ARJ21

Aircraft Characteristics for Airport Planning ACAP



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TRANSMITTAL LETTER

2020.12.20

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





LIST OF EFFECTIVE DATA MODULES

This list provides the effective data modules in the current edition of Aircraft Characteristics For Airport Planning.

N = New revised data module

C = Changed revised data module D = Deleted revised 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		1	2020.12.20
ARJ21-A-00-00-00-00A-021A-A		1	2020.12.20
ARJ21-A-00-00-00-00A-023B-A		1	2020.12.20
ARJ21-A-00-00-00-00A-00UA-A		1	2020.12.20
ARJ21-A-00-00-00-00A-00SA-A		2	2020.12.20
ARJ21-A-00-00-00-00A-00TA-A		1	2020.12.20
ARJ21-A-00-40-23-01A-01BA-A		1	2020.12.20
ARJ21-A-00-40-23-00A-01BA-A		2	2020.12.20
ARJ21-A-19-20-01-01A-01BA-A		1	2020.12.20
ARJ21-A-19-20-01-02A-01BA-A		2	2020.12.20
ARJ21-A-19-20-01-03A-01BA-A		1	2020.12.20
ARJ21-A-19-20-02-01A-04AA-A		2	2020.12.20
ARJ21-A-19-20-02-02A-04AA-A		2	2020.12.20
ARJ21-A-19-20-02-03A-04AA-A		20	2020.12.20
ARJ21-A-19-20-02-04A-04AA-A		3	2020.12.20
ARJ21-A-19-20-02-05A-04AA-A		7	2020.12.20
ARJ21-A-19-20-02-06A-04AA-A		2	2020.12.20
ARJ21-A-19-20-02-07A-04AA-A		21	2020.12.20
ARJ21-A-19-20-02-08A-04AA-A		7	2020.12.20
ARJ21-A-19-20-02-09A-04AA-A		3	2020.12.20
ARJ21-A-19-20-03-01A-03CA-A		1	2020.12.20
ARJ21-A-19-20-03-02A-03CA-A		2	2020.12.20
ARJ21-A-19-20-03-03A-03CA-A		5	2020.12.20
ARJ21-A-19-20-03-04A-03CA-A		3	2020.12.20
ARJ21-A-19-20-03-05A-03CA-A		2	2020.12.20
ARJ21-A-19-20-04-01A-04AA-A		1	2020.12.20



Data module code	Revision Status	Number of pages	Issue Date
ARJ21-A-19-20-04-02A-04AA-A		2	2020.12.20
ARJ21-A-19-20-04-03A-04AA-A		1	2020.12.20
ARJ21-A-19-20-04-04A-04AA-A		1	2020.12.20
ARJ21-A-19-20-04-05A-04AA-A		3	2020.12.20
ARJ21-A-19-20-04-06A-04AA-A		1	2020.12.20
ARJ21-A-19-20-05-01A-04AA-A		2	2020.12.20
ARJ21-A-19-20-05-02A-04AA-A		1	2020.12.20
ARJ21-A-19-20-05-03A-04AA-A		23	2020.12.20
ARJ21-A-19-20-05-04A-04AA-A		2	2020.12.20
ARJ21-A-19-20-05-05A-04AA-A		1	2020.12.20
ARJ21-A-19-20-05-06A-04AA-A		2	2020.12.20
ARJ21-A-19-20-06-01A-04AA-A		6	2020.12.20
ARJ21-A-19-20-06-02A-04AA-A		1	2020.12.20
ARJ21-A-19-20-06-03A-04AA-A		3	2020.12.20
ARJ21-A-19-20-07-01A-04AA-A		2	2020.12.20
ARJ21-A-19-20-07-02A-04AA-A		1	2020.12.20
ARJ21-A-19-20-07-03A-04AA-A		1	2020.12.20
ARJ21-A-19-20-07-04A-04AA-A		1	2020.12.20
ARJ21-A-19-20-07-05A-04AA-A		2	2020.12.20
ARJ21-A-19-20-07-06A-04AA-A		2	2020.12.20
ARJ21-A-19-20-07-07A-04AA-A		1	2020.12.20
ARJ21-A-19-20-07-08A-04AA-A		5	2020.12.20
ARJ21-A-19-20-07-09A-04AA-A		5	2020.12.20



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





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

In the paper format, a vertical bar in the left margin identifies the revised part. Detailed revision reasons can be acquired refer to the revision highlights.





Symbols and Acronyms

1. Acronyms

Table 1 Acronyms

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
Е	Young's modulus	NTO	Takeoff Thrust
FR	Frame	OAT	Outside Air Temperature
FWD	Forward	OEW	Operating Empty Weight
GPU	Ground Power Unit	PAX	Passenger
Н	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	VREF	Landing Reference Speed
LCD	Liquid Crystal Display	W	Weight
LCN	Load Classification Number		
MAC	Mean Aerodynamic Chord		

2. Symbol

Table 2 Symbol

0	Degree (unit of angle)	lb	Pound
	Percentage	lbf	Pounds Force
${}^{\sim}$	Degree Centigrade	L/Min	Litre/Minute
°F	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/s²	Foot per Square Second	MN/ m³	Mega Newton per Cubic Meter
ft²	Square Foot	MPa	Mega Pascal
ft ³	Cubic Foot	MPH	Meter/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		
1	Liter		





Scope

ARJ21 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.





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 Temperatures
- APU Exhaust Velocities and 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

01-02 Applicable to: ALL



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).





General Characteristics

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

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

<u>Maximum Design Takeoff Weight (MTOW):</u> 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)

<u>Maximum Design Zero Fuel Weight (MZFW):</u> 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.

<u>Avionics Compartment Volume:</u> 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.

<u>Usable Fuel:</u> Fuel available for engines with unusable fuel deducted.

		Aircraft Type				
		ARJ21-7	700 STD	ARJ21-	700 ER	
		Full Econ- omy/Mixed	Premium Economy	Full Econ- omy/Mixed	Premium Economy	
Maximum	lb	89464	84613	96077	89905	
Design Taxi Weight	kg	40580	38380	43580	40780	
Maximum Design Landing Weight	lb	83036	81571	89187	81571	
	kg	37665	37000	40455	37000	
Maximum	lb	89286	84437	95900	89728	
Design Takeoff Weight	kg	40500	38300	43500	40700	
Operating Empty	lb	55016	54895	55016	54895	
Weight	kg	24955	24900	24955	24900	
Maximum	lb	74713	72532	74713	72532	
Design Zero Fuel Weight	kg	33890	32900	33890	32900	



		Aircraft Type			
		ARJ21-7	700 STD	ARJ21-	700 ER
		Full Econ- omy/Mixed	Premium Economy	Full Econ- omy/Mixed	Premium Economy
Maximum	lb	19698	17637	19698	17637
Payload	kg	8935	8000	8935	8000
Maximum Passenger Capacity	Passenger	90/78	60	90/78	60
Avionics	ft ³	273.7	273.7	273.7	273.7
Compartment Volume	m³	7.8	7.8	7.8	7.8
Cooknit Valuma	ft ³	310.8	310.8	310.8	310.8
Cockpit Volume	m³	8.8	8.8	8.8	8.8
Cabin	ft ³	3918.7	3918.7	3918.7	3918.7
Cabin	m³	111	111	111	111
Maximum Cargo	ft ³	711.4	711.4	711.4	711.4
Volume	m³	20.1	20.1	20.1	20.1
	ft³	453.5	453.5	453.5	453.5
Usable Fuel	m³	12.8	12.8	12.8	12.8
Capacity	US GAL	3392.5	3392.5	3392.5	3392.5
	L	12842	12842	12842	12842

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

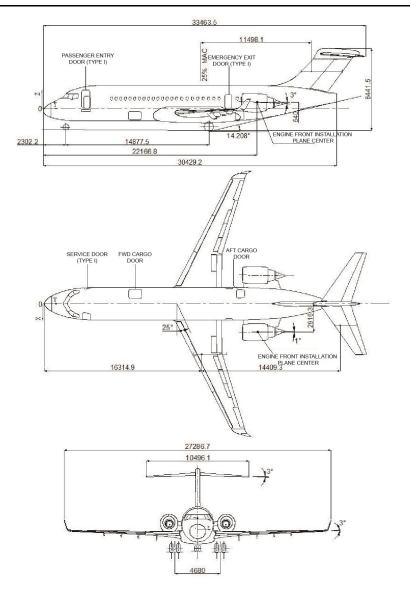
02-01 Applicable to: ALL



General Dimensions

	T		
	Wing Span (including winglets)	27.29 m(1074.33 in)	
Aircraft Dimensions	Height	27.29 m(1074.33 in)	
	Length	33.46 m(1317.44 in)	
\\/in a	Reference Area	79.86 m ² (859.60 ft ²)	
Wing	Aspect Ratio	8.86	
	Overall Length	30.43 m(1197.99 in)	
	Length of FWD Non-barrel Cross Section	5.64 m(222.00 in)	
Fuselage	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)	
	Reference Area	23.22 m ² (249.89 ft ²)	
Horizontal Tail	Span	10.51 m(413.78 in)	
	Aspect Ratio	4.76	
	Reference Area	14.96 m²(161.03 ft²)	
Vertical Tail	Span	3.505 m(137.99 in)	
	Aspect Ratio	0.82	





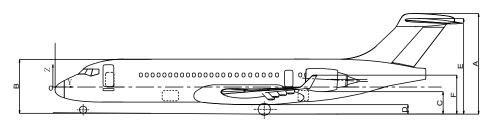
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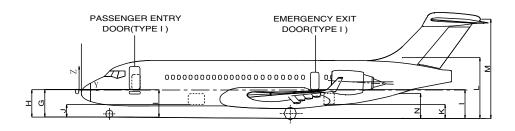
Figure 1 Three-View Drawing of Aircraft (mm) (Sheet 1 of 1)

02-02 Applicable to: ALL



Ground Clearances





ICN-ARJ21-A-192002-A-SVV19-10703-A-003-01

Figure 1 Ground Clearances (Sheet 1 of 1)

Table 1 Ground Clearances

Dimension No.	Dimension Name	Dimension No.	Dimension Name
Α	Vertical Tail Highest Point	Н	Service Door
В	Fuselage Highest Point	I	Emergency Exit Door
С	Engine Lowest Point	J	FWDCargo Door
D	Fuselage Lowest Point	K	AFT Cargo Door Ground Clearances
Е	Horizontal Tail Highest Point	L	Vertical Tail Root
F	Wingtip	M	Horizontal Tail Rear Part
G	Passenger Entry Door	N	MID-AFT Fuselage Jacking Point

NOTE: 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°	
Dimension No.	mm	in	mm	in	mm	in
Α	8606	338.8	8590	338.2	8579	337.8
В	4747	186.9	4727	186.1	4713	185.6
С	1909	75.2	1891	74.4	1879	74.0



D	888	35.0	869	34.2	857	33.7
Е	8085	318.3	8069	317.7	8058	317.2
F	3352	132.0	3334	131.3	3322	130.8
G	2461	96.9	2440	96.1	2426	95.5
Н	2440	96.1	2419	95.2	2405	94.7
I	2391	94.1	2372	93.4	2360	92.9
J	1213	47.8	1193	47.0	1180	46.5
K	1198	47.2	1180	46.5	1168	46.0
L	4636	182.5	4619	181.9	4608	181.4
M	7955	313.2	7939	312.6	7928	312.1
N	1444	56.9	1426	56.1	1415	55.7
	OAT	-20°	OAT	AT -30°		-40°
Dimension No.	mm	in	mm	in	mm	in
Α	8568	337.3	8558	336.9	8548	336.5
В	4699	185.0	4686	184.5	4672	183.9
С	1868	73.5	1856	73.1	1845	72.6
D	844	33.2	832	32.8	820	32.3
E	8047	316.8	8037	316.4	8027	316.0
F	3310	130.3	3299	129.9	3288	129.4
G	2412	95.0	2398	94.4	2385	93.9
Н	2391	94.1	2378	93.6	2364	93.1
I	2348	92.4	2337	92.0	2325	91.5
J	1167	45.9	1153	45.4	1140	44.9
K	1156	45.5	1145	45.1	1133	44.6
L	4597	181.0	4586	180.6	4575	180.1
M	7918	311.7	7908	311.3	7898	310.9
N	1403	55.2	1392	54.8	1381	54.4

Table 3 Ground Clearances at Status of MTW (STD)

		OAT	15°	_	OAT 0°					
Dimension	mm	in	mm	in	mm	in	mm	in		
No.	C.G. FV	VD Limit	C.G. AF	T Limit	C.G. FV	VD Limit	C.G. AF	T Limit		
A	8600	338.6	8508	335.0	8583	337.9	8494	334.4		

02-03 Applicable to: ALL



В	4643	182.8	4667	183.7	4627	182.2	4650	183.1		
С	1859	73.2	1817	71.5	1842	72.5	1802	70.9		
D	810	31.9	799	31.5	794	31.3	783	30.8		
Е	8079	318.1	7987	314.4	8062	317.4	7973	313.9		
F	3299	129.9	3260	128.3	3282	129.2	3245	127.8		
G	2311	91.0	2382	93.8	2296	90.4	2365	93.1		
Н	2290	90.2	2361	93.0	2276	89.6	2344	92.3		
I	2325	91.5	2300	90.6	2309	90.9	2285	90.0		
J	1092	43.0	1130	44.5	1077	42.4	1114	43.9		
К	1140	44.9	1107	43.6	1123	44.2	1092	43.0		
L	4611	181.5	4540	178.7	4595	180.9	4526	178.2		
М	7967	313.7	7854	309.2	7949	313.0	7840	308.7		
N	1403	55.2	1350	53.1	1386	54.6	1336	52.6		
		OAT	-10°			OAT	-20°			
Dimension	mm	in	mm	in	mm	in	mm	in		
No.	C.G. FV	VD Limit	C.G. AF	T Limit	C.G. FV	VD Limit	C.G. AF	T Limit		
Α	8572	337.5	8485	334.1	8561	337.0	8476	333.7		
В	4616	181.7	4639	182.6	4605	181.3	4628	182.2		
С	1832	72.1	1792	70.6	1821	71.7	1783	70.2		
D	784	30.9	773	30.4	774	30.5	763	30.0		
E	8050	316.9	7964	313.5	8039	316.5	7955	313.2		
F	3272	128.8	3235	127.4	3261	128.4	3226	127.0		
G	2287	90.0	2353	92.6	2277	89.6	2342	92.2		
Н	2267	89.3	2332	91.8	2257	88.9	2321	91.4		
I	2299	90.5	2275	89.6	2288	90.1	2265	89.2		
J	1067	42.0	1103	43.4	1057	41.6	1092	43.0		
K	1113	43.8	1082	42.6	1102	43.4	1072	42.2		
L	4584	180.5	4517	177.8	4573	180.0	4507	177.4		
М	7938	312.5	7832	308.3	7927	312.1	7823	308.0		
N	1376	54.2	1326	52.2	1365	53.7	1317	51.9		
		OAT	-30°			OAT	-40°			
				· —						
Dimension No.	mm	in	mm	in	mm	in	mm	in		



Α	8550	336.6	8468	333.4	8539	336.2	8459	333.0
В	4595	180.9	4552	179.2	4584	180.5	4605	181.3
С	1811	71.3	1773	69.8	1800	70.9	1764	69.4
D	763	30.0	753	29.6	753	29.6	743	29.3
Е	8029	316.1	7947	312.9	8018	315.7	7938	312.5
F	3251	128.0	3216	126.6	3241	127.6	3207	126.3
G	2268	89.3	2330	91.7	2258	88.9	2319	91.3
Н	2247	88.5	2309	90.9	2238	88.1	2298	90.5
I	2278	89.7	2256	88.8	2268	89.3	2246	88.4
J	1047	41.2	1081	42.6	1037	40.8	1070	42.1
K	1092	43.0	1063	41.9	1082	42.6	1053	41.5
L	4562	179.6	4499	177.1	4552	179.2	4490	176.8
М	7916	311.7	7815	307.7	7905	311.2	7807	307.4
N	1354	53.3	1307	51.5	1344	52.9	1298	51.1

Table 4 Ground Clearances at Status of MTW (ER)

		OAT	15°			OAT	0°	
Dimension	mm	in	mm	in	mm	in	mm	in
No.	C.G. FV	VD Limit	C.G. AF	T Limit	C.G. FV	VD Limit	C.G. AF	T Limit
Α	8578	337.7	8516	335.3	8562	337.1	8502	334.7
В	4626	182.1	4646	182.9	4610	181.5	4630	182.3
С	1842	72.5	1810	71.3	1826	71.9	1796	70.7
D	797	31.4	792	31.2	782	30.8	777	30.6
Е	8057	317.2	7995	314.8	8041	316.6	7980	314.2
F	3283	129.3	3235	127.4	3267	128.6	3220	126.8
G	2306	90.8	2356	92.8	2292	90.2	2340	92.1
Н	2286	90.0	2341	92.2	2272	89.4	2325	91.5
I	2311	91.0	2296	90.4	2295	90.4	2281	89.8
J	1084	42.7	1114	43.9	1069	42.1	1098	43.2
K	1124	44.3	1104	43.5	1109	43.7	1089	42.9
L	4592	180.8	4544	178.9	4576	180.2	4530	178.3
M	7943	312.7	7866	309.7	7926	312.0	7852	309.1
N	1386	54.6	1351	53.2	1370	53.9	1336	52.6
		OAT	-10°			OAT	-20°	

02-03 Applicable to: ALL



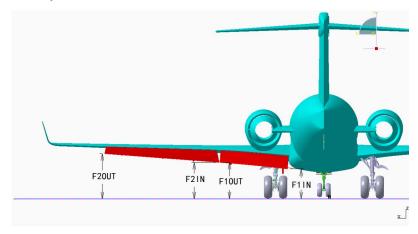
Dimension	mm	in	mm	in	mm	in	mm	in
No.	C.G. FV	VD Limit	C.G. Al	T Limit	C.G. FV	VD Limit	C.G. AF	T Limit
Α	8551	336.7	8493	334.4	8541	336.3	8484	334.0
В	4600	181.1	4619	181.9	4589	180.7	4609	181.5
С	1816	71.5	1786	70.3	1806	71.1	1776	69.9
D	771	30.4	767	30.2	761	30.0	757	29.8
Е	8030	316.1	7971	313.8	8020	315.7	7962	313.5
F	3257	128.2	3210	126.4	3246	127.8	3201	126.0
G	2283	89.9	2330	91.7	2273	89.5	2319	91.3
Н	2262	89.1	2314	91.1	2252	88.7	2303	90.7
I	2285	90.0	2271	89.4	2275	89.6	2261	89.0
J	1059	41.7	1087	42.8	1050	41.3	1077	42.4
К	1098	43.2	1079	42.5	1088	42.8	1070	42.1
L	4565	179.7	4521	178.0	4555	179.3	4511	177.6
М	7916	311.7	7843	308.8	7905	311.2	7834	308.4
N	1359	53.5	1327	52.2	1349	53.1	1317	51.9
		OAT	-30°			OAT	-40°	
Dimension	mm	in	mm	in	mm	in	mm	in
No.	C.G. FV	VD Limit	C.G. AF	T Limit	C.G. FV	VD Limit	C.G. AF	T Limit
А	8530	335.8	8475	333.7	8520	335.4	8466	333.3
В	4579	180.3	4598	181.0	4569	179.9	4587	180.6
С	1796	70.7	1767	69.6	1786	70.3	1758	69.2
D	751	29.6	747	29.4	742	29.2	737	29.0
Е	8009	315.3	7954	313.1	7999	314.9	7945	312.8
F	3236	127.4	3191	125.6	3227	127.0	3182	125.3
G	2263	89.1	2308	90.9	2254	88.7	2297	90.4
Н	2243	88.3	2292	90.2	2233	87.9	2282	89.8
I	2265	89.2	2252	88.7	2255	88.8	2242	88.3
J	1040	40.9	1067	42.0	1030	40.6	1056	41.6
К	1078	42.4	1060	41.7	1068	42.0	1051	41.4
L	4545	178.9	4502	177.2	4535	178.5	4493	176.9
М	7895	310.8	7826	308.1	7884	310.4	7818	307.8
N	1339	52.7	1308	51.5	1329	52.3	1299	51.1



Table 5 Ground Clearances at Jacked Status

Dimension No.	mm	in
А	9022	355.2
В	5052	198.9
С	2266	89.2
D	1209	47.6
Е	8506	334.9
F	3706	145.9
G	2686	105.8
Н	2666	105.0
I	2728	107.4
J	1477	58.1
K	1544	60.8
L	5027	197.9
M	8395	330.5
N	1813	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)

02-03 Applicable to: ALL

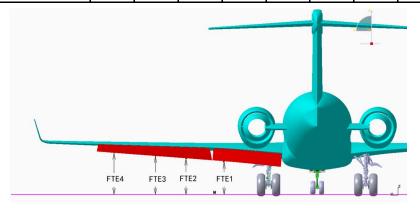


Table 6 Ground Clearances at Flap Fully Extended Status of Each Flap

	-	Operational Empty		Maxi		Γaxi We	eight	Maxi		Гахі We	eight
OAT	Description		ight	FWD	CG	AFT	CG	FWD	CG	AFT	CG
		mm	in	mm	in	mm	in	mm	in	mm	in
	Flap 1 Inboard (F1IN)	1048	41.3	965	38.0	950	37.4	979	38.5	958	37.7
15℃	Flap 1 Outboard (F1OUT)	1366	53.8	1283	50.5	1262	49.7	1297	51.1	1276	50.2
13 C	Flap 2 Inboard (F2IN)	1367	53.8	1284	50.6	1263	49.7	1298	51.1	1277	50.3
	Flap 2 Outboard (F2OUT)	1786	70.3	1711	67.4	1673	65.9	1726	68.0	1695	66.7
	Flap 1 Inboard (F1IN)	1030	40.6	950	37.4	935	36.8	963	37.9	943	37.1
0℃	Flap 1 Outboard (F1OUT)	1348	53.1	1267	49.9	1247	49.1	1281	50.4	1261	49.6
00	Flap 2 Inboard (F2IN)	1348	53.1	1268	49.9	1248	49.1	1282	50.5	1262	49.7
	Flap 2 Outboard (F2OUT)	1768	69.6	1695	66.7	1658	65.3	1710	67.3	1680	66.1
	Flap 1 Inboard (F1IN)	1018	40.1	940	37.0	925	36.4	953	37.5	933	36.7
10℃	Flap 1 Outboard (F1OUT)	1335	52.6	1257	49.5	1237	48.7	1271	50.0	1251	49.3
-10℃	Flap 2 Inboard (F2IN)	1336	52.6	1258	49.5	1238	48.7	1272	50.1	1252	49.3
	Flap 2 Outboard (F2OUT)	1756	69.1	1685	66.3	1649	64.9	1699	66.9	1670	65.7
	Flap 1 Inboard (F1IN)	1006	39.6	929	36.6	915	36.0	943	37.1	923	36.3
-20℃	Flap 1 Outboard (F1OUT)	1323	52.1	1247	49.1	1228	48.3	1260	49.6	1241	48.9
-20 C	Flap 2 Inboard (F2IN)	1324	52.1	1248	49.1	1228	48.3	1261	49.6	1242	48.9
	Flap 2 Outboard (F2OUT)	1744	68.7	1675	65.9	1639	64.5	1689	66.5	1660	65.4
	Flap 1 Inboard (F1IN)	994	39.1	919	36.2	906	35.7	932	36.7	913	35.9
20%	Flap 1 Outboard (F1OUT)	1311	51.6	1237	48.7	1218	48.0	1250	49.2	1231	48.5
-30℃	Flap 2 Inboard (F2IN)	1312	51.7	1238	48.7	1219	48.0	1251	49.3	1232	48.5
	Flap 2 Outboard (F2OUT)	1732	68.2	1665	65.6	1630	64.2	1679	66.1	1650	65.0



ОАТ		Operational Empty Weight		Maxi		Taxi We ER	eight	Maximum Taxi Weight - STD			
	Description			FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
	Flap 1 Inboard (F1IN)	982	38.7	910	35.8	896	35.3	922	36.3	904	35.6
40°C	Flap 1 Outboard (F1OUT)	1300	51.2	1227	48.3	1208	47.6	1240	48.8	1221	48.1
-40℃	Flap 2 Inboard (F2IN)	1301	51.2	1228	48.3	1209	47.6	1241	48.9	1222	48.1
-	Flap 2 Outboard (F2OUT)	1721	67.8	1655	65.2	1620	63.8	1668	65.7	1641	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

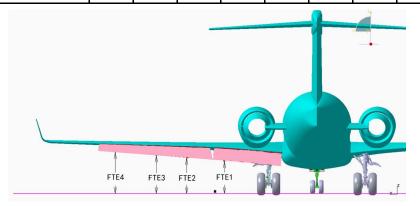
		Operational Empty Weight		Maxi		Γaxi We ER	eight	Maximum Taxi Weight - STD			
OAT	Description			FWD CG		AFT CG		FWD CG		AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
	Flap Track 1 (FTE1)	1250	49.2	1164	45.8	1147	45.2	1177	46.3	1161	45.7
15℃	Flap Track 2 (FTE2)	1418	55.8	1333	52.5	1312	51.7	1347	53.0	1328	52.3
15 C	Flap Track 3 (FTE3)	1545	60.8	1463	57.6	1437	56.6	1477	58.1	1455	57.3
	Flap Track 4 (FTE4)	1699	66.9	1620	63.8	1587	62.5	1635	64.4	1608	63.3
	Flap Track 1 (FTE1)	1232	48.5	1148	45.2	1132	44.6	1162	45.7	1146	45.1
0℃	Flap Track 2 (FTE2)	1400	55.1	1318	51.9	1297	51.1	1331	52.4	1313	51.7
	Flap Track 3 (FTE3)	1527	60.1	1447	57.0	1422	56.0	1461	57.5	1440	56.7
	Flap Track 4 (FTE4)	1681	66.2	1605	63.2	1573	61.9	1619	63.7	1593	62.7

02-03 Applicable to: ALL





			Operational Empty			Γaxi We	eight	Maximum Taxi Weight - STD			
OAT	Description		ight	FWD CG		AFT CG		FWD	CG	AFT CG	
		mm	in	mm	in	mm	in	mm	in	mm	in
	Flap Track 1 (FTE1)	1220	48.0	1138	44.8	1122	44.2	1151	45.3	1136	44.7
-10℃	Flap Track 2 (FTE2)	1387	54.6	1308	51.5	1287	50.7	1321	52.0	1303	51.3
-10 C	Flap Track 3 (FTE3)	1514	59.6	1437	56.6	1412	55.6	1451	57.1	1430	56.3
	Flap Track 4 (FTE4)	1669	65.7	1594	62.8	1563	61.5	1608	63.3	1583	62.3
	Flap Track 1 (FTE1)	1208	47.6	1128	44.4	1113	43.8	1141	44.9	1126	44.3
-20℃	Flap Track 2 (FTE2)	1375	54.1	1297	51.1	1277	50.3	1310	51.6	1293	50.9
-20 C	Flap Track 3 (FTE3)	1502	59.1	1427	56.2	1402	55.2	1440	56.7	1420	55.9
	Flap Track 4 (FTE4)	1657	65.2	1584	62.4	1553	61.1	1598	62.9	1573	61.9
	Flap Track 1 (FTE1)	1196	47.1	1118	44.0	1103	43.4	1131	44.5	1116	43.9
20%	Flap Track 2 (FTE2)	1363	53.7	1287	50.7	1268	49.9	1300	51.2	1283	50.5
-30℃	Flap Track 3 (FTE3)	1491	58.7	1417	55.8	1392	54.8	1430	56.3	1410	55.5
	Flap Track 4 (FTE4)	1645	64.8	1574	62.0	1543	60.7	1588	62.5	1564	61.6
	Flap Track 1 (FTE1)	1184	46.6	1108	43.6	1093	43.0	1120	44.1	1106	43.5
-40°C	Flap Track 2 (FTE2)	1352	53.2	1278	50.3	1258	49.5	1290	50.8	1274	50.2
-40 C	Flap Track 3 (FTE3)	1479	58.2	1407	55.4	1383	54.4	1420	55.9	1400	55.1
	Flap Track 4 (FTE4)	1633	64.3	1564	61.6	1534	60.4	1577	62.1	1554	61.2



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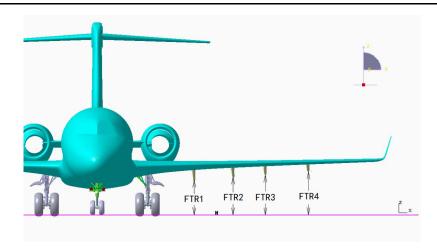
Figure 4 Ground Clearances at Flap Detent 2 Status of Flap Track Fairing (Sheet 1 of 1)



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

			tional pty	Maxi		Гахі Wo	eight	Maxi		Гахі We	eight
	Description		ight	FWD	CG	AFT	CG	FWD	CG	AFT	CG
OAT		mm	in	mm	in	mm	in	mm	in	mm	in
	Flap Track 1 (FTF1)	1285	50.6	1197	47.1	1182	46.5	1211	47.7	1196	47.1
15℃	Flap Track 2 (FTF2)	1441	56.7	1356	53.4	1335	52.6	1370	53.9	1352	53.2
15 C	Flap Track 3 (FTF3)	1559	61.4	1476	58.1	1450	57.1	1490	58.7	1469	57.8
	Flap Track 4 (FTF4)	1708	67.2	1629	64.1	1597	62.9	1644	64.7	1618	63.7
	Flap Track 1 (FTF1)	1266	49.8	1182	46.5	1167	45.9	1195	47.0	1180	46.5
000	Flap Track 2 (FTF2)	1423	56.0	1340	52.8	1320	52.0	1354	53.3	1337	52.6
0℃	Flap Track 3 (FTF3)	1540	60.6	1460	57.5	1435	56.5	1474	58.0	1453	57.2
	Flap Track 4 (FTF4)	1690	66.5	1613	63.5	1582	62.3	1628	64.1	1603	63.1
	Flap Track 1 (FTF1)	1254	49.4	1172	46.1	1157	45.6	1185	46.7	1170	46.1
1000	Flap Track 2 (FTF2)	1411	55.6	1330	52.4	1310	51.6	1343	52.9	1327	52.2
-10℃	Flap Track 3 (FTF3)	1528	60.2	1450	57.1	1425	56.1	1463	57.6	1443	56.8
	Flap Track 4 (FTF4)	1678	66.1	1603	63.1	1572	61.9	1617	63.7	1593	62.7
	Flap Track 1 (FTF1)	1242	48.9	1162	45.7	1147	45.2	1174	46.2	1160	45.7
2000	Flap Track 2 (FTF2)	1399	55.1	1320	52.0	1301	51.2	1333	52.5	1317	51.9
-20℃	Flap Track 3 (FTF3)	1516	59.7	1440	56.7	1416	55.7	1453	57.2	1433	56.4
	Flap Track 4 (FTF4)	1666	65.6	1593	62.7	1562	61.5	1607	63.3	1583	62.3
	Flap Track 1 (FTF1)	1230	48.4	1152	45.4	1137	44.8	1164	45.8	1150	45.3
2000	Flap Track 2 (FTF2)	1387	54.6	1310	51.6	1291	50.8	1323	52.1	1307	51.5
-30℃	Flap Track 3 (FTF3)	1504	59.2	1430	56.3	1406	55.4	1443	56.8	1424	56.1
	Flap Track 4 (FTF4)	1654	65.1	1583	62.3	1553	61.1	1596	62.8	1573	61.9
	Flap Track 1 (FTF1)	1218	48.0	1142	45.0	1127	44.4	1154	45.4	1140	44.9
40°C	Flap Track 2 (FTF2)	1375	54.1	1300	51.2	1281	50.4	1312	51.7	1297	51.1
-40℃	Flap Track 3 (FTF3)	1492	58.7	1420	55.9	1396	55.0	1433	56.4	1414	55.7
	Flap Track 4 (FTF4)	1642	64.6	1573	61.9	1543	60.7	1586	62.4	1563	61.5





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

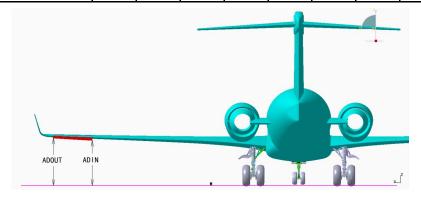
Table 9 Ground Clearances at Flap Smooth Status of Flap Track Fairing

			itional pty	Maxi		Taxi We	eight	Maxi		Taxi We	eight
OAT	Description		ight	FWD	CG	AFT	CG	FWD	CG	AFT	CG
		mm	in	mm	in	mm	in	mm	in	mm	in
	Flap Track 1 (FTR1)	1285	50.6	1197	47.1	1182	46.5	1211	47.7	1196	47.1
15℃	Flap Track 2 (FTR2)	1441	56.7	1356	53.4	1335	52.6	1370	53.9	1352	53.2
15 C	Flap Track 3 (FTR3)	1559	61.4	1476	58.1	1450	57.1	1490	58.7	1469	57.8
	Flap Track 4 (FTR4)	1708	67.2	1629	64.1	1597	62.9	1644	64.7	1618	63.7
	Flap Track 1 (FTR1)	1266	49.8	1182	46.5	1167	45.9	1195	47.0	1180	46.5
0°C	Flap Track 2 (FTR2)	1423	56.0	1340	52.8	1320	52.0	1354	53.3	1337	52.6
0℃	Flap Track 3 (FTR3)	1540	60.6	1460	57.5	1435	56.5	1474	58.0	1453	57.2
	Flap Track 4 (FTR4)	1690	66.5	1613	63.5	1582	62.3	1628	64.1	1603	63.1
	Flap Track 1 (FTR1)	1254	49.4	1172	46.1	1157	45.6	1185	46.7	1170	46.1
-10℃	Flap Track 2 (FTR2)	1411	55.6	1330	52.4	1310	51.6	1343	52.9	1327	52.2
-10 C	Flap Track 3 (FTR3)	1528	60.2	1450	57.1	1425	56.1	1463	57.6	1443	56.8
	Flap Track 4 (FTR4)	1678	66.1	1603	63.1	1572	61.9	1617	63.7	1593	62.7
	Flap Track 1 (FTR1)	1242	48.9	1162	45.7	1147	45.2	1174	46.2	1160	45.7
200°C	Flap Track 2 (FTR2)	1399	55.1	1320	52.0	1301	51.2	1333	52.5	1317	51.9
-20℃	Flap Track 3 (FTR3)	1516	59.7	1440	56.7	1416	55.7	1453	57.2	1433	56.4
	Flap Track 4 (FTR4)	1666	65.6	1593	62.7	1562	61.5	1607	63.3	1583	62.3

Aircraft Characteristics For Airport Planning



		Operational Empty		Max	imum 1 - I	Γaxi We ER	eight	Maxi		Taxi We	eight
OAT	Description		ight	FWD	CG	AFT	CG	FWD	CG	AFT	CG
		mm	in	mm	in	mm	in	mm	in	mm	in
	Flap Track 1 (FTR1)	1230	48.4	1152	45.4	1137	44.8	1164	45.8	1150	45.3
20%	Flap Track 2 (FTR2)	1387	54.6	1310	51.6	1291	50.8	1323	52.1	1307	51.5
-30℃	Flap Track 3 (FTR3)	1504	59.2	1430	56.3	1406	55.4	1443	56.8	1424	56.1
	Flap Track 4 (FTR4)	1654	65.1	1583	62.3	1553	61.1	1596	62.8	1573	61.9
	Flap Track 1 (FTR1)	1218	48.0	1142	45.0	1127	44.4	1154	45.4	1140	44.9
-40℃	Flap Track 2 (FTR2)	1375	54.1	1300	51.2	1281	50.4	1312	51.7	1297	51.1
-40 C	Flap Track 3 (FTR3)	1492	58.7	1420	55.9	1396	55.0	1433	56.4	1414	55.7
	Flap Track 4 (FTR4)	1642	64.6	1573	61.9	1543	60.7	1586	62.4	1563	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

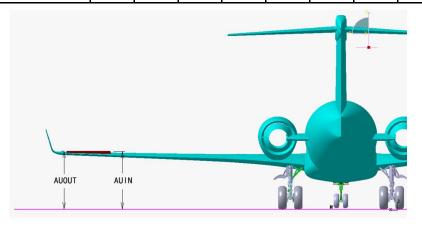
ОАТ	Description	Operational Empty Weight			- 1	Taxi We			- S	Taxi We	
	2000	Wei	ight	FWD	CG	AFT	CG	FWD	CG	AFT	CG
		mm	in	mm	in	mm	in	mm	in	mm	in
	Aileron Inboard (ADIN)	1976	77.8	1901	74.8	1864	73.4	1916	75.4	1886	74.3
15℃	Aileron Outboard (ADOUT)	2095	82.5	2022	79.6	1979	77.9	2038	80.2	2003	78.9
	Aileron Inboard (ADIN)	1958	77.1	1885	74.2	1849	72.8	1900	74.8	1870	73.6
0℃	Aileron Outboard (ADOUT)	2077	81.8	2006	79.0	1964	77.3	2022	79.6	1988	78.3

02-03 Applicable to: ALL





		Operational Empty		Maxi		Γaxi We ER	eight	Maxi		Γaxi We	eight
OAT	Description		ight	FWD	CG	AFT	CG	FWD	CG	AFT	CG
		mm	in	mm	in	mm	in	mm	in	mm	in
	Aileron Inboard (ADIN)	1946	76.6	1875	73.8	1839	72.4	1889	74.4	1861	73.3
-10℃	Aileron Outboard (ADOUT)	2065	81.3	1996	78.6	1954	76.9	2011	79.2	1978	77.9
	Aileron Inboard (ADIN)	1935	76.2	1865	73.4	1830	72.0	1879	74.0	1851	72.9
-20℃	Aileron Outboard (ADOUT)	2053	80.8	1986	78.2	1945	76.6	2000	78.7	1969	77.5
	Aileron Inboard (ADIN)	1923	75.7	1855	73.0	1820	71.7	1868	73.5	1841	72.5
-30℃	Aileron Outboard (ADOUT)	2041	80.4	1976	77.8	1935	76.2	1990	78.3	1959	77.1
	Aileron Inboard (ADIN)	1911	75.2	1811	71.3	1845	72.6	1858	73.1	1832	72.1
-40℃	Aileron Outboard (ADOUT)	2030	79.9	1926	75.8	1966	77.4	1980	78.0	1950	76.8



ICN-ARJ21-A-192002-A-SVV19-11361-A-001-01

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

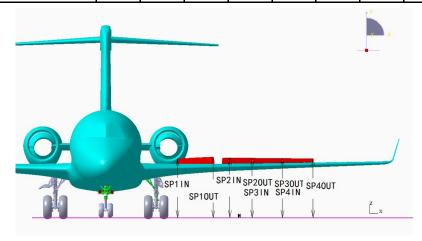
Table 11 Ground Clearances at Aileron Raise Status

OAT	Em		Operational Empty Weight		Maximum 7 - E FWD CG		eight	Maxi	- S	Taxi We	eight · CG
		mm	in	mm	in	mm	in	mm	in	mm	in
	Aileron Inboard (AUIN)	2324	91.5	2249	88.5	2212	87.1	2264	89.1	2233	87.9
15℃	Aileron Outboard (AUOUT)	2339	92.1	2267	89.3	2223	87.5	2282	89.8	2248	88.5

Aircraft Characteristics For Airport Planning



OAT 0°C			itional pty	Maxi		Γaxi We ER	eight	Maxi		Γaxi We	eight
OAT	Description	Wei	ight	FWD	CG	AFT	CG	FWD	CG	AFT	CG
		mm	in	mm	in	mm	in	mm	in	mm	in
	Aileron Inboard (AUIN)	2306	90.8	2233	87.9	2197	86.5	2248	88.5	2218	87.3
0℃	Aileron Outboard (AUOUT)	2321	91.4	2251	88.6	2208	86.9	2266	89.2	2233	87.9
	Aileron Inboard (AUIN)	2294	90.3	2223	87.5	2187	86.1	2237	88.1	2208	86.9
-10℃	Aileron Outboard (AUOUT)	2309	90.9	2241	88.2	2199	86.6	2256	88.88	2223	87.5
	Aileron Inboard (AUIN)	2282	89.8	2213	87.1	2177	85.7	2227	87.7	2198	86.5
-20℃	Aileron Outboard (AUOUT)	2297	90.4	2231	87.8	2189	86.2	2245	88.4	2213	87.1
	Aileron Inboard (AUIN)	2271	89.4	2203	86.7	2168	85.4	2216	87.2	2189	86.2
-30℃	Aileron Outboard (AUOUT)	2286	90.0	2220	87.4	2180	85.8	2235	88.0	2203	86.7
	Aileron Inboard (AUIN)	2259	88.9	2158	85.0	2193	86.3	2206	86.9	2179	85.8
-40℃	Aileron Outboard (AUOUT)	2274	89.5	2170	85.4	2211	87.0	2224	87.6	2194	86.4



ICN-ARJ21-A-192002-A-SVV19-11363-A-001-01

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

02-03 Applicable to: ALL



Table 12 Ground Clearances at Spoiler Raise Status

0.17	5	Opera Em	itional pty	Maxi		Taxi We	eight	Max		Taxi We	eight
OAT	Description	Wei	ight	FWD	CG	AFT	CG	FWD	CG	AFT	CG
		mm	in	mm	in	mm	in	mm	in	mm	in
	No.1 Spoiler Inboard (SP1IN)	2440	96.1	2353	92.6	2339	92.1	2366	93.1	2351	92.6
	No.1 Spoiler Outboard (SP1OUT)	2523	99.3	2435	95.9	2419	95.2	2449	96.4	2433	95.8
	No.2 Spoiler Inboard (SP2IN)	2477	97.5	2390	94.1	2372	93.4	2404	94.6	2388	94.0
15℃	No.2 Spoiler Outboard (SP2OUT)	2470	97.2	2386	93.9	2363	93.0	2400	94.5	2380	93.7
15 C	No.3 Spoiler Inboard (SP3IN)	2470	97.2	2385	93.9	2363	93.0	2399	94.4	2380	93.7
	No.3 Spoiler Outboard (SP3OUT)	2454	96.6	2373	93.4	2345	92.3	2387	94.0	2364	93.1
	No.4 Spoiler Inboard (SP4IN)	2454	96.6	2372	93.4	2345	92.3	2387	94.0	2364	93.1
	No.4 Spoiler Outboard (SP4OUT)	2442	96.1	2363	93.0	2331	91.8	2377	93.6	2351	92.6
	No.1 Spoiler Inboard (SP1IN)	2421	95.3	2337	92.0	2324	91.5	2350	92.5	2335	91.9
	No.1 Spoiler Outboard (SP1OUT)	2504	98.6	2420	95.3	2404	94.6	2433	95.8	2418	95.2
	No.2 Spoiler Inboard (SP2IN)	2458	96.8	2375	93.5	2357	92.8	2388	94.0	2372	93.4
0°C	No.2 Spoiler Outboard (SP2OUT)	2451	96.5	2370	93.3	2348	92.4	2384	93.9	2365	93.1
0℃	No.3 Spoiler Inboard (SP3IN)	2451	96.5	2370	93.3	2348	92.4	2384	93.9	2365	93.1
	No.3 Spoiler Outboard (SP3OUT)	2436	95.9	2357	92.8	2330	91.7	2371	93.3	2349	92.5
	No.4 Spoiler Inboard (SP4IN)	2436	95.9	2357	92.8	2330	91.7	2371	93.3	2349	92.5
	No.4 Spoiler Outboard (SP4OUT)	2423	95.4	2347	92.4	2316	91.2	2361	93.0	2336	92.0

Aircraft Characteristics For Airport Planning



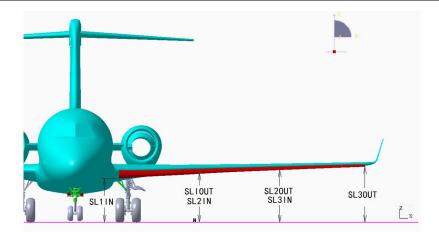
			itional pty	Maxi		Γaxi We	eight	Maxi		Гахі We	eight
OAT	Description	Wei	ight	FWD	CG	AFT	CG	FWD	CG	AFT	CG
		mm	in	mm	in	mm	in	mm	in	mm	in
	No.1 Spoiler Inboard (SP1IN)	2409	94.8	2327	91.6	2314	91.1	2340	92.1	2325	91.5
	No.1 Spoiler Outboard (SP1OUT)	2492	98.1	2410	94.9	2394	94.3	2423	95.4	2408	94.8
	No.2 Spoiler Inboard (SP2IN)	2446	96.3	2365	93.1	2347	92.4	2378	93.6	2362	93.0
-10℃	No.2 Spoiler Outboard (SP2OUT)	2439	96.0	2360	92.9	2338	92.0	2373	93.4	2355	92.7
-10 C	No.3 Spoiler Inboard (SP3IN)	2439	96.0	2360	92.9	2338	92.0	2373	93.4	2355	92.7
	No.3 Spoiler Outboard (SP3OUT)	2424	95.4	2347	92.4	2320	91.3	2360	92.9	2339	92.1
	No.4 Spoiler Inboard (SP4IN)	2424	95.4	2347	92.4	2320	91.3	2360	92.9	2339	92.1
	No.4 Spoiler Outboard (SP4OUT)	2411	94.9	2337	92.0	2306	90.8	2351	92.6	2326	91.6
	No.1 Spoiler Inboard (SP1IN)	2397	94.4	2317	91.2	2304	90.7	2330	91.7	2315	91.1
	No.1 Spoiler Outboard (SP1OUT)	2480	97.6	2400	94.5	2384	93.9	2412	95.0	2398	94.4
	No.2 Spoiler Inboard (SP2IN)	2434	95.8	2355	92.7	2337	92.0	2367	93.2	2352	92.6
20%	No.2 Spoiler Outboard (SP2OUT)	2427	95.6	2350	92.5	2328	91.7	2363	93.0	2345	92.3
-20℃	No.3 Spoiler Inboard (SP3IN)	2427	95.6	2350	92.5	2328	91.7	2363	93.0	2345	92.3
	No.3 Spoiler Outboard (SP3OUT)	2412	95.0	2337	92.0	2311	91.0	2350	92.5	2329	91.7
	No.4 Spoiler Inboard (SP4IN)	2412	95.0	2337	92.0	2310	90.9	2350	92.5	2329	91.7
	No.4 Spoiler Outboard (SP4OUT)	2399	94.4	2327	91.6	2296	90.4	2340	92.1	2316	91.2



Aircraft Characteristics For Airport Planning

			itional pty	Maxi		Taxi We	eight	Maxi		Taxi We	eight
OAT	Description	Wei	ight	FWD	CG	AFT	CG	FWD	CG	AFT	CG
		mm	in	mm	in	mm	in	mm	in	mm	in
	No.1 Spoiler Inboard (SP1IN)	2385	93.9	2307	90.8	2294	90.3	2319	91.3	2305	90.7
	No.1 Spoiler Outboard (SP1OUT)	2468	97.2	2390	94.1	2374	93.5	2402	94.6	2388	94.0
	No.2 Spoiler Inboard (SP2IN)	2422	95.4	2345	92.3	2328	91.7	2357	92.8	2342	92.2
-30℃	No.2 Spoiler Outboard (SP2OUT)	2415	95.1	2340	92.1	2319	91.3	2352	92.6	2335	91.9
-30 C	No.3 Spoiler Inboard (SP3IN)	2415	95.1	2340	92.1	2318	91.3	2352	92.6	2335	91.9
	No.3 Spoiler Outboard (SP3OUT)	2400	94.5	2327	91.6	2301	90.6	2340	92.1	2319	91.3
	No.4 Spoiler Inboard (SP4IN)	2400	94.5	2327	91.6	2301	90.6	2340	92.1	2319	91.3
	No.4 Spoiler Outboard (SP4OUT)	2388	94.0	2317	91.2	2286	90.0	2330	91.7	2307	90.8
	No.1 Spoiler Inboard (SP1IN)	2373	93.4	2297	90.4	2284	89.9	2309	90.9	2295	90.4
	No.1 Spoiler Outboard (SP1OUT)	2456	96.7	2380	93.7	2364	93.1	2392	94.2	2378	93.6
	No.2 Spoiler Inboard (SP2IN)	2410	94.9	2335	91.9	2318	91.3	2347	92.4	2332	91.8
-40°C	No.2 Spoiler Outboard (SP2OUT)	2403	94.6	2330	91.7	2309	90.9	2342	92.2	2325	91.5
-40 C	No.3 Spoiler Inboard (SP3IN)	2403	94.6	2330	91.7	2309	90.9	2342	92.2	2325	91.5
	No.3 Spoiler Outboard (SP3OUT)	2388	94.0	2317	91.2	2291	90.2	2329	91.7	2310	90.9
	No.4 Spoiler Inboard (SP4IN)	2388	94.0	2317	91.2	2291	90.2	2329	91.7	2309	90.9
	No.4 Spoiler Outboard (SP4OUT)	2376	93.5	2307	90.8	2277	89.6	2320	91.3	2297	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

			itional pty	Maxi		Γaxi We ER	eight	Maxi		Taxi We	eight
OAT	Description		ight	FWD	CG	AFT	CG	FWD	CG	AFT	CG
		mm	in	mm	in	mm	in	mm	in	mm	in
	Slat 1 Inboard (SL1IN)	1598	62.9	1490	58.7	1497	58.9	1501	59.1	1512	59.5
	Slat 1 Outboard (SL1OUT)	1801	70.9	1702	67.0	1695	66.7	1714	67.5	1713	67.4
	Slat 2 Inboard (SL2IN)	1801	70.9	1703	67.0	1696	66.8	1715	67.5	1714	67.5
15℃	Slat 2 Outboard (SL2OUT)	1967	77.4	1877	73.9	1856	73.1	1891	74.4	1878	73.9
	Slat 3 Inboard (SL3IN)	1967	77.4	1878	73.9	1856	73.1	1891	74.4	1878	73.9
	Slat 3 Outboard (SL3OUT)	2106	82.9	2027	79.8	1989	78.3	2041	80.4	2015	79.3
	Slat 1 Inboard (SL1IN)	1579	62.2	1475	58.1	1482	58.3	1486	58.5	1496	58.9
	Slat 1 Outboard (SL1OUT)	1782	70.2	1687	66.4	1680	66.1	1699	66.9	1698	66.9
	Slat 2 Inboard (SL2IN)	1782	70.2	1688	66.5	1680	66.1	1699	66.9	1698	66.9
0℃	Slat 2 Outboard (SL2OUT)	1948	76.7	1862	73.3	1841	72.5	1875	73.8	1862	73.3
	Slat 3 Inboard (SL3IN)	1948	76.7	1862	73.3	1841	72.5	1875	73.8	1863	73.3
	Slat 3 Outboard (SL3OUT)	2088	82.2	2011	79.2	1974	77.7	2025	79.7	2000	78.7

02-03 Applicable to: ALL



Aircraft Characteristics For Airport Planning

			tional pty	Maxi		Taxi We	eight	Maxi		Taxi We	eight
OAT	Description		ght	FWD	CG	AFT	CG	FWD	CG	AFT	CG
		mm	in	mm	in	mm	in	mm	in	mm	in
	Slat 1 Inboard (SL1IN)	1566	61.7	1465	57.7	1472	58.0	1475	58.1	1485	58.5
	Slat 1 Outboard (SL1OUT)	1769	69.6	1677	66.0	1670	65.7	1689	66.5	1687	66.4
	Slat 2 Inboard (SL2IN)	1770	69.7	1678	66.1	1670	65.7	1689	66.5	1688	66.5
-10℃	Slat 2 Outboard (SL2OUT)	1936	76.2	1852	72.9	1831	72.1	1864	73.4	1852	72.9
	Slat 3 Inboard (SL3IN)	1936	76.2	1852	72.9	1831	72.1	1865	73.4	1853	73.0
	Slat 3 Outboard (SL3OUT)	2076	81.7	2001	78.8	1964	77.3	2015	79.3	1990	78.3
	Slat 1 Inboard (SL1IN)	1553	61.1	1455	57.3	1461	57.5	1465	57.7	1475	58.1
	Slat 1 Outboard (SL1OUT)	1757	69.2	1667	65.6	1660	65.4	1678	66.1	1677	66.0
	Slat 2 Inboard (SL2IN)	1757	69.2	1668	65.7	1660	65.4	1679	66.1	1678	66.1
-20℃	Slat 2 Outboard (SL2OUT)	1924	75.7	1842	72.5	1821	71.7	1854	73.0	1842	72.5
	Slat 3 Inboard (SL3IN)	1924	75.7	1842	72.5	1821	71.7	1854	73.0	1843	72.6
	Slat 3 Outboard (SL3OUT)	2064	81.3	1991	78.4	1955	77.0	2004	78.9	1980	78.0
	Slat 1 Inboard (SL1IN)	1541	60.7	1445	56.9	1451	57.1	1455	57.3	1464	57.6
	Slat 1 Outboard (SL1OUT)	1745	68.7	1657	65.2	1650	65.0	1668	65.7	1667	65.6
	Slat 2 Inboard (SL2IN)	1745	68.7	1658	65.3	1650	65.0	1669	65.7	1667	65.6
-30℃	Slat 2 Outboard (SL2OUT)	1912	75.3	1832	72.1	1811	71.3	1844	72.6	1832	72.1
	Slat 3 Inboard (SL3IN)	1912	75.3	1832	72.1	1811	71.3	1844	72.6	1833	72.2
	Slat 3 Outboard (SL3OUT)	2052	80.8	1981	78.0	1945	76.6	1994	78.5	1971	77.6

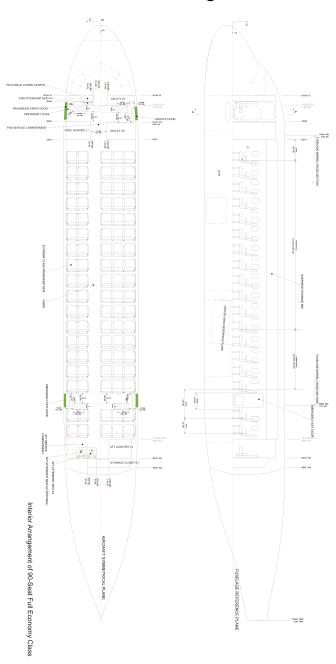
Aircraft Characteristics For Airport Planning



		Operational Empty		Maxi		Γaxi We ER	eight	Maxi		Γaxi We	eight
OAT	Description		ight	FWD CG		AFT	CG	FWD	CG	AFT	CG
		mm	in	mm	in	mm	in	mm	in	mm	in
	Slat 1 Inboard (SL1IN)	1528	60.2	1436	56.5	1441	56.7	1445	56.9	1454	57.2
	Slat 1 Outboard (SL1OUT)	1732	68.2	1647	64.8	1640	64.6	1658	65.3	1657	65.2
	Slat 2 Inboard (SL2IN)	1733	68.2	1648	64.9	1641	64.6	1659	65.3	1657	65.2
-40℃	Slat 2 Outboard (SL2OUT)	1900	74.8	1822	71.7	1801	70.9	1834	72.2	1822	71.7
	Slat 3 Inboard (SL3IN)	1900	74.8	1822	71.7	1802	70.9	1834	72.2	1823	71.8
	Slat 3 Outboard (SL3OUT)	2040	80.3	1971	77.6	1936	76.2	1984	78.1	1961	77.2



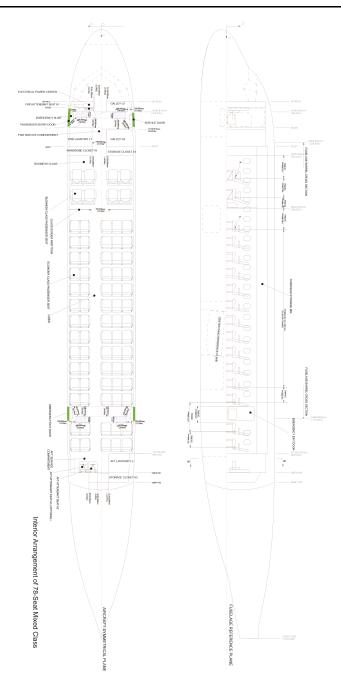
Interior Arrangement



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



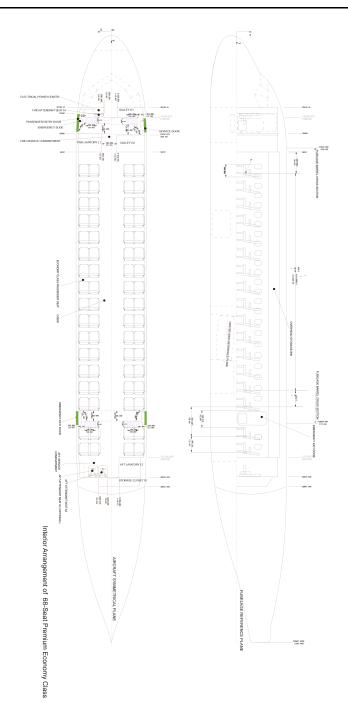


ICN-ARJ21-A-192002-A-SVV19-10705-A-002-01

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

02-04 Applicable to: ALL



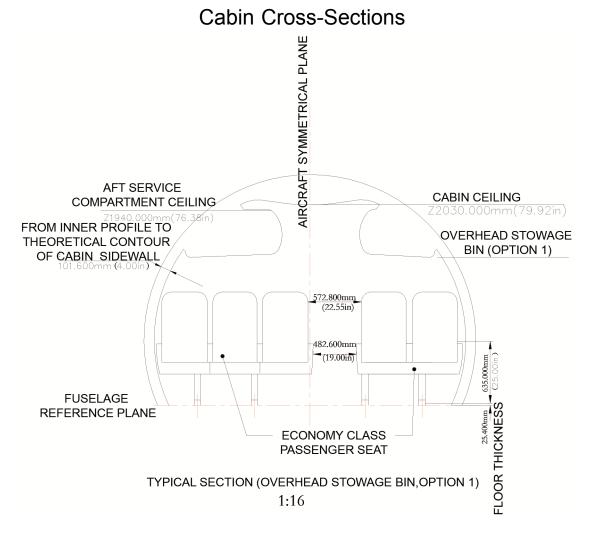


ICN-ARJ21-A-192002-A-SVV19-10706-A-002-01

Figure 3 ARJ21-700 Interior Arrangement of Premium Economy Class with 68 Seats (Sheet 1 of 1)



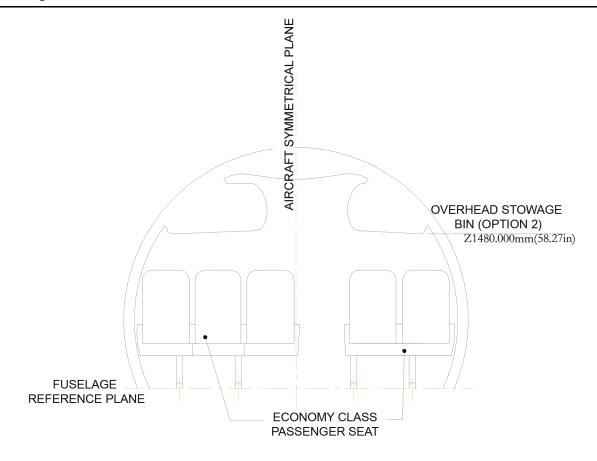




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Figure 1 ARJ21-700 Cabin Cross-Section of 90-Seat Full Economy Class (Sheet 1 of 3)





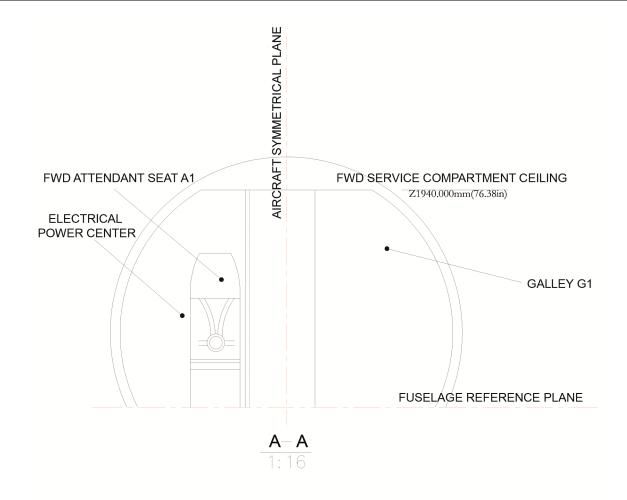
 $\begin{array}{c} \text{TYPICAL SECTION (OVERHEAD STOWAGE BIN,OPTION 2)} \\ 1:16 \end{array}$

ICN-ARJ21-A-192002-A-SVV19-10708-A-002-01

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

02-05 Applicable to: ALL

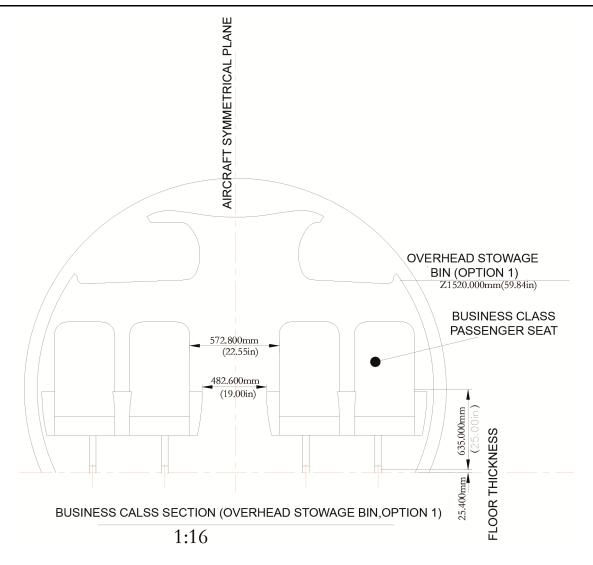




ICN-ARJ21-A-192002-A-SVV19-10709-A-002-01

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



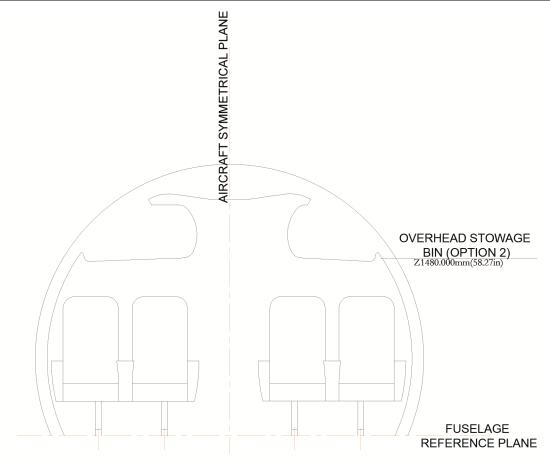


ICN-ARJ21-A-192002-A-SVV19-10710-A-002-01

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

02-05 Applicable to: ALL



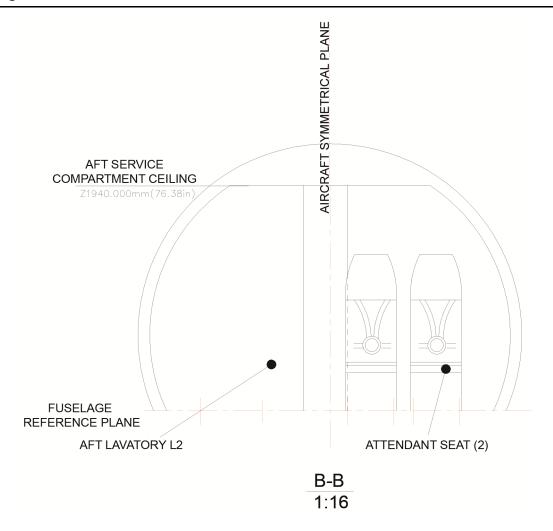


BUSINESS CALSS SECTION (OVERHEAD STOWAGE BIN, OPTION 2) 1.16

ICN-ARJ21-A-192002-A-SVV19-10711-A-002-01

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



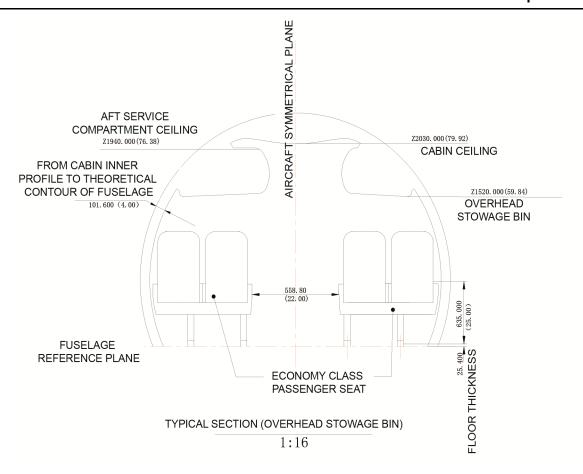


ICN-ARJ21-A-192002-A-SVV19-10712-A-002-01

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

02-05 Applicable to: ALL





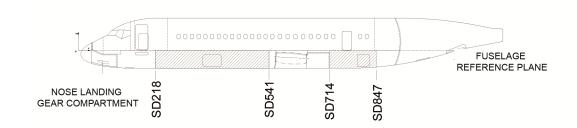
ICN-ARJ21-A-192002-A-SVV19-10713-A-002-01

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



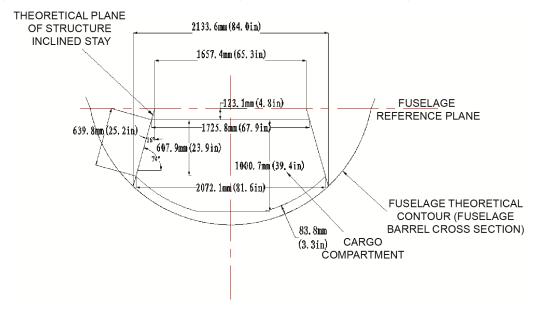


Cargo Compartment Data



ICN-ARJ21-A-192002-A-SVV19-90806-A-002-01

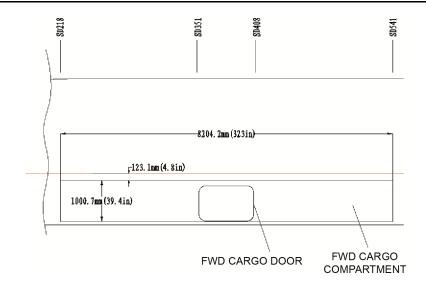
Figure 1 Locations of ARJ21-700 Cargo Compartment and Cargo Door (Sheet 1 of 1)



ICN-ARJ21-A-192002-A-SVV19-10714-A-002-01

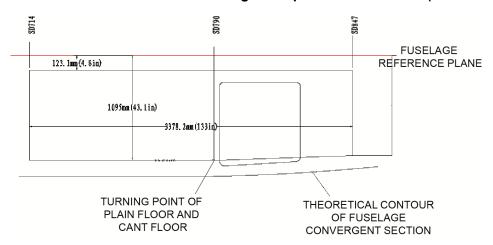
Figure 2 ARJ21-700 Cargo Compartment Cross-Section (Fuselage Barrel Cross Section) (Sheet 1 of 1)





ICN-ARJ21-A-192002-A-SVV19-90805-A-002-01

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



ICN-ARJ21-A-192002-A-SVV19-10715-A-002-01

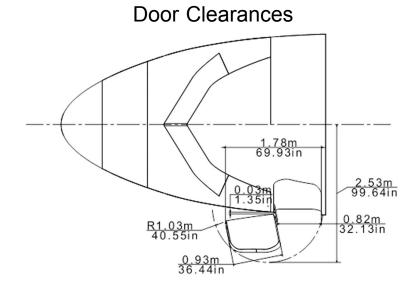
Figure 4 Profile of ARJ21-700 AFT Cargo Compartment Side View (Sheet 1 of 1)

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

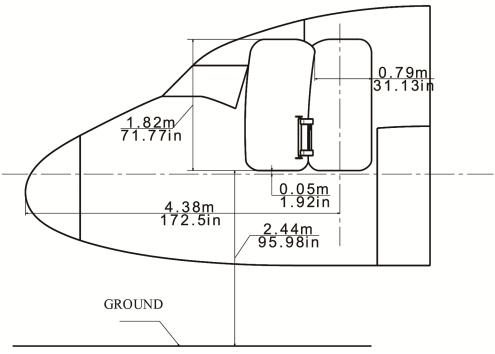
02-06 Applicable to: ALL





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

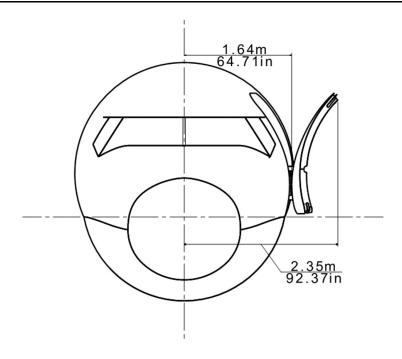
Figure 1 ARJ21-700 Passenger Entry Door Clearances (Sheet 1 of 3)



ICN-ARJ21-A-192002-A-SVV19-10717-A-002-01

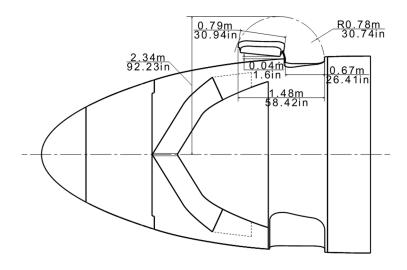
Figure 1 ARJ21-700 Passenger Entry Door Clearances (Sheet 2 of 3)





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

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

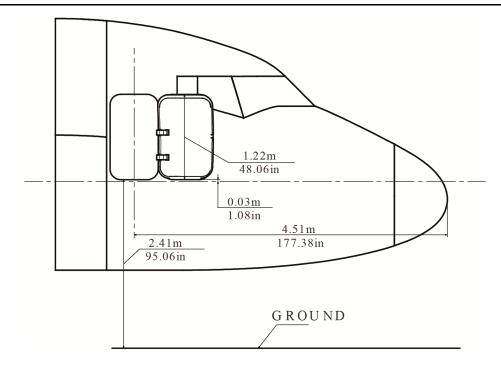


ICN-ARJ21-A-192002-A-SVV19-10721-A-001-01

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

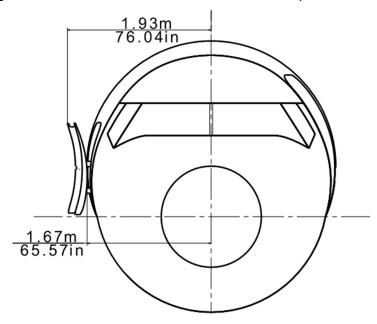
02-07 Applicable to: ALL





ICN-ARJ21-A-192002-A-SVV19-10722-A-002-01

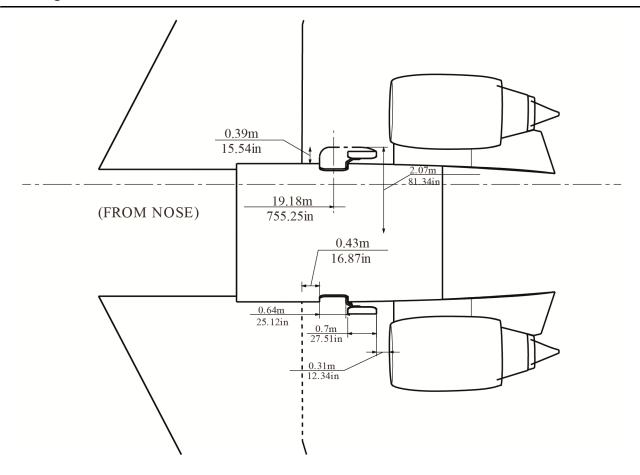
Figure 2 ARJ21-700 Service Door Clearances (Sheet 2 of 3)



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

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



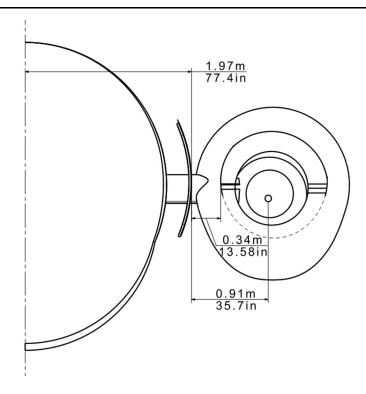


ICN-ARJ21-A-192002-A-SVV19-10724-A-002-01

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

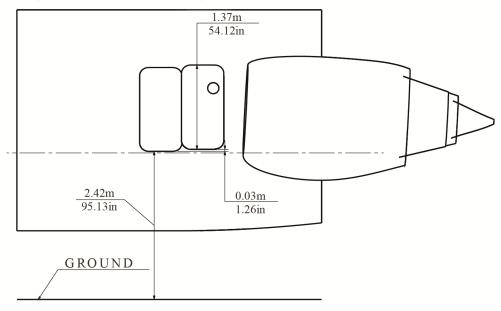
02-07 Applicable to: ALL





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

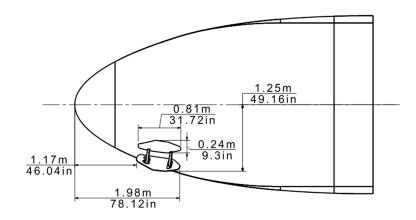
Figure 3 ARJ21-700 Emergency Exit Door Clearances (Sheet 2 of 3)



ICN-ARJ21-A-192002-A-SVV19-10726-A-002-01

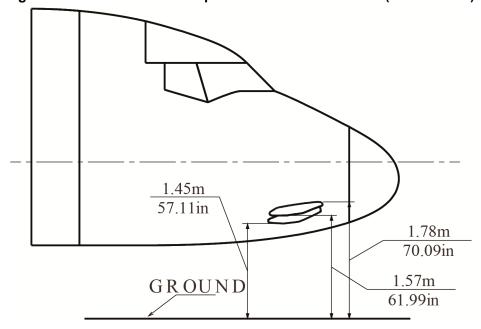
Figure 3 ARJ21-700 Emergency Exit Door Clearances (Sheet 3 of 3)





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

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

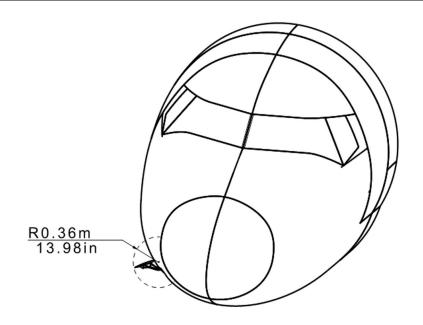


ICN-ARJ21-A-192002-A-SVV19-10730-A-002-01

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

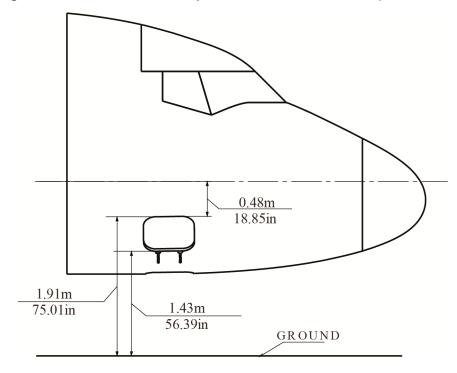
02-07 Applicable to: ALL





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

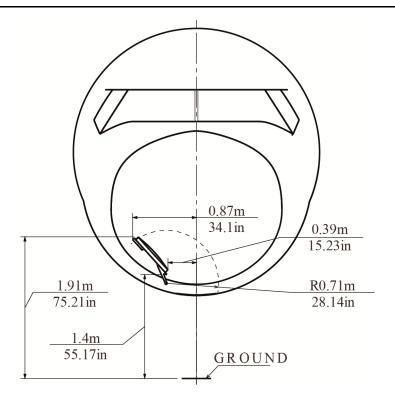
Figure 4 ARJ21-700 Rat Compartment Door Clearances (Sheet 3 of 3)



ICN-ARJ21-A-192002-A-SVV19-10732-A-002-01

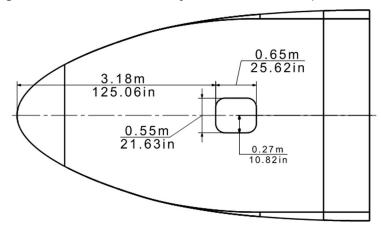
Figure 5 ARJ21-700 E/E Bay Door Clearances (Sheet 1 of 3)





ICN-ARJ21-A-192002-A-SVV19-10733-A-002-01

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

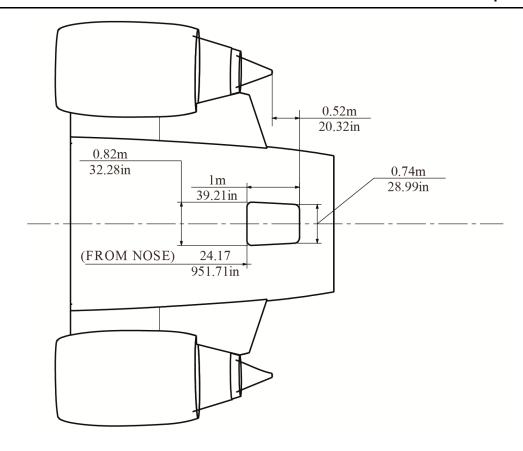


ICN-ARJ21-A-192002-A-SVV19-10734-A-001-01

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

02-07 Applicable to: ALL

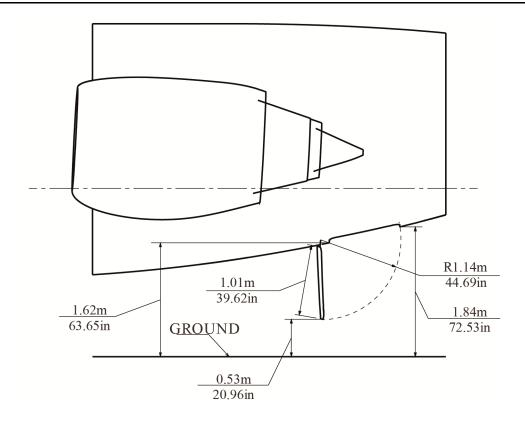




ICN-ARJ21-A-192002-A-SVV19-10735-A-002-01

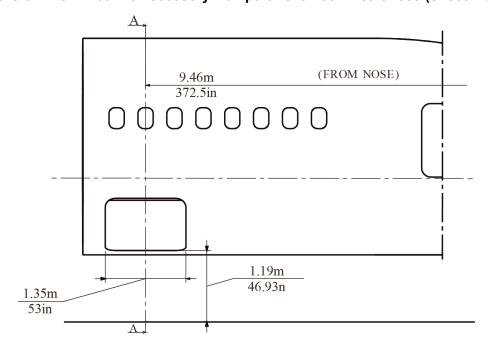
Figure 6 ARJ21-700 Aft Accessory Compartment Door Clearances (Sheet 1 of 2)





ICN-ARJ21-A-192002-A-SVV19-10736-A-002-01

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

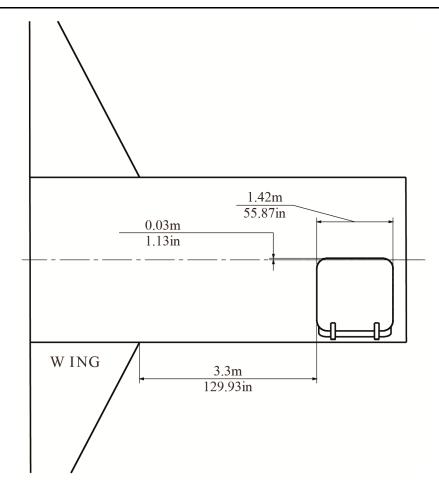


ICN-ARJ21-A-192002-A-SVV19-10737-A-002-01

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

02-07 Applicable to: ALL

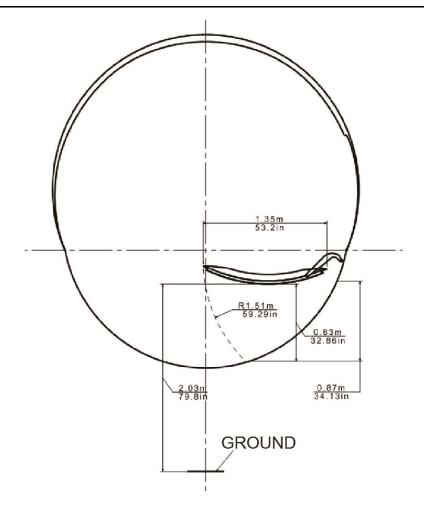




ICN-ARJ21-A-192002-A-SVV19-10738-A-002-01

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



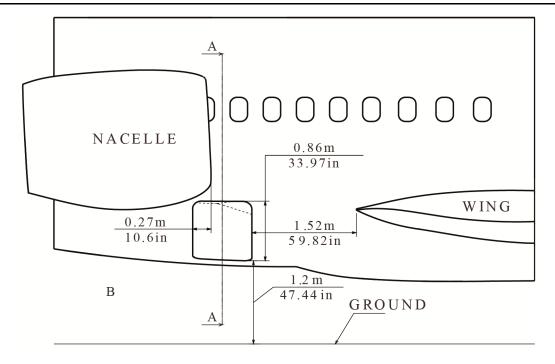


ICN-ARJ21-A-192002-A-SVV19-10739-A-002-01

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

02-07 Applicable to: ALL

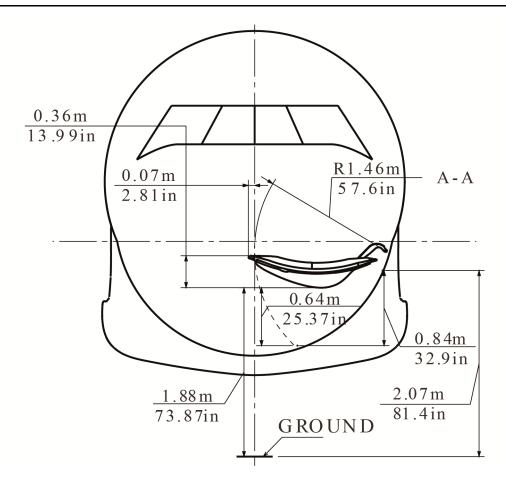




ICN-ARJ21-A-192002-A-SVV19-10740-A-002-01

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



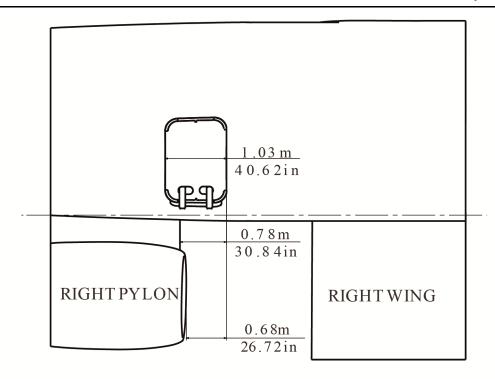


ICN-ARJ21-A-192002-A-SVV19-10741-A-002-01

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

02-07 Applicable to: ALL

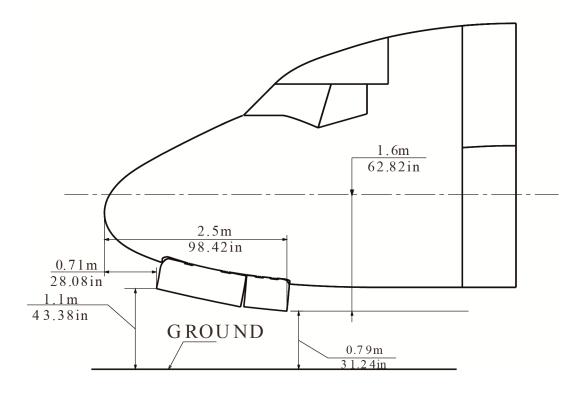




ICN-ARJ21-A-192002-A-SVV19-10742-A-002-01

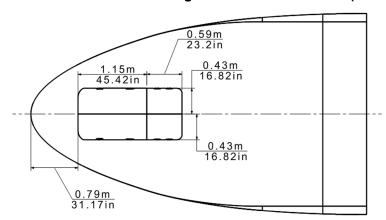
Figure 8 ARJ21-700 AFT Cargo Door Clearances (Sheet 3 of 3)





ICN-ARJ21-A-192002-A-SVV19-10743-A-002-01

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

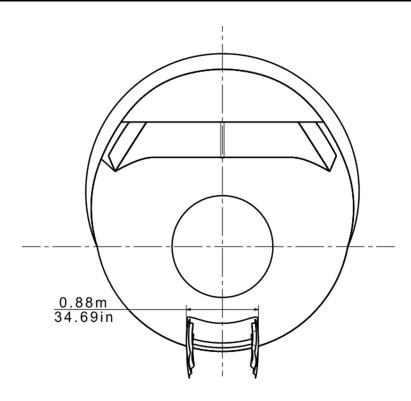


ICN-ARJ21-A-192002-A-SVV19-10744-A-001-01

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

02-07 Applicable to: ALL

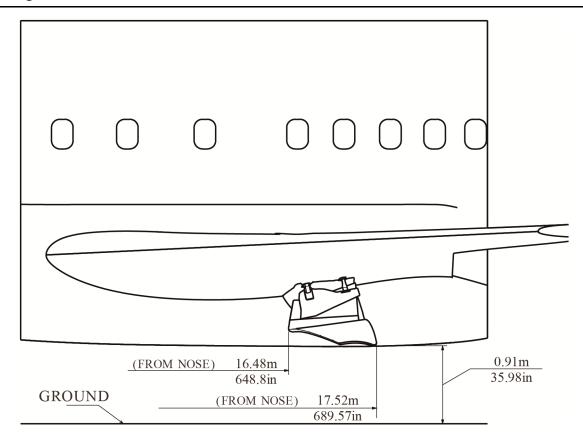




ICN-ARJ21-A-192002-A-SVV19-10745-A-001-01

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



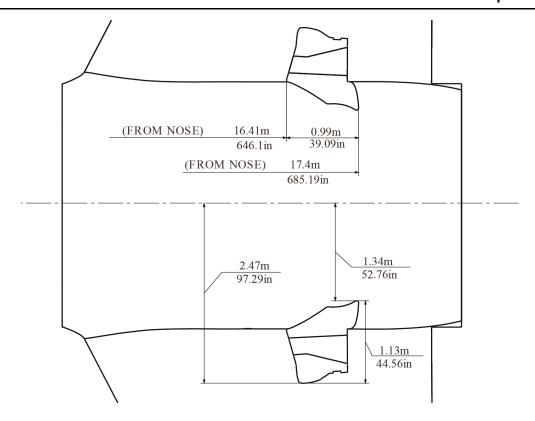


ICN-ARJ21-A-192002-A-SVV19-10746-A-002-01

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

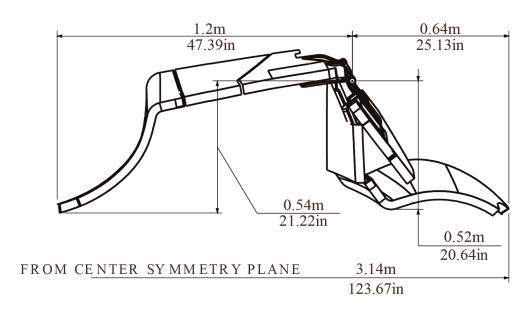
02-07 Applicable to: ALL





ICN-ARJ21-A-192002-A-SVV19-10747-A-002-01

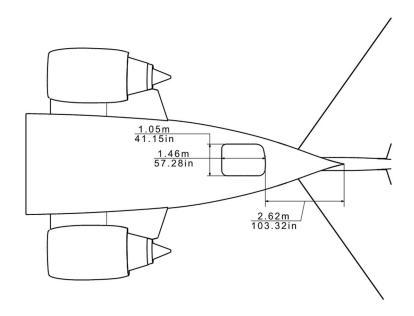
Figure 10 ARJ21-700 Main Landing Gear Door Clearance (Sheet 2 of 3)



ICN-ARJ21-A-192002-A-SVV19-10748-A-002-01

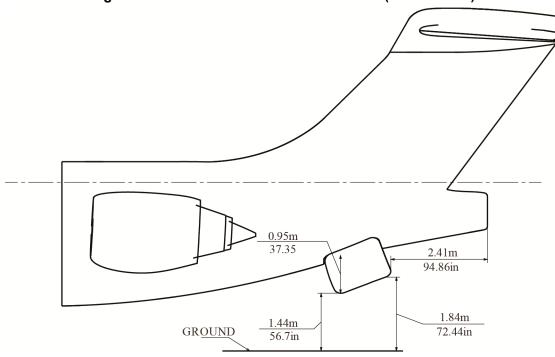
Figure 10 ARJ21-700 Main Landing Gear Door Clearance (Sheet 3 of 3)





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

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

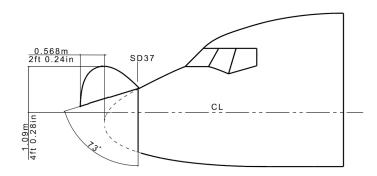


ICN-ARJ21-A-192002-A-SVV19-10752-A-002-01

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

02-07 Applicable to: ALL





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

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





Jacking for Maintenance

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 aircraft 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.

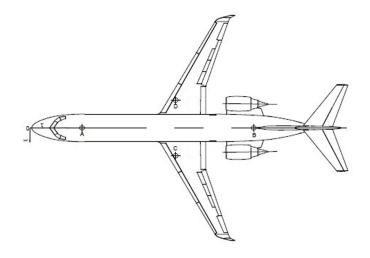
(2) Auxiliary Jacking Points

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-SVV19-11280-A-001-01

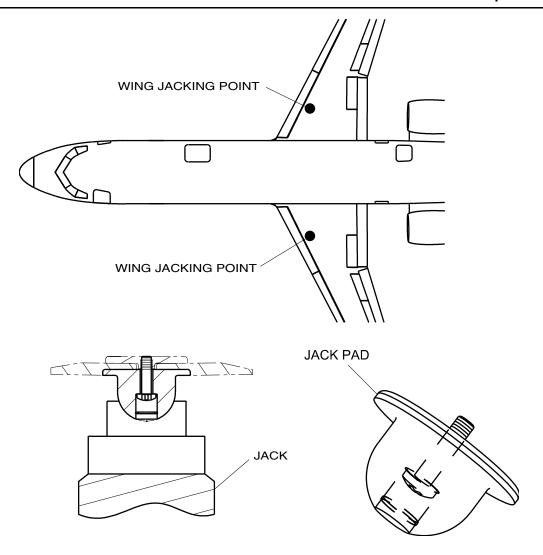
Figure 1 Location of Jacking Points (Sheet 1 of 1)

Jacking Points		Maximum	Jacking Location				
		Permitted Loads (kg)	X(mm/in)	Y(mm/in)	Z(mm/in)		
FWD fuselage	А	5969	0/0	5507/216.81	-1265/-49.8		
AFT fuselage	В	7980	0/0	23670931.89	-901/-35.47		
Left Wing	С	20333	3395/133.67	15134/595 .83	-621/-24.45		
Right Wing	D	20333	-3395/- 133.67	15134/595 .83	-621/-24.45		

NOTE: Safety stay is not used for jacking.

02-08 Applicable to: ALL

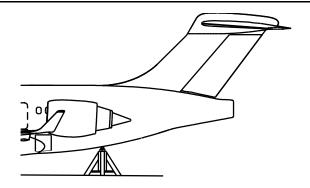


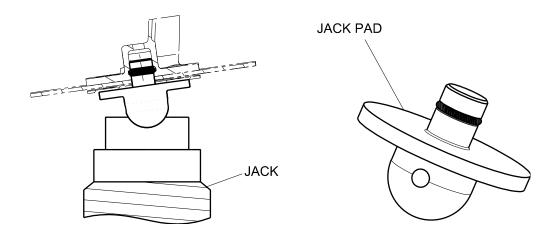


ICN-ARJ21-A-192002-A-SVV19-11281-A-001-01

Figure 2 Wing Jack Point (Sheet 1 of 1)





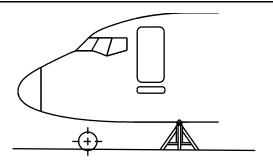


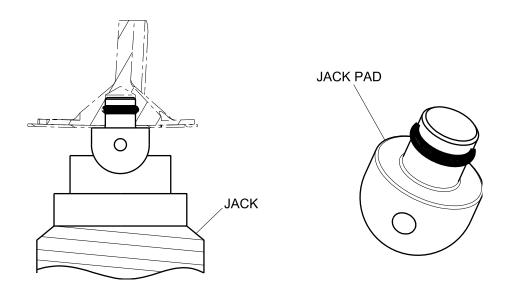
ICN-ARJ21-A-192002-A-SVV19-11282-A-001-01

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

02-08 Applicable to: ALL







ICN-ARJ21-A-192002-A-SVV19-11283-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.

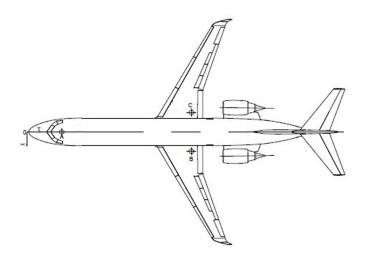
Jacking refer to AMM 07 Lifting and Shoring.

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.





ICN-ARJ21-A-192002-A-SVV19-11286-A-001-01

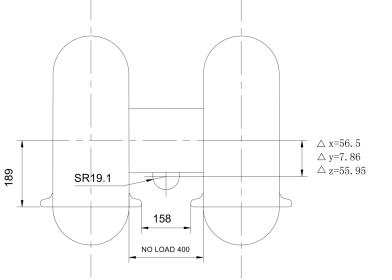
Figure 5 Location of Jacking Points (Sheet 1 of 1)

Jacking Points		Maximum	Jacking Location			
		Permitted Loads (kg)	X(mm/in)	Y(mm/in)	Z(mm/in)	
Nose Landing Gear	А	6044	0			
Left Main Landing Gear	В	27331	2340/92.13			
Right Main Landing Gear	С	27331	-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.

02-08 Applicable to: ALL

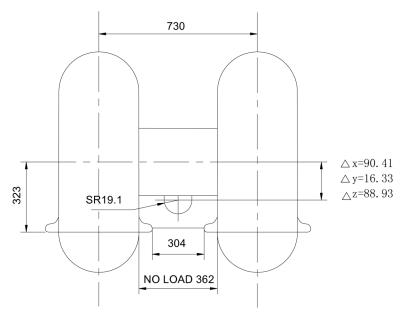




Note: a) Dimensions 189 mm and 158 mm in the figure are meas ured when the tire is deflated and flattened. b) Nominal tire diameter Φ is 609.6 mm.

ICN-ARJ21-A-192002-A-SVV19-11284-A-001-01

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



NOTE: a) Dimensions 323 mm and 304 mm in the figure are measured when the tire is deflated and flat tened.

b) Nominal tire diameter Φ is 1 016 mm.

ICN-ARJ21-A-192002-A-SVV19-11285-A-001-01

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

Applicable to: ALL 02-08

Issue 001, 2020-12-20





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.

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.

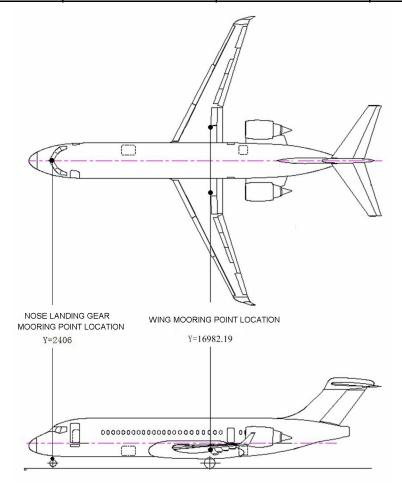
Aircraft left and right main landing gear mooring points and nose landing gear mooring point each set one mooring point, special mooring lug vertica are set in left and right main landing gear and nose landing gear shock strut.

Table 1 Aircraft Mooring Point Locations

Magaina Daint	Mooring Point Locations						
Mooring Point	X	Υ	Z				
left wing mooring points	+3291	16982	-632				
right wing mooring points	-3291	16982	-632				



Magaina Daint	Mooring Point Locations					
Mooring Point	X	Υ	Z			
nose landing gear mooring point	0	2406	1380			

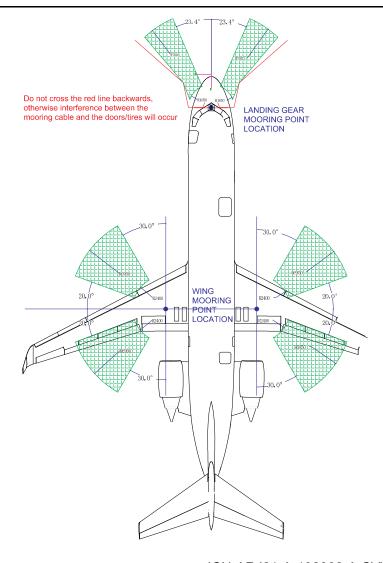


ICN-ARJ21-A-192002-A-SVV19-11289-A-001-01

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

02-09 Applicable to: ALL





ICN-ARJ21-A-192002-A-SVV19-11334-A-001-01

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





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				
2000	610	51.9	11.0				
4000	1219	44.7	7.1				
6000	1829	37.6	3.1				
8000	2438	30.5	-0.8				
10000	3048	23.3	-4.8				
12000	3658	16.2	-8.8				
13500	4115	10.9	-11.7				

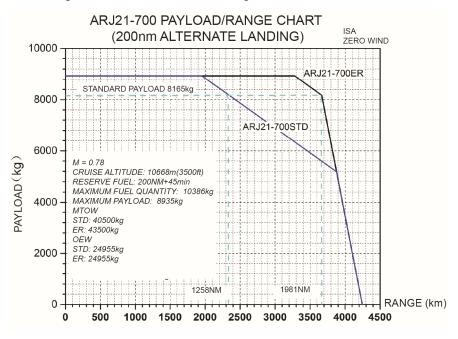




Payload/Range

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

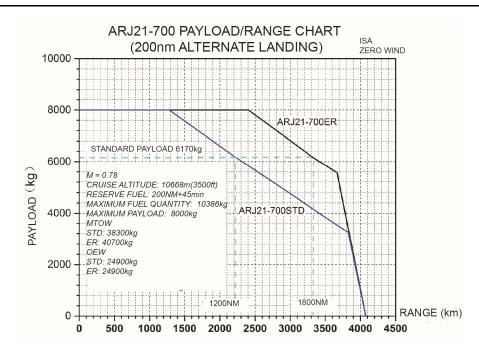
The payload/range capability of ARJ21-700STD and ARJ21-700ER in the regular condition with reserve fuel for **200 nm** and waiting reserve fuel for **45 min** are given, and the details are shown in figure 1 and 2.



ICN-ARJ21-A-192003-A-SVV19-10756-A-003-01

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





ICN-ARJ21-A-192003-A-SVV19-10757-A-003-01

Figure 2 ARJ21-700 Payload Range (Premium Economy Class) (Sheet 1 of 1)

03-02 Applicable to: ALL



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 and Figure 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)

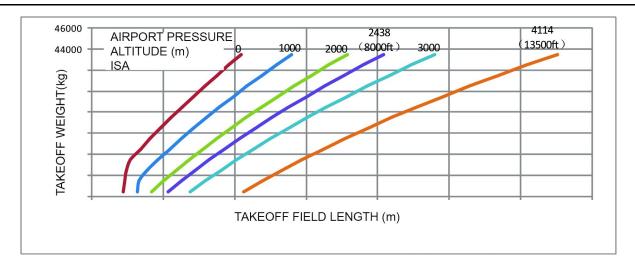
	$\DeltaT(^{\circ}C)$									
W(kg)	ISA	ISA+10	ISA+20	ISA+30	ISA+40	ISA	ISA+10	ISA+20	ISA+30	ISA+40
			H=0m				H=1000m			
30500	1223	1256	1279	1356	1512	1319	1359	1371	1525	1709
31500	1232	1266	1291	1438	1605	1332	1372	1449	1619	1816
32500	1242	1276	1356	1523	1701	1384	1428	1534	1716	1928
33500	1273	1313	1433	1611	1802	1463	1510	1623	1817	2045
34500	1341	1383	1512	1702	1906	1544	1594	1714	1921	2166
35500	1410	1456	1594	1796	2015	1628	1680	1809	2029	2292
36500	1482	1530	1678	1894	2127	1714	1770	1906	2142	2424
37500	1556	1607	1765	1995	2244	1803	1862	2007	2258	2561
38500	1633	1686	1854	2100	2366	1895	1958	2112	2379	2703
39500	1711	1767	1947	2208	2493	1990	2056	2220	2505	2851
40500	1792	1851	2043	2321	2624	2088	2158	2332	2635	3006
41500	1875	1937	2142	2438	2761	2189	2263	2447	2770	3167
42500	1960	2026	2244	2558	2903	2293	2371	2567	2910	3335
43500	2049	2118	2349	2684	3051	2401	2484	2691	3056	3520

Aircraft Characteristics For Airport Planning



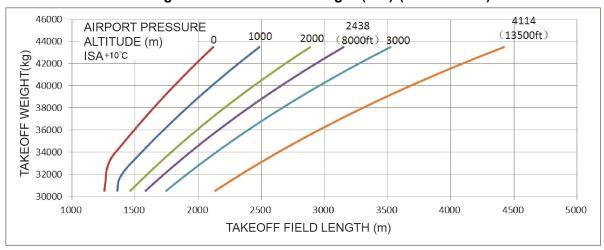
	H=2000m					H=2438m(8000ft)				
30500	1418	1462	1566	1756	1967	1534	1583	1695	1904	2138
31500	1503	1551	1662	1866	2094	1627	1679	1800	2025	2278
32500	1592	1643	1762	1981	2226	1724	1779	1909	2151	2424
33500	1683	1737	1865	2100	2363	1824	1883	2022	2282	2577
34500	1778	1836	1972	2223	2507	1927	1991	2139	2419	2736
35500	1875	1937	2082	2352	2657	2034	2102	2261	2562	2903
36500	1976	2042	2197	2486	2814	2146	2217	2388	2710	3077
37500	2081	2151	2316	2625	2977	2261	2337	2519	2865	3259
38500	2189	2263	2439	2770	3147	2380	2461	2655	3026	3450
39500	2301	2379	2567	2920	3325	2503	2589	2797	3194	3649
40500	2417	2499	2699	3077	3511	2631	2722	2944	3368	3871
41500	2537	2624	2837	3239	3708	2764	2859	3096	3551	4101
42500	2661	2753	2979	3409	3923	2901	3002	3254	3741	4342
43500	2789	2886	3126	3585	4146	3043	3150	3419	3942	4594
	H=3000m					H=4114m(13500ft)				
			H=3000m	<u>1</u>			H=4	114m(135	500ft)	
30500	1691	1746	H=3000m 1867	2098	2369	2063	H=4 ⁻ 2134	114m(135 2282	2556	2918
30500 31500	1691 1796		I	I	2369 2527	2063 2193		<u> </u>	Ī	2918 3122
		1746	1867	2098			2134	2282	2556	
31500	1796	1746 1855	1867 1984	2098 2233	2527	2193	2134 2270	2282 2429	2556 2727	3122
31500 32500	1796 1904	1746 1855 1967	1867 1984 2106	2098 2233 2375	2527 2693	2193 2330	2134 2270 2412	2282 2429 2584	2556 2727 2907	3122 3336
31500 32500 33500	1796 1904 2016	1746 1855 1967 2083	1867 1984 2106 2233	2098 2233 2375 2523	2527 2693 2866	2193 2330 2471	2134 2270 2412 2559	2282 2429 2584 2744	2556 2727 2907 3094	3122 3336 3562
31500 32500 33500 34500	1796 1904 2016 2132	1746 1855 1967 2083 2204	1867 1984 2106 2233 2365	2098 2233 2375 2523 2677	2527 2693 2866 3048	2193 2330 2471 2619	2134 2270 2412 2559 2713	2282 2429 2584 2744 2912	2556 2727 2907 3094 3291	3122 3336 3562 3800
31500 32500 33500 34500 35500	1796 1904 2016 2132 2253	1746 1855 1967 2083 2204 2330	1867 1984 2106 2233 2365 2502	2098 2233 2375 2523 2677 2837	2527 2693 2866 3048 3239	2193 2330 2471 2619 2773	2134 2270 2412 2559 2713 2873	2282 2429 2584 2744 2912 3087	2556 2727 2907 3094 3291 3497	3122 3336 3562 3800 4062
31500 32500 33500 34500 35500 36500	1796 1904 2016 2132 2253 2378	1746 1855 1967 2083 2204 2330 2460	1867 1984 2106 2233 2365 2502 2645	2098 2233 2375 2523 2677 2837 3005	2527 2693 2866 3048 3239 3438	2193 2330 2471 2619 2773 2933	2134 2270 2412 2559 2713 2873 3039	2282 2429 2584 2744 2912 3087 3270	2556 2727 2907 3094 3291 3497 3713	3122 3336 3562 3800 4062 4340
31500 32500 33500 34500 35500 36500 37500	1796 1904 2016 2132 2253 2378 2508	1746 1855 1967 2083 2204 2330 2460 2595	1867 1984 2106 2233 2365 2502 2645 2793	2098 2233 2375 2523 2677 2837 3005 3180	2527 2693 2866 3048 3239 3438 3647	2193 2330 2471 2619 2773 2933 3100	2134 2270 2412 2559 2713 2873 3039 3213	2282 2429 2584 2744 2912 3087 3270 3460	2556 2727 2907 3094 3291 3497 3713 3940	3122 3336 3562 3800 4062 4340 4632
31500 32500 33500 34500 35500 36500 37500 38500	1796 1904 2016 2132 2253 2378 2508 2643	1746 1855 1967 2083 2204 2330 2460 2595 2736	1867 1984 2106 2233 2365 2502 2645 2793 2947	2098 2233 2375 2523 2677 2837 3005 3180 3363	2527 2693 2866 3048 3239 3438 3647 3878	2193 2330 2471 2619 2773 2933 3100 3274	2134 2270 2412 2559 2713 2873 3039 3213 3394	2282 2429 2584 2744 2912 3087 3270 3460 3660	2556 2727 2907 3094 3291 3497 3713 3940 4177	3122 3336 3562 3800 4062 4340 4632
31500 32500 33500 34500 35500 36500 37500 38500 39500	1796 1904 2016 2132 2253 2378 2508 2643 2783	1746 1855 1967 2083 2204 2330 2460 2595 2736 2881	1867 1984 2106 2233 2365 2502 2645 2793 2947 3107	2098 2233 2375 2523 2677 2837 3005 3180 3363 3554	2527 2693 2866 3048 3239 3438 3647 3878 4122	2193 2330 2471 2619 2773 2933 3100 3274 3456	2134 2270 2412 2559 2713 2873 3039 3213 3394 3583	2282 2429 2584 2744 2912 3087 3270 3460 3660 3867	2556 2727 2907 3094 3291 3497 3713 3940 4177 4427	3122 3336 3562 3800 4062 4340 4632
31500 32500 33500 34500 35500 36500 37500 38500 39500 40500	1796 1904 2016 2132 2253 2378 2508 2643 2783 2929	1746 1855 1967 2083 2204 2330 2460 2595 2736 2881 3032	1867 1984 2106 2233 2365 2502 2645 2793 2947 3107 3274	2098 2233 2375 2523 2677 2837 3005 3180 3363 3554 3753	2527 2693 2866 3048 3239 3438 3647 3878 4122 4376	2193 2330 2471 2619 2773 2933 3100 3274 3456 3645	2134 2270 2412 2559 2713 2873 3039 3213 3394 3583 3779	2282 2429 2584 2744 2912 3087 3270 3460 3660 3867 4084	2556 2727 2907 3094 3291 3497 3713 3940 4177 4427 4701	3122 3336 3562 3800 4062 4340 4632





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Figure 1 Takeoff Field Length (ISA) (Sheet 1 of 5)

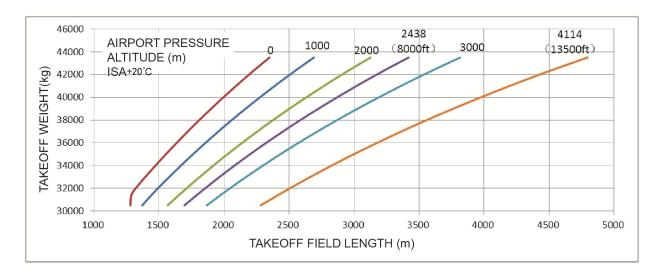


ICN-ARJ21-A-192003-A-SVV19-10759-A-002-01

Figure 1 Takeoff Field Length (ISA) (Sheet 2 of 5)

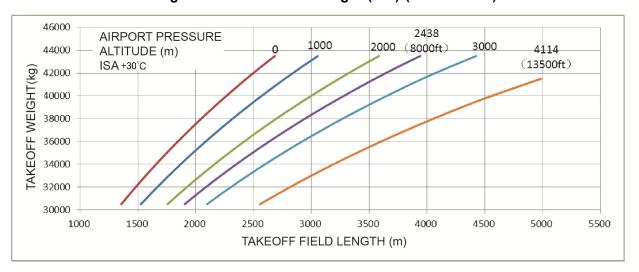
Aircraft Characteristics For Airport Planning





ICN-ARJ21-A-192003-A-SVV19-10760-A-002-01

Figure 1 Takeoff Field Length (ISA) (Sheet 3 of 5)

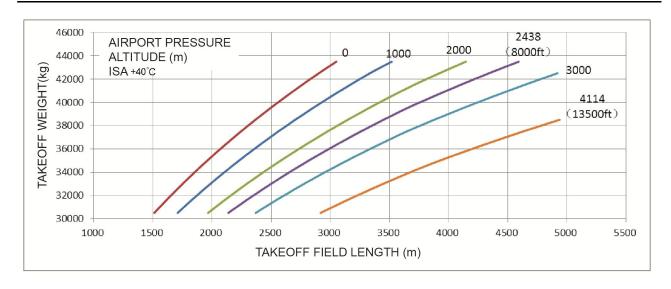


ICN-ARJ21-A-192003-A-SVV19-10761-A-002-01

Figure 1 Takeoff Field Length (ISA) (Sheet 4 of 5)

03-03 Applicable to: ALL





ICN-ARJ21-A-192003-A-SVV19-10762-A-002-01

Figure 1 Takeoff Field Length (ISA) (Sheet 5 of 5)





Landing Field Length

Refer to Table 1 and 2, Figure 1 and 2 for details of landing field lengths for ARJ21-700 at different weights and different airport altitudes.

1. Calculation Methods and Conditions

According to CCAR25.125, landing distance is the horizontal distance required for aircraft landing from a **15 m** (**50 ft**) 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)

	Airport Pressure Altitude (m)									
Weight (kg)	0	1000	2000	2438 (8000ft)	3000	4000	4114 (13500ft)			
30000	1512	1629	1759	1821	1906	2071	2091			
31000	1552	1672	1807	1871	1958	2128	2149			
32000	1591	1715	1854	1920	2011	2187	2208			
33000	1631	1758	1902	1970	2063	2245	2267			
34000	1671	1802	1950	2021	2116	2304	2327			
35000	1711	1846	1998	2071	2170	2364	2388			
36000	1751	1890	2047	2122	2224	2424	2449			
37000	1791	1934	2096	2173	2278	2485	2510			
37665	1818	1964	2129	2207	2315	2525	2551			
38000	1831	1979	2145	2225	2333	2546	2572			
39000	1872	2023	2195	2277	2388	2608	2635			

Aircraft Characteristics For Airport Planning



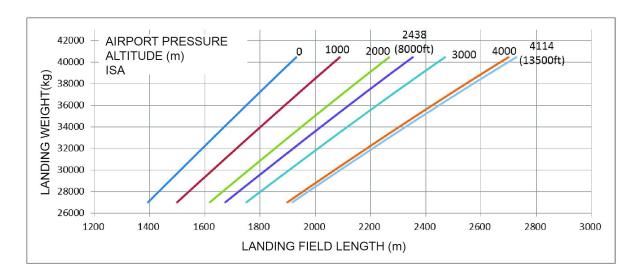
	Airport Pressure Altitude (m)								
Weight (kg)	0	1000	2000	2438 (8000ft)	3000	4000	4114 (13500ft)		
40000	1913	2068	2245	2329	2444	2671	2698		
40455	1931	2089	2268	2353	2470	2699	2728		

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

	Airport Pressure Altitude (m)								
Weight (kg)	0	1000	2000	2438 (8000ft)	3000	4000	4114 (13500ft)		
30000	1395	1503	1625	1683	1762	1916	1935		
31000	1431	1542	1668	1728	1809	1969	1989		
32000	1467	1582	1712	1774	1858	2023	2044		
33000	1504	1622	1756	1820	1907	2078	2099		
34000	1540	1662	1800	1866	1956	2133	2154		
35000	1577	1703	1845	1913	2006	2188	2210		
36000	1614	1743	1890	1960	2055	2244	2267		
37000	1651	1784	1935	2007	2106	2300	2324		
37665	1675	1811	1965	2039	2139	2338	2362		
38000	1688	1825	1980	2055	2156	2357	2382		
39000	1725	1866	2026	2103	2207	2414	2440		
40000	1762	1907	2072	2151	2259	2472	2499		
40455	1779	1926	2093	2173	2283	2499	2526		

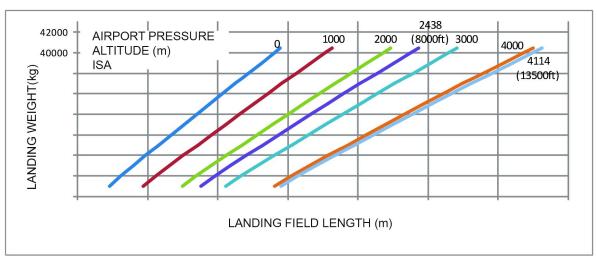
03-04 Applicable to: ALL





ICN-ARJ21-A-192003-A-SVV19-10763-A-002-01

Figure 1 ARJ21-700 Landing Field Length with Flap at Detent 3 (Sheet 1 of 1)



ICN-ARJ21-A-192003-A-SVV19-10764-A-002-01

Figure 2 ARJ21-700 Landing Field Length with Flap at Detent 4 (Sheet 1 of 1)





Landing Reference Speed

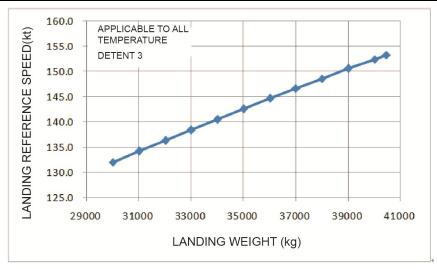
Refer to Table 1 and 2, Figure 1 and 2 for ARJ21-700 landing reference speed at sea level in ISA. The speeds are calibrated air speeds.

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

W (kg)	30000	31000	32000	33000	34000	35000
VREF(kt)	132.0	134.2	136.3	138.4	140.5	142.6
W (kg)	36000	37000	38000	39000	40000	40455
VREF(kt)	144.6	146.6	148.6	150.6	152.4	153.3

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

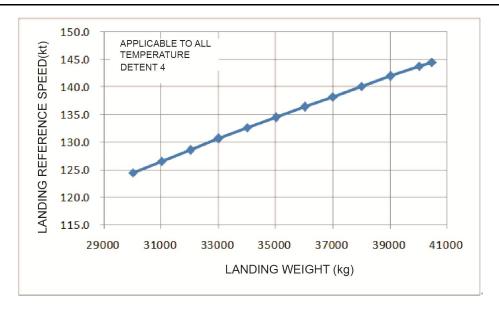
W (kg)	30000	31000	32000	33000	34000	35000
VREF(kt)	124.5	126.6	128.5	130.6	132.6	134.4
W (kg)	36000	37000	38000	39000	40000	40455
VREF(kt)	136.4	138.3	140.1	141.9	143.8	144.5



ICN-ARJ21-A-192003-A-SVV19-10765-A-003-01

Figure 1 ARJ21-700 Landing Reference Speed with Flap at Detent 3 (Sheet 1 of 1)





ICN-ARJ21-A-192003-A-SVV19-10766-A-003-01

Figure 2 ARJ21-700 Landing Reference Speed with Flap at Detent 4 (Sheet 1 of 1)

03-05 Applicable to: ALL





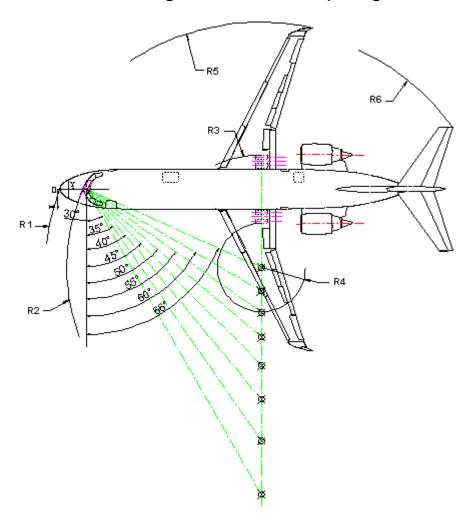
General

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.





Steering Radius - No Slip Angle



ICN-ARJ21-A-192004-A-SVV19-10767-A-002-01

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

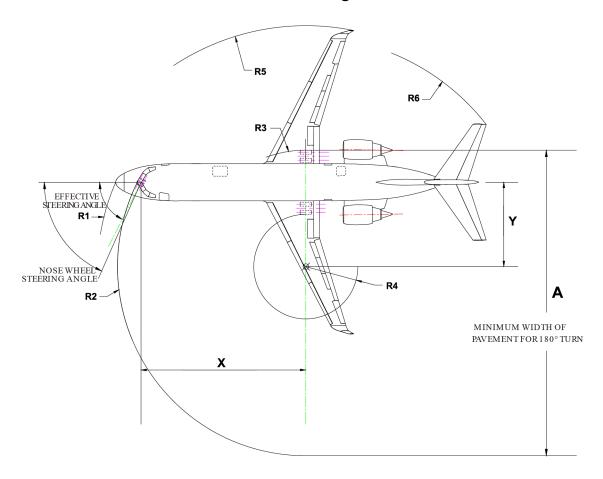
Steering	R	1	R	2	R	:3	R	4	R	15	R	6
Angle (°)	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
30	30.96	101.6	30.08	98.7	28.65	94.0	22.89	75.1	39.63	130.0	34.98	114.8
35	27.31	89.6	26.24	86.1	24.13	79.2	18.36	60.2	35.14	115.3	31.05	101.9
40	24.68	81.0	23.48	77.0	20.61	67.6	14.85	48.7	31.65	103.8	28.11	92.2
45	22.71	74.5	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



Minimum Steering Radius



ICN-ARJ21-A-192004-A-SVV19-10768-A-002-01

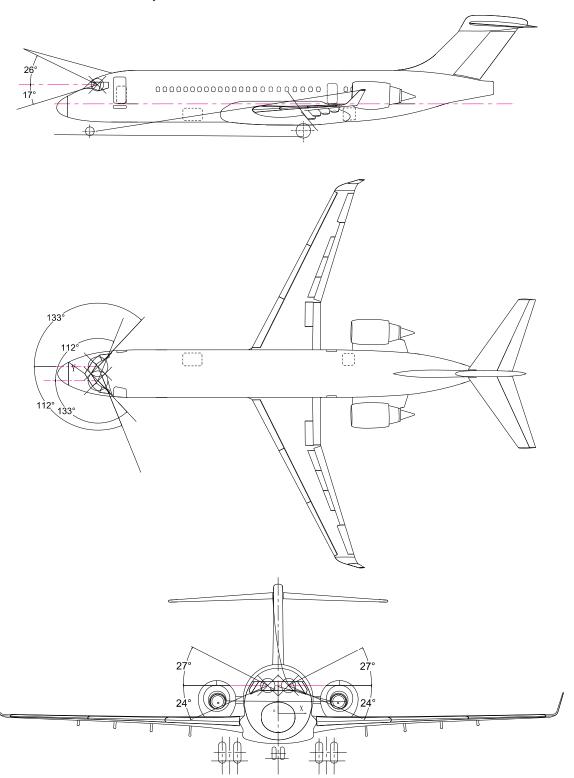
Figure 1 Ground Minimum Steering Radius (Sheet 1 of 1)

Effective Steerin	g Angle	Χ	Υ	Α	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





Cockpit Field of View in Static Status



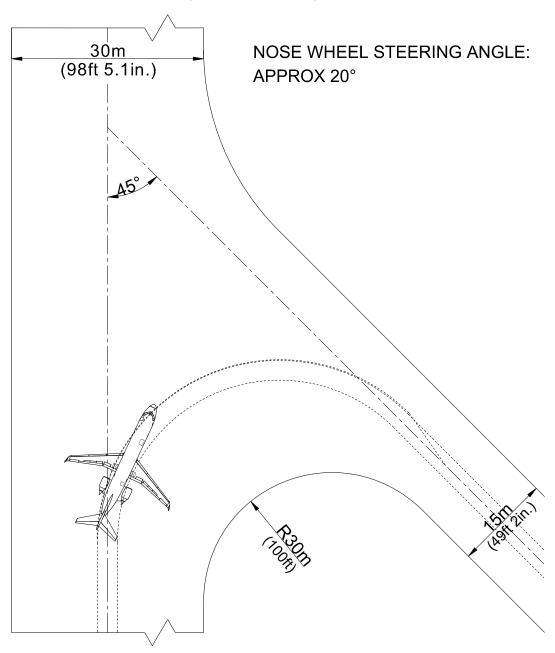
ICN-ARJ21-A-192004-A-SVV19-10769-A-001-01

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





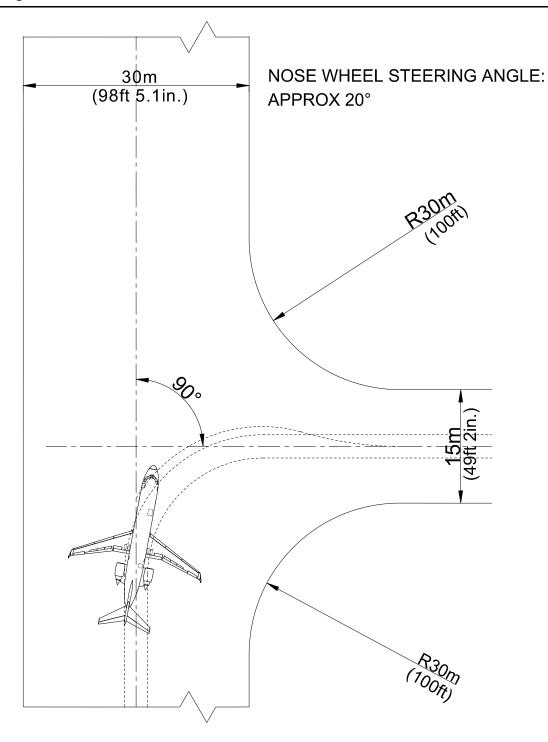
Runway and Taxiway Turn Paths



ICN-ARJ21-A-192004-A-SVV19-10770-A-003-01

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



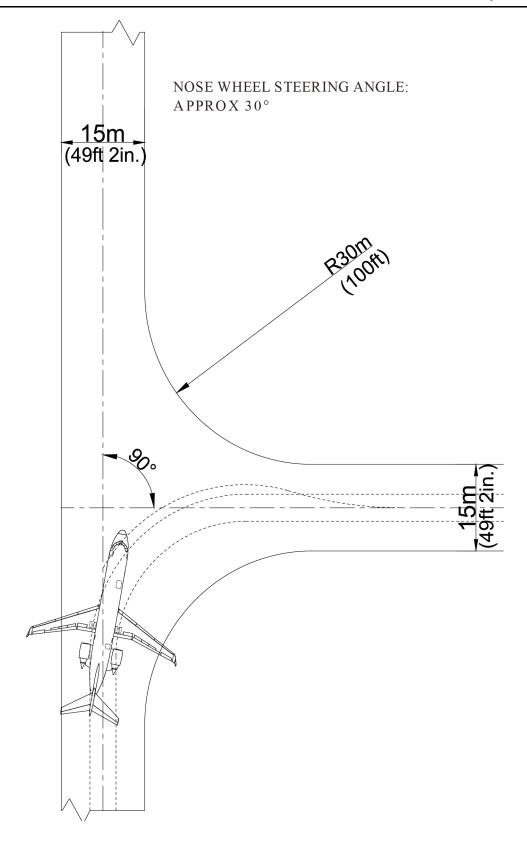


ICN-ARJ21-A-192004-A-SVV19-10771-A-003-01

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

04-05 Applicable to: ALL





ICN-ARJ21-A-192004-A-SVV19-10772-A-002-01

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





Runway Holding Bay **RUNWAY** 75m (246ft) **MINIMUM** 3m **SEPARATION** (10ft) 15m (49ft 2in.) TRACK OF EDGE OF MAIN WHEEL 15m (49ft 2in.) **TAXIWAY**

ICN-ARJ21-A-192004-A-SVV19-10773-A-003-01

Figure 1 Runway Holding Bay (Sheet 1 of 1)

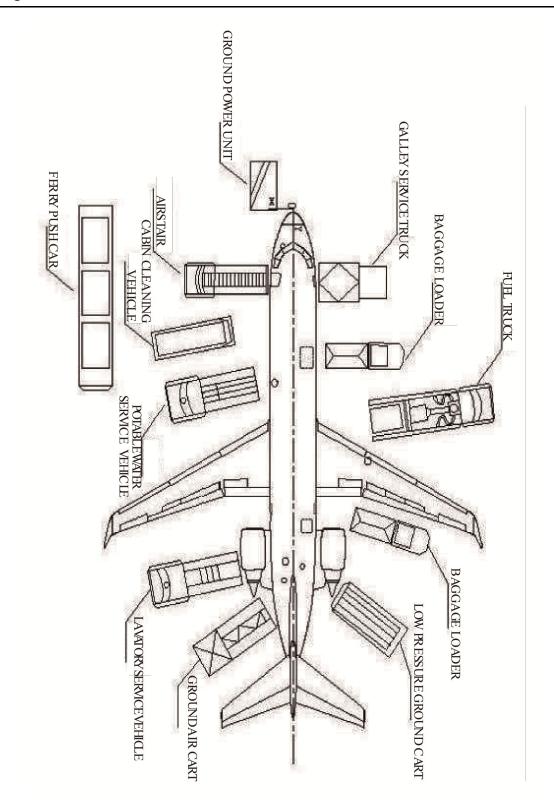
TRACK OF EDGE OF MAIN WHEEL





Aircraft Servicing Arrangement





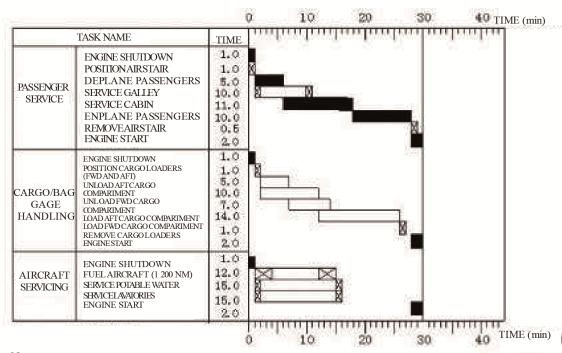
ICN-ARJ21-A-192005-A-SVV19-10774-A-002-01

Figure 1 Aircraft Servicing Arrangement (Sheet 1 of 1)

05-01 Applicable to: ALL



Turnaround Station



Note: 1. For basis 90-seat aircraft.

- 2. Mindicates 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.

ICN-ARJ21-A-192005-A-SVV19-10775-A-002-01

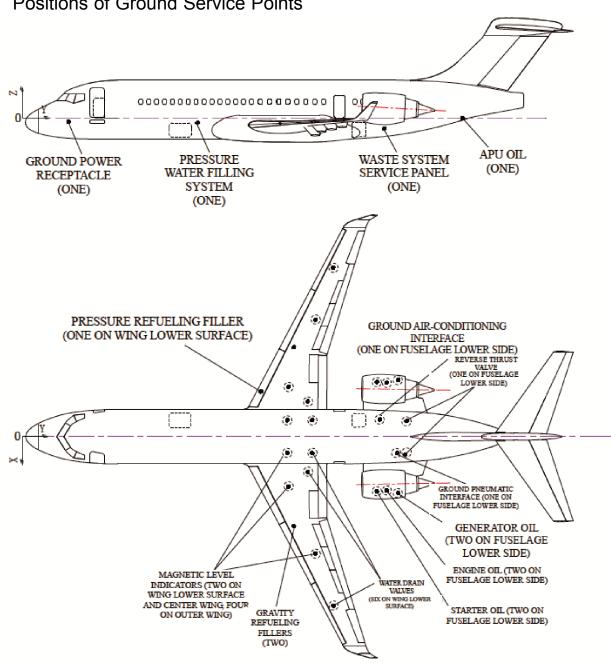
Figure 1 Turnaround Station (Sheet 1 of 1)





Ground Servicing Connections

1. Positions of Ground Service Points



ICN-ARJ21-A-192005-A-SVV19-90577-A-002-01

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

2. Grounding Points



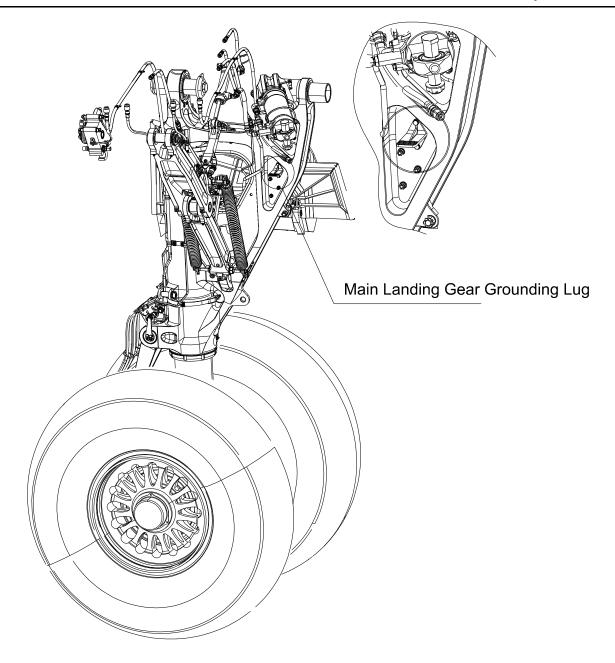
	Distance(mm/in)										
		From Aircra									
	From Nose	L Side	R Side	From Ground							
On left Main Landing Gear leg	17180/676	2340/92	-	1000/39							
On right Main Landing Gear leg	17180/676	-	2340/92	1000/39							

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.

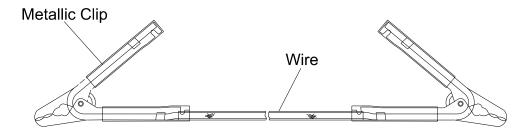




ICN-ARJ21-A-192005-A-SVV19-11308-A-001-01

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





ICN-ARJ21-A-192005-A-SVV19-11309-A-001-01

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

3. Hydraulic System

	Distance(mm/in)										
	Erom Noos	From Aircra	aft Centerline	From Cround							
	From Nose	L Side	R Side	From Ground							
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

- (1) Pressure Quick Disconnect (including protective cap), size: 28.58 mm 1.125 in .
- (2) Return Fluid Quick Disconnect (including protective cap), size: 41.28 mm 1.625 in .
- (3) Fill Quick Disconnect (including protective cap), size: 23.81 mm 0.9375 in .
- (4) Accumulator Charging Valve, size: M6164-5.

B. Oil Tank

(1) No.1 Reservior

Fluid Tem- perature ℃	-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

05-03 Applicable to: ALL



Fluid Tem- perature °C	-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

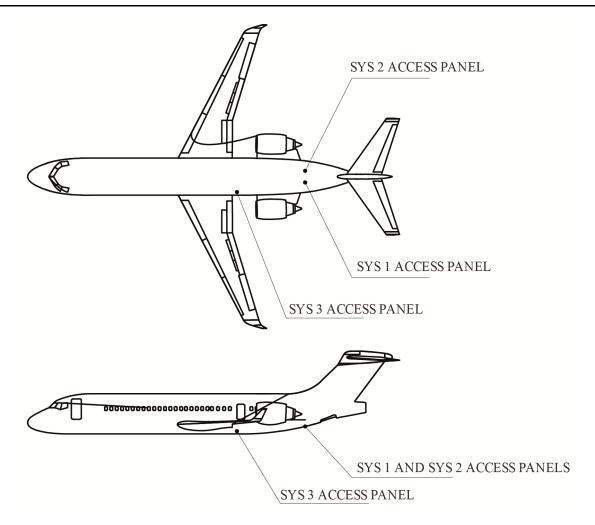
NOTE: Fluid capacity variation does not exceed 9% after pressurization.

(3) No.3 Reservior

Fluid Tem- perature °C	-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 variation does not exceed 20% after pressurization.





ICN-ARJ21-A-192005-A-SVV19-10777-A-002-01

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

4. Electrical Power System

Distance(mm/in)									
	From None	From Aircra	F O						
	From Nose	L Side	R Side	From Ground					
External Power Receptacle	2531/100	1012/40		1709/67					

NOTE: Zero-load status.

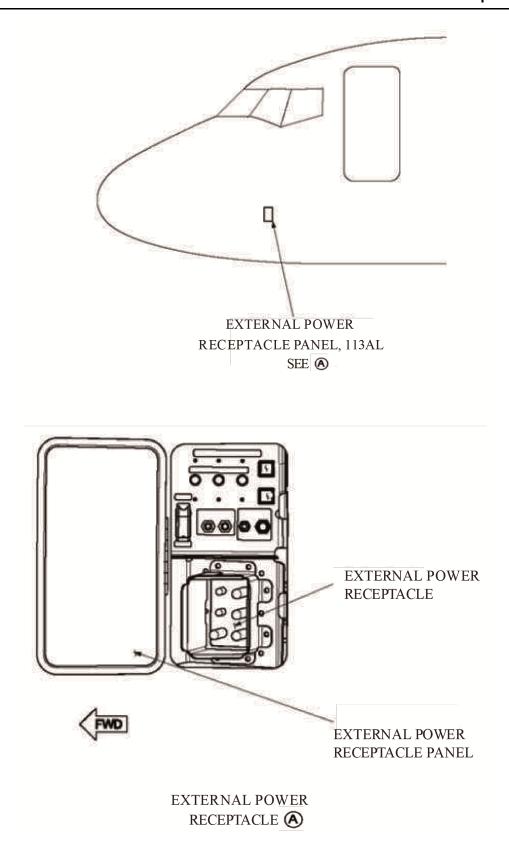
A.The receptacle conforms to the Standard ISO R461, 40kVA.

B.Three-phase AC, 115 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.

05-03 Applicable to: ALL





ICN-ARJ21-A-192005-A-SVV19-10778-A-002-01

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



5. Air Conditioning System

	5 ,									
Distance(mm/in)										
	-	From Aircra	5							
	From Nose	L Side	R Side	From Ground						
Low Pressure Ground Connection	21576/849		937/37	1643/65						

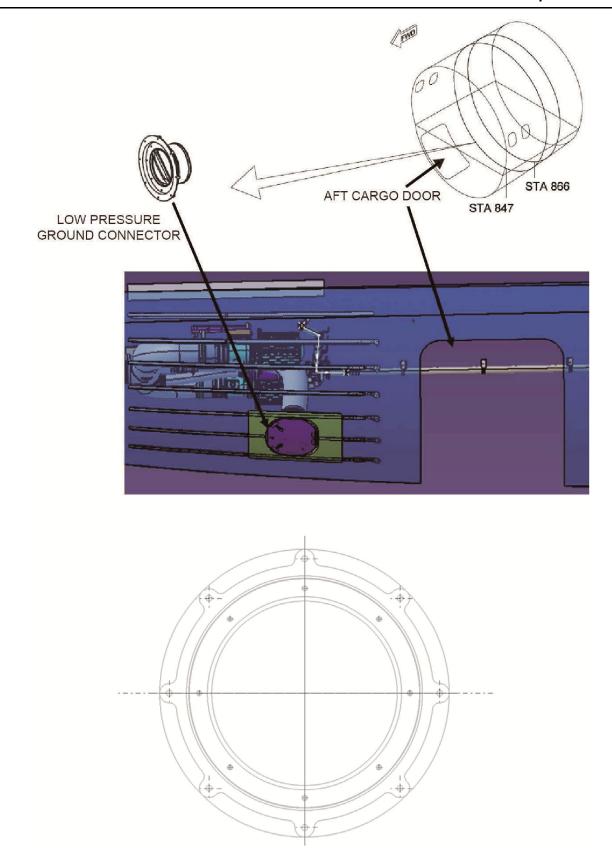
NOTE: Zero-load status.

A.Comply with DIN ISO 1034 and MS33562(ASG).

B. Diameter 203.2 mm 8 in

05-03 Applicable to: ALL





ICN-ARJ21-A-192005-A-SVV19-10779-A-002-01

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



6. Oxygen System

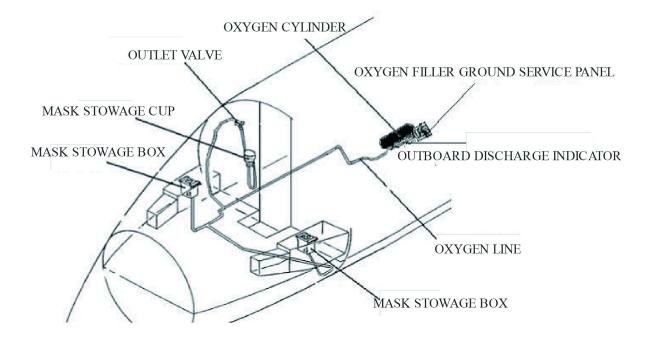
Distance(mm/in)					
		From Aircraft Centerline			
	From Nose	L Side	R Side	From Ground	
Oxygen Filler Valve	6840/269	1290/51		1890/74	

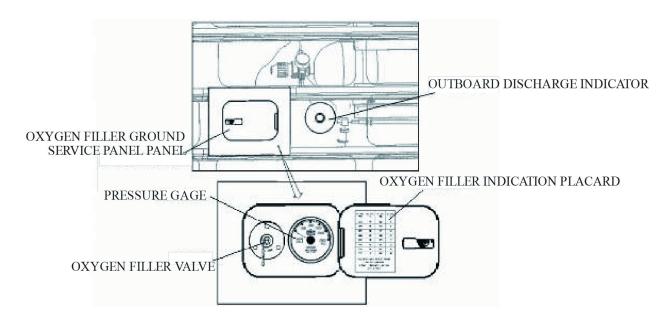
NOTE: Zero-load status.

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







ICN-ARJ21-A-192005-A-SVV19-10781-A-002-01

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

7. Waste System



Distance(mm/in)				
	From Nose	Distance to Symmetrical Plane		
		R Side	L Side	From Ground
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 RDS11-16ISO/DIS 17775

(2) Draining nipple: 101.6 mm 4 in Comply with RDS10-4ISO/DIS17775

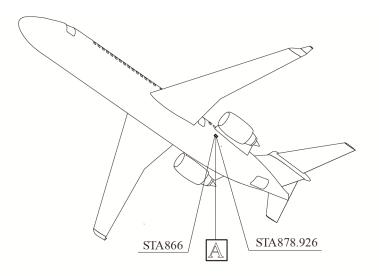
B. Waste tank capacity: 68 L

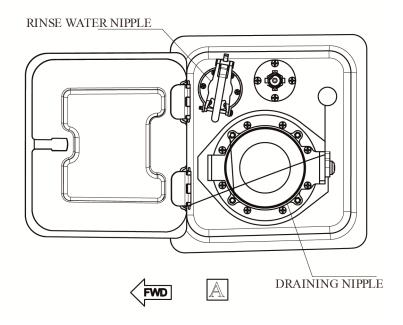
C. Flushing water pressure of waste tank: 1.72 bar 25 psi

D. Flow rate: 16 L/min ~ 28 L/min

05-03 Applicable to: ALL







ICN-ARJ21-A-192005-A-SVV19-10783-A-002-01

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

8. Potable Water System



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

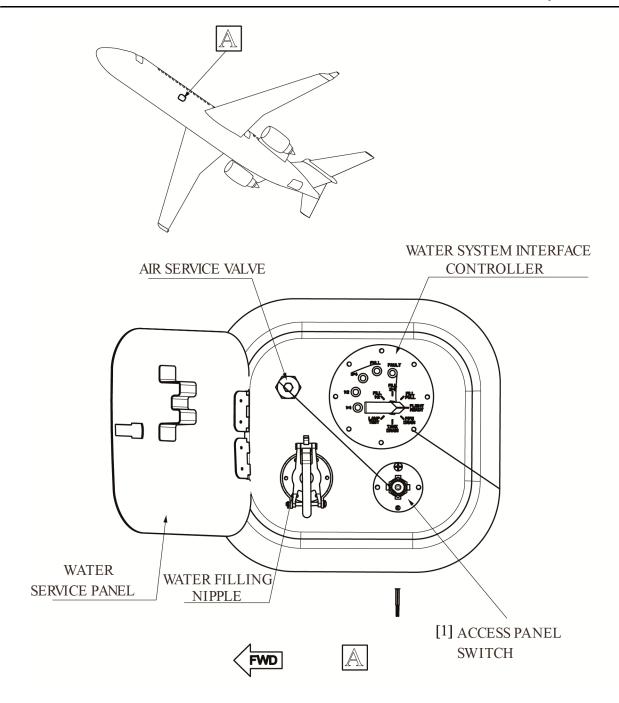
NOTE: Zero-load status.

A. Water filling nipple: 19.05 mm 0.75 in Comply with RDS11-16ISO/DIS 17775

B. Water tank capacity: 83 L

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





ICN-ARJ21-A-192005-A-SVV19-10784-A-002-01

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

9. Oil System



	Distance(mm/in)			
	From Nose	From Aircraft Centerline		5 O
		R Side	L Side	From Ground
Manual Gravity Oil Filler	21705/855	3619/142		1757/69
Manual Gravity Oil Filler	21705/855		2246/88	1757/69
GSE Pressure Oil Filler	21654/853	3606/142		1737/68
GSE Pressure Oil Filler	21654/853		2230/87	1730/68

NOTE: Zero-load status

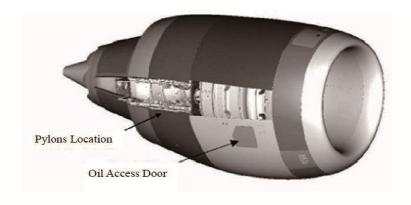
A. Oil Tank Volume 16qt

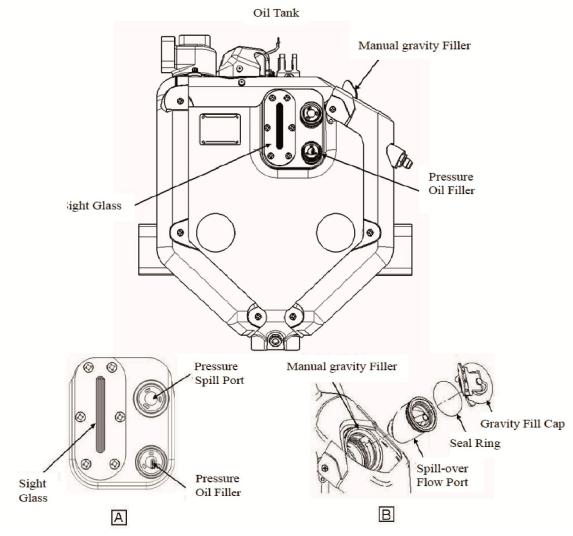
B. Oil Overfill Volume 13.3qt

C. GSE Pressure Oil Filler shall comply with AS4395E06

D. GSE Pressure Spill Port shall comply with AS4395E08







ICN-ARJ21-A-192005-A-SVV19-10785-A-002-01

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

A. Starter Oil System



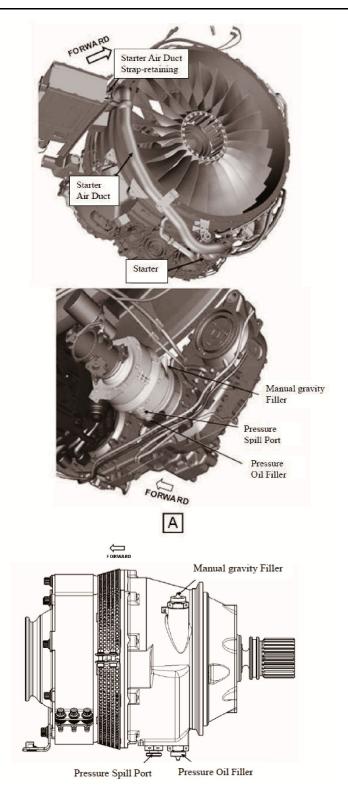
	Distance(mm/in)				
		From Aircraft Centerline		5 O	
	From Nose	R Side	L Side	From Ground	
Manual Gravity Oil Filler	21802/858	2728/107		1345/53	
Manual Gravity Oil Filler	21802/858		3117/123	1345/53	
GSE Pressure Oil Filler	21778/857	2801/110		1193/47	
GSE Pressure Oil Filler	21778/857		3040/120	1193/47	

NOTE: Zero-load status.

A. GSE Pressure Oil Filler shall comply with AS4395E06

B. Pressure Spill Port shall comply with AS4395E08





ICN-ARJ21-A-192005-A-SVV19-10786-A-002-01

Figure 11 Starter Oil Filler (Sheet 1 of 1)

B. Integrated Drive Generator (IDG) Oil System



	Distance(mm/in)				
NAME	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. ENGINE (CF34-10A) IDG (1707123A) Sight Glass Pressure Oil Filler 0 Oil Drain Port Spill-over Flow Port (C)

ICN-ARJ21-A-192005-A-SVV19-10787-A-002-01

Figure 12 IDG Oil Port (Sheet 1 of 1)



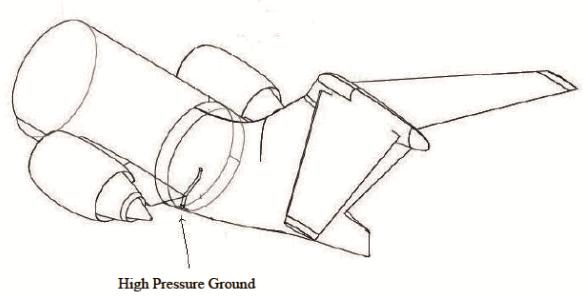
10. Pneumatic System

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

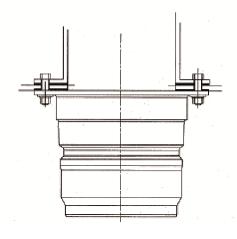
NOTE: Zero-load status.

A. Standard Connector comply with MS33740ASG

B. Diameter **76.2 mm 3 in**



Connector



ICN-ARJ21-A-192005-A-SVV19-10788-A-002-01

Figure 13 Pneumatic System Connector (Sheet 1 of 1)



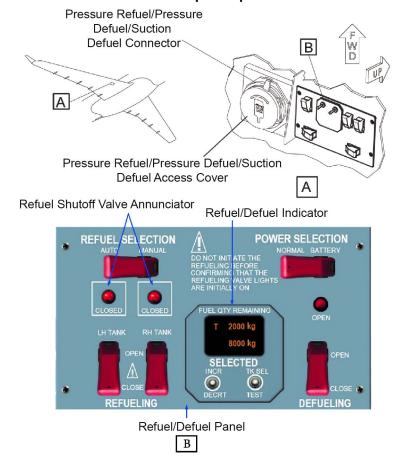
11. Fuel System

	Distance(mm/in)			
	F N	From Aircraft Centerline		5 O
	From Nose	R Side	L Side	From Ground
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 ISO45, install one between No.3 rib and No.4 rib in the right wing only.

B. Refuel Pressure: 3.45 bar ±0.345 bar 50 psi ±5 psi



ICN-ARJ21-A-192005-A-SVV19-10789-A-002-01

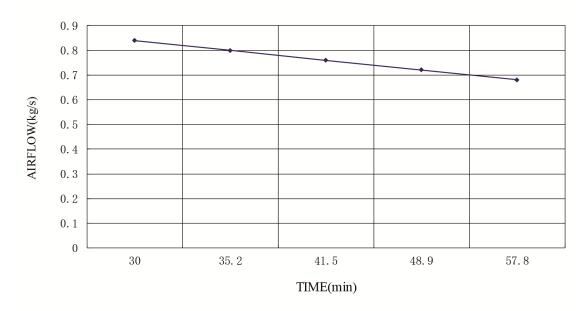
Figure 14 Fuel System Connector (Sheet 1 of 1)





Ground Air-Conditioning Requirements

COOLING



ICN-ARJ21-A-192005-A-SVV19-10790-A-002-01

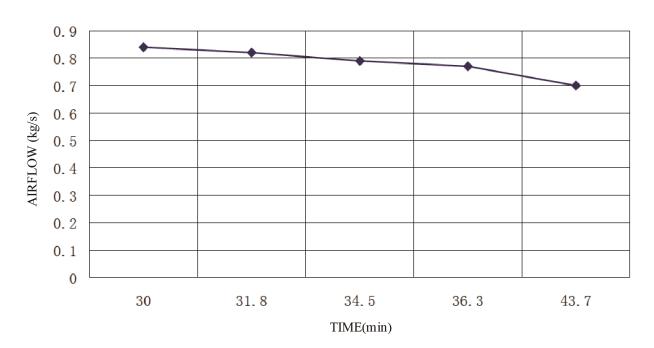
Figure 1 Cooling (Sheet 1 of 1)

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

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







ICN-ARJ21-A-192005-A-SVV19-10791-A-002-01

Figure 2 Heating (Sheet 1 of 1)

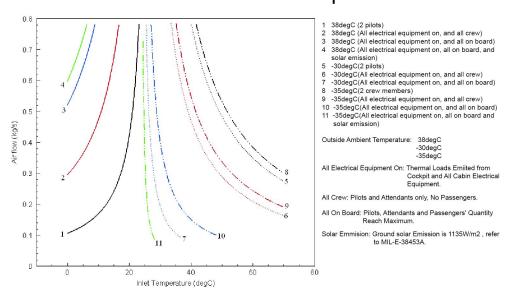
Initial Cabin Temperature: -30°C, heating cabin to 24°C. Low Pressure Ground Connection Temperature: 70°C.

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

05-04 Applicable to: ALL



Preconditioned Airflow Requirements



ICN-ARJ21-A-192005-A-SVV19-10792-A-002-01

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





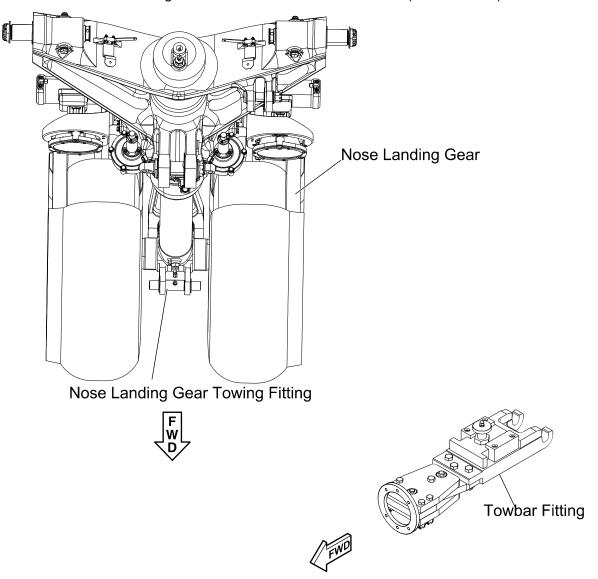
Ground Towing Requirements

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.

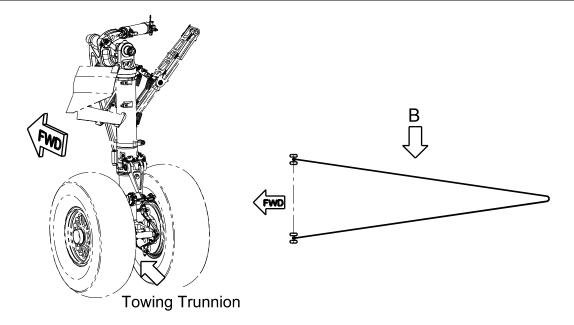
Two safety bolts are arranged on the towing fitting of the towbar. The failure shear force of the first is **45674 N** (**10267 lbf**) . The failure shear force of the second is **61986 N** (**13934 lbf**) . Maximum allowable moment at towing trunnion of the towbar is **2022.6 N.m** (**1491.7 lbf.ft**) .

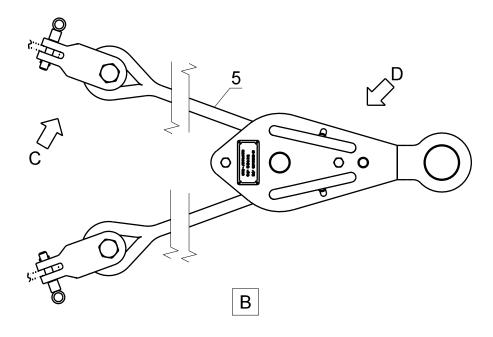


ICN-ARJ21-A-192005-A-SVV19-11315-A-001-01

Figure 1 nose (Sheet 1 of 1)







ICN-ARJ21-A-192005-A-SVV19-11314-A-001-01

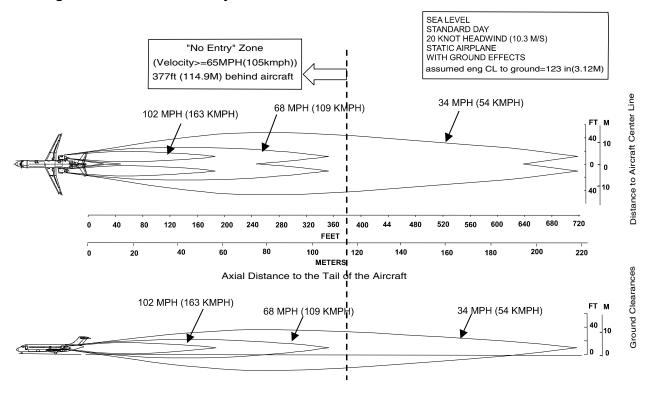
Figure 2 trunnion (Sheet 1 of 1)

05-06 Applicable to: ALL



Engine Exhaust Velocities and Temperatures

1. Engine Exhaust Velocity - Takeoff Thrust

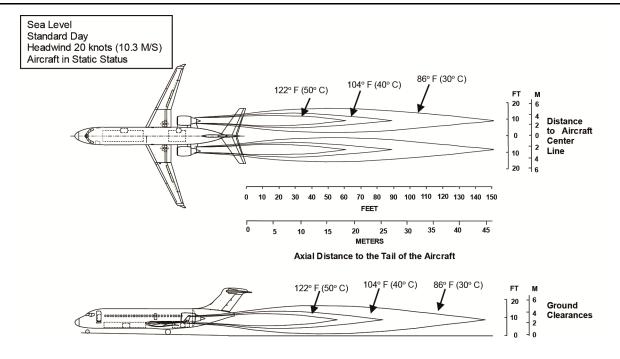


ICN-ARJ21-A-192006-A-SVV19-10793-A-003-01

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

2. Engine Exhaust Temperature - Takeoff Thrust





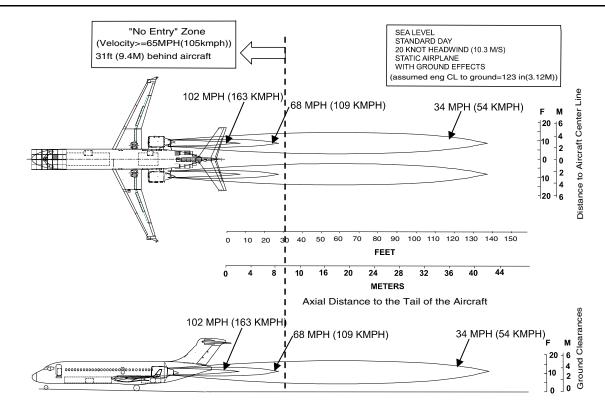
ICN-ARJ21-A-192006-A-SVV19-10794-A-002-01

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

3. Engine Exhaust Velocity - Ground Idle Thrust

06-01 Applicable to: ALL





ICN-ARJ21-A-192006-A-SVV19-10795-A-004-01

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



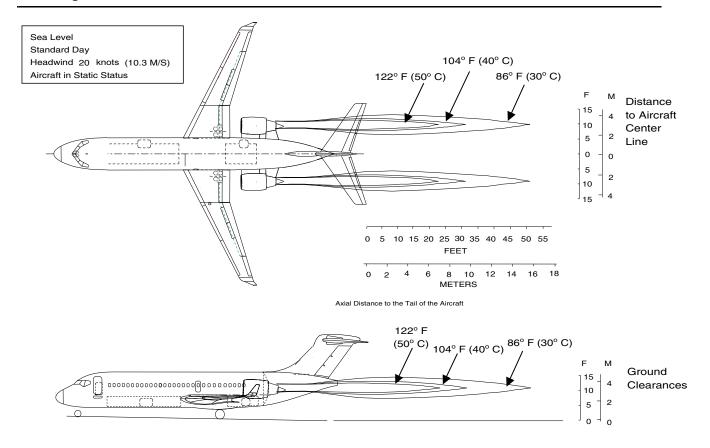


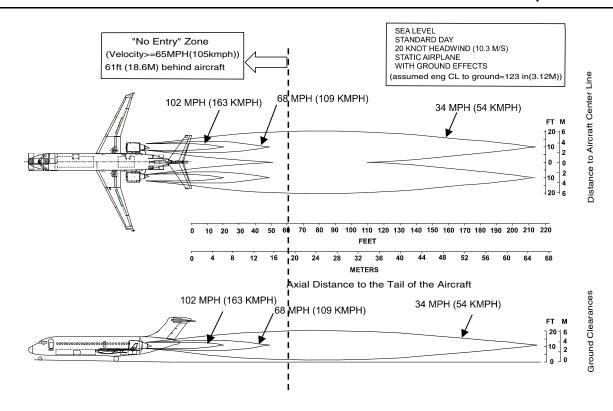
Figure 4 CF34-10A Engine Exhaust Temperature Contour (Sea Level, Ground Idle Thrust 761 lbf) (Sheet 1 of 1)

ICN-ARJ21-A-192006-A-SVV19-10796-A-003-01

5. Engine Exhaust Velocity - Initial Moving Thrust

06-01 Applicable to: ALL



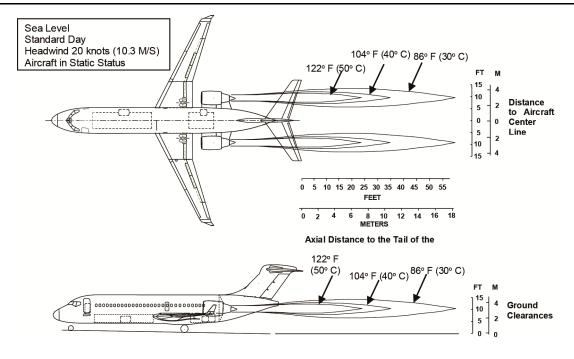


ICN-ARJ21-A-192006-A-SVV19-10797-A-003-01

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





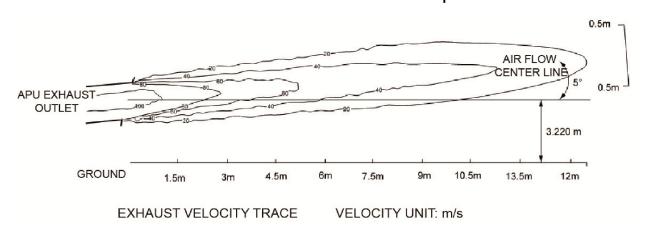
ICN-ARJ21-A-192006-A-SVV19-10798-A-002-01

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

06-01 Applicable to: ALL

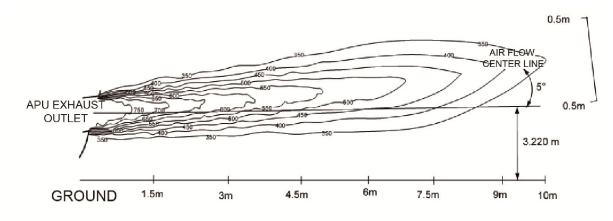


APU Exhaust Velocities and Temperatures



ICN-ARJ21-A-192006-A-SVV19-10799-A-002-01

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



EXHAUST TEMPERATURE TRACE

TEMPERATURE UNIT: KELVIN

Unit Conversion: Kelvin Temperature Scale = Degree Centigrade+273.15

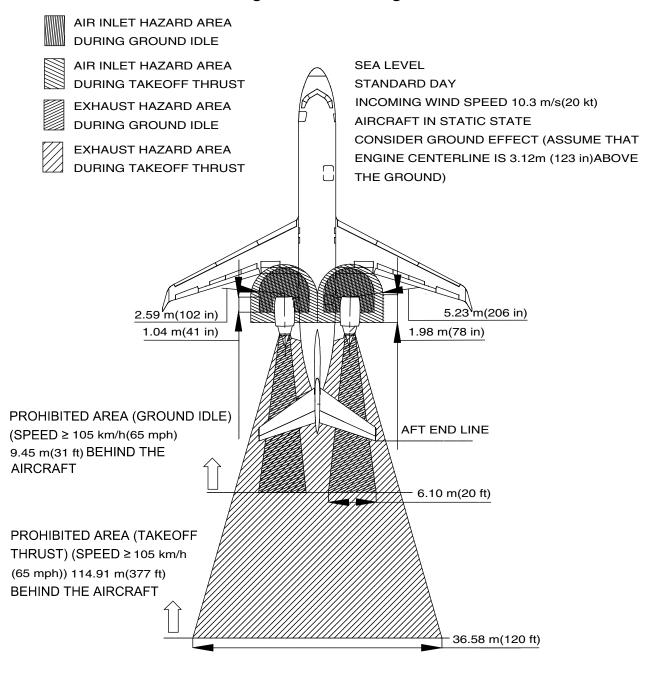
ICN-ARJ21-A-192006-A-SVV19-10800-A-002-01

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





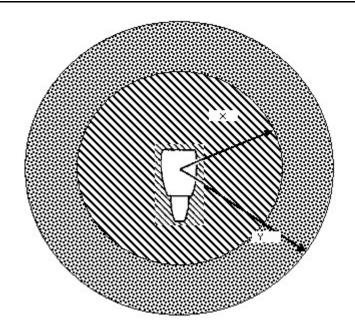
Danger Area of Engines



ICN-ARJ21-A-192006-A-SVV19-10801-A-003-01

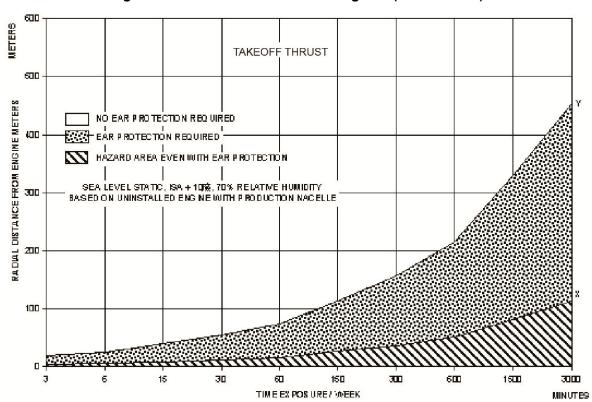
Figure 1 Intake Danger Area of Engines (Sheet 1 of 1)





ICN-ARJ21-A-192006-A-SVV19-10803-A-001-01

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

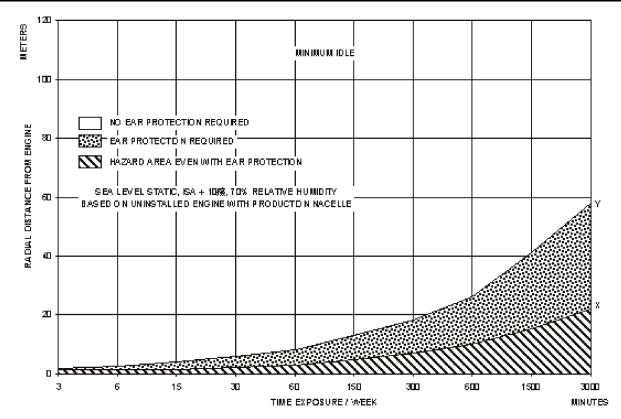


ICN-ARJ21-A-192006-A-SVV19-10804-A-002-01

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

06-03 Applicable to: ALL





Note:

- A. Indicates that in this area, operators require ear protection and operate in accordance with the time and distance in Figure 4 and 5.
- B. Indicates that working for a long time in this area may cause hearing impairment even with ear protection.

ICN-ARJ21-A-192006-A-SVV19-10805-A-002-01

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





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 load expressed in thousands of kilograms, 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 TIRE PRESSURE CATEGORY 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	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:

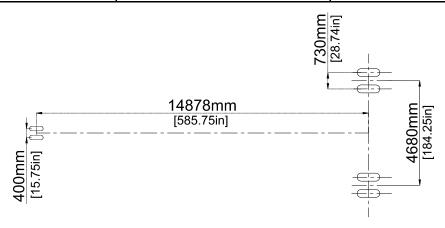
- High Strength, k = 150 MN/m³ (550 pci)
- Medium Strength, k = 80 MN/m³ (300 pci)
- Low Strength, k = 40 MN/m³ (150 pci)
- Ultra Low Strength, k = 20 MN/m³ (75 pci)

07-01 Applicable to: ALL



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	



ICN-ARJ21-A-192007-A-SVV19-10810-A-001-01

Figure 1 Landing Gear Footprint (Sheet 1 of 1)





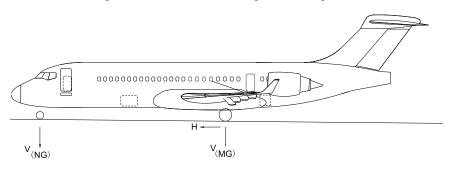
Maximum Pavement Load

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.



ICN-ARJ21-A-192007-A-SVV19-10811-A-001-01

Figure 1 Maximum Pavement Load (Sheet 1 of 1)

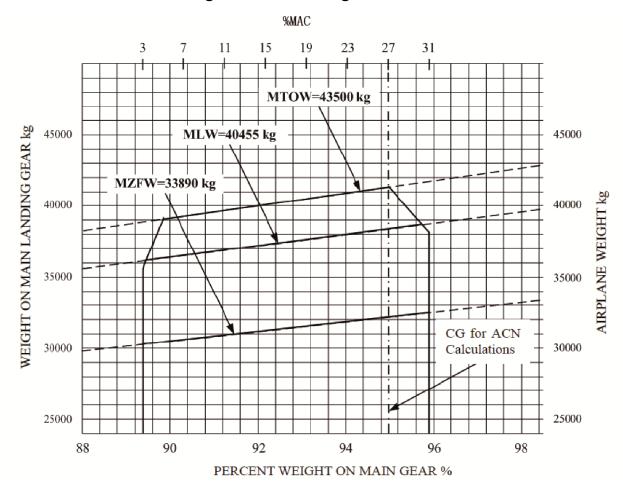
Table 1

MODEL I		V_{NG}		V _{MG} (Per Strut At Max Load)	H (Per Strut At Max Load)	
	Maximum Taxi Weight	Static At Most FWD C.G.	Steady Braking (Acceler- ation =-3 m/s ²)	Static At Most AFT C.G.	Steady Braking (Acceler- ation =-3 m/s ²)	Continuous Braking (µ= 0.8)
STD	40580 kg	4268 kg	5261 kg	19417 kg	6306 kg	15534 kg
	89464 lb	9410 lb	11578 lb	42808 lb	13903 lb	34246 lb
ER	43580 kg	4423 kg	5489 kg	20692 kg	6773 kg	16554 kg
	96077 lb	9752 lb	12101 lb	45618 lb	14931 lb	36494 lb





Landing Gear Loading on Pavement



ICN-ARJ21-A-192007-A-SVV19-10812-A-002-01

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





Flexible Pavement Requirements

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

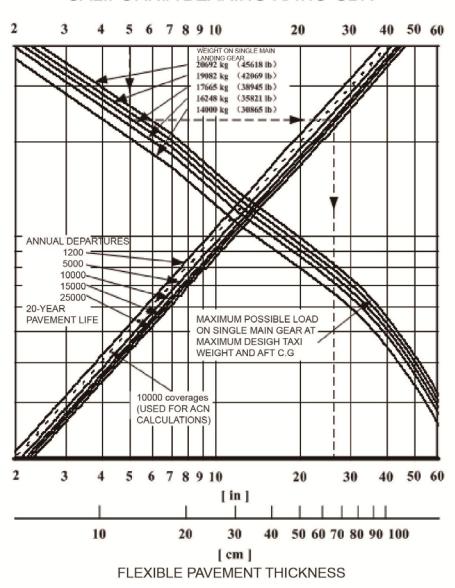
For example:

- 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).



CALIFORNIA BEARING RATIO-CBR



ICN-ARJ21-A-192007-A-SVV19-10813-A-002-01

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).

07-05 Applicable to: ALL



Flexible Pavement LCN Conversion

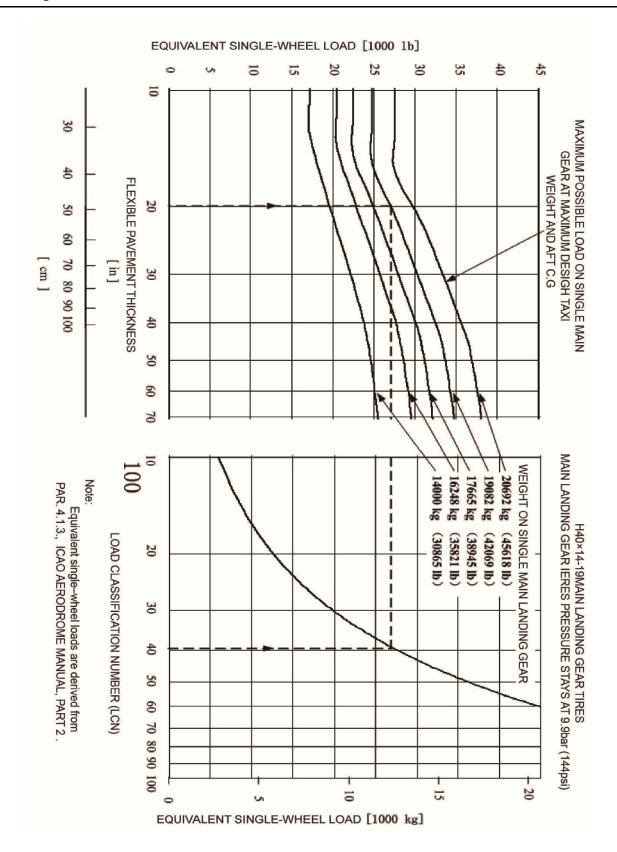
To determine the aircraft weight that can be accommodated on a particular flexible pavement, both the Load Classification Number (LCN) of the pavement and the thickness must be known.

For 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).





ICN-ARJ21-A-192007-A-SVV19-10814-A-002-01

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

07-06 Applicable to: ALL



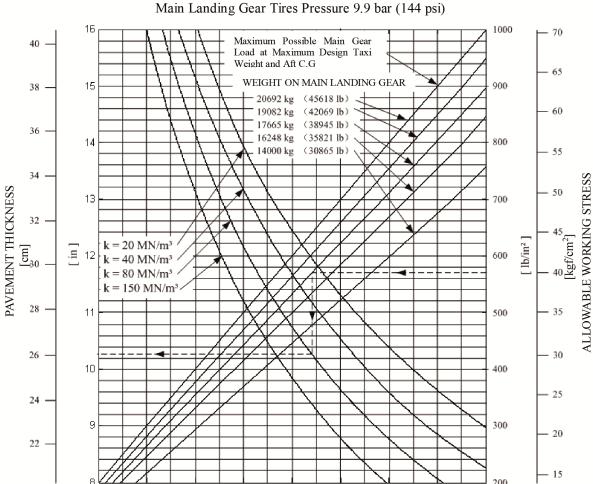
Rigid Pavement Requirements

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

For 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

<u>Note</u>: 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 $k=80MN/m^2$ but deviate slightly for other values of k.

ICN-ARJ21-A-192007-A-SVV19-10815-A-002-01

Figure 1 Rigid Pavement Requirements (Sheet 1 of 1)





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.

For 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).

VALUES IN INCHES
$$L = \sqrt[4]{\frac{Ed^3}{12(1-\mu^2)k}} = 24.1652\sqrt[4]{\frac{d^3}{k}}$$
 Note: E = 4×10⁶ psi (YOUNG'S MODULUS) k (SUBGRADE MODULUS, Ibf/in³) d (Rigid pavement thickness, in) μ = 0.15 (POISSON'S RATIO)

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Figure 1 Radius of Relative Stiffness (L) (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
14.00	59.43	55.31	49.98	46.51	43.98	42.02	40.44	39.11	36.99	36.12

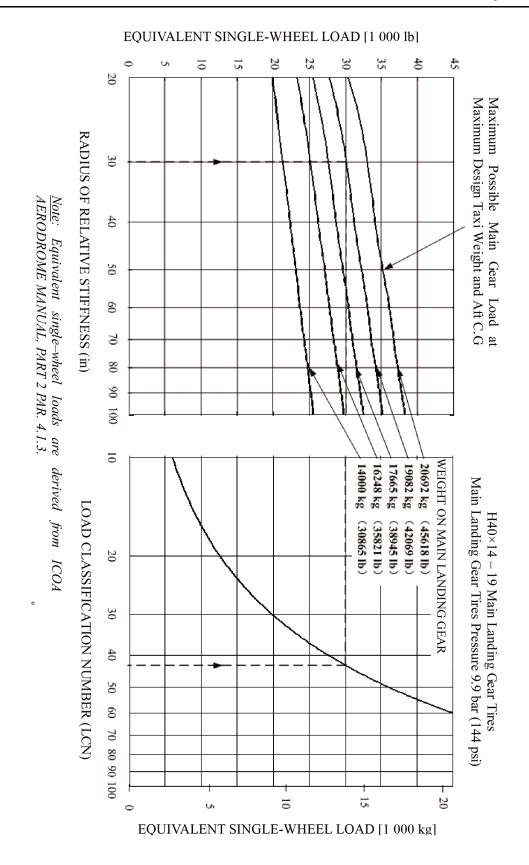
Aircraft Characteristics For Airport Planning



d	k=75	k=100	k=150	k=200	k=250	k=300	k=350	k=400	k=500	k=550
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.





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

Aircraft Characteristics For Airport Planning



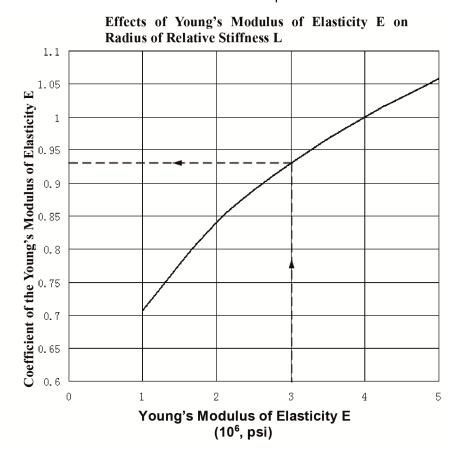
Section 7.8 is about the radius of relative stiffness L calculated on this case of the Young's modulus of elasticity $E = 4 \times 10^6$ psi, Poisson's ratio $\mu = 0.15$. When the value of Young's modulus of elasticity E or Poisson's ratio μ equals other value, the value of originally obtained radius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

For example:

 $- E = 3 \times 10^6 \text{ psi}$

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 .

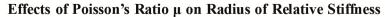


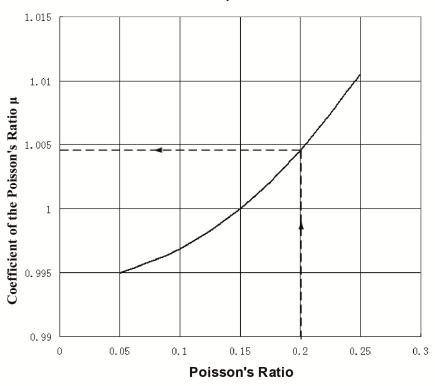
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Figure 3 Young's modulus (Sheet 1 of 1)

07-08 Applicable to: ALL







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





ACN/PCN Reporting System - Flexible and Rigid Pavements

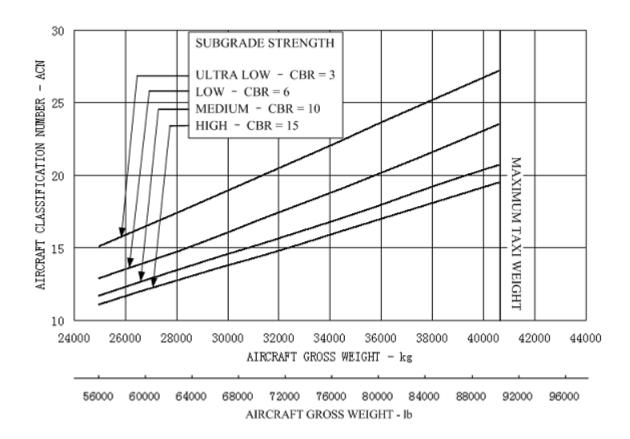
To determine the ACN of an aircraft on flexible or rigid pavement, both the aircraft gross weight and the subgrade strength category must be known.

NOTE: If the ACN of an aircraft is less than or equal to the PCN of a pavement, the aircraft can be operated on the pavement without limitation of tire inflation 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.

	MTW- /OEW		Tire Pres-	ACN for Rigid Pavement Subgrades - MN/m3				ACN for Flexible Pavement Subgrades - CBR			
	Le	MLG Leg %	sure MPa- /psi	High 150	Med- ium 80	Low 40	Ultra Low 20	High 15	Med- ium 10	Low 6	Ultra Low 3
STD	40580/ 89464 24955/ 55016	95%	0.93/1 35	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	95%	0.99/1 44	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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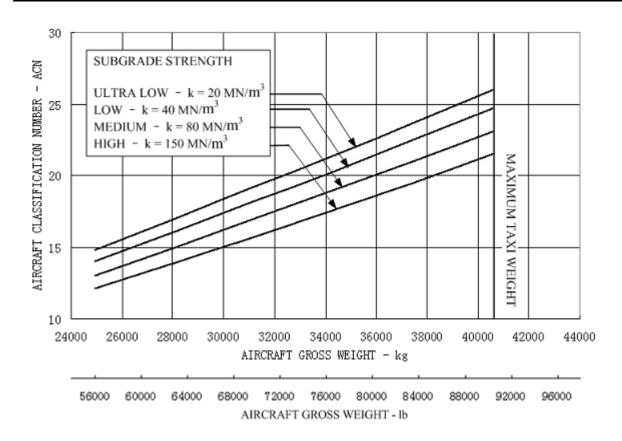
Figure 1 ARJ21-700STD ACN for Flexible Pavement (Sheet 1 of 1)

NOTE: Tire size: H40×14.0 - 19

Tire pressure: 135 PSI (0.93 MPa)

07-09 Applicable to: ALL





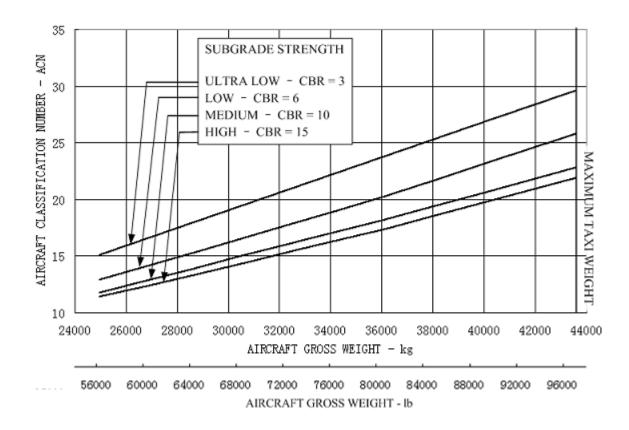
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Figure 2 ARJ21-700STD ACN for Rigid Pavement (Sheet 1 of 1)

NOTE: Tire size: H40×14.0 - 19

Tire pressure: 135 PSI (0.93 MPa)





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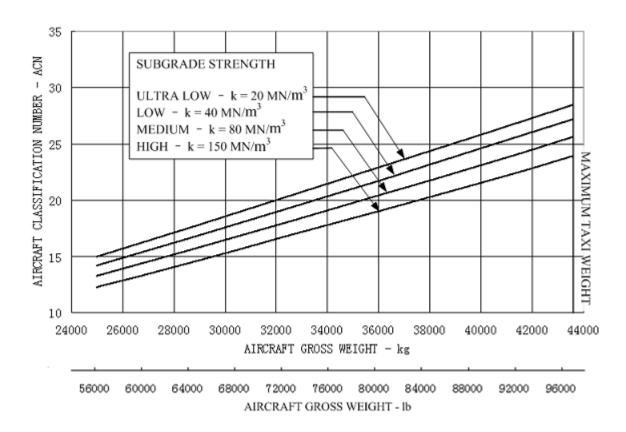
Figure 3 ARJ21-700 ER ACN for Flexible Pavement (Sheet 1 of 1)

NOTE: Tire size: H40×14.0 - 19

Tire pressure: 144 psi (0.99 MPa)

07-09 Applicable to: ALL





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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)

