1)

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Chapter 5
Terminal Servicing

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Aircraft Servicing Arrangement

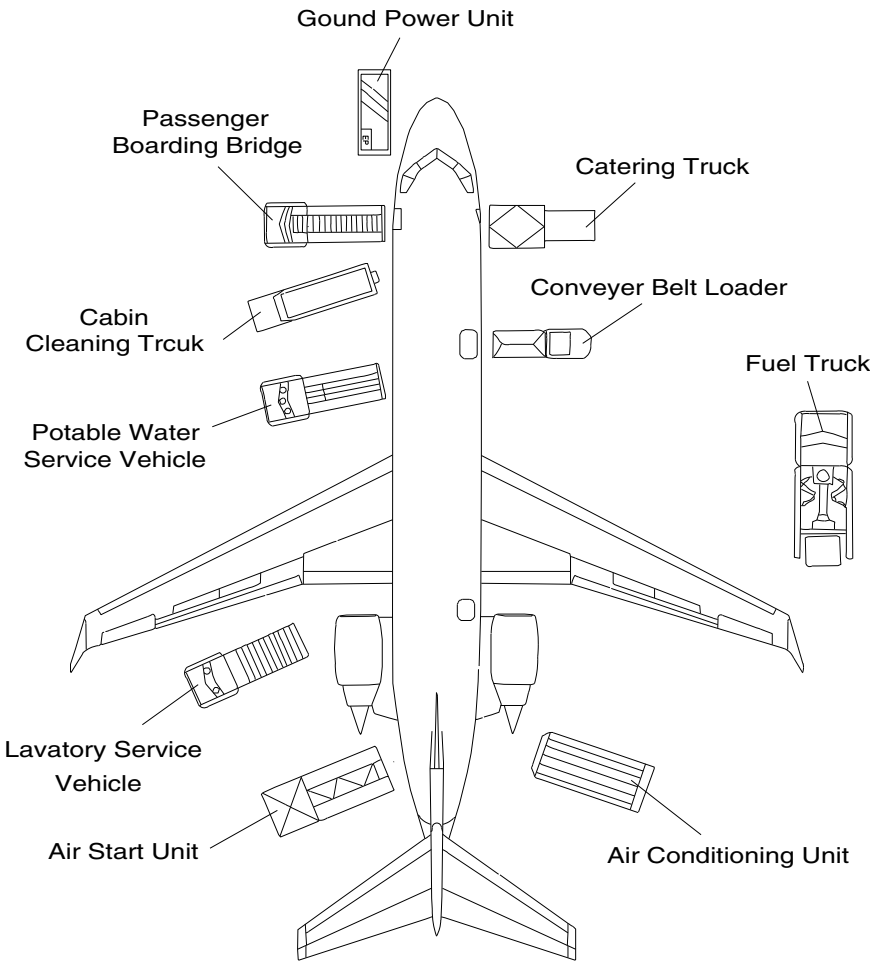

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Figure 1 Aircraft Servicing Arrangement (Sheet 1 of 1)

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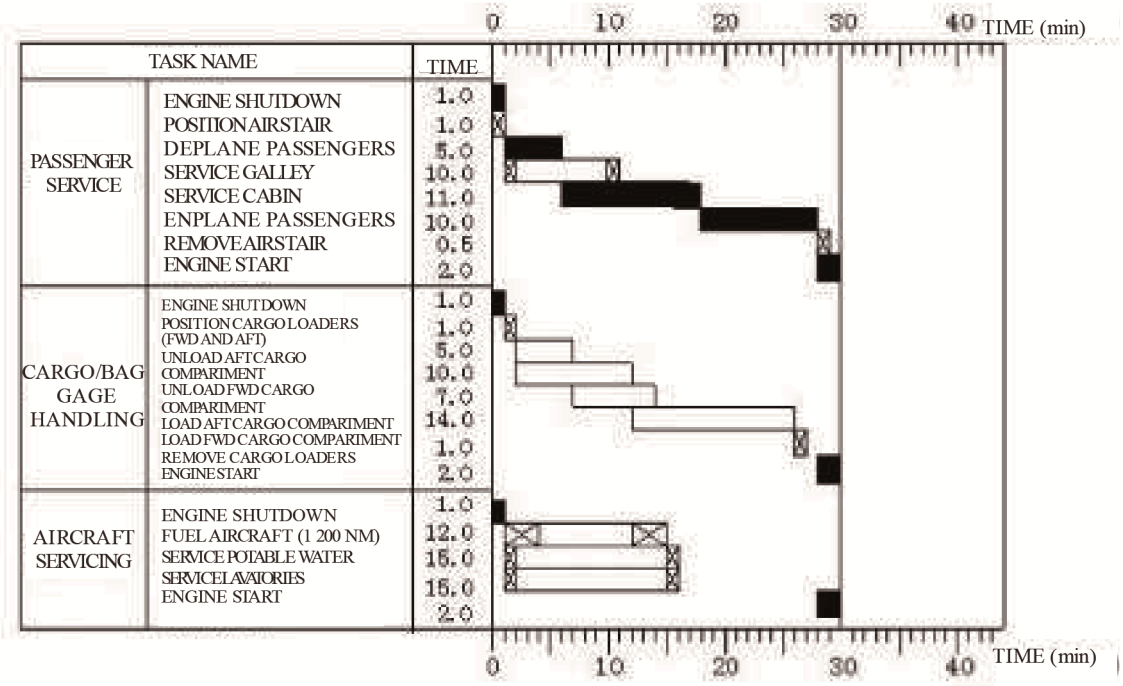
Turnaround Station



Note: 1.For basis 90-seat aircraft.
2. ⊠ indicates positioning/removing vehicle.
3. ■ indicates critical servicing processes.
4. 100% loading factor.
5. 3 000 lb cargo.
6. 1.2 pieces of baggage for each passenger.
7. Time for enplaning passengers is the time required for the first passenger to pass through the entry door to the last passenger seated.

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Figure 1 Turnaround Station (Sheet 1 of 1)

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Ground Servicing Connections

1. Positions of Ground Service Points

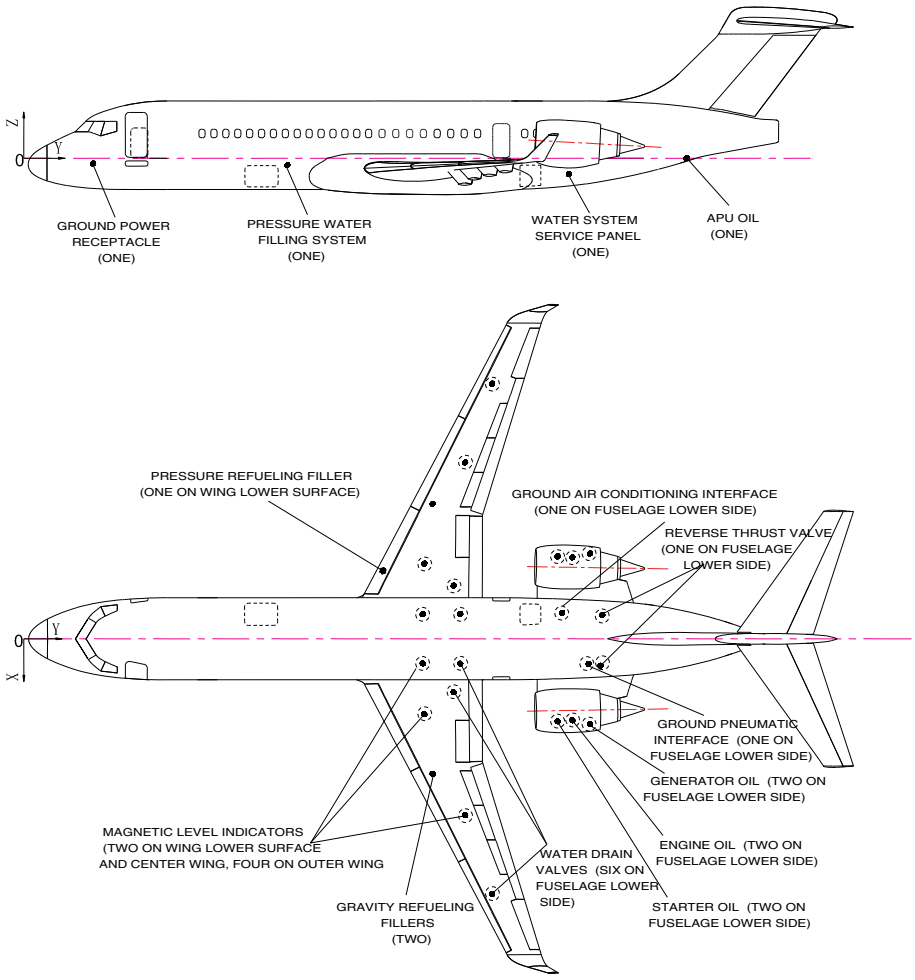

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Figure 1 Positions of Ground Service Points (Sheet 1 of 1)

2. Grounding Points

Distance(mm/in)				
	From Nose	From Aircraft Centerline		From Ground
		L Side	R Side	
On left Main Landing Gear leg	17180/676	2340/92	-	1000/39
On right Main Landing Gear leg	17180/676	-	2340/92	1000/39

Static grounding is necessary when performing maintenance tasks using these devices:

(1) Power tools.

(2) Electrical power sources.

(3) Lights.

(4) Tools driven by external power.

(5) Flammable conditions.

For details, see AMM 20 Static grounding.

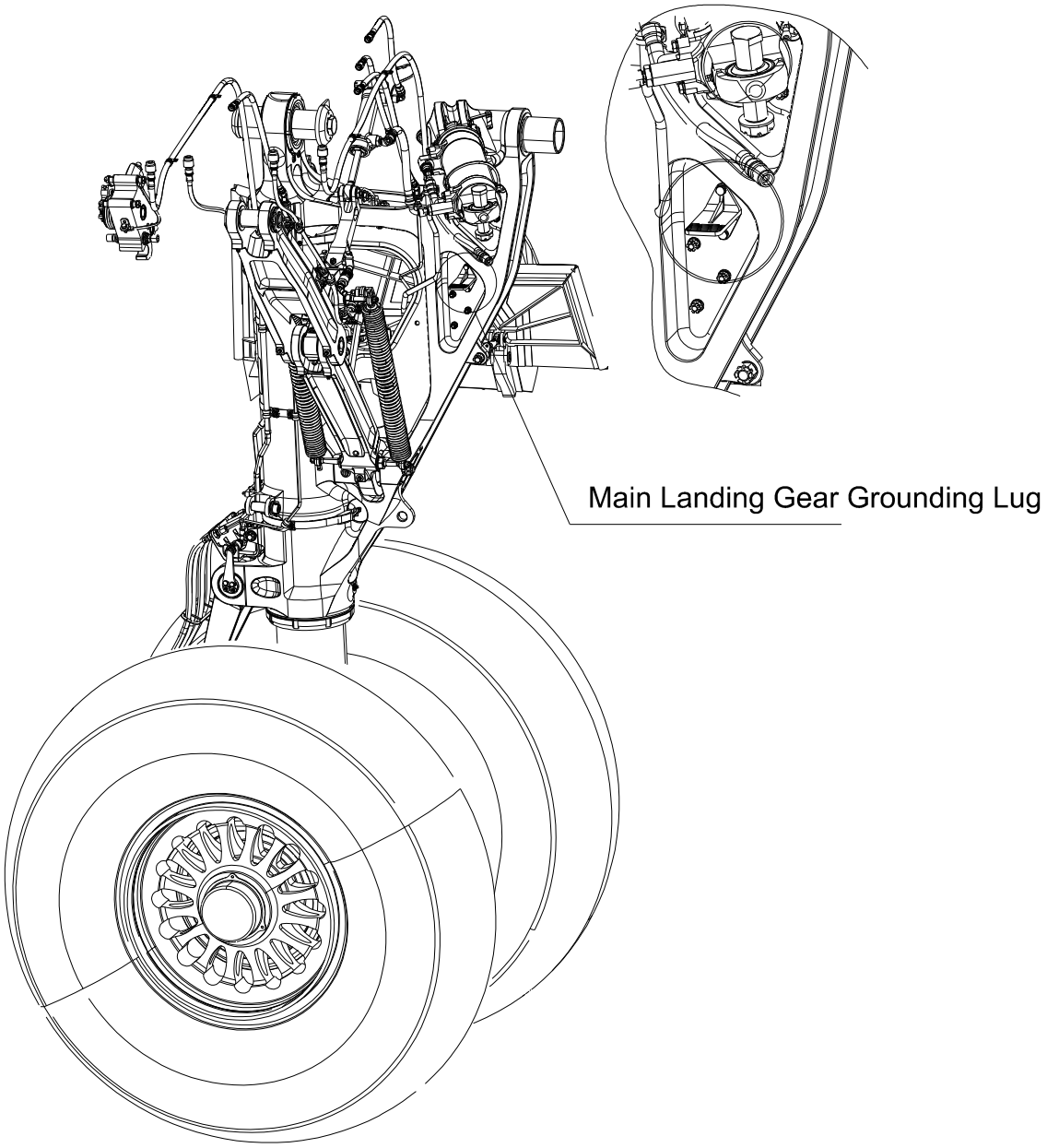

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Figure 2 Main Landing Gear Grounding Lug (Sheet 1 of 1)

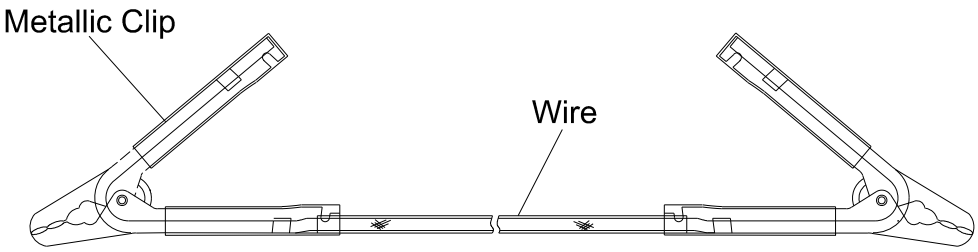

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Figure 3 Main Landing Gear Grounding Metallic Clip (Sheet 1 of 1)

3. Hydraulic System

Distance(mm/in)				
	From Nose	From Aircraft Centerline		From Ground
		L Side	R Side	
Maintenance Panel No.1	24720/973	383/15		1880/74
Maintenance Panel No.2	24627/970		427/17	1871/74
Maintenance Panel No.3	18633/734	1474/58		1887/74

NOTE: Zero-load status

A. Maintenance Panel No.1, 2 and 3

Pressure Quick Disconnect (including protective cap), size: **28.58 mm** (**1.125 in**).

Return Fluid Quick Disconnect (including protective cap), size: **41.28 mm** (**1.625 in**) ;

Return Fluid Quick Disconnect (including protective cap), size: **23.81 mm** (**0.9375 in**).

Accumulator Charging Valve, size: M6164-5.

B. Oil Tank

(1) No.1 Reservior

Fluid Temperature ℃	-40 ~18	-17 ~4	5 ~27	27 ~49	49 ~71	72 ~93
Capacity Limit %	42 ~50	48 ~56	53 ~62	59 ~68	65 ~73	71 ~79

NOTE: Fluid capacity variation does not exceed 10% after pressurization.

(2) No.2 Reservior

Fluid Temperature ℃	-40 ~18	-17 ~4	5 ~27	27 ~49	49 ~71	72 ~93
Capacity Limit %	43 ~53	50 ~60	57 ~67	64 ~74	71 ~81	78 ~88

NOTE: Fluid capacity variation does not exceed 9% after pressurization.

(3) No.3 Reservior

Fluid Temperature ℃	-40 ~18	-17 ~4	5 ~27	27 ~49	49 ~71	72 ~93
Capacity Limit %	49 ~54	53 ~58	56 ~62	60 ~66	64 ~69	68 ~73

NOTE: Fluid capacity variation does not exceed 20% after pressurization.

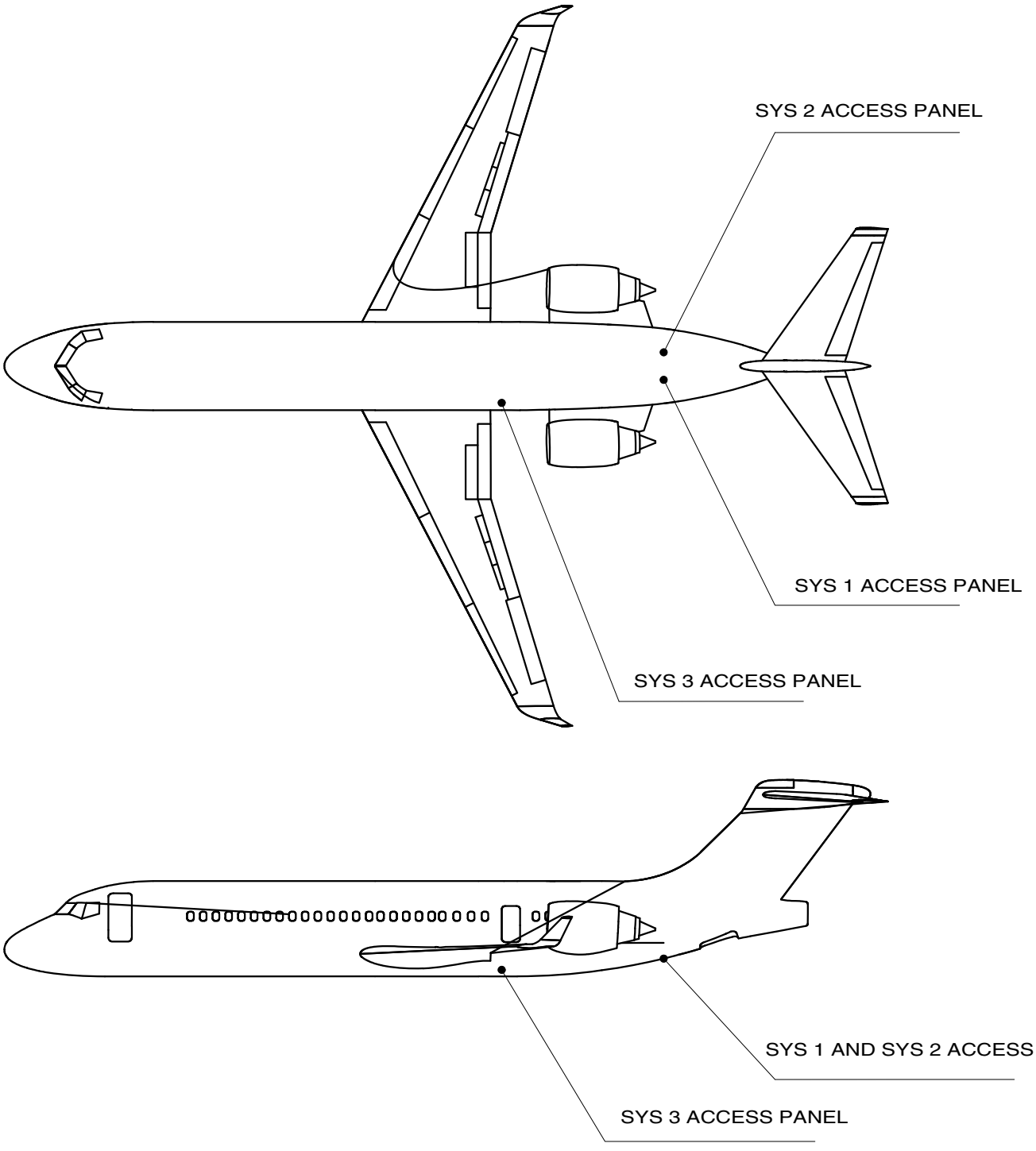

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Figure 4 Hydraulic System Ground Maintenance Panels (Sheet 1 of 1)

4. Electrical Power System

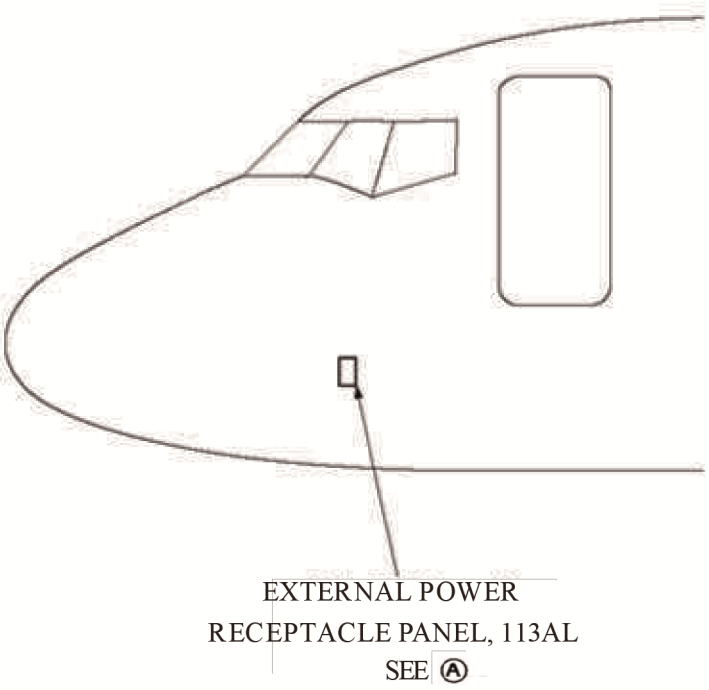
Distance(mm/in)				
	From Nose	From Aircraft Centerline		From Ground
		L Side	R Side	
External Power Receptacle	2531/100	1012/40		1709/67

NOTE: Zero-load status

A. The receptacle conforms to the Standard ISO R461, and rated input power 40kVA.

B. Three-phase **115 V /200 V** , **400 Hz** .

C. When aircraft is powered by external power, the output cable must be connected to the external power receptacle conforming to standard ISO R461.



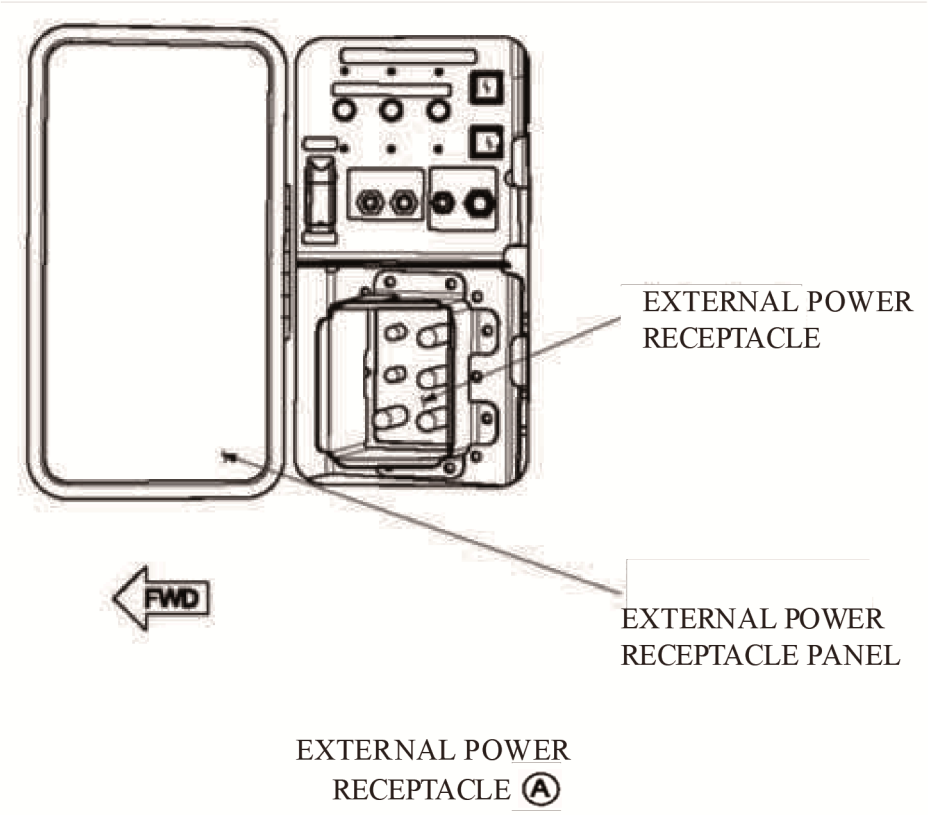


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Figure 5 Electrical System Ground Service Panel (Sheet 1 of 1)

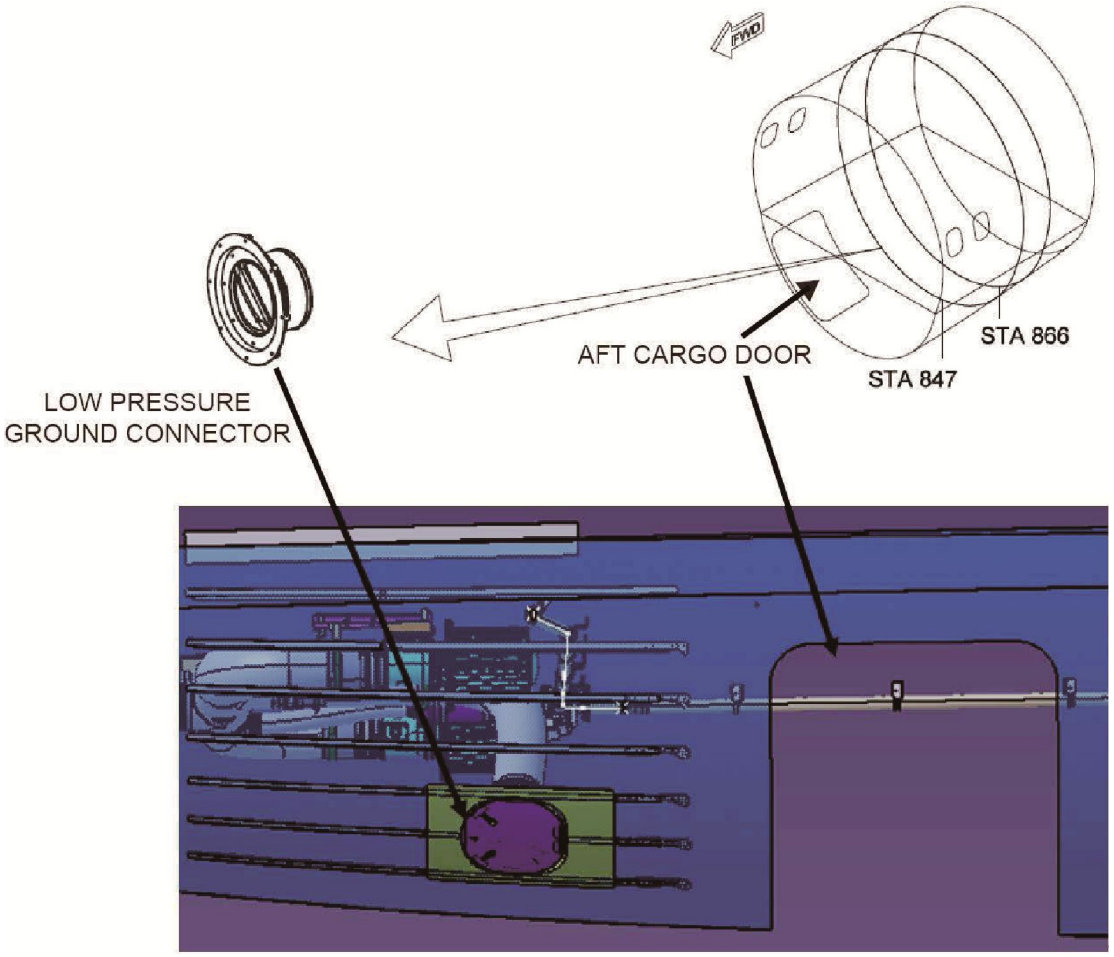
5. Air Conditioning System

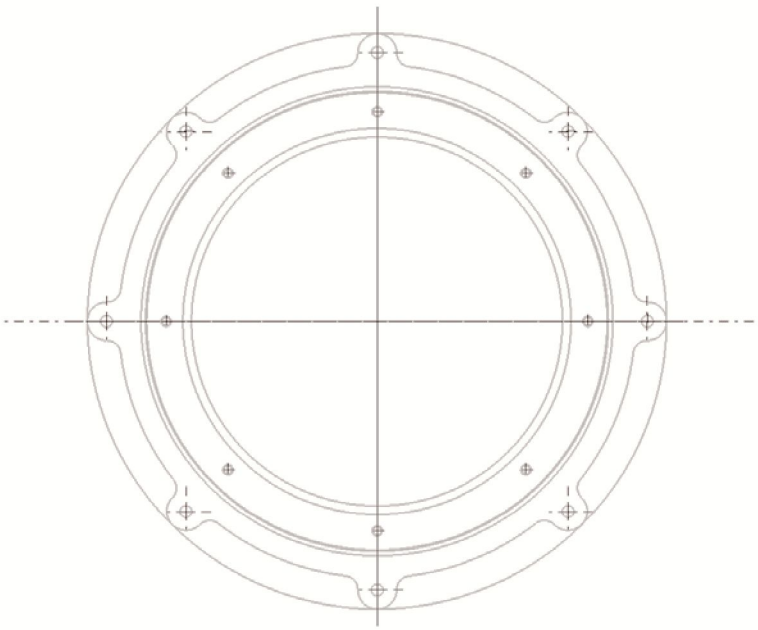
Distance(mm/in)				
	From Nose	From Aircraft Centerline		From Ground
		L Side	R Side	
Low Pressure Ground Connection	21576/849		937/37	1643/65

NOTE: Zero-load status

A. Comply with ISO 1034.

B. Diameter **203.2 mm** (**8 in**)





ICN-ARJ21-A-192005-A-SVV19-10779-A-001-01

Figure 6 Air Conditioning System Port (Sheet 1 of 1)

6. Oxygen System

Distance(mm/in)				
	From Nose	From Aircraft Centerline		From Ground
		L Side	R Side	
Oxygen Filler Valve	6840/269	1290/51		1890/74

NOTE: Zero-load status

A. On oxygen filler ground service panel of fwd fuselage (Door No. 136ARW, size: 200 × 120).

B. Diameter of oxygen filling valve is **6.35 mm** (**0.25 in**)

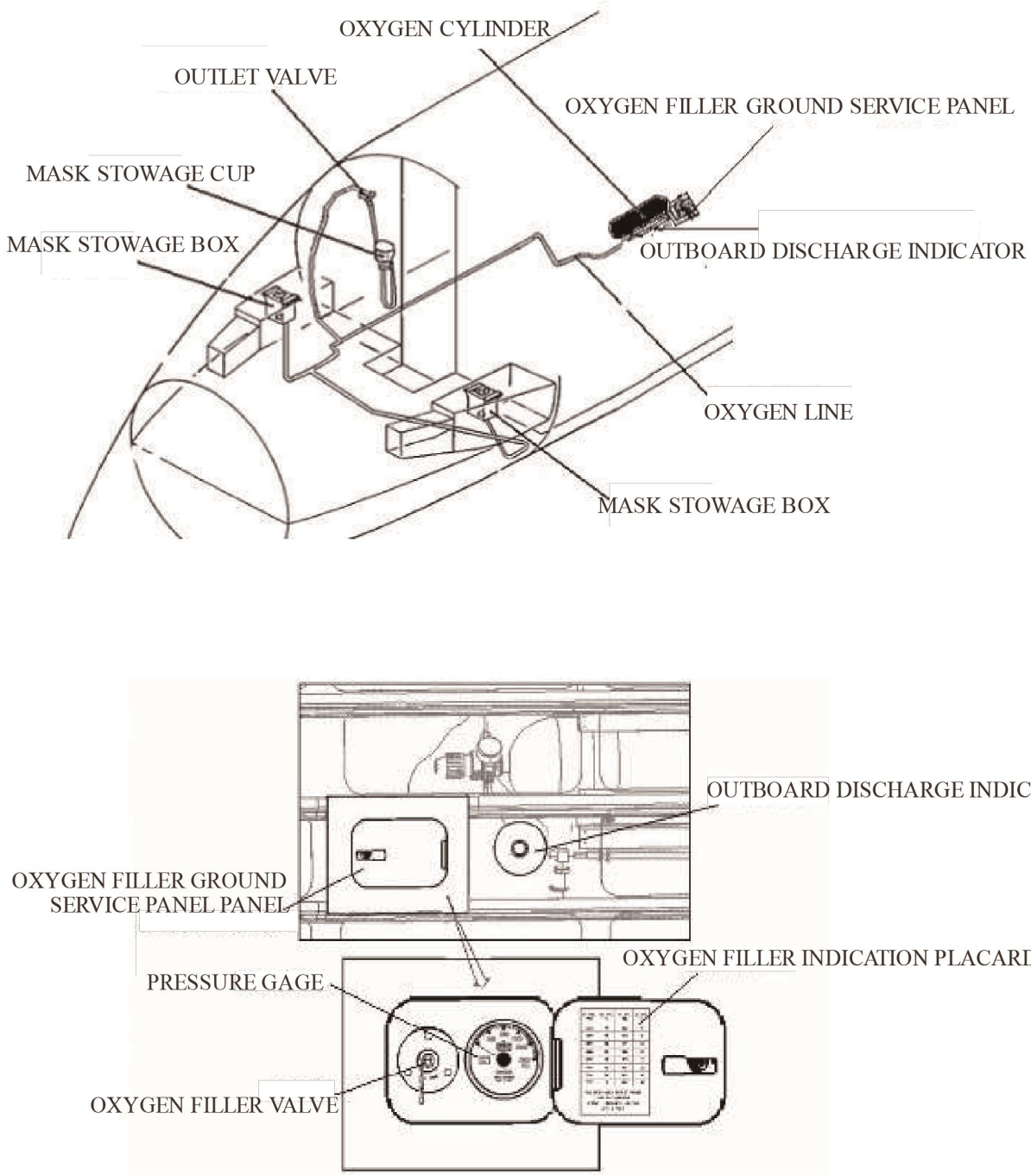


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Figure 7 Oxygen System Ground Service Panel (Sheet 1 of 1)

7. Waste System

Distance(mm/in)				
	From Nose	Distance to Symmetrical Plane		From Ground
		R Side	L Side	
Access panel: 161ALW	22140/872		930/37	1600/63

NOTE: Zero-load status

A. Nipple

(1) Rinse water nipple: **25.4 mm** (**1 in**) Comply with ISO 17775.

(2) Draining nipple: **101.6 mm** (**4 in**) Comply with ISO 17775.

B. Waste tank capacity: **68 L**

C. Flushing water pressure of waste tank: **3.45 bar** (**50 psi**)

D. Flow rate: **16 L/min**(**~ 28 L/min**)

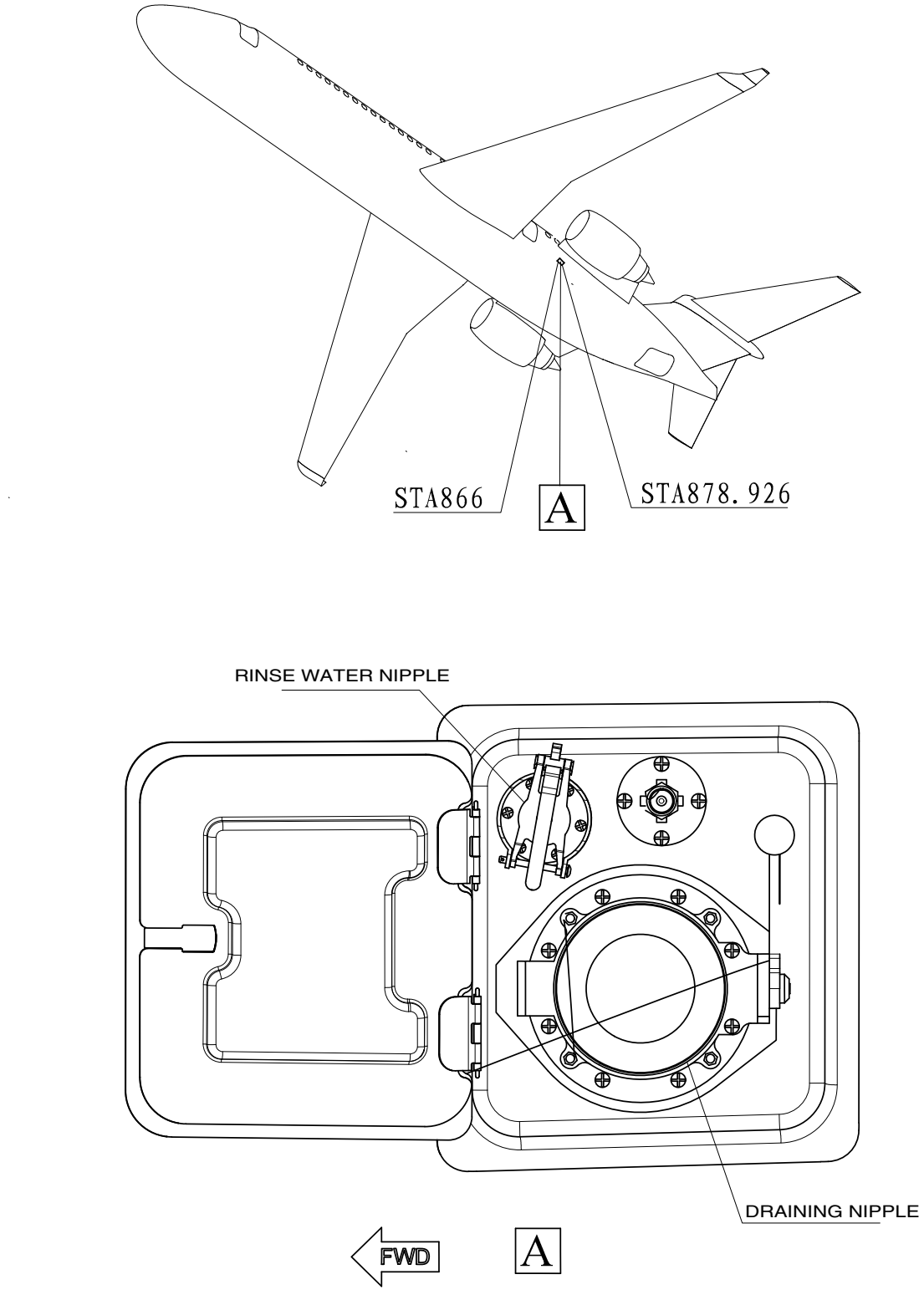

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Figure 8 Drainage System Ground Service Panel (Sheet 1 of 1)

8. Potable Water System

	Distance(mm/in)			
	From Nose	From Aircraft Centerline		From Ground
		R Side	L Side	
Access panel: 135ALW	10600/417		1330/52	1930/76

NOTE: Zero-load status

A. Water filling nipple: **19.05 mm** (**0.75 in**) Comply with ISO 17775.

B. Water tank capacity: **83 L**

C. Maximum filling pressure of water tank: **3.45 bar** (**50 psi**)

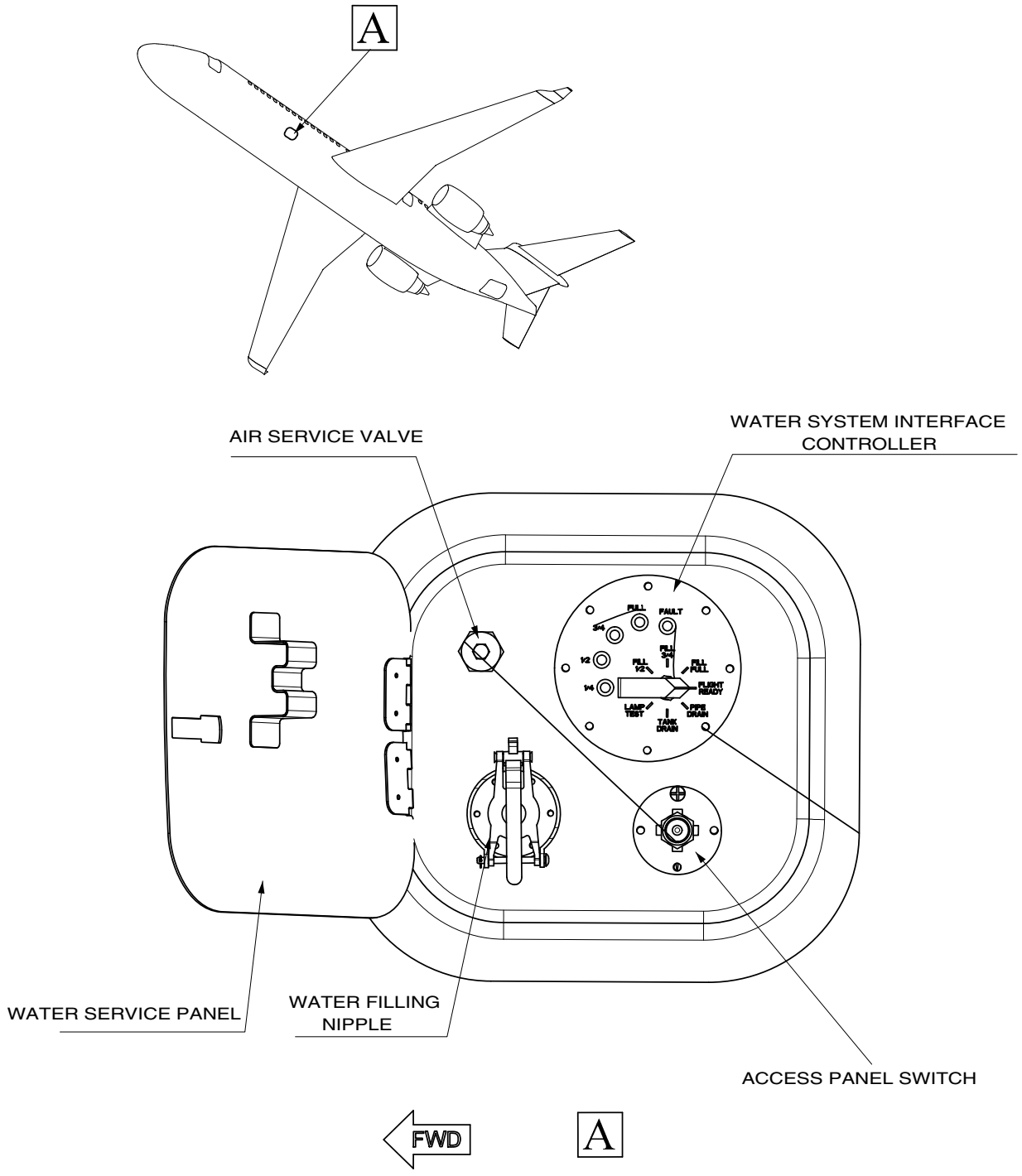

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Figure 9 Potable Water System Ground Service Panel (Sheet 1 of 1)

9. Oil System

	Distance(mm/in)			
	From Nose	From Aircraft Centerline		From Ground
		R Side	L Side	
Manual Gravity Oil Filler	21705/855	3619/142		1757/69
Manual Gravity Oil Filler	21705/855		2246/88	1757/69
Pressure Refueling Receptacle	21654/853	3606/142		1737/68
Pressure Refueling Receptacle	21654/853		2230/87	1730/68

NOTE: Zero-load status

A. Oil Tank Volume 16 qt

B. Oil Overfill Volume 13.3 qt

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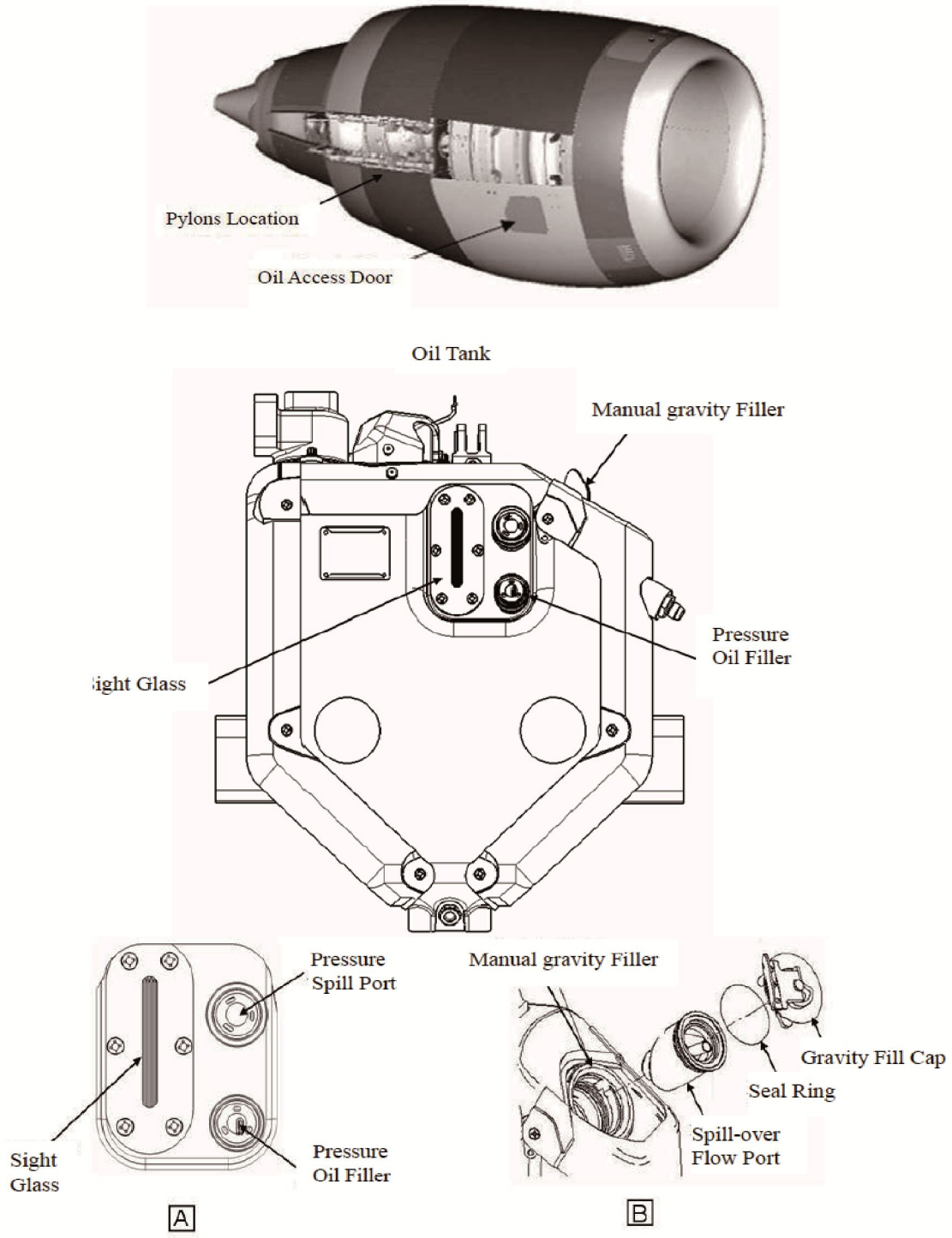

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Figure 10 Engine Oil Tank Refueling Filler (Sheet 1 of 1)

A. Starter Oil System

	Distance(mm/in)			
	From Nose	From Aircraft Centerline		From Ground
		R Side	L Side	
Manual Gravity Oil Filler	21802/858	2728/107		1345/53
Manual Gravity Oil Filler	21802/858		3117/123	1345/53
Pressure Refueling Receptacle	21778/857	2801/110		1193/47
Pressure Refueling Receptacle	21778/857		3040/120	1193/47

NOTE: Zero-load status

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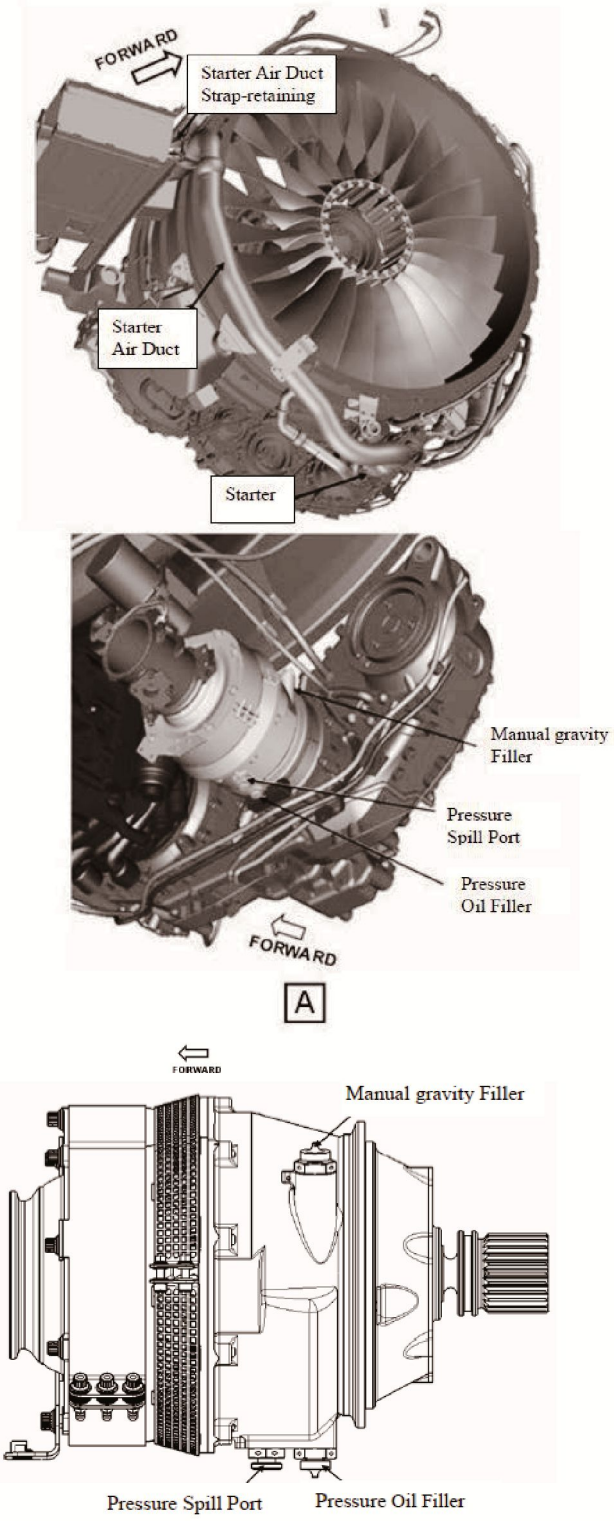

ICN-ARJ21-A-192005-A-SVV19-10786-A-001-01

Figure 11 Starter Oil Filler (Sheet 1 of 1)

B. Integrated Drive Generator (IDG) Oil System

Name	Distance(mm/in)			
	From Nose	Distance to Symmetrical Plane of Aircraft		From Ground
		R Side	L Side	
L IDG Oil Port	21700/854		2710/107	2080/82
R IDG Oil Port	21700/854	2710/107		2080/82

NOTE: Zero-load status

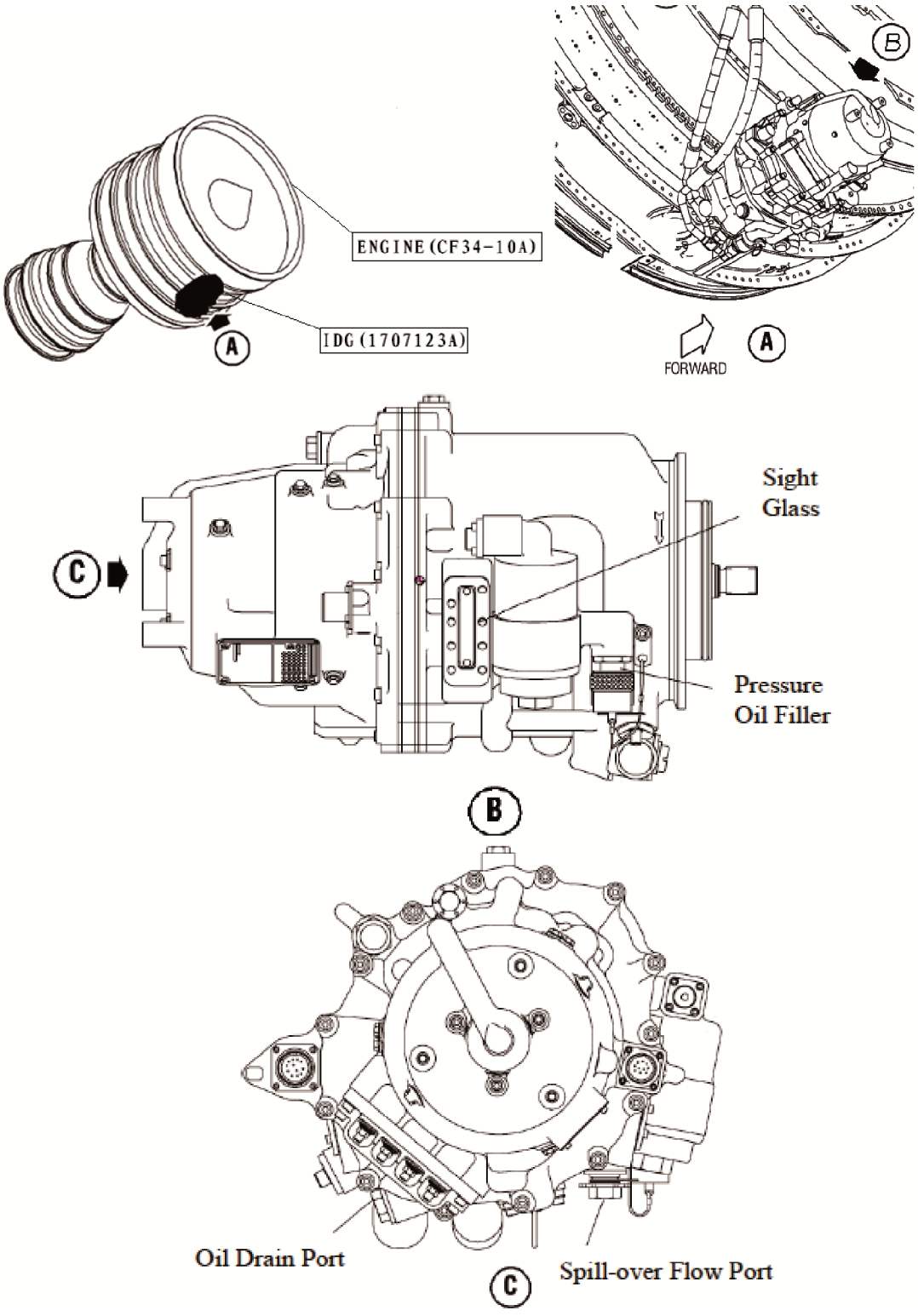

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Figure 12 IDG Oil Port (Sheet 1 of 1)

10. Pneumatic System

Distance(mm/in)				
	From Nose	From Aircraft Centerline		From Ground
		L Side	R Side	
High Pressure Ground Connector	23715/934	708/28		1592/63

NOTE: Zero-load status

A. Standard Connector comply with ISO 2026.

B. Diameter **76.2 mm** (**3 in**)

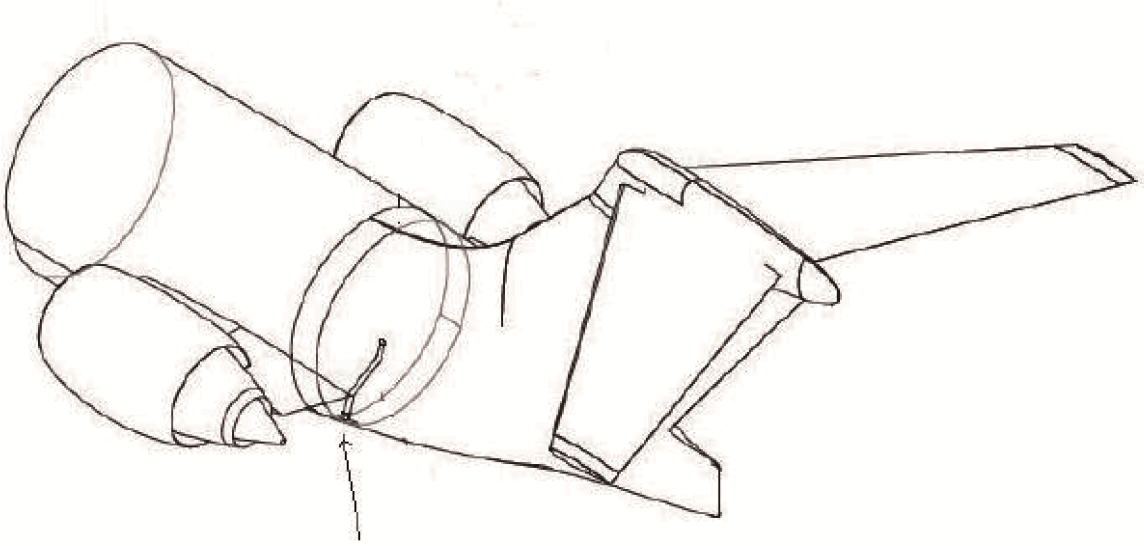

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Figure 13 Pneumatic System Connector (Sheet 1 of 1)

11. Fuel System

	Distance(mm/in)			
	From Nose	From Aircraft Centerline		From Ground
		R Side	L Side	
Refuel/Defuel Adapter	14680/578	3130/123		1900/75

NOTE: Zero-load status

A. Refuel/Defuel Adapter: **63.5 mm** (**2.5 in**) standard connector comply with ISO 45, install one between No.3 rib and No.4 rib in the right wing only.

B. Refuel Pressure: **2.42 bar ~ 3.45 bar** (**35 psi ~ 50 psi**)

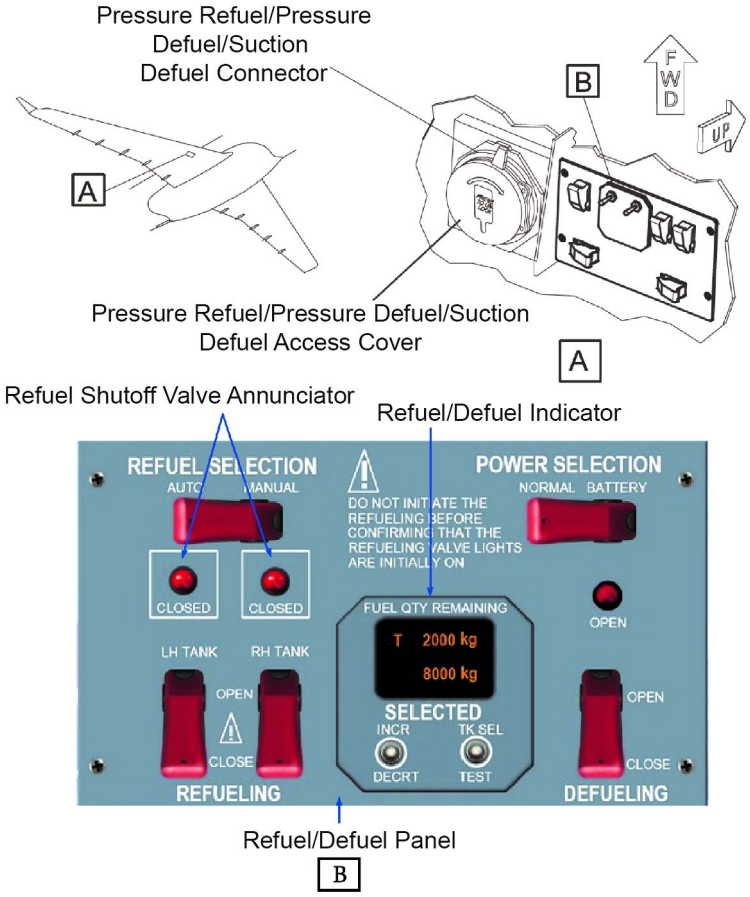

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Figure 14 Fuel System Connector (Sheet 1 of 1)

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Ground Air-Conditioning Requirements

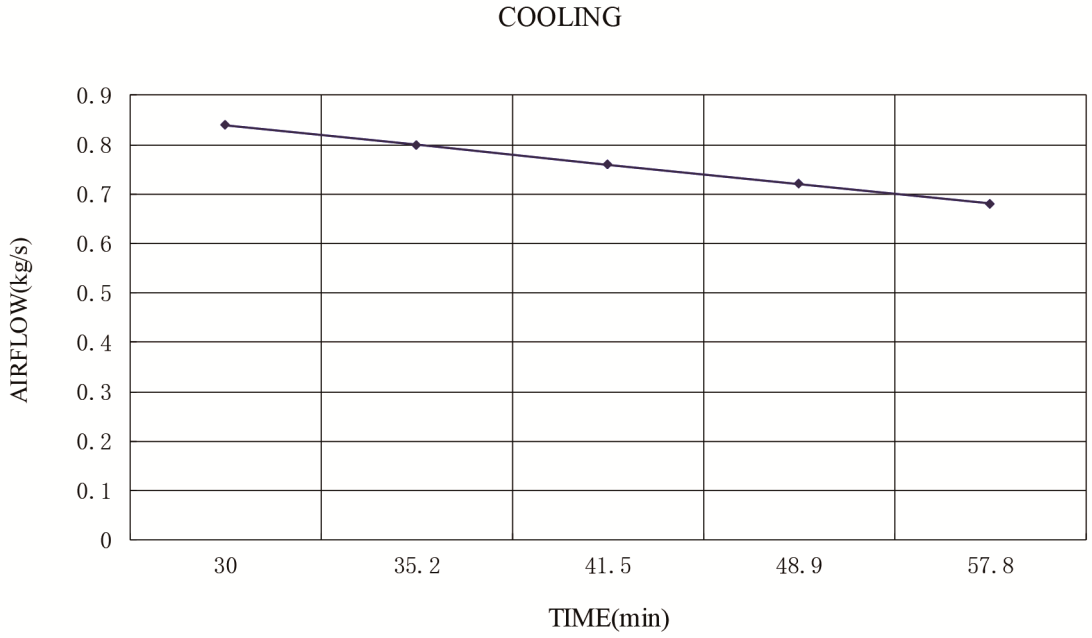

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Figure 1 Cooling (Sheet 1 of 1)

Initial Cabin Temperature: 46℃, cooling cabin to 27℃. Low Pressure Ground Connection Temperature: 1.5℃.

Aircraft State: No passengers, recirculation fan on, windows and doors are closed, no other internal thermal loads.

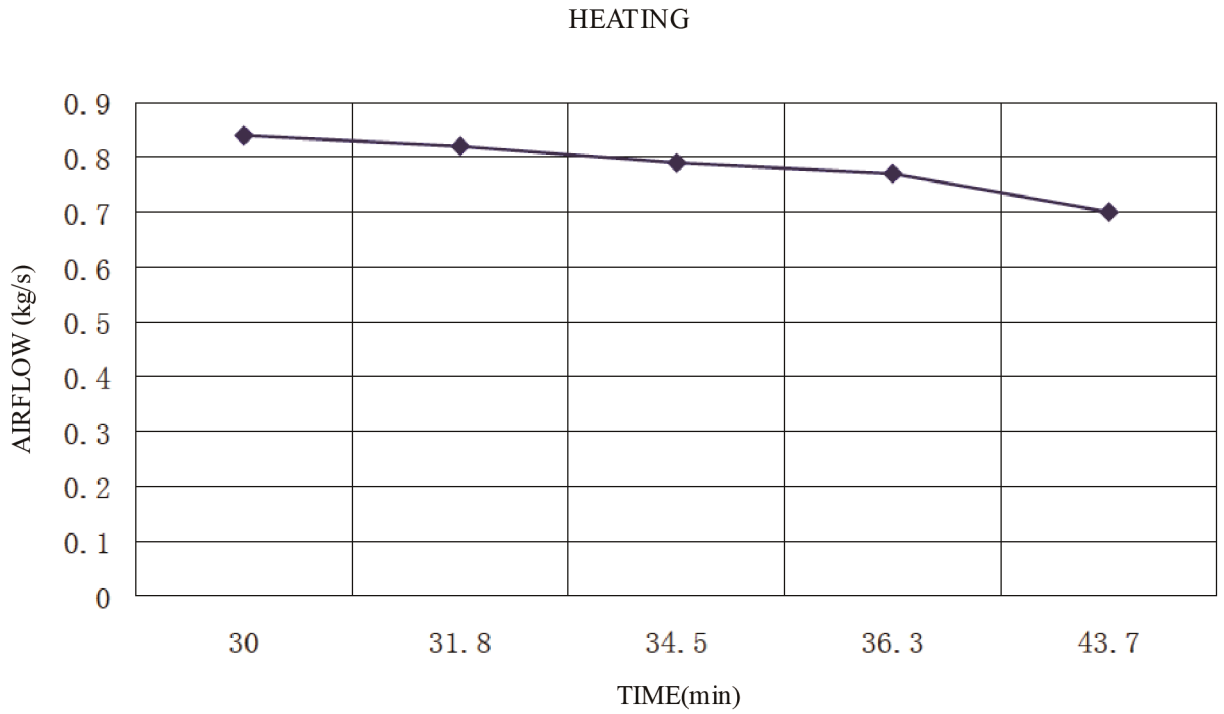

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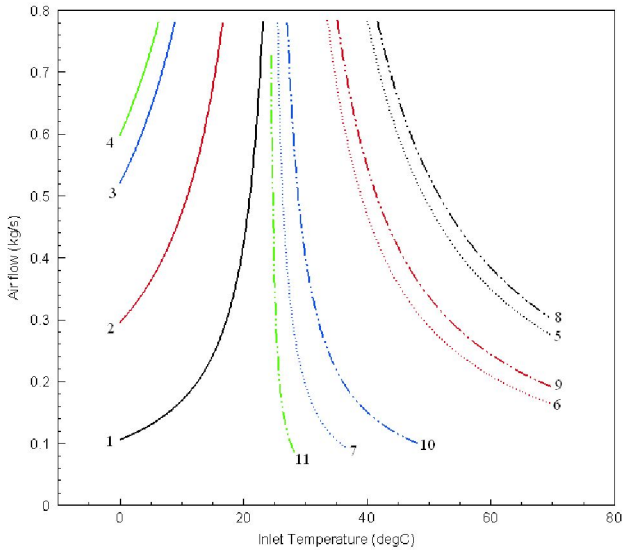
Figure 2 Heating (Sheet 1 of 1)

Initial Cabin Temperature: -30℃, heating cabin to 24℃. Low Pressure Ground Connection Temperature: 70℃.

Aircraft State: No passengers, recirculation fan on, windows and doors are closed, no other internal thermal loads.

Preconditioned Airflow Requirements



1 38degC (2 pilots)
2 38degC (All electrical equipment on, and all crew)
3 38degC (All electrical equipment on, and all on board)
4 38degC (All electrical equipment on, all on board, and solar emission)
5 -30degC(2 pilots)
6 -30degC(All electrical equipment on, and all crew)
7 -30degC(All electrical equipment on, and all on board)
8 -35degC(2 crew members)
9 -35degC(All electrical equipment on, and all crew)
10 -35degC(All electrical equipment on, and all on board)
11 -35degC(All electrical equipment on, all on board and solar emission)

Outside Ambient Temperature: 38degC
-30degC
-35degC

All Electrical Equipment On: Thermal Loads Emiited from Cockpit and All Cabin Electrical Equipment.

All Crew: Pilots and Attendants only, No Passengers.

All On Board: Pilots, Attendants and Passengers' Quantity Reach Maximum.

Solar Emmision: Ground solar Emission is 1135W/m2 , refer to MIL-E-38453A.

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Figure 1 Cabin Airflow and Connection Temperature Curve (Sheet 1 of 1)

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Ground Towing Requirements

1. Ground Towing Requirements

Use towing equipment for aircraft towing when carrying out parking, mooring or maintenance work. Aircraft towing contains normal towing and emergency towing. Normal towing is generally through towing the aircraft from nose landing gear. Emergency towing is generally through towing the aircraft from main landing gear.

For details, see AMM 09 Towing and Taxiing.

Two safety bolts are arranged on the towing fitting of the towbar. The failure shear force of the first is **45674 N** （ **10267 lbf** ）, The failure shear force of the second is **61986 N** （ **13934 lbf** ）.

Maximum allowable moment at towing trunnion of the towbar is **2022.6 N.m** （ **1491.7 lbf.ft** ）.

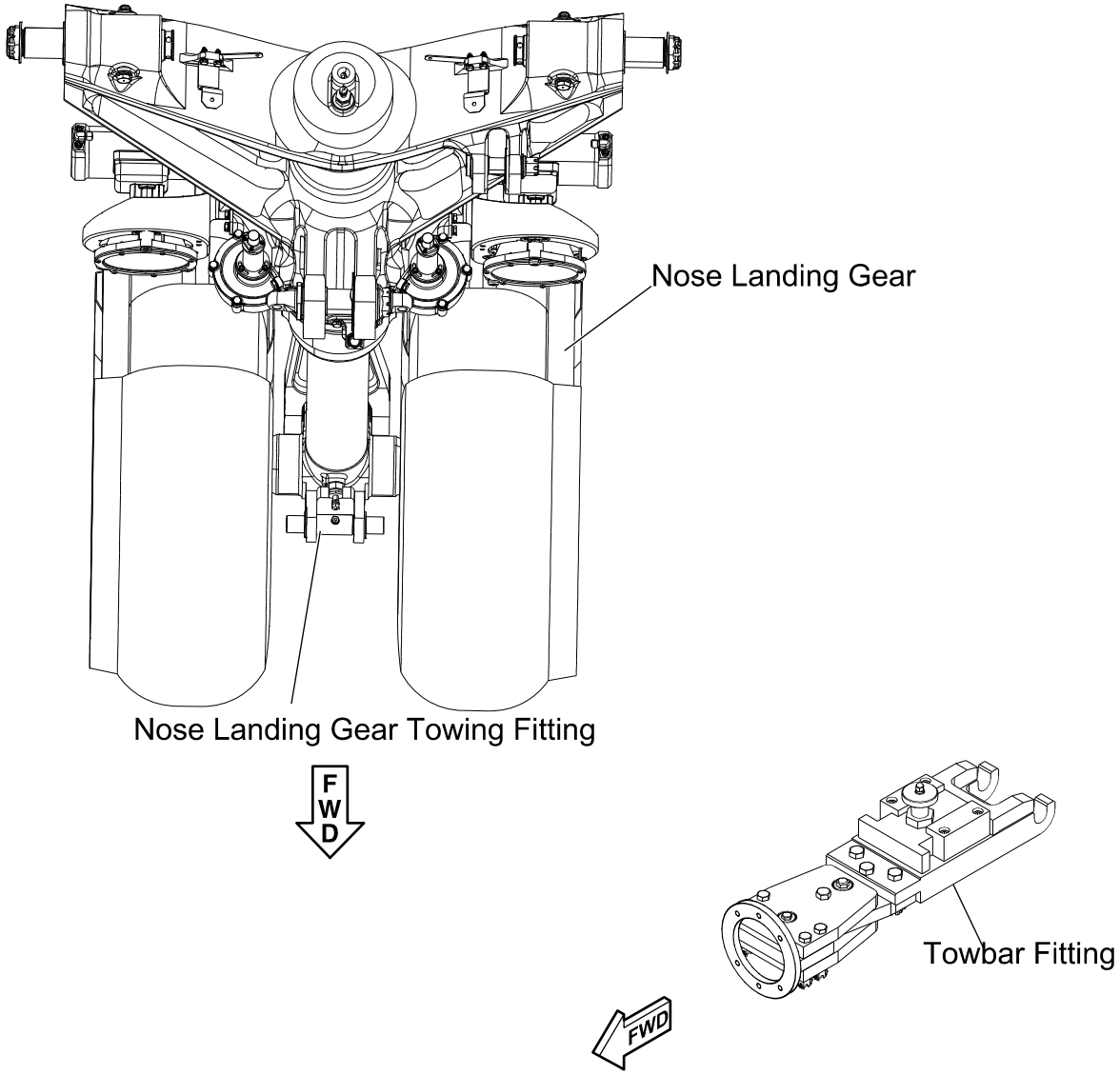

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Figure 1 Normal Towing (Sheet 1 of 1)

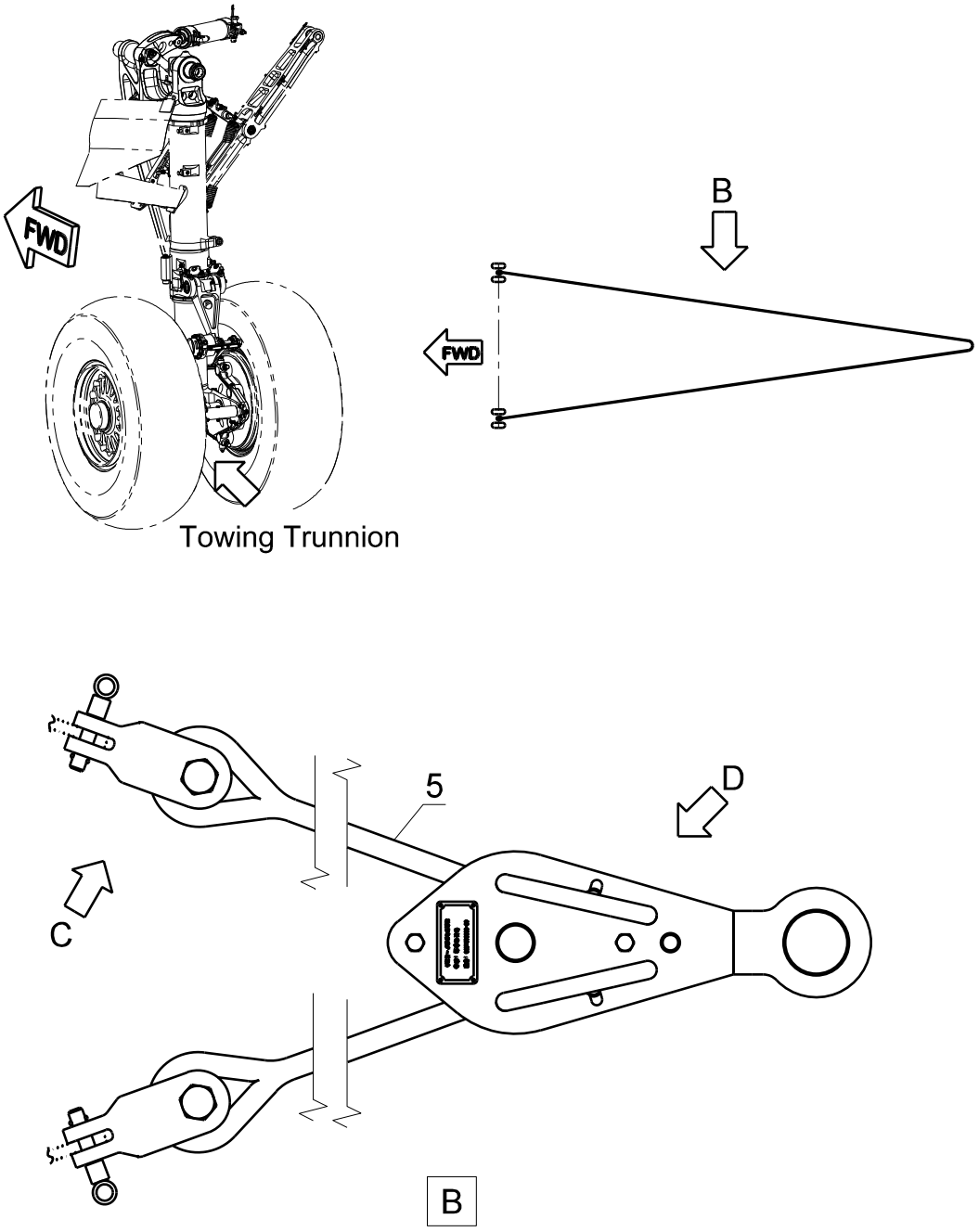

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Figure 2 Emergency Towing (Sheet 1 of 1)

Chapter 6
Operating Conditions

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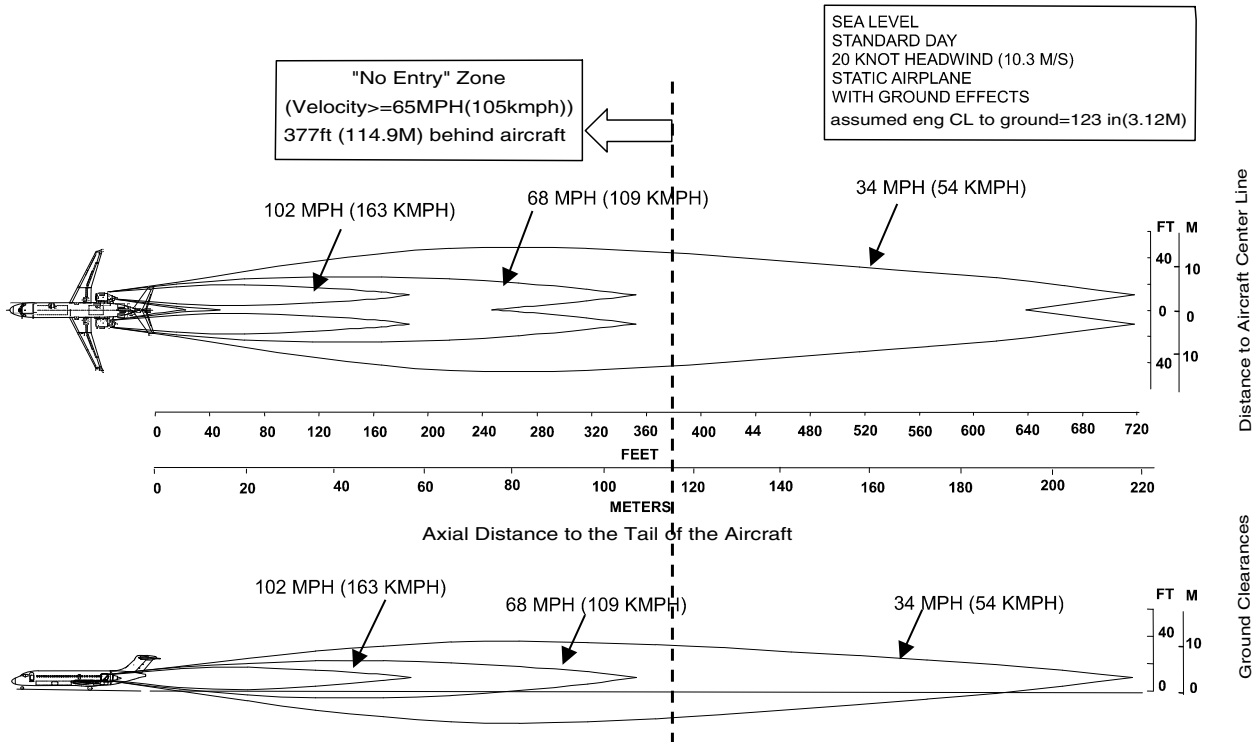
Engine Exhaust Velocities and Temperatures

1. Engine Exhaust Velocity - Takeoff Thrust



ICN-ARJ21-A-192006-A-SVV19-10793-A-001-01

Figure 1 CF34-10A Engine Exhaust Velocity Contour (Sea Level, Takeoff Thrust 17514 lbf) (Sheet 1 of 1)

2. Engine Exhaust Temperature - Takeoff Thrust

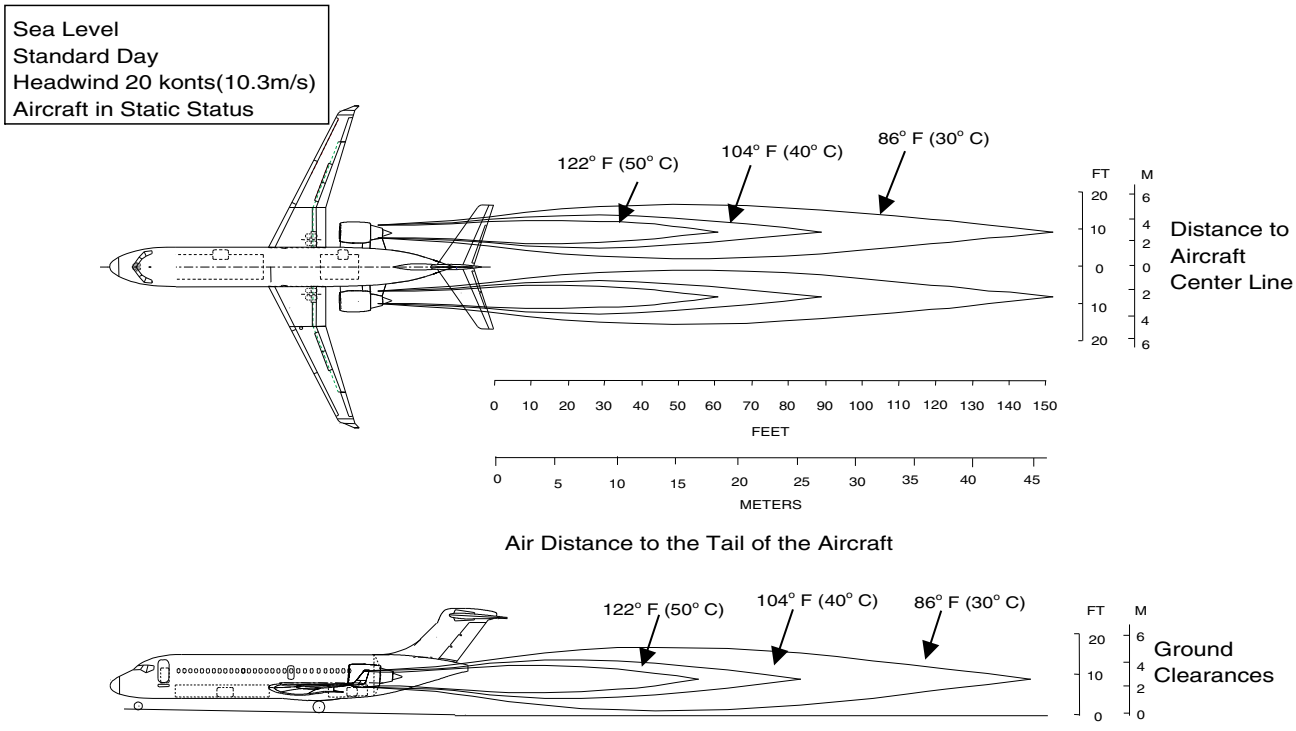


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Figure 2 CF34-10A Engine Exhaust Temperature Contour (Sea Level, Take-off Thrust 17514 lbf) (Sheet 1 of 1)

3. Engine Exhaust Velocity - Ground Idle Thrust

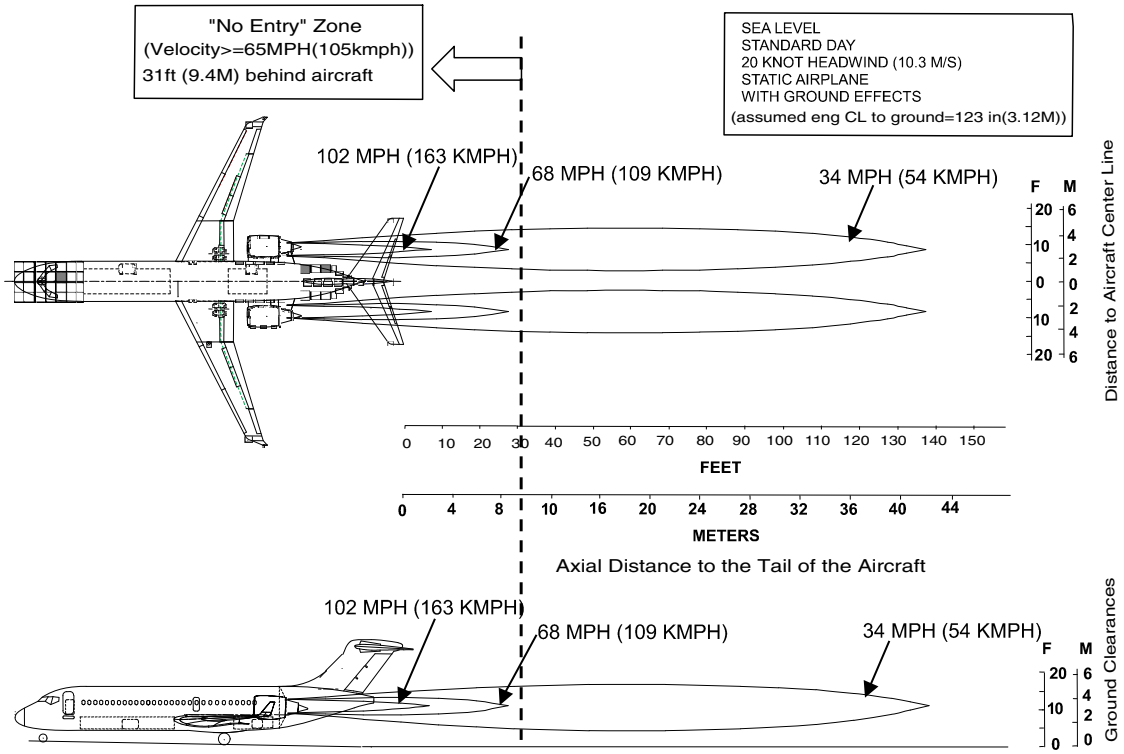

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Figure 3 CF34-10A Engine Exhaust Velocity Contour (Sea Level, Ground Idle Thrust 761 lbf) (Sheet 1 of 1)

4. Engine Exhaust Temperature - Ground Idle Thrust

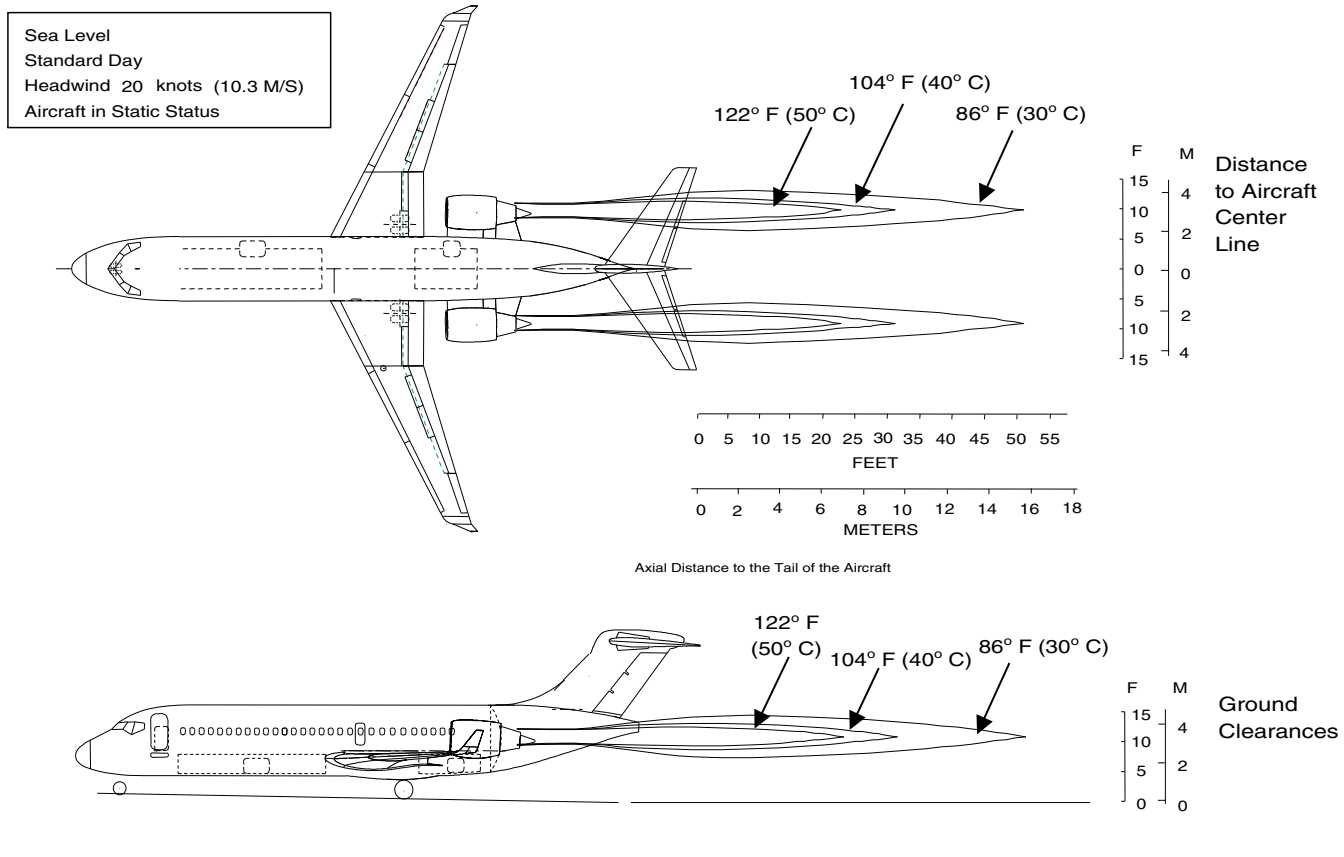

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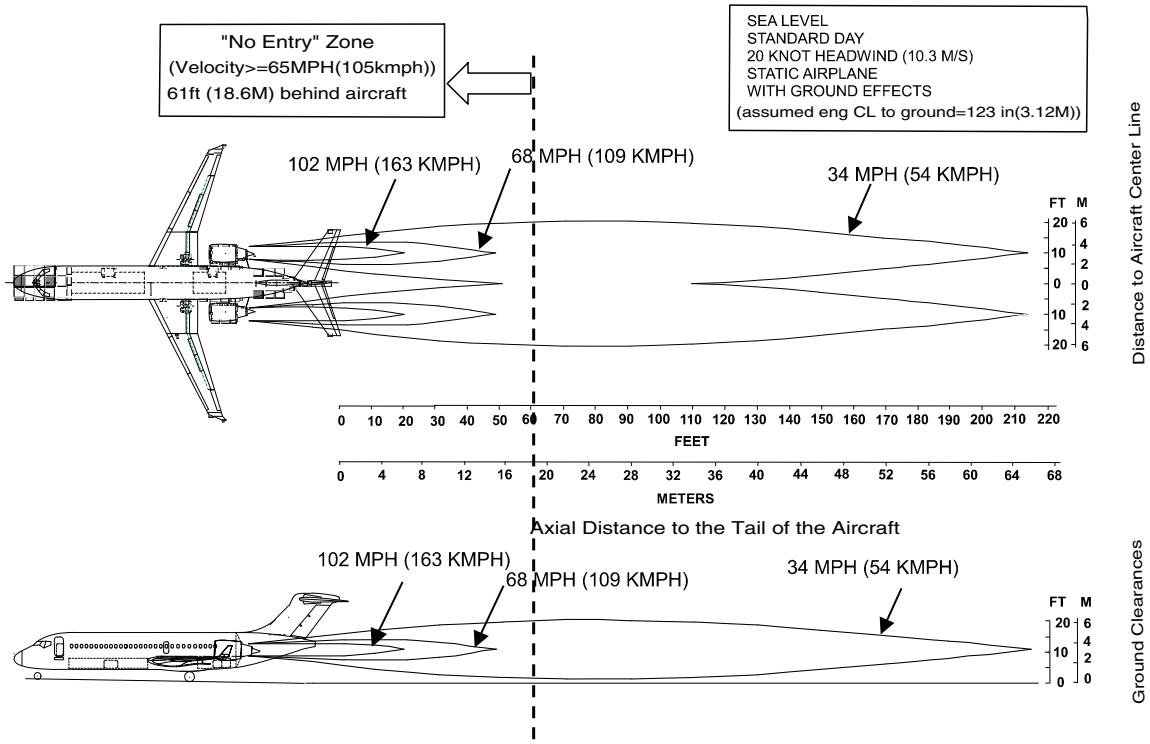
Figure 4 CF34-10A Engine Exhaust Temperature Contour (Sea Level, Ground Idle Thrust 761 lbf) (Sheet 1 of 1)

5. Engine Exhaust Velocity - Initial Moving Thrust



ICN-ARJ21-A-192006-A-SVV19-10797-A-001-01

Figure 5 CF34-10A Engine Exhaust Velocity Contour (Sea Level, Initial Moving Thrust 1678 lbf) (Sheet 1 of 1)

6. Engine Exhaust Temperature - Initial Moving Thrust

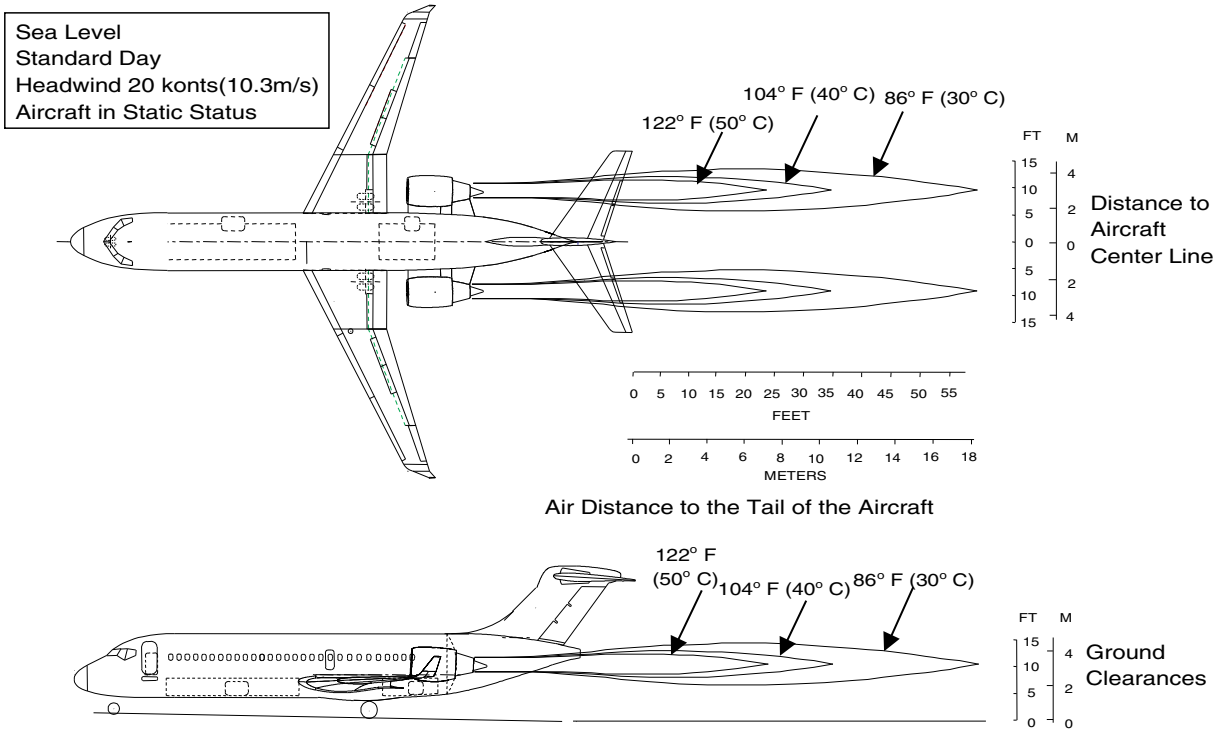


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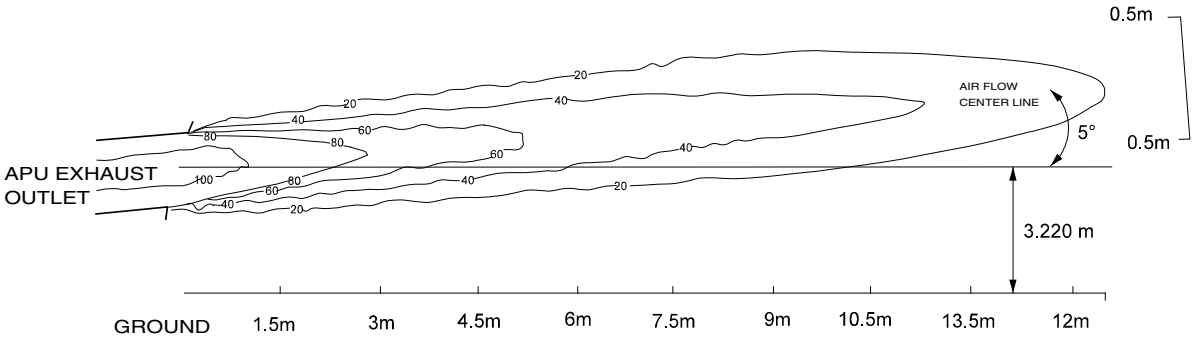
Figure 6 CF34-10A Engine Exhaust Temperature Contour (Sea Level, Initial Moving Thrust 1678 lbf) (Sheet 1 of 1)

APU Exhaust Velocities and Temperatures



EXHAUST VELOCITY TRACE Velocity Unit: m/s

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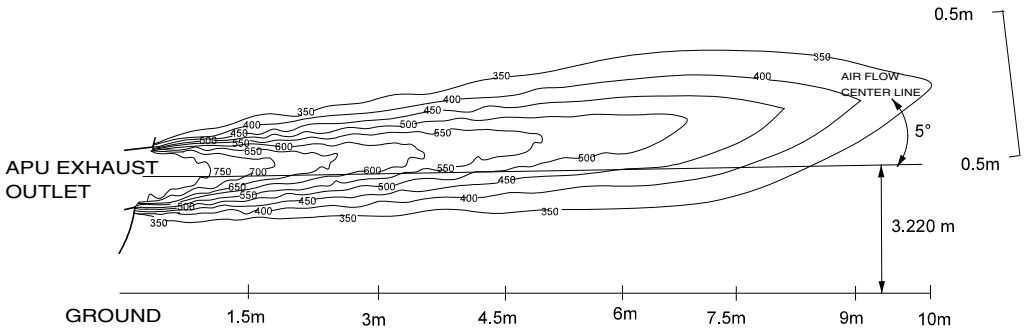
Figure 1 APU Exhaust Velocity Contour (Sheet 1 of 1)



EXHAUST TEMPERATURE TRACE Temperature Unit:KELVIN
Unit Conversion:Kelvin Temperature Scale=Degree Centigrade+2 73.15

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Figure 2 APU Exhaust Temperature Contour (Sheet 1 of 1)

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Danger Area of Engines

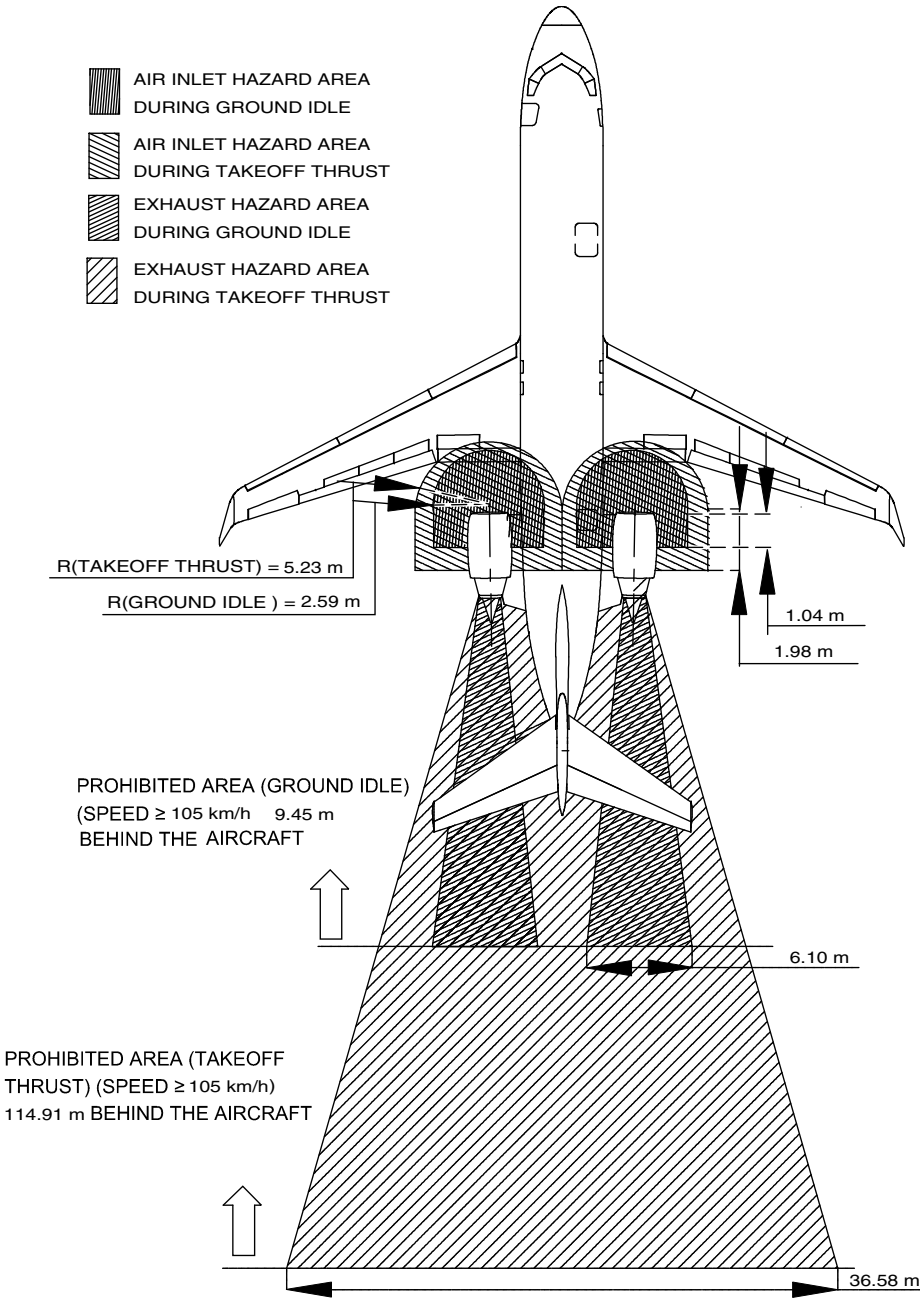

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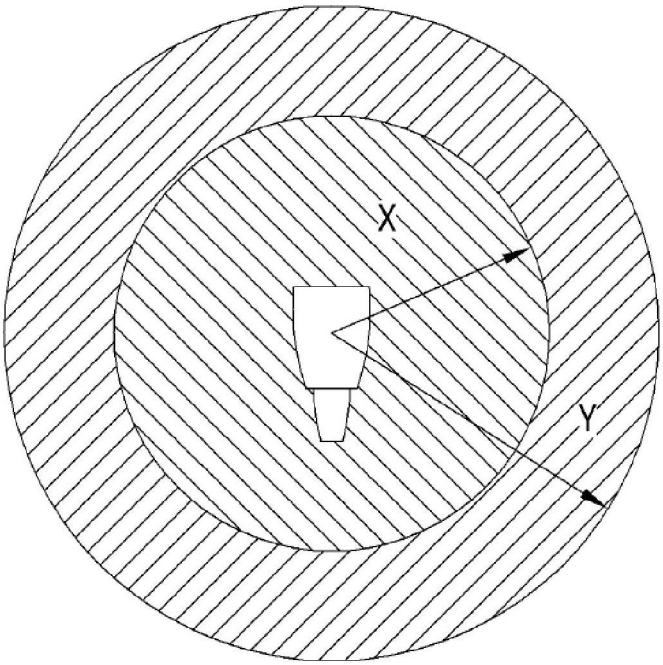
Figure 1 Danger Area of Engines (Sheet 1 of 1)



X. Indicates that working for a long time in this area may cause hearing impairment even with ear protection.

Y. Indicates that in this area, operators require ear protection and operate in accordance with the time and distance in Figure 3 and 4.

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Figure 2 Noise Hazard Areas of Engines (Sheet 1 of 1)

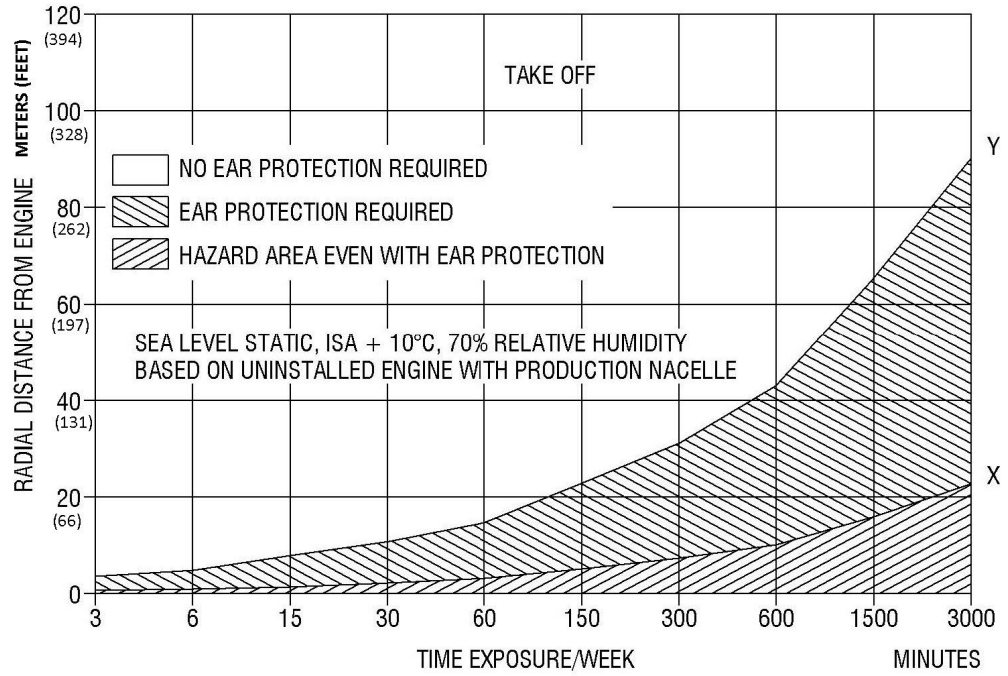

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Figure 3 Noise Hazard Areas of Engines (Takeoff Thrust) (Sheet 1 of 1)

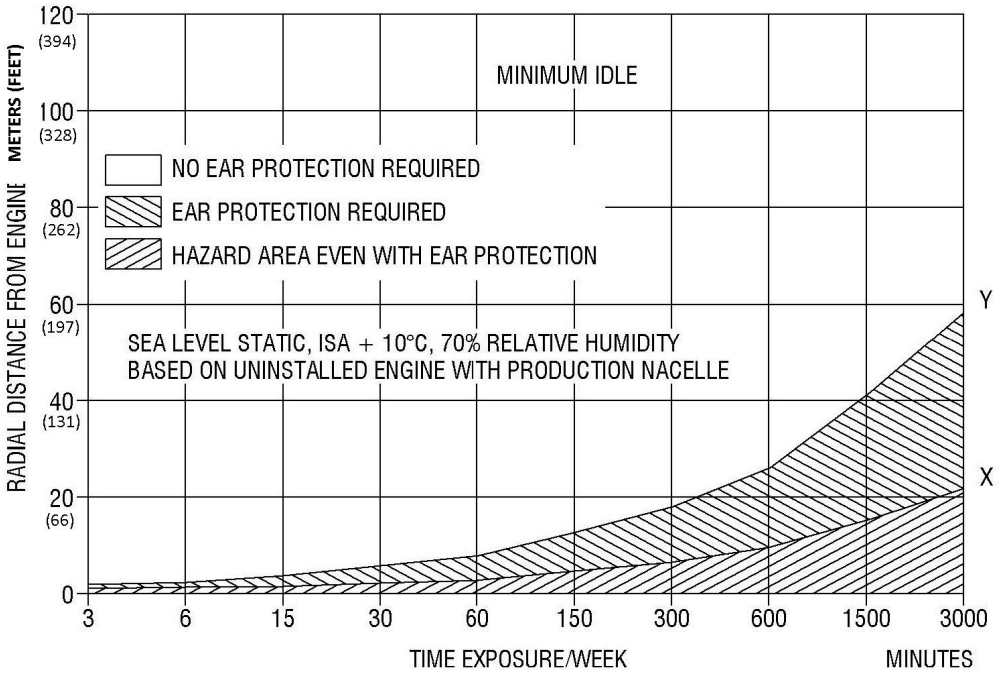

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Figure 4 Noise Hazard Areas of Engines (Idle Thrust) (Sheet 1 of 1)

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Chapter 7
Pavement Data

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General

A brief description of the pavement charts that follow will help in their use for airport planning. Each aircraft configuration is depicted with a minimum range of five loads imposed on the main landing gear to aid in interpolation between the discrete values shown. All curves for any single chart represent data based on rated loads and tire pressures, the data obtained at the maximum possible main gear load at maximum design taxi weight and AFT C.G.

Section 7.2 presents basic data on the landing gear footprint configuration, maximum design taxi loads, and tire sizes and pressures.

Maximum pavement loads for certain critical conditions at the tire-to-ground interface are shown in Section 7.3, with the tires having equal loads on the struts.

The charts in Section 7.4 are provided in order to determine these loads throughout the stability limits of the aircraft at rest on the pavement.

The flexible pavement design curves (Section 7.5) are based on procedures set forth in Instruction Report No. S-77-1, "Procedures for Development of CBR Design Curves," dated June 1977. The line showing 10,000 coverages is used to calculate Aircraft Classification Number (ACN).

All Load Classification Number (LCN) curves (Sections 7.6 and 7.8) have been developed from a computer program based on data provided in International Civil Aviation Organization (ICAO) document 7920-AN/865/2, Aerodrome Design Manual, Part 2 ("Airport Physical Characteristics", Second Edition, 1965).

Rigid pavement design curves (Section 7.7) have been prepared with the Westergaard equation in general accordance with the procedures outlined in the Design of Concrete Airport Pavement (1973 edition) and Computer Program for Airport Pavement Design(1967 edition), published by the Portland Cement Association.

The ACN/PCN system (Section 7.9) as referenced in ICAO Annex 14, "Aerodromes", provides a standardized international aircraft/pavement rating system replacing the various S, T, TT, LCN, AUW, ISWL, etc., rating systems used throughout the world. ACN is the Aircraft Classification Number and PCN is the Pavement Classification Number. An aircraft having an ACN equal to or less than the PCN can operate on the pavement subject to no limitation on the tire pressure. Numerically, the ACN is two times the derived single-wheel loadexpressed in **1000 kg**(**2205 lb**). where the derived single wheel load is defined as the load on a single tire inflated to 181 psi (1.25 MPa) that would have the same pavement requirements as the aircraft. Computationally, the ACN/PCN system uses the PCA program PDILB for rigid pavements and S-77-1 for flexible pavements to calculate ACN values. The method of pavement evaluation is left up to the airport with the results of their evaluation presented as follows:

PCN			
PAVEMENT TYPE	**SUBGRADE CATEGORY**	**TIRE PRESSURE CATEGORY**	**EVALUATION METHOD**
R = Rigid	A = High	W = No Limit	T = Technical
F = Flexible	B = Medium	X - ≤1.5 MPa (217 psi)	U = Using Aircraft

PCN			
PAVEMENT TYPE	SUBGRADE CATEGORY	TIRE PRESSURE CATEGORY	EVALUATION METHOD
	C = Low	Y - ≤1 MPa (145 psi)	
	D = Ultra Low	Z - ≤0.5 MPa (73 psi)	

ACN values for flexible pavements are calculated for the following four subgrade categories:

High Strength - CBR 15

Medium Strength - CBR 10

Low Strength - CBR 6

Ultra Low Strength - CBR 3

ACN values for rigid pavements are calculated for the following four subgrade categories:

High Strength, k = 150 Mn/m^3 (550 pci)

Medium Strength, k = 80 MN/m^3 (300 pci)

Low Strength, k = 40 MN/m^3 (150 pci)

Ultra Low Strength, k = 20 MN/m^3 (75 pci)

Landing Gear Footprint

Model	ARJ21-700 STD	ARJ21-700 ER
Maximum Taxi Weight	40580 kg / 89464 lb	43580 kg / 96077 lb
NLG Tire Size	24×7.7	24×7.7
NLG Tire Pressure	0.66 MPa / 96 PSI	0.7 MPa / 101PSI
MLG Tire Size	H40×14 - 19	H40×14 - 19
MLG Tire Pressure	0.93 MPa / 135 PSI	0.99 MPa / 144 PSI

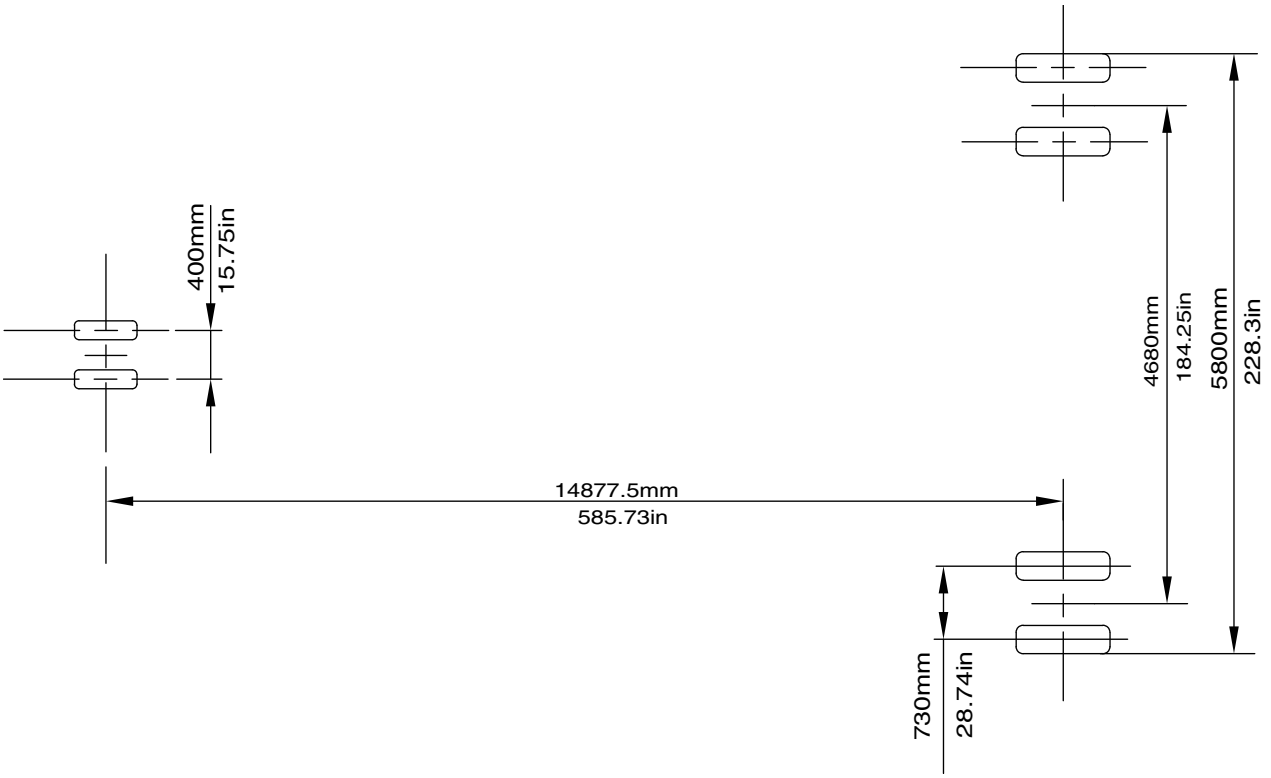

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Figure 1 Landing Gear Footprint (Sheet 1 of 1)

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Maximum Pavement Load

V_{NG}: maximum vertical nose gear ground load at most forward center of gravity.

V_{MG}: maximum vertical main gear ground load at most aft center of gravity.

H : maximum horizontal ground load from braking.

NOTE: All loads calculated using aircraft maximum design taxi weight.

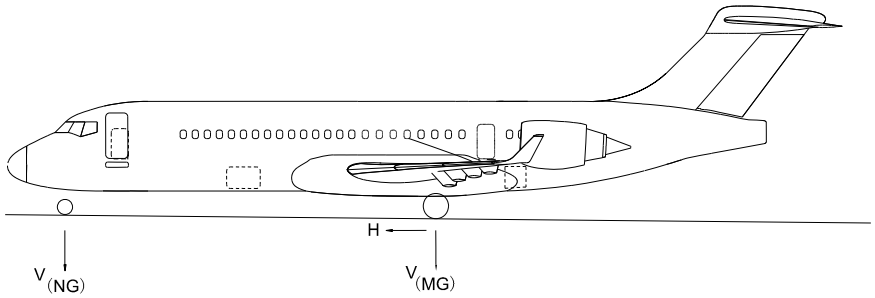

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Figure 1 Maximum Pavement Load (Sheet 1 of 1)

Model	Maximum Taxi Weight	V_{NG}		V_{MG} (Per Strut At Max Load)	H (Per Strut At Max Load)	
		Static At Most FWD C.G.	Steady Braking Accel-eration: -3m/s²	Static At Most AFT C.G.	Steady Braking Accel-eration: -3m/s²	Continu-ous Brak-ing (μ= 0.8)
STD	40,580 kg 89,464 lb	4,268 kg 9,410 lb	5,261 kg 11,578 lb	19,417 kg 42,808 lb	6,306 kg 13,903 lb	15,534 kg 34,246 lb
ER	43,580 kg 96,077 lb	4,423 kg 9,752 lb	5,489 kg 12,101 lb	20,692 kg 45,618 lb	6,773 kg 14,931 lb	16,554 kg 36,494 lb

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Landing Gear Loading on Pavement

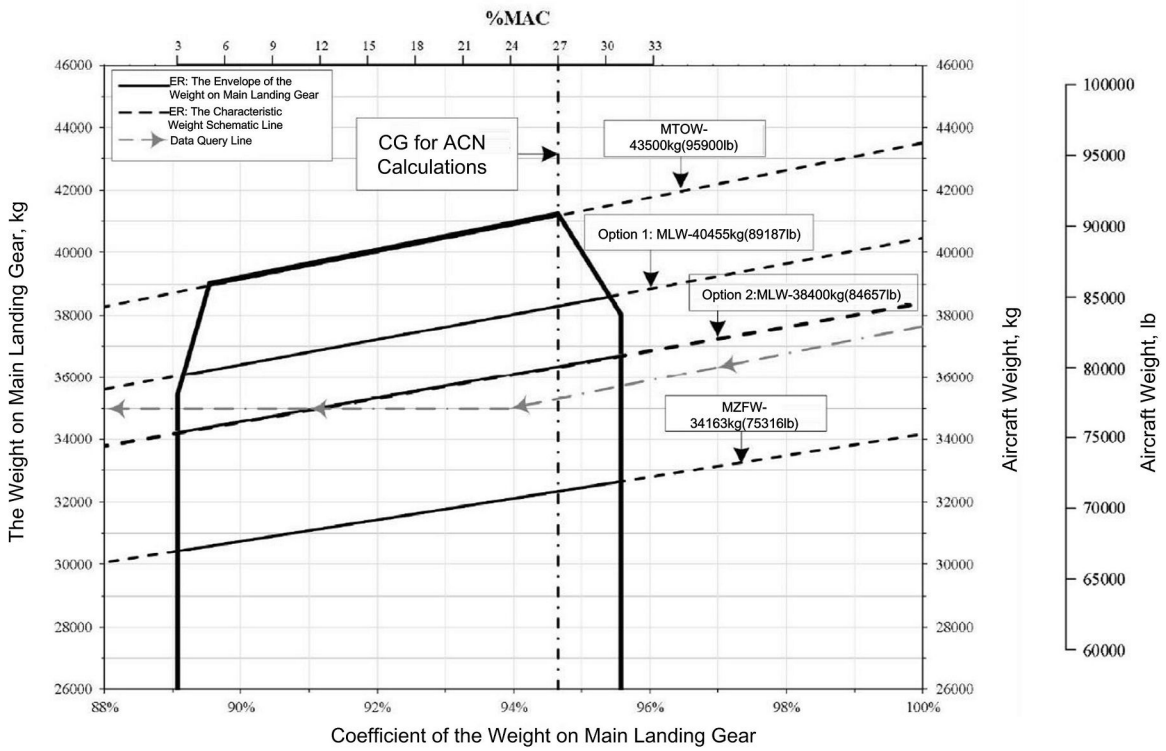

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Figure 1 Landing Gear Loading on Pavement (Sheet 1 of 1)

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Flexible Pavement Requirements

To determine the flexible pavement thickness, the CBR, the annual departures and the main gear load must be known.

Example:

— CBR 5

— Annual Departures 10000

— Weight on Single Main Landing Gear 17665 kg (38945 lb)

For these conditions, flexible pavement thickness is at 66.4 cm (26.1 in).

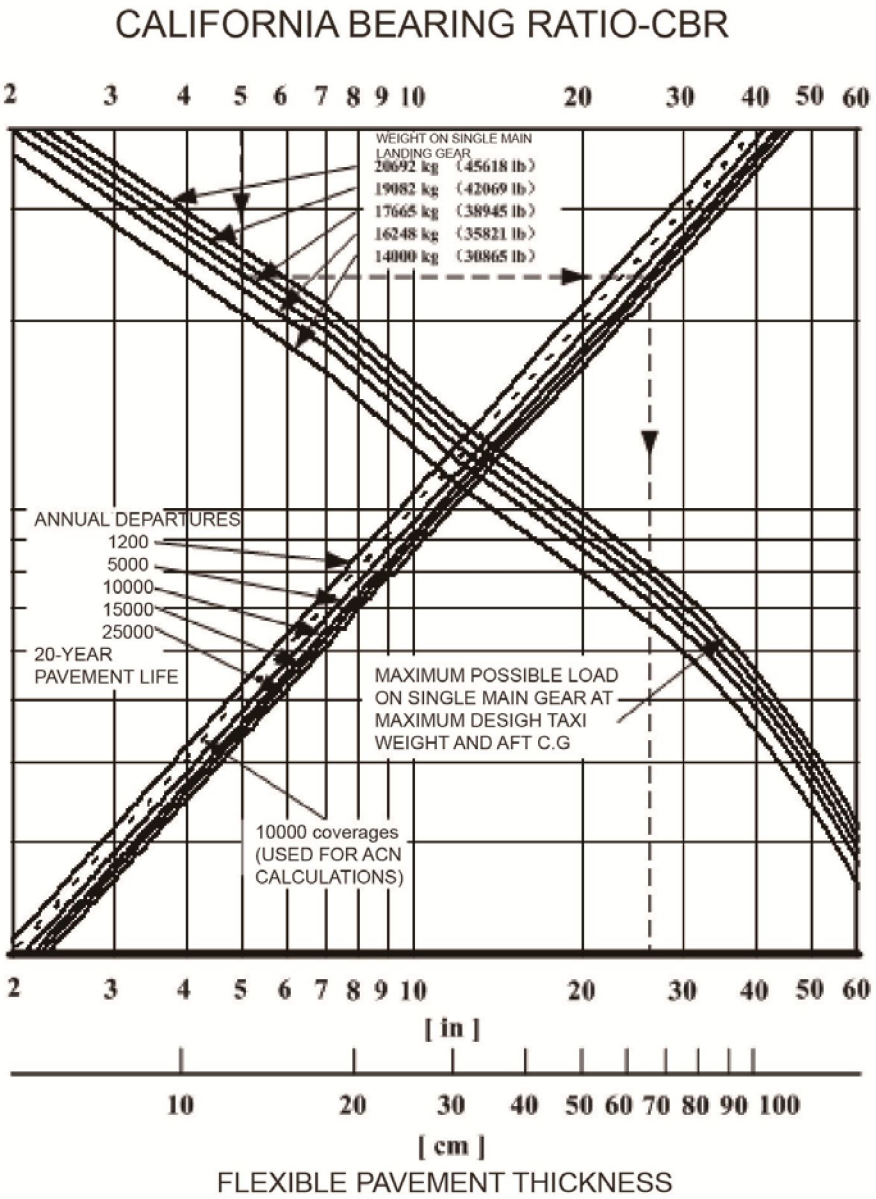

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Figure 1 Main Landing Gear Tire size: H40×14.0-19 (Sheet 1 of 1)

NOTE: Main Landing Gear Tires Pressure Stays at 9.9 bar (144 psi).

Flexible Pavement LCN Conversion

To determine the aircraft weight that can be accommodated on a particular flexible pavement, both the Load Classification Number (LCN) of the pavement and the thickness must be known.

Example:

— Flexible Pavement Thickness 50.8 cm (20 in)

— LCN 39

For these conditions, the apparent maximum allowable weight permissible on the single main landing gear is 19082 kg (42069 lb).

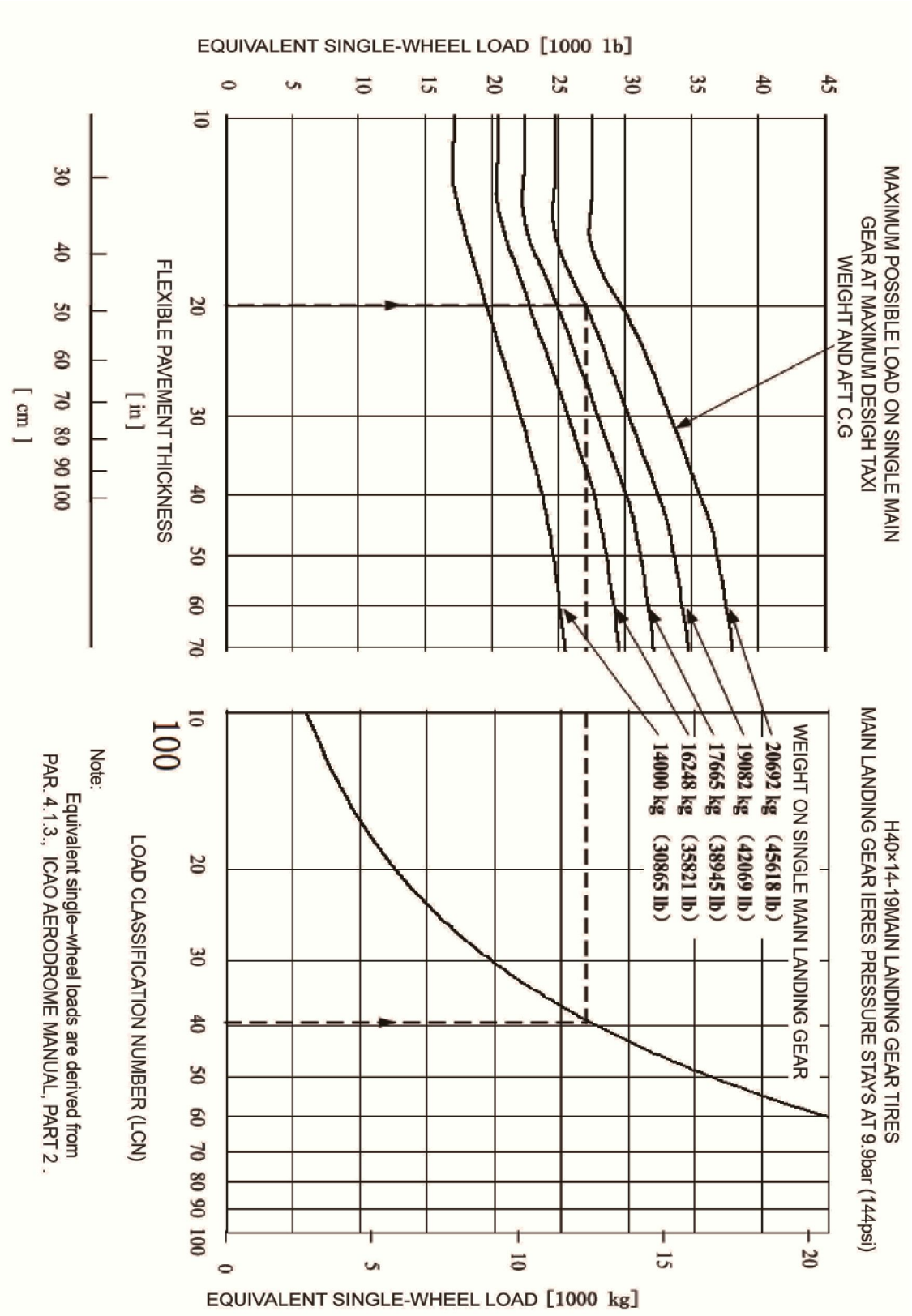

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Figure 1 Flexible Pavement LCN Conversion (Sheet 1 of 1)

Rigid Pavement Requirements

To determine the rigid pavement thickness, the subgrade strength (k), the allowable working stress and the weight on main landing gear must be known.

Example:

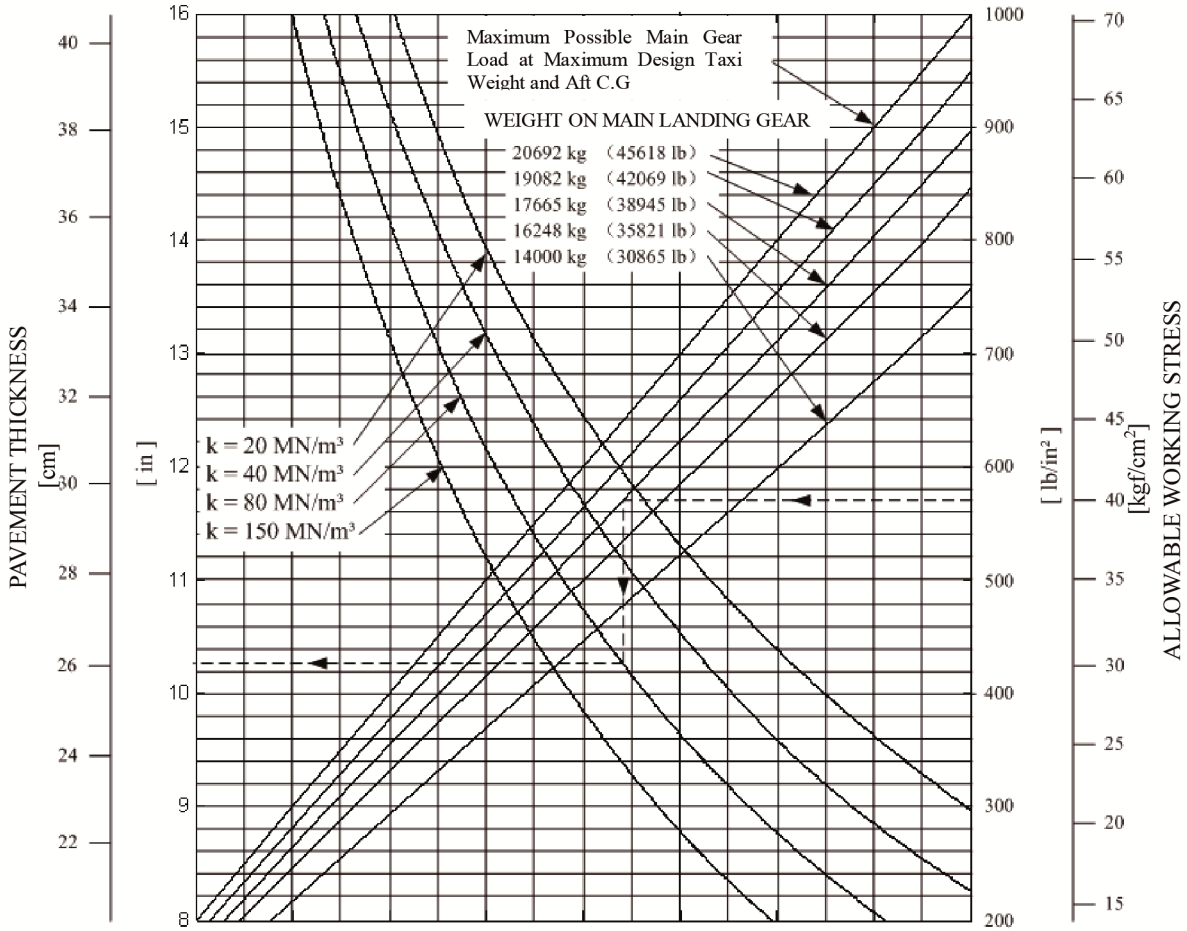
— Subgrade Strength k = 80 MN/m3 (300 lb/in3)

— Allowable Working Stress 35.2 kgf/cm2 (500 lbf/in2)

— Weight on Single Main Landing Gear 17665 Kg (38945 Lb)

For these conditions, the rigid pavement thickness is 18.3 cm (7.2 in).

H40×14 – 19 Main Landing Gear Tires
Main Landing Gear Tires Pressure 9.9 bar (144 psi)



Note: The values obtained by using the maximum load reference line and any value of k are exact. For loads less that maximum, the curves are exact for k=80MN/m² but deviate slightly for other values of k.

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Figure 1 Rigid Pavement Requirements (Sheet 1 of 1)

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Rigid Pavement LCN Conversion

To determine the aircraft weight that can be accommodated on a particular rigid pavement, both the LCN of the pavement and the radius of relative stiffness (L) of the pavement must be known.

Example:

— LCN 43

— Radius of Relative Stiffness 90.9 cm (35.8 in)

For these conditions, the maximum allowable weight permissible on the main landing gear is 19082 kg (42069 lb).

Radius of Relative Stiffness (L)

Value in Inches

$$L = \sqrt[4]{\frac{Ed^3}{12(1-\mu^2)k}} = 24.1652\sqrt[4]{\frac{d^3}{k}}$$

Note: E=4×10^6 psi (Young's Modulus)
k Subgrade Modulus, lbf/in^3
d (Rigid pavement thickness,in)
$\mu = 0.15$ (Poisson's Ratio)

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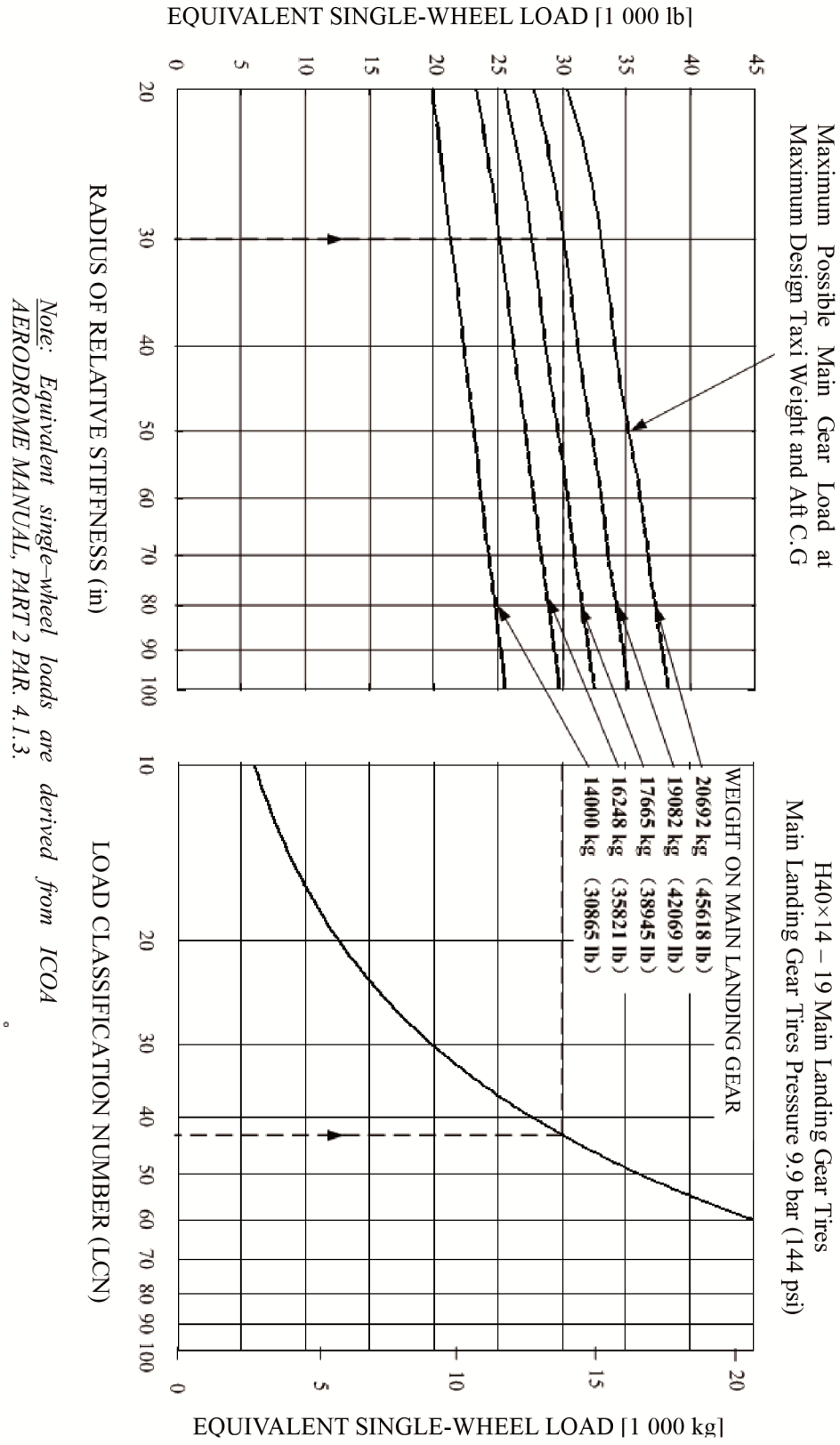
Figure 1 Radius of Relative Stiffness (Sheet 1 of 1)

d	k=75	k=100	k=150	k=200	k=250	k=300	k=350	k=400	k=500	k=550
6.00	31.48	29.30	26.47	24.63	23.30	22.26	21.42	20.72	19.59	19.13
6.50	33.43	31.11	28.11	26.16	24.74	23.64	22.74	22.00	20.80	20.31
7.00	35.34	32.89	29.72	27.65	26.15	24.99	24.04	23.25	21.99	21.47
7.50	37.22	34.63	31.29	29.12	27.54	26.32	25.32	24.49	23.16	22.61
8.00	39.06	36.35	32.85	30.57	28.91	27.62	26.58	25.70	24.31	23.74
8.50	40.88	38.04	34.37	31.99	30.25	28.91	27.81	26.90	25.44	24.84
9.00	42.67	39.71	35.88	33.39	31.58	30.17	29.03	28.08	26.55	25.93
9.50	44.43	41.35	37.36	34.77	32.89	31.42	30.23	29.24	27.65	27.00
10.00	46.18	42.97	38.83	36.14	34.17	32.65	31.42	30.39	28.74	28.06
10.50	47.90	44.57	40.28	37.48	35.45	33.87	32.59	31.52	29.81	29.11
11.00	49.60	46.16	41.71	38.81	36.71	35.07	33.75	32.64	30.87	30.14
11.50	51.28	47.72	43.12	40.13	37.95	36.26	34.89	33.74	31.91	31.16
12.00	52.94	49.27	44.52	41.43	39.18	37.44	36.02	34.84	32.95	32.17
12.50	54.59	50.80	45.90	42.72	40.40	38.60	37.14	35.92	33.97	33.17
13.00	56.22	52.32	47.27	43.99	41.61	39.75	38.25	36.99	34.99	34.16
13.50	57.83	53.82	48.63	45.26	42.80	40.89	39.35	38.06	35.99	35.14

d	k=75	k=100	k=150	k=200	k=250	k=300	k=350	k=400	k=500	k=550
14.00	59.43	55.31	49.98	46.51	43.98	42.02	40.44	39.11	36.99	36.12
14.50	61.02	56.78	51.31	47.75	45.16	43.15	41.51	40.15	37.97	37.08
15.00	62.59	58.25	52.63	48.98	46.32	44.26	42.58	41.19	38.95	38.03
15.50	64.15	59.70	53.94	50.20	47.47	45.36	43.64	42.21	39.92	38.98
16.00	65.69	61.13	55.24	51.41	48.62	46.45	44.70	43.23	40.88	39.92
16.50	67.23	62.56	56.53	52.61	49.75	47.54	45.74	44.24	41.84	40.85
17.00	68.75	63.98	57.81	53.80	50.88	48.61	46.77	45.24	42.78	41.78
17.50	70.26	65.38	59.08	54.98	52.00	49.68	47.80	46.23	43.72	42.70
18.00	71.76	66.78	60.34	56.15	53.11	50.74	48.82	47.22	44.66	43.61
19.00	74.73	69.54	62.84	58.48	55.31	52.84	50.84	49.17	46.51	45.41
20.00	77.66	72.27	65.30	60.77	57.47	54.91	52.84	51.10	48.33	47.19
21.00	80.55	74.96	67.74	63.04	59.62	56.96	54.81	53.01	50.13	48.95
22.00	83.41	77.63	70.14	65.28	61.73	58.98	56.75	54.89	51.91	50.69
23.00	86.24	80.26	72.52	67.49	63.83	60.98	58.68	56.75	53.67	52.41
24.00	89.04	82.86	74.87	69.68	65.90	62.96	60.58	58.59	55.41	54.11
25.00	91.81	85.44	77.20	71.84	67.95	64.92	62.46	60.41	57.14	55.79

Reference: Portland Cement Association.



Note: Equivalent single-wheel loads are derived from ICOA AERODROME MANUAL, PART 2 PAR. 4.1.3.

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Figure 2 Rigid Pavement LCN Conversion (Sheet 1 of 1)

Section 7.8 is about the radius of relative stiffness L calculated on this case of the Young' s modulus of elasticity E = 4×10^6 psi, Poisson's ratio μ= 0.15. When the value of Young' s modulus of elasticity E or Poisson's ratio μ equals other value, the value of originally obtained radius of relative stiffness L shall be multiplied by a coefficient.

Example:

— E = 3×10^6 psi

In accordance with the query graph from Young's modulus of elasticity E to radius of relative stiffness L, it can determine coefficient of the Young' s modulus of elasticity E to equal 0.931.

Similarly, it can determine the coefficient of Poisson's ratio μ.

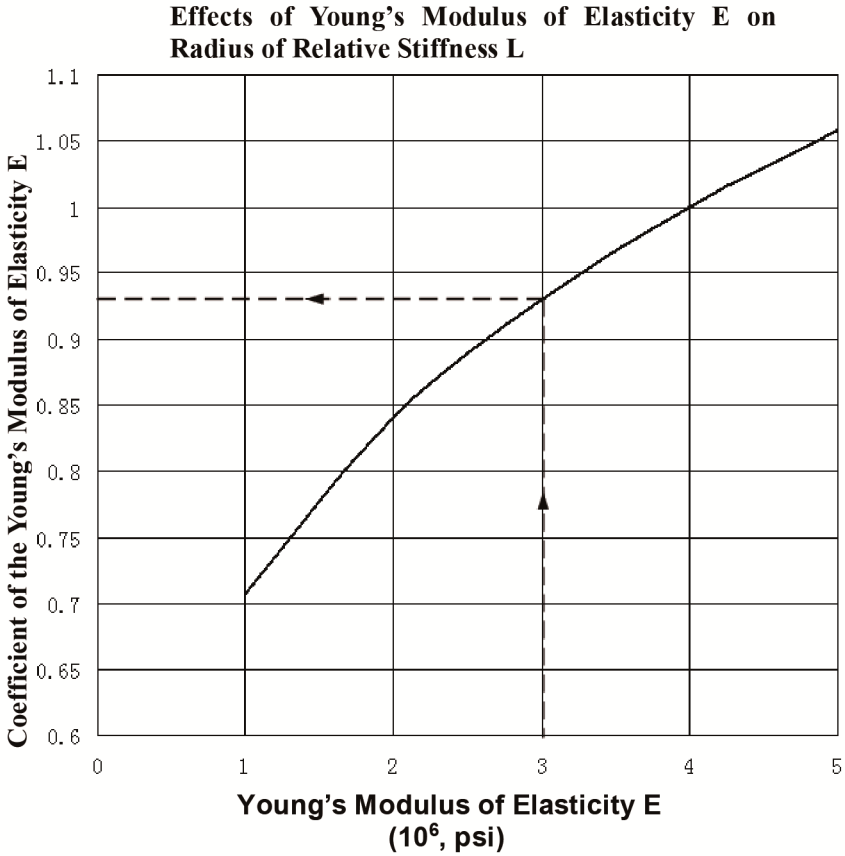

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Figure 3 Young's modulus (Sheet 1 of 1)

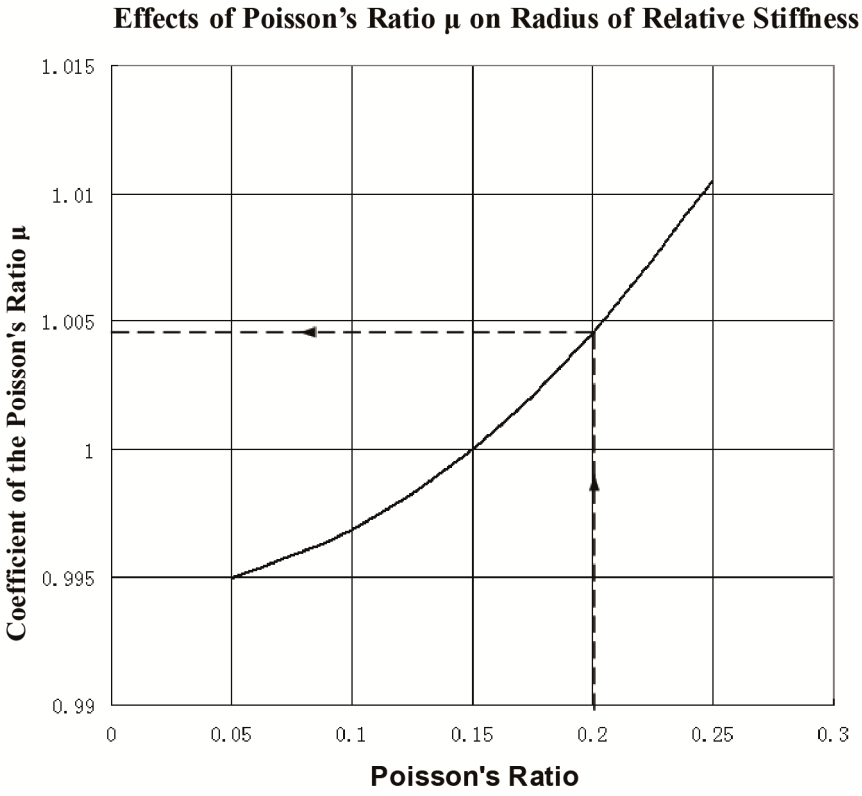

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Figure 4 Poisson's Ratio (Sheet 1 of 1)

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ACN/PCN Reporting System - Flexible and Rigid Pavements

To determine the ACN of an aircraft on flexible or rigid pavement, both the aircraft gross weight and the subgrade strength category must be known.

NOTE: An aircraft with an ACN equal to or less than the reported PCN can operate on that pavement, subject to any limitation on the tire pressure.

The table below provides ACN data of ARJ21-700 aircraft. If the ACN for an intermediate weight between Operating Empty Weight (OEW) and Maximum Taxi Weight (MTW) of the aircraft is required, Figures 1, 2, 3 and 4 should be consulted.

Model	MTW OEW kg/lb	Load on One MLG Leg %	Tire Pressure MPa/PSI	ACN for Rigid Pavement Subgrades – MN/m³				ACN for Flexible Pavement Subgrades - CBR			
				High 150	Medium 80	Low 40	Ultra Low 20	High 15	Medium 10	Low 6	Ultra Low 3
STD	40580.89464 24955.55016	94.65 %	0.93/135	21.5 12.1	23.1 13	24.7 14	26 14.8	19.5 11.1	20.7 11.7	23.5 12.9	27.2 15.1
ER	43580.96077 24955.55016	94.65 %	0.99/144	23.9 12.3	25.6 13.3	27.2 14.2	28.5 15	21.9 11.4	22.8 11.8	25.8 12.9	29.6 15.1

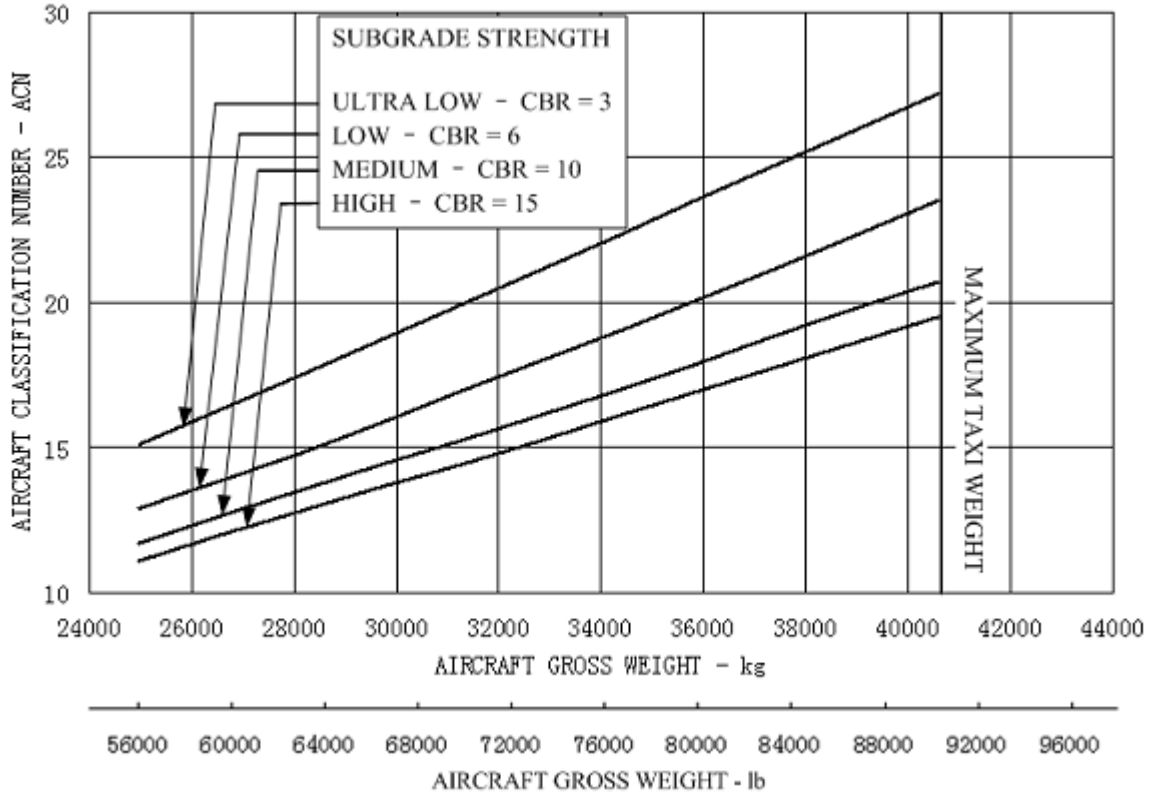

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Figure 1 ARJ21-700 STD ACN for Flexible Pavement (Sheet 1 of 1)

NOTE: Tire size: H40×14.0 - 19

Tire pressure: 135 PSI (0.93 MPa)

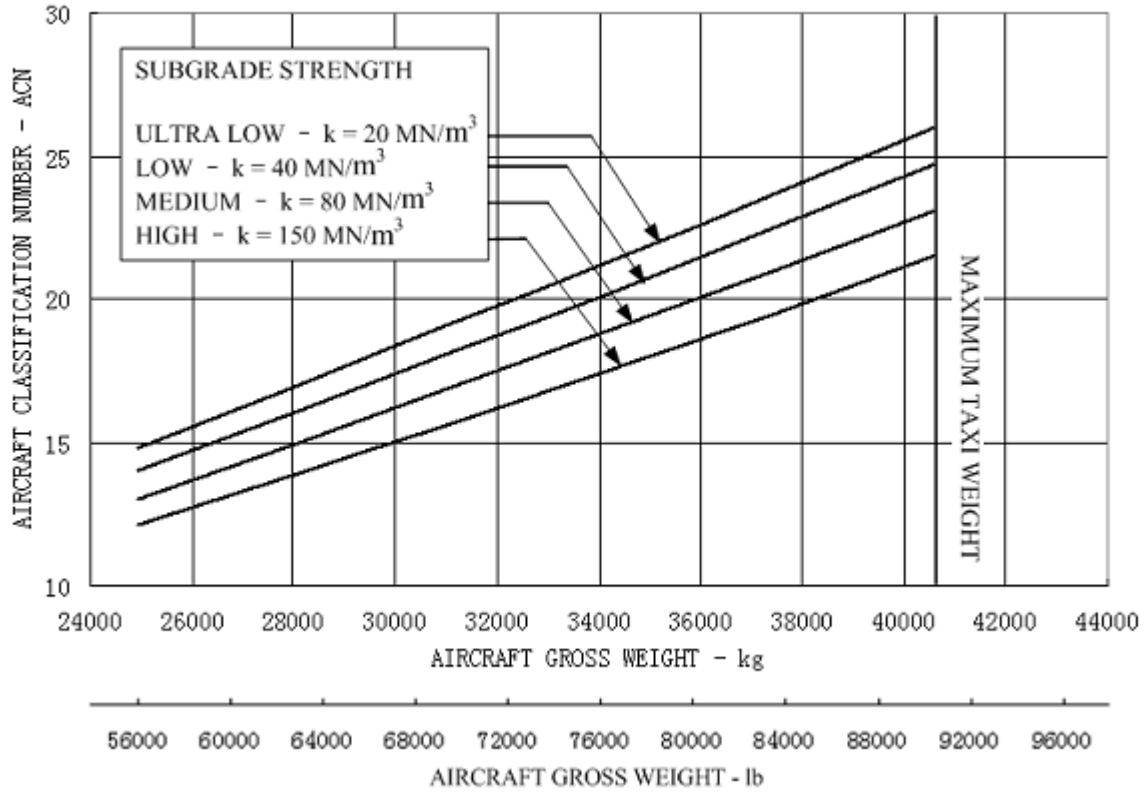

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Figure 2 ARJ21-700 STD ACN for Rigid Pavement (Sheet 1 of 1)

NOTE: Tire size: H40×14.0 - 19

Tire pressure: 135 PSI (0.93 MPa)

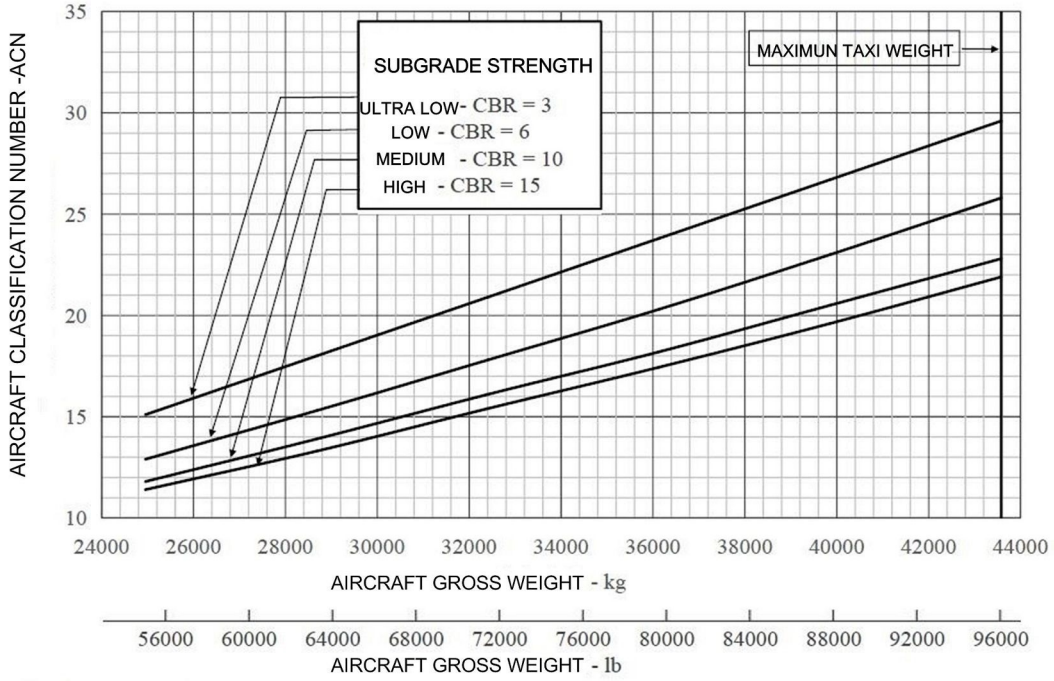

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Figure 3 ARJ21-700 ER ACN for Flexible Pavement (Sheet 1 of 1)

NOTE: Tire size: H40×14.0 - 19

Tire pressure: 144 psi (0.99 MPa)

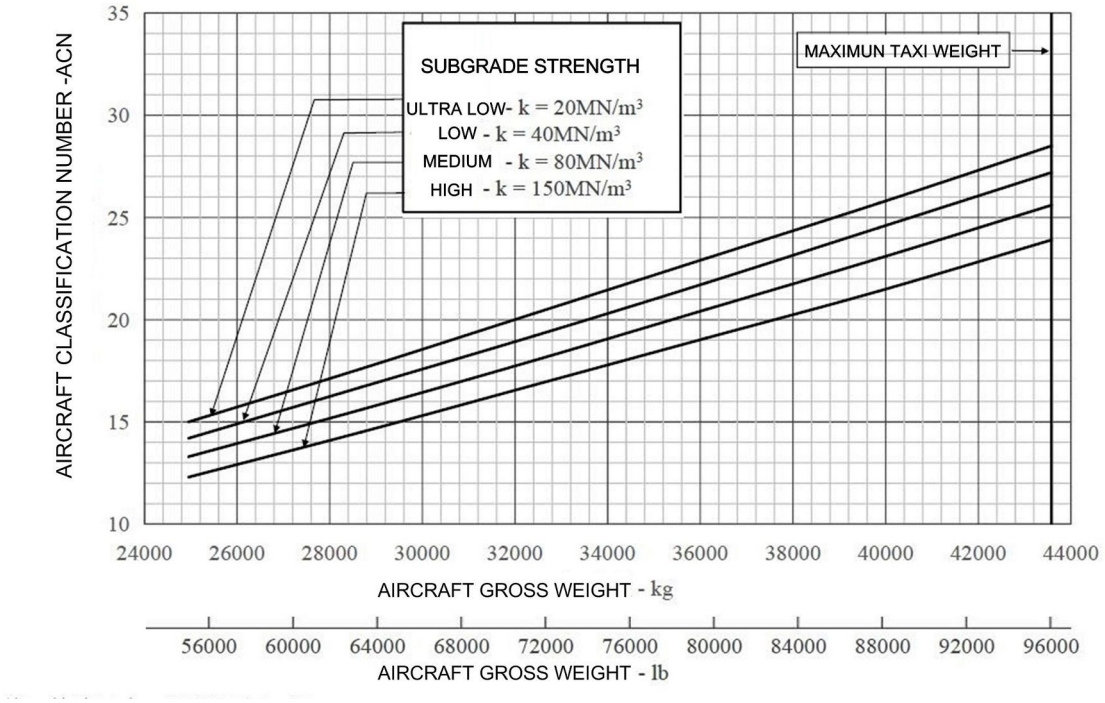

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Figure 4 ARJ21-700 ER ACN for Rigid Pavement (Sheet 1 of 1)

NOTE: Tire size: H40×14.0 - 19
Tire pressure: 144 psi (0.99 MPa)

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