A319

AIRCRAFT CHARACTERISTICS
AIRPORT AND MAINTENANCE PLANNING

AC

AIRBUS S.A.S.
Customer Services
Technical Data Support and Services
31707 Blagnac Cedex
FRANCE

Issue: Jul 01/95 Rev: Apr 01/20

HIGHLIGHTS

Revision No. 22 - Apr 01/20

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
CHAPTER 3		
Section 3-3		
Subject 3-3-3		
Aerodrome Reference Code	R	

LIST OF EFFECTIVE CONTENT

Revision No. 22 - Apr 01/20

CONTENT	CHG CODE	LAST REVISION DATE
CHAPTER 1		
Subject 1-1-0		
Purpose		Nov 01/19
Subject 1-2-0		
Glossary		Dec 01/17
CHAPTER 2		
Subject 2-1-1		
General Aircraft Characteristics Data		May 01/14
Subject 2-2-0		
General Aircraft Dimensions		May 01/14
FIGURE General Aircraft Dimensions - Wing Tip Fence		Feb 01/18
FIGURE General Aircraft Dimensions		May 01/15
Subject 2-3-0		
Ground Clearances		May 01/15
FIGURE Ground Clearances - Wing Tip Fence		Dec 01/18
FIGURE Ground Clearances - Sharklet		Dec 01/18
FIGURE Ground Clearances		Dec 01/18
FIGURE Ground Clearances - Trailing Edge Flaps - Extended		May 01/15
FIGURE Ground Clearances - Flap Tracks - Extended		May 01/15
FIGURE Ground Clearances - Flap Tracks - Retracted		May 01/15
FIGURE Ground Clearances - Flap Tracks - 1 + F		May 01/15
FIGURE Ground Clearances - Aileron Down		May 01/15
FIGURE Ground Clearances - Aileron Up		May 01/15
FIGURE Ground Clearances - Spoilers - Extended		May 01/15
FIGURE Ground Clearances - Leading Edge Slats - Extended		May 01/15
Subject 2-4-1		

CONTENT	CHG CODE	LAST REVISION DATE
FIGURE Power Plant Handling - Major Dimensions - IAE V2500 Series Engine		May 01/14
FIGURE Power Plant Handling - Major Dimensions - IAE V2500 Series Engine		May 01/14
FIGURE Power Plant Handling - Fan Cowls - IAE V2500 Series Engine		May 01/17
FIGURE Power Plant Handling - Thrust Reverser Halves - IAE V2500 Series Engine		May 01/17
FIGURE Power Plant Handling - Major Dimensions - PW 1100G Engine		May 01/17
FIGURE Power Plant Handling - Fan Cowls - PW 1100G Engine		May 01/17
FIGURE Power Plant Handling - Thrust Reverser Halves - PW 1100G Engine		May 01/14
FIGURE Power Plant Handling - Major Dimensions - CFM LEAP-1A Engine		May 01/15
FIGURE Power Plant Handling - Major Dimensions - CFM LEAP-1A Engine		May 01/17
Subject 2-13-0		
Leveling, Symmetry and Alignment		May 01/14
FIGURE Location of the Leveling Points		May 01/14
Subject 2-14-0		
Jacking for Maintenance		May 01/14
FIGURE Jacking for Maintenance - Jacking Point Locations		May 01/15
FIGURE Jacking for Maintenance - Forward Jacking Point		May 01/14
FIGURE Jacking for Maintenance - Wing Jacking Points		May 01/14
FIGURE Jacking for Maintenance - Safety Stay		May 01/15
FIGURE Jacking for Maintenance - Jacking Design		May 01/15
FIGURE Loads at the Aircraft Jacking Points - Wing Jacking Point and Forward Fuselage Jacking Point		May 01/14
FIGURE Jacking for Maintenance - Location of Shoring Cradles		May 01/14
Jacking of the Landing Gear		May 01/17

CONTENT	CHG CODE	LAST REVISION DATE
Subject 3-4-1		
Landing Field Length - ISA Conditions		May 01/14
FIGURE Landing Field Length - ISA Conditions - CFM56-5A Series Engine		May 01/14
FIGURE Landing Field Length - ISA Conditions - IAE V2500 Series Engine		May 01/14
Subject 3-5-0		
Final Approach Speed		May 01/14
CHAPTER 4		
Subject 4-1-0		
General Information		May 01/14
Subject 4-2-0		
Turning Radii		Dec 01/15
FIGURE Turning Radii, No Slip Angle - (Sheet 1)		Dec 01/15
FIGURE Turning Radii, No Slip Angle - (Sheet 2)		Dec 01/15
Subject 4-3-0		
Minimum Turning Radii		Dec 01/15
FIGURE Minimum Turning Radii		May 01/14
Subject 4-4-0		
Visibility from Cockpit in Static Position		May 01/14
FIGURE Visibility from Cockpit in Static Position		Dec 01/18
FIGURE Binocular Visibility Through Windows from Captain Eye Position		May 01/14
Subject 4-5-0		
Runway and Taxiway Turn Paths		May 01/14
Subject 4-5-1		
135° Turn - Runway to Taxiway		May 01/14
FIGURE 135° Turn - Runway to Taxiway - Cockpit Over Centerline Method		Dec 01/18
FIGURE 135° Turn - Runway to Taxiway - Judgemental Oversteering Method		Dec 01/18

CONTENT	CHG CODE	LAST REVISION DATE
Subject 6-1-3		
Engine Exhaust Velocities Contours - Breakaway Power		Dec 01/18
FIGURE Engine Exhaust Velocities - Breakaway Power 12% MTO – CFM LEAP-1A Engine		Dec 01/15
FIGURE Engine Exhaust Velocities - Breakaway Power 12% MTO – PW 1100G Engine		Dec 01/15
FIGURE Engine Exhaust Velocities - Breakaway Power 24% MTO – CFM LEAP-1A Engine		Dec 01/15
FIGURE Engine Exhaust Velocities - Breakaway Power 24% MTO – PW 1100G Engine		Dec 01/15
FIGURE Engine Exhaust Velocities - Breakaway Power - CFM56 Series Engine		Dec 01/18
FIGURE Engine Exhaust Velocities - Breakaway Power - IAE V2500 Series Engine		Dec 01/18
Subject 6-1-4		
Engine Exhaust Temperatures Contours - Breakaway Power		Dec 01/18
FIGURE Engine Exhaust Temperatures - Breakaway Power 12% MTO - CFM LEAP-1A Engine		Dec 01/15
FIGURE Engine Exhaust Temperatures - Breakaway Power 12% MTO - PW 1100G Engine		Dec 01/15
FIGURE Engine Exhaust Temperatures - Breakaway Power 24% MTO - CFM LEAP-1A Engine		Dec 01/15
FIGURE Engine Exhaust Temperatures - Breakaway Power 24% MTO - PW 1100G Engine		Dec 01/15
FIGURE Engine Exhaust Temperatures - Breakaway Power - CFM56 Series Engine		Dec 01/18
FIGURE Engine Exhaust Temperatures - Breakaway Power - IAE V2500 Series Engine		Dec 01/18
Subject 6-1-5		
Engine Exhaust Velocities Contours - Takeoff Power		Dec 01/15
FIGURE Engine Exhaust Velocities - Takeoff Power – CFM56 Series Engine		Dec 01/15

CONTENT	CHG CODE	LAST REVISION DATE
Subject 8-0-0		
Scaled Drawings		Dec 01/15
FIGURE Scaled Drawing		Dec 01/15
FIGURE Scaled Drawing		Dec 01/15
CHAPTER 10		
Subject 10-0-0		
Aircraft Rescue and Fire Fighting		May 01/15
FIGURE Front Page		Nov 01/19
FIGURE Highly Flammable and Hazardous Materials and Components		Nov 01/19
FIGURE Batteries Location and Access		Nov 01/19
FIGURE Wheel/Brake Overheat - Wheel Safety Area		Nov 01/19
FIGURE Composite Materials		May 01/14
FIGURE L/G Ground Lock Safety Devices		Nov 01/19
FIGURE Emergency Evacuation Devices		Nov 01/19
FIGURE Pax/Crew Doors		Nov 01/19
FIGURE Emergency Exit Hatch		Nov 01/19
FIGURE FWD and AFT Lower Deck Cargo Doors		Nov 01/19
FIGURE Control Panels		Nov 01/19
FIGURE APU Access Door		Nov 01/19
FIGURE Aircraft Ground Clearances		Nov 01/19
FIGURE Structural Break-in Points		Nov 01/19

TABLE OF CONTENTS

SCOPE

1-1-0 Introduction

**ON A/C A319-100 A319neo

Purpose

1. General

The A319 AIRCRAFT CHARACTERISTICS – AIRPORT AND MAINTENANCE PLANNING (AC) manual is issued for the A319-100 series aircraft equipped with wing-tip fences or sharklets, to provide necessary data to airport operators, airlines and Maintenance/Repair Organizations (MRO) for airport and maintenance facilities planning.

The A320 Family is the world's best-selling single-aisle aircraft. An A320 takes off or lands somewhere in the world every 1.5 seconds of every day, the family has logged more than 117 million cycles since entry-into-service and records a best-in-class dispatch reliability of 99.7%.

To ensure this true market leadership, Airbus continues to invest in improvements in the A320 Family: enhancements to aerodynamics such as the sharklet wingtip devices, upgrades to the widest passenger cabin in its class, the A320 Family neo. The latter combines top-of-class engine efficiency offered by two new engine options: the PW1100G PurePower from Pratt&Whitney and the LEAP-1A from CFM International with superior aerodynamics offered by the new sharklet devices.

The A320neo family offers a minimum of 15% fuel savings and an additional flight range of about 500 nm (926 km) and up to 20% fuel savings achieved through cabin innovations and efficiency improvements. For the environment, the A320neo family is also more eco-friendly, with 5 000 t (11 023 113 lb) less CO2 emissions per year per aircraft and nearly 50% reduction in noise footprint compared to previous generation aircraft.

1-2-0 Glossary

****ON A/C A319-100 A319neo**

Glossary

1. List of Abbreviations

A/C	Aircraft
ACF	Aircraft Cabin Flex
ACN	Aircraft Classification Number
AMM	Aircraft Maintenance Manual
APU	Auxiliary Power Unit
B/C	Business Class
CBR	California Bearing Ratio
CC	Cargo Compartment
CG	Center of Gravity
CKPT	Cockpit
E	Young's Modulus
ELEC	Electric, Electrical, Electricity
ESWL	Equivalent Single Wheel Load
FAA	Federal Aviation Administration
F/C	First Class
FDL	Fuselage Datum Line
FR	Frame
FSTE	Full Size Trolley Equivalent
FWD	Forward
GPU	Ground Power Unit
GSE	Ground Support Equipment
HYD	Hydraulic
ICAO	International Civil Aviation Organisation
IDG	Integrated Drive Generator
ISA	International Standard Atmosphere
L	Left
L	Radius of relative stiffness
LCN	Load Classification Number
LD	Lower Deck
L/G	Landing Gear
LH	Left Hand
LPS	Last Pax Seating
MAC	Mean Aerodynamic Chord

MAX	Maximum
MIN	Minimum
MLG	Main Landing Gear
NLG	Nose Landing Gear
OAT	Outside Air Temperature
PAX	Passenger
PBB	Passenger Boarding Bridge
PCA	Portland Cement Association
PCN	Pavement Classification Number
PRM	Passenger with Reduced Mobility
R	Right
RH	Right Hand
ULD	Unit Load Device
US	United States
WV	Weight Variant
Y/C	Tourist Class

2. Design Weight Terminology
   - Maximum Design Ramp Weight (MRW):
     Maximum weight for ground maneuver (including weight of taxi and run-up fuel) as limited by aircraft strength and airworthiness requirements. It is also called Maximum Design Taxi Weight (MTW).
   - Maximum Design Landing Weight (MLW):
     Maximum weight for landing as limited by aircraft strength and airworthiness requirements.
   - Maximum Design Takeoff Weight (MTOW):
     Maximum weight for takeoff as limited by aircraft strength and airworthiness requirements. (This is the maximum weight at start of the take-off run).
   - Maximum Design Zero Fuel Weight (MZFW):
     Maximum permissible weight of the aircraft without usable fuel.
   - Maximum Seating Capacity:
     Maximum number of passengers specifically certified or anticipated for certification.
   - Usable Volume:
     Usable volume available for cargo, pressurized fuselage, passenger compartment and cockpit.
   - Water Volume:
     Maximum volume of cargo compartment.
   - Usable Fuel:
     Fuel available for aircraft propulsion.

AIRCRAFT DESCRIPTION

2-1-1 General Aircraft Characteristics Data

****ON A/C A319-100 A319neo**

General Aircraft Characteristics Data

****ON A/C A319-100**

1. The following table provides characteristics of A319-100 Models, these data are specific to each Weight Variant:

Aircraft Characteristics					
	WV000	WV001	WV002	WV003	WV004
Maximum Ramp Weight (MRW) Maximum Taxi Weight (MTW)	64 400 kg (141 978 lb)	70 400 kg (155 205 lb)	75 900 kg (167 331 lb)	68 400 kg (150 796 lb)	68 400 kg (150 796 lb)
Maximum Take-Off Weight (MTOW)	64 000 kg (141 096 lb)	70 000 kg (154 324 lb)	75 500 kg (166 449 lb)	68 000 kg (149 914 lb)	68 000 kg (149 914 lb)
Maximum Landing Weight (MLW)	61 000 kg (134 482 lb)	61 000 kg (134 482 lb)	62 500 kg (137 789 lb)	61 000 kg (134 482 lb)	62 500 kg (137 789 lb)
Maximum Zero Fuel Weight (MZFW)	57 000 kg (125 663 lb)	57 000 kg (125 663 lb)	58 500 kg (128 970 lb)	57 000 kg (125 663 lb)	58 500 kg (128 970 lb)

Aircraft Characteristics					
	WV005	WV006	WV007	WV008	WV009
Maximum Ramp Weight (MRW) Maximum Taxi Weight (MTW)	70 400 kg (155 205 lb)	73 900 kg (162 922 lb)	75 900 kg (167 331 lb)	64 400 kg (141 978 lb)	66 400 kg (146 387 lb)
Maximum Take-Off Weight (MTOW)	70 000 kg (154 324 lb)	73 500 kg (162 040 lb)	75 500 kg (166 449 lb)	64 000 kg (141 096 lb)	66 000 kg (145 505 lb)
Maximum Landing Weight (MLW)	62 500 kg (137 789 lb)	62 500 kg (137 789 lb)	61 000 kg (134 482 lb)	62 500 kg (137 789 lb)	62 500 kg (137 789 lb)
Maximum Zero Fuel Weight (MZFW)	58 500 kg (128 970 lb)	58 500 kg (128 970 lb)	57 000 kg (125 663 lb)	58 500 kg (128 970 lb)	58 500 kg (128 970 lb)

Aircraft Characteristics				
	WV010	WV011	WV012	WV013
Maximum Ramp Weight (MRW) Maximum Taxi Weight (MTW)	76 900 kg (169 535 lb)	66 400 kg (146 387 lb)	62 400 kg (137 568 lb)	75 900 kg (167 331 lb)

Aircraft Characteristics				
	WV010	WV011	WV012	WV013
Maximum Take-Off Weight (MTOW)	76 500 kg (168 653 lb)	66 000 kg (145 505 lb)	62 000 kg (136 686 lb)	75 500 kg (166 449 lb)
Maximum Landing Weight (MLW)	62 500 kg (137 789 lb)	61 000 kg (134 482 lb)	61 000 kg (134 482 lb)	62 500 kg (137 789 lb)
Maximum Zero Fuel Weight (MZFW)	58 500 kg (128 970 lb)	57 000 kg (125 663 lb)	57 000 kg (125 663 lb)	52 000 kg (114 640 lb)

****ON A/C A319neo**

2. The following table provides characteristics of A319neo Models, these data are specific to each Weight Variant:

Aircraft Characteristics			
	WV050	WV051	WV052
Maximum Ramp Weight (MRW) Maximum Taxi Weight (MTW)	64 400 kg (141 978 lb)	64 400 kg (141 978 lb)	70 400 kg (155 205 lb)
Maximum Take-Off Weight (MTOW)	64 000 kg (141 096 lb)	64 000 kg (141 096 lb)	70 000 kg (154 323 lb)
Maximum Landing Weight (MLW)	62 800 kg (138 450 lb)	63 900 kg (140 875 lb)	62 800 kg (138 450 lb)
Maximum Zero Fuel Weight (MZFW)	58 800 kg (129 632 lb)	60 300 kg (132 939 lb)	58 800 kg (129 632 lb)

Aircraft Characteristics			
	WV053	WV054	WV055
Maximum Ramp Weight (MRW) Maximum Taxi Weight (MTW)	70 400 kg (155 205 lb)	75 900 kg (167 331 lb)	75 900 kg (167 331 lb)
Maximum Take-Off Weight (MTOW)	70 000 kg (154 323 lb)	75 500 kg (166 449 lb)	75 500 kg (166 449 lb)
Maximum Landing Weight (MLW)	63 900 kg (140 875 lb)	62 800 kg (138 450 lb)	63 900 kg (140 875 lb)
Maximum Zero Fuel Weight (MZFW)	60 300 kg (132 939 lb)	58 800 kg (129 632 lb)	60 300 kg (132 939 lb)

****ON A/C A319-100 A319neo**

3. The following table provides characteristics of A319-100 and A319neo Models, these data are common to each Weight Variant:

Aircraft Characteristics	
Standard Seating Capacity	156 (Single-Class)
Usable Fuel Capacity (density = 0.785 kg/l)	23 859 l (6 303 US gal)
	18 729 kg (41 290 lb)
Pressurized Fuselage Volume (A/C non equipped)	285 m^3 (10 065 ft^3)
Passenger Compartment Volume	120 m^3 (4 238 ft^3)
Cockpit Volume	9 m^3 (318 ft^3)
Usable Volume, FWD CC	8.52 m^3 (301 ft^3)
Usable Volume, AFT CC	11.92 m^3 (421 ft^3)
Usable Volume, Bulk CC	7.22 m^3 (255 ft^3)
Water Volume, FWD CC	10.63 m^3 (375 ft^3)
Water Volume, AFT CC	13.91 m^3 (491 ft^3)
Water Volume, Bulk CC	7.51 m^3 (265 ft^3)

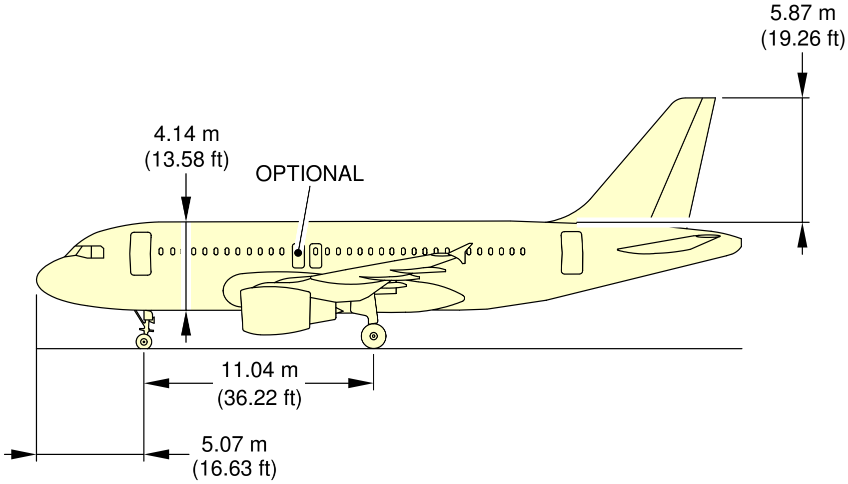
2-2-0 General Aircraft Dimensions

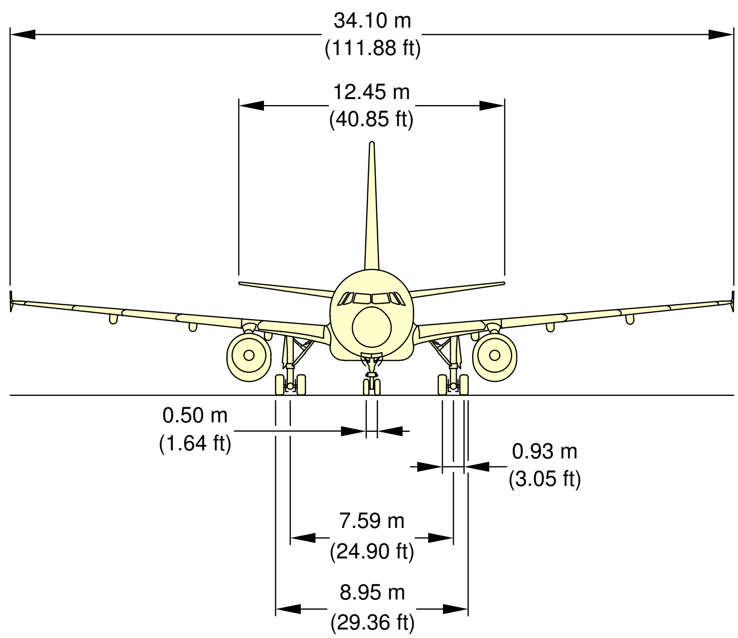
****ON A/C A319-100 A319neo**

General Aircraft Dimensions

1. This section provides general aircraft dimensions.

**ON A/C A319-100



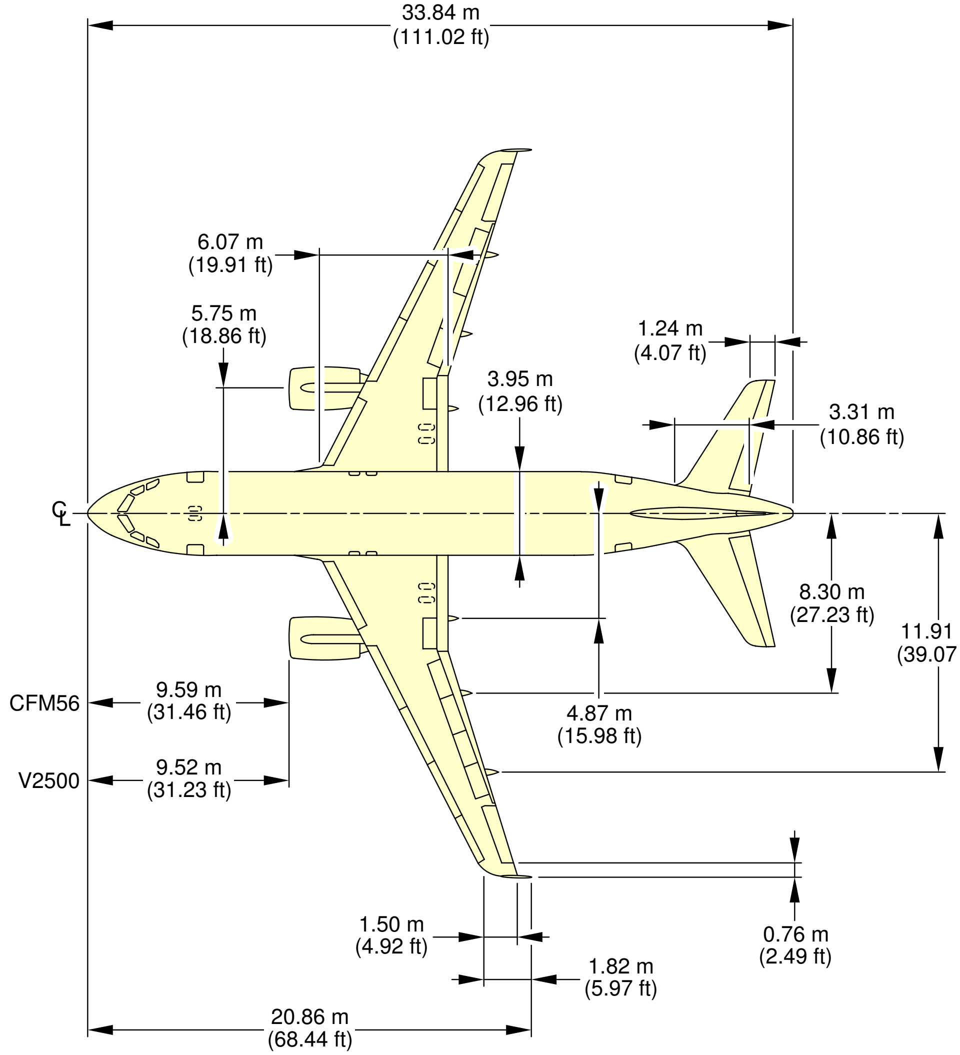


NOTE:
RELATED TO AIRCRAFT ATTITUDE AND WEIGHT.

N_AC_020200_1_0020101_01_04

General Aircraft Dimensions
Wing Tip Fence (Sheet 1 of 4)
FIGURE-2-2-0-991-002-A01

**ON A/C A319-100

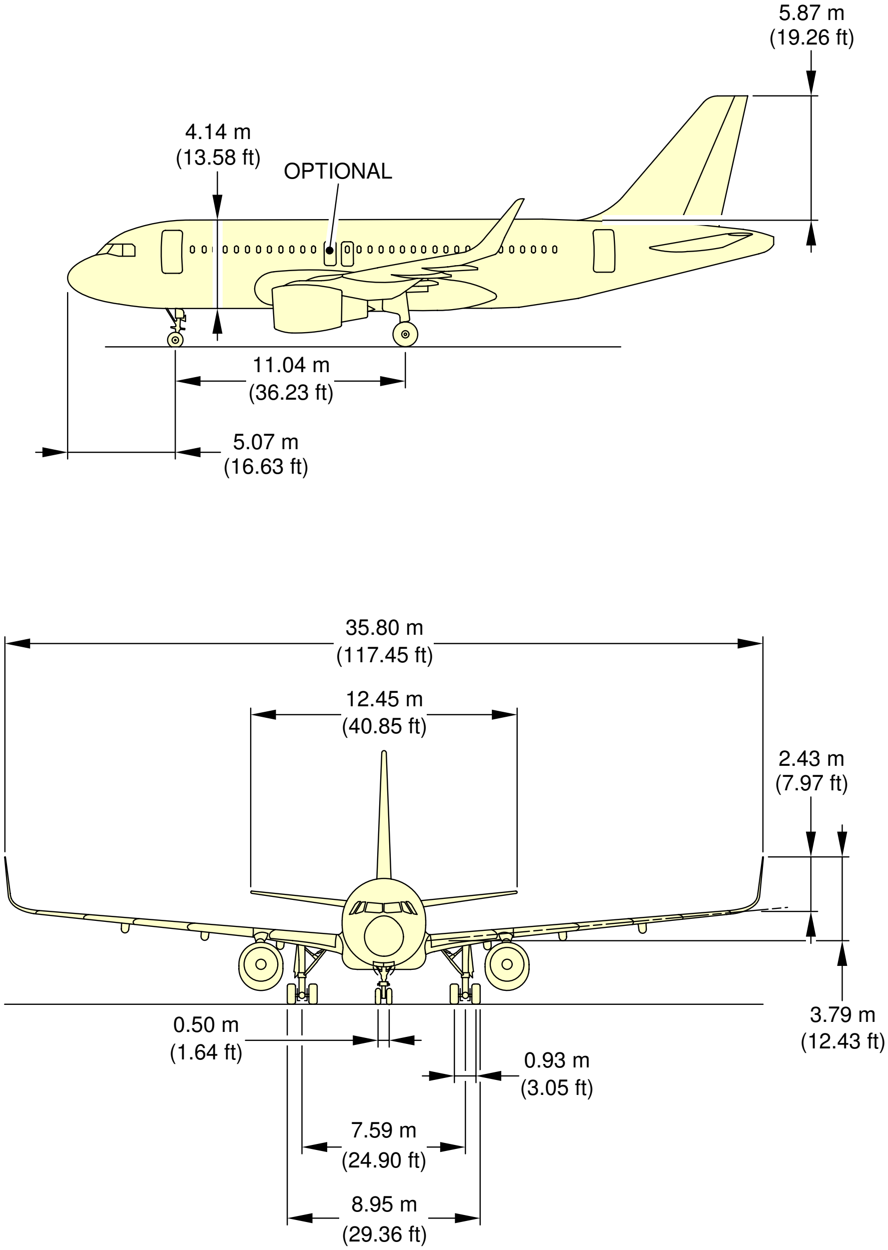


NOTE:
RELATED TO AIRCRAFT ATTITUDE AND WEIGHT.

N_AC_020200_1_0020103_01_02

General Aircraft Dimensions
Wing Tip Fence (Sheet 2 of 4)
FIGURE-2-2-0-991-002-A01

****ON A/C A319-100**

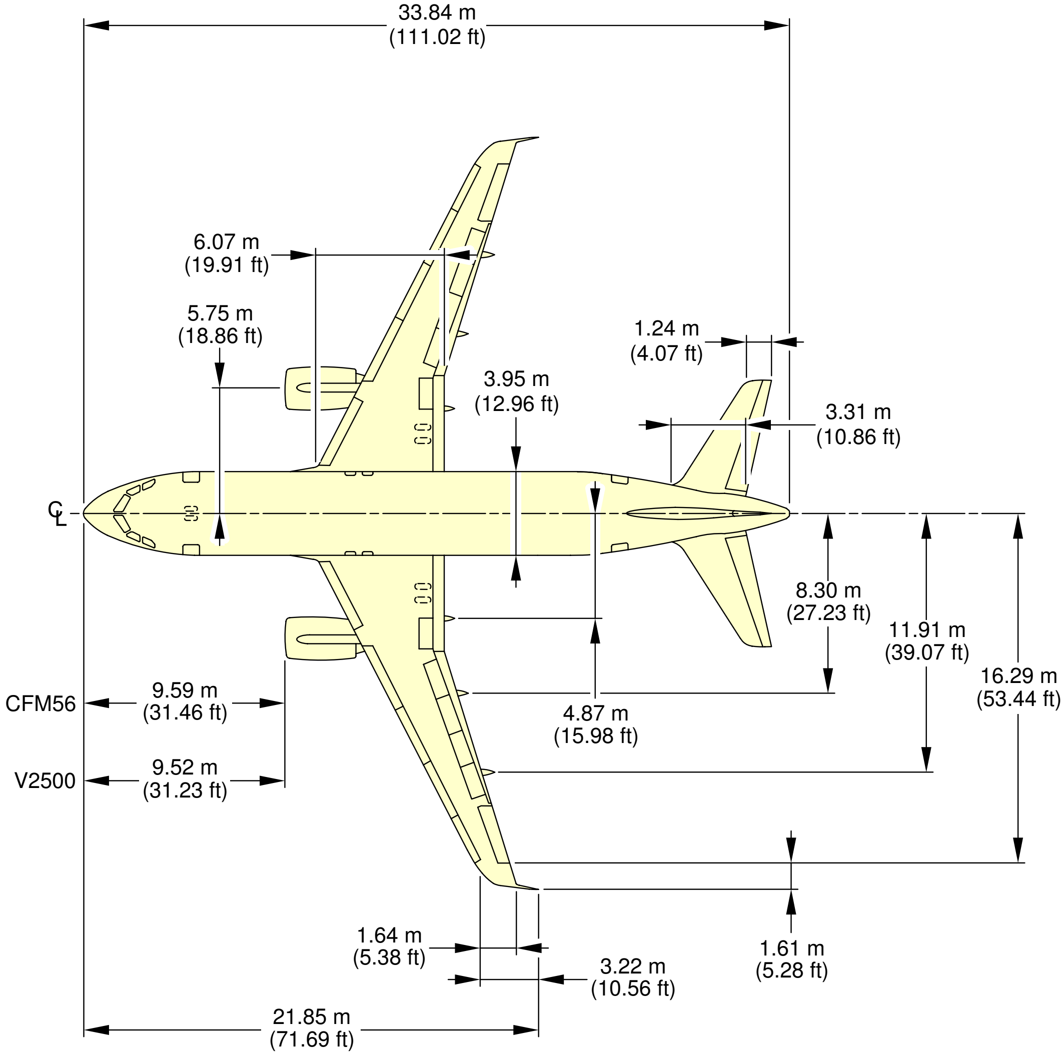


NOTE:
RELATED TO AIRCRAFT ATTITUDE AND WEIGHT.

N_AC_020200_1_0020102_01_02

General Aircraft Dimensions
Sharklet (Sheet 3 of 4)
FIGURE-2-2-0-991-002-A01

**ON A/C A319-100

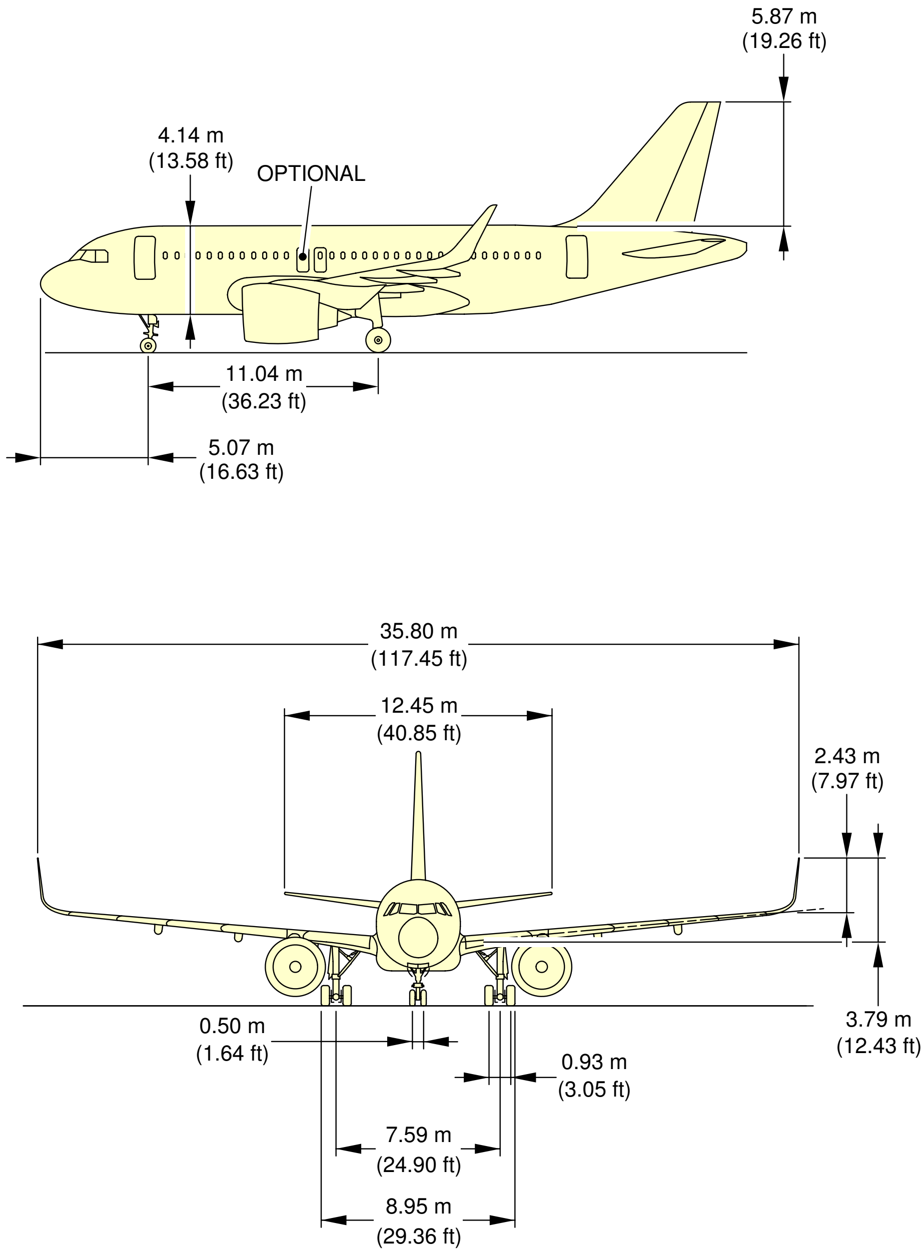


NOTE:
RELATED TO AIRCRAFT ATTITUDE AND WEIGHT.

N_AC_020200_1_0020104_01_02

General Aircraft Dimensions
Sharklet (Sheet 4 of 4)
FIGURE-2-2-0-991-002-A01

**ON A/C A319neo

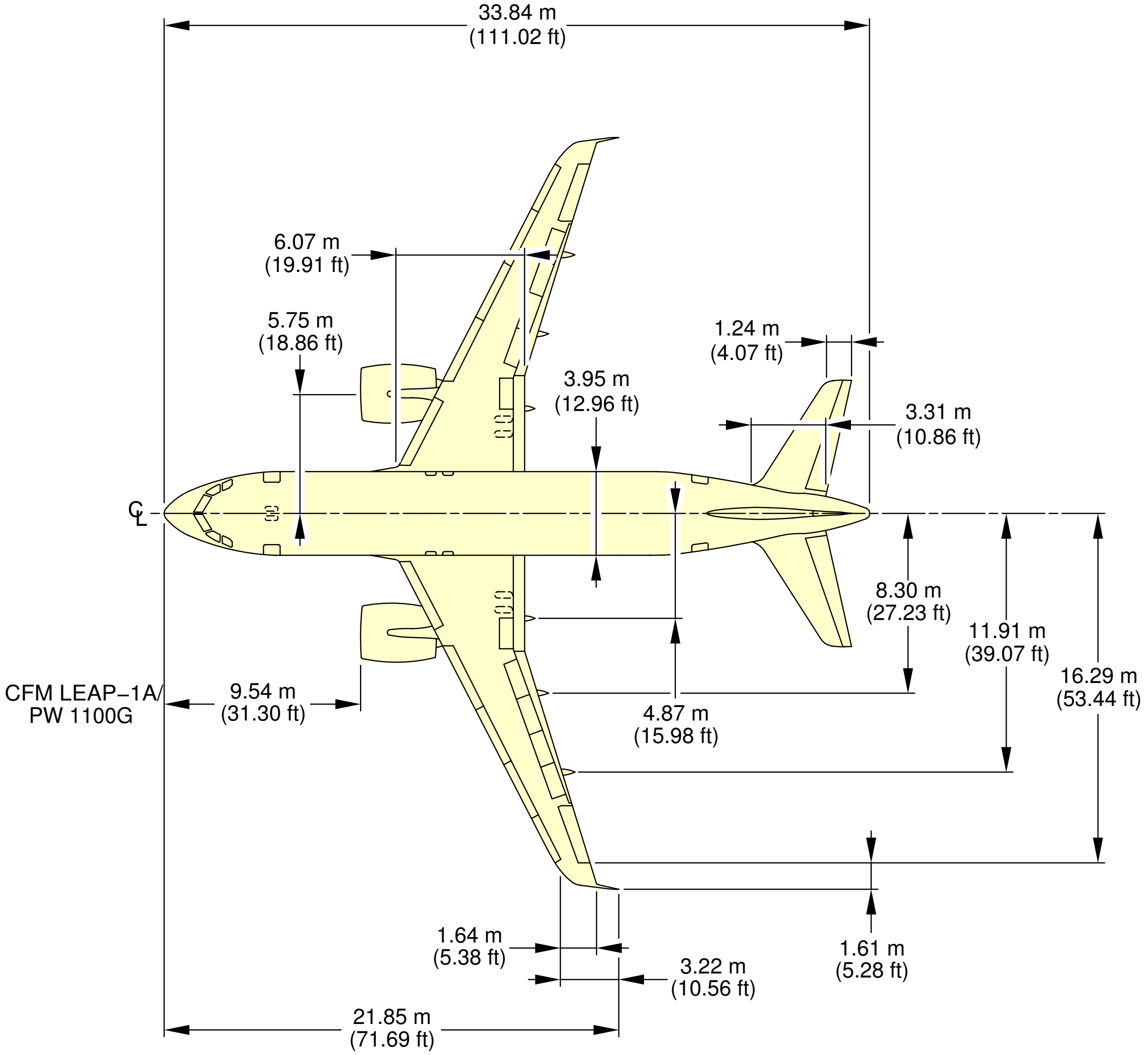


NOTE:
RELATED TO AIRCRAFT ATTITUDE AND WEIGHT.

N_AC_020200_1_0080101_01_01

General Aircraft Dimensions
(Sheet 1 of 2)
FIGURE-2-2-0-991-008-A01

****ON A/C A319neo**



NOTE:
RELATED TO AIRCRAFT ATTITUDE AND WEIGHT.

N_AC_020200_1_0080102_01_01

General Aircraft Dimensions
(Sheet 2 of 2)
FIGURE-2-2-0-991-008-A01

2-3-0 Ground Clearances

****ON A/C A319-100 A319neo**

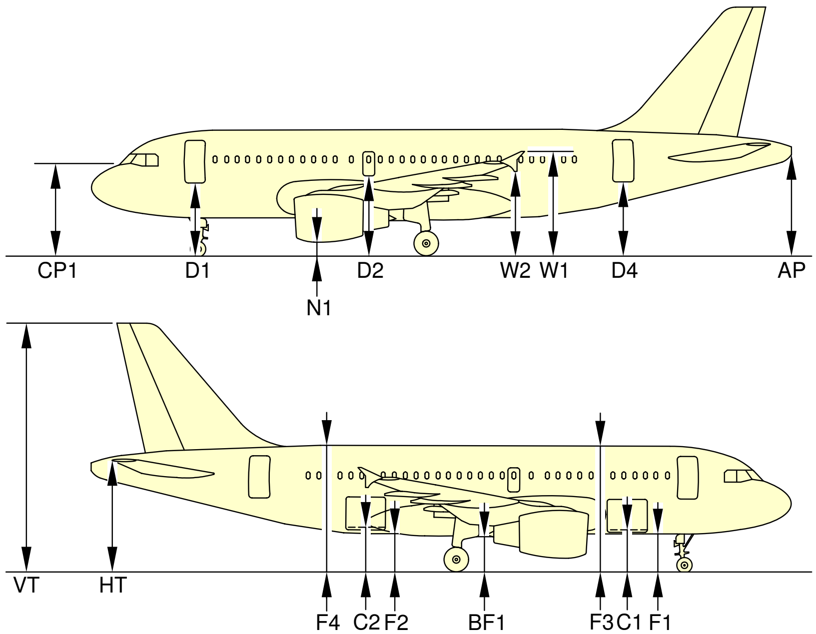
Ground Clearances

1. This section provides the height of various points of the aircraft, above the ground, for different aircraft configurations.
   Dimensions in the tables are approximate and will vary with tire type, weight and balance and other special conditions.

   The dimensions are given for:
   - A light weight, for an A/C in maintenance configuration with a mid CG,
   - An aircraft at Maximum Ramp Weight with a FWD CG and an AFT CG,
   - Aircraft on jacks, FDL at 4.60 m (15.09 ft).

   NOTE : Passenger and cargo door ground clearances are measured from the center of the door sill and from floor level.

****ON A/C A319-100**



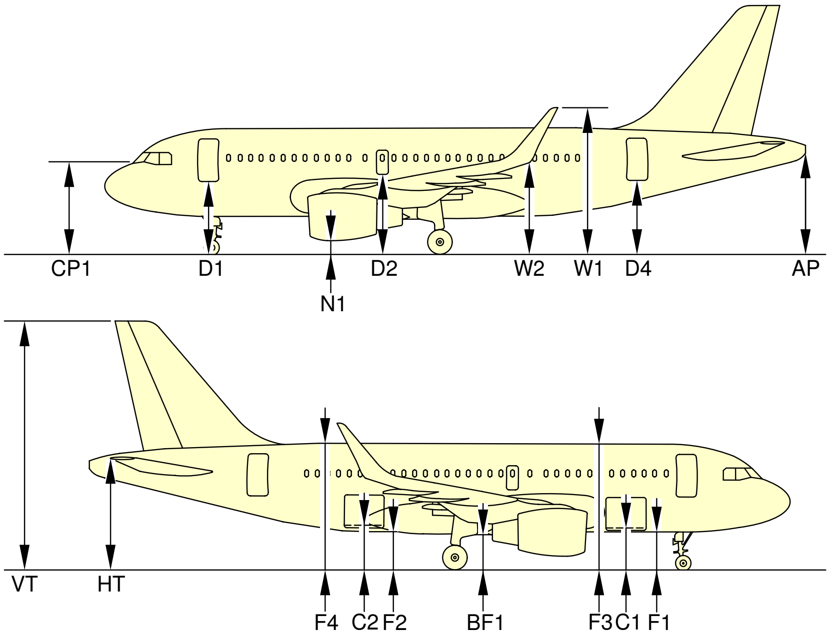
A/C CONFIGURATION		MRW				40 000 kg (88 185 lb)		A/C JACKED FDL = 4.60 m (15.09 ft)	
		FWD CG (21%)		AFT CG (36%)		CG (28%)			
		m	ft	m	ft	m	ft	m	ft
DOORS	D1	3.38	11.09	3.43	11.25	3.47	11.38	4.13	13.55
	D2	3.88	12.73	3.88	12.73	3.97	13.02	4.54	14.89
	D4	3.61	11.84	3.54	11.61	3.71	12.17	4.13	13.55
	C1	1.99	6.53	2.03	6.66	2.09	6.86	2.71	8.89
	C2	2.12	6.96	2.09	6.86	2.22	7.28	2.71	8.89
FUSELAGE	F1	1.73	5.68	1.76	5.77	1.83	6.00	2.43	7.97
	F2	1.84	6.04	1.81	5.94	1.94	6.36	2.43	7.97
	F3	5.88	19.29	5.90	19.36	5.97	19.59	6.58	21.59
	F4	5.99	19.65	5.95	19.52	6.09	19.98	6.58	21.59
	BF1	1.63	5.35	1.62	5.31	1.73	5.68	2.26	7.41
	CP1	4.16	13.65	4.24	13.91	4.26	13.98	4.96	16.27
WINGS	W1	4.78	15.68	4.74	15.55	4.87	15.98	5.35	17.55
	W2	3.81	12.50	3.77	12.37	3.90	12.80	4.38	14.37
TAILPLANE	HT	5.48	17.98	5.37	17.62	5.58	18.31	5.93	19.46
	AP	4.78	15.68	4.65	15.26	4.87	15.98	5.20	17.06
	VT	12.01	39.40	11.89	39.01	12.11	39.73	12.45	40.85
ENGINE/ NACELLE	N1 (CFM)	0.57	1.87	0.58	1.90	0.67	2.20	1.24	4.07
	N1 (IAE)	0.76	2.49	0.76	2.49	0.85	2.79	1.42	4.66

NOTE:
PASSENGER AND CARGO DOOR GROUND CLEARANCES ARE MEASURED FROM THE CENTER OF THE DOOR SILL AND FROM FLOOR LEVEL.

N_AC_020300_1_0020101_01_07

Ground Clearances
Wing Tip Fence
FIGURE-2-3-0-991-002-A01

****ON A/C A319-100**



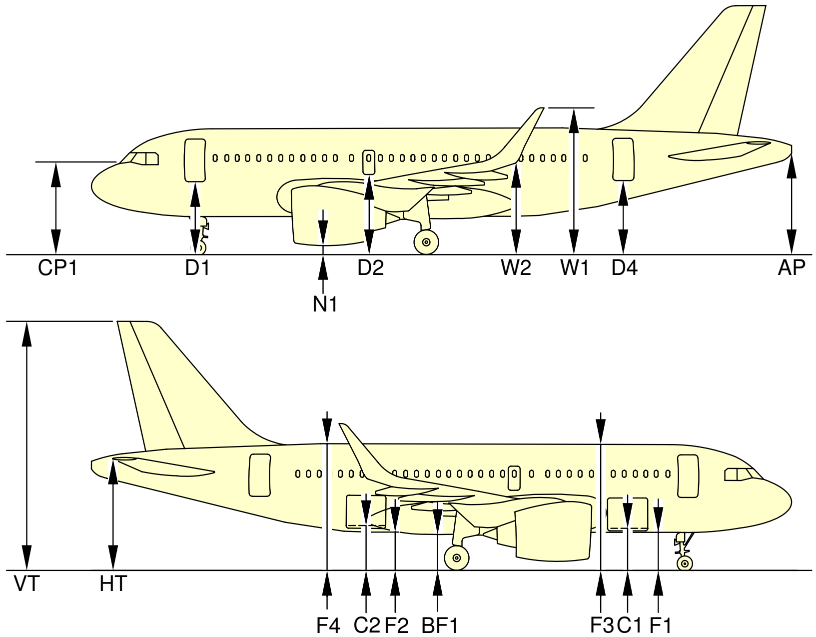
A/C CONFIGURATION		MRW				40 000 kg (88 185 lb)		A/C JACKED FDL = 4.60 m (15.09 ft)	
		FWD CG (21%)		AFT CG (36%)		CG (28%)			
		m	ft	m	ft	m	ft	m	ft
DOORS	D1	3.38	11.09	3.43	11.25	3.47	11.38	4.13	13.55
	D2	3.88	12.73	3.88	12.73	3.97	13.02	4.54	14.89
	D4	3.61	11.84	3.54	11.61	3.71	12.17	4.13	13.55
	C1	1.99	6.53	2.03	6.66	2.09	6.86	2.71	8.89
	C2	2.12	6.96	2.09	6.86	2.22	7.28	2.71	8.89
FUSELAGE	F1	1.73	5.68	1.76	5.77	1.83	6.00	2.43	7.97
	F2	1.84	6.04	1.81	5.94	1.94	6.36	2.43	7.97
	F3	5.88	19.29	5.90	19.36	5.97	19.59	6.58	21.59
	F4	5.99	19.65	5.95	19.52	6.09	19.98	6.58	21.59
	BF1	1.63	5.35	1.62	5.31	1.73	5.68	2.26	7.41
	CP1	4.16	13.65	4.24	13.91	4.26	13.98	4.96	16.27
WINGS	W1	6.72	22.05	6.68	21.92	6.81	22.34	7.29	23.92
	W2	4.08	13.39	4.04	13.25	4.17	13.68	4.65	15.26
TAILPLANE	HT	5.48	17.98	5.37	17.62	5.58	18.31	5.93	19.46
	AP	4.78	15.68	4.65	15.26	4.87	15.98	5.20	17.06
	VT	12.01	39.40	11.89	39.01	12.11	39.73	12.45	40.85
ENGINE/ NACELLE	N1 (CFM)	0.57	1.87	0.58	1.90	0.67	2.20	1.24	4.07
	N1 (IAE)	0.76	2.49	0.76	2.49	0.85	2.79	1.42	4.66

NOTE:
PASSENGER AND CARGO DOOR GROUND CLEARANCES ARE MEASURED FROM THE CENTER OF THE DOOR SILL AND FROM FLOOR LEVEL.

N_AC_020300_1_0280101_01_03

Ground Clearances
Sharklet
FIGURE-2-3-0-991-028-A01

**ON A/C A319neo



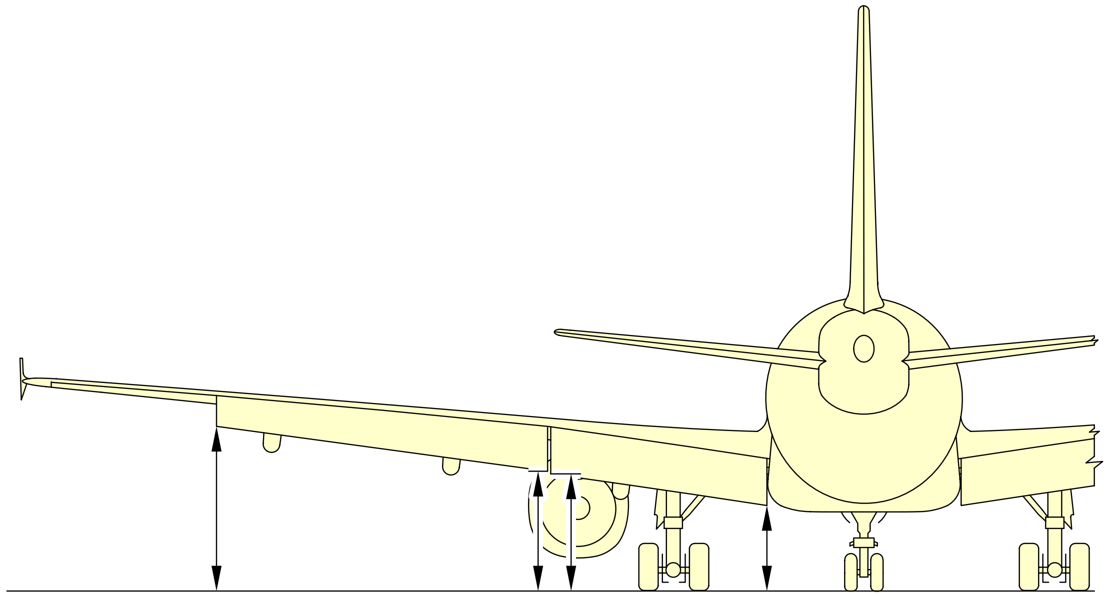
A/C CONFIGURATION		MRW				40 000 kg (88 185 lb)		A/C JACKED FDL = 4.60 m (15.09 ft)	
		FWD CG (21%)		AFT CG (36%)		CG (28%)			
		m	ft	m	ft	m	ft	m	ft
DOORS	D1	3.38	11.09	3.43	11.25	3.47	11.38	4.13	13.55
	D2	3.88	12.73	3.88	12.73	3.97	13.02	4.54	14.89
	D4	3.61	11.84	3.54	11.61	3.71	12.17	4.13	13.55
	C1	1.99	6.53	2.03	6.66	2.09	6.86	2.71	8.89
	C2	2.12	6.96	2.09	6.86	2.22	7.28	2.71	8.89
FUSELAGE	F1	1.73	5.68	1.76	5.77	1.83	6.00	2.43	7.97
	F2	1.84	6.04	1.81	5.94	1.94	6.36	2.43	7.97
	F3	5.88	19.29	5.90	19.36	5.97	19.59	6.58	21.59
	F4	5.99	19.65	5.95	19.52	6.09	19.98	6.58	21.59
	BF1	1.63	5.35	1.62	5.31	1.73	5.68	2.26	7.41
	CP1	4.16	13.65	4.24	13.91	4.26	13.98	4.96	16.27
WINGS	W1	6.72	22.05	6.68	21.92	6.81	22.34	7.29	23.92
	W2	4.08	13.39	4.04	13.25	4.17	13.68	4.65	15.26
TAILPLANE	HT	5.48	17.98	5.37	17.62	5.58	18.31	5.93	19.46
	AP	4.78	15.68	4.65	15.26	4.87	15.98	5.20	17.06
	VT	12.01	39.40	11.89	39.01	12.11	39.73	12.45	40.85
ENGINE/ NACELLE	N1 (CFM LEAP−1A)	0.46	1.51	0.47	1.54	0.56	1.84	1.13	3.71
	N1 (PW 1100G)	0.46	1.51	0.47	1.54	0.56	1.84	1.13	3.71

NOTE:
PASSENGER AND CARGO DOOR GROUND CLEARANCES ARE MEASURED FROM THE CENTER OF THE DOOR SILL AND FROM FLOOR LEVEL.

N_AC_020300_1_0310101_01_02

Ground Clearances
FIGURE-2-3-0-991-031-A01

****ON A/C A319-100 A319neo**

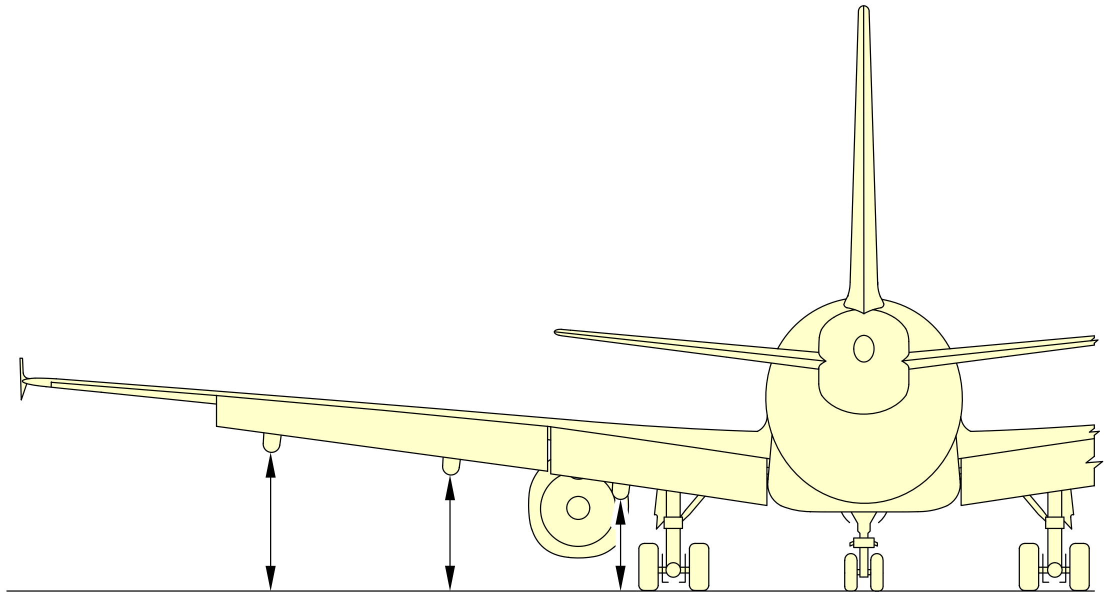


FLAPS EXTENDED							
DESCRIPTION		A/C IN MAINTENANCE CONFIGURATION MID CG		MAXIMUM RAMP WEIGHT FWD CG		MAXIMUM RAMP WEIGHT AFT CG	
		m	ft	m	ft	m	ft
FLAP 1 INBD	A	2.07	6.79	1.94	6.36	1.93	6.33
FLAP 1 OUTBD	B	2.79	9.15	2.67	8.76	2.65	8.69
FLAP 2 INBD	C	2.83	9.28	2.70	8.86	2.69	8.83
FLAP 2 OUTBD	D	3.67	12.04	3.54	11.61	3.51	11.52

N_AC_020300_1_0110101_01_02

Ground Clearances
Trailing Edge Flaps - Extended
FIGURE-2-3-0-991-011-A01

****ON A/C A319-100 A319neo**

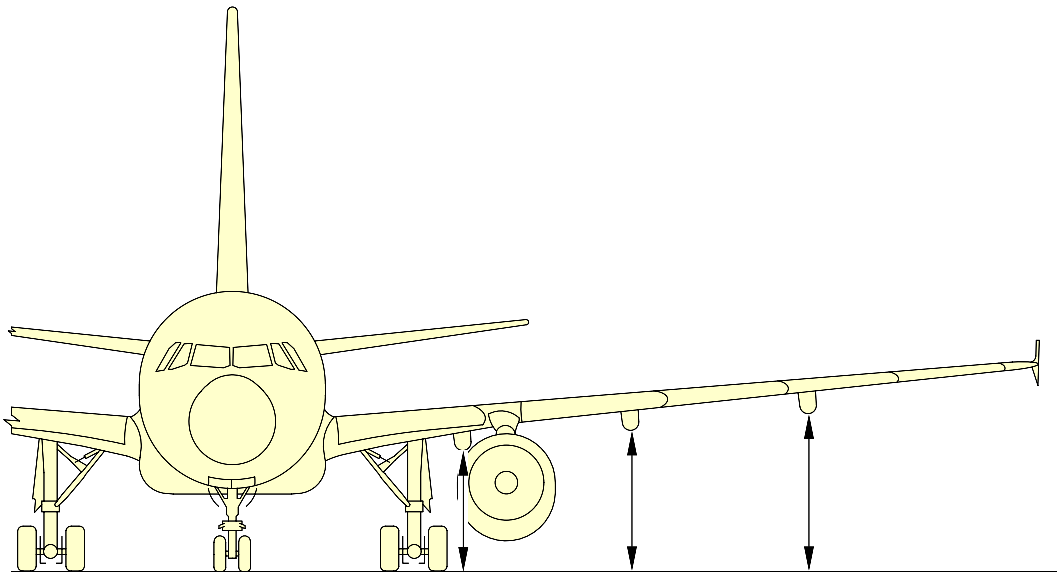


FLAP TRACKS EXTENDED							
DESCRIPTION		A/C IN MAINTENANCE CONFIGURATION MID CG		MAXIMUM RAMP WEIGHT FWD CG		MAXIMUM RAMP WEIGHT AFT CG	
		m	ft	m	ft	m	ft
FLAP TRACK 2	A	2.11	6.92	1.99	6.53	1.97	6.46
FLAP TRACK 3	B	2.61	8.56	2.48	8.14	2.46	8.07
FLAP TRACK 4	C	3.06	10.06	2.93	9.61	2.91	9.55

N_AC_020300_1_0380101_01_00

Ground Clearances
Flap Tracks - Extended
FIGURE-2-3-0-991-038-A01

**ON A/C A319-100 A319neo

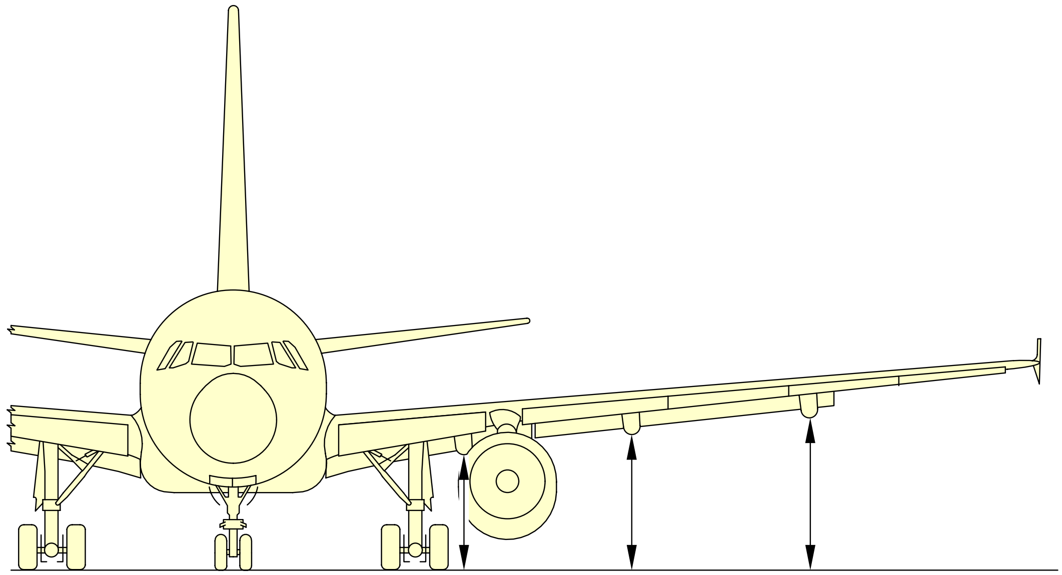


FLAP TRACKS RETRACTED							
DESCRIPTION		A/C IN MAINTENANCE CONFIGURATION MID CG		MAXIMUM RAMP WEIGHT FWD CG		MAXIMUM RAMP WEIGHT AFT CG	
		m	ft	m	ft	m	ft
FLAP TRACK 2	A	2.70	8.86	2.60	8.53	2.58	8.46
FLAP TRACK 3	B	3.10	10.17	3.00	9.84	2.97	9.74
FLAP TRACK 4	C	3.50	11.48	3.39	11.12	3.36	11.02

N_AC_020300_1_0120101_01_02

Ground Clearances
Flap Tracks - Retracted
FIGURE-2-3-0-991-012-A01

****ON A/C A319-100 A319neo**

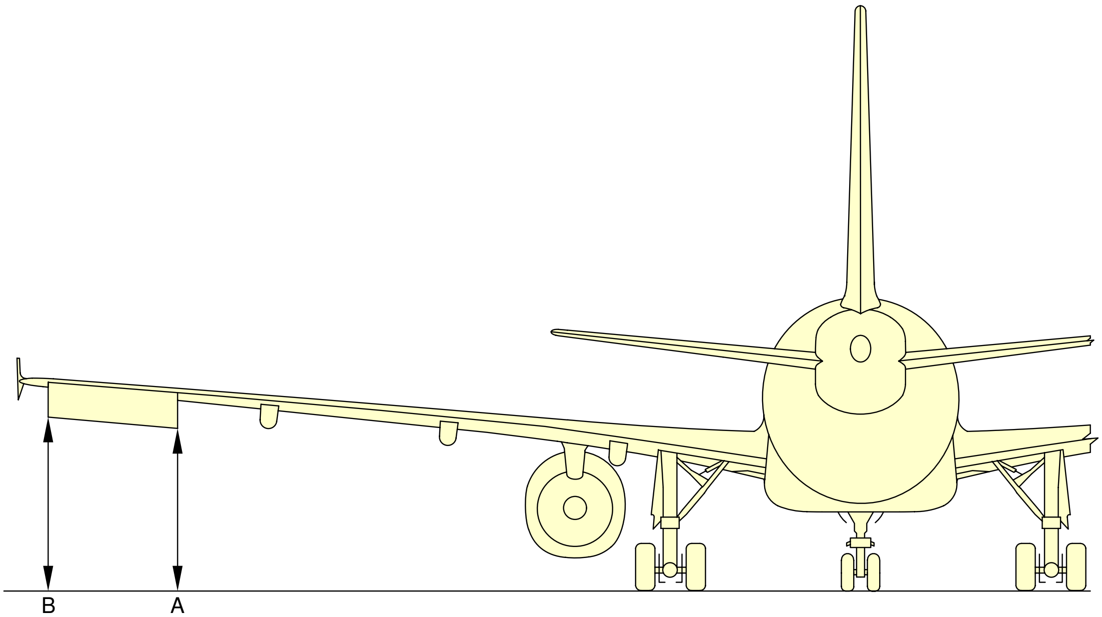


FLAP TRACKS 1+F							
DESCRIPTION		A/C IN MAINTENANCE CONFIGURATION MID CG		MAXIMUM RAMP WEIGHT FWD CG		MAXIMUM RAMP WEIGHT AFT CG	
		m	ft	m	ft	m	ft
FLAP TRACK 2	A	1.95	6.40	1.85	6.07	1.83	6.00
FLAP TRACK 3	B	2.31	7.58	2.21	7.25	2.18	7.15
FLAP TRACK 4	C	2.89	9.48	2.78	9.12	2.75	9.02

N_AC_020300_1_0390101_01_00

Ground Clearances
Flap Tracks - 1 + F
FIGURE-2-3-0-991-039-A01

****ON A/C A319-100 A319neo**

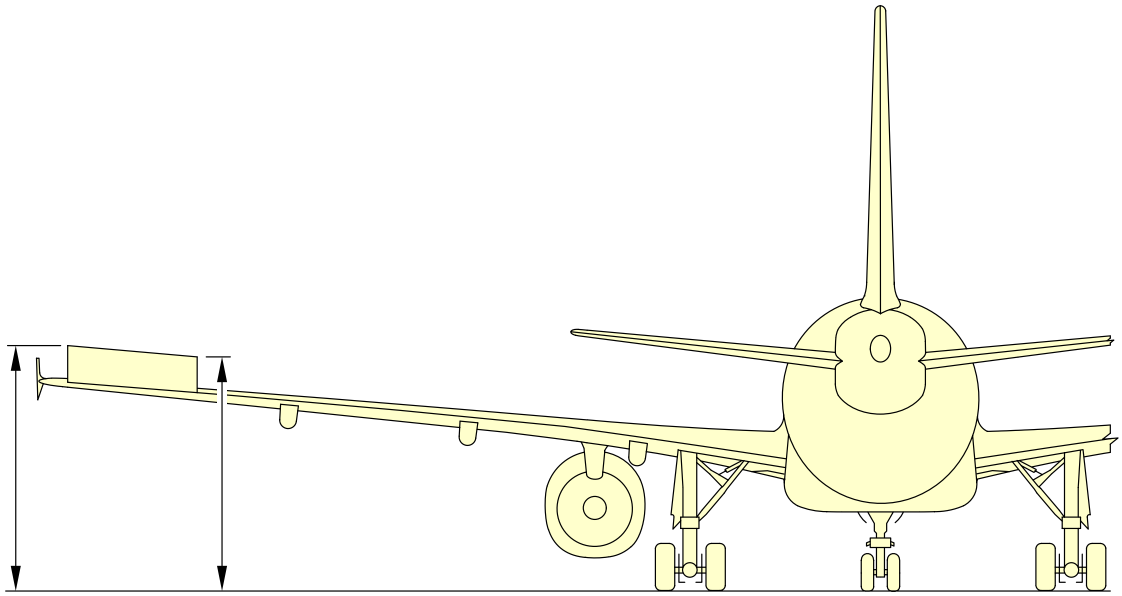


AILERON DOWN							
DESCRIPTION		A/C IN MAINTENANCE CONFIGURATION MID CG		MAXIMUM RAMP WEIGHT FWD CG		MAXIMUM RAMP WEIGHT AFT CG	
		m	ft	m	ft	m	ft
AILERON INBD	A	3.86	12.66	3.73	12.24	3.71	12.17
AILERON OUTBD	B	4.20	13.78	4.06	13.32	4.04	13.25

N_AC_020300_1_0130101_01_02

Ground Clearances
Aileron Down
FIGURE-2-3-0-991-013-A01

****ON A/C A319-100 A319neo**

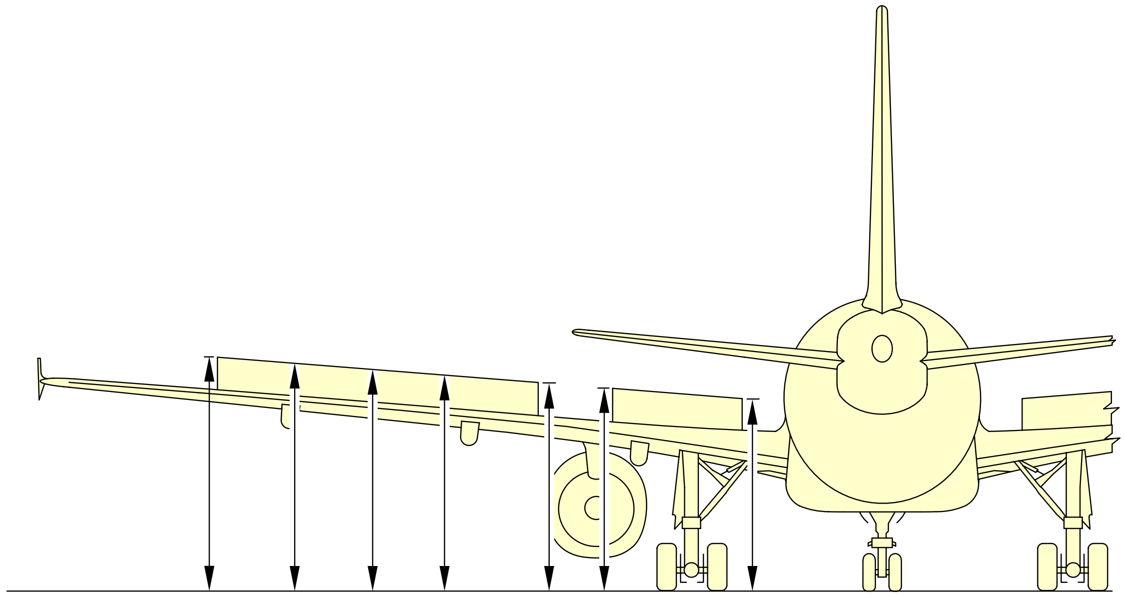


AILERON UP							
DESCRIPTION		A/C IN MAINTENANCE CONFIGURATION MID CG		MAXIMUM RAMP WEIGHT FWD CG		MAXIMUM RAMP WEIGHT AFT CG	
		m	ft	m	ft	m	ft
AILERON INBD	A	4.38	14.37	4.25	13.94	4.23	13.88
AILERON OUTBD	B	4.58	15.03	4.44	14.57	4.42	14.50

N_AC_020300_1_0400101_01_00

Ground Clearances
Aileron Up
FIGURE-2-3-0-991-040-A01

****ON A/C A319-100 A319neo**

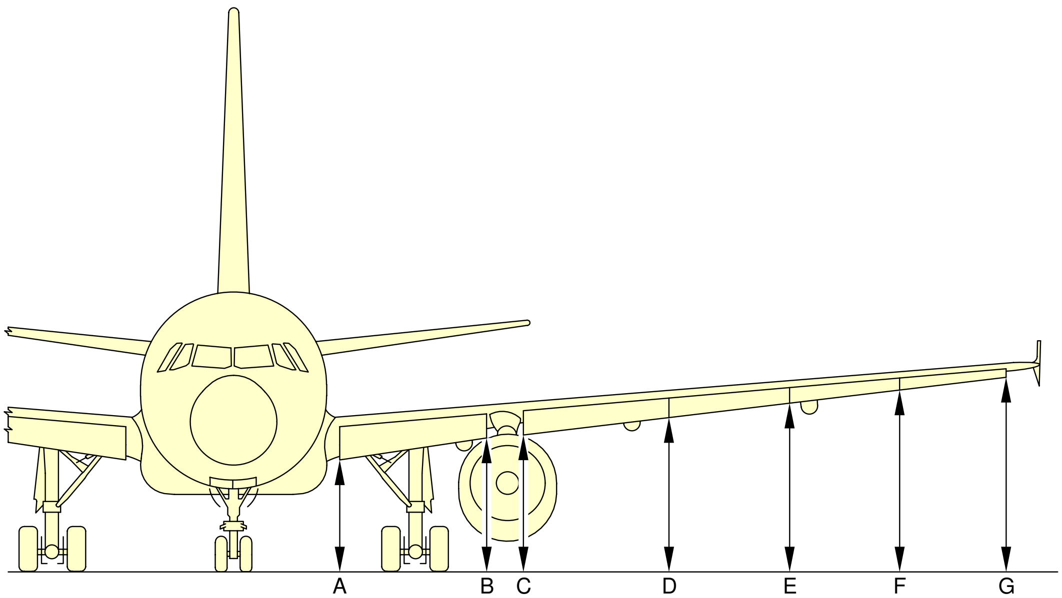


SPOILERS EXTENDED							
DESCRIPTION		A/C IN MAINTENANCE CONFIGURATION MID CG		MAXIMUM RAMP WEIGHT FWD CG		MAXIMUM RAMP WEIGHT AFT CG	
		m	ft	m	ft	m	ft
SPOILER 1 INBD	A	3.77	12.37	3.65	11.98	3.64	11.94
SPOILER 1 OUTBD	B	4.02	13.19	3.91	12.83	3.90	12.80
SPOILER 2 INBD	C	4.09	13.42	3.97	13.02	3.96	12.99
SPOILER 2/3	D	4.23	13.88	4.11	13.48	4.10	13.10
SPOILER 3/4	E	4.37	14.34	4.24	13.91	4.23	13.88
SPOILER 4/5	F	4.49	14.73	4.37	14.34	4.35	14.27
SPOILER 5 OUTBD	G	4.62	15.16	4.49	14.73	4.47	14.67

N_AC_020300_1_0140101_01_02

Ground Clearances
Spoilers - Extended
FIGURE-2-3-0-991-014-A01

**ON A/C A319-100 A319neo



LEADING EDGE SLATS EXTENDED							
DESCRIPTION		A/C IN MAINTENANCE CONFIGURATION MID CG		MAXIMUM RAMP WEIGHT FWD CG		MAXIMUM RAMP WEIGHT AFT CG	
		m	ft	m	ft	m	ft
SLAT 1 INBD	A	2.57	8.43	2.47	8.10	2.49	8.17
SLAT 1 OUTBD	B	2.98	9.78	2.88	9.45	2.89	9.48
SLAT 2 INBD	C	3.07	10.07	2.97	9.74	2.97	9.74
SLAT 2/3	D	3.37	11.06	3.26	10.70	3.26	10.70
SLAT 3/4	E	3.63	11.91	3.51	11.52	3.51	11.52
SLAT 4/5	F	3.88	12.73	3.76	12.34	3.75	12.30
SLAT 5 OUTBD	G	4.12	13.52	3.99	13.09	3.97	13.02

N_AC_020300_1_0150101_01_02

Ground Clearances
Leading Edge Slats - Extended
FIGURE-2-3-0-991-015-A01

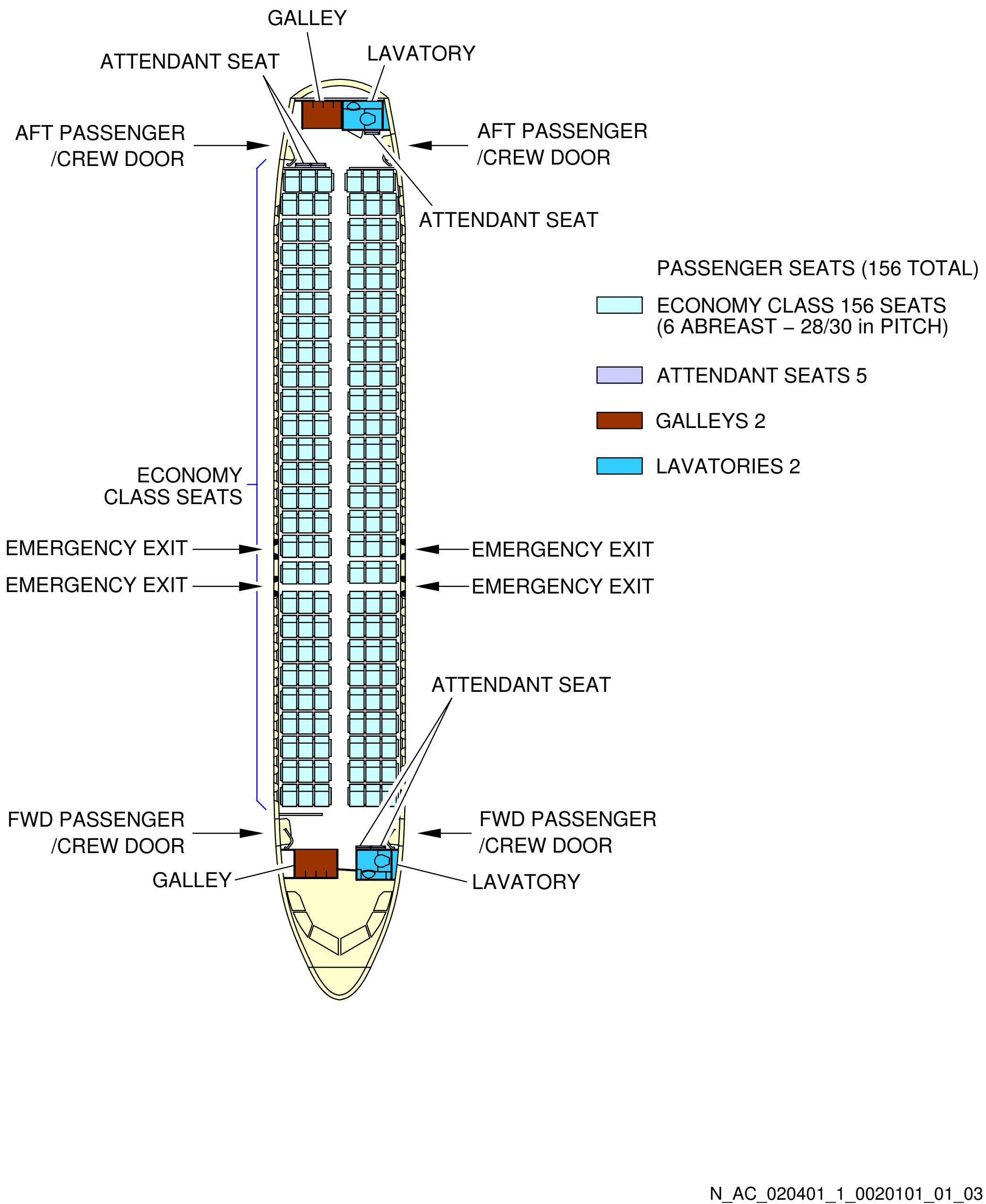
2-4-1 Interior Arrangements - Plan View

****ON A/C A319-100 A319neo**

Interior Arrangements - Plan View

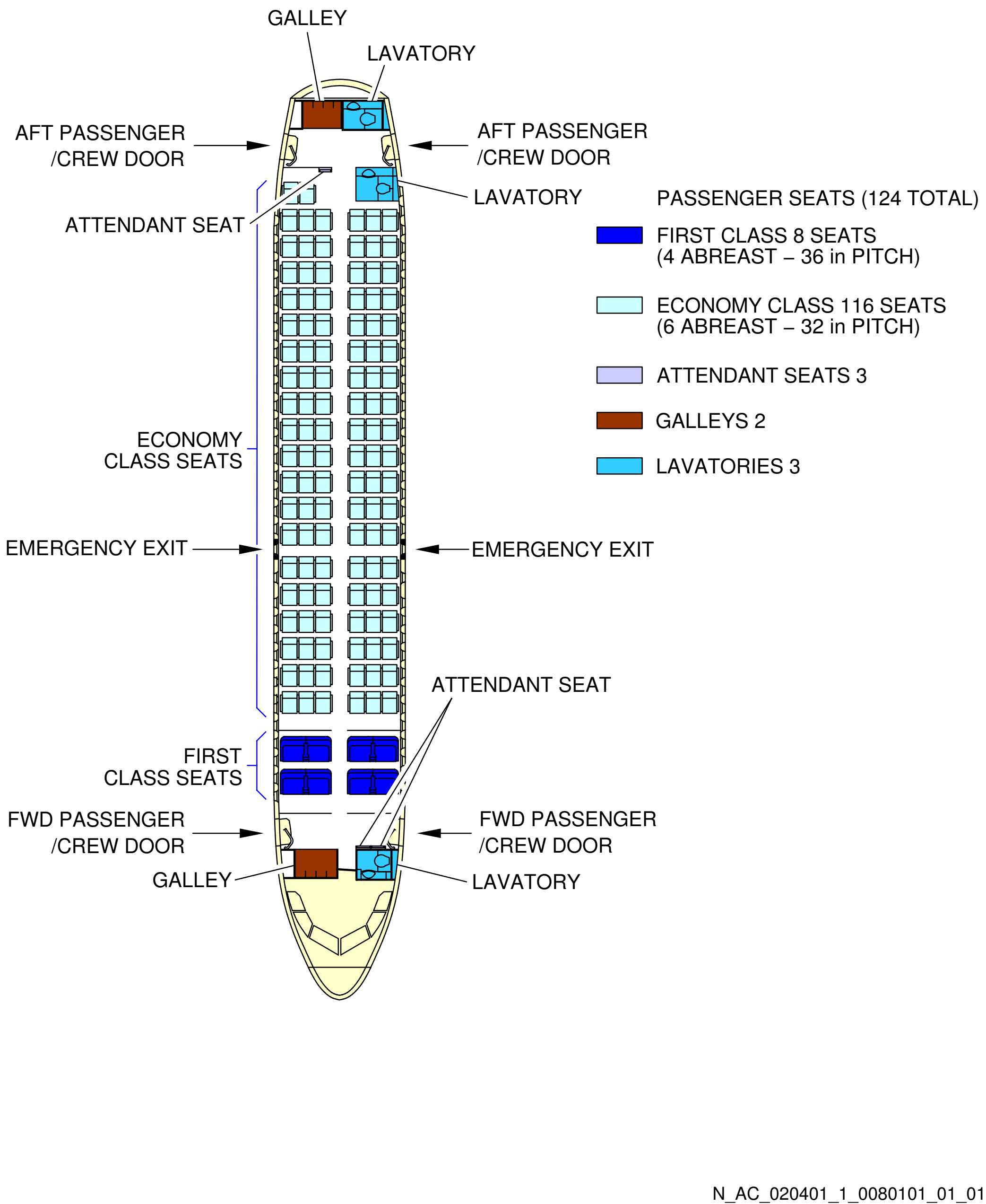
1. This section provides the typical interior configuration.

**ON A/C A319-100 A319neo



Interior Arrangements - Plan View
Typical Configuration - Single-Class, High Density
FIGURE-2-4-1-991-002-A01

**ON A/C A319-100 A319neo



Interior Arrangements - Plan View
Typical Configuration - Two-Class
FIGURE-2-4-1-991-008-A01

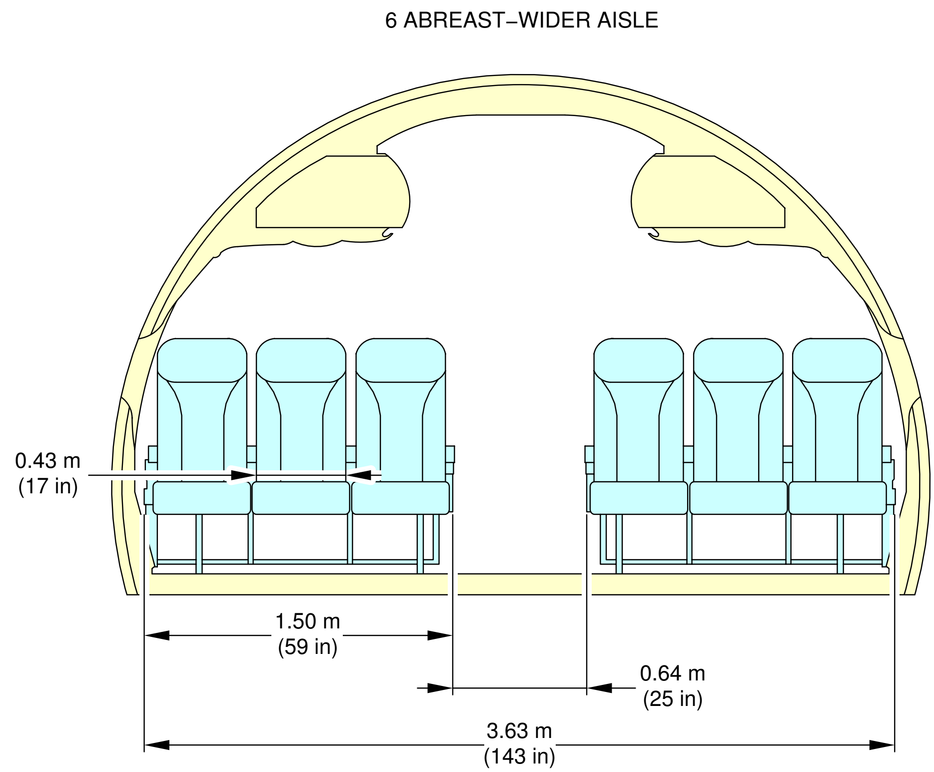
2-5-0 Interior Arrangements - Cross Section

****ON A/C A319-100 A319neo**

Interior Arrangements - Cross Section

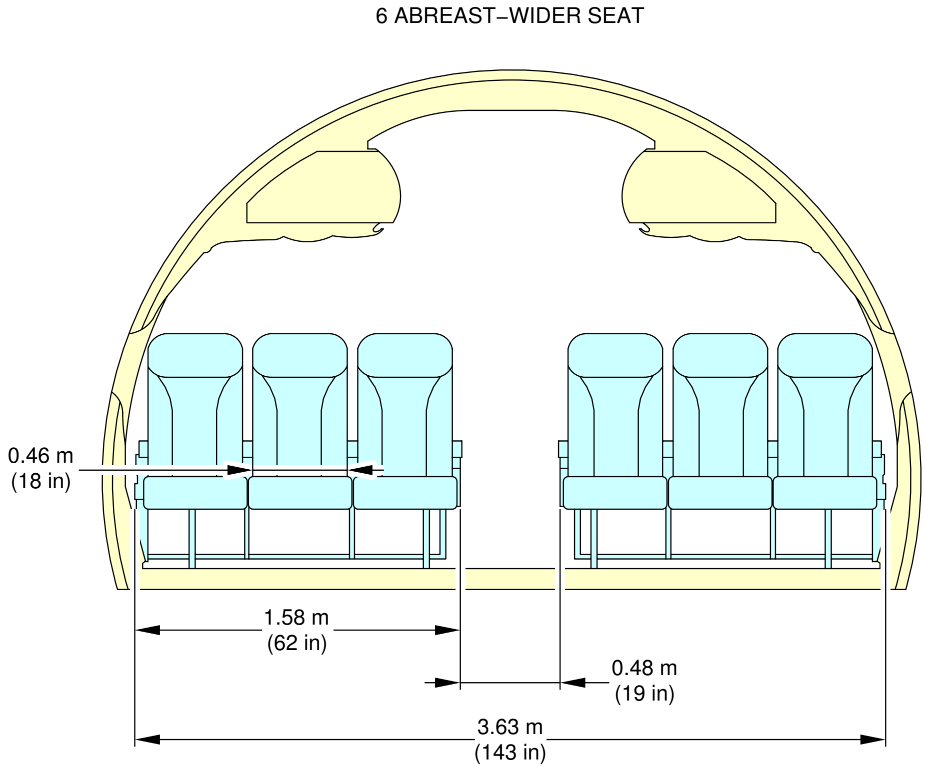
1. This section provides the typical configuration.

**ON A/C A319-100 A319neo



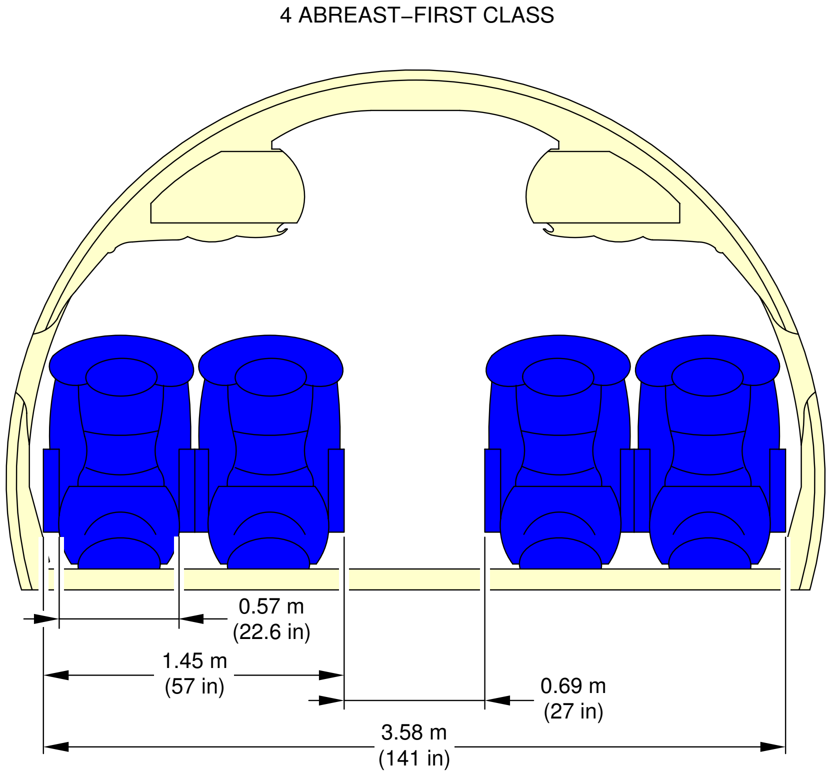
Interior Arrangements - Cross Section
Economy Class, 6 Abreast - Wider Aisle (Sheet 1 of 2)
FIGURE-2-5-0-991-005-A01

****ON A/C A319-100 A319neo**



Interior Arrangements - Cross Section
Economy Class, 6 Abreast - Wider Seat (Sheet 2 of 2)
FIGURE-2-5-0-991-005-A01

**ON A/C A319-100 A319neo



Interior Arrangements - Cross Section
First-Class
FIGURE-2-5-0-991-006-A01

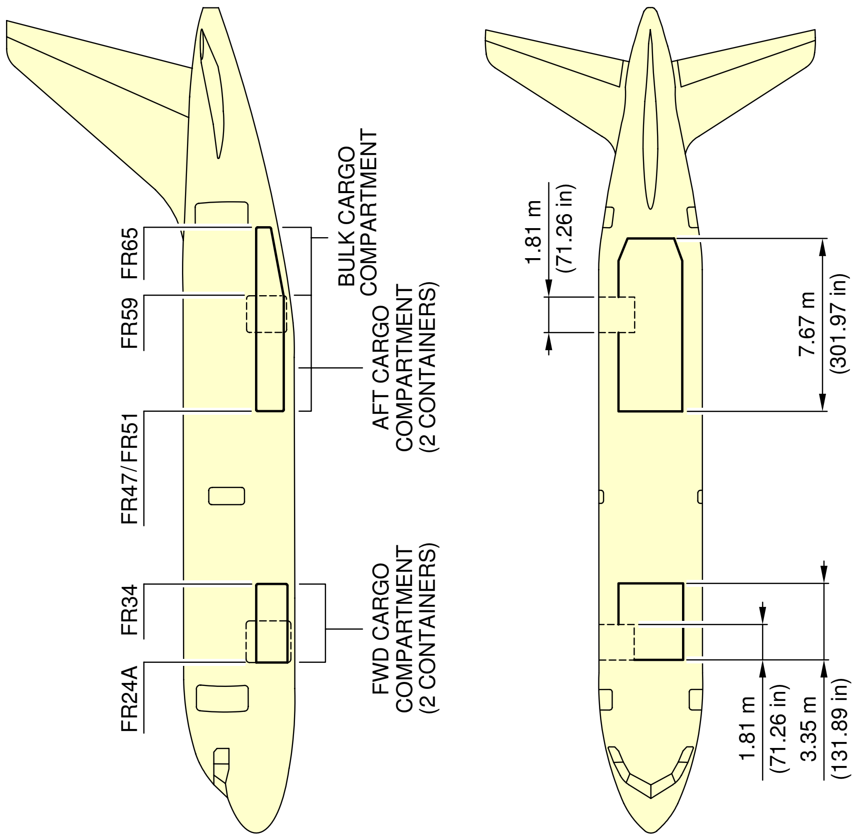
2-6-0 Cargo Compartments

****ON A/C A319-100 A319neo**

Cargo Compartments

1. This section provides the cargo compartments locations, dimensions and loading combinations.

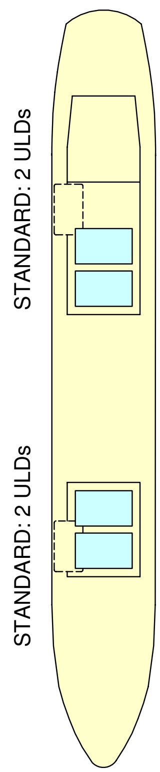
**ON A/C A319-100 A319neo



N_AC_020600_1_0020101_01_00

Cargo Compartments
Locations and Dimensions
FIGURE-2-6-0-991-002-A01

**ON A/C A319-100 A319neo



Cargo Compartments
Loading Combinations
FIGURE-2-6-0-991-005-A01

2-7-0 Door Clearances and Location

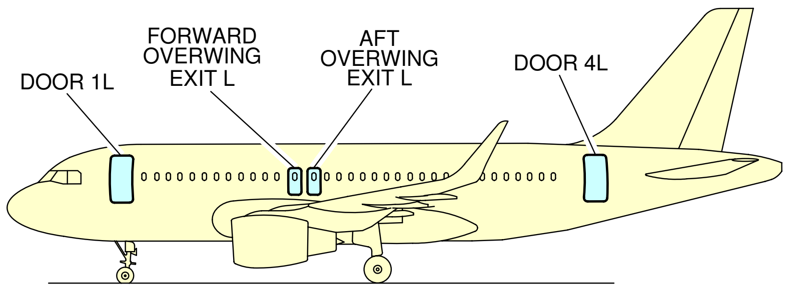
****ON A/C A319-100 A319neo**

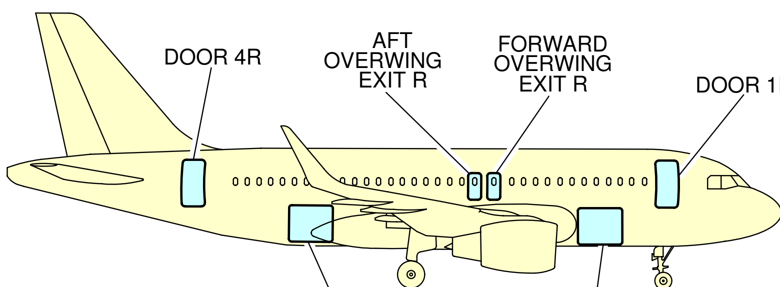
Door Clearances

1. This section provides door identification and location.

   NOTE : Dimensions of the ground clearances are approximate and will vary with tire type, weight and balance and other special conditions.

****ON A/C A319-100 A319neo**

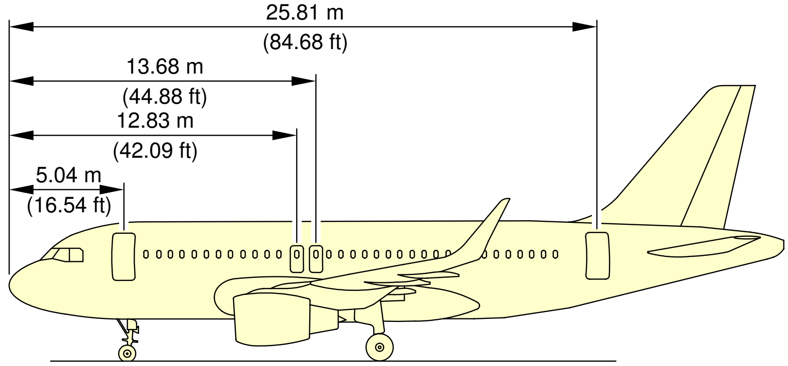


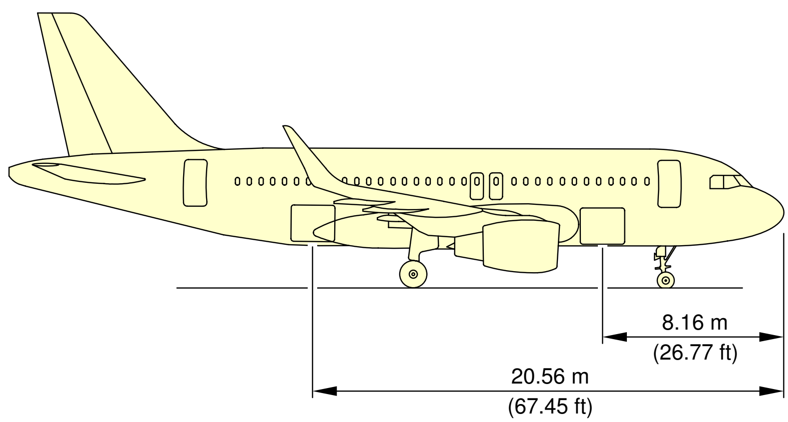


N_AC_020700_1_0020101_01_01

Door Identification and Location
Door Identification (Sheet 1 of 2)
FIGURE-2-7-0-991-002-A01

**ON A/C A319-100 A319neo

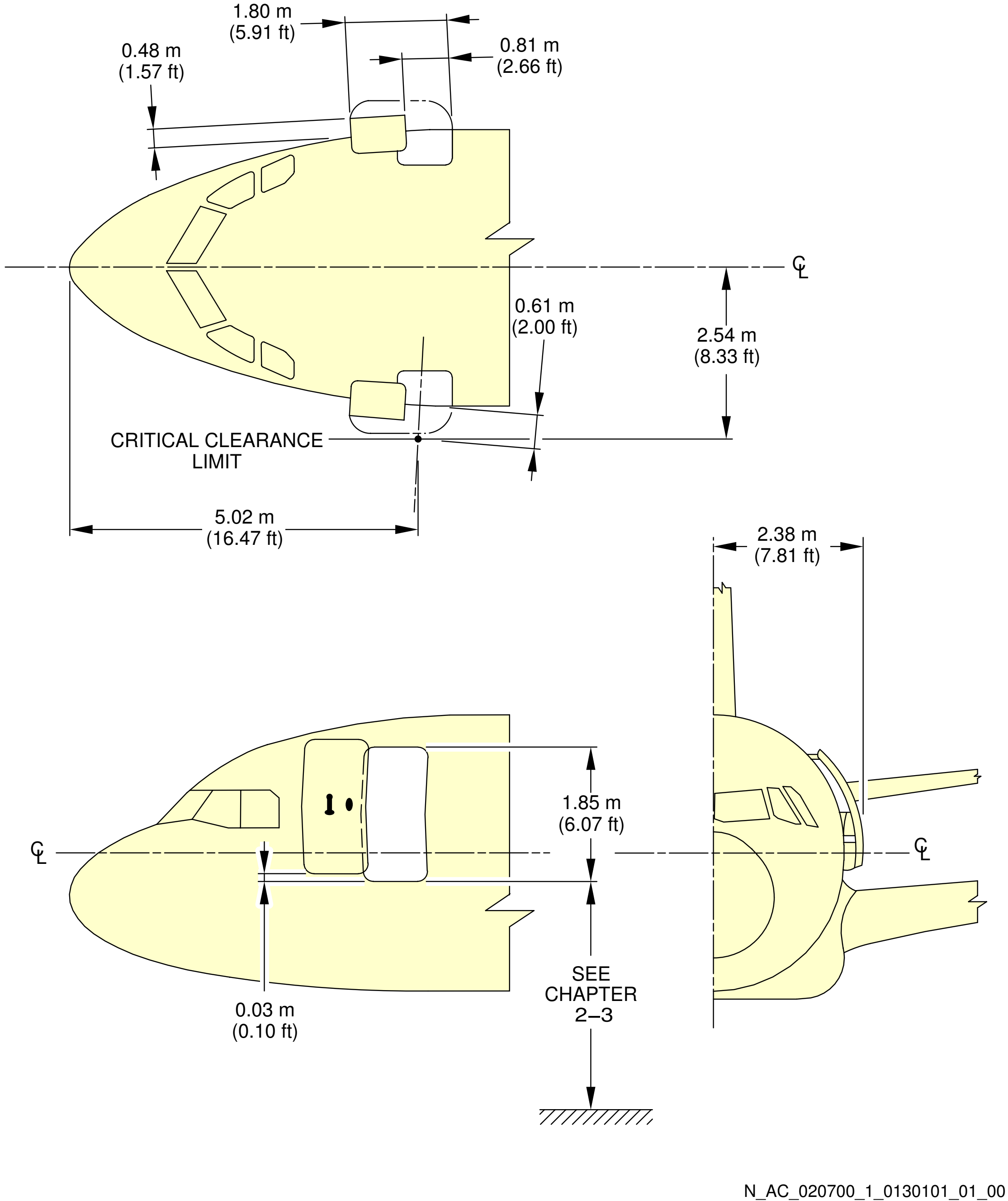




N_AC_020700_1_0020102_01_00

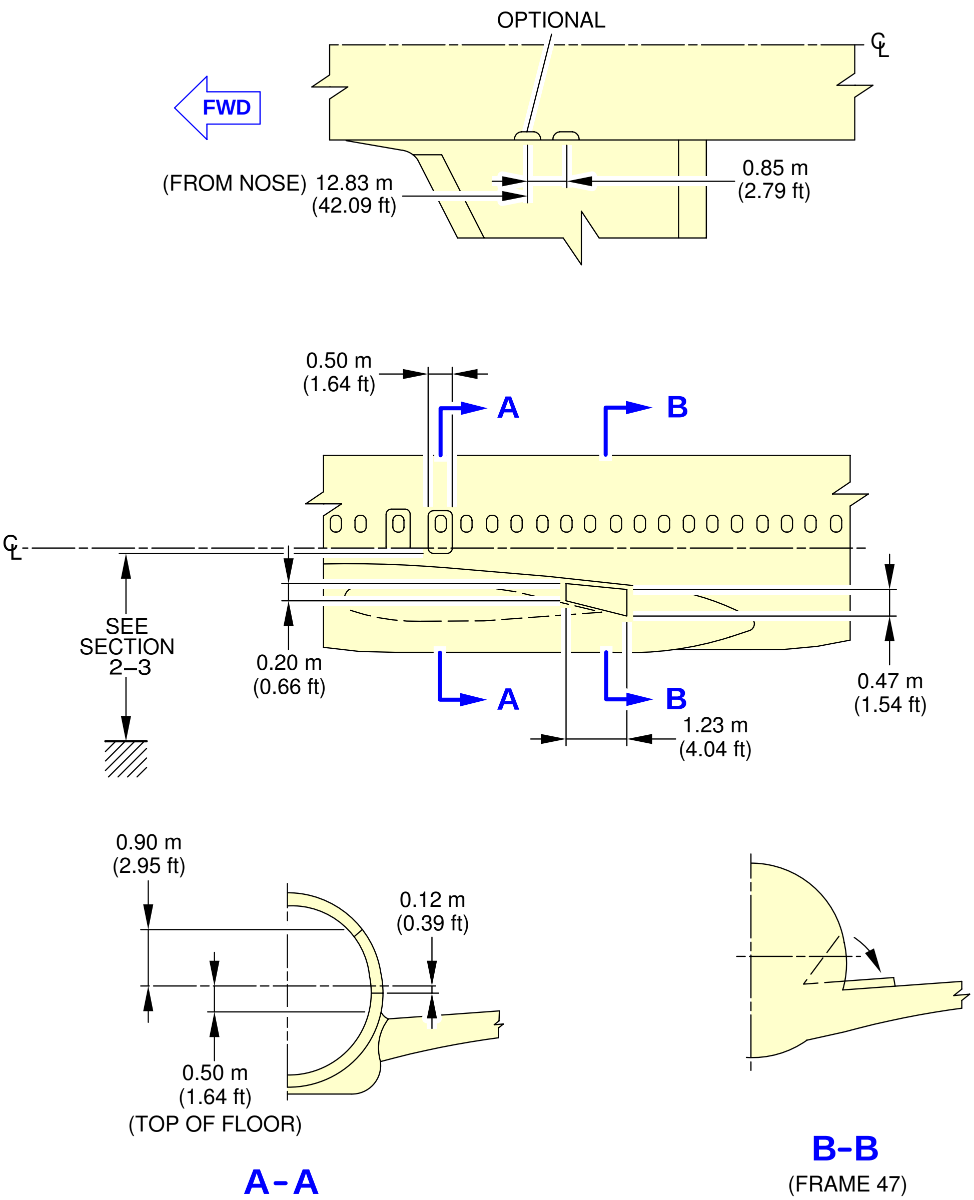
Door Identification and Location
Door Location (Sheet 2 of 2)
FIGURE-2-7-0-991-002-A01

****ON A/C A319-100 A319neo**



Doors Clearances
Forward Passenger/Crew Doors
FIGURE-2-7-0-991-013-A01

**ON A/C A319-100 A319neo

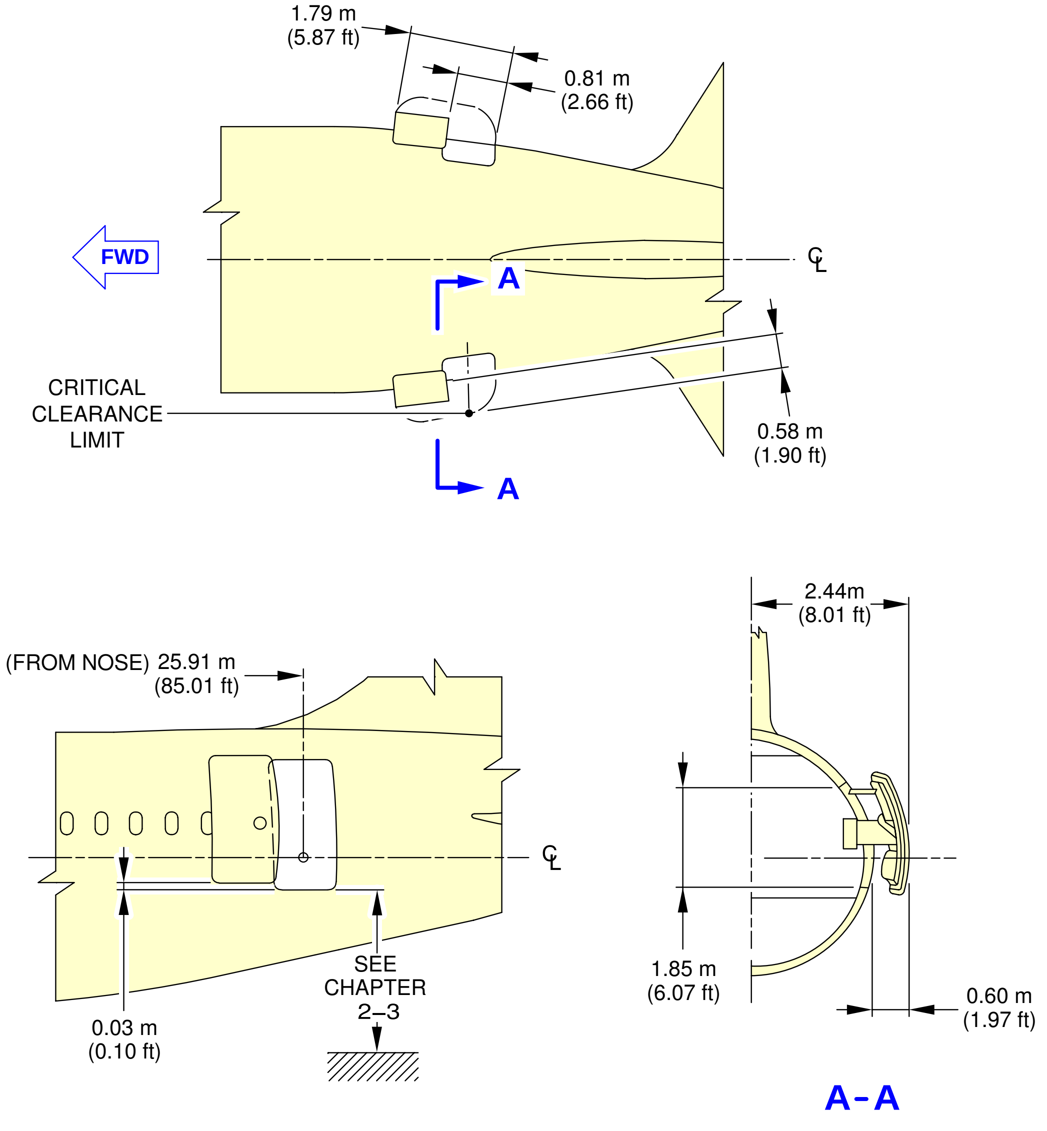


NOTE:
ESCAPE SLIDE COMPARTMENT DOOR OPENS ON WING UPPER SURFACE.

N_AC_020700_1_0140101_01_00

Doors Clearances
Emergency Exits
FIGURE-2-7-0-991-014-A01

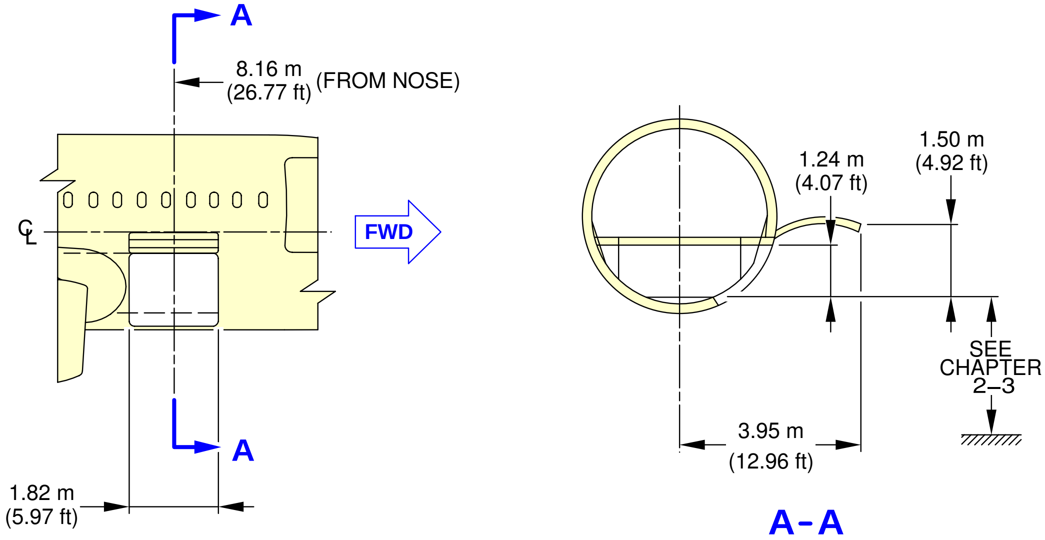
**ON A/C A319-100 A319neo

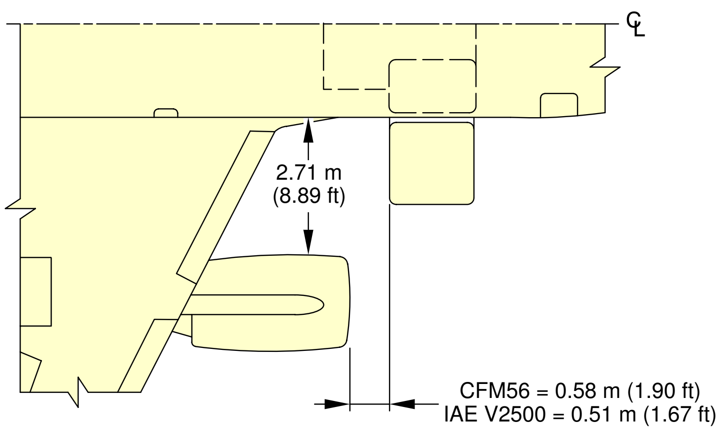


N_AC_020700_1_0150101_01_00

Doors Clearances
Aft Passenger/Crew Doors
FIGURE-2-7-0-991-015-A01

**ON A/C A319-100

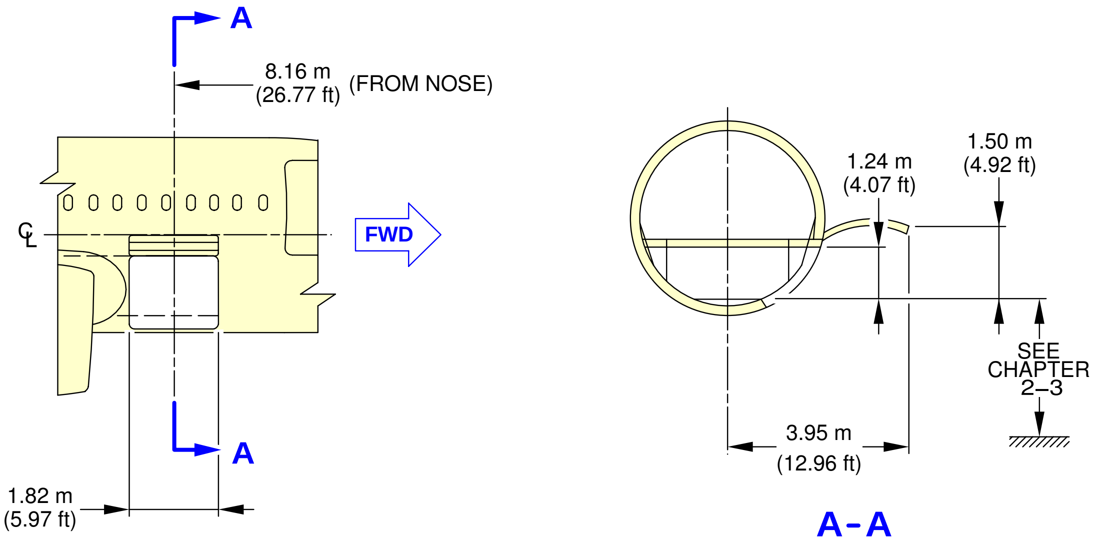


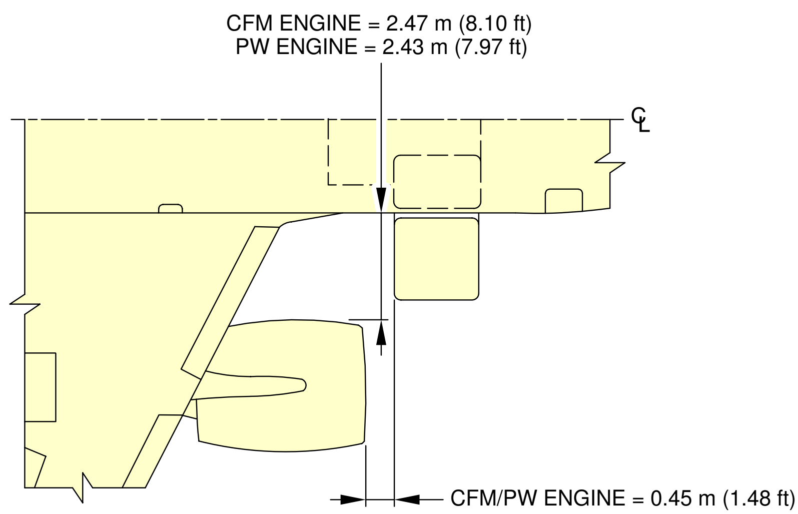


N_AC_020700_1_0160101_01_00

Doors Clearances
Forward Cargo Compartment Door
FIGURE-2-7-0-991-016-A01

****ON A/C A319neo**

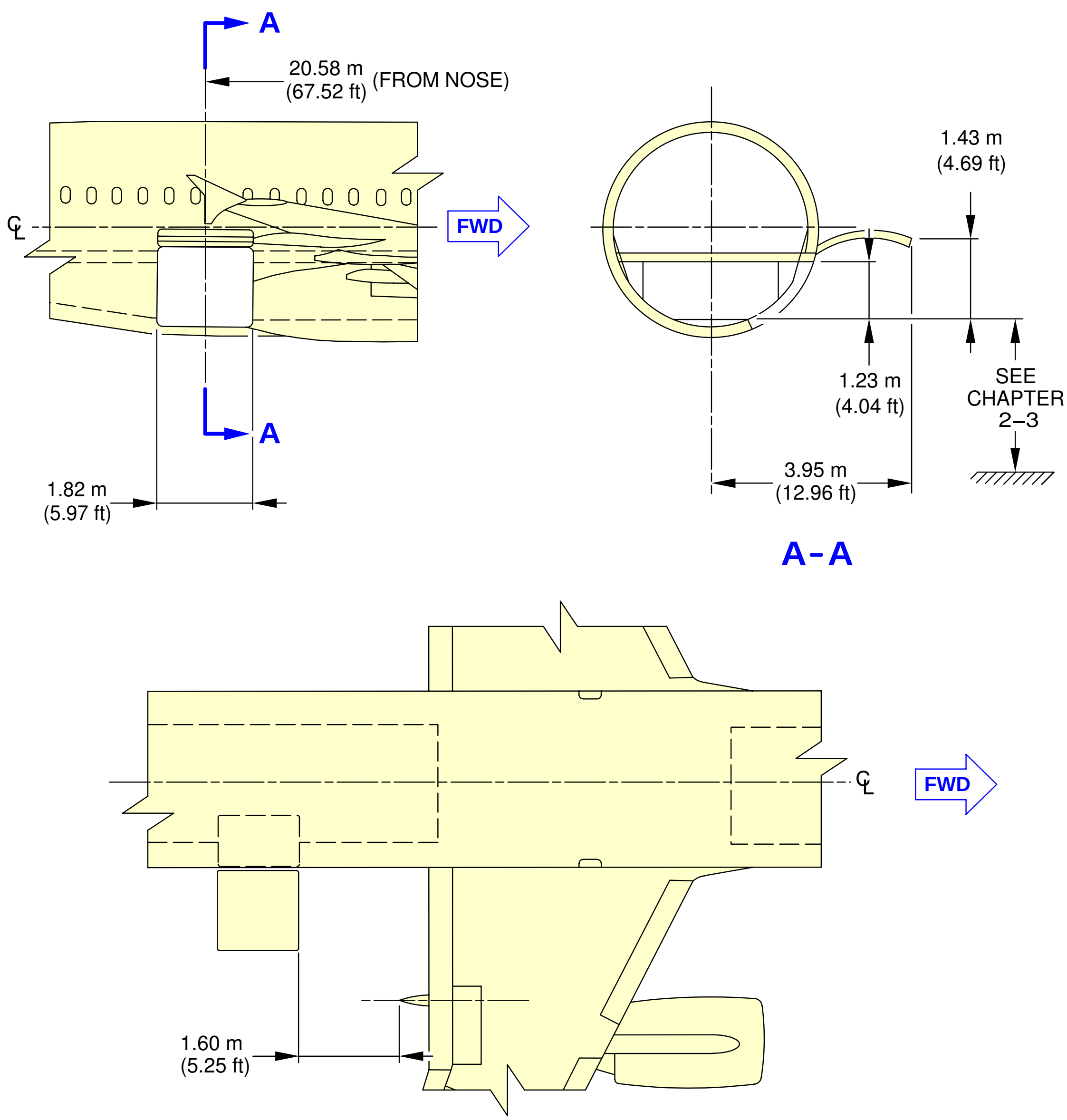




N_AC_020700_1_0170101_01_00

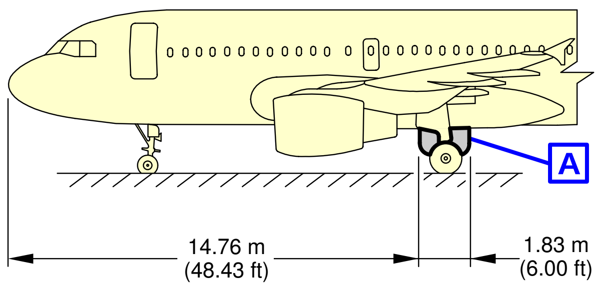
Doors Clearances
Forward Cargo Compartment Door
FIGURE-2-7-0-991-017-A01

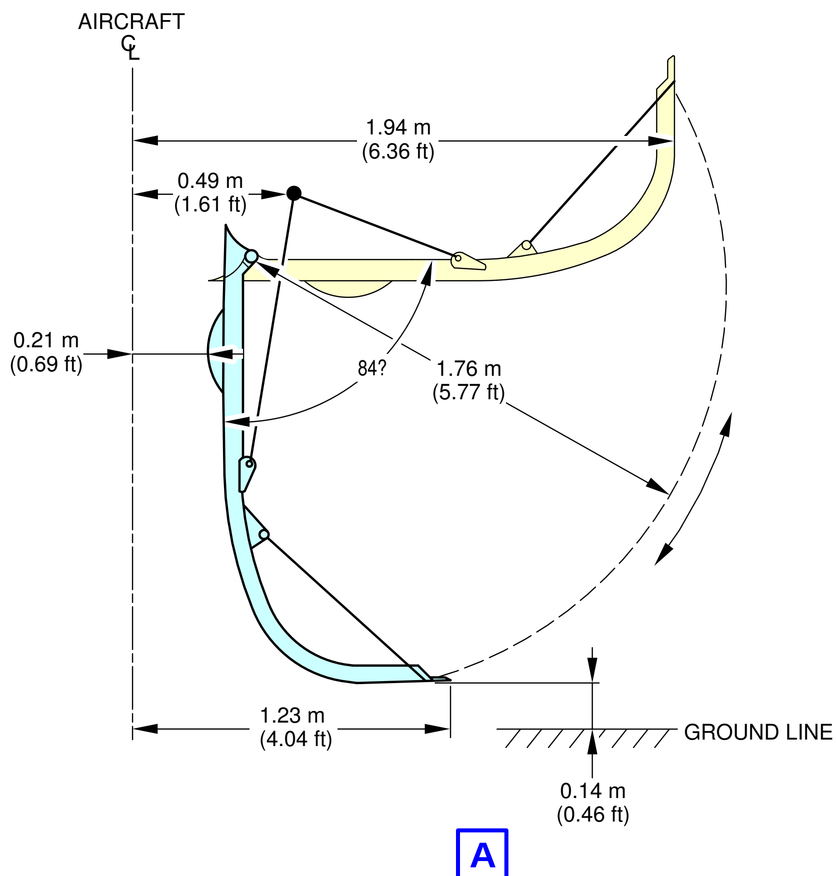
****ON A/C A319-100 A319neo**



Doors Clearances
Aft Cargo Compartment Door
FIGURE-2-7-0-991-018-A01

****ON A/C A319-100 A319neo**



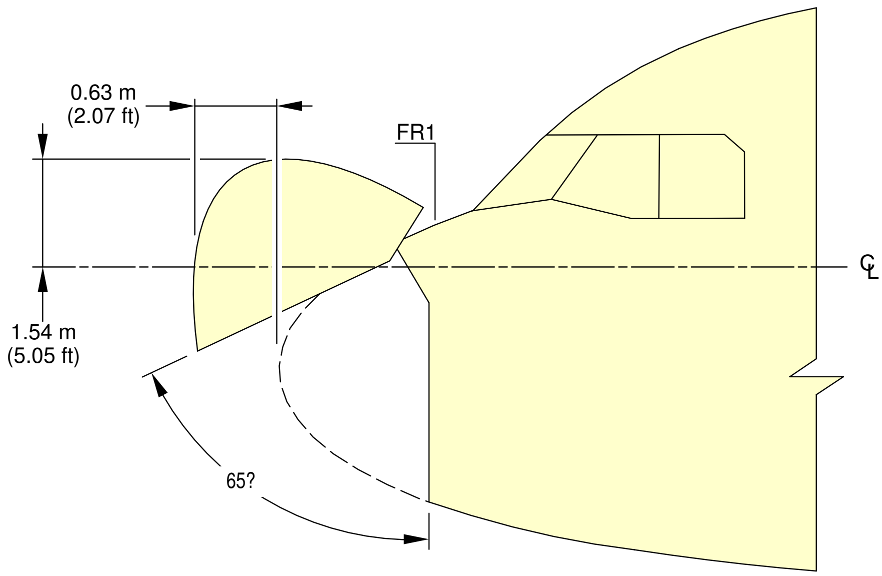


NOTE:
VALUE OF CG: 25% RC.

N_AC_020700_1_0190101_01_00

Doors Clearances
Main Landing Gear Doors
FIGURE-2-7-0-991-019-A01

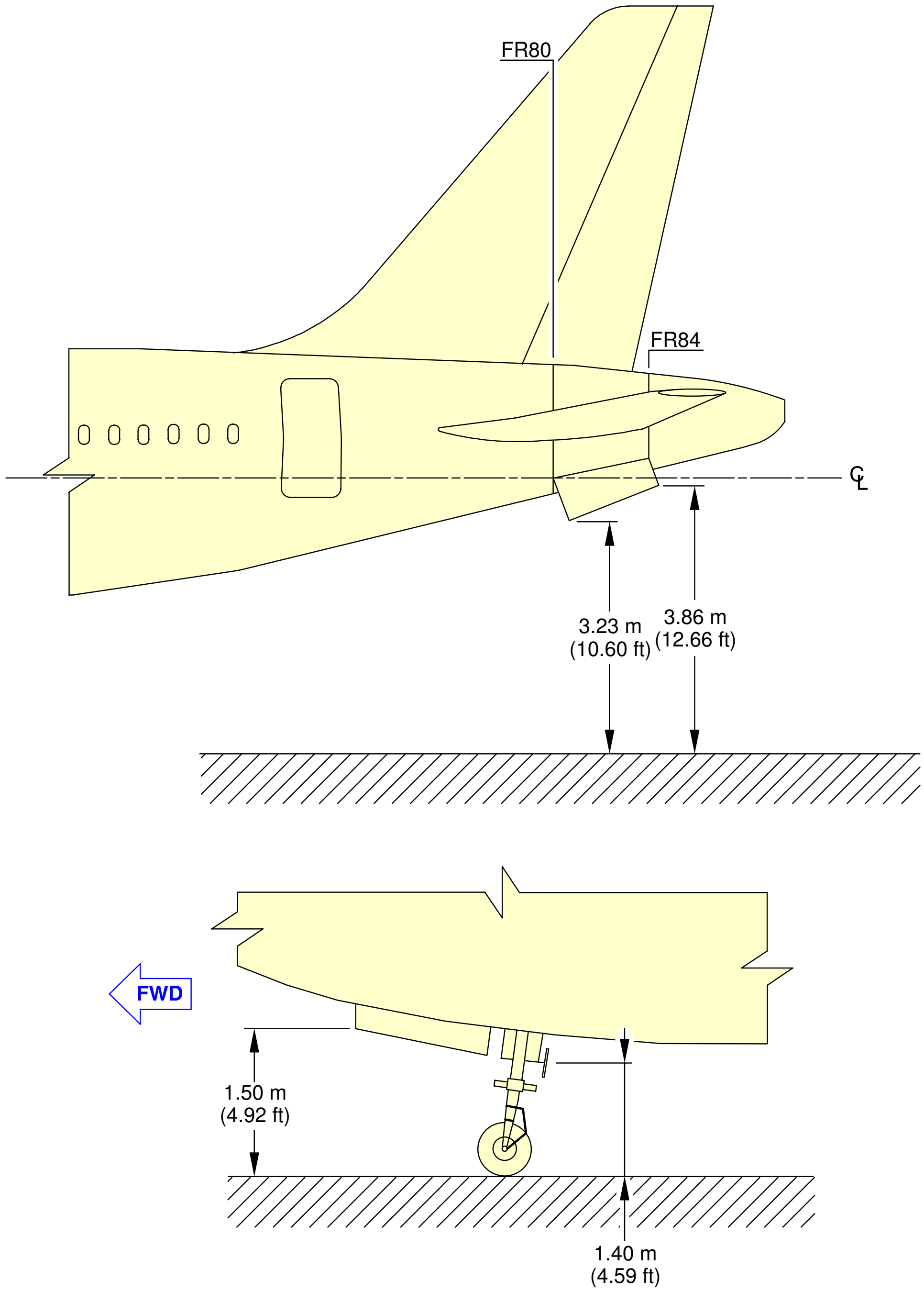
****ON A/C A319-100 A319neo**



N_AC_020700_1_0200101_01_00

Doors Clearances
Radome
FIGURE-2-7-0-991-020-A01

**ON A/C A319-100 A319neo



NOTE:
VALUE OF CG: 25% RC.

N_AC_020700_1_0210101_01_00

Doors Clearances
APU and Nose Landing Gear Doors
FIGURE-2-7-0-991-021-A01

2-8-0 Escape Slides

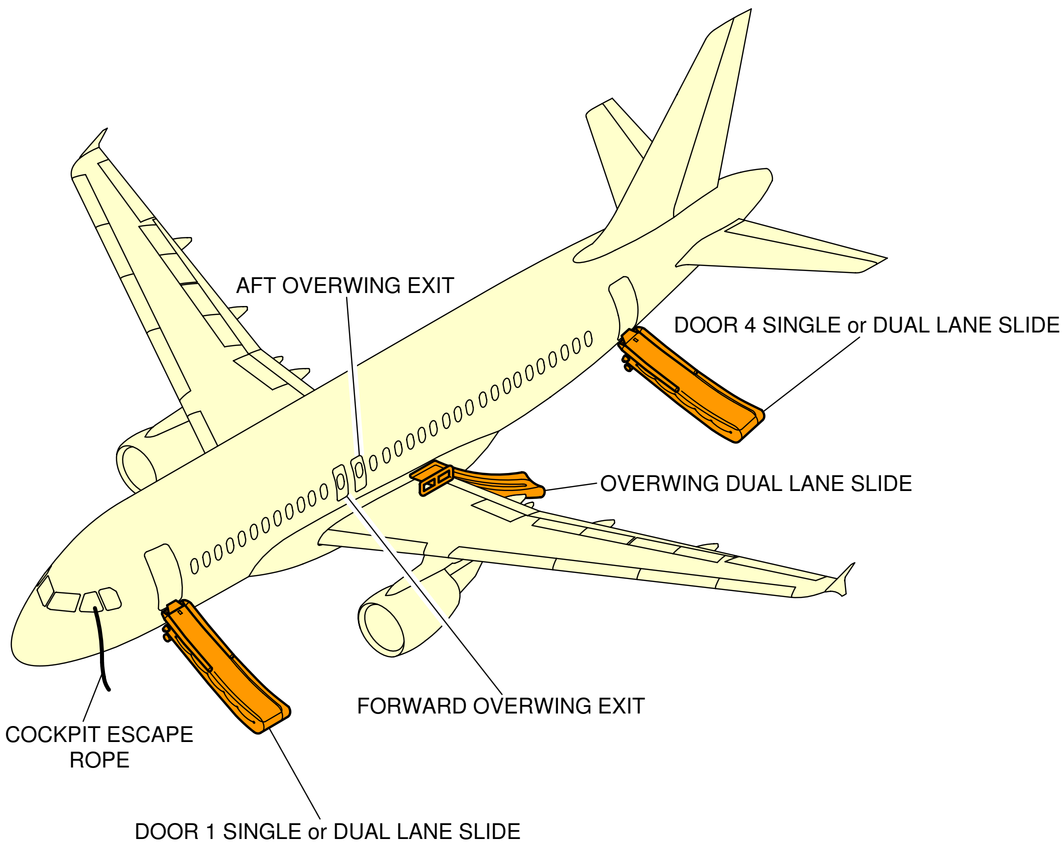
****ON A/C A319-100 A319neo**

Escape Slides

1. General
   This section provides location of slides/rafts facilities and related clearances.

2. Location
   Slides/rafts facilities are provided at the following locations:
   - One single or dual lane slide at each door 1 & 4 (total four)
   - Dual lane overwing slides are installed above the wings in the left and right wing-to-fuselage fairings for off-the-wing evacuation (total 2).

****ON A/C A319-100 A319neo**

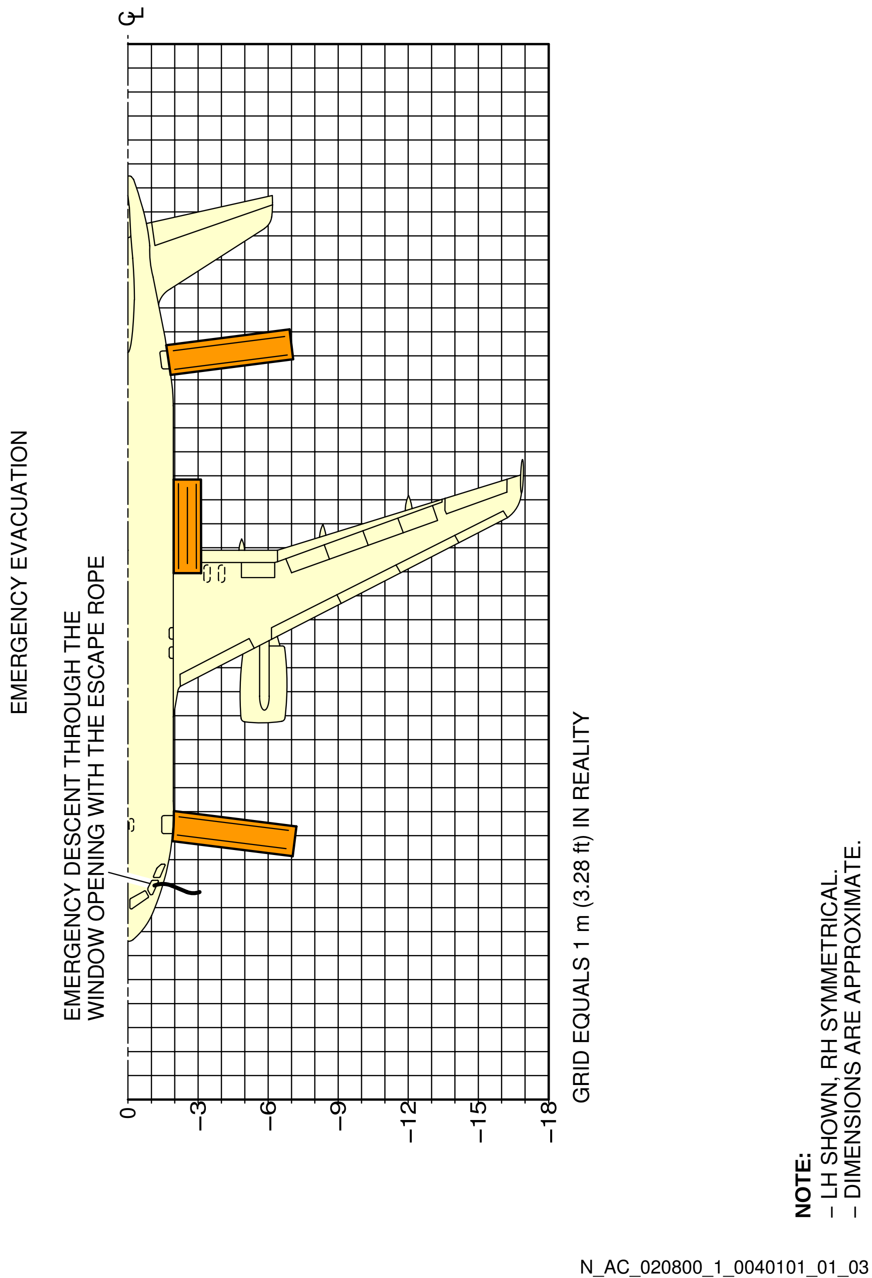


NOTE:
LH SHOWN, RH SYMMETRICAL.

N_AC_020800_1_0030101_01_04

Escape Slides
Location
FIGURE-2-8-0-991-003-A01

****ON A/C A319-100 A319neo**



Escape Slides
Dimensions
FIGURE-2-8-0-991-004-A01

2-9-0 Landing Gear

****ON A/C A319-100 A319neo**

Landing Gear

1. General

The landing gear is of the conventional retractable tricycle type comprising:
- Two main gears with twin-wheel,
- A twin-wheel nose gear.

The main landing gears are located under the wing and retract sideways towards the fuselage centerline.
The nose landing gear retracts forward into a fuselage compartment located between FR9 and FR20.

The landing gears and landing gear doors are operated and controlled electrically and hydraulically.
In abnormal operation, the landing gear can be extended by gravity.

For landing gear footprint and tire size, refer to 07-02-00.

2. Main Landing Gear

A. Twin-Wheel

Each of the two main landing gear assemblies consists of a conventional two-wheel direct type with an integral shock absorber supported in the fore and aft directions by a fixed drag strut and laterally by a folding strut mechanically locked when in the DOWN position.

3. Nose Landing Gear

The nose landing gear consists of a leg with a built-in shock absorber strut, carrying twin wheels with adequate shimmy damping and a folding strut mechanically locked when in the DOWN position.

4. Nose Wheel Steering

Steering is controlled by two hand wheels in the cockpit. For steering angle controlled by the hand wheels, refer to AMM 32-51-00.
For steering angle limitation, refer to AMM 09-10-00.

A steering disconnection box is installed on the nose landing gear to allow steering deactivation for towing purposes.

5. Landing Gear Servicing Points

A. General

Filling of the landing-gear shock absorbers is done through MIL-PRF-6164 standard valves.

Charging of the landing-gear shock absorbers is accomplished with nitrogen through MIL-PRF-6164 standard valves.

B. Charging Pressure

For charging of the landing-gear shock absorbers, refer to AMM 12-14-32.

6. Braking

A. General

The four main wheels are equipped with carbon multidisc brakes.

The braking system is electrically controlled and hydraulically operated.

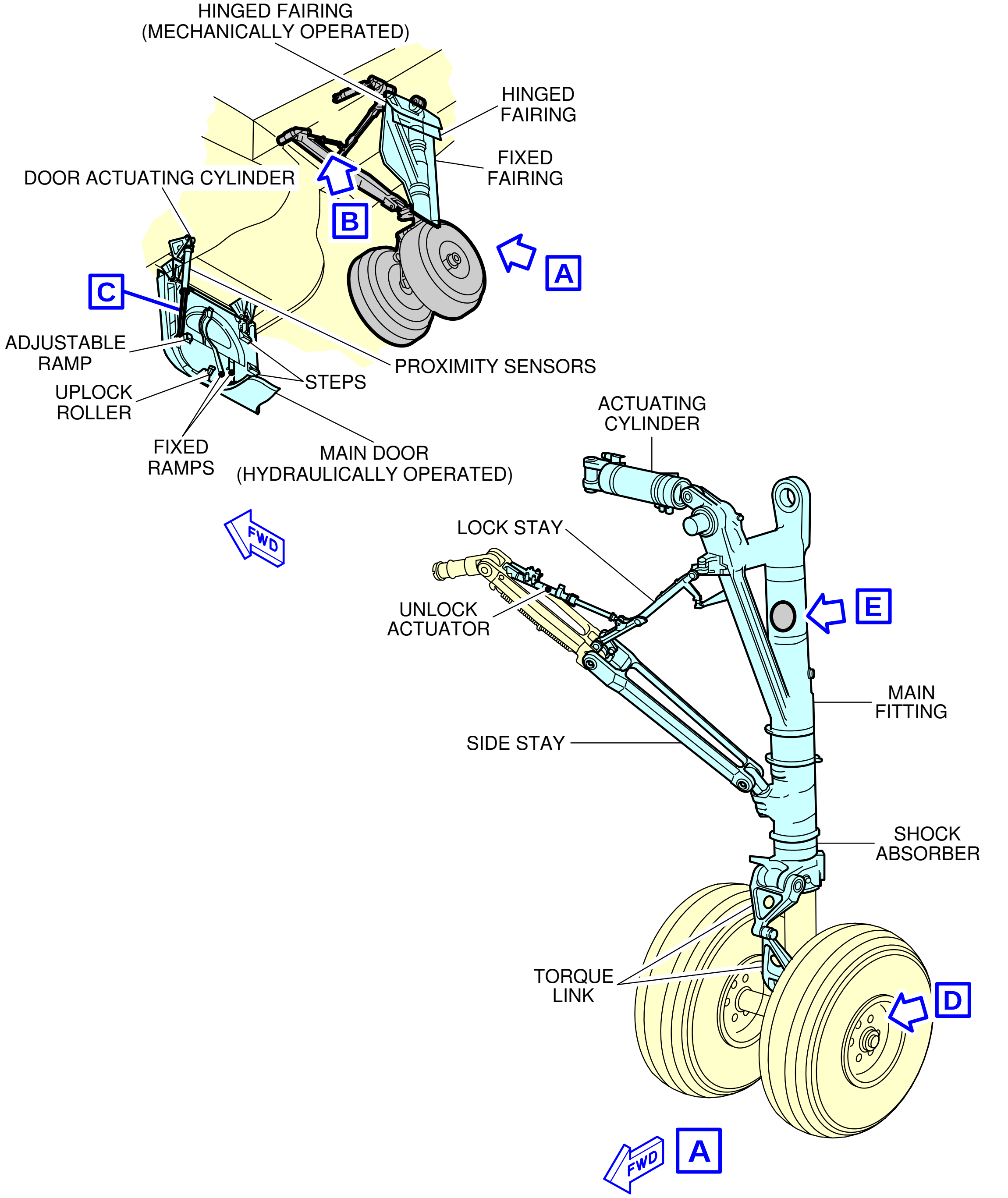
The braking system has four braking modes plus autobrake and anti-skid systems:
- Normal braking with anti-skid capability,
- Alternative braking with anti-skid capability,
- Alternative braking without anti-skid capability,
- Parking brake with full pressure application capability only.

B. In-Flight Wheel Braking

The main gear wheels are braked automatically before the wheels enter the wheel bay.

The nose gear wheels are stopped by the wheels contacting a rubbing strip (the brake band) when the gear is in the retracted position.

**ON A/C A319-100 A319neo

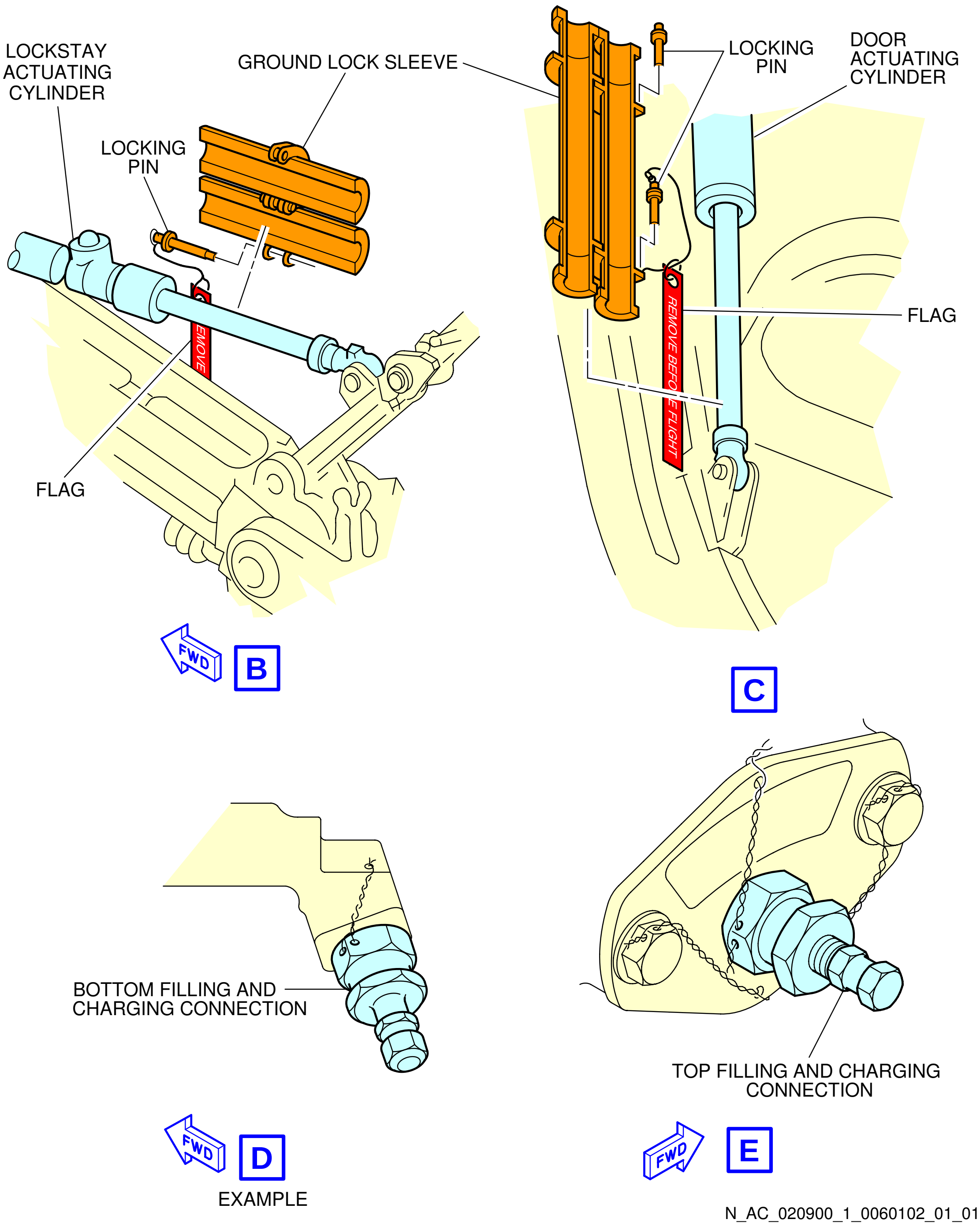


NOTE: MAIN DOOR SHOWN OPEN IN GROUND MAINTENANCE POSITION.

N_AC_020900_1_0060101_01_00

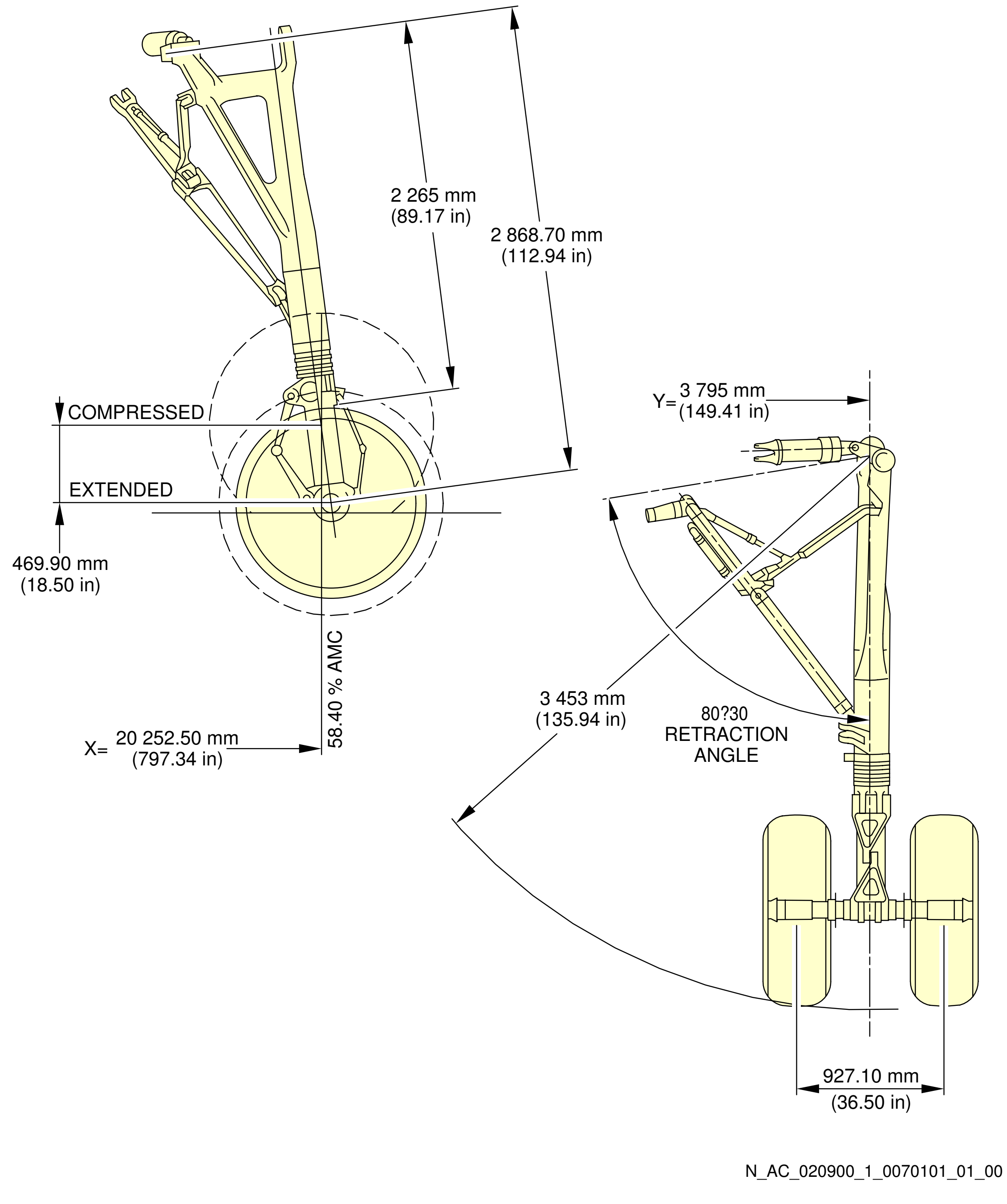
Landing Gear
Main Landing Gear - Twin-Wheel (Sheet 1 of 2)
FIGURE-2-9-0-991-006-A01

**ON A/C A319-100 A319neo



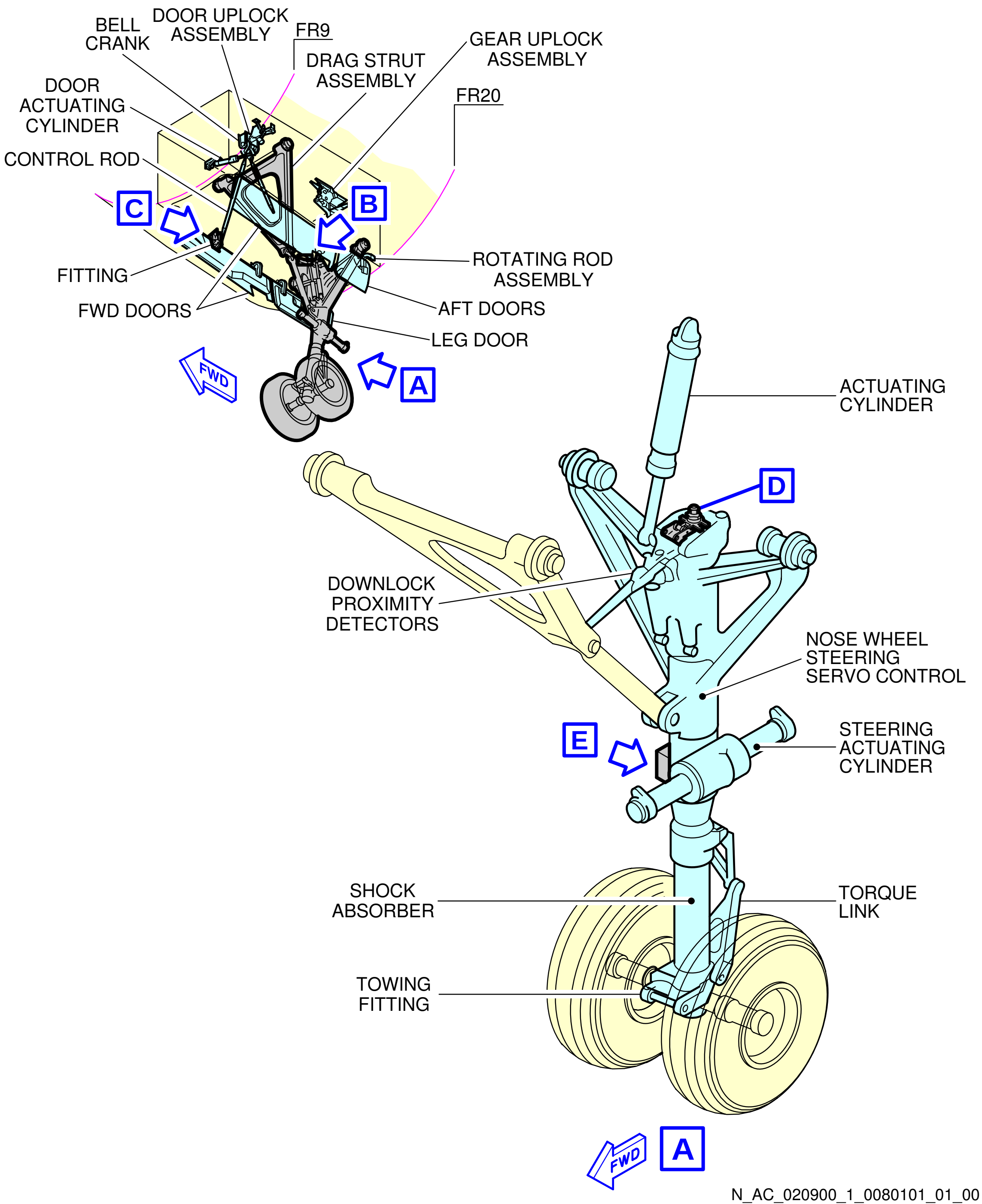
Landing Gear
Main Landing Gear - Twin-Wheel (Sheet 2 of 2)
FIGURE-2-9-0-991-006-A01

****ON A/C A319-100 A319neo**



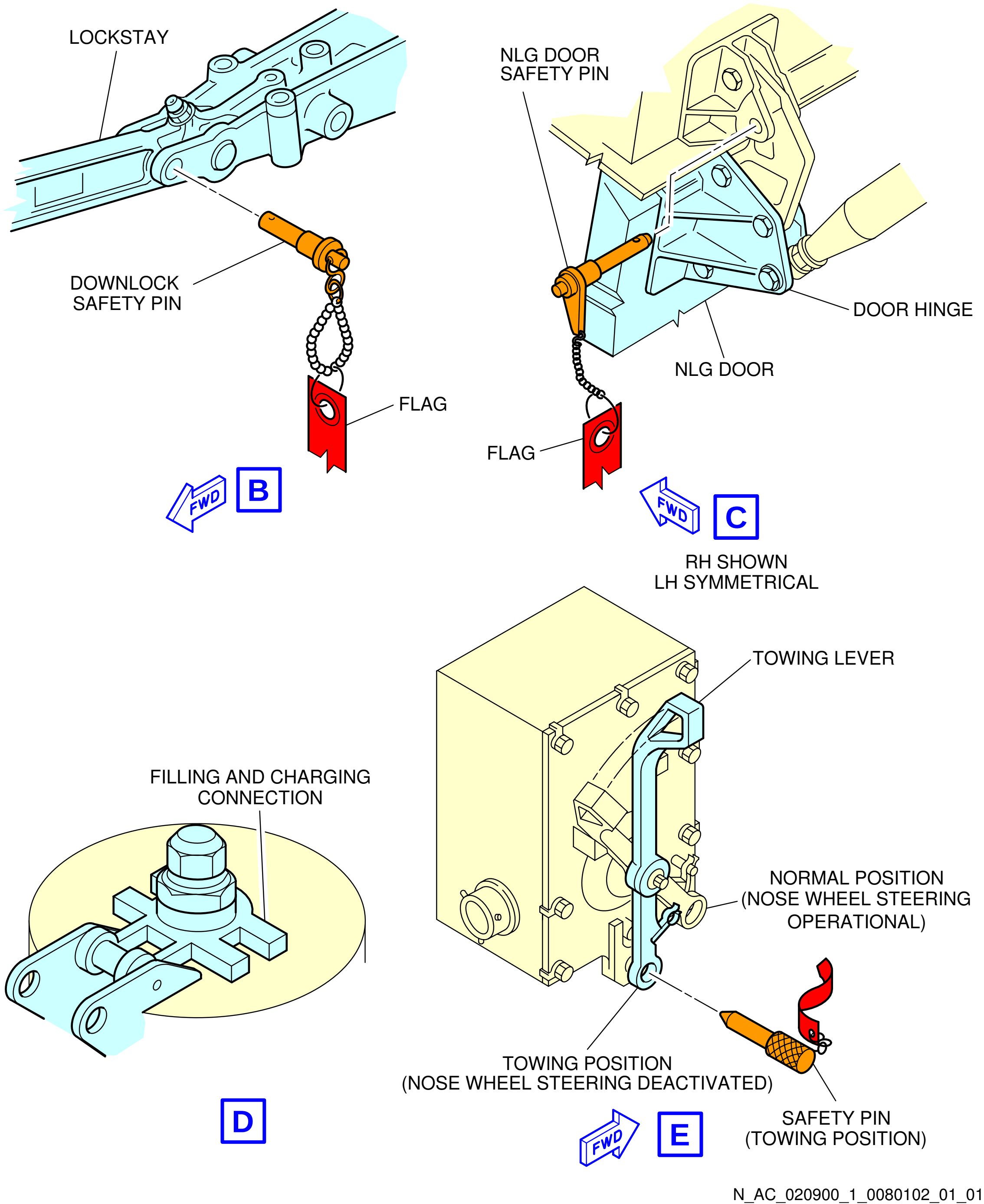
Landing Gear
Main Landing Gear Dimensions - Twin-Wheel
FIGURE-2-9-0-991-007-A01

**ON A/C A319-100 A319neo



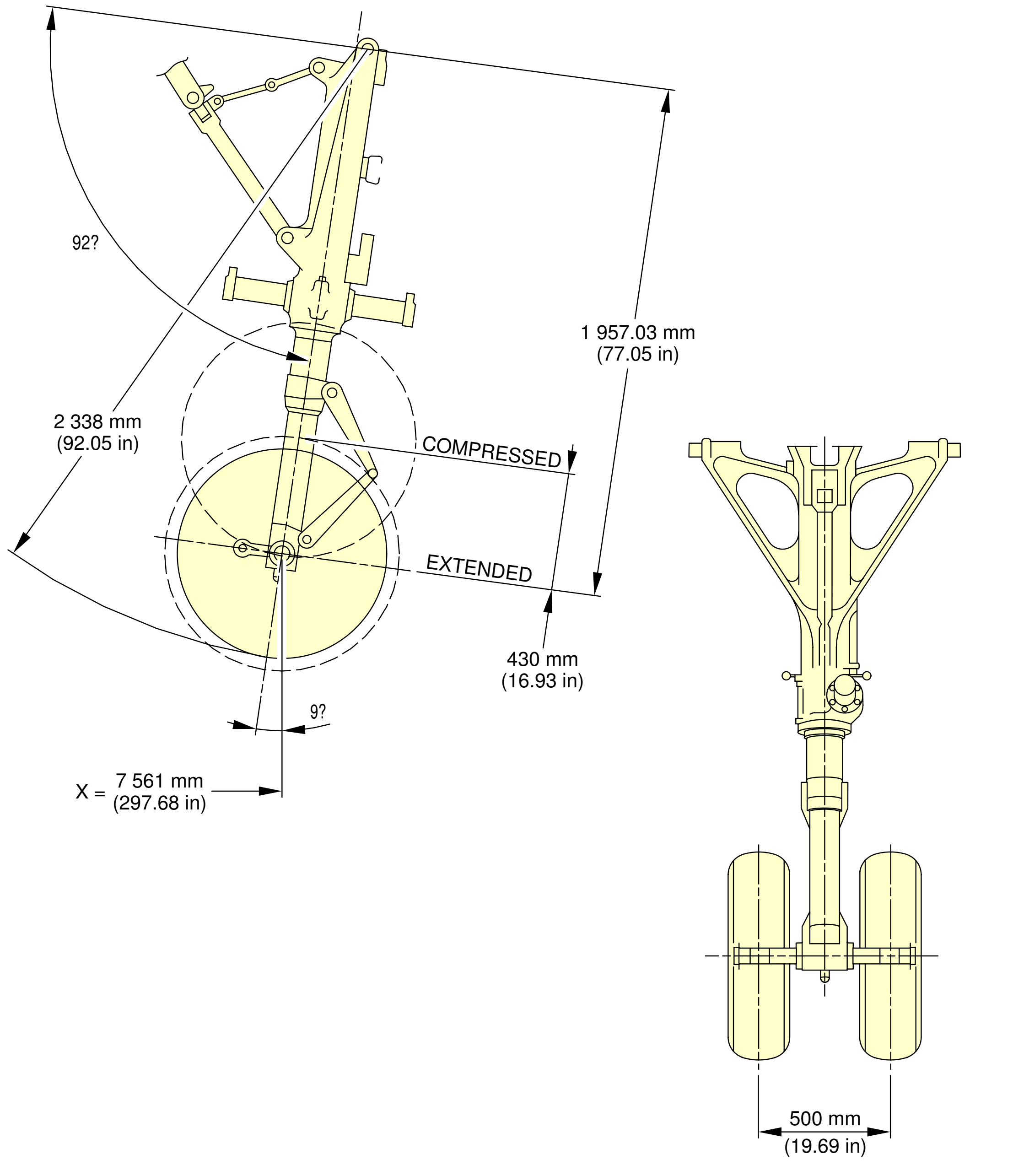
Landing Gear
Nose Landing Gear (Sheet 1 of 2)
FIGURE-2-9-0-991-008-A01

****ON A/C A319-100 A319neo**



Landing Gear
Nose Landing Gear (Sheet 2 of 2)
FIGURE-2-9-0-991-008-A01

****ON A/C A319-100 A319neo**



Landing Gear
Nose Landing Gear Dimensions
FIGURE-2-9-0-991-009-A01

****ON A/C A319-100 A319neo**

Landing Gear Maintenance Pits

1. Description

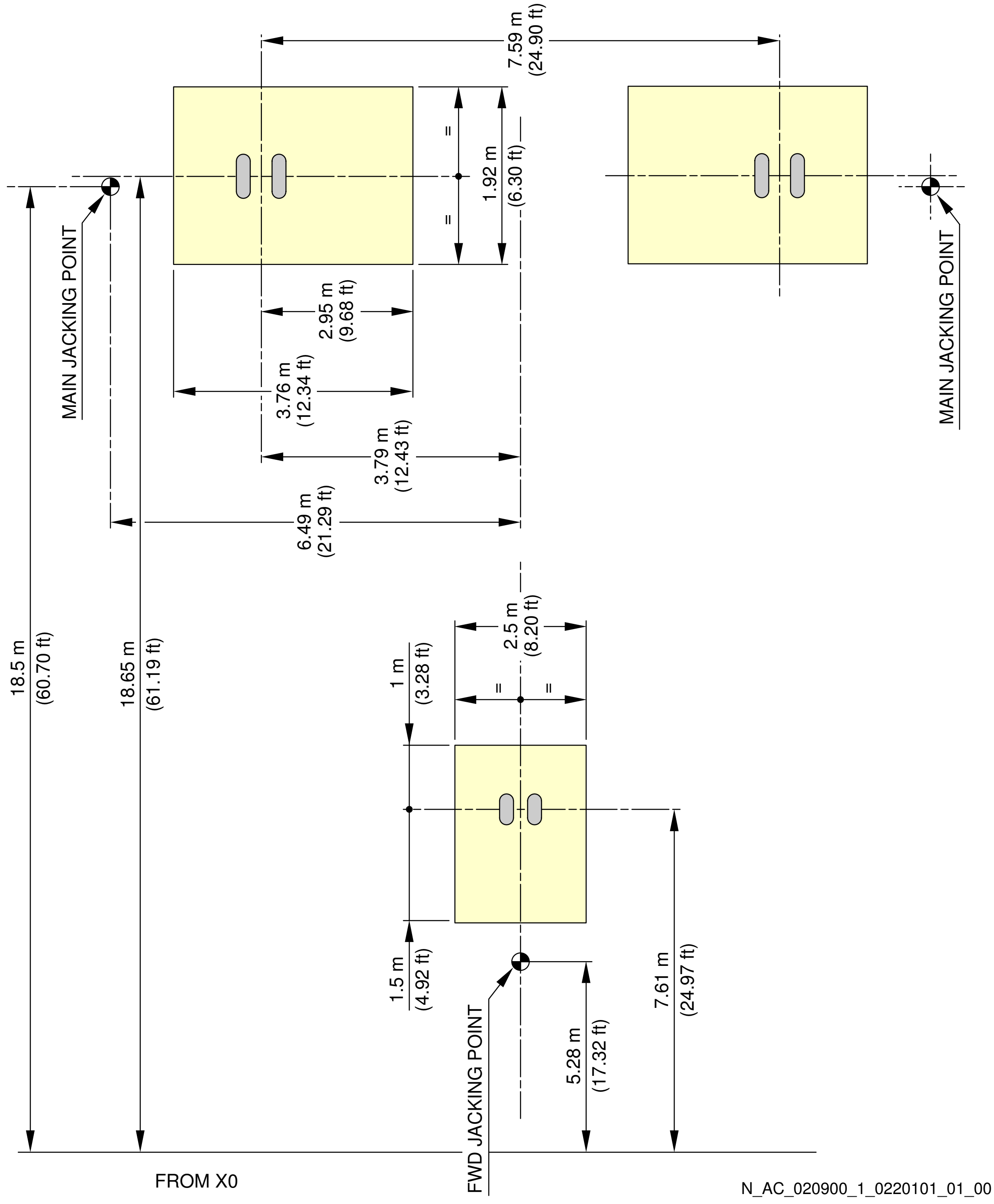
The minimum maintenance pit envelopes for the landing-gear shock absorber removal are shown in FIGURE 2-9-0-991-022-A and FIGURE 2-9-0-991-023-A.

All dimensions shown are minimum dimensions with zero clearances.

The dimensions for the pits have been determined as follows:
- The length and width of the pits allow the gear to rotate as the weight is taken off the landing gear.
- The depth of the pits allows the shock absorber to be removed when all the weight is taken off the landing gear.

Dimensions for elevators and associated mechanisms must be added to those in FIGURE 2-9-0-991-022-Aand FIGURE 2-9-0-991-023-A.

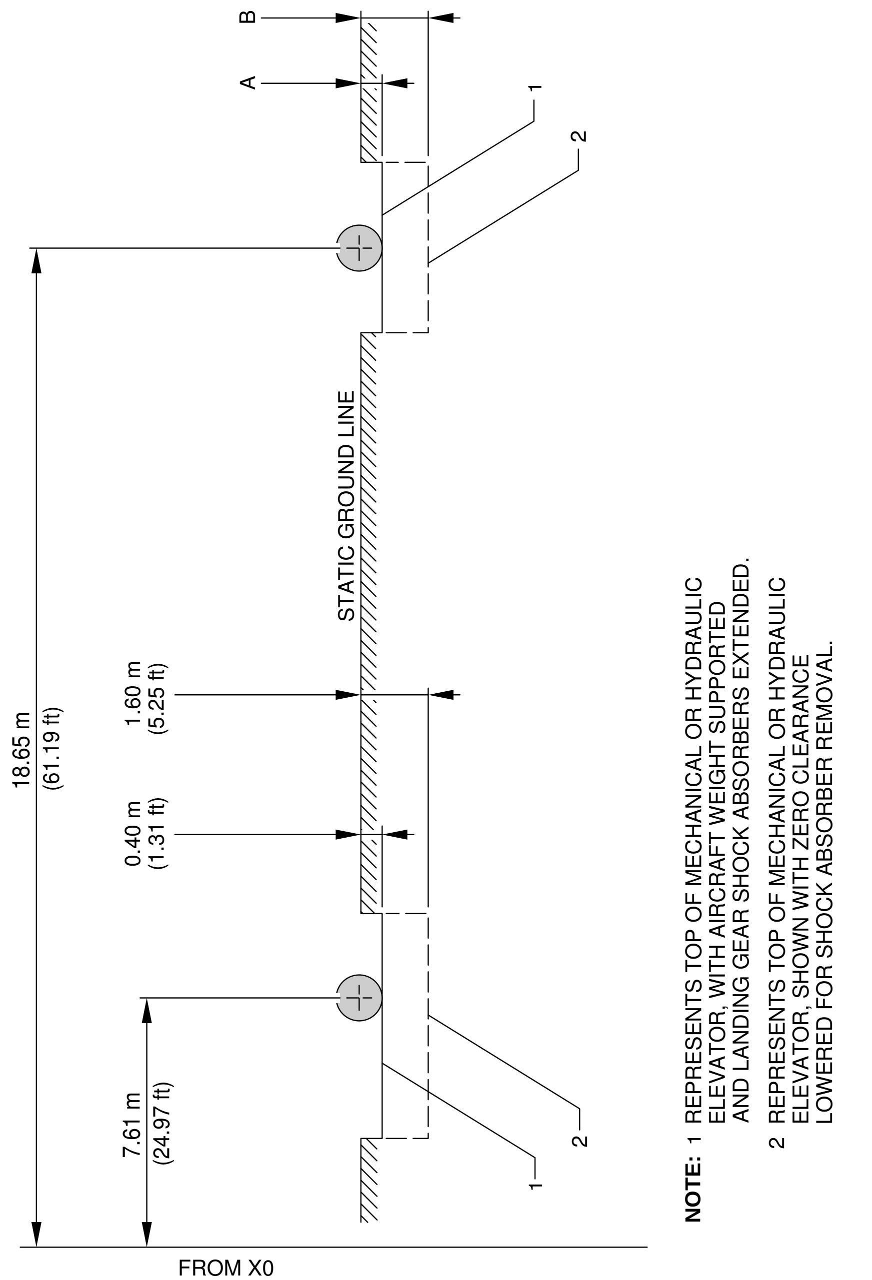
**ON A/C A319-100 A319neo



Landing Gear Maintenance Pits
Maintenance Pit Envelopes
FIGURE-2-9-0-991-022-A01

****ON A/C A319-100 A319neo**

	A		B	
	m	ft	m	ft
DIM QUOTED IS WITH WHEELS REMOVED AND 153 mm (6.02 in) CLEARANCE AT JACKING DOME	0.52	1.71	1.17	3.84



N_AC_020900_1_0230101_01_00

Landing Gear Maintenance Pits
Maintenance Pit Envelopes
FIGURE-2-9-0-991-023-A01

2-10-0 Exterior Lighting

****ON A/C A319-100 A319neo**

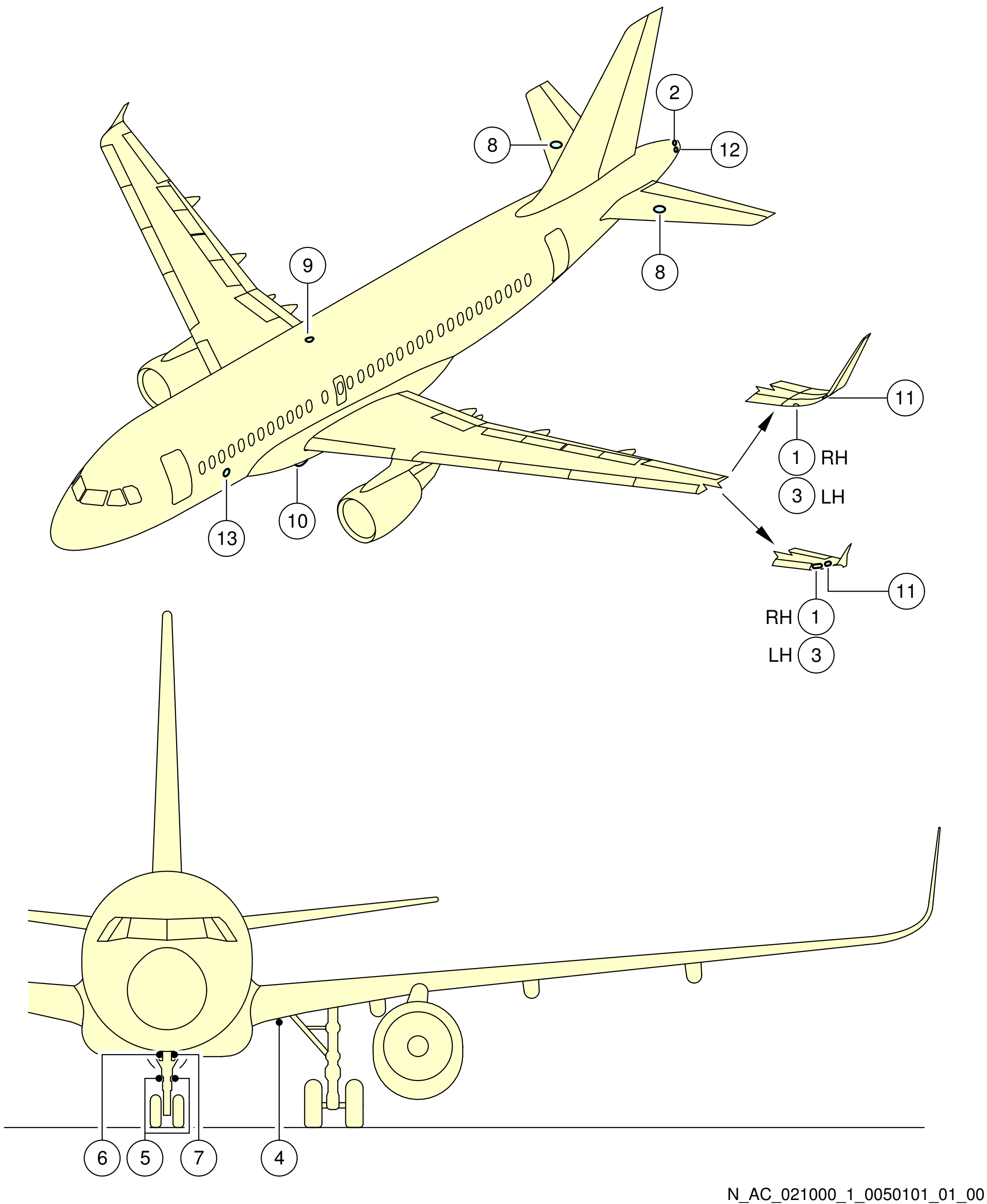
Exterior Lighting

1. General

This section provides the location of the aircraft exterior lighting.

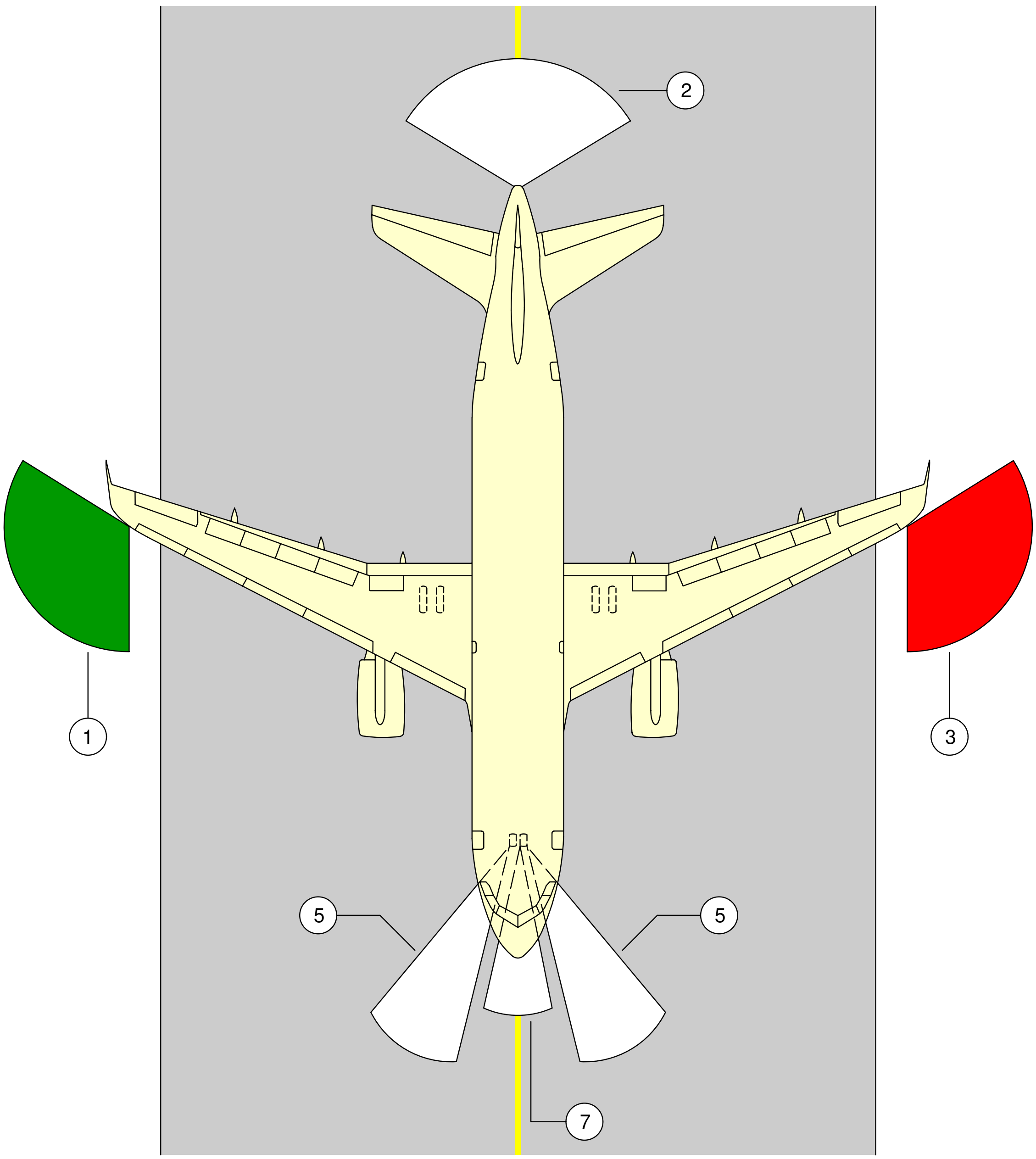
EXTERIOR LIGHTING	
ITEM	DESCRIPTION
1	RIGHT NAVIGATION LIGHT (GREEN)
2	TAIL NAVIGATION LIGHT (WHITE)
3	LEFT NAVIGATION LIGHT (RED)
4	RETRACTABLE LANDING LIGHT
5	RUNWAY TURN OFF LIGHT
6	TAXI LIGHT
7	TAKE-OFF LIGHT
8	LOGO LIGHT
9	UPPER ANTI-COLLISION LIGHT/BEACON (RED)
10	LOWER ANTI-COLLISION LIGHT/BEACON (RED)
11	WING STROBE LIGHT (HIGH INTENSITY, WHITE)
12	TAIL STROBE LIGHT (HIGH INTENSITY, WHITE)
13	WING/ENGINE SCAN LIGHT
14	WHEEL WELL LIGHT (DOME)
15	CARGO COMPARTMENT FLOOD LIGHT

**ON A/C A319-100 A319neo



Exterior Lighting
FIGURE-2-10-0-991-005-A01

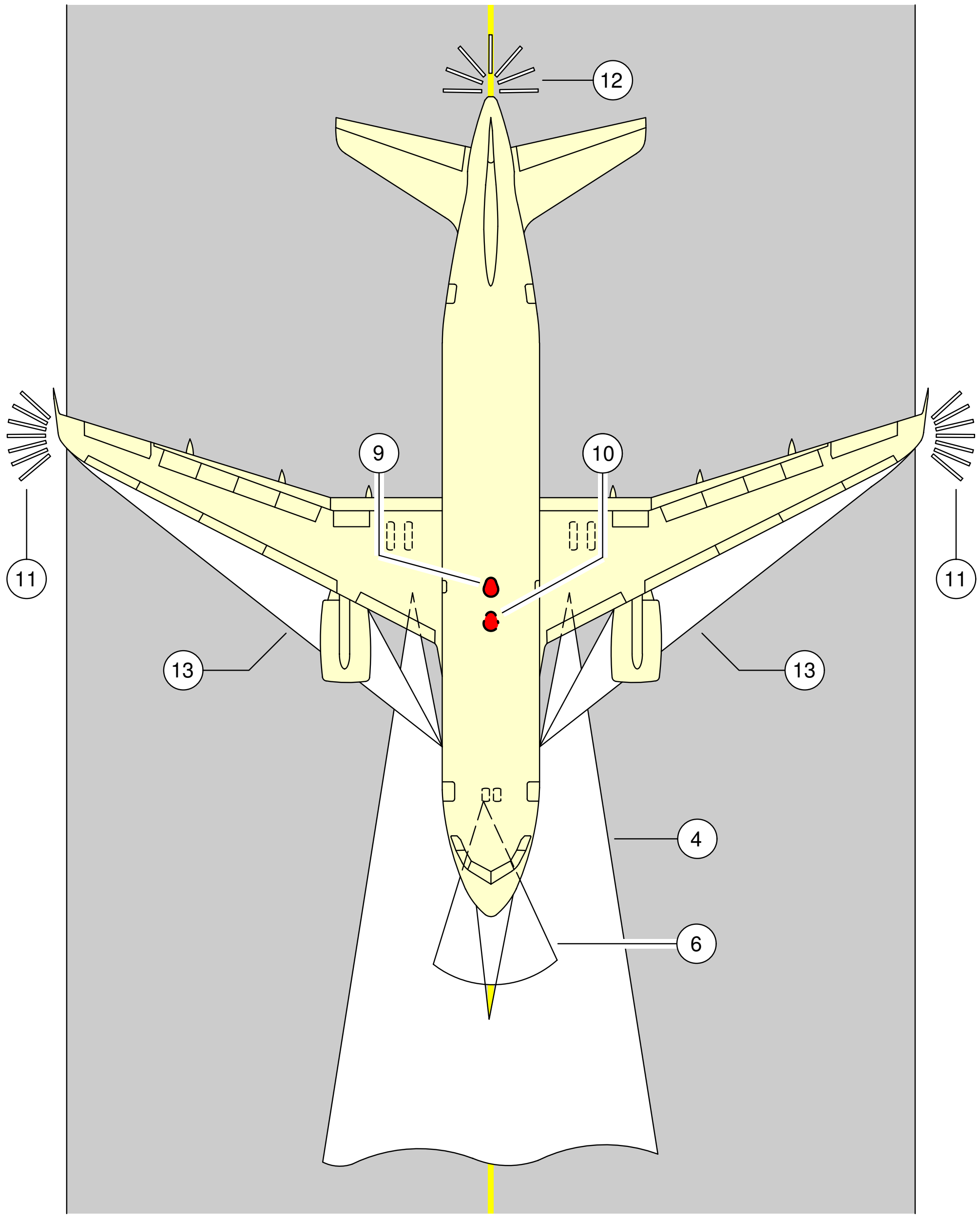
****ON A/C A319-100 A319neo**



N_AC_021000_1_0060101_01_00

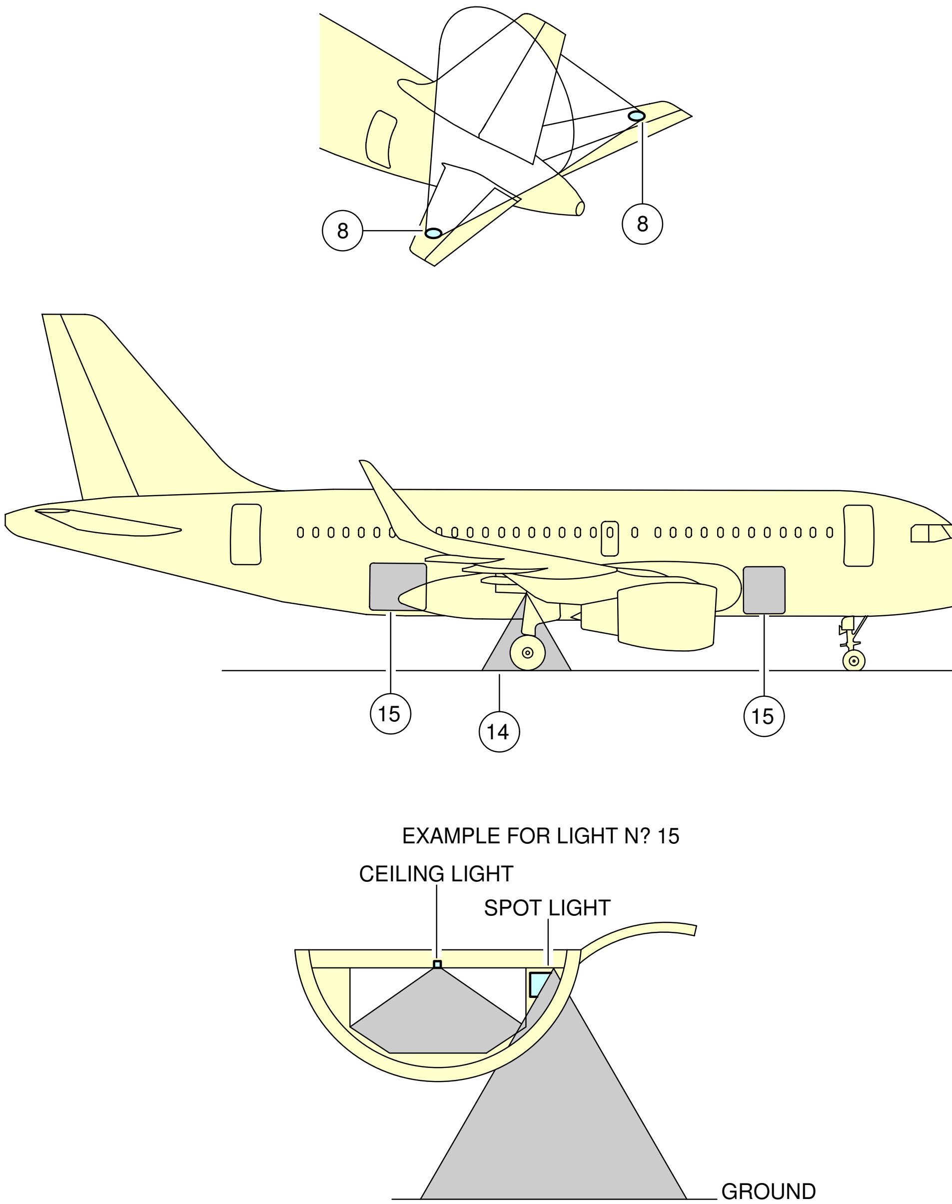
Exterior Lighting
FIGURE-2-10-0-991-006-A01

****ON A/C A319-100 A319neo**



Exterior Lighting
FIGURE-2-10-0-991-007-A01

**ON A/C A319-100 A319neo



N_AC_021000_1_0180101_01_00

Exterior Lighting
FIGURE-2-10-0-991-018-A01

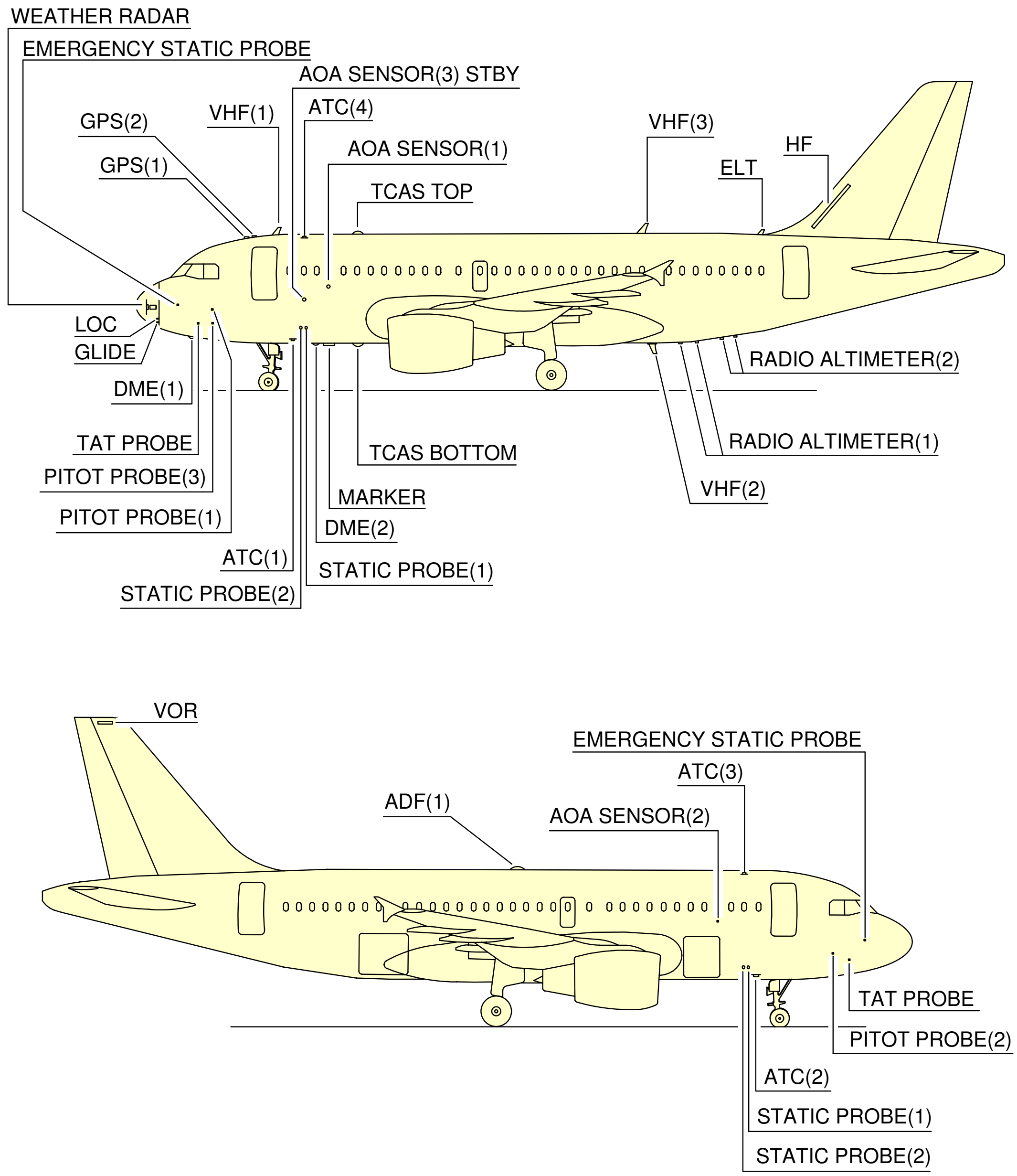
2-11-0 Antennas and Probes Location

**ON A/C A319-100 A319neo

Antennas and Probes Location

1. This section gives the location of antennas and probes.

**ON A/C A319-100 A319neo



NOTE: DEPENDING ON AIRCRAFT CONFIGURATION

N_AC_021100_1_0020101_01_00

Antennas and Probes
Location
FIGURE-2-11-0-991-002-A01

2-12-0 Power Plant

ON A/C A319-100 A319neo

Auxiliary Power Unit

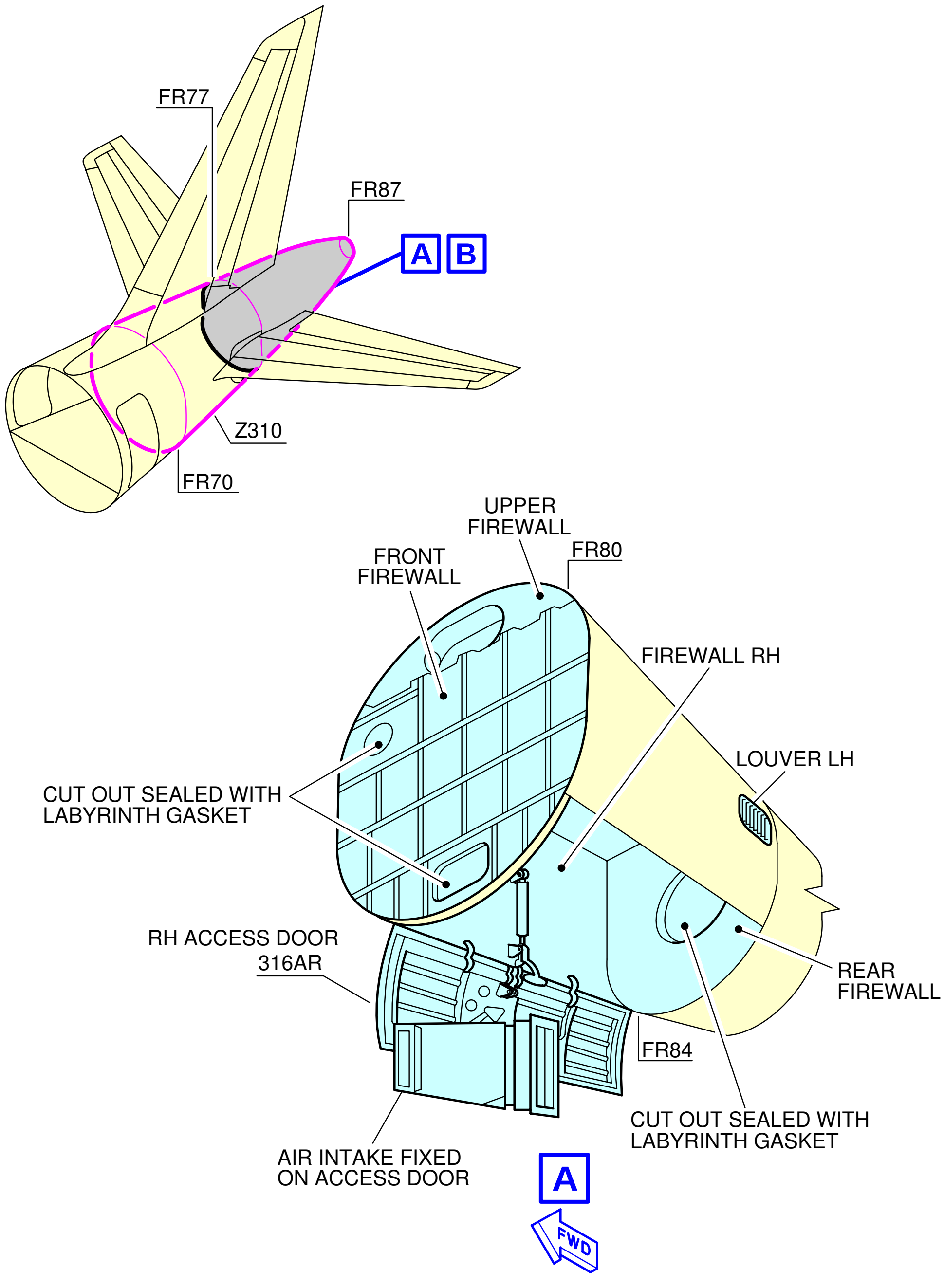
1. General

   The APU is installed at the rear part of the fuselage in the tail cone. An air intake system with a flap-type door is installed in front of the APU compartment. The exhaust gases pass overboard at the end of the fuselage cone.

2. Controls and Indication

   The primary APU controls and indications are installed on the overhead panel, on the center pedestal and on the center instrument panel. Additionally, an external APU panel is installed on the nose landing gear to initiate an APU emergency shutdown.

**ON A/C A319-100 A319neo

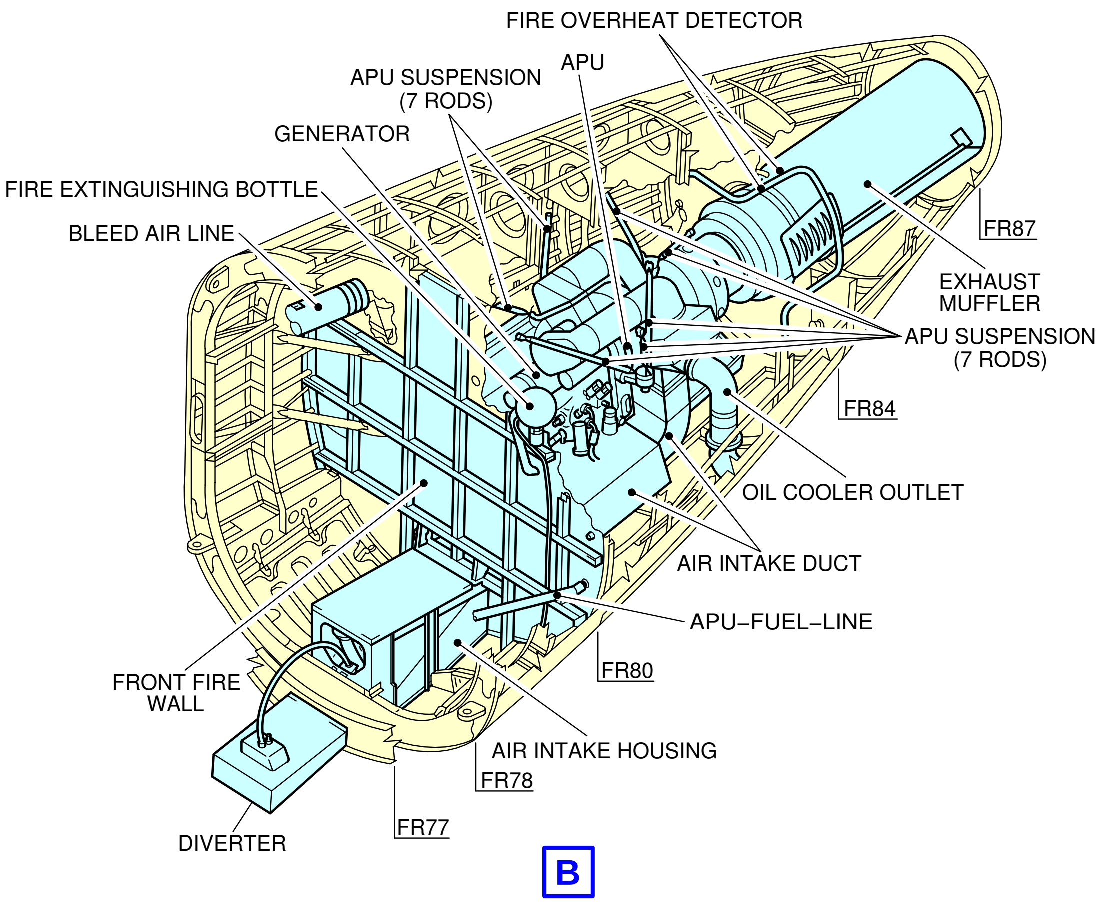


NOTE:
LH ACCESS DOOR 315AL NOT SHOWN FOR CLARITY.

N_AC_021200_1_0030101_01_01

Auxiliary Power Unit
Access Doors
FIGURE-2-12-0-991-003-A01

**ON A/C A319-100 A319neo



N_AC_021200_1_0040101_01_01

Auxiliary Power Unit
General Layout
FIGURE-2-12-0-991-004-A01

****ON A/C A319-100 A319neo**

Engine and Nacelle

****ON A/C A319-100**

1. Engine and Nacelle - CFM Engine

   A. Engine

   The engine is a dual-rotor, variable stator, high bypass ratio turbofan powerplant for subsonic services. The principal modules of the engine are:
   - low pressure compressor (fan stator and fan rotor)
   - high pressure compressor
   - turbine frame
   - combustion chamber
   - high pressure turbine
   - low pressure turbine
   - accessory drives (gear box).

   The 9 stage high pressure compressor is driven by 1 stage high pressure turbine, and the integrated front fan and booster is driven by 4 stage low pressure turbine. An annular combustor converts fuel and compressor discharge air into energy to provide engine thrust part through primary exhaust and to drive the turbines. The accessory drive system extracts energy from the high pressure rotor to drive the engine accessories and the engine mounted aircraft accessories. Reverse thrust for braking the aircraft after landing is supplied by an integrated system which acts on the fan discharge airflow.

   B. Nacelle

   The cowls enclose the periphery of the engine so as to form the engine nacelle. Each engine is housed in a nacelle suspended from a pylon attached to the wing lower surface. The nacelle consists of the demountable powerplant, the fan cowls and the thrust reverser cowls.

   The nacelle installation is designed to provide cooling and ventilation air for engine accessories mounted along the fan and core casing. The nacelle provides:
   - protection for the engine and the accessories
   - airflow around the engine during its operation
   - lighting protection
   - HIRF and EMI attenuation.

2. Engine and Nacelle - IAE Engine

   A. Engine

   The engine is a two spool, axial flow, high bypass ratio turbofan powerplant for subsonic service. The main modules of the engine are:

- low pressure compressor (fan and booster) assembly
- LP compressor/intermediate case
- No. 4 bearing and combustion section
- high pressure compressor
- HP turbine section
- LP turbine section
- accessory drives (gear box).

The four stage Low Pressure Compressor (LPC) is driven by a five stage Low Pressure Turbine (LPT) and the ten stage High Pressure Compressor (HPC) by a two stage High Pressure Turbine (HPT). The HPT also drives a gearbox which, in turn drives the engines and aircraft mounted accessories. The two shafts are supported by five main bearings.

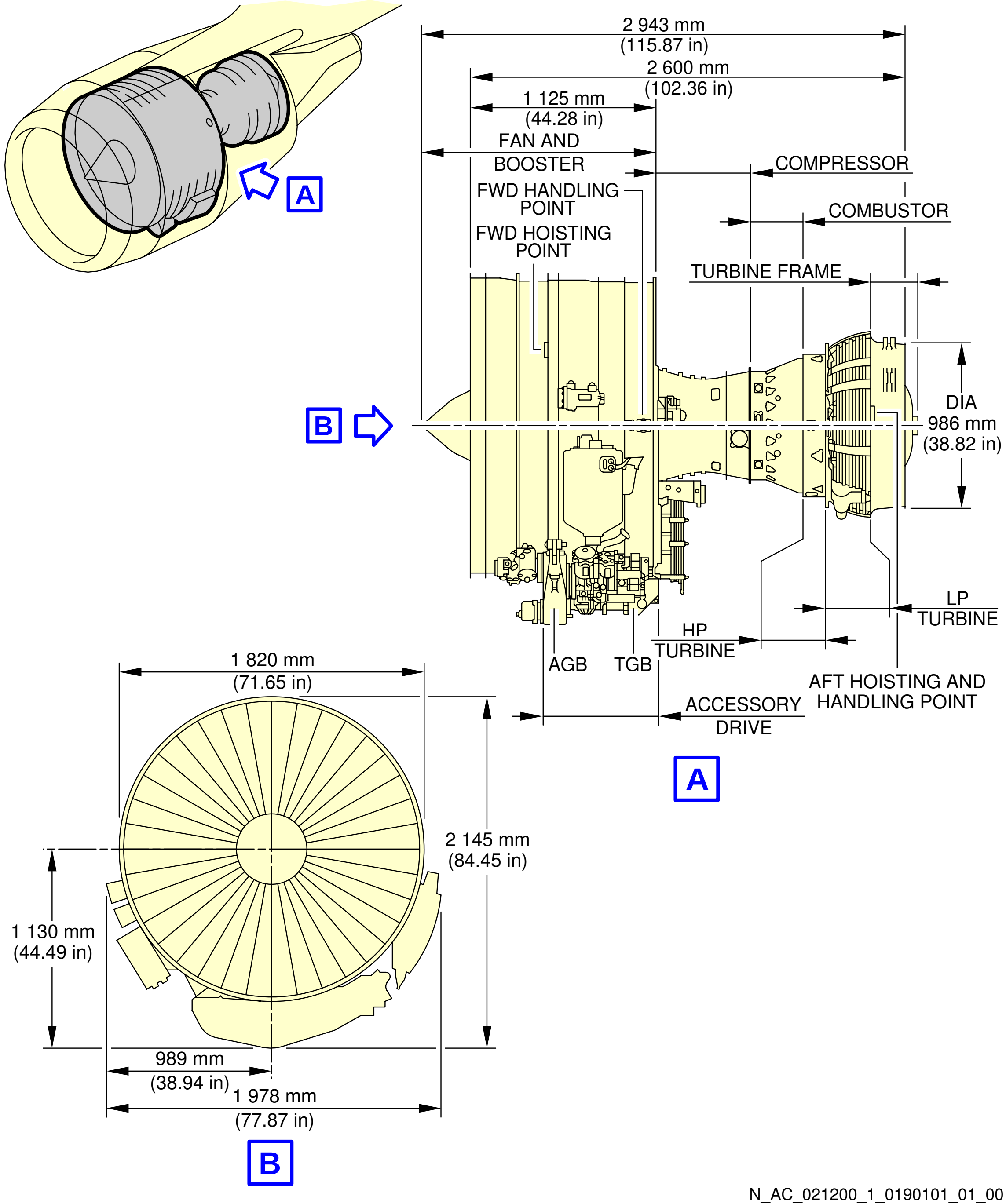
The V2500 incorporates a Full Authority Digital Engine Control (FADEC) which governs all engine functions, including power management. Reverse thrust for braking the aircraft after landing is supplied by an integrated system which acts on the fan discharge airflow.

B. Nacelle

The cowls enclose the periphery of the engine so as to form the engine nacelle. Each engine is housed in a nacelle suspended from a pylon attached below the wing.

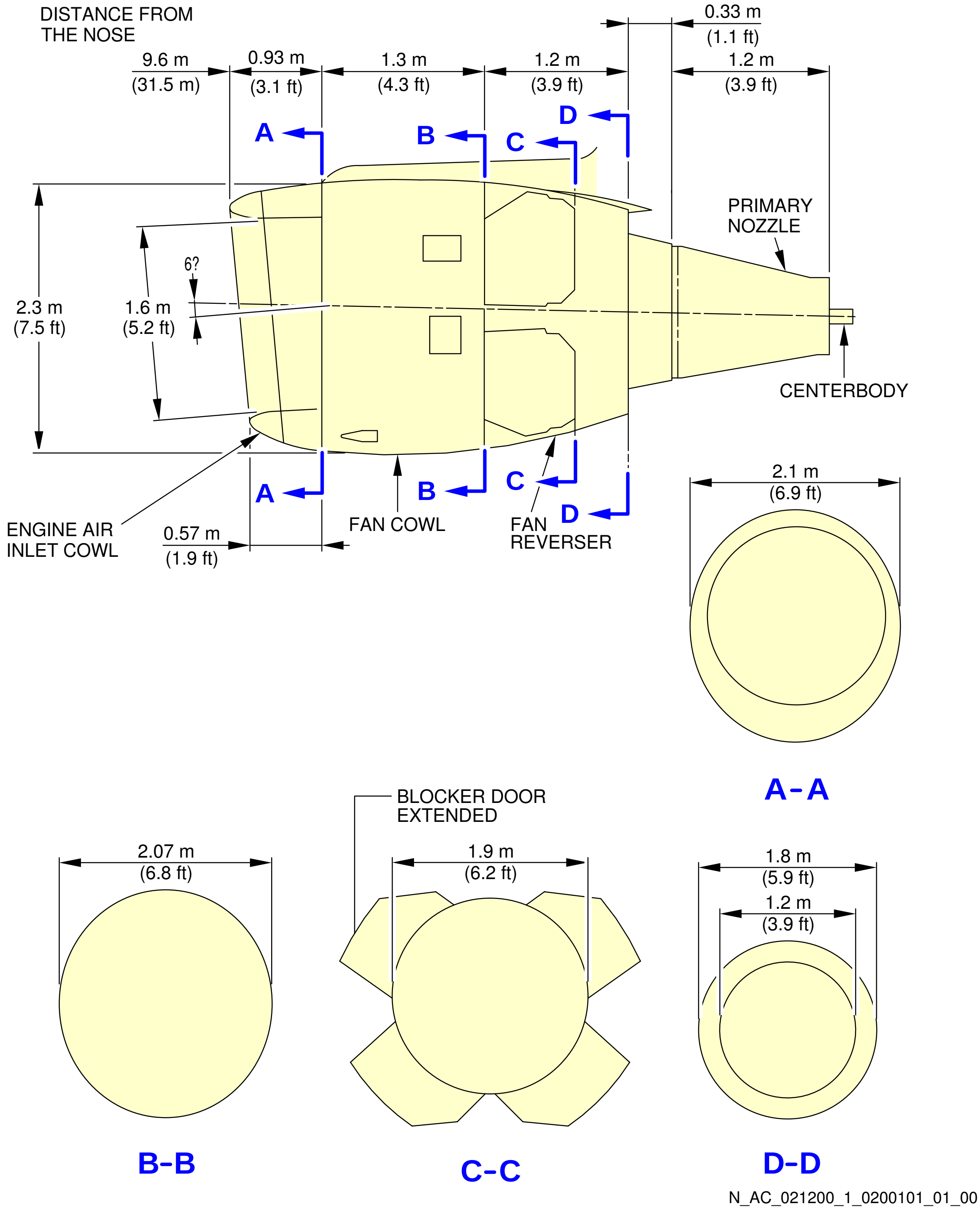
The nacelle installation is designed to provide cooling and ventilation air for engine accessories mounted along the fan and core casing. The nacelle provides:
- protection for the engine and the accessories
- airflow around the engine during its operation
- lighting protection
- HIRF and EMI attenuation.

**ON A/C A319-100



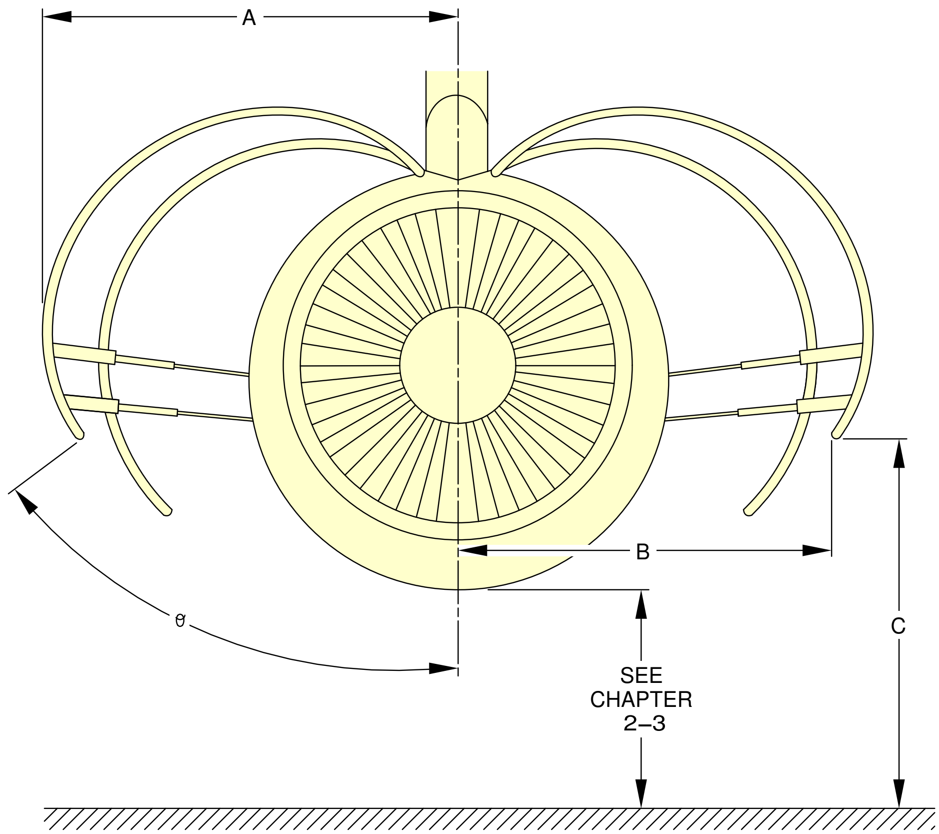
Power Plant Handling
Major Dimensions - CFM56 Series Engine
FIGURE-2-12-0-991-019-A01

**ON A/C A319-100



Power Plant Handling
Major Dimensions - CFM56 Series Engine
FIGURE-2-12-0-991-020-A01

**ON A/C A319-100



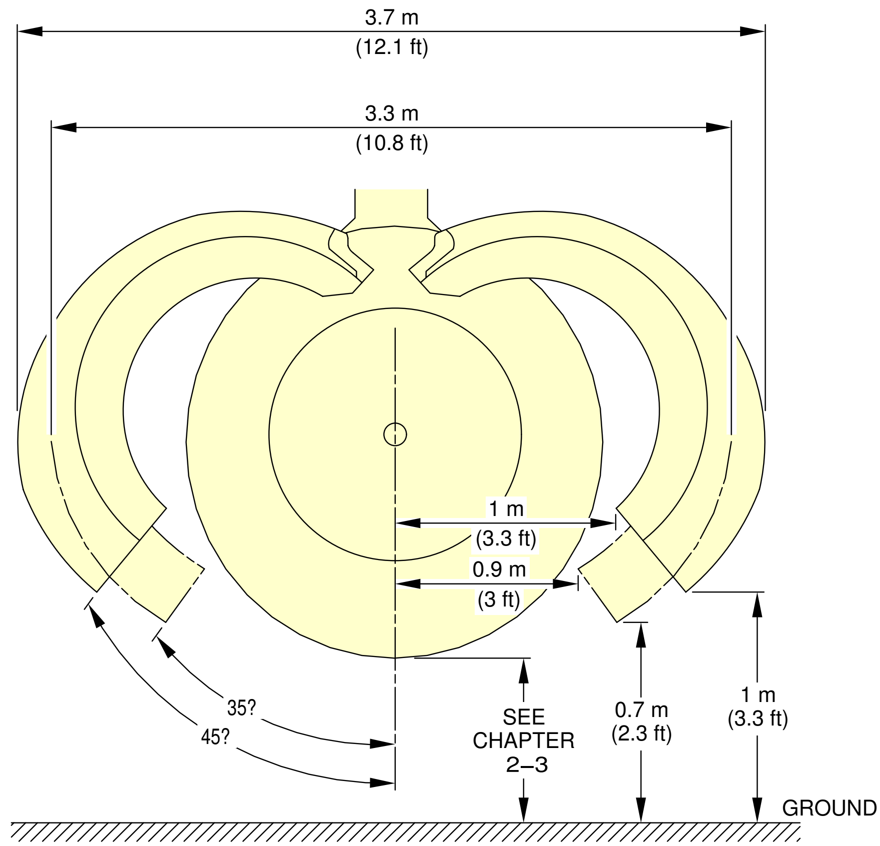
m (ft)	θ	A	B	C
VIEW COWLING AFT	42?27	1.8 (5.9)	1.5 (4.9)	1.3 (4.3)
	55?15	2.0 (6.6)	1.8 (5.9)	1.7 (5.6)
VIEW COWLING FWD	40?40	1.8 (5.9)	1.4 (4.6)	1.3 (4.3)
	52?56	2.0 (6.6)	1.7 (5.6)	1.6 (5.2)

NOTE: APPROXIMATE DIMENSIONS.

N_AC_021200_1_0210101_01_01

Power Plant Handling
Fan Cowls - CFM56 Series Engine
FIGURE-2-12-0-991-021-A01

**ON A/C A319-100



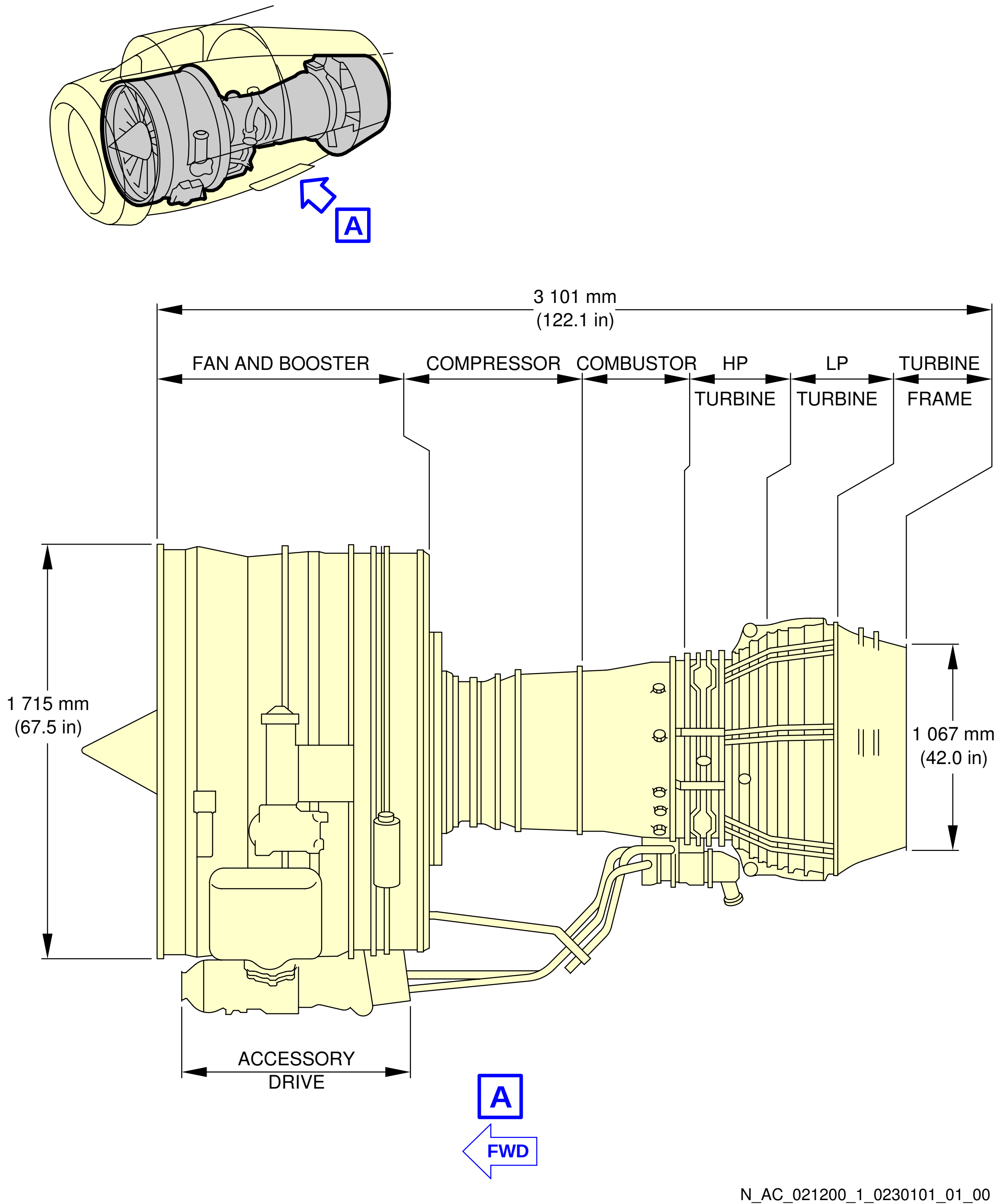
NOTE: APPROXIMATE DIMENSIONS.

CAUTION
DO NOT ACTUATE SLATS:
- WITH THRUST REVERSER COWLS 45? OPEN POSITION
- WITH BLOCKER DOORS OPEN AND THRUST REVERSER COWLS AT 35? AND 45? OPEN POSITION.

N_AC_021200_1_0220101_01_01

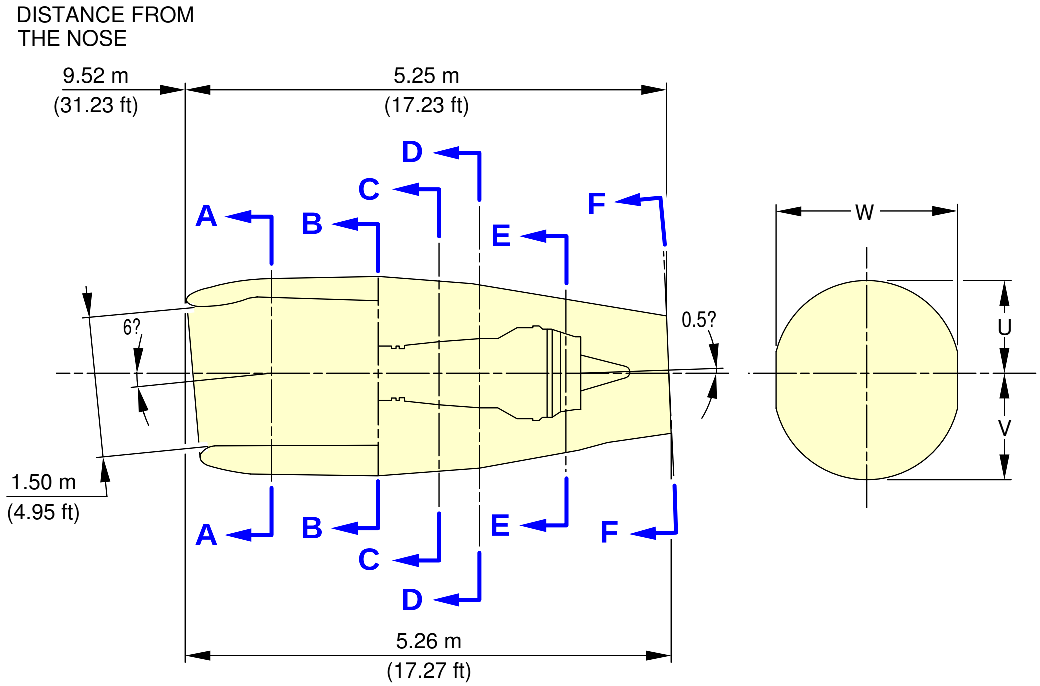
Power Plant Handling
Thrust Reverser Cowls - CFM56 Series Engine
FIGURE-2-12-0-991-022-A01

**ON A/C A319-100



Power Plant Handling
Major Dimensions - IAE V2500 Series Engine
FIGURE-2-12-0-991-023-A01

**ON A/C A319-100



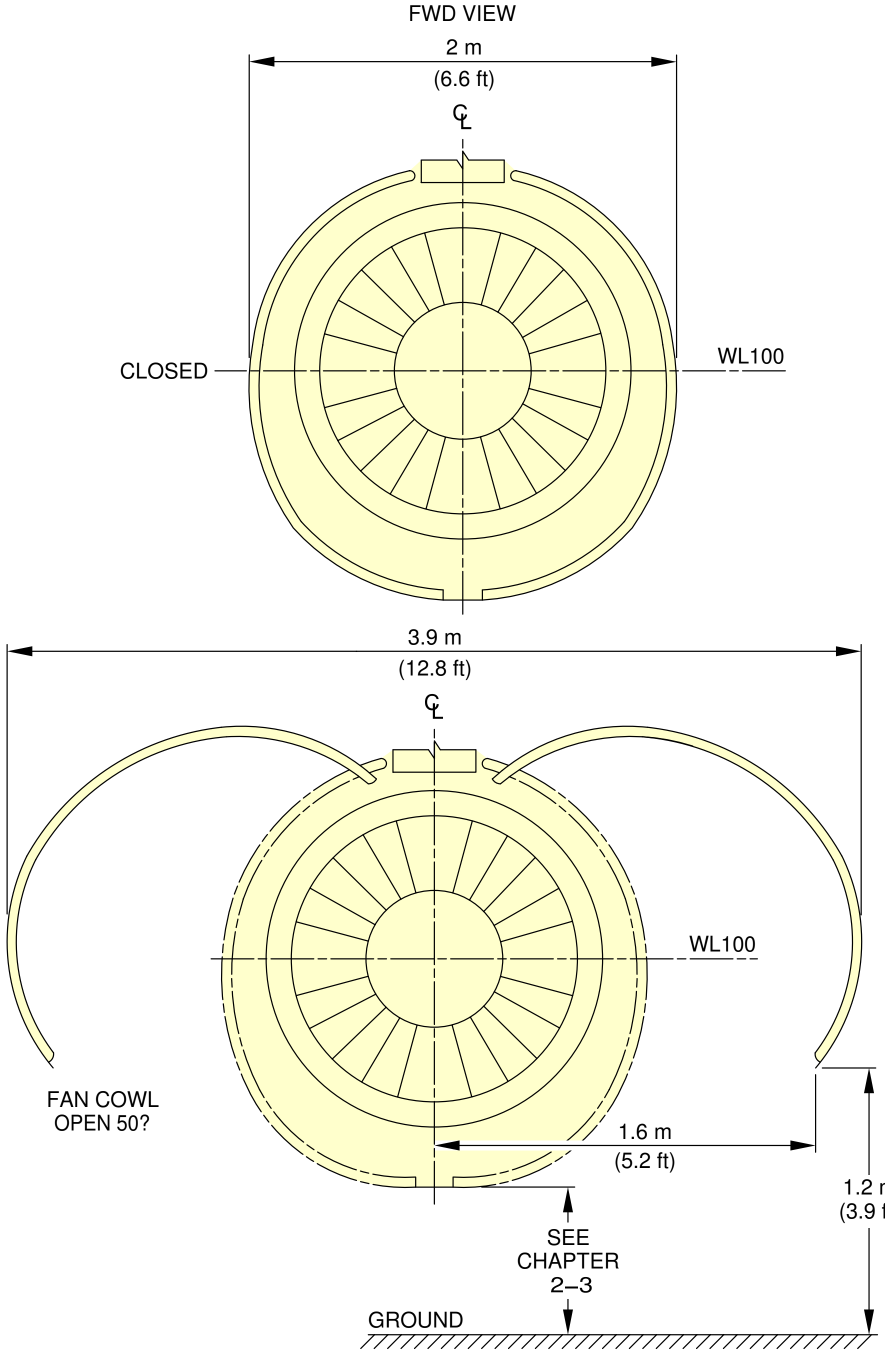
	W		U		V		PPS		AT COMPONENT
	m	ft	m	ft	m	ft	m	ft	
A−A	2.01	6.58	0.99	3.25	1.10	3.63	1.41	4.62	INLET ATTACH FLG
B−B	2.01	6.58	1.00	3.29	1.11	3.64	2.59	8.50	TORQUE BOX "V" BLADE
C−C	1.98	6.50	0.97	3.19	1.07	3.52	3.26	10.70	COMB. CHAMBER ENTRY FLG
D−D	1.93	6.32	0.93	3.06	1.03	3.39	3.63	11.90	COMB. CHAMBER EXIT FLG
E−E	1.64	5.38	0.78	2.57	0.86	2.83	4.60	15.10	TEC FLG TURB. EXIT CASE
F−F	1.24	4.07	0.60	1.96	0.64	2.11	————	————	AFT END CNA

NOTE: ALL SIZES GIVEN ON THIS ILLUSTRATION ARE APPROXIMATE

N_AC_021200_1_0240101_01_00

Power Plant Handling
Major Dimensions - IAE V2500 Series Engine
FIGURE-2-12-0-991-024-A01

**ON A/C A319-100

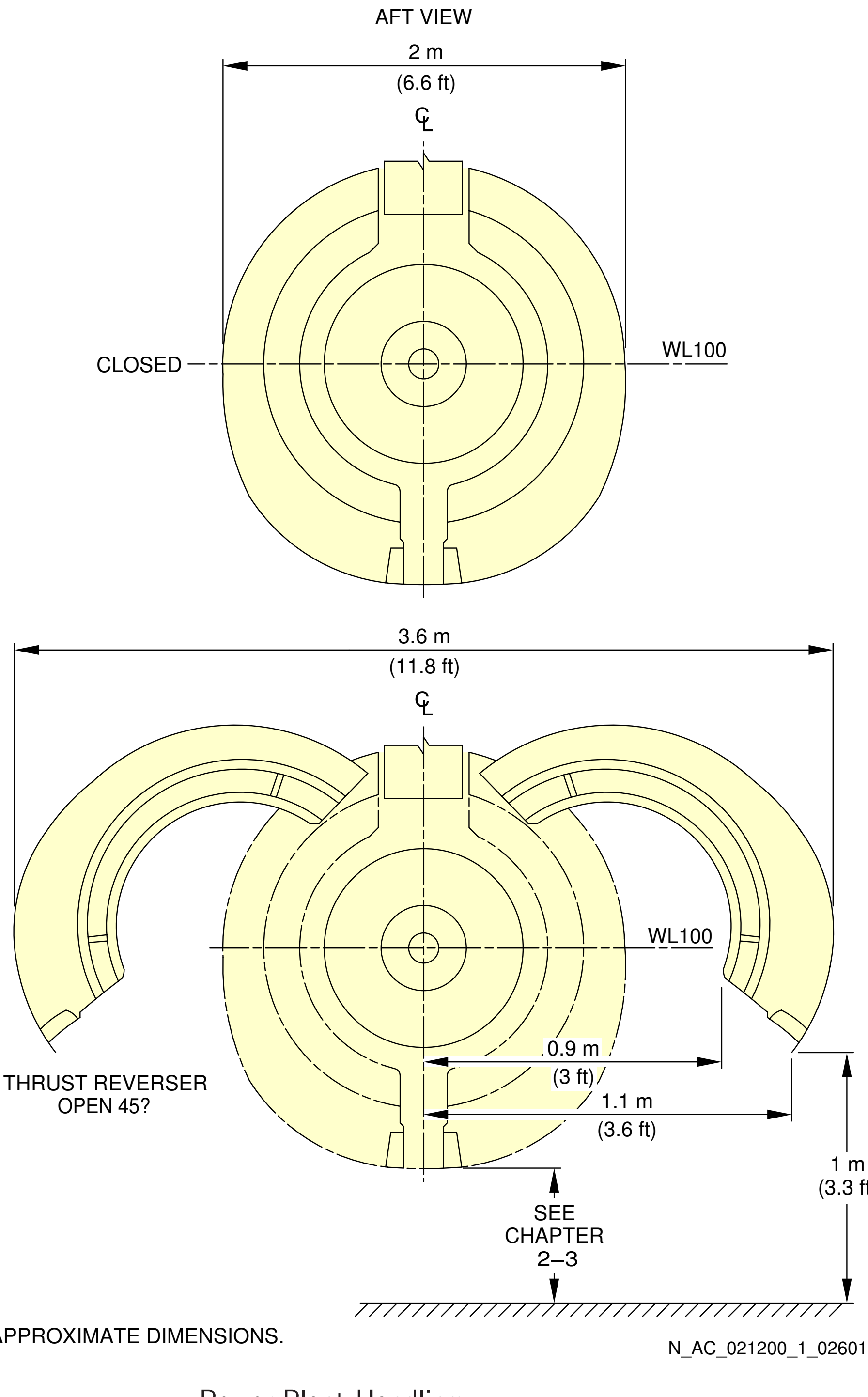


NOTE: APPROXIMATE DIMENSIONS.

N_AC_021200_1_0250101_01_01

Power Plant Handling
Fan Cowls - IAE V2500 Series Engine
FIGURE-2-12-0-991-025-A01

**ON A/C A319-100

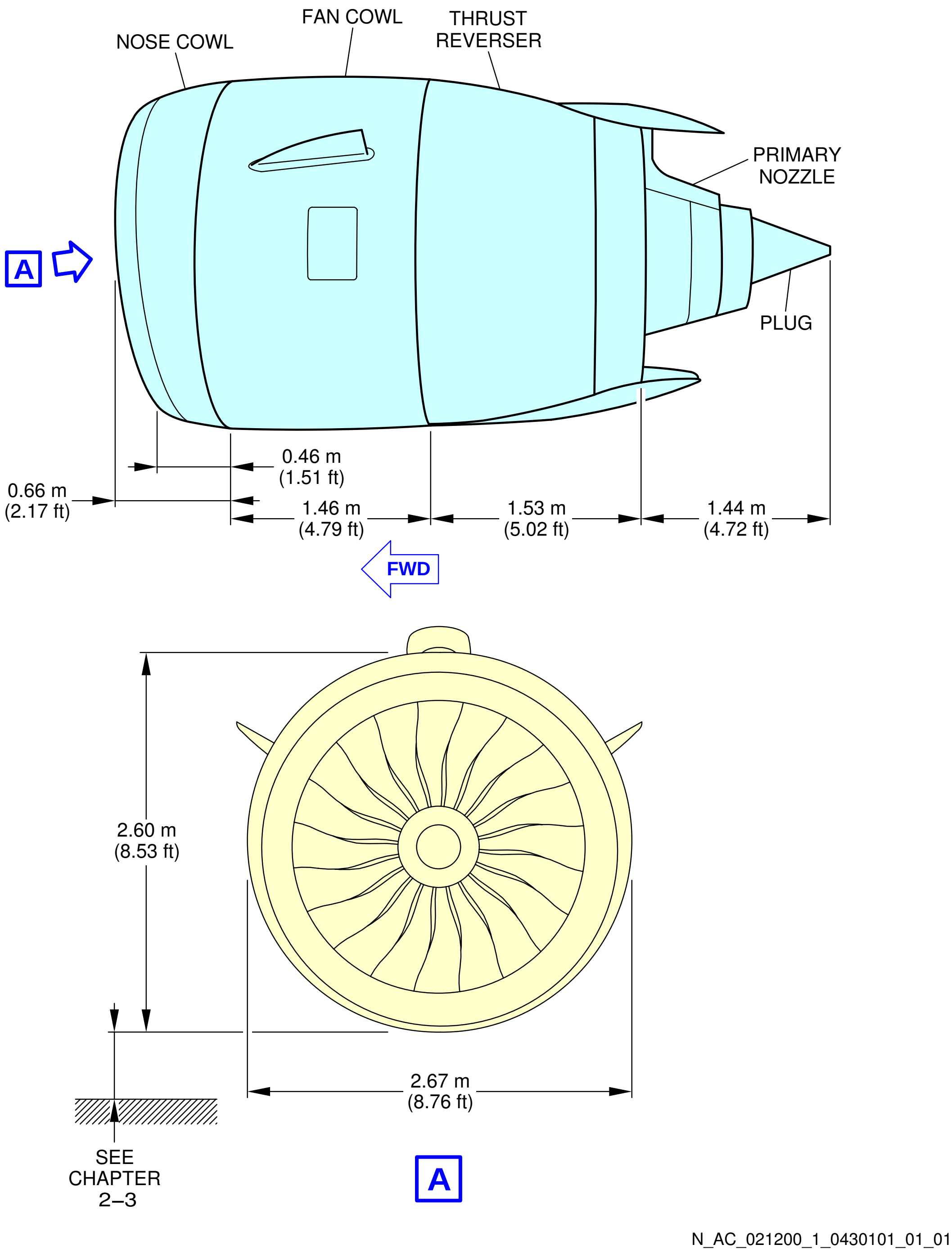


NOTE: APPROXIMATE DIMENSIONS.

N_AC_021200_1_0260101_01_01

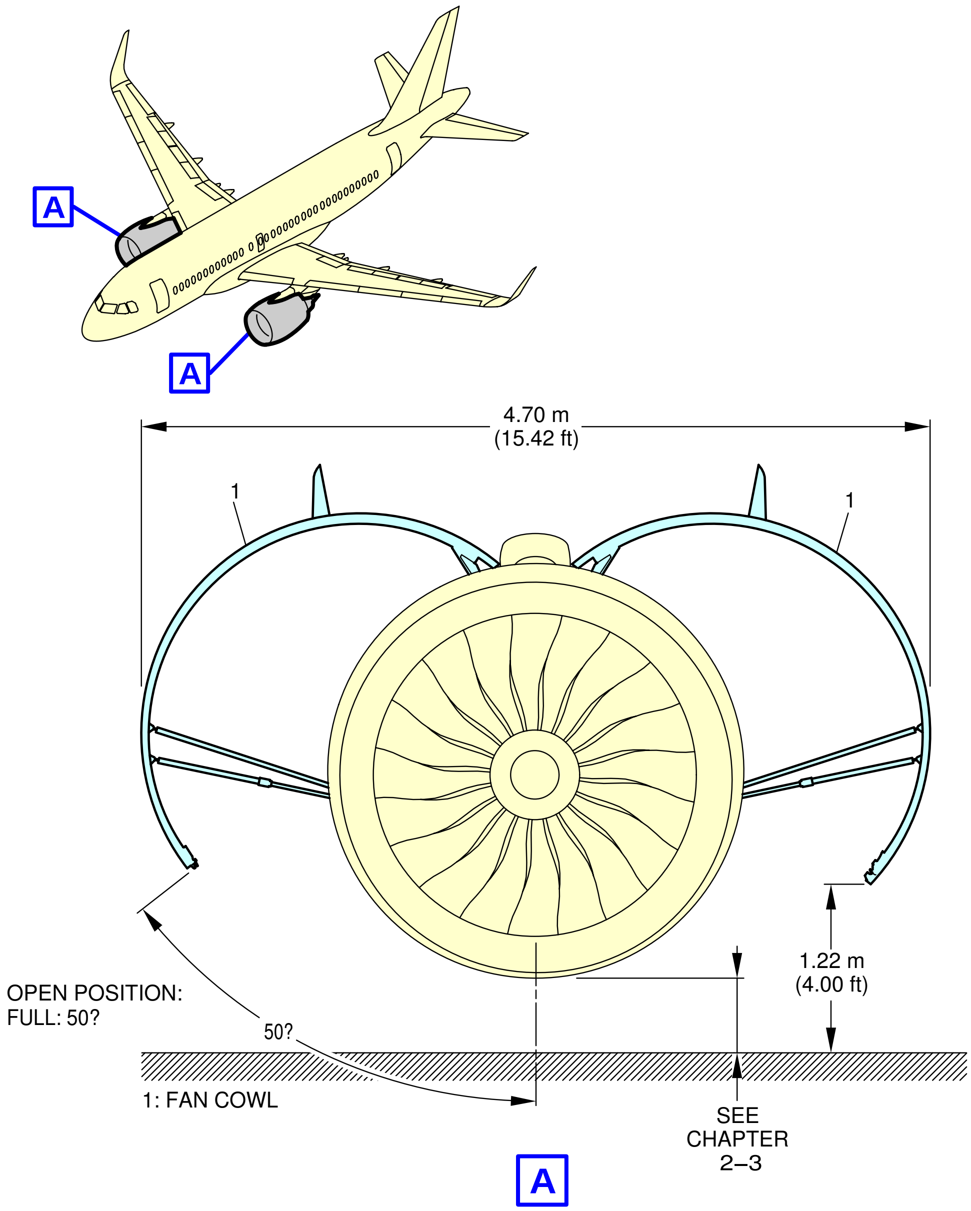
Power Plant Handling
Thrust Reverser Halves - IAE V2500 Series Engine
FIGURE-2-12-0-991-026-A01

**ON A/C A319neo



Power Plant Handling
Major Dimensions - PW 1100G Engine
FIGURE-2-12-0-991-043-A01

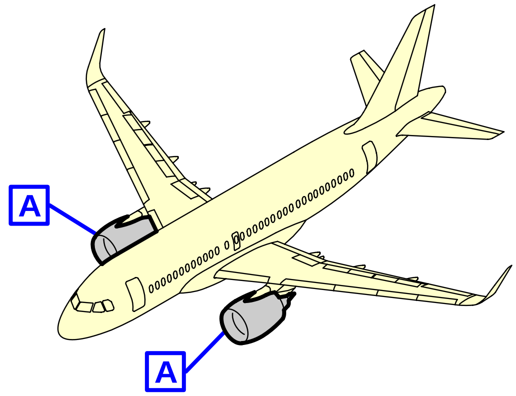
**ON A/C A319neo

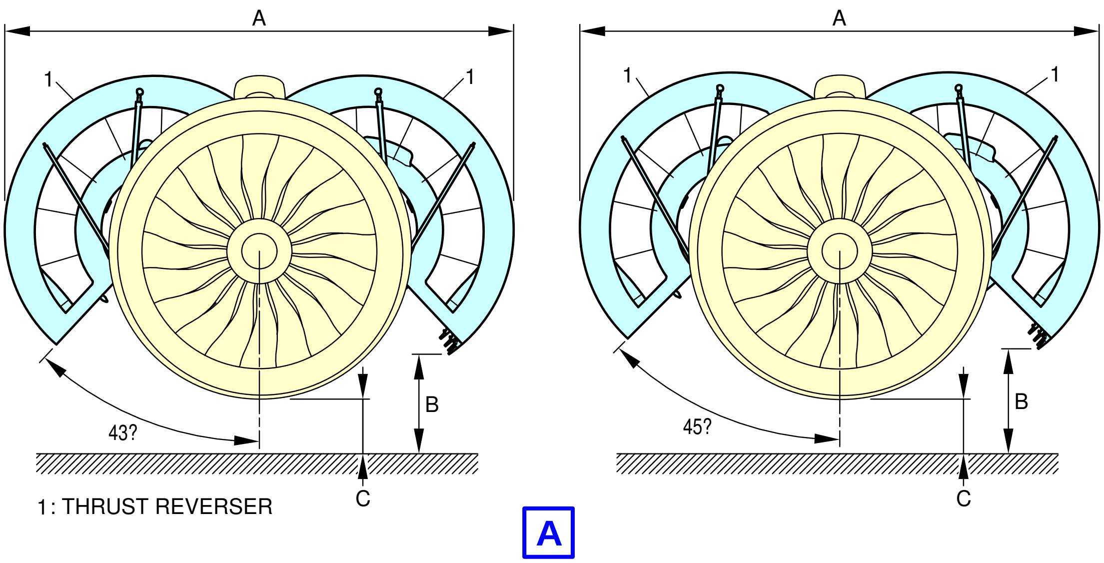


N_AC_021200_1_0440101_01_01

Power Plant Handling
Fan Cowls - PW 1100G Engine
FIGURE-2-12-0-991-044-A01

**ON A/C A319neo





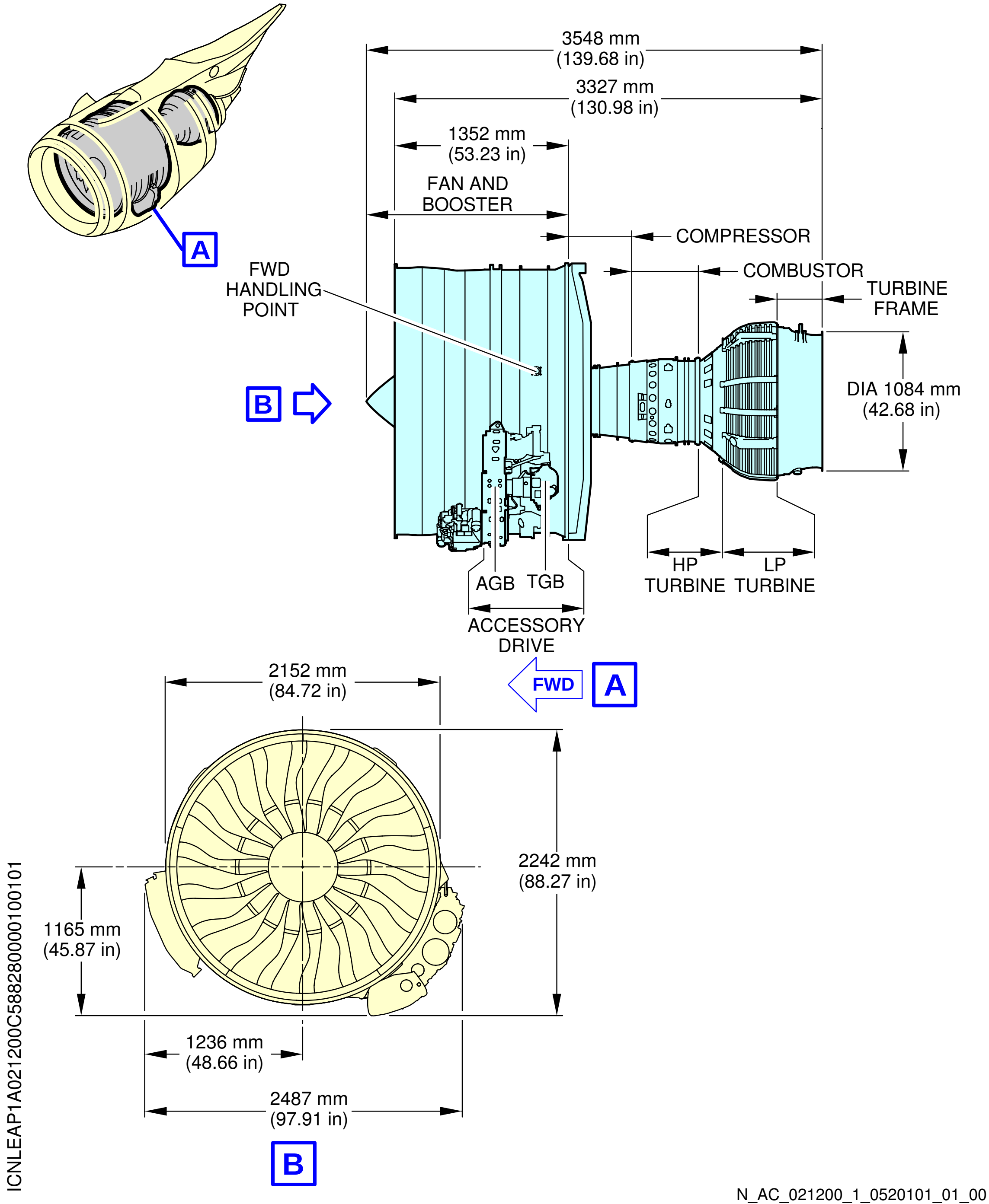
OPEN POSITION	A	B		C
		MIN.	MAX.	
43?	4.26 m (13.98 ft)	0.80 m (2.62 ft)	0.90 m (2.95 ft)	SEE AC SECTION 2–3–0
45?	4.33 m (14.21 ft)	0.84 m (2.76 ft)	0.95 m (3.12 ft)	

NOTE:
B AND C DEPENDING ON AIRCRAFT CONFIGURATION.

N_AC_021200_1_0450101_01_00

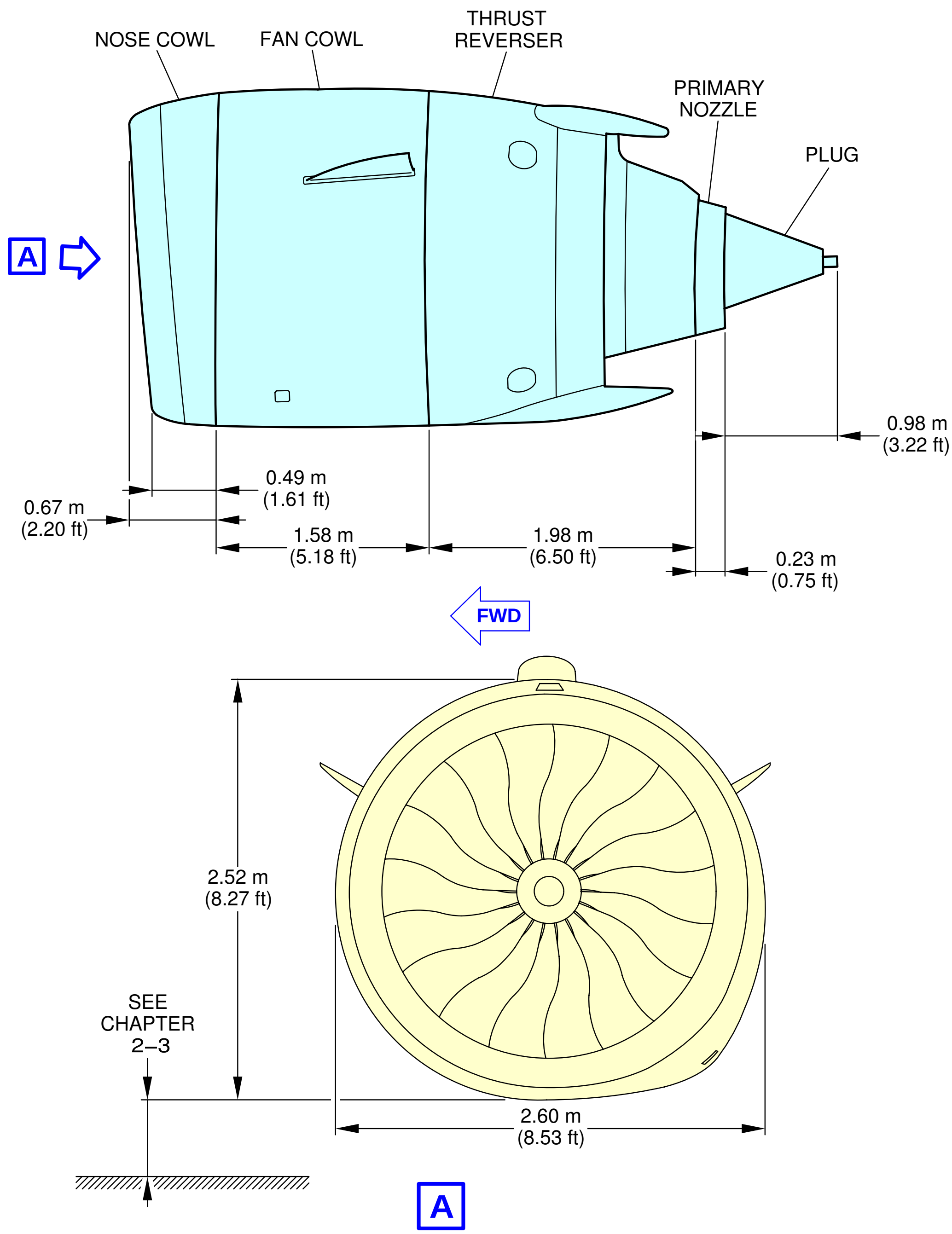
Power Plant Handling
Thrust Reverser Halves - PW 1100G Engine
FIGURE-2-12-0-991-045-A01

****ON A/C A319neo**



Power Plant Handling
Major Dimensions - CFM LEAP-1A Engine
FIGURE-2-12-0-991-052-A01

**ON A/C A319neo



N_AC_021200_1_0530101_01_01

Power Plant Handling
Major Dimensions - CFM LEAP-1A Engine
FIGURE-2-12-0-991-053-A01

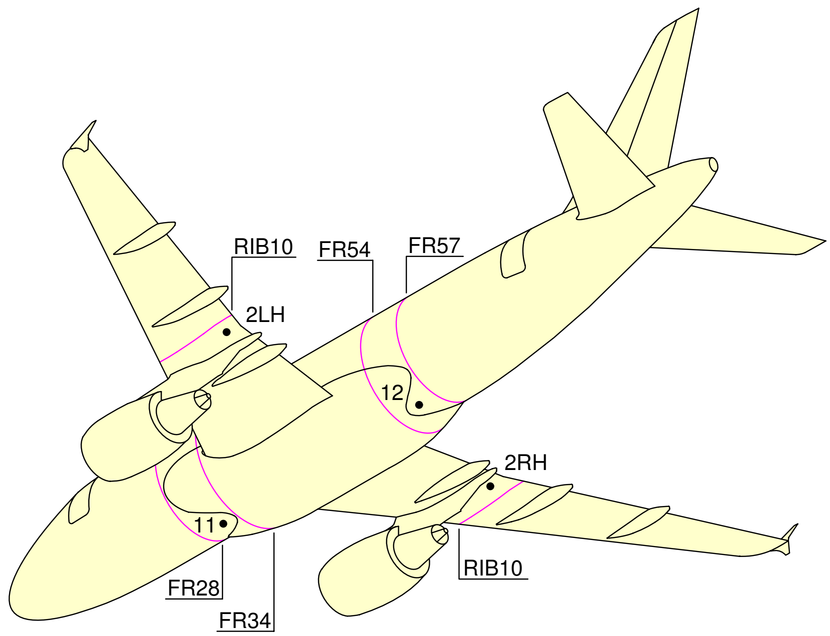
2-13-0 Leveling, Symmetry and Alignment

**ON A/C A319-100 A319neo

Leveling, Symmetry and Alignment

1. Quick Leveling
   There are three alternative procedures to level the aircraft:
   - Quick leveling procedure with Air Data/Inertial Reference Unit (ADIRU).
   - Quick leveling procedure with a spirit level in the passenger compartment.
   - Quick leveling procedure with a spirit level in the FWD cargo compartment.
2. Precise Leveling
   For precise leveling, it is necessary to install sighting rods in the receptacles located under the fuselage (points 11 and 12 for longitudinal leveling) and under the wings (points 2LH and 2RH for lateral leveling) and use a sighting tube. With the aircraft on jacks, adjust the jacks until the reference marks on the sighting rods are aligned in the sighting plane (aircraft level).
3. Symmetry and Alignment Check
   Possible deformation of the aircraft is measured by photogrammetry.

****ON A/C A319-100 A319neo**



N_AC_021300_1_0020101_01_00

Location of the Leveling Points
FIGURE-2-13-0-991-002-A01

2-14-0 Jacking

****ON A/C A319-100 A319neo**

Jacking for Maintenance

1. Aircraft Jacking Points for Maintenance

   A. General

      (1) The A319 can be jacked:
         - At not more than 57 000 kg (125 663 lb),
         - Within the limits of the permissible wind speed when the aircraft is not in a closed environment.

   B. Primary Jacking Points

      (1) The aircraft is provided with three primary jacking points:
         - One located under the forward fuselage (FR8),
         - Two located under the wings (one under each wing, located at the intersection of RIB9 and the datum of the rear spar).

      (2) Three jack adapters are used as intermediary parts between the aircraft and the jacks:
         - One male spherical jack adapter of 19 mm (0.75 in) radius, forming part of the aircraft structure (FR8),
         - Two wing jack pads (one attached to each wing at RIB9 with 2 bolts) for the location of the jack adaptor.
           Wing jack pads are ground equipment.

   C. Auxiliary Jacking Points (Safety Stay)

      (1) When the aircraft is on jacks, it is recommended that a safety stay be placed under the fuselage, between FR73 and FR74, to prevent tail tipping caused by accidental displacement of the center of gravity.

      (2) The safety stay must not be used to lift the aircraft.

      (3) A male spherical ball pad with a 19 mm (0.75 in) radius, forming part of the aircraft structure, is provided for using the safety stay.

2. Jacks and Safety Stay

   A. Jack Design

      (1) The maximum permitted loads given in the table in FIGURE 2-14-0-991-005-A are the maximum loads applicable on jack fittings.

      (2) In the fully retracted position (jack stroke at minimum), the height of the jack is such that the jack may be placed beneath the aircraft in the most adverse conditions, namely, tires deflated and shock absorbers depressurized. In addition, there must be a clearance of approximately 50 mm (1.97 in) between the aircraft jacking point and the jack upper end.

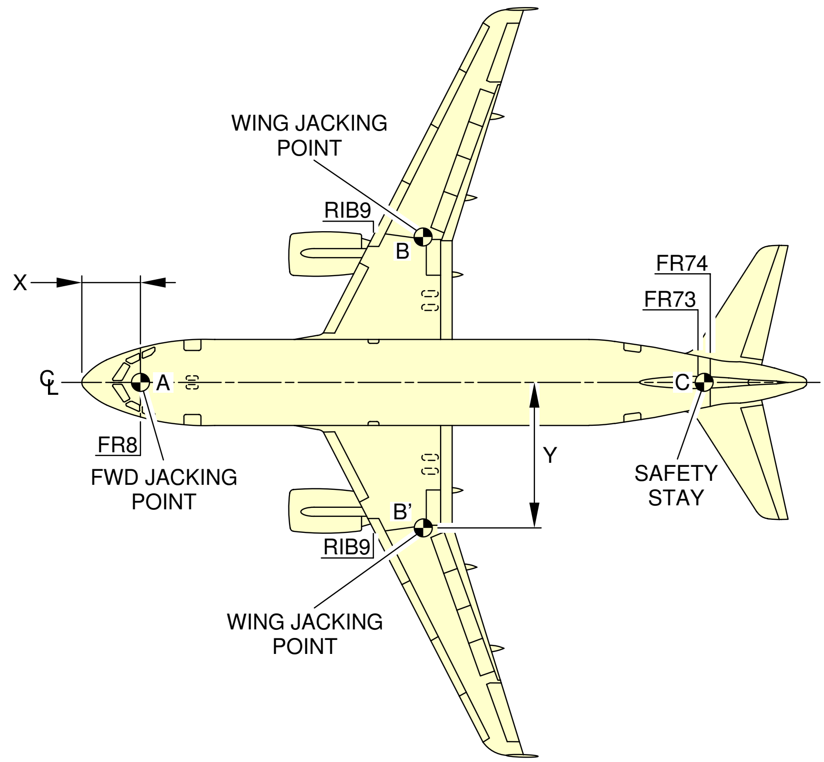
(3) The lifting jack stroke enables the aircraft to be jacked up so that the fuselage longitudinal datum line (aircraft center line) is parallel to the ground, with a clearance of 100 mm (3.94 in) between the main landing gear wheels and the ground. This enables the landing gear extension/retraction tests to be performed.

3. Shoring Cradles

When it is necessary to support the aircraft in order to relieve the loads on the structure to do modifications or major work, shoring cradles shall be placed under each wing and the fuselage as necessary.

NOTE : The aircraft must not be lifted or supported by the wings or fuselage alone without adequate support of the other.

**ON A/C A319-100 A319neo



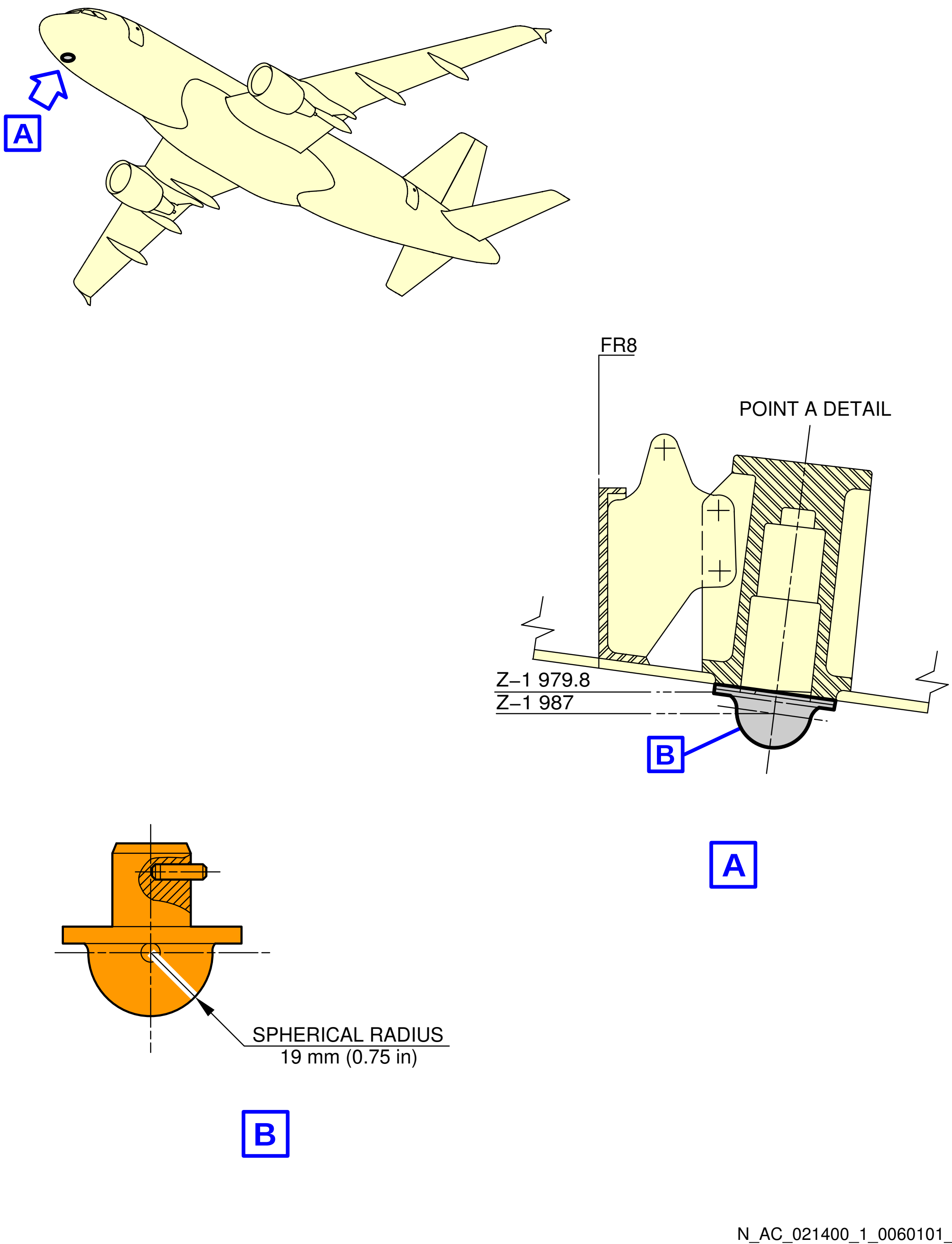
		X		Y		MAXIMUM LOAD ELIGIBLE
		m	ft	m	ft	daN
FORWARD FUSELAGE JACKING POINT	A	2.74	8.99	0	0	6 800
WING JACKING POINT	B	15.97	52.40	6.50	21.33	28 500
	B'	15.97	52.40	–6.50	–21.33	28 500
SAFETY STAY	C	28.83	94.59	0	0	2 000

NOTE:
SAFETY STAY IS NOT USED FOR JACKING.

N_AC_021400_1_0050101_01_02

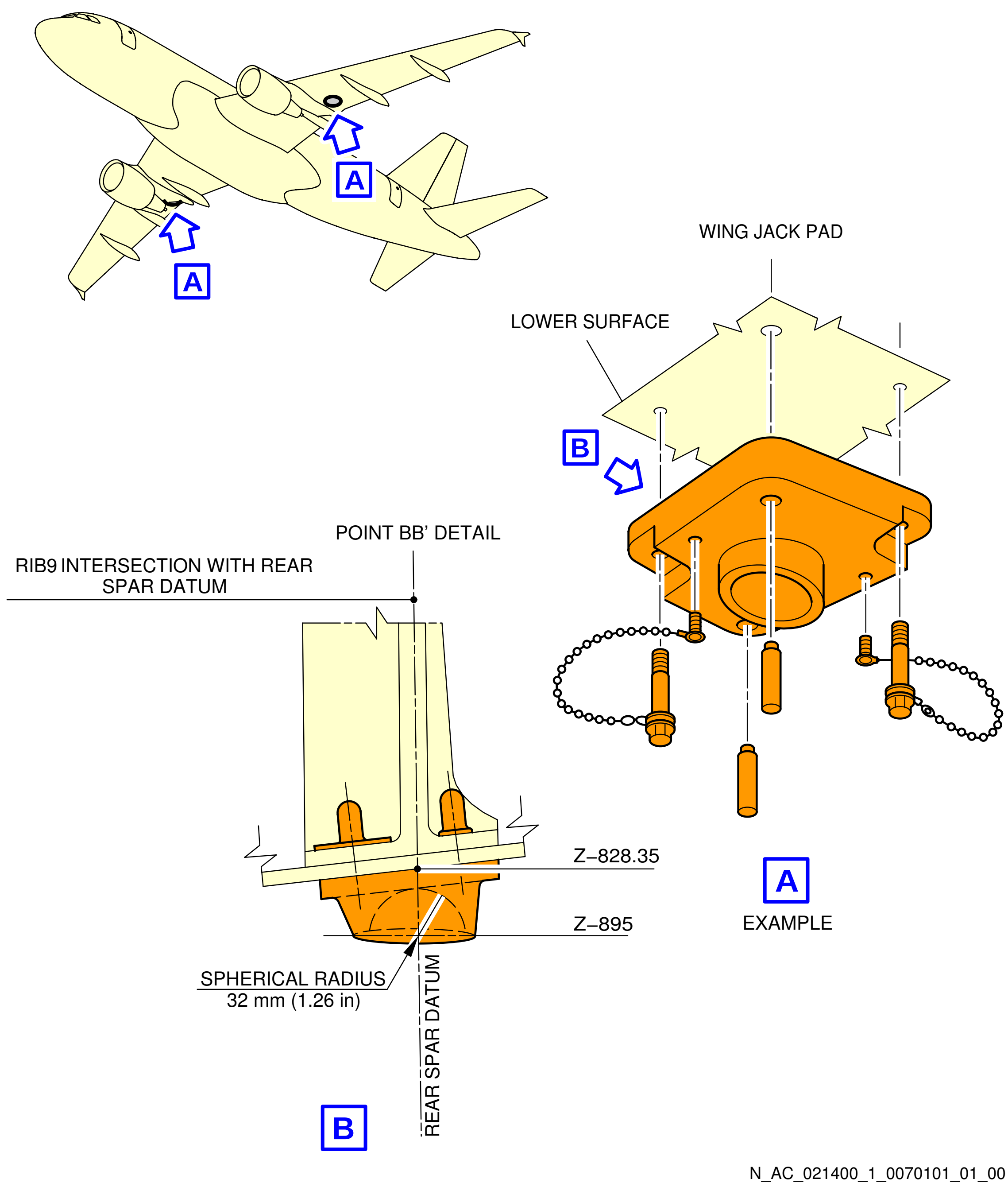
Jacking for Maintenance
Jacking Point Locations
FIGURE-2-14-0-991-005-A01

**ON A/C A319-100 A319neo



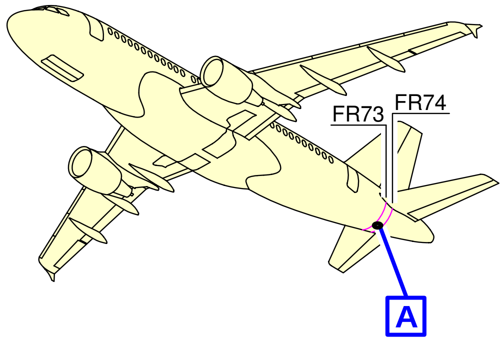
Jacking for Maintenance
Forward Jacking Point
FIGURE-2-14-0-991-006-A01

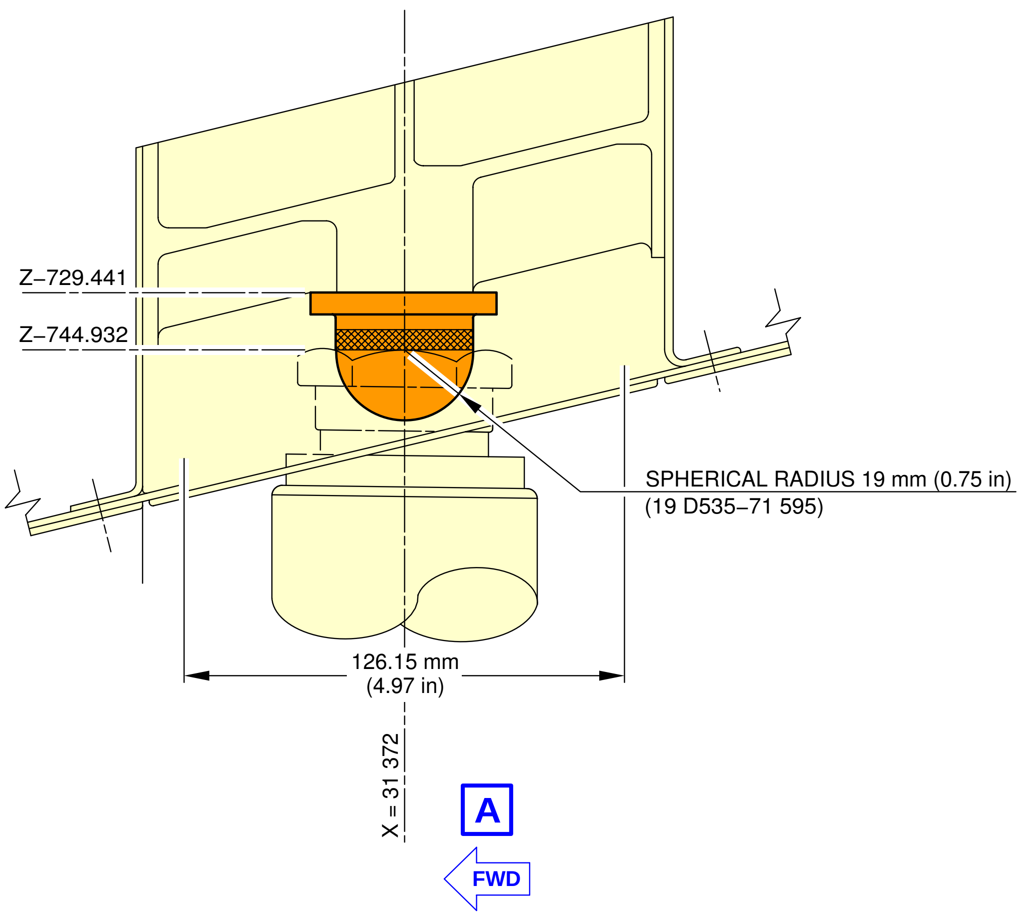
**ON A/C A319-100 A319neo



Jacking for Maintenance
Wing Jacking Points
FIGURE-2-14-0-991-007-A01

****ON A/C A319-100 A319neo**

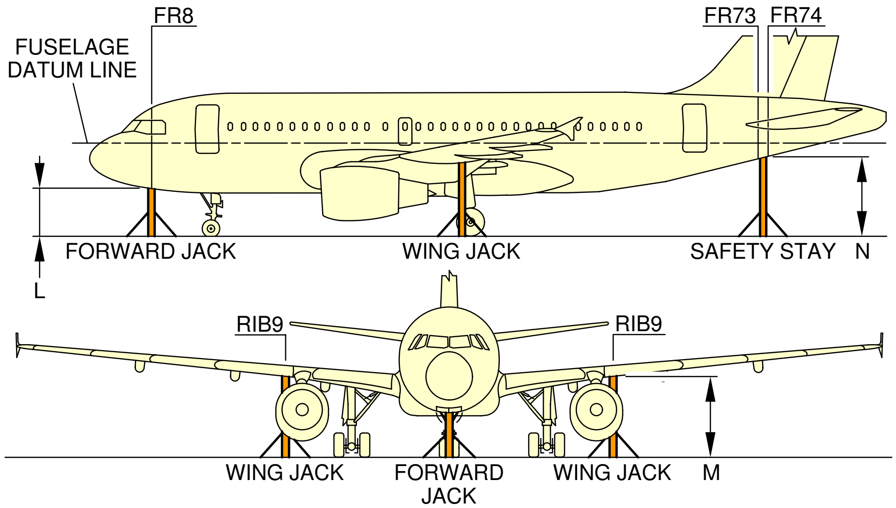




N_AC_021400_1_0080101_01_01

Jacking for Maintenance
Safety Stay
FIGURE-2-14-0-991-008-A01

****ON A/C A319-100 A319neo**



TYPICAL JACK INSTALLATION SHOWN

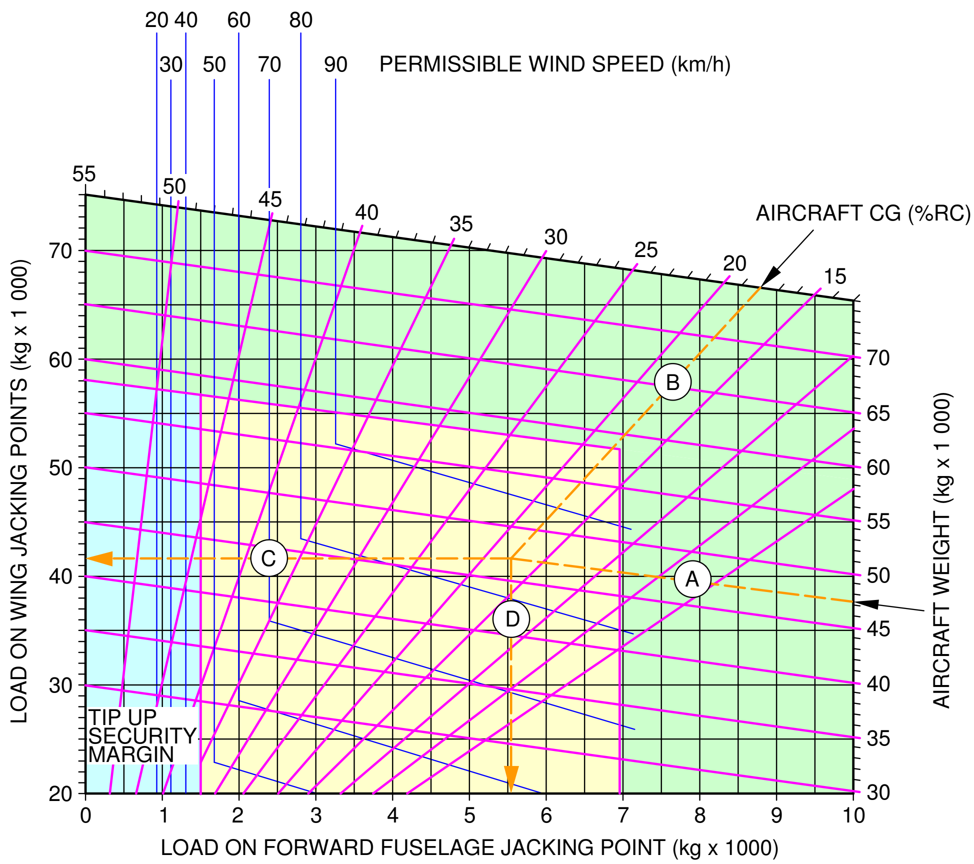
CONFIGURATION	DESCRIPTION	DISTANCE BETWEEN JACKING/SAFETY POINTS AND THE GROUND		
		L (FORWARD JACK)	M (WING JACK)	N (SAFETY STAY)
– AIRCRAFT ON WHEELS	– NLG SHOCK ABSORBER DEFLATED AND NLG TIRES FLAT – MLG STANDARD TIRES, WITH STANDARD SHOCK ABSORBERS	1 576 mm (62.05 in)	3 119 mm (122.80 in)	3 672 mm (144.57 in)
	TIRES FLAT SHOCK ABSORBERS DEFLATED	1 659 mm (65.31 in)	2 736 mm (107.72 in)	2 834 mm (111.57 in)
	STANDARD TIRES STANDARD SHOCK ABSORBERS	1 859 mm (73.19 in)	3 121 mm (122.87 in)	3 400 mm (133.86 in)
– AIRCRAFT ON JACKS (FORWARD JACK AND WING JACKS) – FUSELAGE DATUM LINE PARALLEL TO THE GROUND	STANDARD TIRES MLG SHOCK ABSORBERS EXTENDED WITH WHEEL CLEARANCE OF 120 mm (4.72 in) FOR MLG RETRACTION OR EXTENSION	2 554 mm (100.55 in)	3 655 mm (143.90 in)	3 779 mm (148.78 in)
	STANDARD TIRES MLG SHOCK ABSORBERS EXTENDED WITH WHEEL CLEARANCE OF 770 mm (30.31 in) FOR REPLACEMENT OF THE MLG	3 204 mm (126.14 in)	4 305 mm (169.49 in)	4 429 mm (174.37 in)
– AIRCRAFT ON FORWARD JACK – MLG WHEELS ON THE GROUND	STANDARD TIRES NLG SHOCK ABSORBERS EXTENDED WITH WHEEL CLEARANCE OF 60 mm (2.36 in) FOR NLG RETRACTION OR EXTENSION	2 394 mm (94.25 in)	NA	2 882 mm (113.46 in)

NOTE:
THE SAFETY STAY IS NOT USED FOR JACKING.

N_AC_021400_1_0090101_01_02

Jacking for Maintenance
Jacking Design
FIGURE-2-14-0-991-009-A01

****ON A/C A319-100 A319neo**

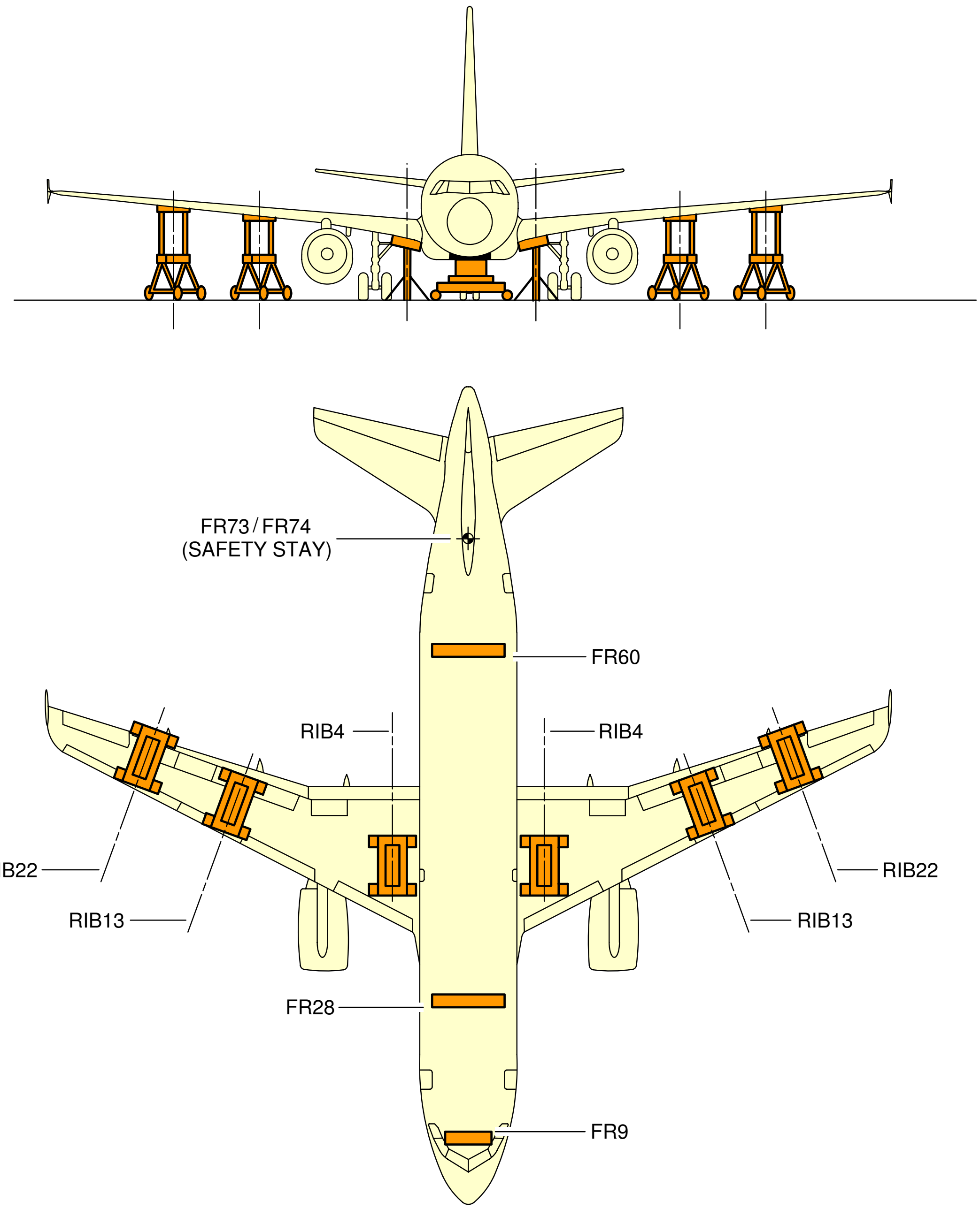


EXAMPLE: ASSUME AIRCRAFT WITH GROSS WEIGHT OF 47 000 kg (A) AND CENTER OF GRAVITY AT 18 % RC (B) . THE REACTION AT THE WING JACKING POINTS IS 41 500 kg (20 750 kg PER SIDE) (C) AND THE REACTION AT THE FORWARD FUSELAGE JACKING POINT IS 5 500 kg (D) . IF THE AIRCRAFT MUST BE LIFTED OUTSIDE THE WIND SPEED MUST NOT BE IN EXCESS OF 84 km/h.

N_AC_021400_1_0100101_01_00

Loads at the Aircraft Jacking Points
Wing Jacking Point and Forward Fuselage Jacking Point
FIGURE-2-14-0-991-010-A01

****ON A/C A319-100 A319neo**



NOTE: THE SHORING CRADLE MUST BE INSTALLED AT THE EXACT LOCATION OF THE FRAME.

N_AC_021400_1_0110101_01_00

Jacking for Maintenance
Location of Shoring Cradles
FIGURE-2-14-0-991-011-A01

****ON A/C A319-100 A319neo**

Jacking of the Landing Gear

1. General

Landing gear jacking will be required to lift the landing gear wheels off the ground.

NOTE : You can lift the aircraft at Maximum Ramp Weight (MRW).

NOTE : The load at each jacking position is the load required to give a 25.4 mm (1 in) clearance between the ground and the tire.

****ON A/C A319-100**

2. Main Gear Jacking

The main gears are normally jacked up by placing a jack directly under the ball pad.

The ball spherical radius is 19 mm (0.75 in).

It is also possible to jack the main gear using a cantilever jack.

The reactions at each of the jacking points are shown in the table, see FIGURE 2-14-0-991-059-A.

****ON A/C A319neo**

3. Main Gear Jacking

The main gears are normally jacked up by placing a jack directly under the ball pad.

The ball spherical radius is 19 mm (0.75 in).

It is also possible to jack the main gear using a cantilever jack.

The reactions at each of the jacking points are shown in the table, see FIGURE 2-14-0-991-062-A.

****ON A/C A319-100**

4. Nose Gear Jacking

For nose gear jacking, a 19 mm (0.75 in) radius ball pad is fitted under the lower end of the shock-absorber sliding tube. Jacking can be accomplished either by placing a jack directly under the ball pad, or using an adapter fitting provided with an identical ball pad.

The reactions at each of the jacking points are shown in the table, see FIGURE 2-14-0-991-059-A.

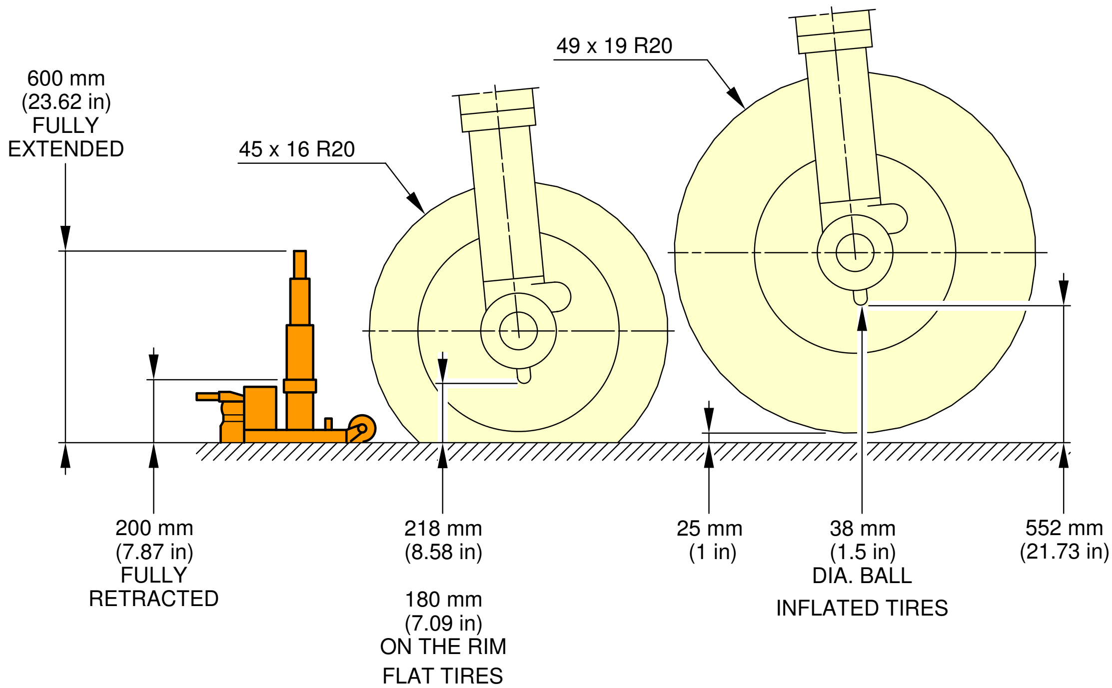
****ON A/C A319neo**

5. Nose Gear Jacking

For nose gear jacking, a 19 mm (0.75 in) radius ball pad is fitted under the lower end of the shock-absorber sliding tube. Jacking can be accomplished either by placing a jack directly under the ball pad, or using an adapter fitting provided with an identical ball pad.

The reactions at each of the jacking points are shown in the table, see FIGURE 2-14-0-991-062-A.

**ON A/C A319-100 A319neo

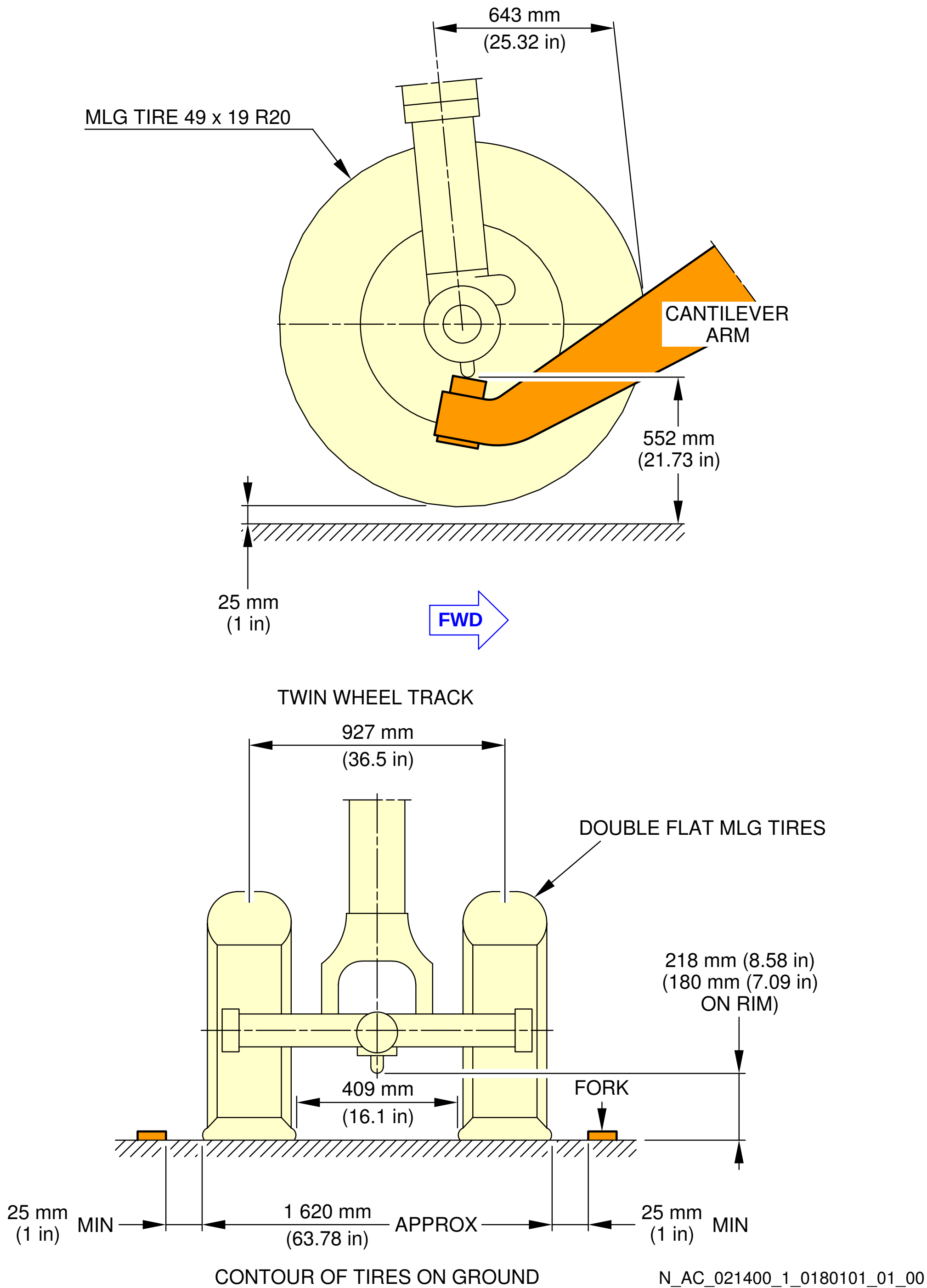


NOTE: TWIN WHEEL TRACK IS 927 mm (36.5 in).
THE FLAT TIRES VIEW SHOWS THE MINIMUM HEIGHT TO ENGAGE JACK WITH 2 FLAT TIRES.
THE INFLATED TIRES VIEW SHOWS THE JACKING HEIGHT TO GIVE 25 mm (1 in) CLEARANCE BETWEEN THE TIRE AND GROUND.

N_AC_021400_1_0170101_01_00

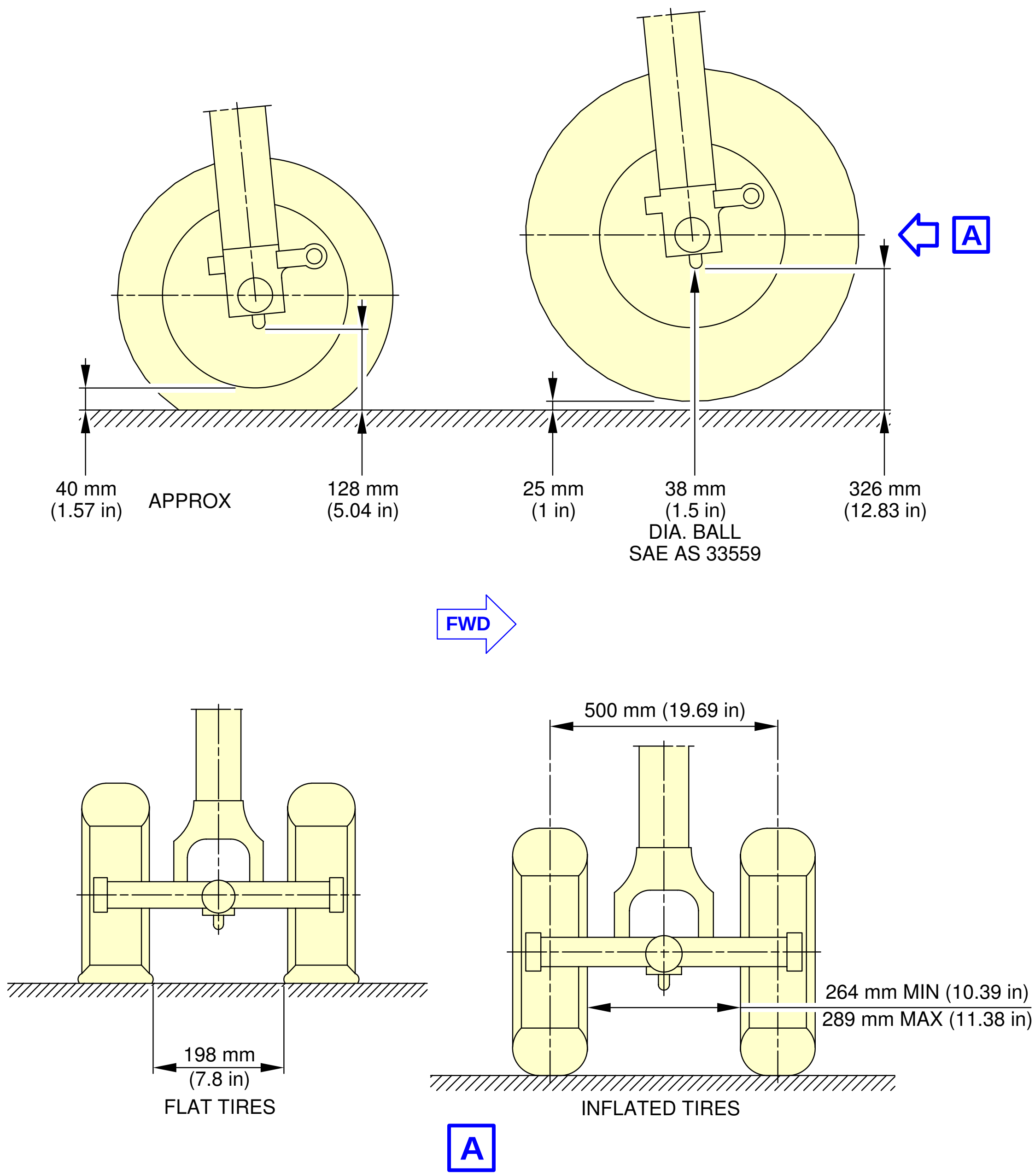
Jacking of the Landing Gear
MLG Jacking Point Location - Twin Wheels
FIGURE-2-14-0-991-017-A01

**ON A/C A319-100 A319neo



Jacking of the Landing Gear
MLG Jacking with Cantilever Jack - Twin Wheels
FIGURE-2-14-0-991-018-A01

**ON A/C A319-100 A319neo



NOTE: THE FLAT TIRES VIEW SHOWS THE MINIMUM HEIGHT TO ENGAGE JACK WITH 2 FLAT TIRES. THE INFLATED TIRES VIEW SHOWS THE JACKING HEIGHT TO GIVE 25 mm (1 in) CLEARANCE BETWEEN THE TIRE AND GROUND.

N_AC_021400_1_0210101_01_00

Jacking of the Landing Gear
NLG Jacking - Point Location
FIGURE-2-14-0-991-021-A01

**ON A/C A319-100

A319–100 AND A319 CJ WV010	
MAXIMUM DESIGN TAXI WEIGHT (MTW)	76 900 kg (169 535 lb)
MAXIMUM DESIGN TAKE–OFF WEIGHT (MTOW)	76 500 kg (168 653 lb)
MAXIMUM LOAD VALUE TO BE APPLIED ON NLG JACKING POINT	11 400 kg (25 133 lb)
NUMBER OF JACKING POINTS ON ONE MLG	1
MAXIMUM LOAD VALUE TO BE APPLIED ON MLG JACKING POINT (LEFT OR RIGHT)	35 000 kg (77 162 lb)

N_AC_021400_1_0590101_01_00

Jacking of the Landing Gear
Maximum Load Capacity to Lift Each Jacking Point
FIGURE-2-14-0-991-059-A01

**ON A/C A319neo

A319 NEO WV054 AND WV055	
MAXIMUM DESIGN TAXI WEIGHT (MTW)	75 900 kg (167 331 lb)
MAXIMUM DESIGN TAKE–OFF WEIGHT (MTOW)	75 500 kg (166 449 lb)
MAXIMUM LOAD VALUE TO BE APPLIED ON NLG JACKING POINT	15 683 kg (34 575 lb)
NUMBER OF JACKING POINTS ON ONE MLG	1
MAXIMUM LOAD VALUE TO BE APPLIED ON MLG JACKING POINT (LEFT OR RIGHT)	46 177 kg (101 803 lb)

N_AC_021400_1_0620101_01_00

Jacking of the Landing Gear
Maximum Load Capacity to Lift Each Jacking Point
FIGURE-2-14-0-991-062-A01

AIRCRAFT PERFORMANCE

3-1-0 General Information

ON A/C A319-100 A319neo

General Information

1. Standard day temperatures for the altitudes shown are tabulated below:

Standard Day Temperatures for the Altitudes			
Altitude		Standard Day Temperature	
FEET	METERS	˚F	˚C
0	0	59.0	15.0
2 000	610	51.9	11.1
4 000	1 220	44.7	7.1
6 000	1 830	37.6	3.1
8 000	2 440	30.5	-0.8

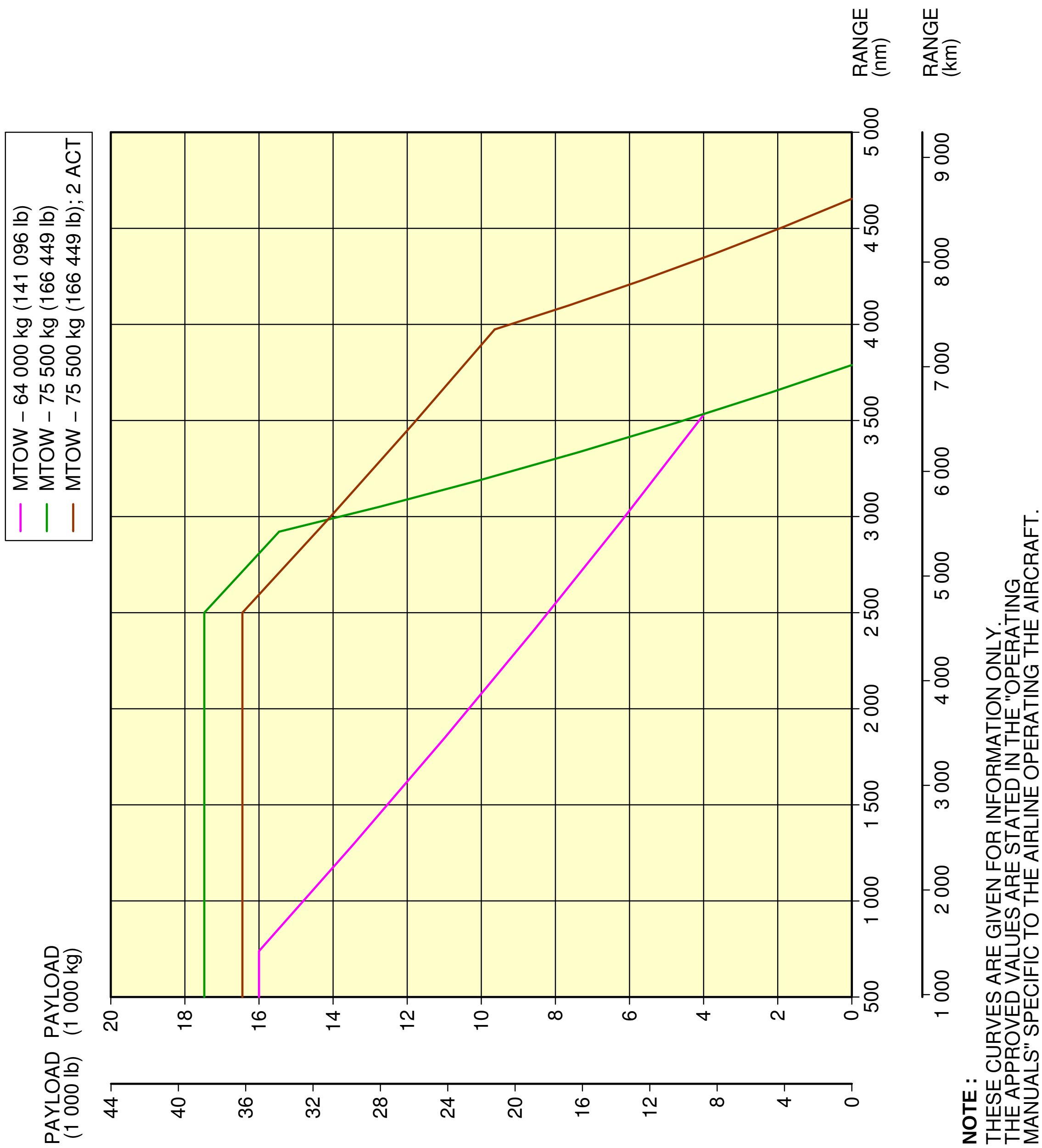
3-2-1 Payload / Range - ISA Conditions

****ON A/C A319-100 A319neo**

Payload/Range - ISA Conditions

1. This section provides the payload/range at ISA conditions.

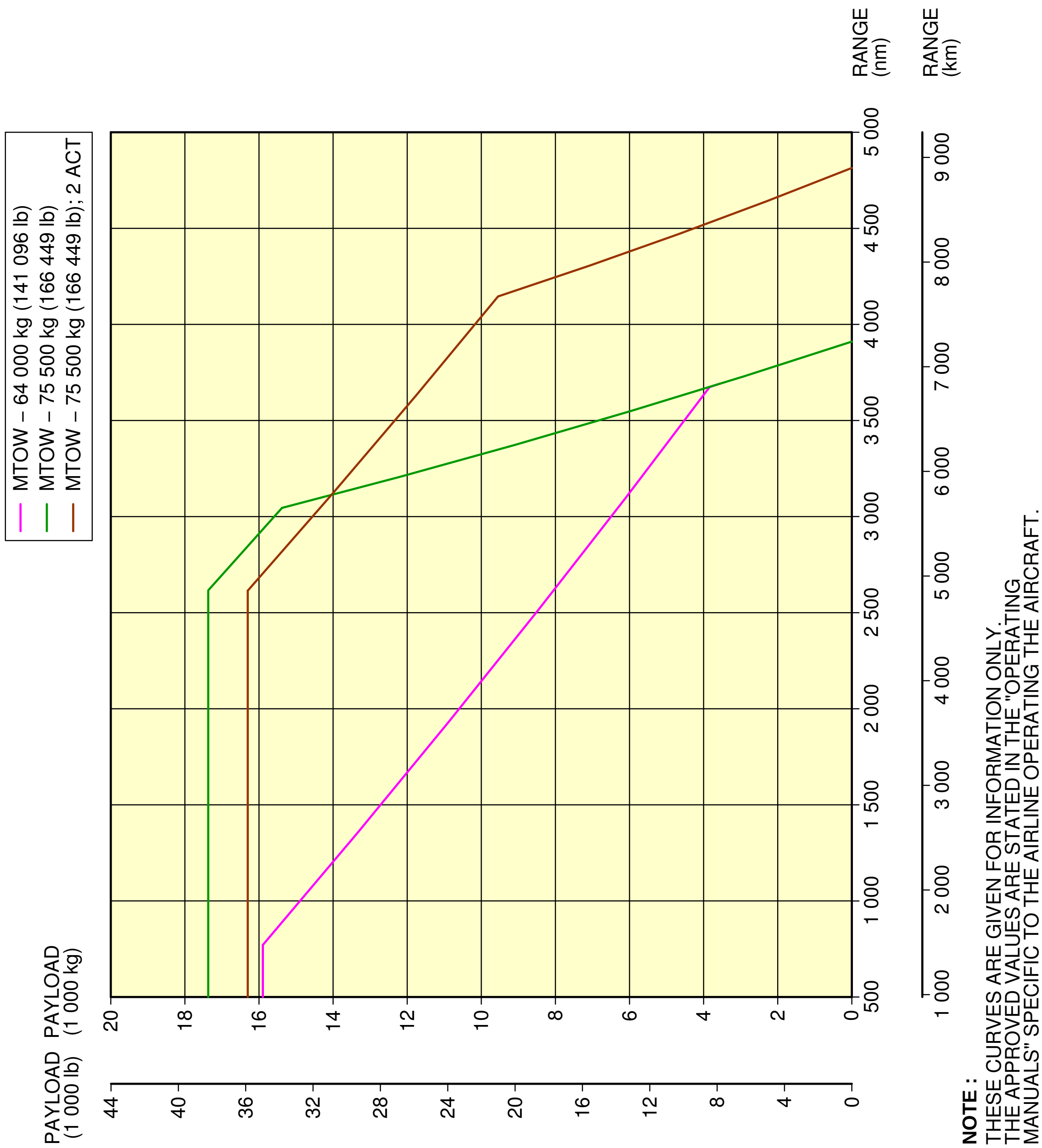
****ON A/C A319-100**



N_AC_030201_1_0130101_01_00

Payload/Range - ISA Conditions
FIGURE-3-2-1-991-013-A01

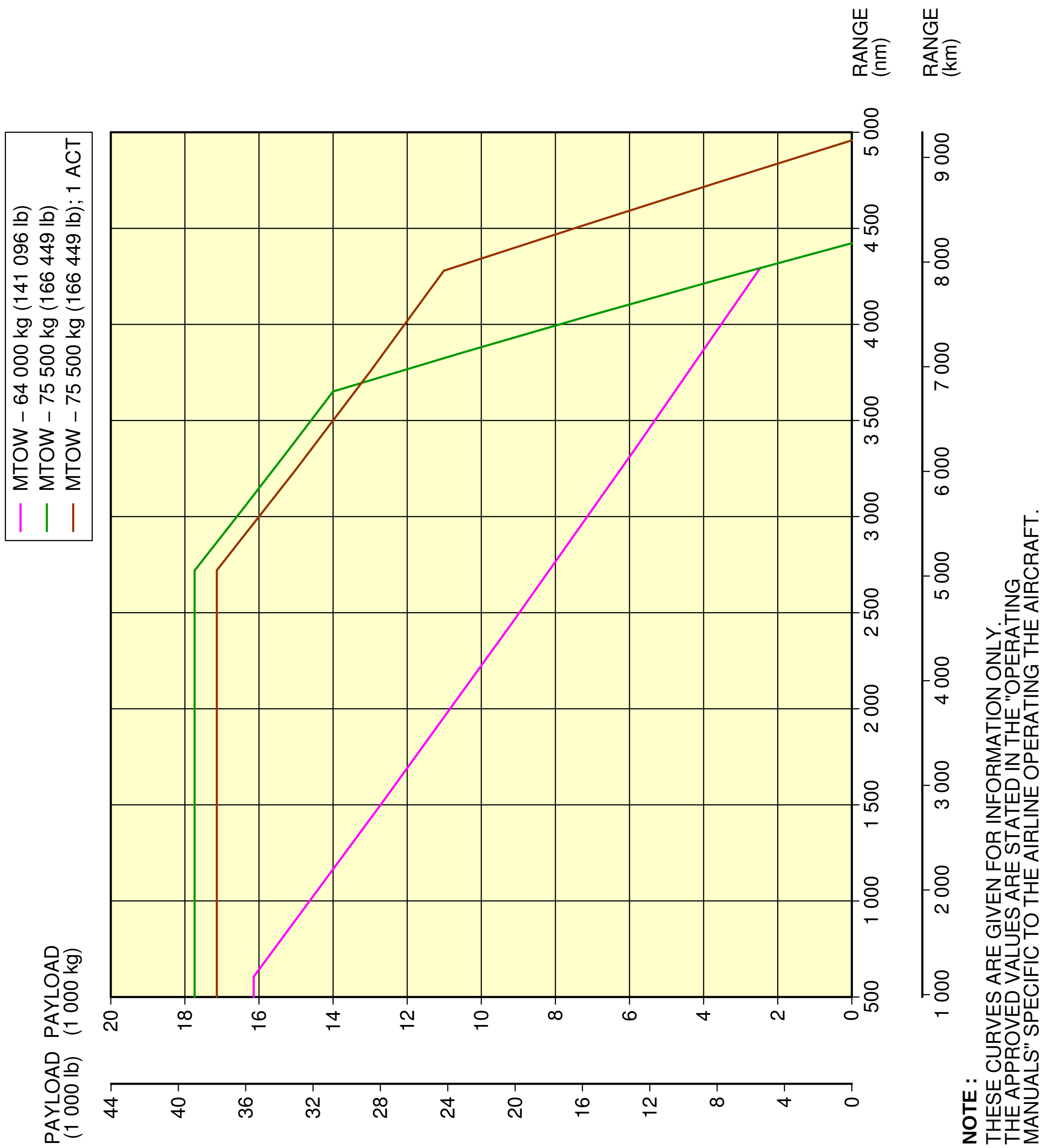
**ON A/C A319-100



N_AC_030201_1_0140101_01_00

Payload/Range - ISA Conditions
Sharklet
FIGURE-3-2-1-991-014-A01

****ON A/C A319neo**



N_AC_030201_1_0150101_01_00

Payload/Range - ISA Conditions
FIGURE-3-2-1-991-015-A01

3-3-1 Take-off Weight Limitation - ISA Conditions

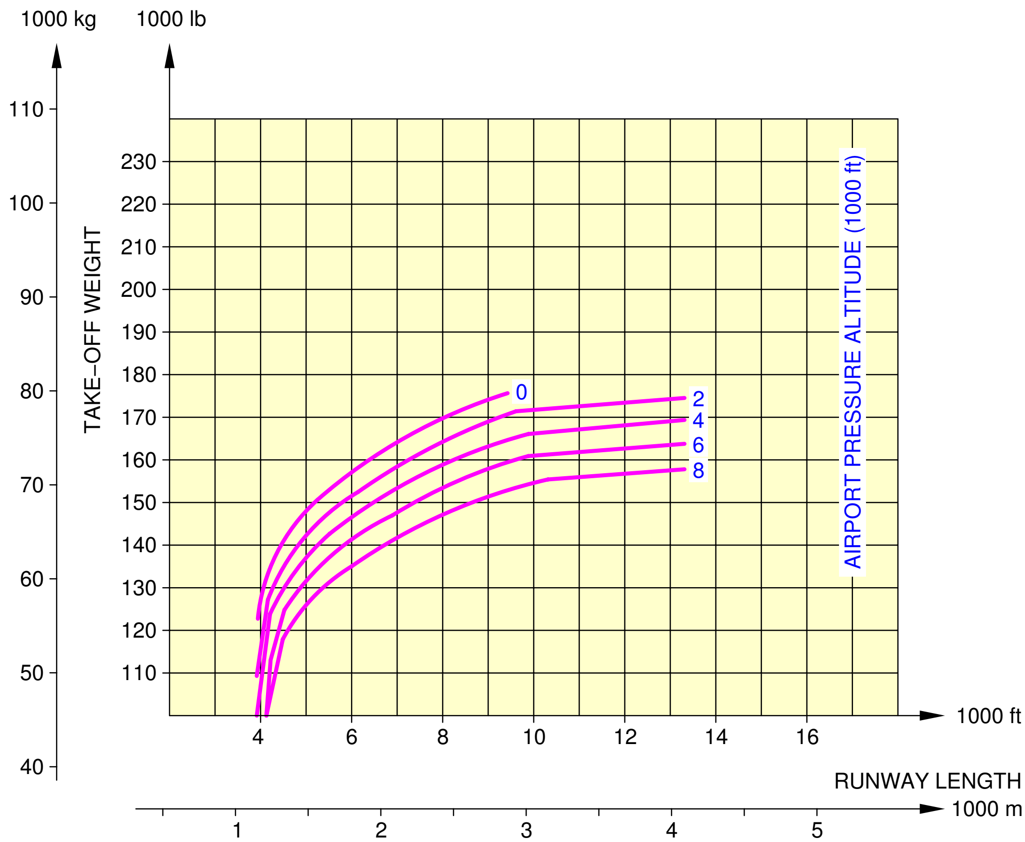
****ON A/C A319-100**

Take-Off Weight Limitation - ISA Conditions

1. This section gives the take-off weight limitation at ISA conditions.

**ON A/C A319-100

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

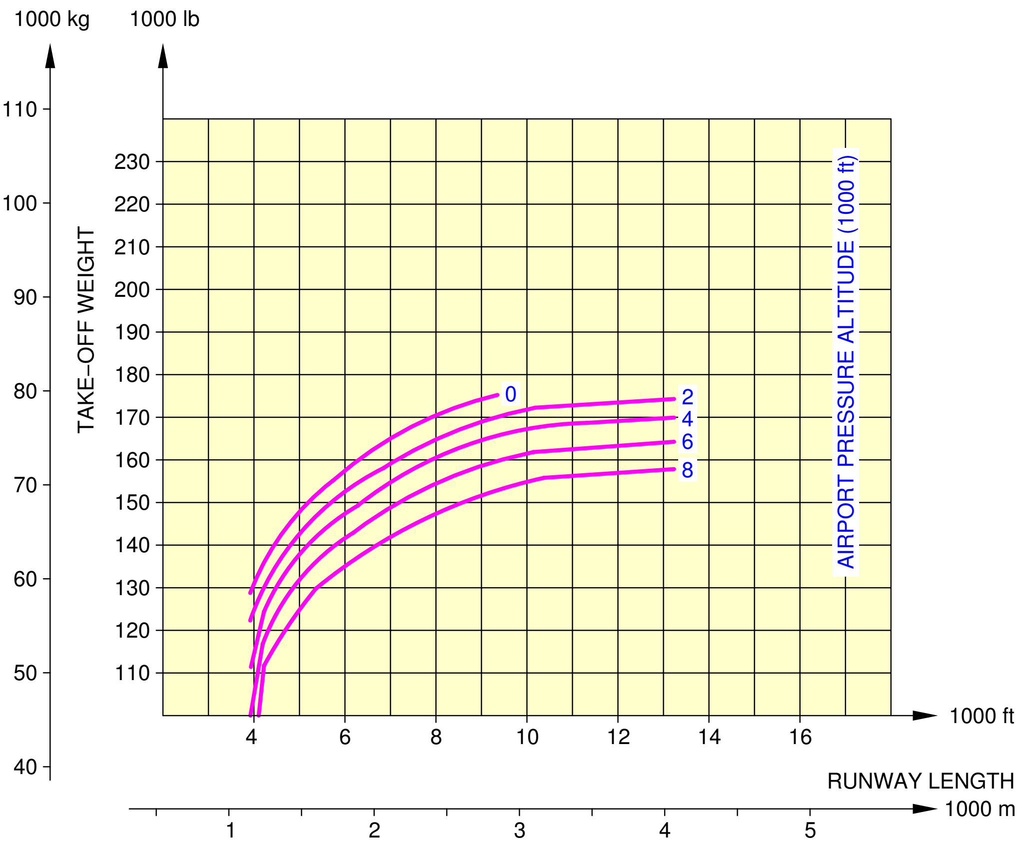


N_AC_030301_1_0030101_01_00

Take-Off Weight Limitation - ISA Conditions
CFM56 Series Engine
FIGURE-3-3-1-991-003-A01

**ON A/C A319-100

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.



N_AC_030301_1_0040101_01_00

Take-Off Weight Limitation - ISA Conditions
IAE V2500 Series Engine
FIGURE-3-3-1-991-004-A01

3-3-2 Take-off Weight Limitation - ISA +15°C (+59°F) Conditions

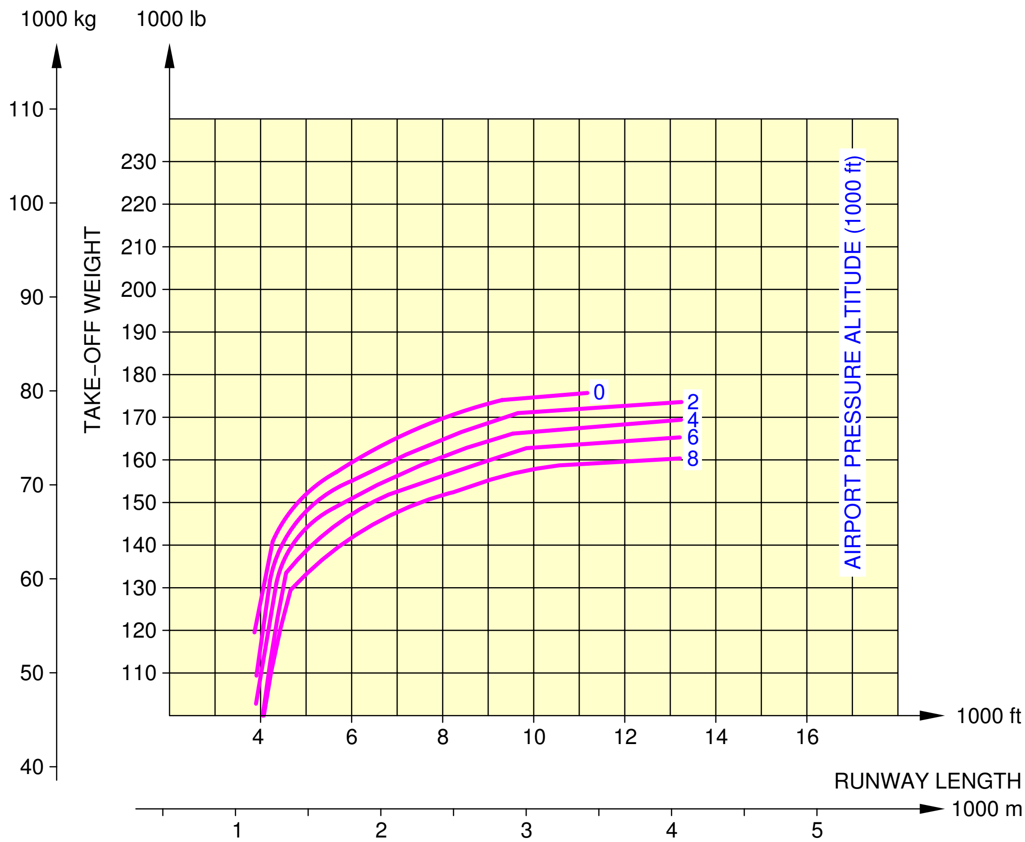
****ON A/C A319-100**

Take-Off Weight Limitation - ISA +15°C (+27°F) Conditions

1. This section gives the take-off weight limitation at ISA +15°C (+27°F) conditions.

**ON A/C A319-100

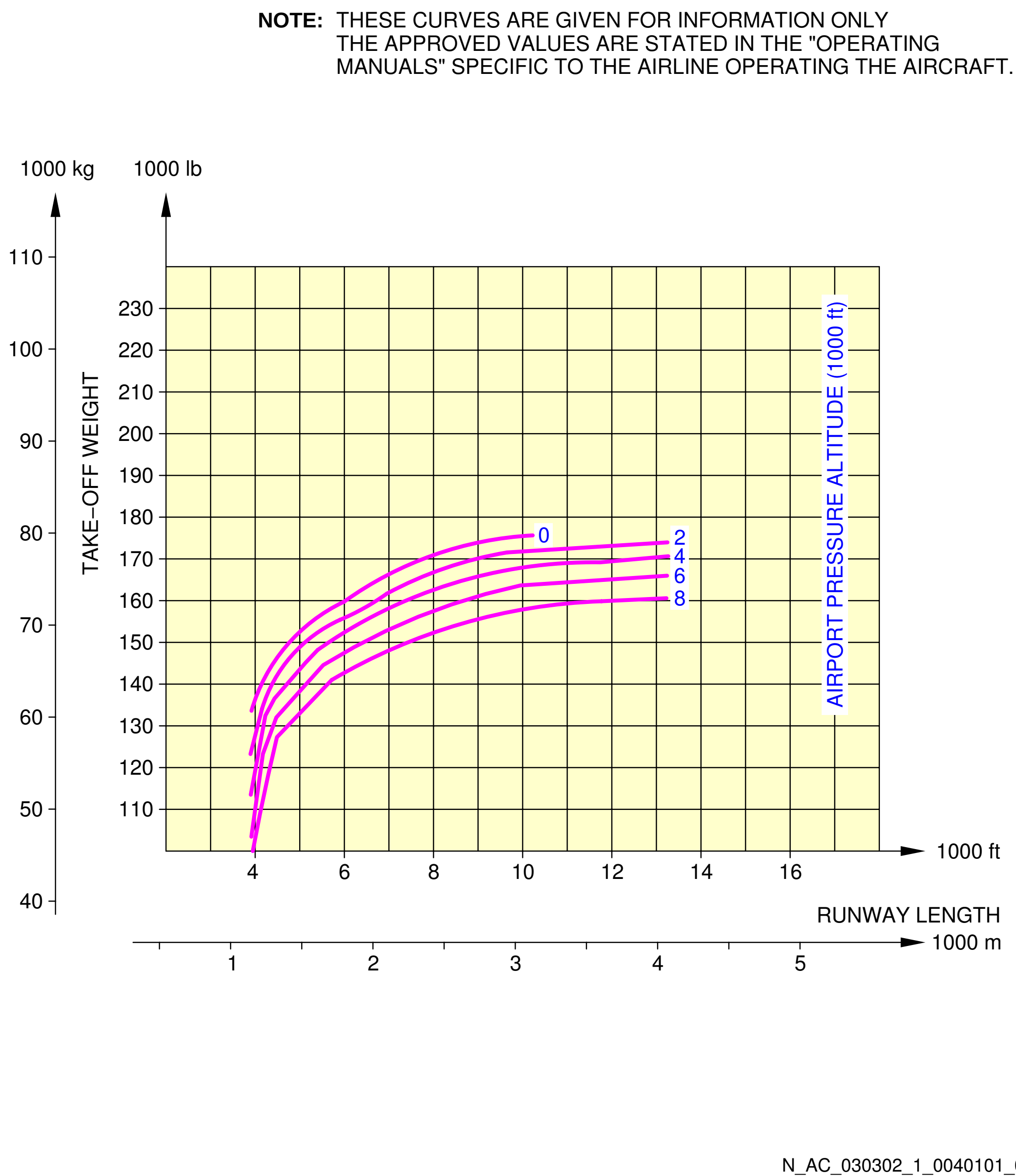
NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.



N_AC_030302_1_0030101_01_00

Take-Off Weight Limitation - ISA +15°C (+27°F) Conditions
CFM56 Series Engine
FIGURE-3-3-2-991-003-A01

**ON A/C A319-100



Take-Off Weight Limitation - ISA +15°C (+27°F) Conditions
IAE V2500 Series Engine
FIGURE-3-3-2-991-004-A01

3-3-3 Aerodrome Reference Code

****ON A/C A319-100 A319neo**

Aerodrome Reference Code

****ON A/C A319-100**

1. The aircraft is classified as code 3C as per ICAO Aerodrome Reference Code (up to and including 75 500 kg (166 449 lb)).

****ON A/C A319neo**

2. The aircraft is classified as code 3C as per ICAO Aerodrome Reference Code.

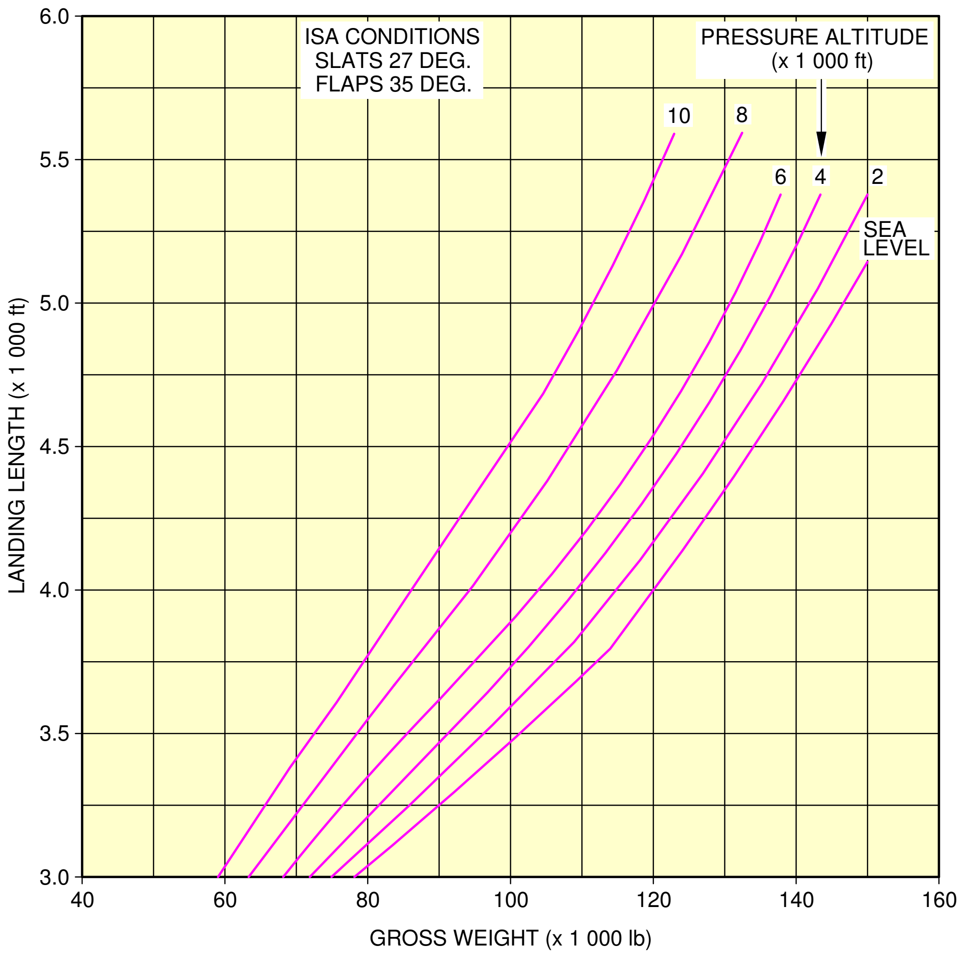
3-4-1 Landing Field Length - ISA Conditions

****ON A/C A319-100**

Landing Field Length - ISA Conditions

1. This section provides the landing field length.

**ON A/C A319-100

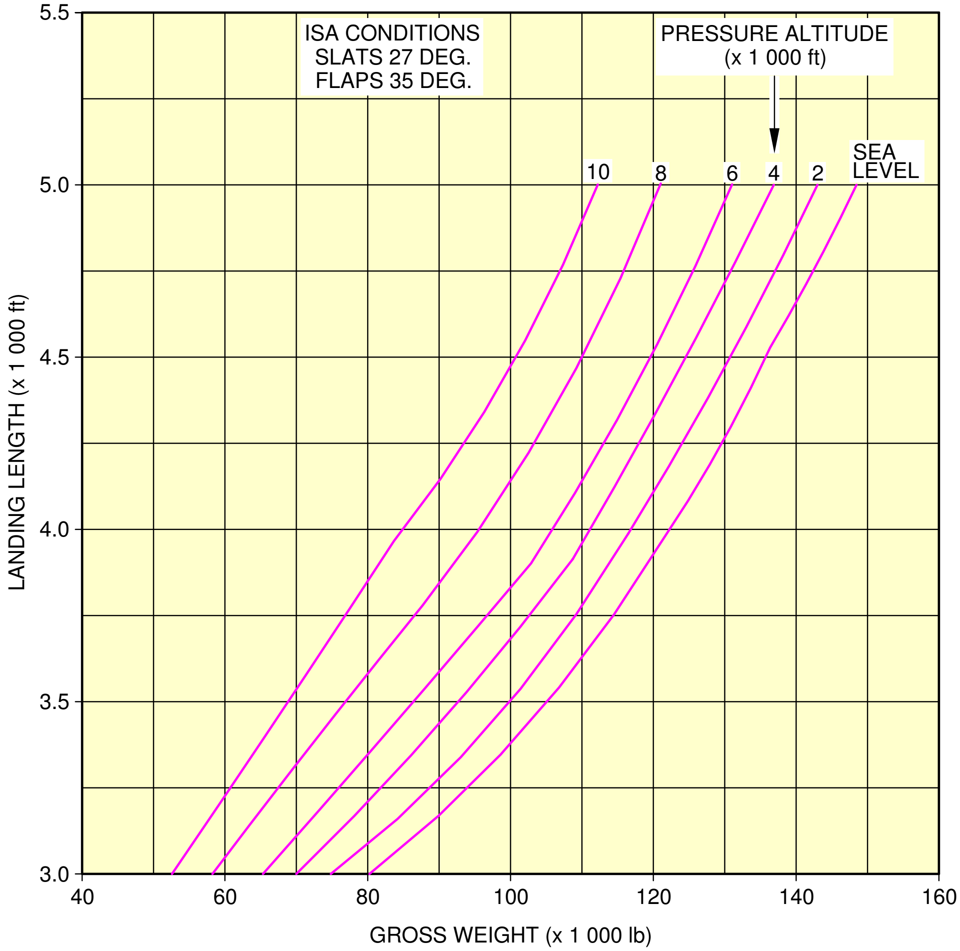


NOTE:
THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

N_AC_030401_1_0030101_01_01

Landing Field Length - ISA Conditions
CFM56-5A Series Engine
FIGURE-3-4-1-991-003-A01

****ON A/C A319-100**



NOTE:
THESE CURVES ARE GIVEN FOR INFORMATION ONLY.
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

N_AC_030401_1_0040101_01_01

Landing Field Length - ISA Conditions
IAE V2500 Series Engine
FIGURE-3-4-1-991-004-A01

3-5-0 Final Approach Speed

****ON A/C A319-100**

Final Approach Speed

1. This section provides the final approach speed. It is defined as the indicated airspeed at threshold in the landing configuration, at the certificated maximum flap setting and Maximum Landing Weight (MLW), in standard atmospheric conditions. The approach speed is used to classify the aircraft into an Aircraft Approach Category, a grouping of aircraft based on the indicated airspeed at threshold.
2. The final approach speed is 126 kt at a MLW of 62 500 kg (137 789 lb) and classifies the aircraft into the Aircraft Approach Category C.

   NOTE : This value is given for information only.

GROUND MANEUVERING

4-1-0 General Information

****ON A/C A319-100 A319neo**

General Information

1. This section provides aircraft turning capability and maneuvering characteristics.

   For ease of presentation, this data has been determined from the theoretical limits imposed by the geometry of the aircraft, and where noted, provides for a normal allowance for tire slippage. As such, it reflects the turning capability of the aircraft in favorable operating circumstances. This data should only be used as a guideline for the method of determination of such parameters and for the maneuvering characteristics of this aircraft type.

   In ground operating mode, varying airline practices may demand that more conservative turning procedures be adopted to avoid excessive tire wear and reduce possible maintenance problems. Airline operating techniques will vary in the level of performance, over a wide range of operating circumstances throughout the world. Variations from standard aircraft operating patterns may be necessary to satisfy physical constraints within the maneuvering area, such as adverse grades, limited area or a high risk of jet blast damage. For these reasons, ground maneuvering requirements should be coordinated with the airlines in question prior to layout planning.

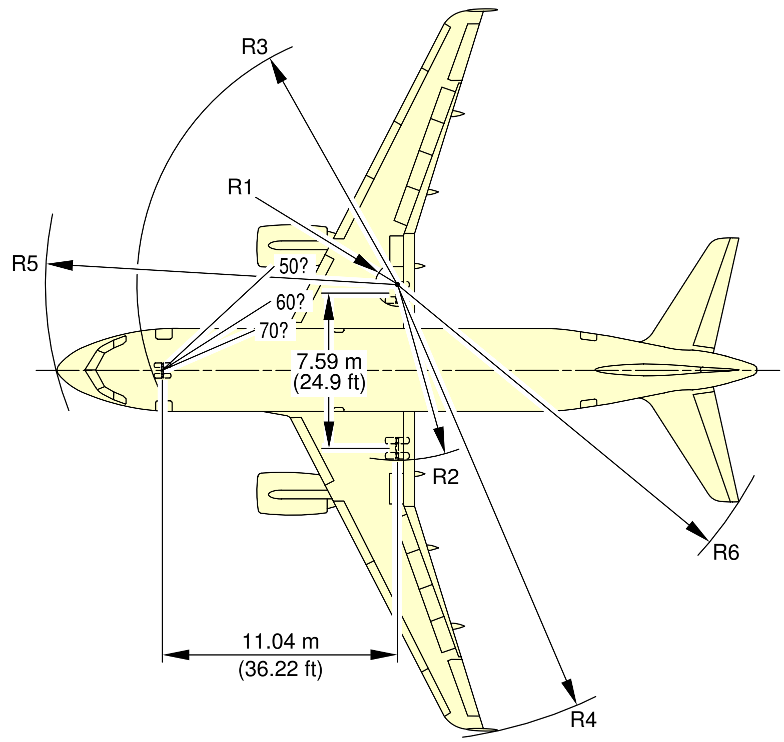
4-2-0 Turning Radii

****ON A/C A319-100 A319neo**

Turning Radii

1. This section provides the turning radii.

**ON A/C A319-100 A319neo



NOTE: FOR STEERING DIMENSION TABLE SEE SHEET 2.

TURN TYPE:

1. ASYMMETRIC THRUST DIFFERENTIAL BRAKING (PIVOTTING ON ONE MAIN GEAR).
2. SYMMETRIC THRUST NO BRAKING.

N_AC_040200_1_0030101_01_02

Turning Radii, No Slip Angle
(Sheet 1)
FIGURE-4-2-0-991-003-A01

****ON A/C A319-100 A319neo**

TYPE OF TURN	MAXIMUM RAMP WEIGHT		R1 RMLG		R2 LMLG		R3 NLG		R4 – WING				R5 NOSE		R6 THS	
	STEERING ANGLE (deg)	EFFECTIVE STEERING ANGLE (deg)							WINGTIP FENCE		SHARKLET					
			m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
2	20	19.4	28.2	92	35.8	117	33.5	110	48.6	159	49.4	162	35.2	116	41.2	135
2	25	24.3	21.4	70	29.0	95	27.2	89	41.8	137	42.6	140	29.3	96	35.1	115
2	30	29.1	16.7	55	24.3	80	23.0	76	37.1	122	38.0	125	25.6	84	31.1	102
2	35	33.9	13.3	44	20.9	69	20.1	66	33.7	111	34.6	113	23.0	75	28.3	93
2	40	38.8	10.6	35	18.2	60	17.9	59	31.1	102	31.9	105	21.2	69	26.2	86
2	45	43.6	8.5	28	16.1	53	16.3	53	29.0	95	29.8	98	19.8	65	24.6	81
2	50	48.4	6.7	22	14.3	47	15.0	49	27.2	89	28.0	92	18.9	62	23.3	76
2	55	53.2	5.2	17	12.7	42	14.0	46	25.7	84	26.5	87	18.1	59	22.3	73
2	60	57.9	3.8	13	11.4	37	13.2	43	24.4	80	25.2	83	17.5	58	21.4	70
2	65	62.5	2.6	9	10.2	34	12.6	41	23.2	76	24.0	79	17.1	56	20.7	68
2	70	66.9	1.6	5	9.2	30	12.2	40	22.2	73	23.0	76	16.8	55	20.1	66
2	75 (MAX)	70.3	0.8	3	8.4	28	11.8	39	21.4	70	22.3	73	16.6	54	19.7	65
1	50	48.6	6.6	22	14.2	47	14.9	49	27.1	89	28.0	92	18.8	62	23.2	76
1	55	53.5	5.1	17	12.6	41	14.0	46	25.6	84	26.4	87	18.1	59	22.2	73
1	60	58.3	3.7	12	11.3	37	13.2	43	24.3	80	25.1	82	17.5	57	21.3	70
1	65	63.1	2.5	8	10.1	33	12.5	41	23.1	76	23.9	78	17.1	56	20.6	68
1	70	67.7	1.4	5	9.0	30	12.1	40	22.0	72	22.8	75	16.7	55	20.0	66
1	75 (MAX)	71.9	0.5	2	8.1	27	11.7	38	21.1	69	22.0	72	16.5	54	19.6	64

NOTE: ABOVE 50?, AIRLINES MAY USE TYPE 1 OR TYPE 2 TURNS DEPENDING ON THE SITUATION.
TYPE 1 TURNS USE: ASYMMETRIC THRUST DURING THE WHOLE TURN; AND DIFFERENTIAL BRAKING TO INITIATE THE TURN ONLY.
TYPE 2 TURNS USE: SYMMETRIC THRUST DURING THE WHOLE TURN; AND NO DIFFERENTIAL BRAKING AT ALL.
IT IS POSSIBLE TO GET LOWER VALUES THAN THOSE FROM TYPE 1 BY APPLYING DIFFERENTIAL BRAKING DURING THE WHOLE TURN.

N_AC_040200_1_0040101_01_01

Turning Radii, No Slip Angle
(Sheet 2)
FIGURE-4-2-0-991-004-A01

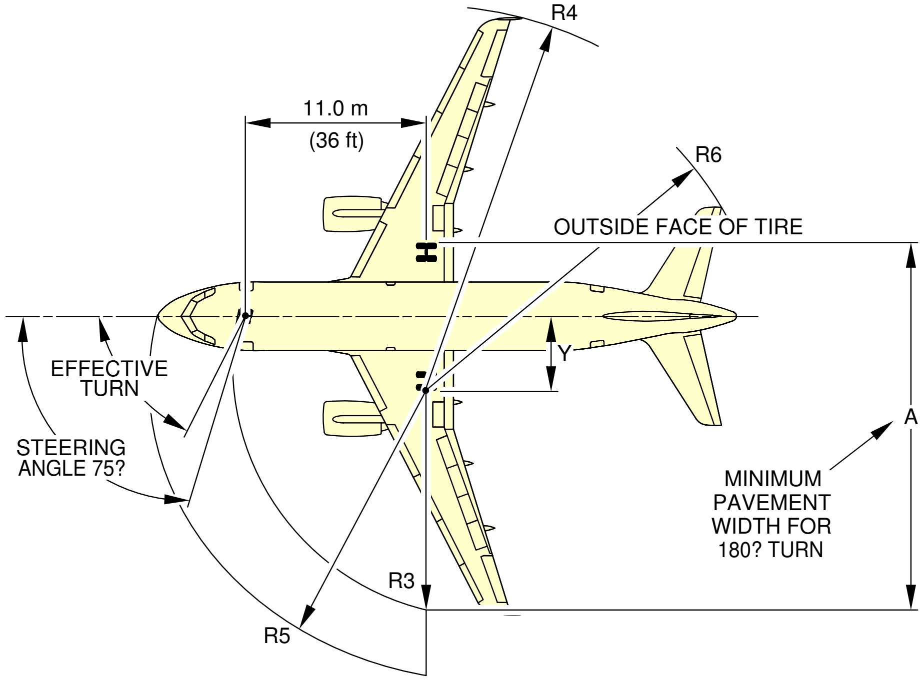
4-3-0 Minimum Turning Radii

**ON A/C A319-100 A319neo

Minimum Turning Radii

1. This section provides the minimum turning radii.

****ON A/C A319-100 A319neo**



NOTE: NOSE GEAR RADII TRACK R3,
MEASURED FROM OUTSIDE FACE OF TIRE.
MODEL 100 TURN DIMENSION SHOWN.
THEORETICAL CENTER OF TURN
FOR MINIMUM TURNING RADIUS.
SLOW CONTINUOUS TURNING.
APPROXIMATELY IDLE THRUST
ON ALL ENGINES.
NO DIFFERENTIAL BRAKING.
DRY SURFACE.

TYPE OF TURN	STEERING ANGLE (DEG)	EFFECTIVE STEERING ANGLE		Y	A	R3 NLG	R4 WING		R5 NOSE	R6 THS
							WING TIP FENCE	SHARKLET		
1	75 (MAX)	71.9?	m	3.6	20.1	11.7	21.1	22.0	16.5	19.6
			ft	12	66	38	69	72	54	64
2	75 (MAX)	70.3?	m	3.9	20.5	11.8	21.4	22.3	16.6	19.7
			ft	13	67	39	70	73	54	65

NOTE: IT IS POSSIBLE TO GET LOWER VALUES THAN THOSE FROM TYPE 1
BY APPLYING DIFFERENTIAL BRAKING DURING THE WHOLE TURN.

N_AC_040300_1_0020101_01_02

Minimum Turning Radii
FIGURE-4-3-0-991-002-A01

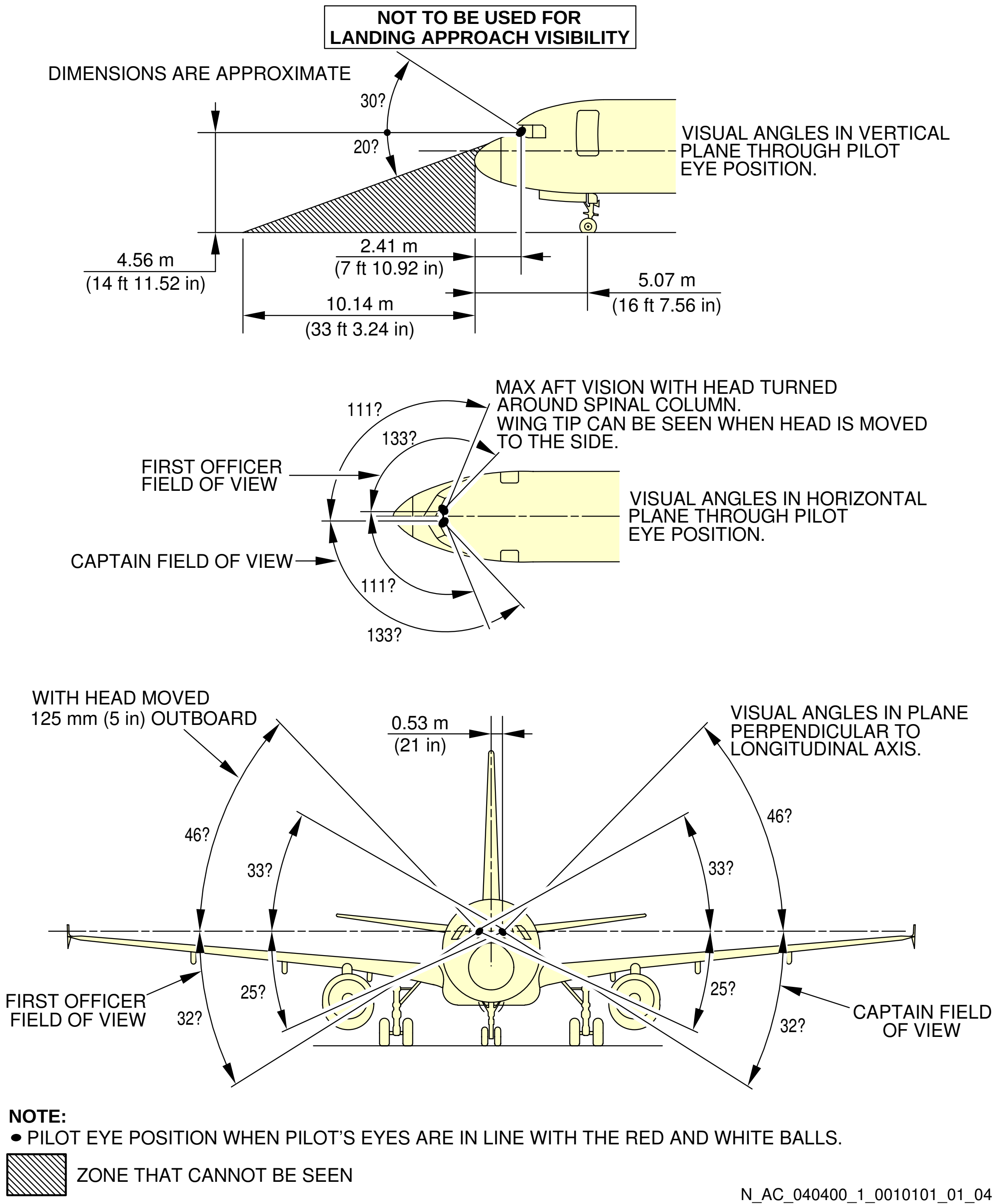
4-4-0 Visibility from Cockpit in Static Position

****ON A/C A319-100 A319neo**

Visibility from Cockpit in Static Position

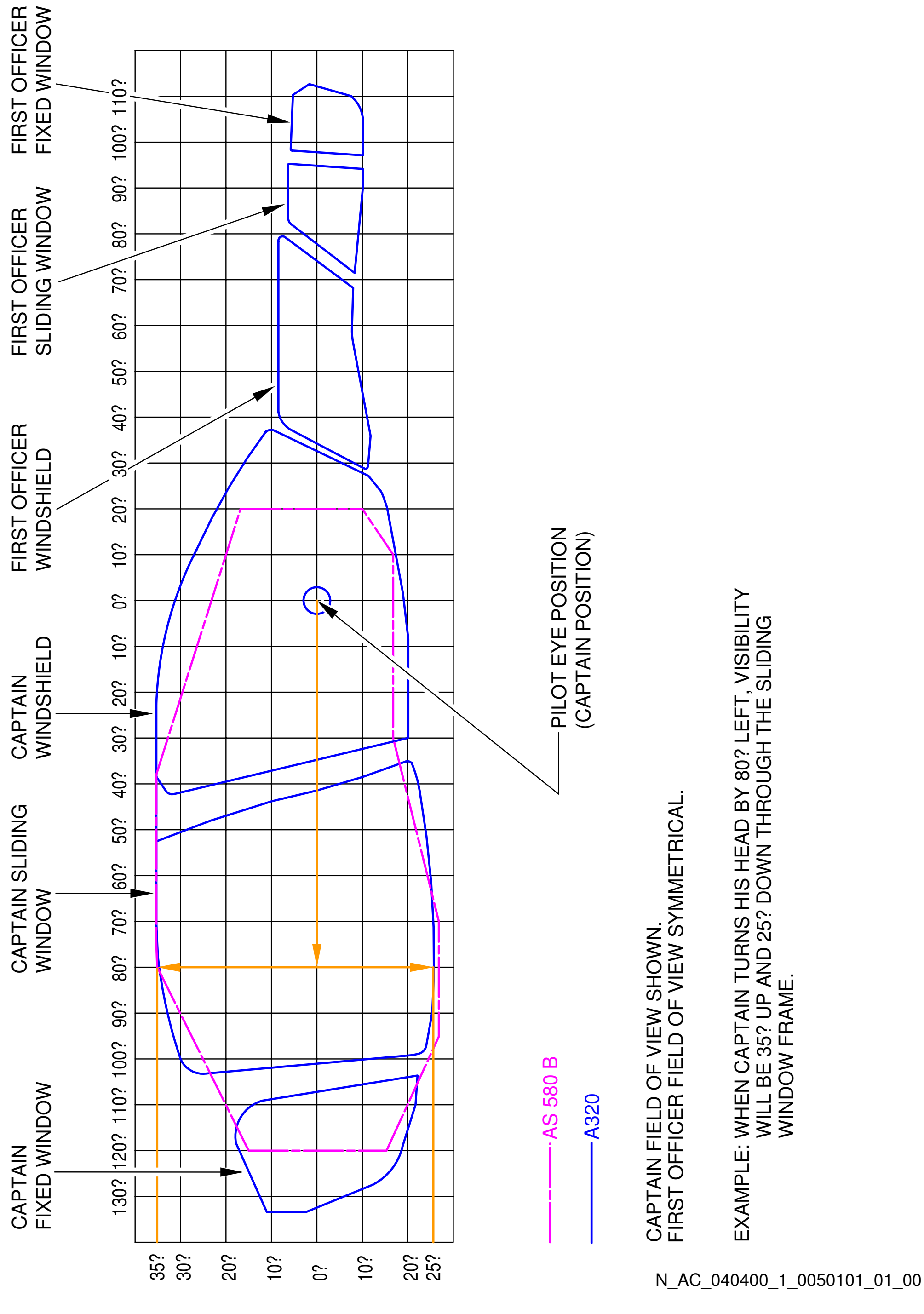
1. This section gives the visibility from cockpit in static position.

**ON A/C A319-100 A319neo



Visibility from Cockpit in Static Position
FIGURE-4-4-0-991-001-A01

**ON A/C A319-100 A319neo



Binocular Visibility Through Windows from Captain Eye Position
FIGURE-4-4-0-991-005-A01

4-5-0 Runway and Taxiway Turn Paths

**ON A/C A319-100 A319neo

Runway and Taxiway Turn Paths

1. Runway and Taxiway Turn Paths.

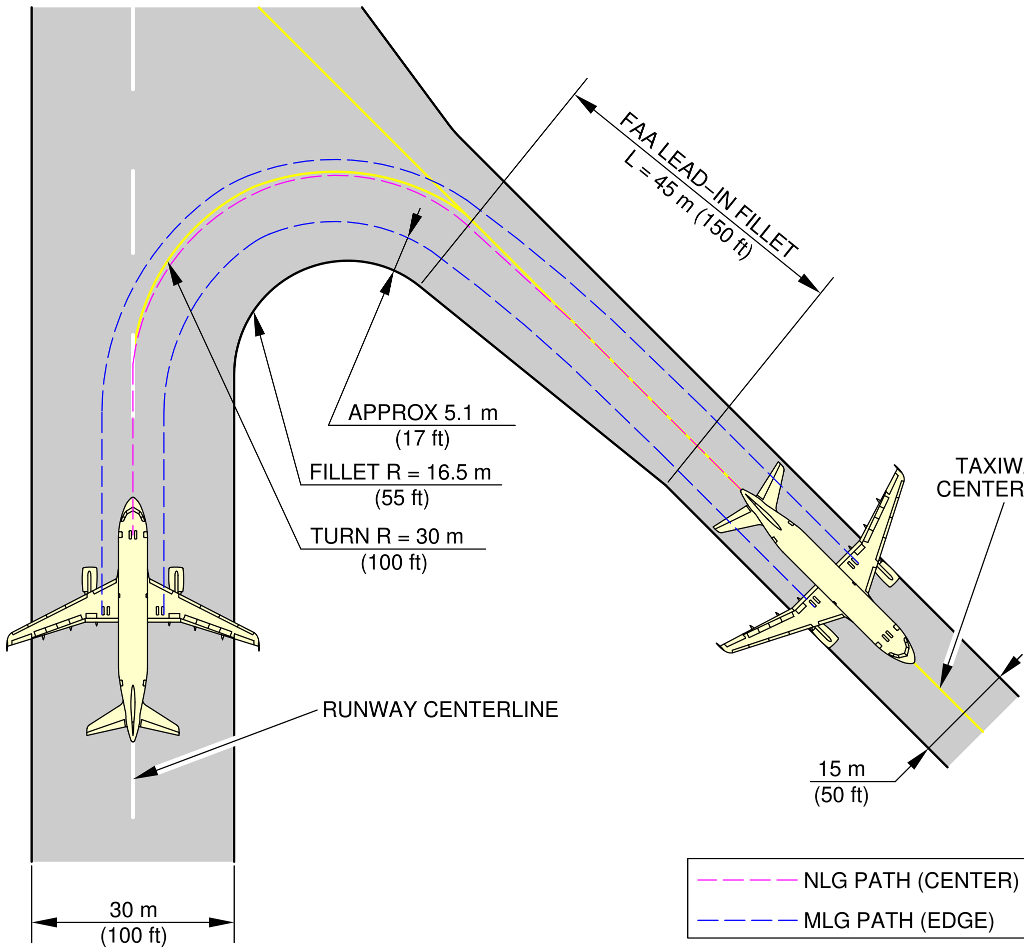
4-5-1 135° Turn - Runway to Taxiway

****ON A/C A319-100 A319neo**

135° Turn - Runway to Taxiway

1. This section gives the 135° turn - runway to taxiway.

**ON A/C A319-100 A319neo

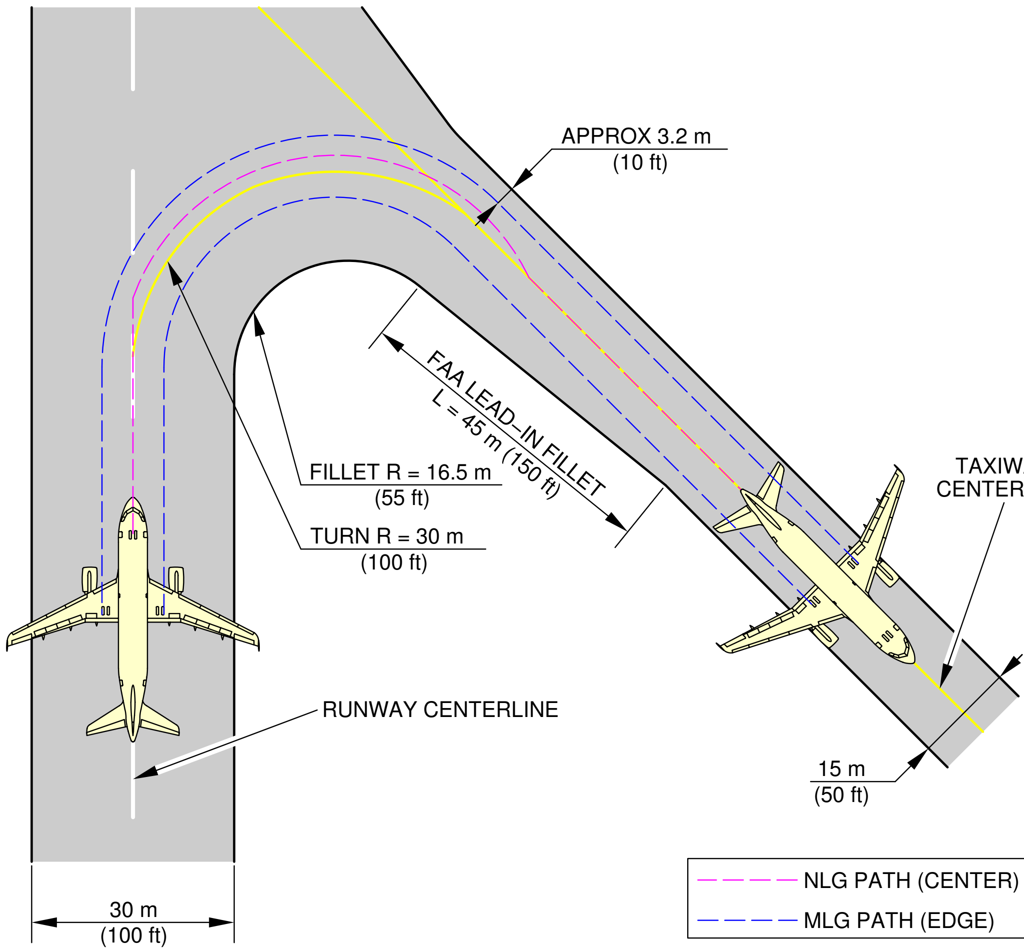


NOTE:
FAA GROUP III FACILITIES.

N_AC_040501_1_0020101_01_03

135° Turn - Runway to Taxiway
Cockpit Over Centerline Method
FIGURE-4-5-1-991-002-A01

**ON A/C A319-100 A319neo



NOTE:
FAA GROUP III FACILITIES.

N_AC_040501_1_0030101_01_03

135° Turn - Runway to Taxiway
Judgemental Oversteering Method
FIGURE-4-5-1-991-003-A01

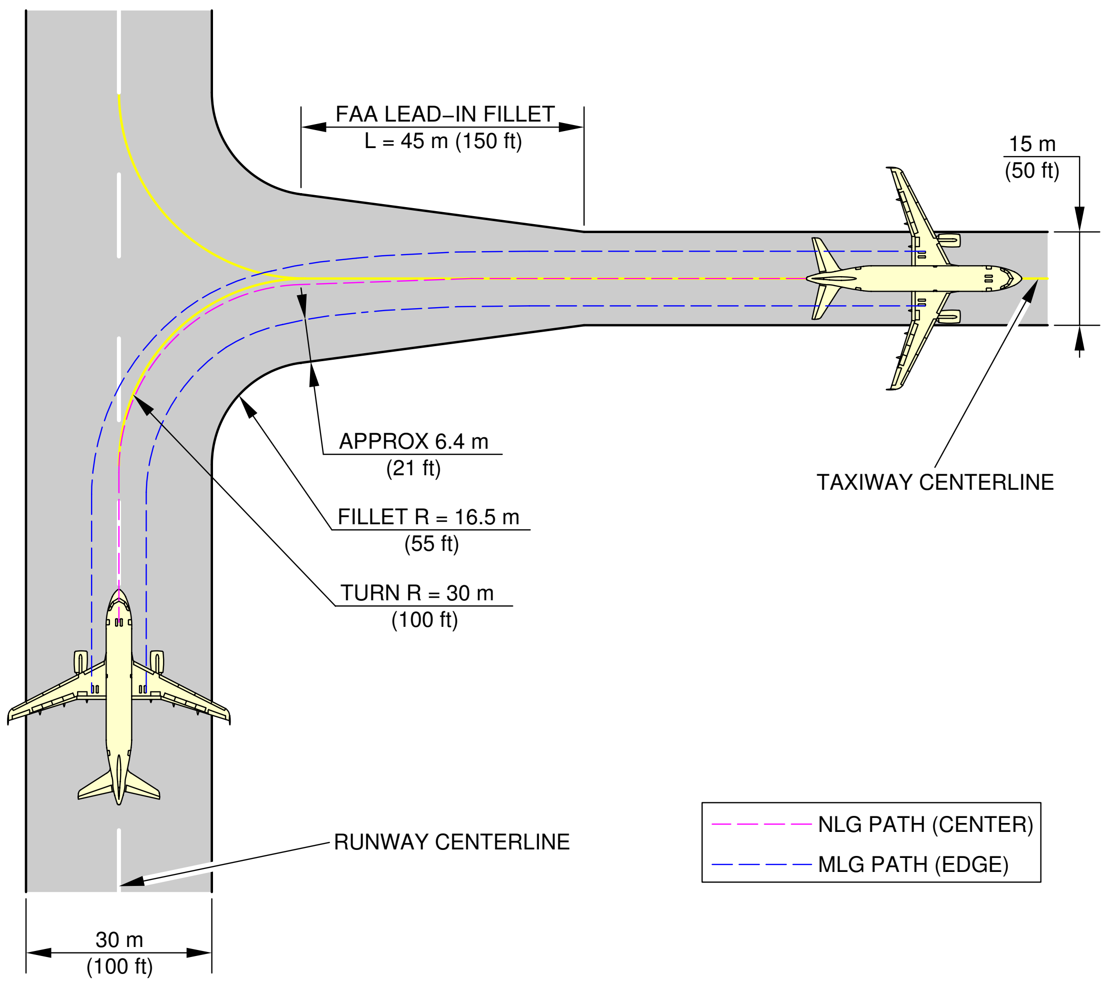
4-5-2 90° Turn - Runway to Taxiway

****ON A/C A319-100 A319neo**

90° Turn - Runway to Taxiway

1. This section gives the 90° turn - runway to taxiway.

**ON A/C A319-100 A319neo

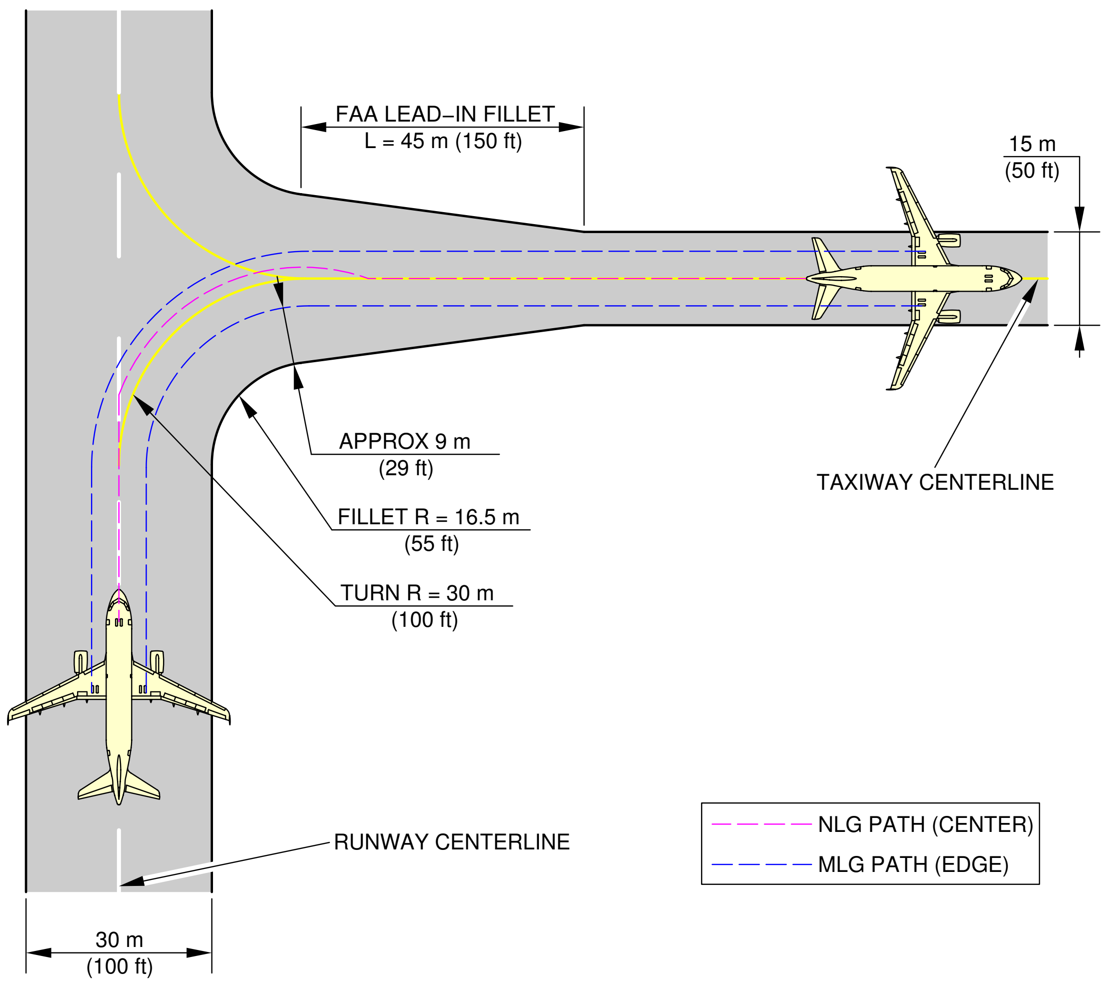


NOTE:
FAA GROUP III FACILITIES.

N_AC_040502_1_0020101_01_02

90° Turn - Runway to Taxiway
Cockpit Over Centerline Method
FIGURE-4-5-2-991-002-A01

**ON A/C A319-100 A319neo



NOTE:
FAA GROUP III FACILITIES.

N_AC_040502_1_0030101_01_02

90° Turn - Runway to Taxiway
Judgemental Oversteering Method
FIGURE-4-5-2-991-003-A01

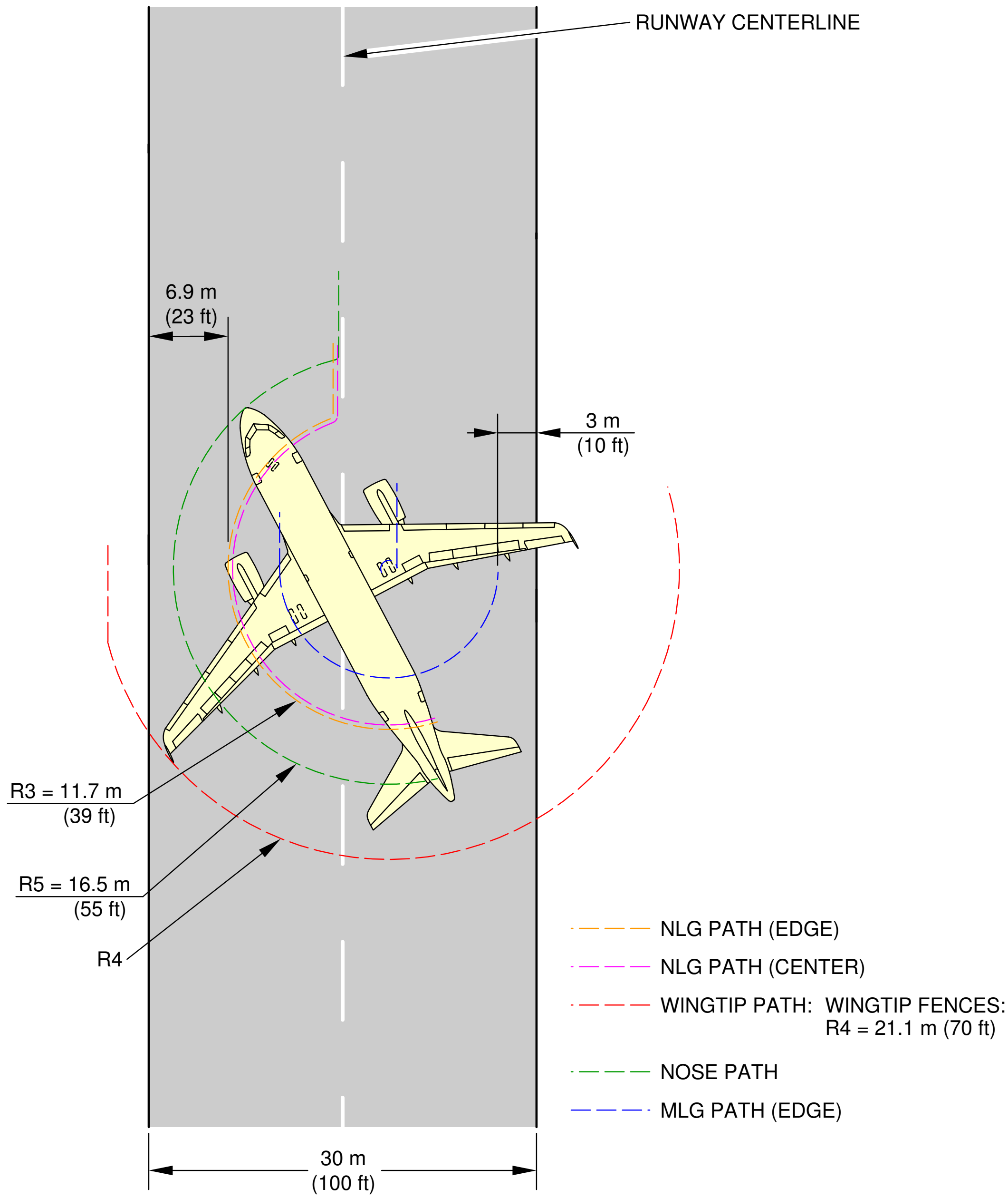
4-5-3 180° Turn on a Runway

****ON A/C A319-100 A319neo**

180° Turn on a Runway

1. This section provides the 180° turn on a runway.

**ON A/C A319-100

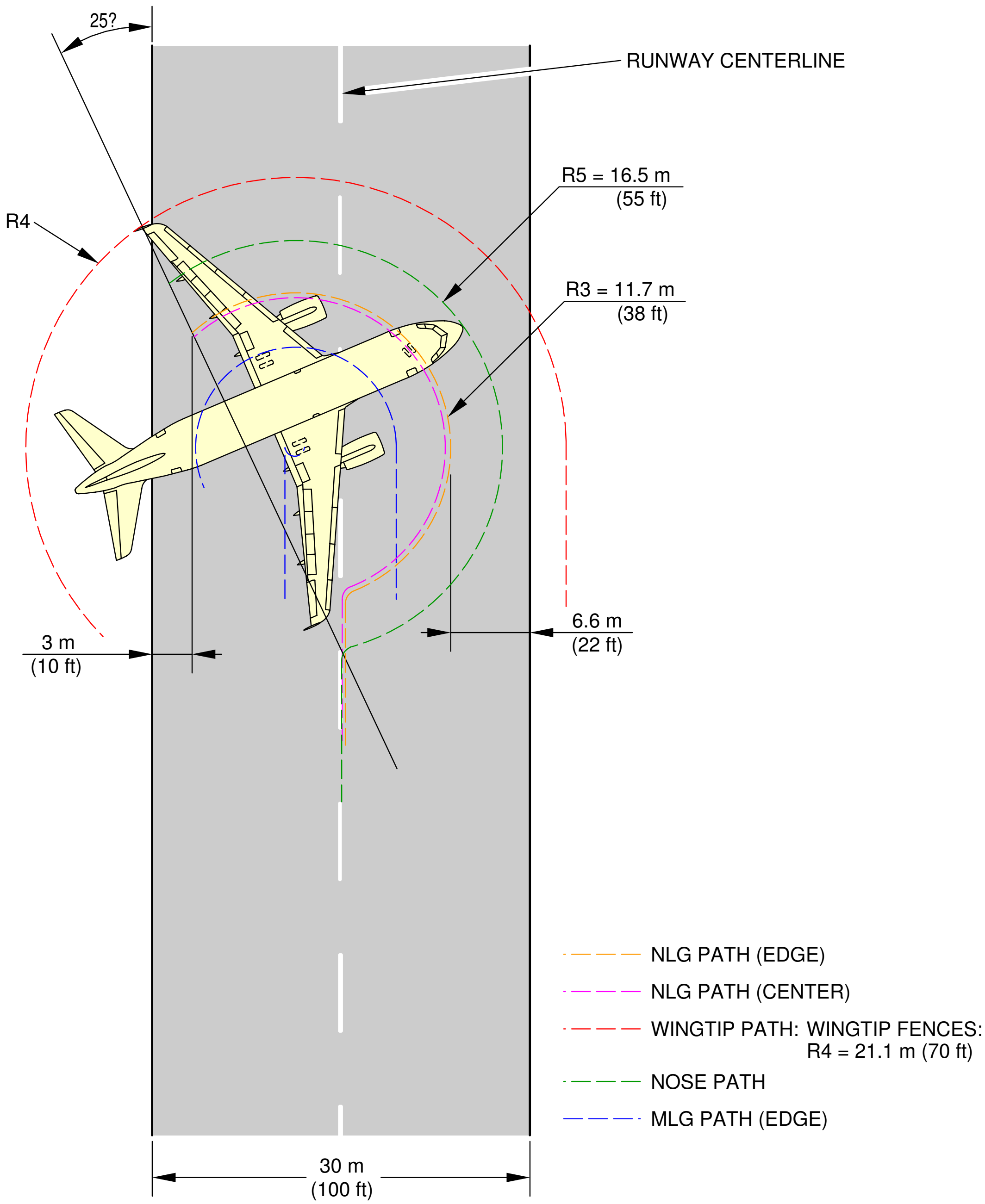


NOTE:
TYPE 1 VALUES.

N_AC_040503_1_0010101_01_04

180° Turn on a Runway
Edge of Runway Method (Sheet 1 of 2)
FIGURE-4-5-3-991-001-A01

**ON A/C A319-100

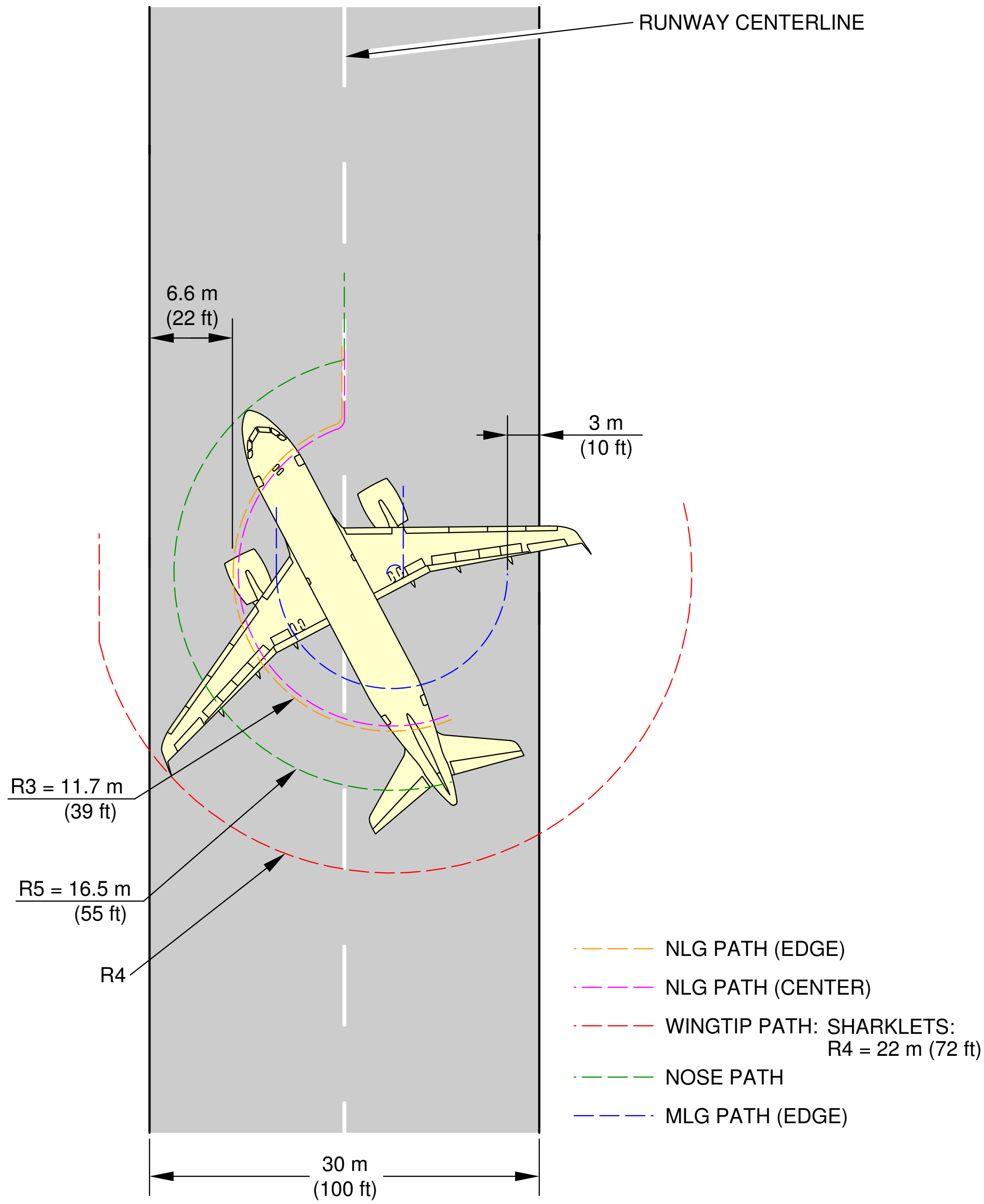


NOTE:
TYPE 1 VALUES.

N_AC_040503_1_0010102_01_02

180° Turn on a Runway
Center of Runway Method (Sheet 2 of 2)
FIGURE-4-5-3-991-001-A01

**ON A/C A319neo

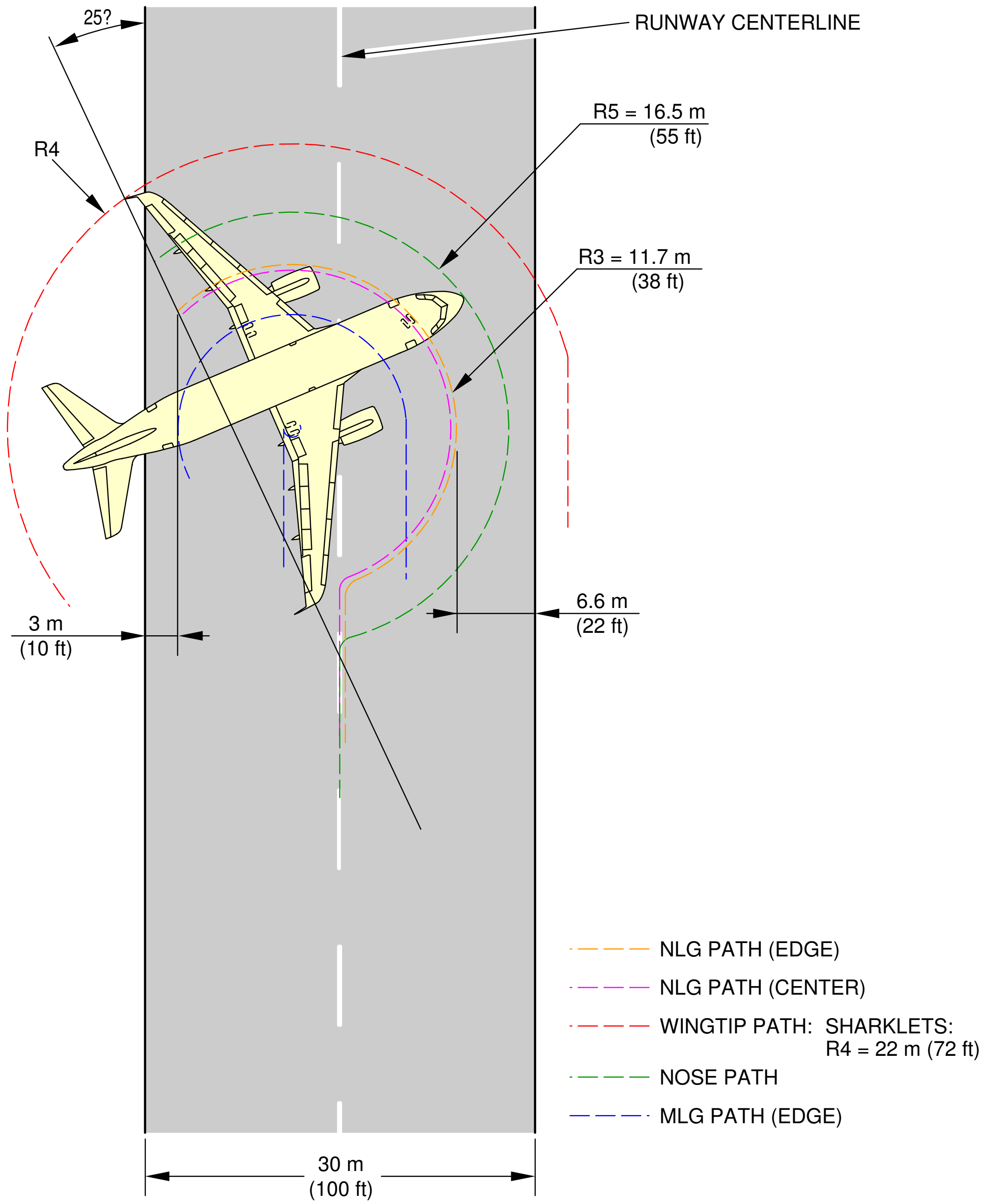


NOTE:
TYPE 1 VALUES.

N_AC_040503_1_0070101_01_00

180 ° Turn on a Runway
Edge of Runway Method (Sheet 1 of 2)
FIGURE-4-5-3-991-007-A01

****ON A/C A319neo**



NOTE:
TYPE 1 VALUES.

N_AC_040503_1_0070102_01_00

180 ° Turn on a Runway
Center of Runway Method (Sheet 2 of 2)
FIGURE-4-5-3-991-007-A01

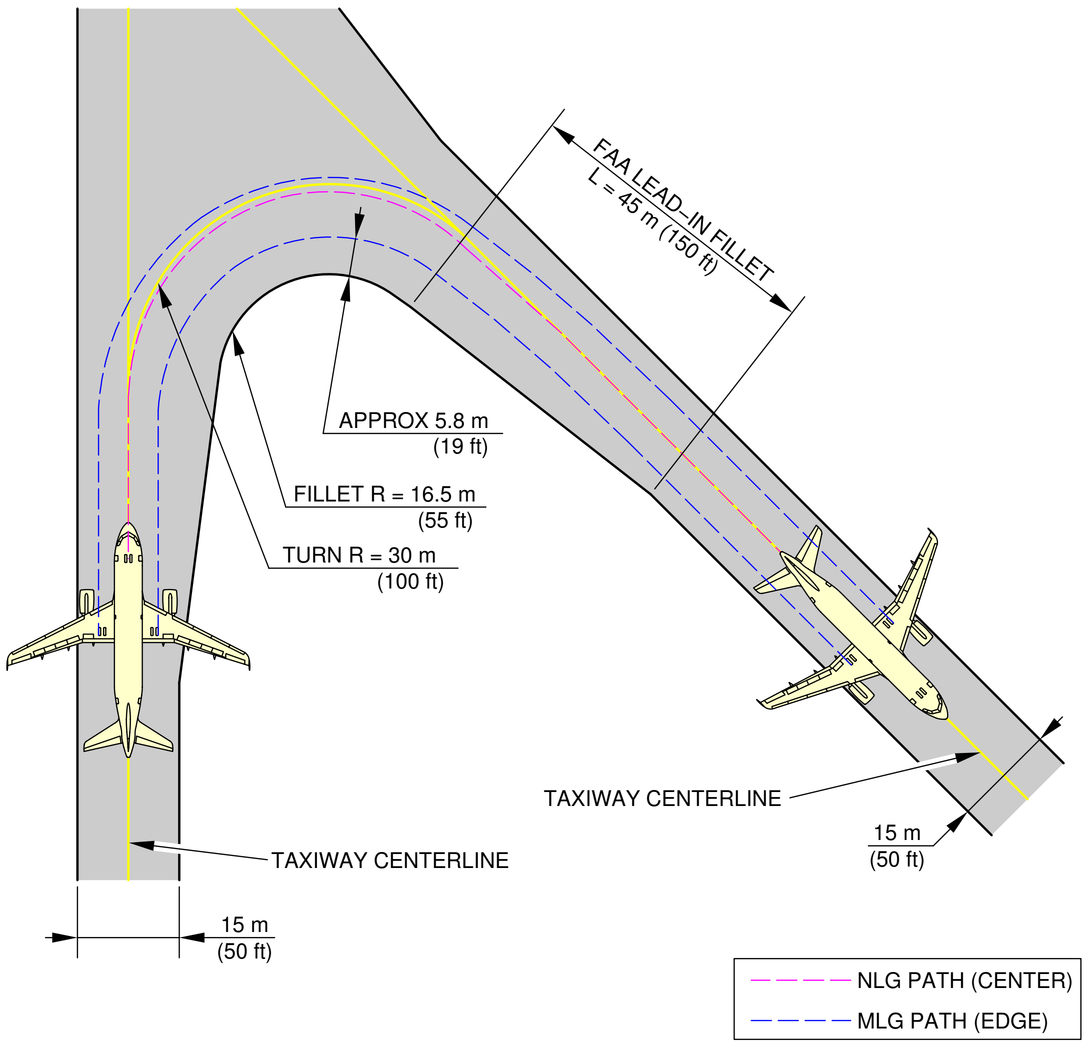
4-5-4 135° Turn - Taxiway to Taxiway

****ON A/C A319-100 A319neo**

135° Turn - Taxiway to Taxiway

1. This section gives the 135° turn - taxiway to taxiway.

**ON A/C A319-100 A319neo

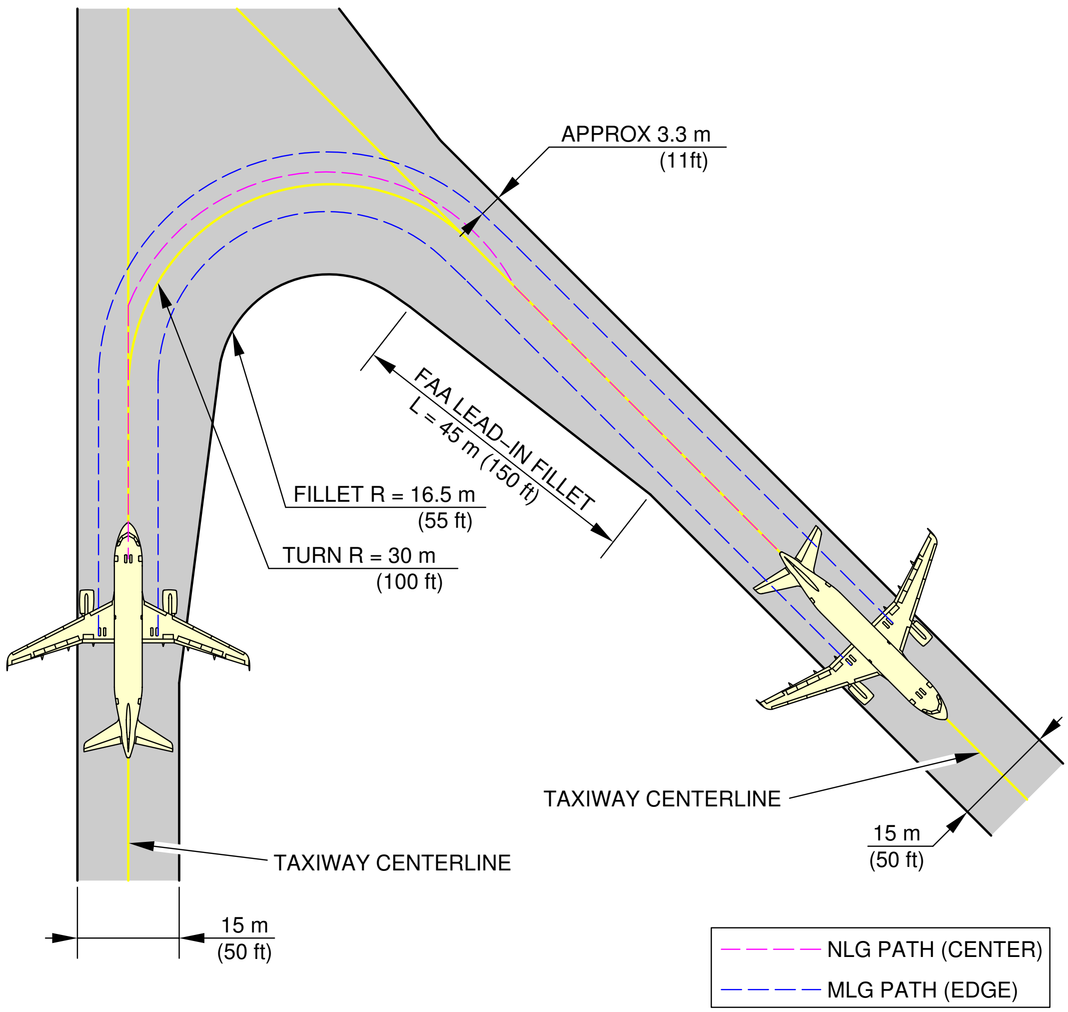


NOTE:
FAA GROUP III FACILITIES.

N_AC_040504_1_0050101_01_01

135° Turn - Taxiway to Taxiway
Cockpit Over Centerline Method (Sheet 1 of 2)
FIGURE-4-5-4-991-005-A01

**ON A/C A319-100 A319neo



NOTE:
FAA GROUP III FACILITIES.

N_AC_040504_1_0050102_01_01

135° Turn - Taxiway to Taxiway
Judgemental Oversteering Method (Sheet 2 of 2)
FIGURE-4-5-4-991-005-A01

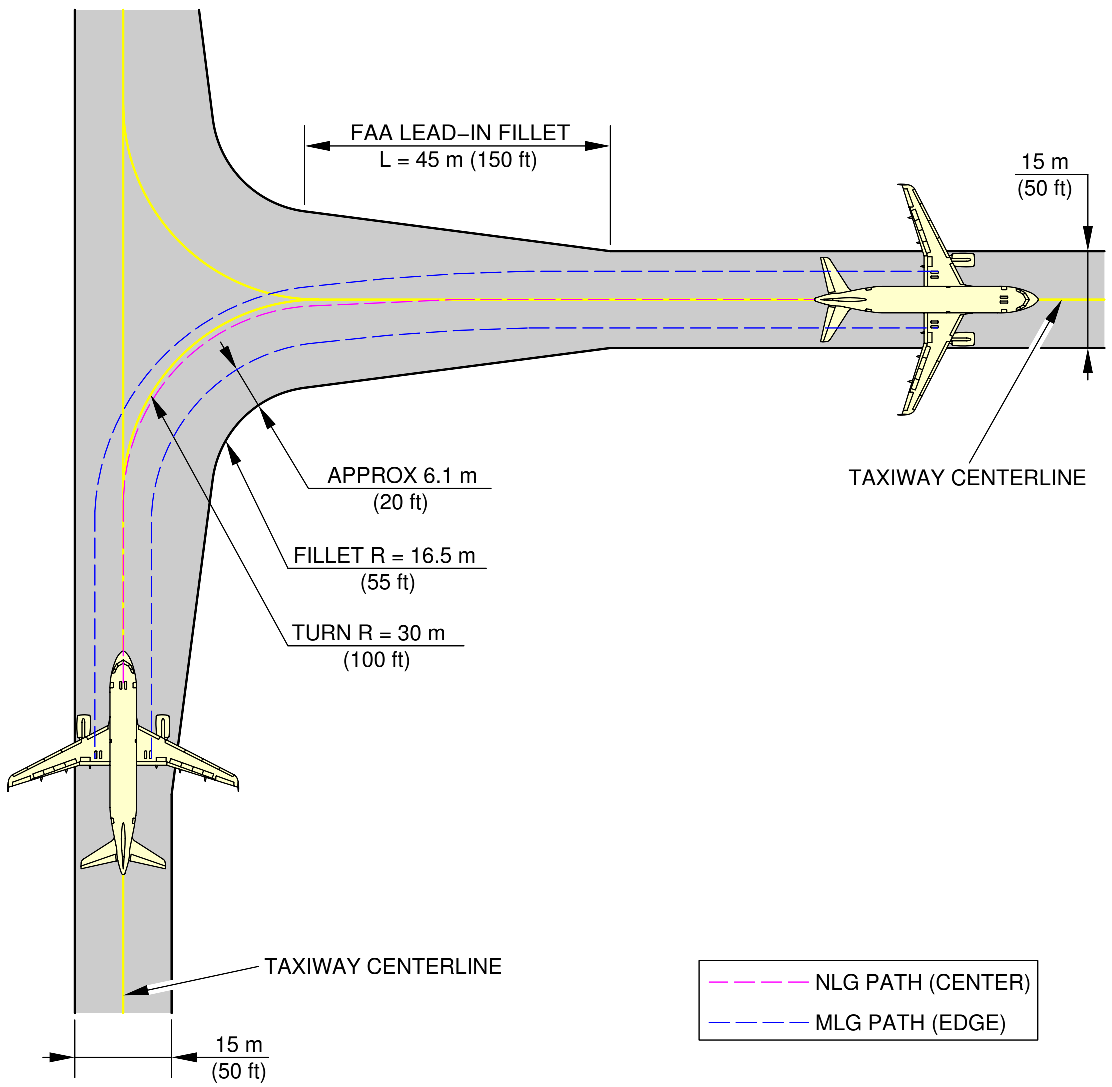
4-5-5 90° Turn - Taxiway to Taxiway

****ON A/C A319-100 A319neo**

<u>90° Turn - Taxiway to Taxiway</u>

1. This section gives the 90° turn - taxiway to taxiway.

**ON A/C A319-100 A319neo

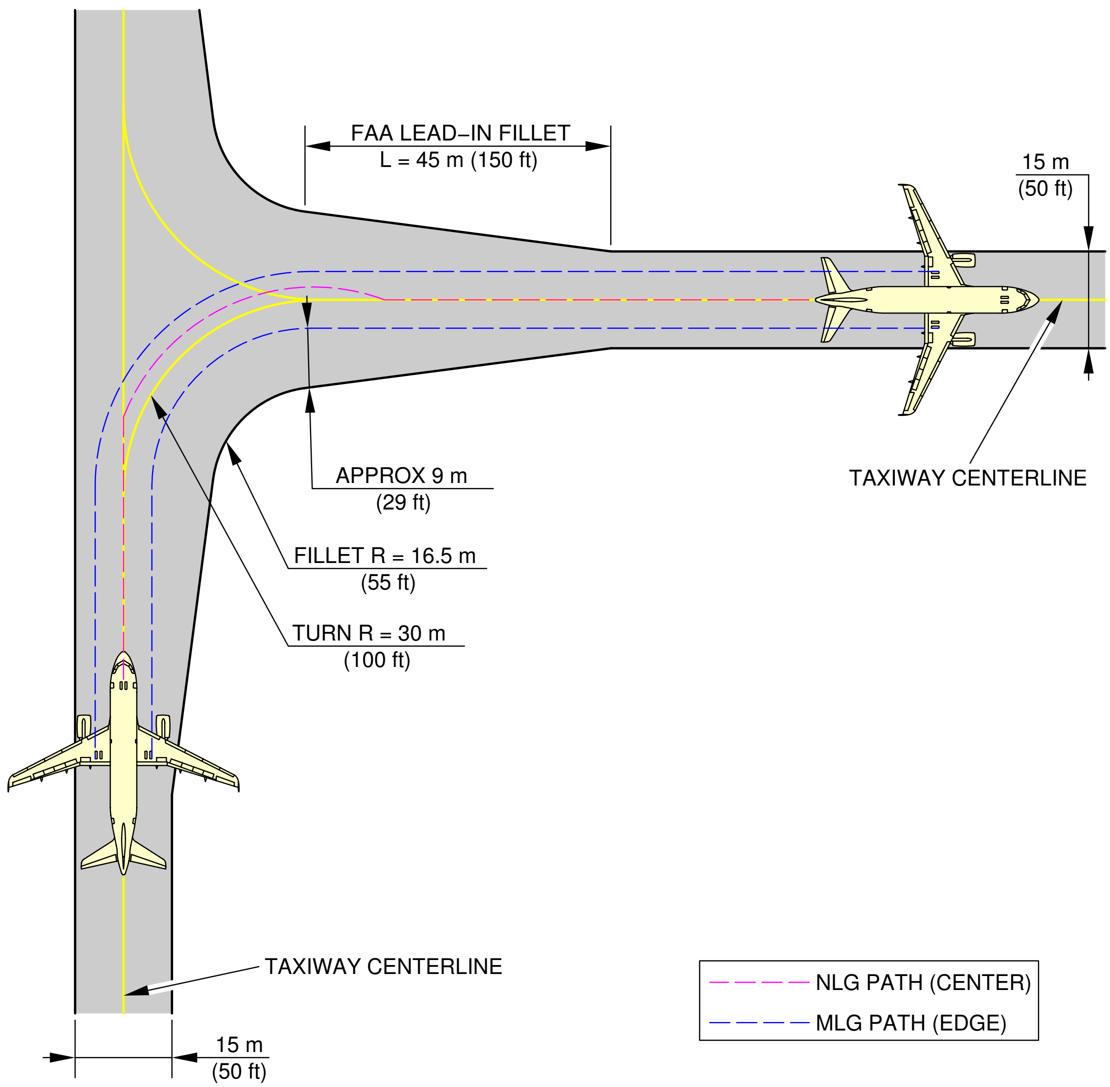


NOTE:
FAA GROUP III FACILITIES.

N_AC_040505_1_0030101_01_01

90° Turn - Taxiway to Taxiway
Cockpit Over Centerline Method (Sheet 1 of 2)
FIGURE-4-5-5-991-003-A01

**ON A/C A319-100 A319neo



NOTE:
FAA GROUP III FACILITIES.

N_AC_040505_1_0030102_01_01

90° Turn - Taxiway to Taxiway
Judgemental Oversteering Method (Sheet 2 of 2)
FIGURE-4-5-5-991-003-A01

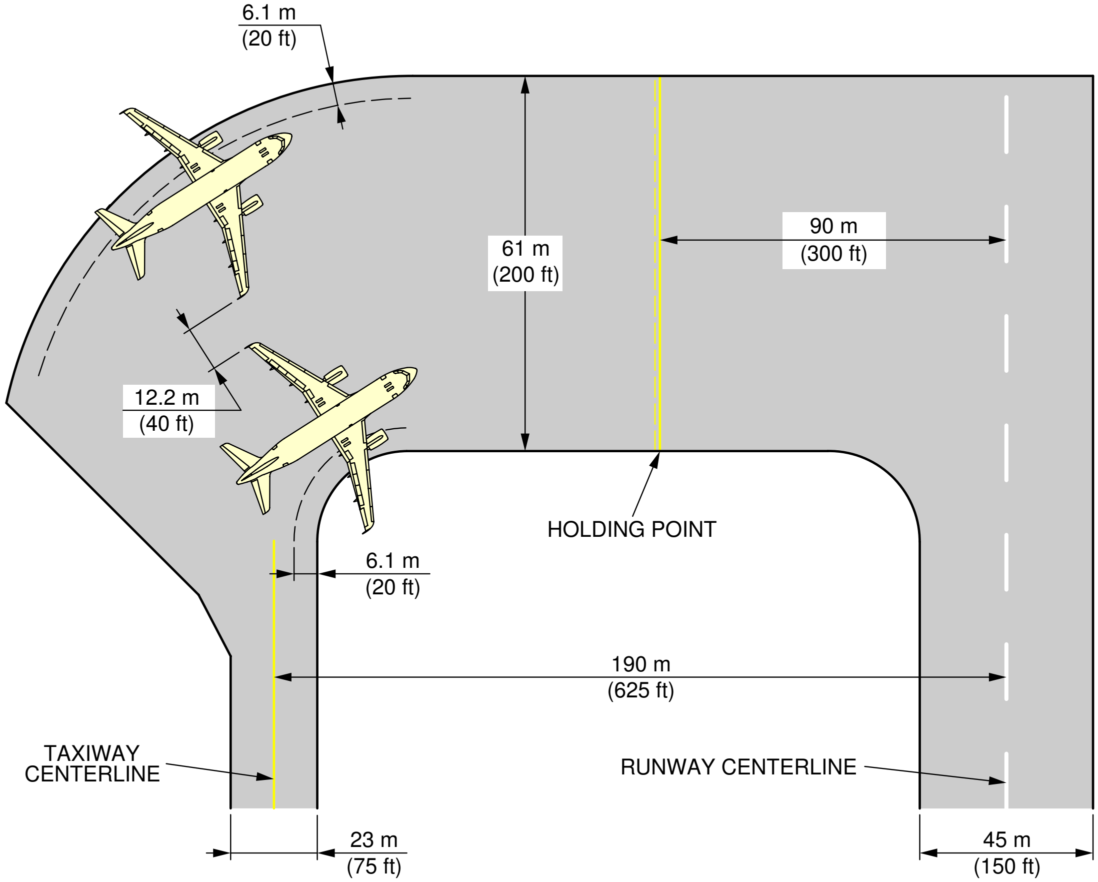
4-6-0 Runway Holding Bay (Apron)

****ON A/C A319-100 A319neo**

Runway Holding Bay (Apron)

1. This section gives the runway holding bay (Apron).

**ON A/C A319-100 A319neo



NOTE: LAYOUT IN ACCORDANCE WITH THE REQUIREMENTS OF NAS 3601, CHAPTER 4, AND AN/865, CHAPTER 3.
OUTER PARKED AIRCRAFT TURNED THRU MIN. TURN RADIUS TO PARKED POSITION.

N_AC_040600_1_0020101_01_02

Runway Holding Bay (Apron)
FIGURE-4-6-0-991-002-A01

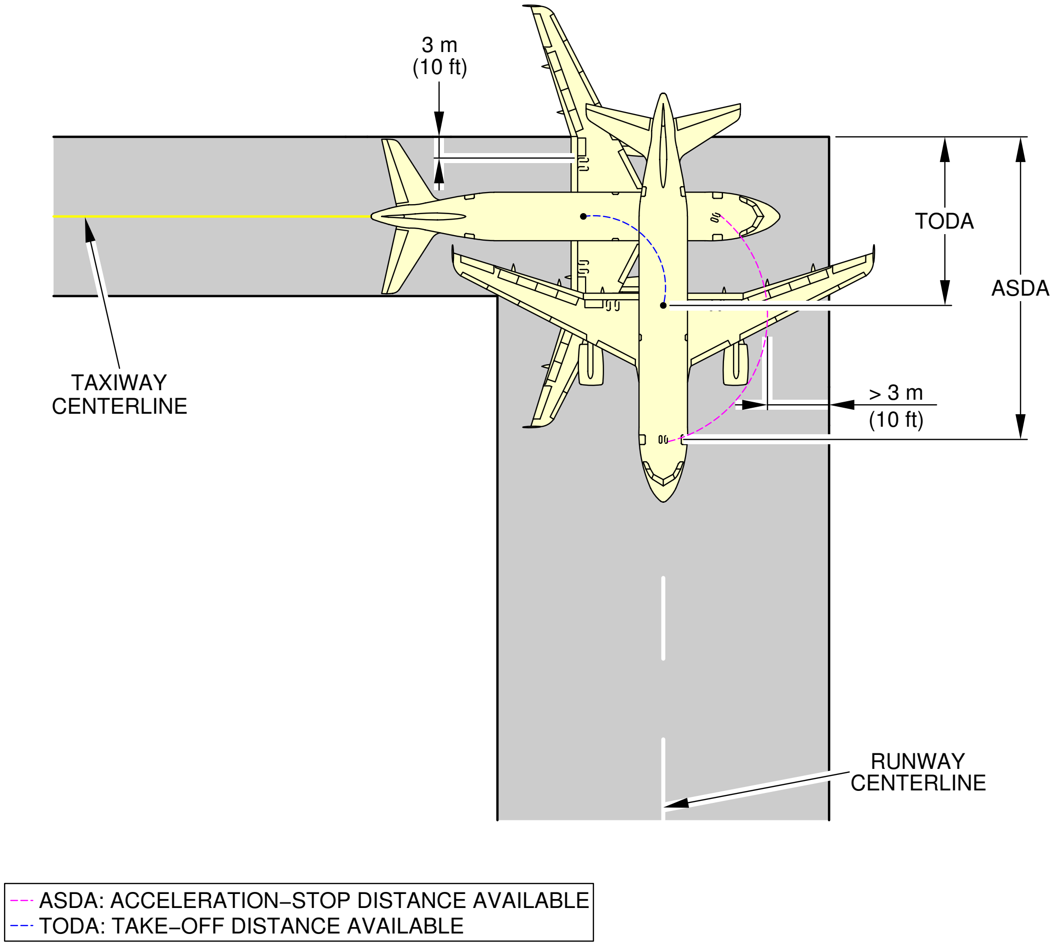
4-7-0 Minimum Line-Up Distance Corrections

****ON A/C A319-100 A319neo**

Minimum Line-Up Distance Corrections

1. The ground maneuvers were performed using asymmetric thrust and differential braking only to initiate the turn.
   TODA: Take-Off Distance Available
   ASDA: Acceleration-Stop Distance Available
2. 90° Turn on Runway Entry
   This section gives the minimum line-up distance correction for a 90° turn on runway entry.
   This maneuver consists in a 90° turn at minimum turn radius. It starts with the edge of the MLG at a distance of 3 m (10 ft) from the taxiway edge, and finishes with the aircraft aligned on the centerline of the runway, see FIGURE 4-7-0-991-017-A.
   During the turn, all the clearances must meet the minimum value of 3 m (10 ft) for this category of aircraft as recommended in ICAO Annex 14.
3. 180° Turn on Runway Turn Pad
   This section gives the minimum line-up distance correction for a 180° turn on the runway turn pad.
   This maneuver consists in a 180° turn at minimum turn radius on a runway turn pad with standard ICAO geometry.
   It starts with the edge of the MLG at a distance of 3 m (10 ft) from the pavement edge, and it finishes with the aircraft aligned on the centerline of the runway, see FIGURE 4-7-0-991-018-A.
   During the turn, all the clearances must meet the minimum value of 3 m (10 ft) for this category of aircraft as recommended in ICAO Annex 14.
4. 180° Turn on Runway Width
   This section gives the minimum line-up distance correction for a 180° turn on the runway width.
   For this maneuver, the pavement width is considered to be the runway width, which is a frozen parameter (30 m (100 ft), 45 m (150 ft) and 60 m (200 ft)).
   As per the standard operating procedures for the "180° turn on runway" (described in the Flight Crew Operating Manual), the aircraft is initially angled with respect to the runway centerline when starting the 180° turn, see FIGURE 4-7-0-991-019-A.
   The value of this angle depends on the aircraft type and is mentioned in the FCOM.
   During the turn, all the clearances must meet the minimum value of 3 m (10 ft) for this category of aircraft as recommended in ICAO Annex 14.

**ON A/C A319-100 A319neo

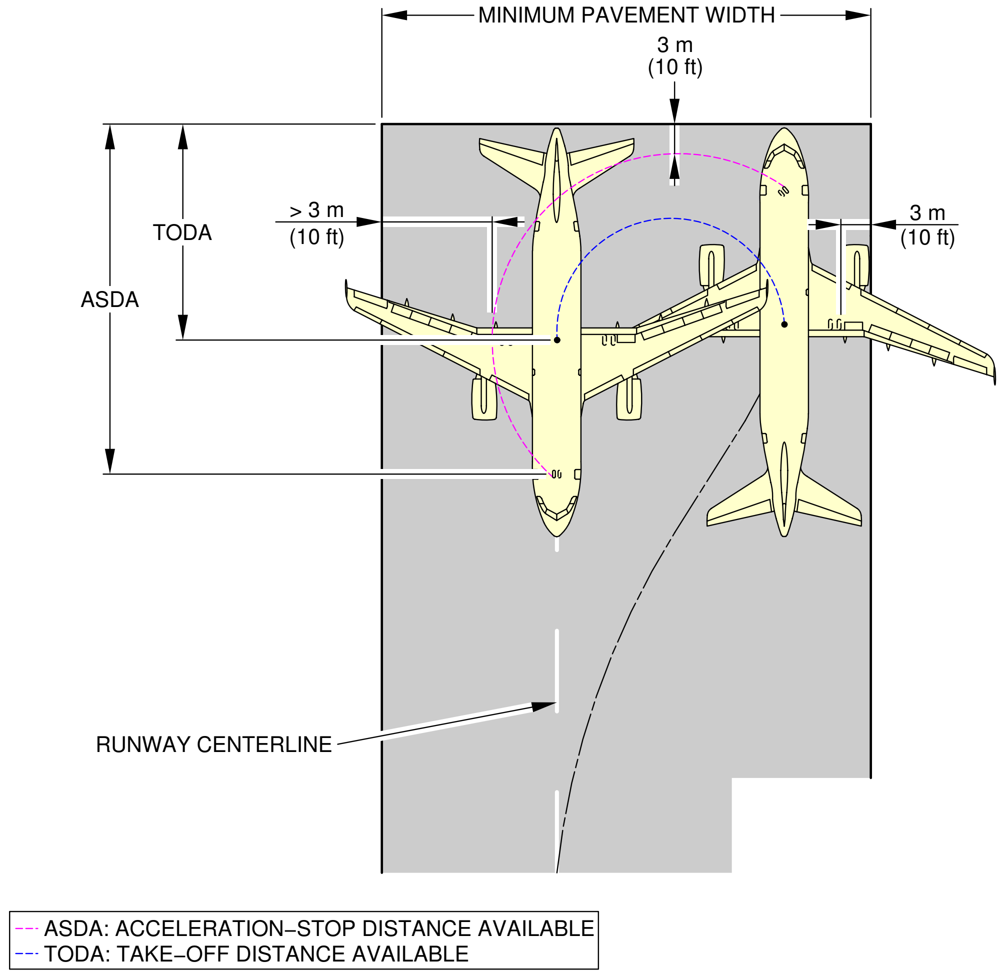


90? TURN ON RUNWAY ENTRY					
AIRCRAFT TYPE	MAX STEERING ANGLE	30 m (100 ft)/45 m (150 ft)/60 m (200 ft) WIDE RUNWAY			
		MINIMUM LINE–UP DISTANCE CORRECTION			
		ON TODA		ON ASDA	
A319	75?	11.1 m	36 ft	22.1 m	73 ft

N_AC_040700_1_0170101_01_00

Minimum Line-Up Distance Corrections
90° Turn on Runway Entry
FIGURE-4-7-0-991-017-A01

**ON A/C A319-100 A319neo

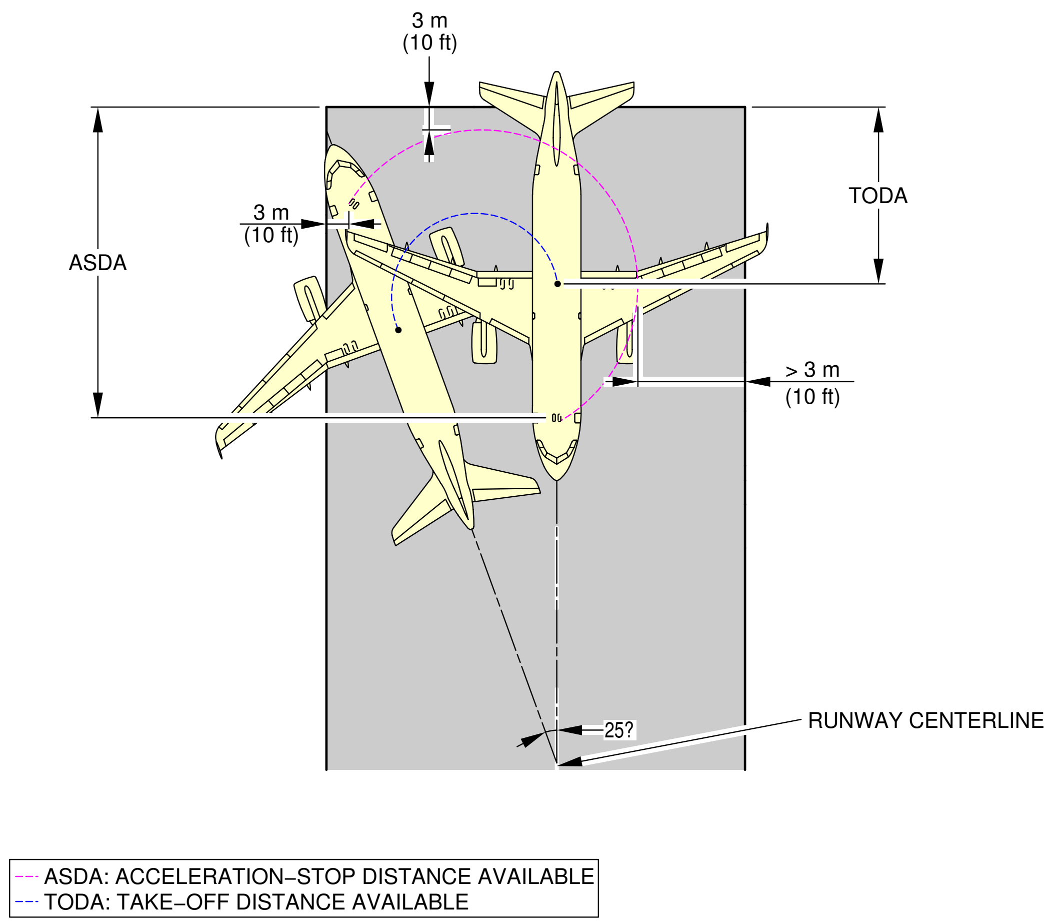


180? TURN ON RUNWAY TURN PAD							
AIRCRAFT TYPE	MAX STEERING ANGLE	30 m (100 ft)/45 m (150 ft)/60 m (200 ft) WIDE RUNWAY					
		MINIMUM LINE–UP DISTANCE CORRECTION				REQUIRED MINIMUM PAVEMENT WIDTH	
		ON TODA		ON ASDA			
A319	75?	15.0 m	49 ft	26.0 m	85 ft	29.7 m	97 ft

N_AC_040700_1_0180101_01_00

Minimum Line-Up Distance Corrections
180° Turn on Runway Turn Pad
FIGURE-4-7-0-991-018-A01

**ON A/C A319-100 A319neo



180? TURN ON RUNWAY WIDTH					
AIRCRAFT TYPE	MAX STEERING ANGLE	30 m (100 ft)/45 m (150 ft)/60 m (200 ft) WIDE RUNWAY			
		MINIMUM LINE–UP DISTANCE CORRECTION			
		ON TODA		ON ASDA	
A319	75?	15.0 m	49 ft	26.0 m	85 ft

N_AC_040700_1_0190101_01_00

Minimum Line-Up Distance Corrections
180° Turn on Runway Width
FIGURE-4-7-0-991-019-A01

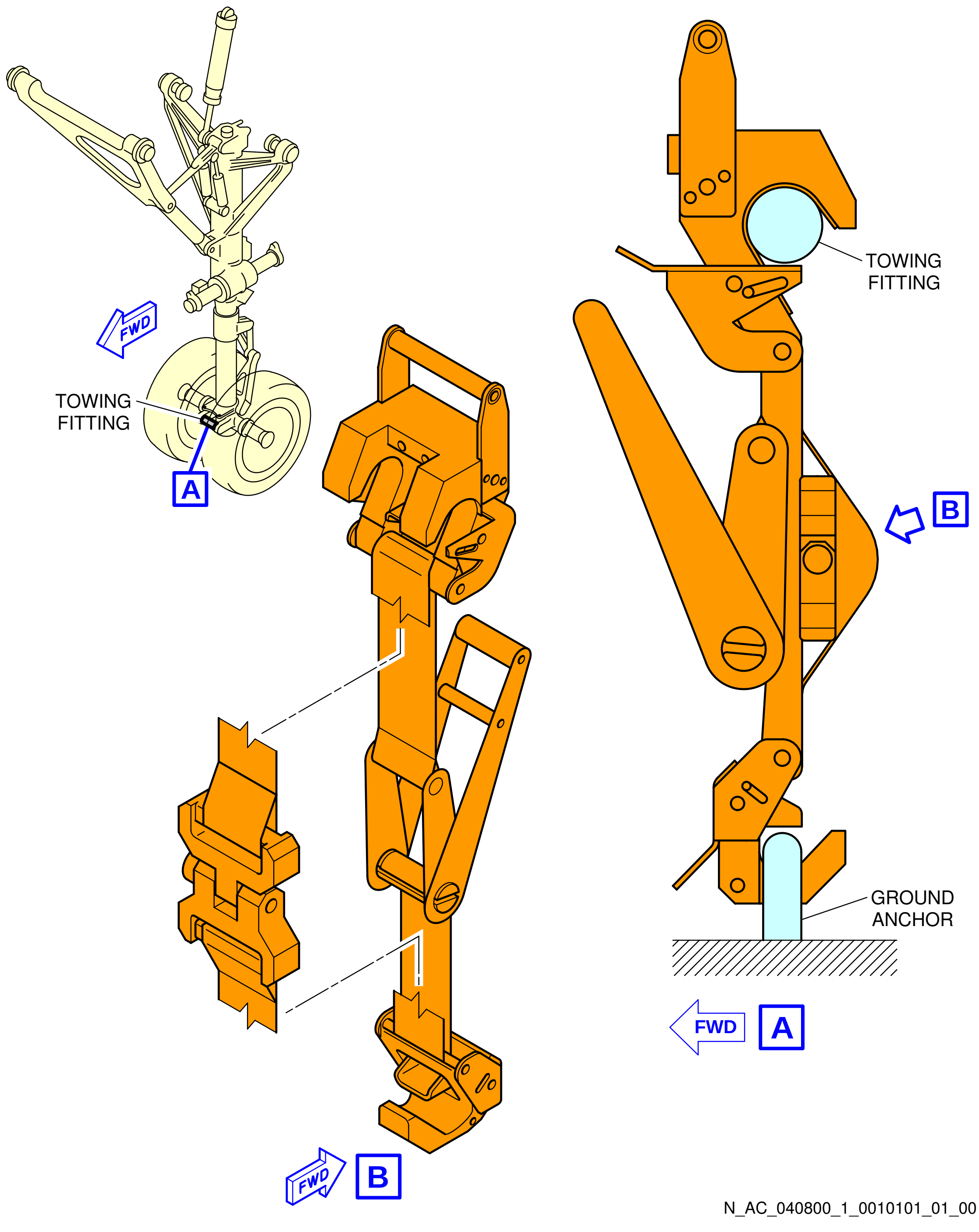
4-8-0 Aircraft Mooring

****ON A/C A319-100 A319neo**

Aircraft Mooring

1. This section provides information on aircraft mooring.

**ON A/C A319-100 A319neo



Aircraft Mooring
FIGURE-4-8-0-991-001-A01

TERMINAL SERVICING

5-1-1 Aircraft Servicing Arrangements

****ON A/C A319-100 A319neo**

Aircraft Servicing Arrangements

1. This section provides typical ramp layouts, showing the various GSE items in position during typical turn-round scenarios.

   These ramp layouts show typical arrangements only. Each operator will have its own specific requirements/regulations for positioning and operation on the ramp.

   This table gives the symbols used on servicing diagrams.

Ground Support Equipment	
AC	AIR CONDITIONING UNIT
AS	AIR START UNIT
BULK	BULK TRAIN
CAT	CATERING TRUCK
CB	CONVEYOR BELT
CLEAN	CLEANING TRUCK
FUEL	FUEL HYDRANT DISPENSER or TANKER
GPU	GROUND POWER UNIT
LDCL	LOWER DECK CARGO LOADER
LV	LAVATORY VEHICLE
PBB	PASSENGER BOARDING BRIDGE
PS	PASSENGER STAIRS
TOW	TOW TRACTOR
ULD	ULD TRAIN
WV	POTABLE WATER VEHICLE

5-1-2 Typical Ramp Layout - Open Apron

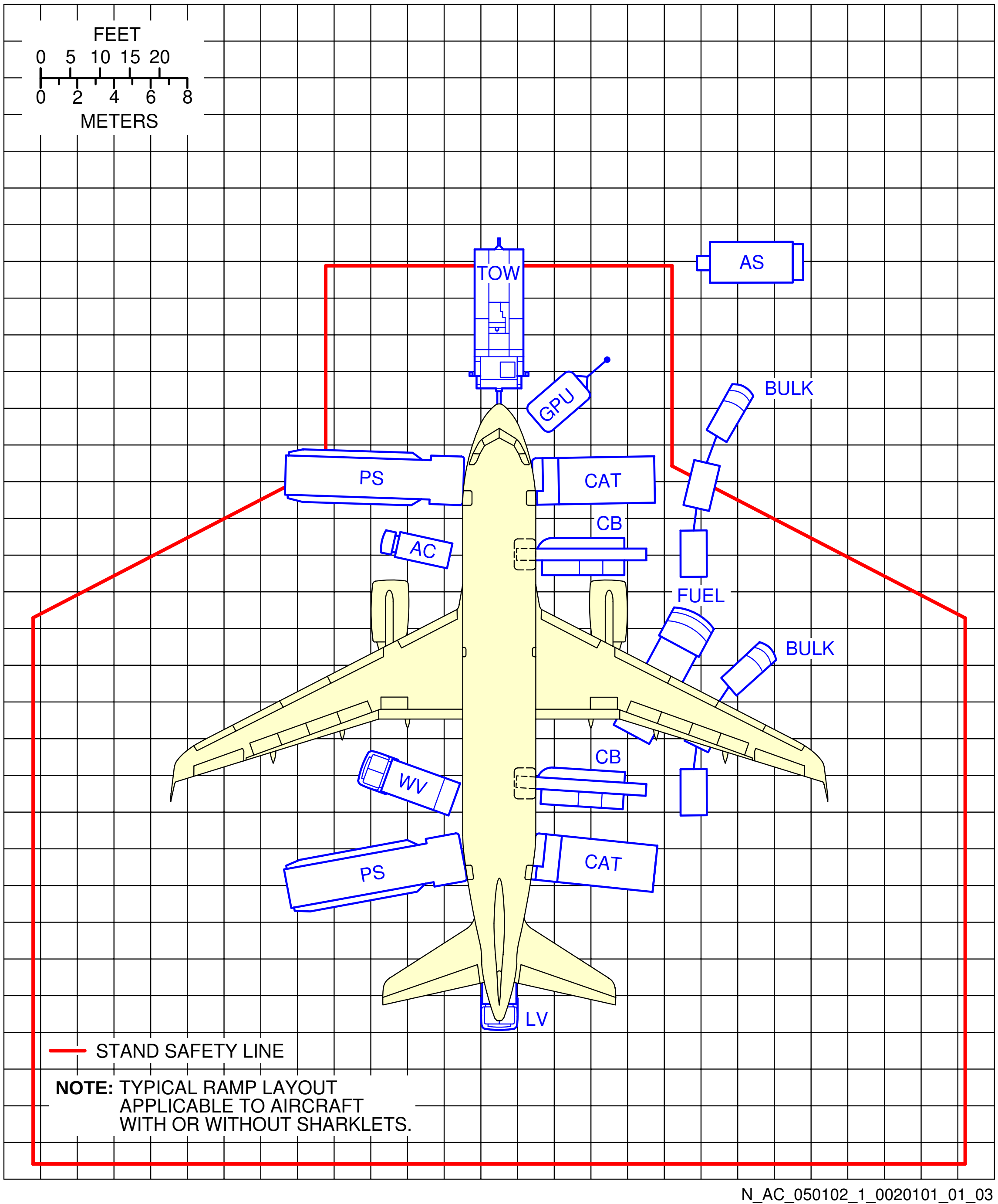
****ON A/C A319-100 A319neo**

Typical Ramp Layout – Open Apron

1. This section gives the typical servicing arrangement for pax version (Open Apron).

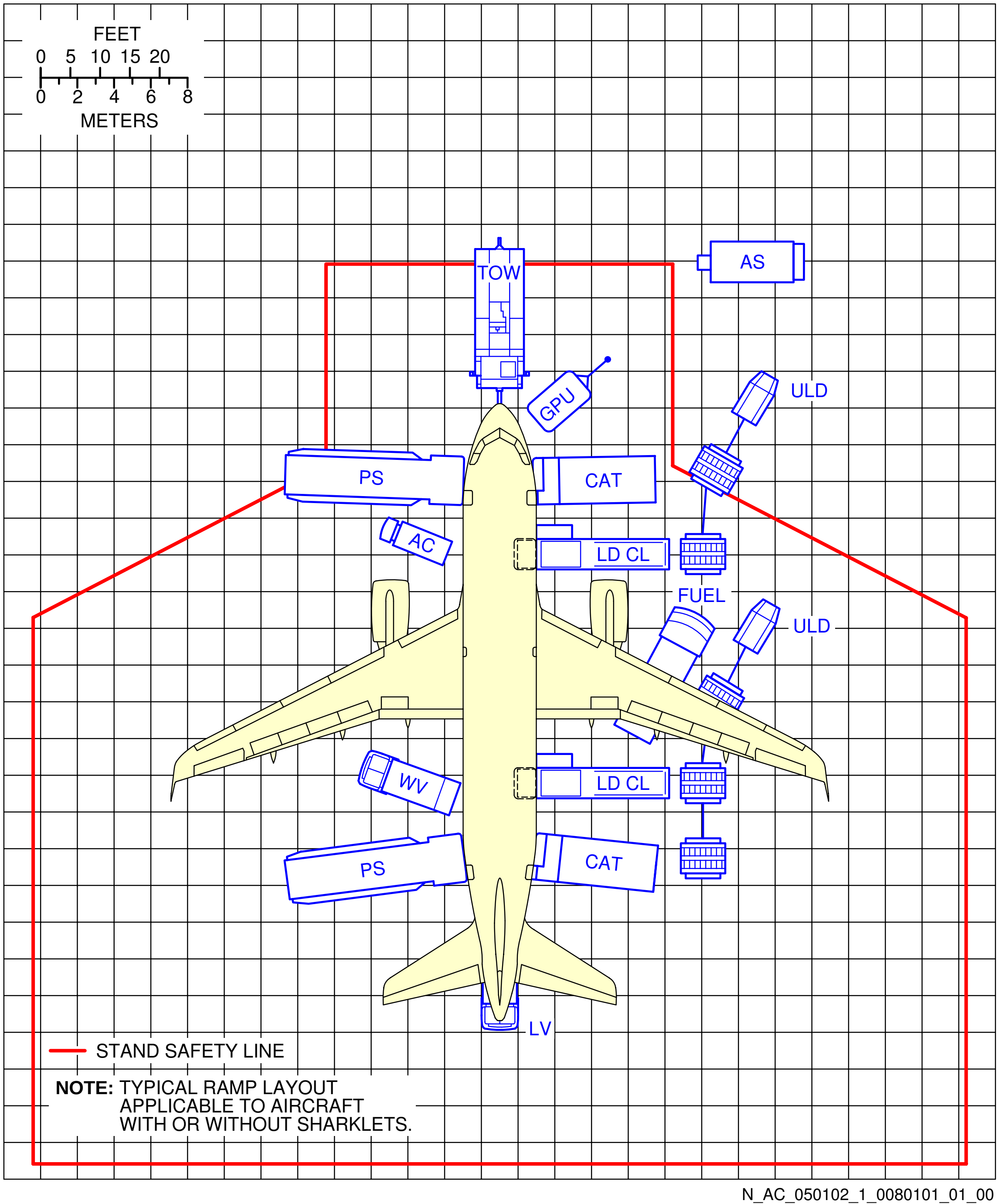
   The Stand Safety Line delimits the Aircraft Safety Area (minimum distance of 7.5 m from the aircraft). No vehicle must be parked in this area before complete stop of the aircraft (wheel chocks in position on landing gears).

**ON A/C A319-100 A319neo



Typical Ramp Layout
Open Apron - Bulk Loading
FIGURE-5-1-2-991-002-A01

**ON A/C A319-100 A319neo



Typical Ramp Layout
Open Apron - ULD Loading
FIGURE-5-1-2-991-008-A01

5-1-3 Typical Ramp Layout - Gate

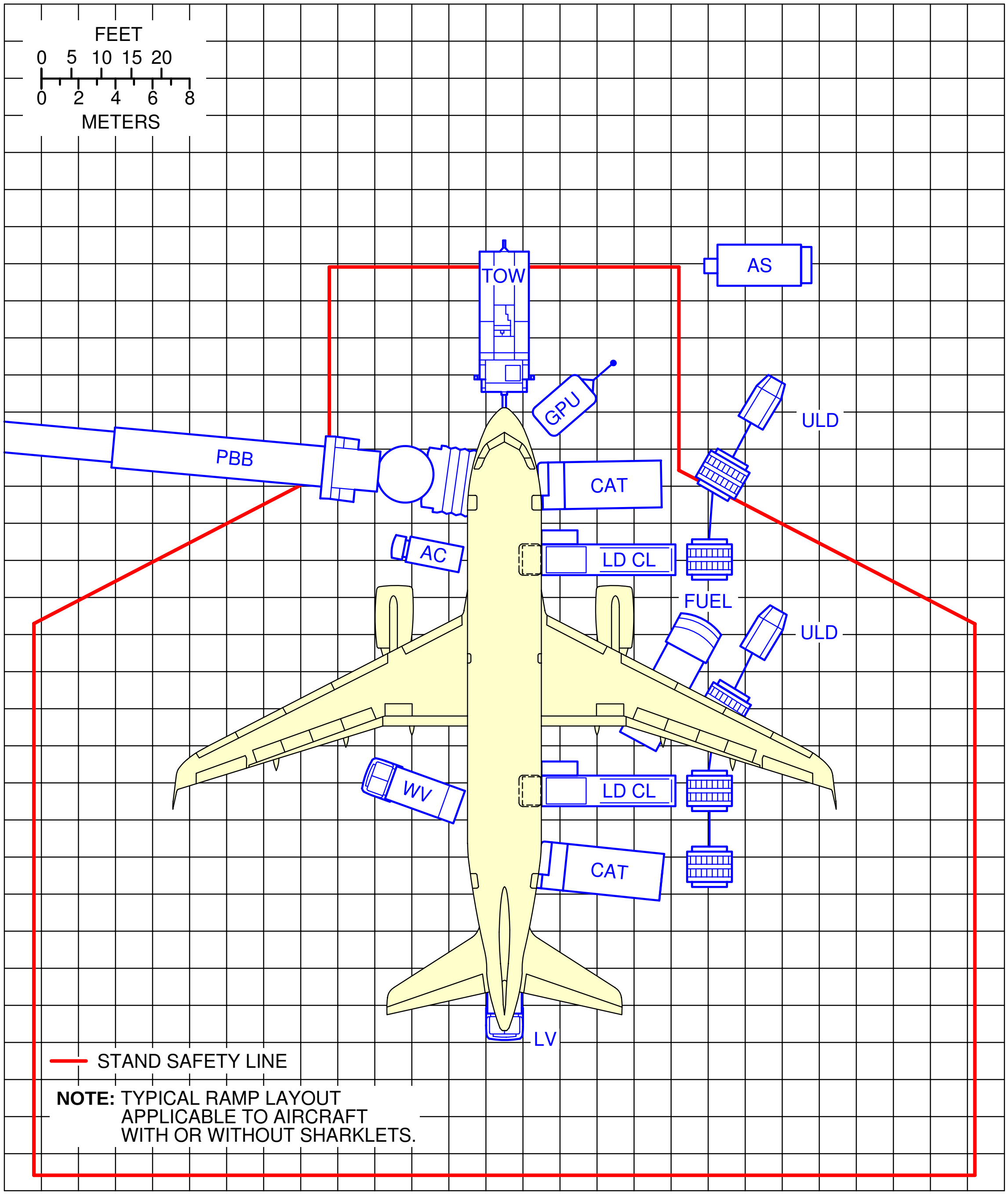
****ON A/C A319-100 A319neo**

Typical Ramp Layout - Gate

1. This section gives the typical servicing arrangement for pax version (Passenger Bridge).

   The Stand Safety Line delimits the Aircraft Safety Area (minimum distance of 7.5 m from the aircraft). No vehicle must be parked in this area before complete stop of the aircraft (wheel chocks in position on landing gears).

**ON A/C A319-100 A319neo



Typical Ramp Layout
Gate
FIGURE-5-1-3-991-001-A01

5-2-0 Terminal Operations - Full Servicing Turn Round Time Chart

****ON A/C A319-100 A319neo**

Terminal Operations - Full Servicing Turn Round Time

1. This section provides a typical turn round time chart showing the typical time for ramp activities during aircraft turn round.
   Actual times may vary due to each operator's specific practices, resources, equipment and operating conditions.

2. Assumptions used for full servicing turn round time chart

   A. PASSENGER HANDLING
   124 pax: 8 F/C + 116 Y/C.
   All passengers deplane and board the aircraft.
   1 Passenger Boarding Bridge (PBB) used at door 1L.
   Equipment positioning + opening door = +2 min.
   Closing door + equipment removal = +1.5 min.
   No Passenger with Reduced Mobility (PRM) on board.

   Deplaning:
   - 124 pax at door 1L
   - Deplaning rate = 20 pax/min per door
   - Priority deplaning for premium passengers.

   Boarding:
   - 124 pax at door 1L
   - Boarding rate = 12 pax/min per door
   - Last Pax Seating allowance (LPS) + headcounting = +2 min.

   B. CARGO
   2 cargo loaders + 1 belt loader.
   Opening door + equipment positioning = +2 min.
   Equipment removal + closing door = +1.5 min.

   100% cargo exchange:
   - FWD cargo compartment: 2 containers
   - AFT cargo compartment: 2 containers
   - Bulk compartment: 500 kg (1 102 lb).

   Container unloading/loading times:
   - Unloading = 1.5 min/container
   - Loading = 1.5 min/container.

   Bulk unloading/loading times:

- Unloading = 150 kg/min (331 lb/min)
- Loading = 120 kg/min (265 lb/min).

C. REFUELING
20 000 l (5 283 US gal) at 50 psig (3.45 bars-rel), one hose (right wing).
Dispenser positioning/removal + connection/disconnection times = +2.5 min.

D. CLEANING
Cleaning is performed in available time.

E. CATERING
1 catering truck for servicing galleys sequentially at doors 1R and 4R.
Equipment positioning + opening door = +2 min.
Closing door + equipment removal = +1.5 min.
Time to drive from one door to the other = +2 min.

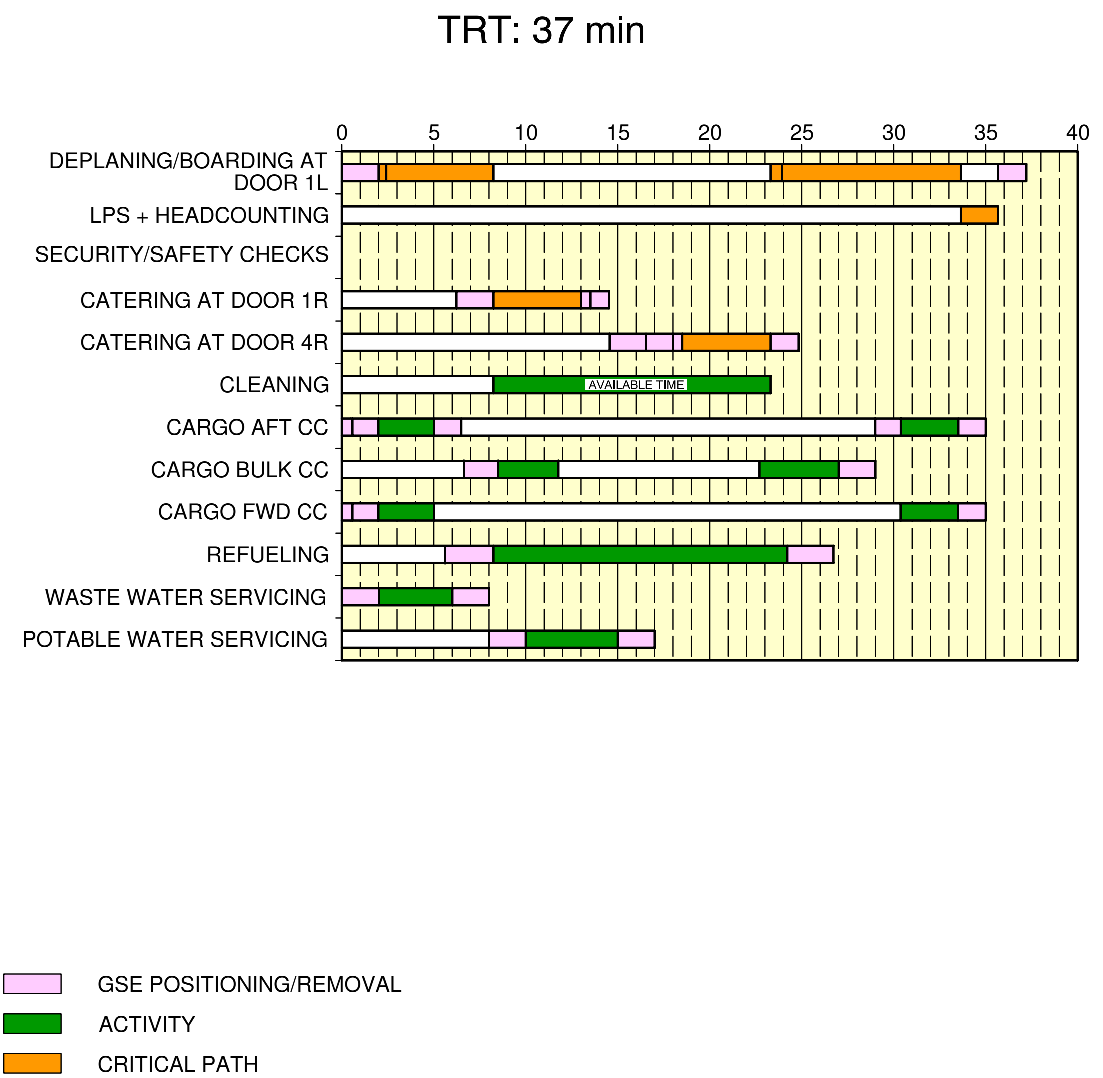
Full Size Trolley Equivalent (FSTE) to unload and load: 8 FSTE
- 4 FSTE at door 1R
- 4 FSTE at door 4R.

Time for trolley exchange = 1.2 min per FSTE.

F. GROUND HANDLING/GENERAL SERVICING
Start of operations:
- Bridges/stairs: t0 = 0
- Other equipment: t = t0.

Ground Power Unit (GPU): up to 90 kVA.
Air conditioning: one hose.
Potable water servicing: 100% uplift, 200 l (53 US gal).
Toilet servicing: draining + rinsing.

**ON A/C A319-100 A319neo



Full Servicing Turn Round Time Chart
FIGURE-5-2-0-991-005-A01

5-3-0 Terminal Operation - Outstation Turn Round Time Chart

****ON A/C A319-100 A319neo**

Terminal Operations - Outstation Turn Round Time

1. This section provides a typical turn round time chart showing the typical time for ramp activities during aircraft turn round.
   Actual times may vary due to each operator's specific practices, resources, equipment and operating conditions.
2. Assumptions used for outstation turn round time chart
   A. PASSENGER HANDLING
      156 pax (all Y/C).
      All passengers deplane and board the aircraft.
      2 stairways used at doors 1L and 4L.
      Equipment positioning + opening door = +2 min.
      Closing door + equipment removal = +1.5 min.
      No Passenger with Reduced Mobility (PRM) on board.

      Deplaning:
      - 78 pax at door 1L
      - 78 pax at door 4L
      - Deplaning rate = 18 pax/min per door.

      Boarding:
      - 78 pax at door 1L
      - 78 pax at door 4L
      - Boarding rate = 12 pax/min per door
      - Last Pax Seating allowance (LPS) + headcounting = +2 min.
   B. CARGO
      2 cargo loaders.
      Opening door + equipment positioning = +2 min.
      Equipment removal + closing door = +1.5 min.

      100% cargo exchange:
      - FWD cargo compartment: 2 containers
      - AFT cargo compartment: 2 containers.

      Container unloading/loading times:
      - Unloading = 1.5 min/container
      - Loading = 1.5 min/container.
   C. REFUELING
      No refueling.

D. CLEANING

Cleaning is performed in available time.

E. CATERING

One catering truck for servicing the galleys as required.

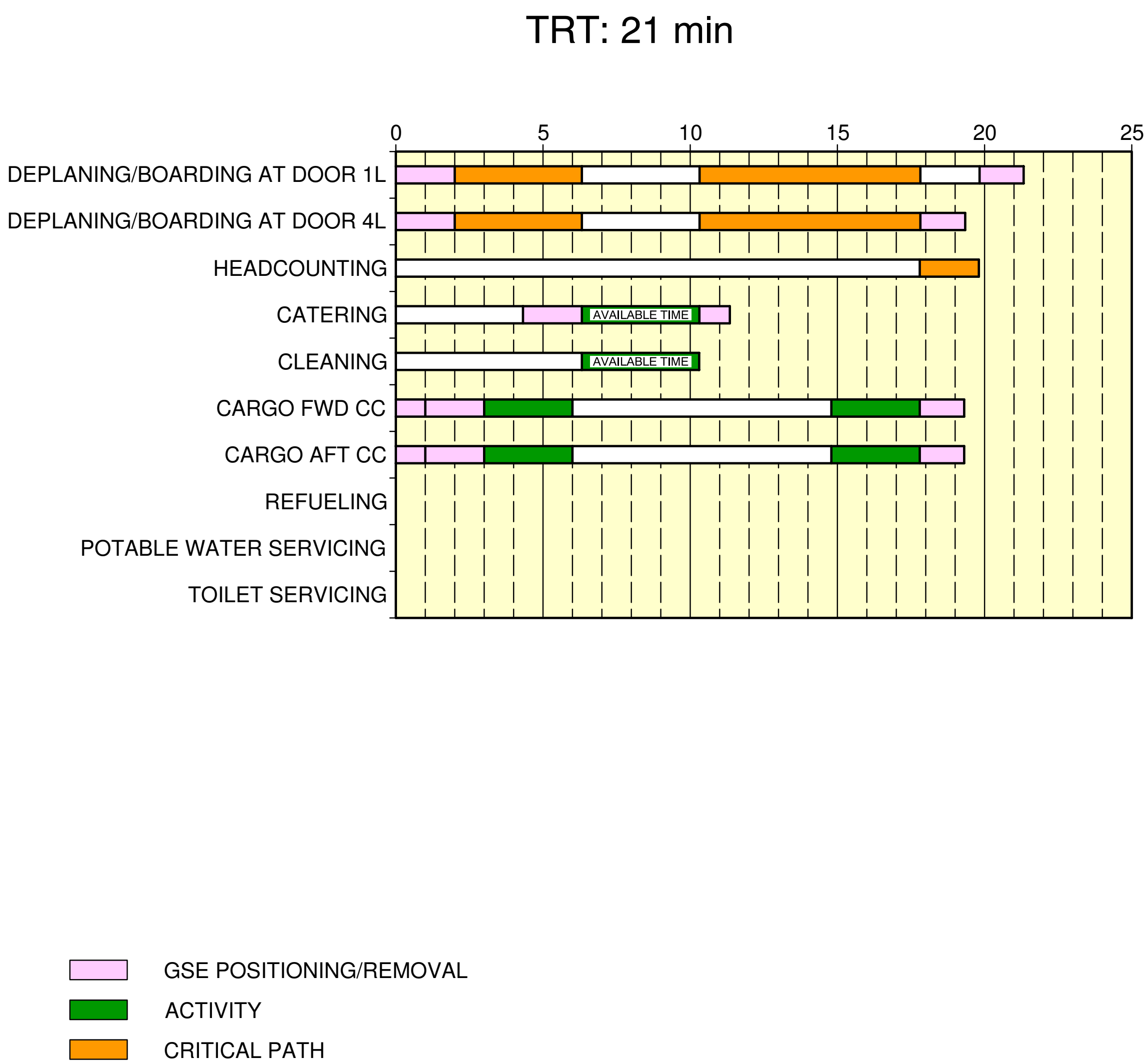
F. GROUND HANDLING/GENERAL SERVICING

Start of operations:

- Bridges/stairs: t0 = 0
- Other equipment: t = t0.

Ground Power Unit (GPU): up to 90 kVA.
Air conditioning: one hose.
No potable water servicing.
No toilet servicing.

****ON A/C A319-100 A319neo**



N_AC_050300_1_0020101_01_05

Outstation Turn Round Time Chart
FIGURE-5-3-0-991-002-A01

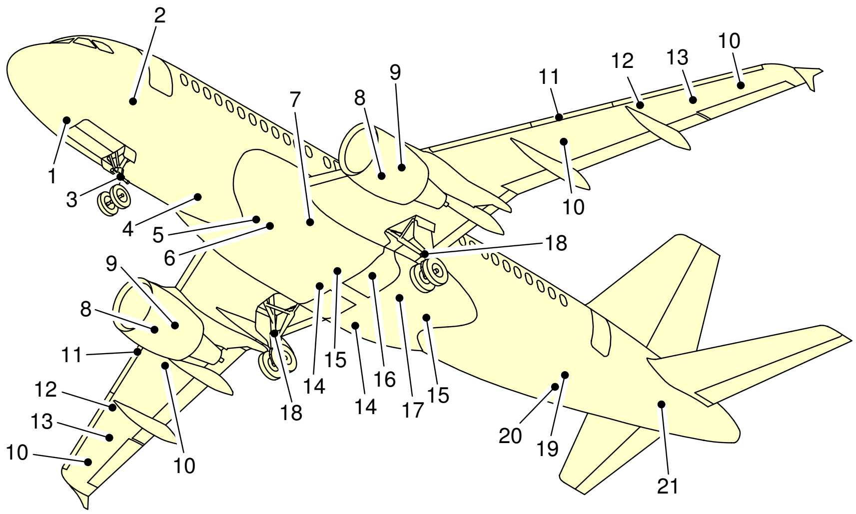
5-4-1 Ground Service Connections

****ON A/C A319-100 A319neo**

<u>Ground Service Connections Layout</u>

1. This section provides the ground service connections layout.

**ON A/C A319-100 A319neo



1 – GROUND ELECTRICAL POWER CONNECTOR
2 – OXYGEN SYSTEM
3 – NLG GROUNDING (EARTHING) POINT
4 – POTABLE WATER DRAIN PANEL
5 – LOW PRESSURE AIR PRE–CONDITIONING
6 – HIGH PRESSURE AIR PRE–CONDITIONING
7 – REFUEL/DEFUEL INTEGRATED PANEL
8 – IDG/STARTER OIL SERVICING
9 – ENGINE OIL SERVICING
10 – OVERPRESSURE PROTECTOR
11 – REFUEL/DEFUEL COUPLINGS (OPTIONAL–LH WING)
12 – OVERWING REFUEL (IF INSTALLED)
13 – NACA VENT INTAKE
14 – YELLOW HYDRAULIC–SYSTEM SERVICE PANEL
15 – BLUE HYDRAULIC–SYSTEM SERVICE PANEL
16 – ACCUMULATOR CHARGING (GREEN SYSTEM) AND RESERVOIR DRAIN (GREEN SYSTEM)
17 – GREEN HYDRAULIC–SYSTEM SERVICE PANEL
18 – MLG GROUNDING (EARTHING) POINT
19 – WASTE WATER SERVICE PANEL
20 – POTABLE WATER SERVICE PANEL
21 – APU OIL SERVICING

N_AC_050401_1_0020101_01_02

Ground Service Connections Layout
FIGURE-5-4-1-991-002-A01

5-4-2 Grounding Points

**ON A/C A319-100 A319neo

Grounding (Earthing) Points

1. Grounding (Earthing) Points

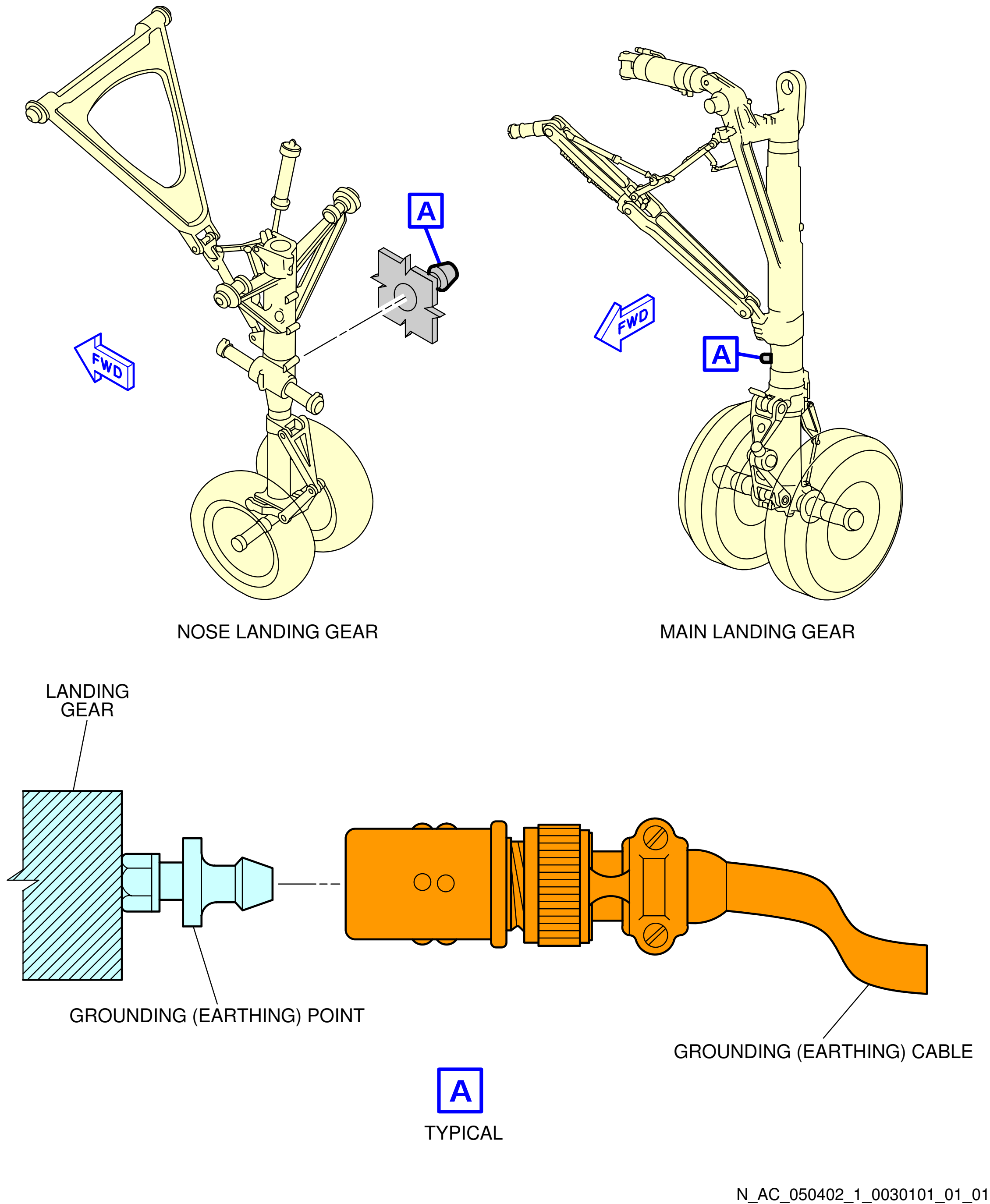
	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		LH SIDE	RH SIDE	
On Nose Landing Gear leg:	5.07 m (16.63 ft)	On Centerline		0.94 m (3.08 ft)
On left Main Landing Gear leg:	16.11 m (52.85 ft)	3.79 m (12.43 ft)	-	1.07 m (3.51 ft)
On right Main Landing Gear leg:	16.11 m (52.85 ft)	-	3.79 m (12.43 ft)	1.07 m (3.51 ft)

A. The grounding (earthing) stud on each landing gear leg is designed for use with a clip-on connector (such as Appleton TGR).

B. The grounding (earthing) studs are used to connect the aircraft to an approved ground (earth) connection on the ramp or in the hangar for:
- Refuel/defuel operations,
- Maintenance operations,
- Bad weather conditions.

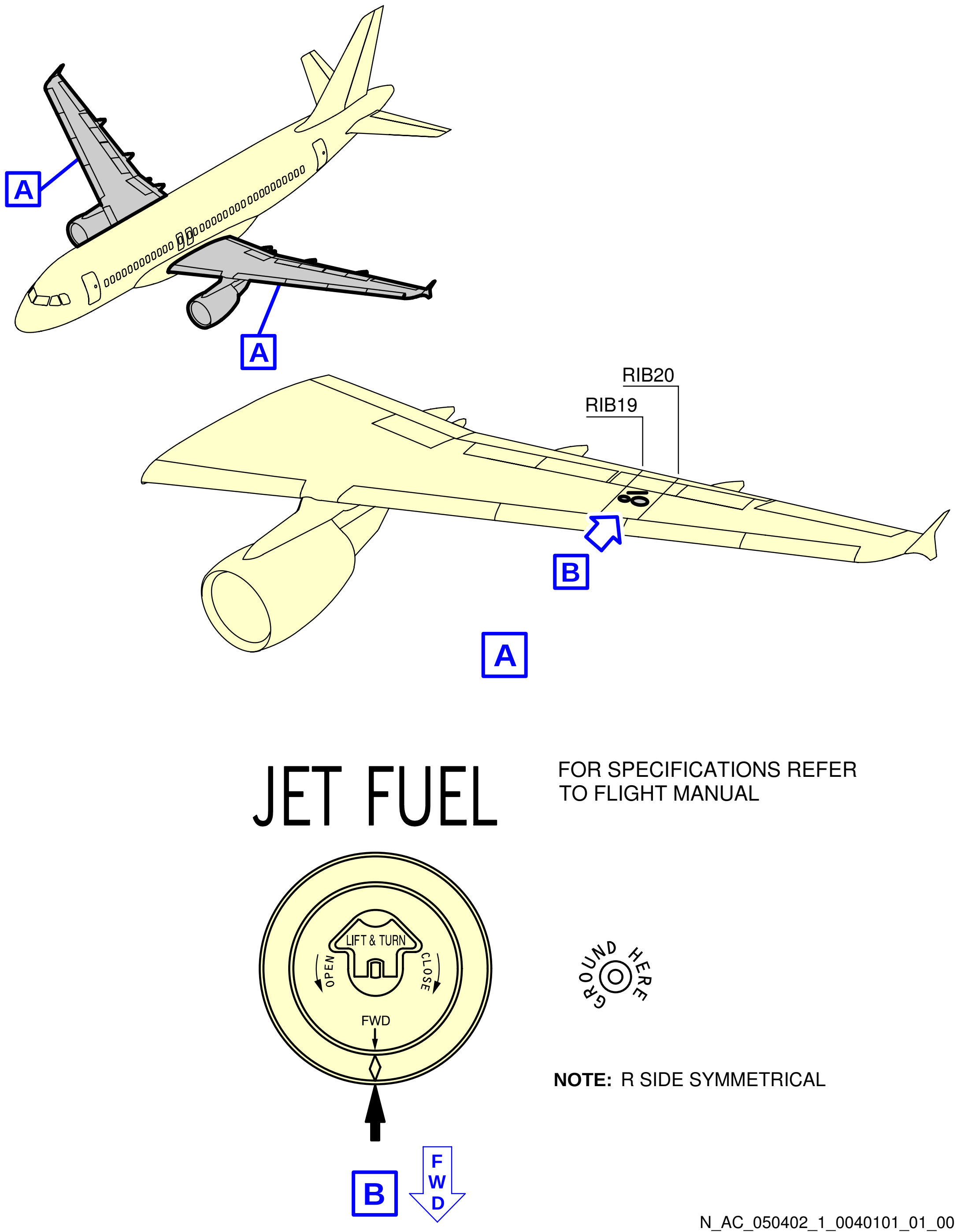
NOTE : In all other conditions, the electrostatic discharge through the tire is sufficient.
If the aircraft is on jacks for retraction and extension checks or for the removal/installation of the landing gear, the grounding (earthing) alternative points (if installed) are:
- In the hole on the avionics-compartment lateral right door-frame (on FR14),
- On the engine nacelles,
- Adjacent to the high-pressure connector,
- On the wing upper surfaces.

**ON A/C A319-100 A319neo



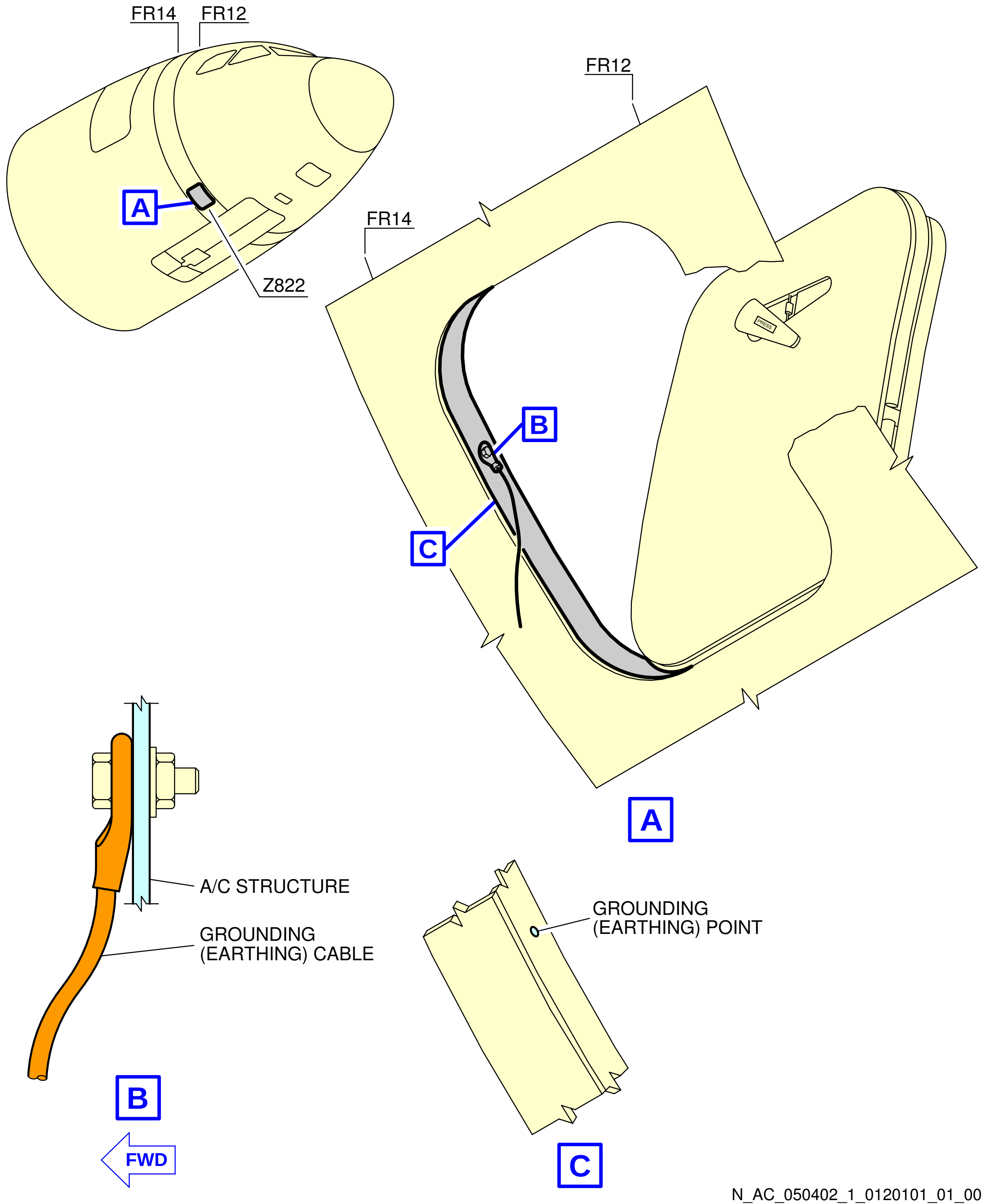
Ground Service Connections
Grounding (Earthing) Points - Landing Gear
FIGURE-5-4-2-991-003-A01

**ON A/C A319-100 A319neo



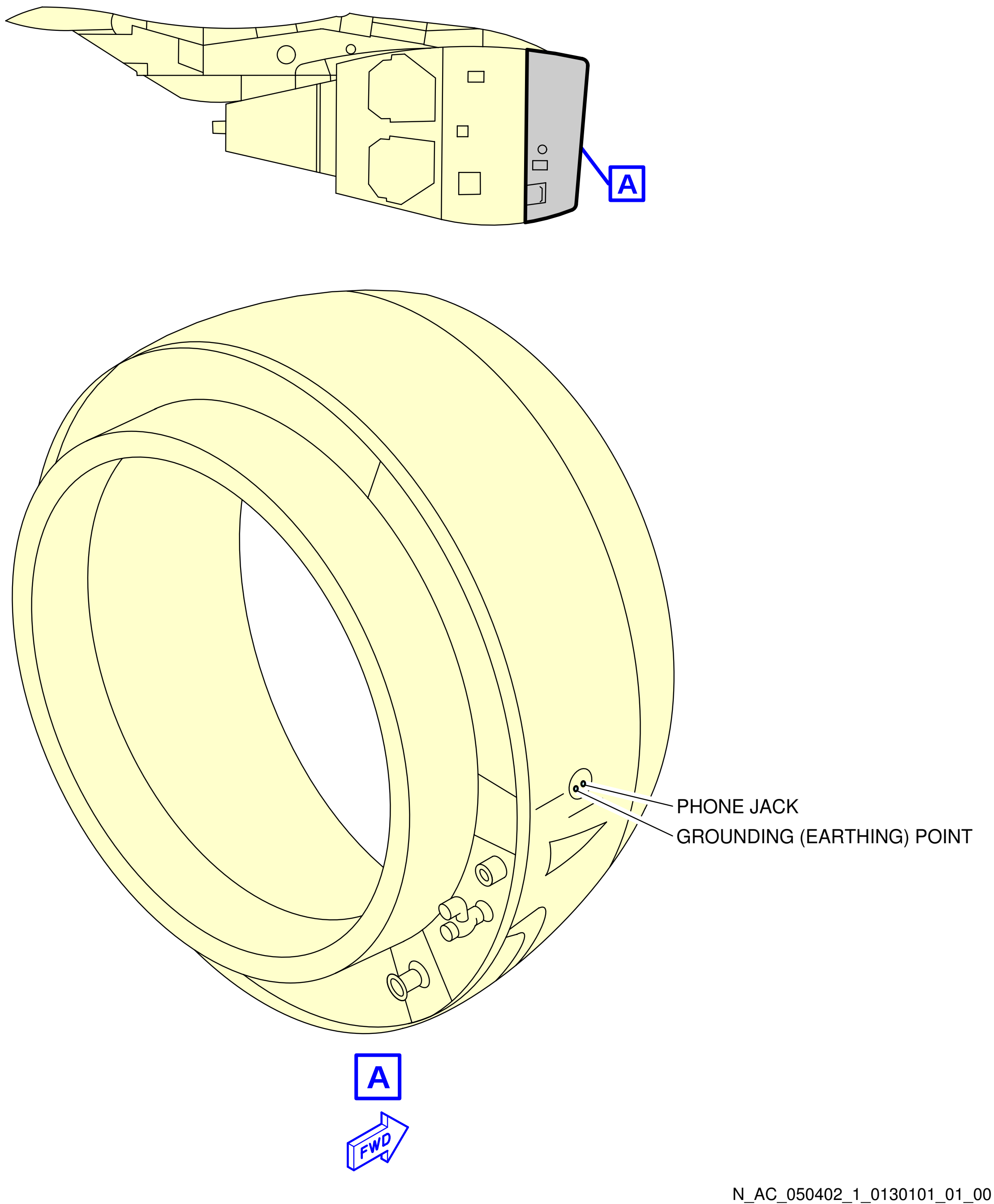
Ground Service Connections
Grounding (Earthing) Points - Wing (If Installed)
FIGURE-5-4-2-991-004-A01

**ON A/C A319-100 A319neo



Ground Service Connections
Grounding (Earthing) Point - Avionics Compartment Door-Frame
FIGURE-5-4-2-991-012-A01

**ON A/C A319-100 A319neo



Ground Service Connections
Grounding (Earthing) Point - Engine Air Intake (If Installed)
FIGURE-5-4-2-991-013-A01

5-4-3 Hydraulic System

ON A/C A319-100 A319neo

Hydraulic Servicing

1. Access

ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		LH SIDE	RH SIDE	
Green System: Access Door 197CB	17.57 m (57.64 ft)	1.27 m (4.17 ft)		1.76 m (5.77 ft)
Yellow System: Access Door 198CB	17.57 m (57.64 ft)		1.27 m (4.17 ft)	1.76 m (5.77 ft)
Blue System: Access Door 197EB	18.92 m (60.07 ft)	1.27 m (4.17 ft)		1.76 m (5.77 ft)

2. Reservoir Pressurization

ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		LH SIDE	RH SIDE	
Access Door 195BB	14.05 m (46.10 ft)	0.25 m (0.82 ft)		1.74 m (5.71 ft)

3. Accumulator Charging

Four MIL-PRF-6164 connections:

ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		LH SIDE	RH SIDE	
Yellow System Accumulator: Access Door 196BB	14.05 m (46.10 ft)		0.25 m (0.82 ft)	1.74 m (5.71 ft)

ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		LH SIDE	RH SIDE	
Green System Accumulator: Left MLG Door	15.67 m (51.41 ft)	0.25 m (0.82 ft)		3.20 m (10.50 ft)
Blue System Accumulator: Access Door 195BB	14.05 m (46.10 ft)	0.25 m (0.82 ft)		1.74 m (5.71 ft)
Yellow System Braking Accumulator: Access Door 196BB	14.05 m (46.10 ft)		0.25 m (0.82 ft)	1.74 m (5.71 ft)

4. Reservoir Filling

Centralized filling capability on the Green System ground service panel:

ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		LH SIDE	RH SIDE	
Access Door 197CB	17.57 m (57.64 ft)	1.27 m (4.17 ft)		1.76 m (5.77 ft)

Filling: Ground pressurized supply or hand pump.

5. Reservoir Drain

Three 3/8 in. self-sealing connections:

ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		LH SIDE	RH SIDE	
Yellow System: Access Door 196BB	14.05 m (46.10 ft)		0.25 m (0.82 ft)	1.74 m (5.71 ft)
Green System: Left MLG Door	15.67 m (51.41 ft)	0.25 m (0.82 ft)		3.20 m (10.50 ft)

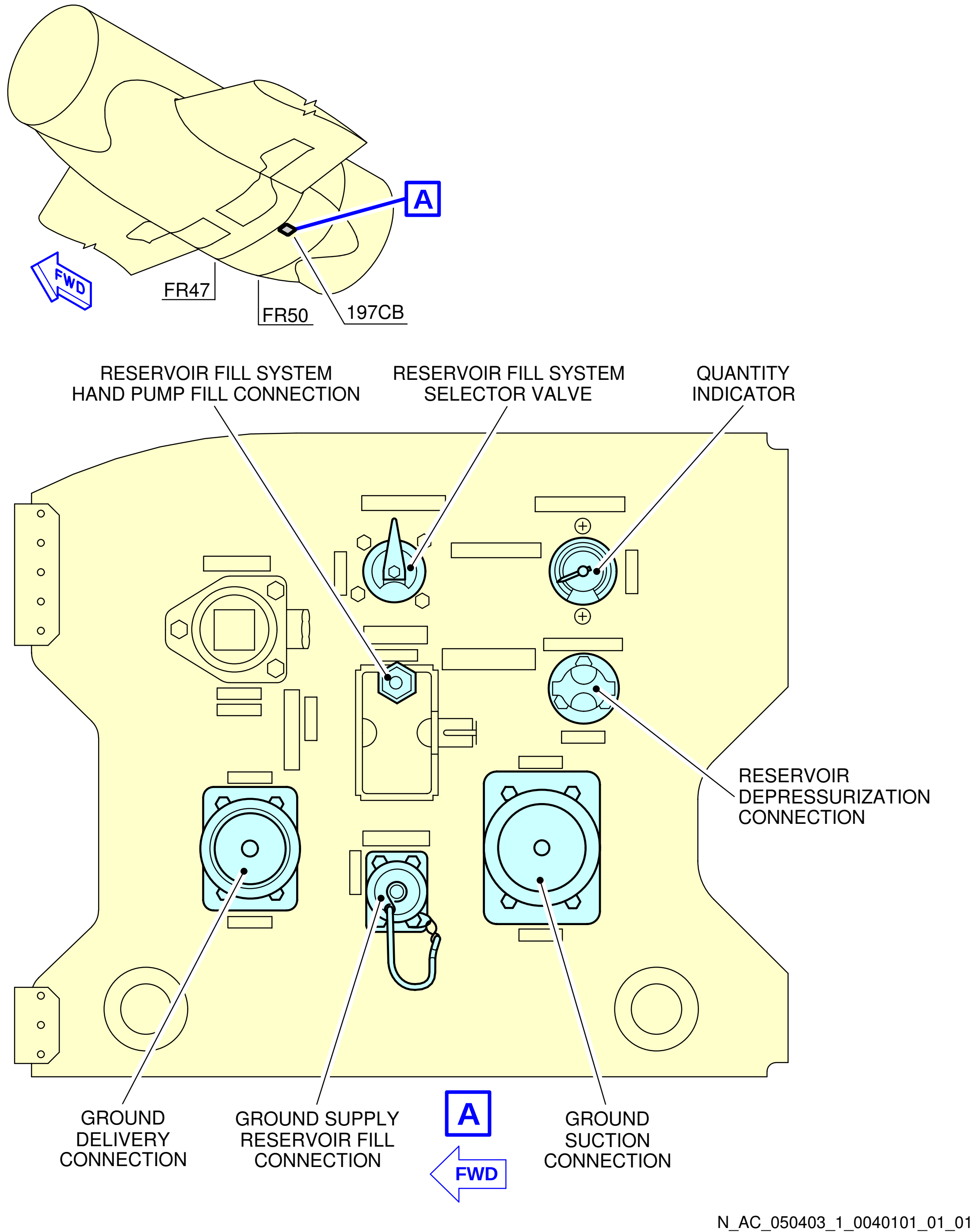
ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		LH SIDE	RH SIDE	
Blue System: Access Door 197EB	18.92 m (62.07 ft)	1.27 m (4.17 ft)		1.76 m (5.77 ft)

NOTE : The drain valve is on the Blue System ground service panel for the reservoir of the Blue hydraulic system.
The drain valve is on the reservoir for the Green and Yellow Hydraulic Systems.

6. Ground Test

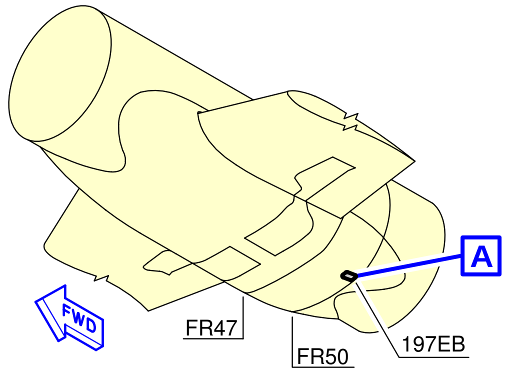
On each ground service panel:
- One self-sealing connector (suction).
- One self-sealing connector (delivery).

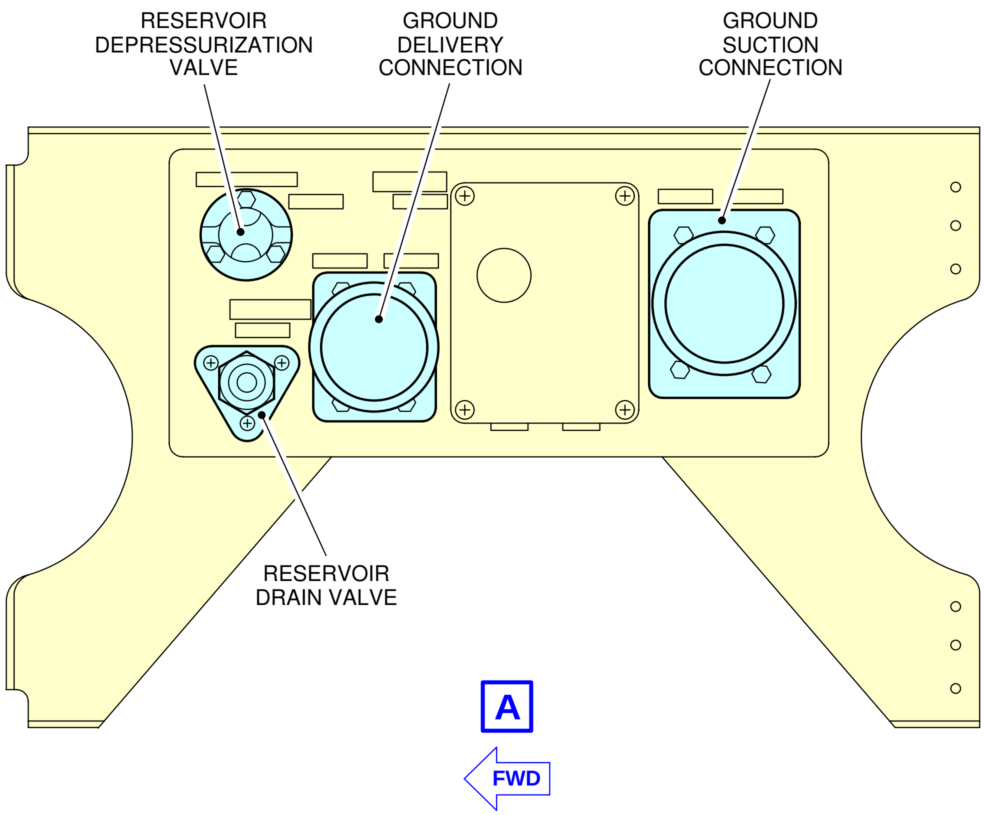
**ON A/C A319-100 A319neo



Ground Service Connections
Green System Ground Service Panel
FIGURE-5-4-3-991-004-A01

**ON A/C A319-100 A319neo

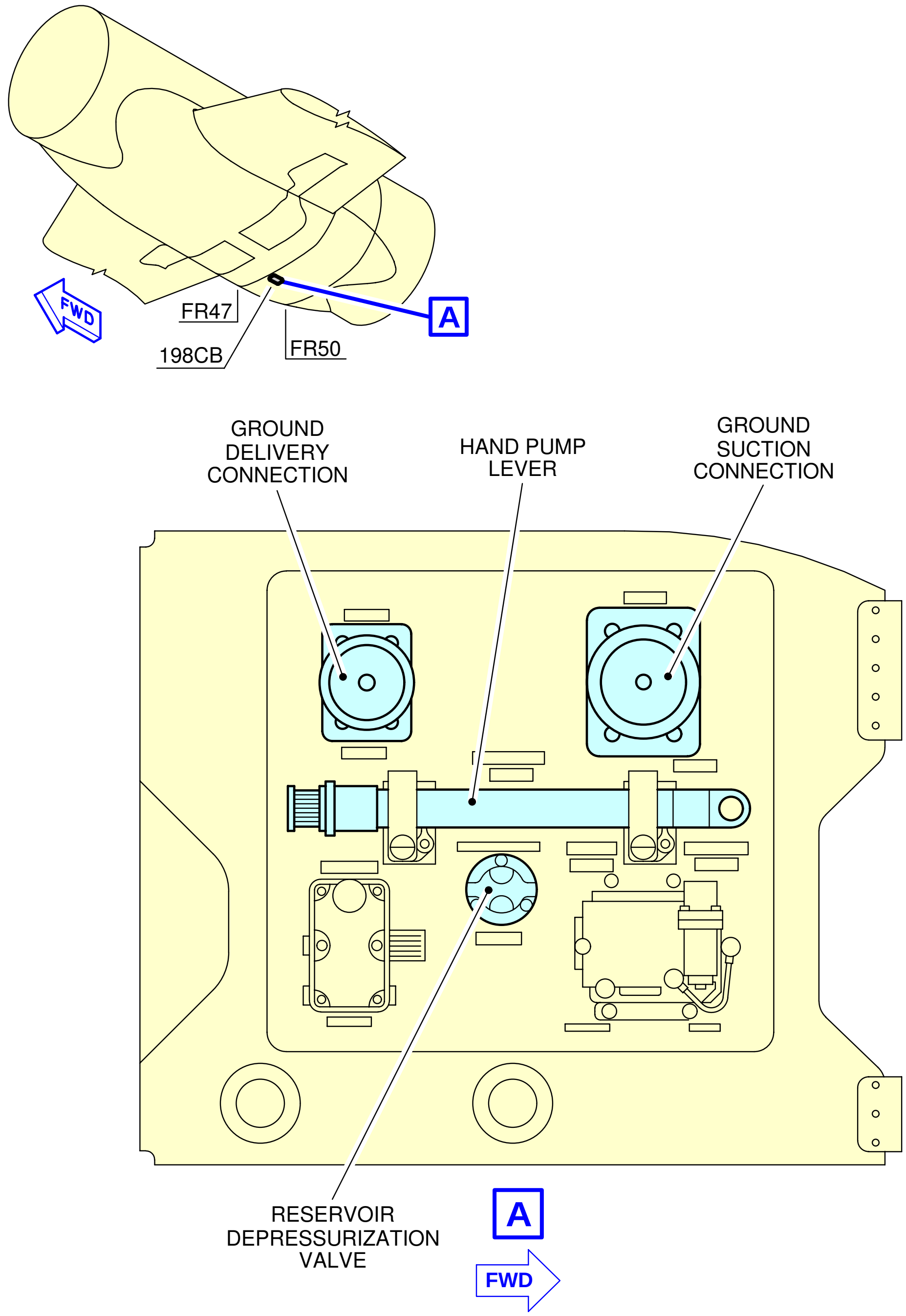




N_AC_050403_1_0050101_01_01

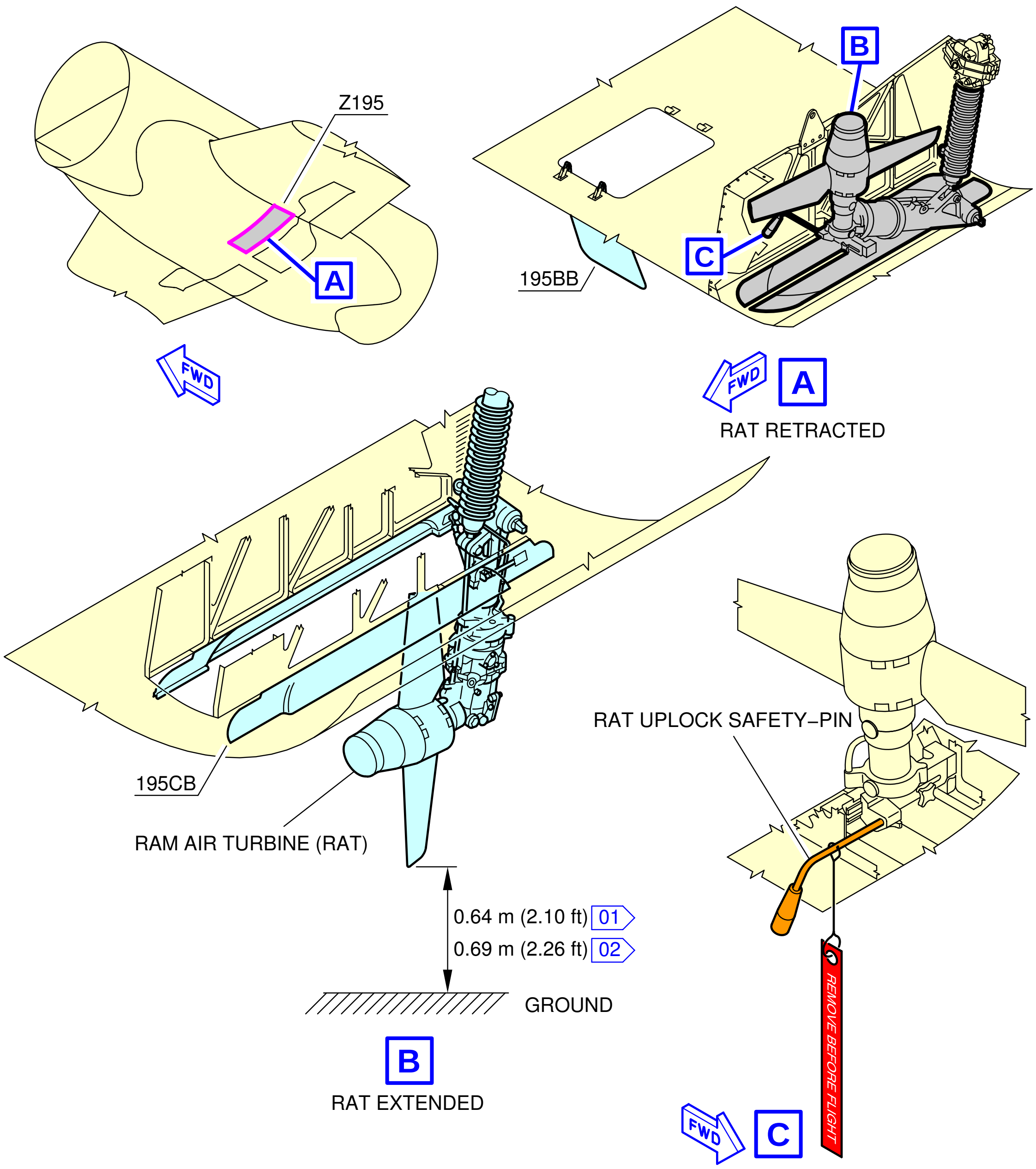
Ground Service Connections
Blue System Ground Service Panel
FIGURE-5-4-3-991-005-A01

****ON A/C A319-100 A319neo**



Ground Service Connections
Yellow System Ground Service Panel
FIGURE-5-4-3-991-006-A01

**ON A/C A319-100 A319neo



NOTE:
01 FOR A318, A319 AND A320
02 FOR A321

N_AC_050403_1_0070101_01_00

Ground Service Connections
RAT
FIGURE-5-4-3-991-007-A01

5-4-4 Electrical System

****ON A/C A319-100 A319neo**

Electrical System

1. Electrical System
This chapter provides data related to the location of the ground service connections.

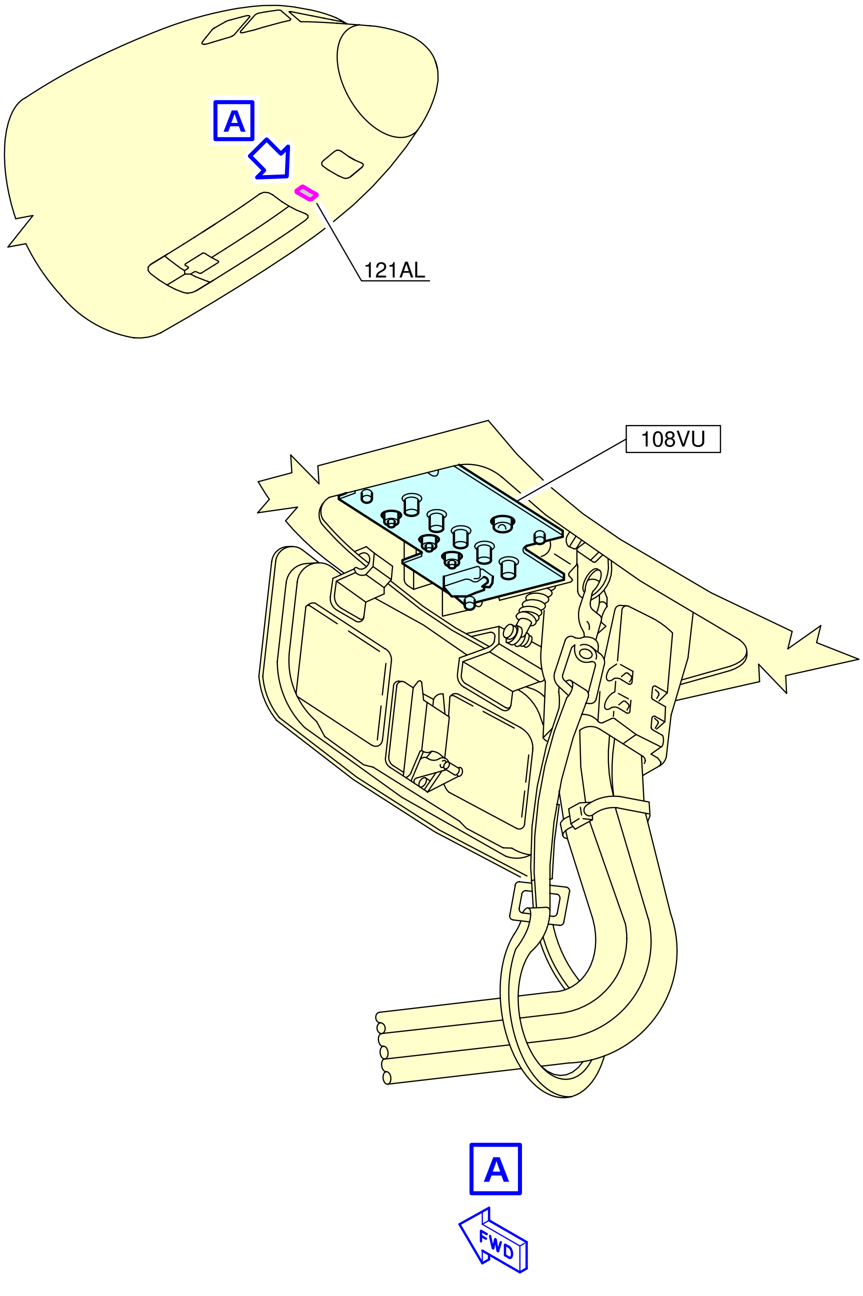
<table>
<tr><th rowspan="3">ACCESS</th><th colspan="4">DISTANCE</th></tr>
<tr><th rowspan="2">AFT OF NOSE</th><th colspan="2">FROM AIRCRAFT CENTERLINE</th><th rowspan="2">MEAN HEIGHT FROM GROUND</th></tr>
<tr><th>LH SIDE</th><th>RH SIDE</th></tr>
<tr><td>A/C External Power: Access Door 121AL</td><td>2.55 m (8.37 ft)</td><td colspan="2">On centerline</td><td>2.00 m (6.56 ft)</td></tr>
</table>

NOTE : Distances are approximate.

2. Technical Specifications
   A. External Power Receptacle:
      - One receptacle according to MS 90362-3 (without shield MS 17845-1) – 90 kVA.

      NOTE : Make sure that for connectors featuring micro switches, the connector is chamfered to properly engage in the receptacle.
   B. Power Supply:
      - Three-phase, 115/200V, 400 Hz.
   C. Electrical Connectors for Servicing:
      - AC outlets: HUBBELL 5258
      - DC outlets: HUBBELL 7472.

**ON A/C A319-100 A319neo



N_AC_050404_1_0010101_01_01

Ground Service Connections
External Power Receptacles
FIGURE-5-4-4-991-001-A01

5-4-5 Oxygen System

****ON A/C A319-100 A319neo**

Oxygen System

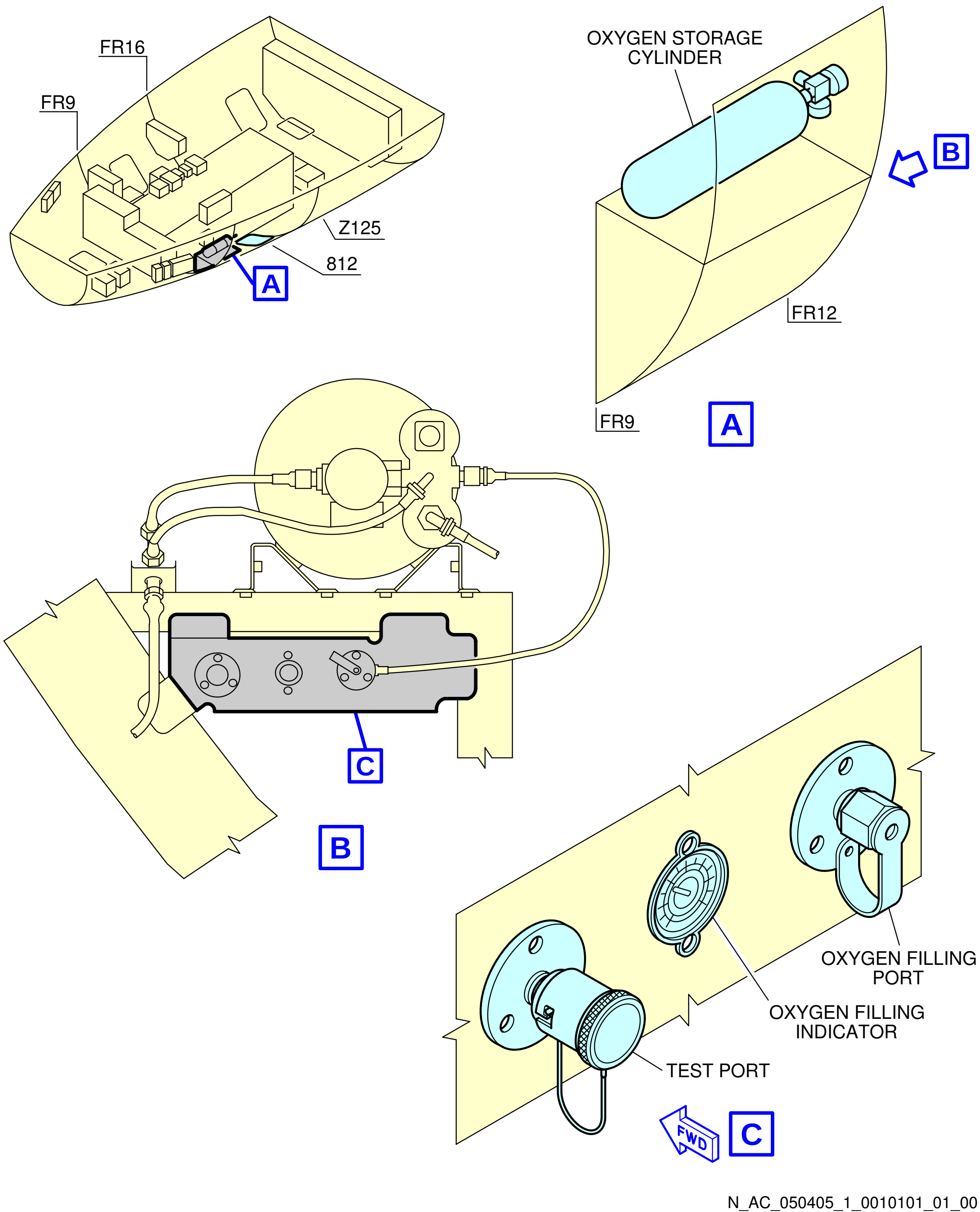
1. Oxygen System

ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		LH SIDE	RH SIDE	
Oxygen Replenishment: Access Door 812	3.45 m (11.32 ft)	1.15 m (3.77 ft)	-	2.60 m (8.53 ft)

2. Technical Specifications
   - One 3/8 in. MIL-DTL 7891 standard service connection.

NOTE : External charging in the avionics compartment.

**ON A/C A319-100 A319neo



Ground Service Connections
Oxygen System
FIGURE-5-4-5-991-001-A01

5-4-6 Fuel System

****ON A/C A319-100 A319neo**

Fuel System

1. Refuel/Defuel Control Panel

ACCESS	DISTANCE			
	AFT OF NOSE	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		LH SIDE	RH SIDE	
Refuel/Defuel Integrated Panel: Access Door 192MB	14.8 m (48.56 ft)	-	1.8 m (5.91 ft)	1.8 m (5.91 ft)

2. Refuel/Defuel Connectors

ACCESS	DISTANCE			
	AFT OF NOSE	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		LH SIDE	RH SIDE	
Refuel/Defuel Coupling, Left: Access Panel 522HB (Optional)	15.99 m (52.46 ft)	9.83 m (32.25 ft)	-	3.65 m (11.98 ft)
Refuel/Defuel Coupling, Right: Access Panel 622HB	15.99 m (52.46 ft)	-	9.83 m (32.25 ft)	3.65 m (11.98 ft)
Overwing Gravity-Refuel Cap	17.5 m (57.41 ft)	12.4 m (40.68 ft)	12.4 m (40.68 ft)	3.7 m (12.14 ft)

A. Refuel/Defuel Couplings:
   - Right wing: one standard ISO 45, 2.5 in.
   - Left wing: one optional standard ISO 45, 2.5 in.

B. Refuel Pressure:
   - Maximum pressure: 3.45 bar (50 psi).

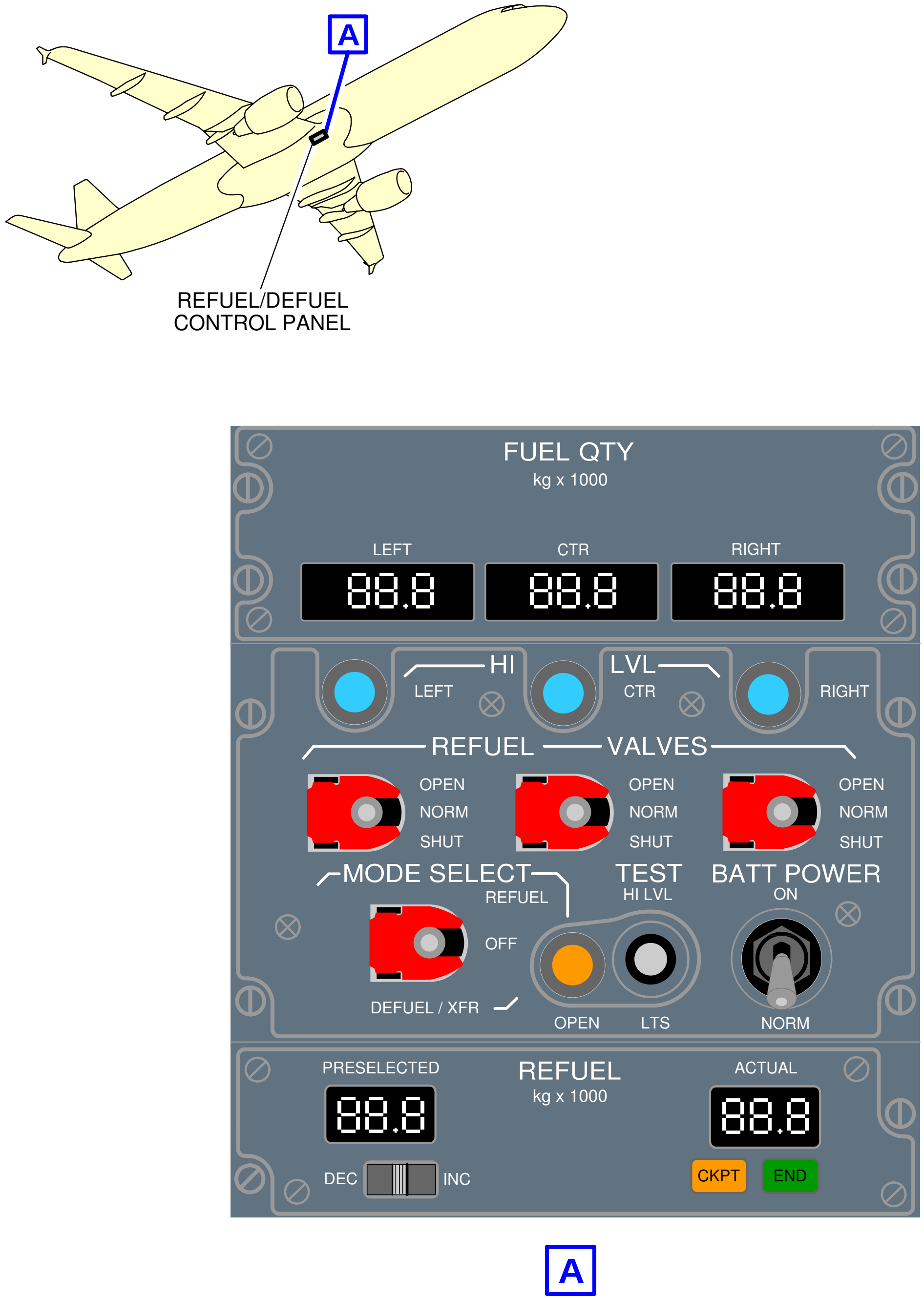
C. Average Flow Rate:
   - 1250 l/min (330 US gal/min).

3. Overpressure Protectors and NACA Vent Intake

ACCESS	DISTANCE			
	AFT OF NOSE	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		LH SIDE	RH SIDE	
Surge Tank Overpressure-Protector: Access Panel 550CB (650CB)	18.76 m (61.55 ft)	14.9 m (48.88 ft)	14.9 m (48.88 ft)	4.32 m (14.17 ft)
Inner Cell Overpressure-Protector: Access Panel 540HB (640HB)	17.5 m (57.41 ft)	9.19 m (30.15 ft)	9.19 m (30.15 ft)	4.1 m (13.45 ft)
NACA Vent Intake: Access Panel 550AB (650AB)	18.2 m (59.71 ft)	13.7 m (44.95 ft)	13.7 m (44.95 ft)	4.02 m (13.19 ft)

NOTE : Distances are approximate.

**ON A/C A319-100 A319neo

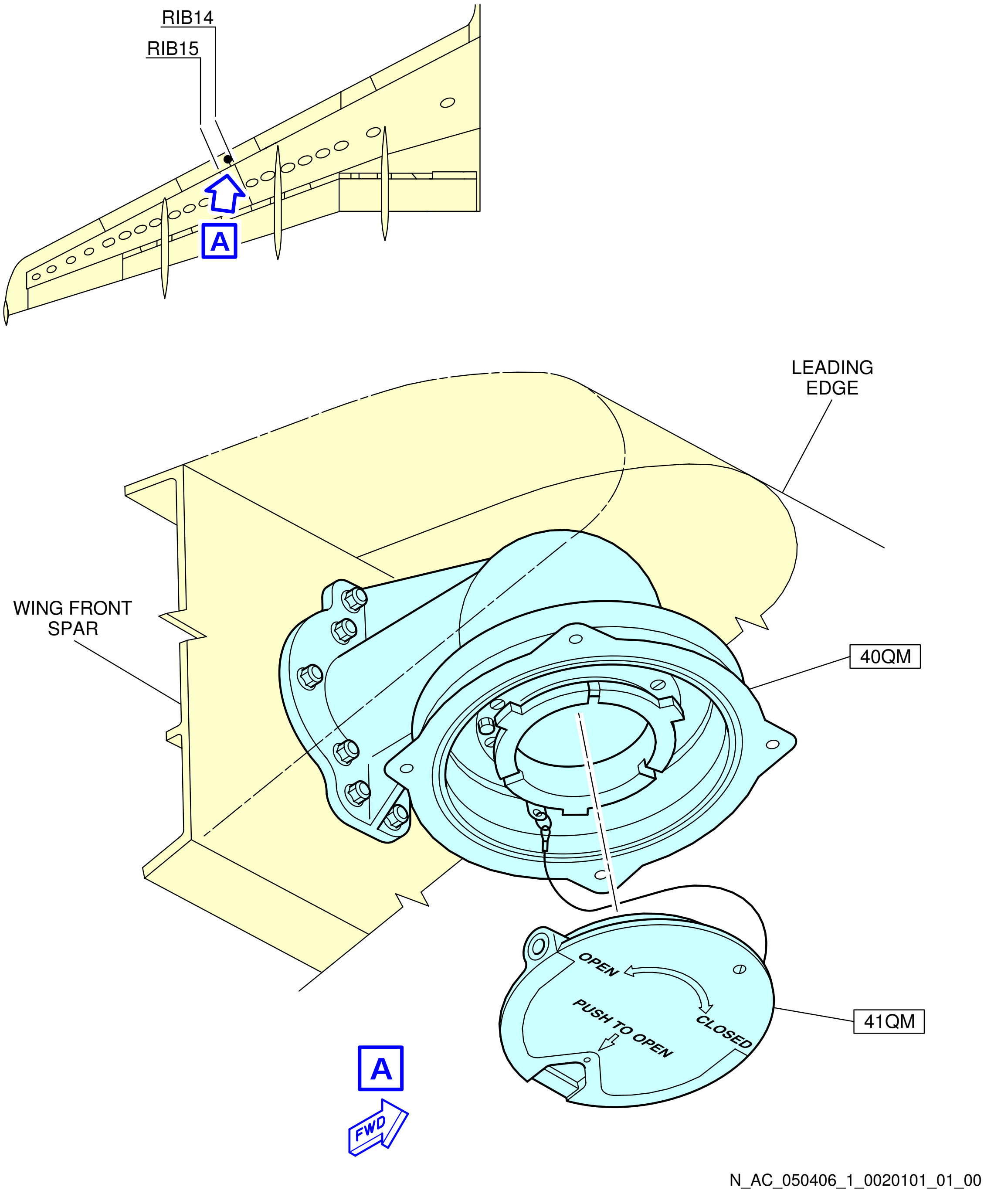


NOTE: STANDARD CONFIGURATION OF REFUEL/DEFUEL PANEL.

N_AC_050406_1_0010101_01_00

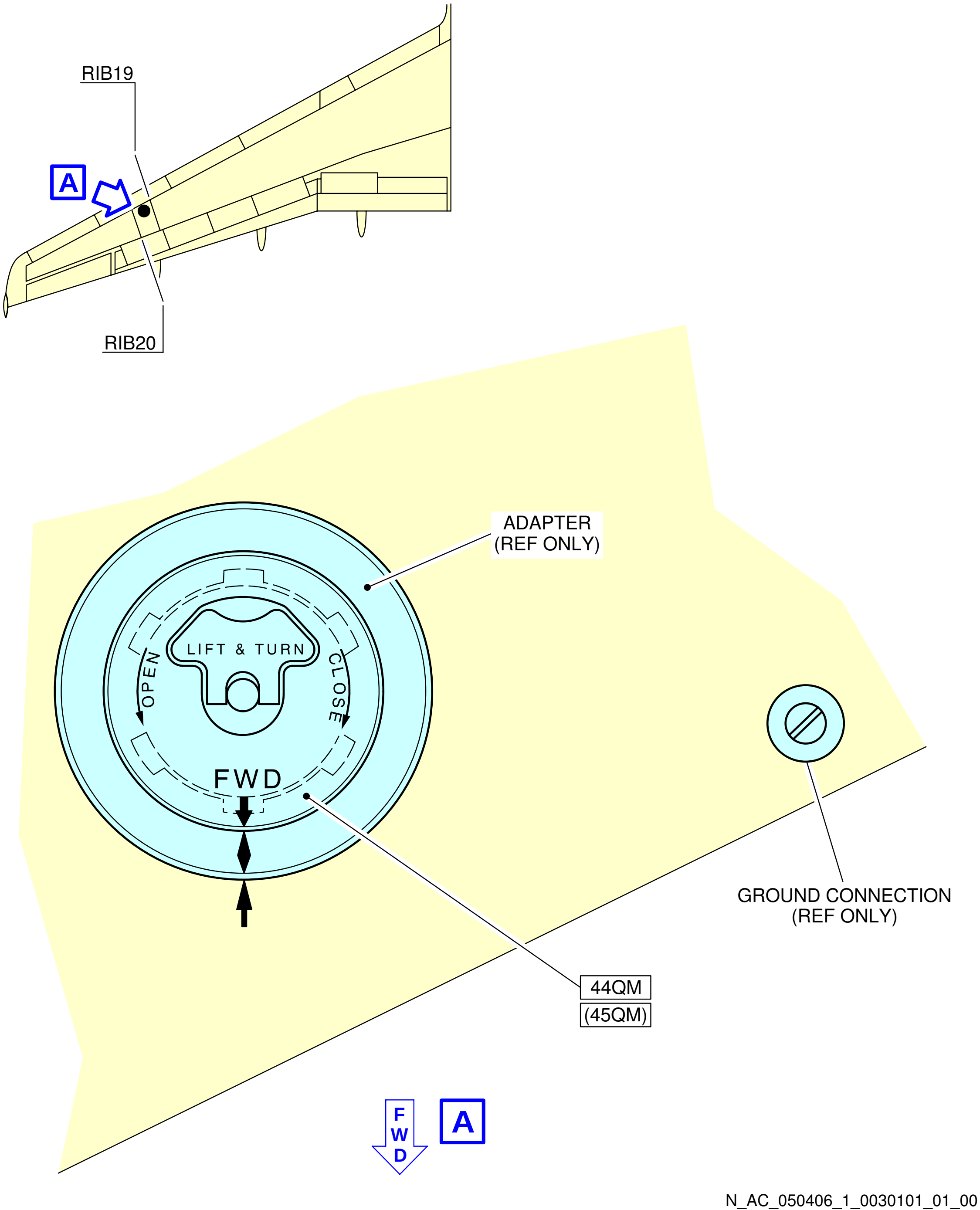
Ground Service Connections
Refuel/Defuel Control Panel
FIGURE-5-4-6-991-001-A01

**ON A/C A319-100 A319neo



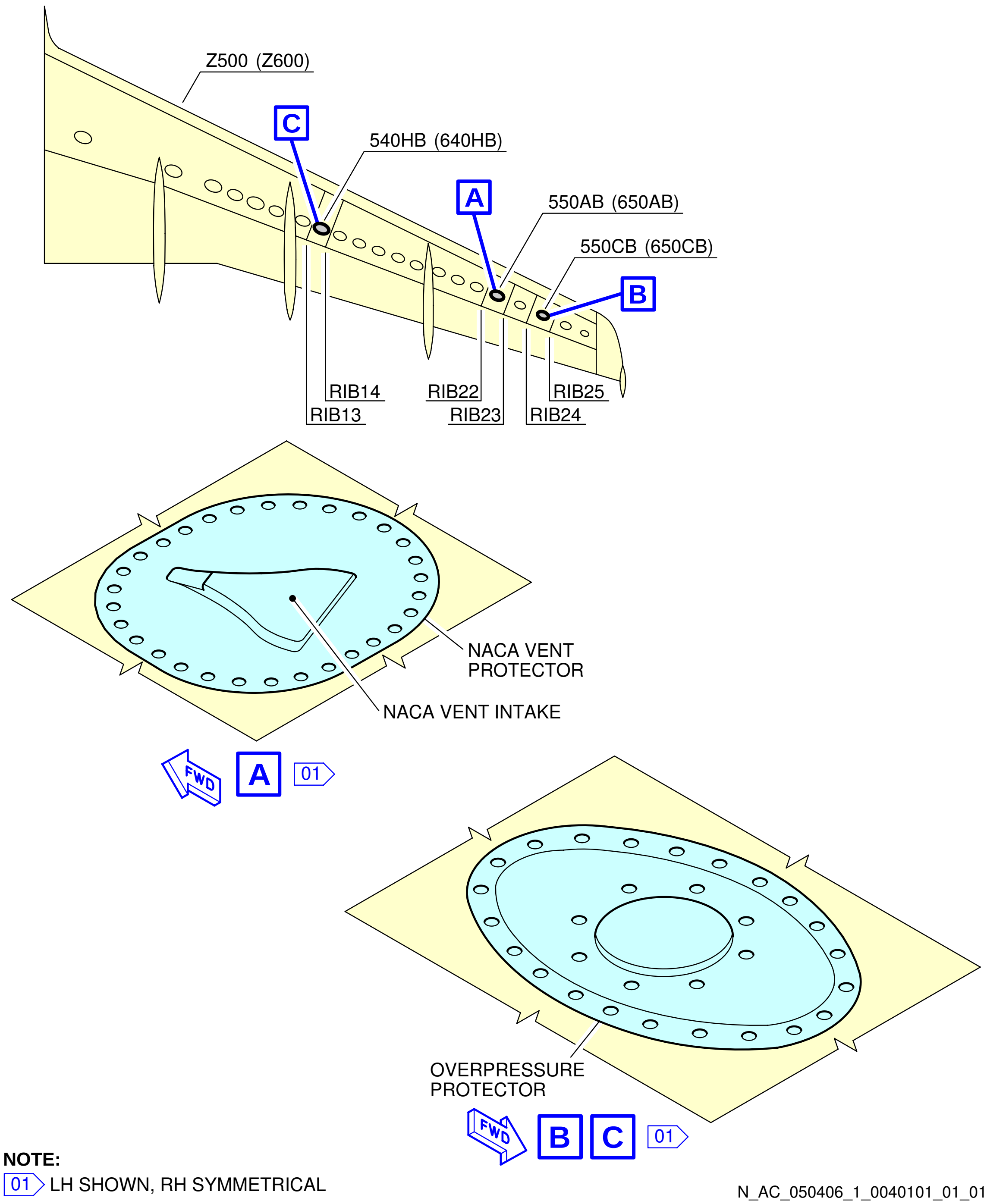
Ground Service Connections
Refuel/Defuel Couplings
FIGURE-5-4-6-991-002-A01

**ON A/C A319-100 A319neo



Ground Service Connections
Overwing Gravity-Refuel Cap (If Installed)
FIGURE-5-4-6-991-003-A01

**ON A/C A319-100 A319neo



Ground Service Connections
Overpressure Protectors and NACA Vent Intake
FIGURE-5-4-6-991-004-A01

5-4-7 Pneumatic System

****ON A/C A319-100 A319neo**

Pneumatic System

1. High Pressure Air Connector

ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		LH SIDE	RH SIDE	
HP Connector: Access Door 191DB	11.38 m (37.34 ft)	0.84 m (2.76 ft)	-	1.76 m (5.77 ft)

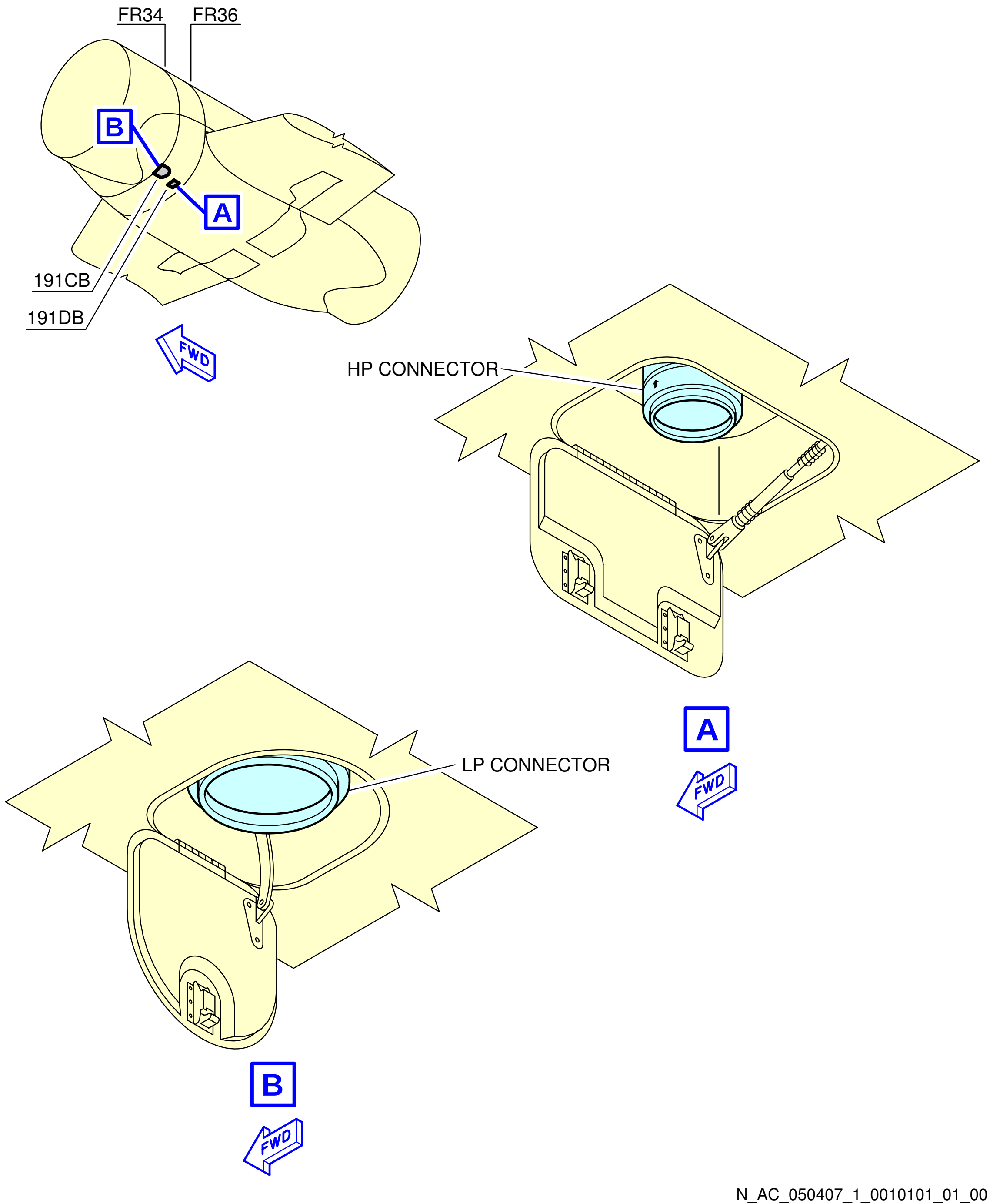
A. Connector:
- One standard 3 in. ISO 2026 connection.

2. Low Pressure Air Connector

ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		LH SIDE	RH SIDE	
LP Connector: Access Door 191CB	10.85 m (35.6 ft)	1.11 m (3.64 ft)	-	1.73 m (5.68 ft)

A. Connector:
- One standard 8 in. SAE AS4262 connection.

**ON A/C A319-100 A319neo



Ground Service Connections
LP and HP Ground Connectors
FIGURE-5-4-7-991-001-A01

5-4-8 Oil System

****ON A/C A319-100 A319neo**

Oil System

****ON A/C A319-100**

1. Engine Oil Replenishment for CFM56 Series Engine (See FIGURE 5-4-8-991-003-A):
   One gravity filling cap and one pressure filling connection per engine.

ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		ENGINE 1 (LH)	ENGINE 2 (RH)	
Engine Oil Gravity Filling Cap: Access door: 437BL (LH), 447BL (RH)	11.56 m (37.93 ft)	6.63 m (21.75 ft)	4.82 m (15.81 ft)	1.46 m (4.79 ft)
Engine Oil Pressure Filling Port:	11.40 m (37.40 ft)	6.49 m (21.29 ft)	4.74 m (15.55 ft)	1.42 m (4.66 ft)

NOTE : Distances are approximate.

A. Tank capacity:
   - Full level: 19.6 l (5 US gal),
   - Usable: 9.46 l (3 US gal).

B. Maximum delivery pressure required: 1.72 bar (25 psi).
   Maximum delivery flow required: 180 l/h (48 US gal/h).

2. IDG Oil Replenishment for CFM56 Series Engine (See FIGURE 5-4-8-991-004-A):
   One pressure filling connection per engine: OMP 2506-18 plus one connection overflow: OMP 2505-18.

ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		ENGINE 1 (LH)	ENGINE 2 (RH)	
IDG Oil Pressure Filling Connection: Access door: 438AR (LH), 448AR (RH)	10.60 m (34.78 ft)	6.90 m (22.64 ft)	5.52 m (18.11 ft)	0.68 m (2.23 ft)

NOTE : Distances are approximate.

A. Tank capacity: 5 l (1 US gal).

B. Delivery pressure required: 0.34 bar (5 psi) to 2.76 bar (40 psi) at the IDG inlet.

3. Starter Oil Replenishment for CFM56 Series Engine (See FIGURE 5-4-8-991-005-A):
One gravity filling cap per engine.

ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		ENGINE 1 (LH)	ENGINE 2 (RH)	
Starter Oil Filling Connection:	11.40 m (37.40 ft)	5.30 m (17.39 ft)	6.20 m (20.34 ft)	0.76 m (2.49 ft)

NOTE : Distances are approximate.

A. Tank capacity: 0.8 l (0.21 US gal).

4. Engine Oil Replenishment for IAE V2500 Series Engine (See FIGURE 5-4-8-991-006-B):
One gravity filling cap per engine.

ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		ENGINE 1 (LH)	ENGINE 2 (RH)	
Engine Oil Gravity Filling Cap: Access door: 437BL (LH), 447BL (RH)	10.64 m (34.91 ft)	6.56 m (21.52 ft)	4.92 m (16.14 ft)	1.22 m (4.00 ft)

NOTE : Distances are approximate.

A. Tank capacity:
- Full level: 28 l (7 US gal),
- Usable: 23.50 l (6 US gal).

5. IDG Oil Replenishment for IAE V2500 Series Engine (See FIGURE 5-4-8-991-007-B):
One pressure filling connection per engine: OMP 2506-2 plus one overflow connection: OMP 2505-2.

ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		ENGINE 1 (LH)	ENGINE 2 (RH)	
IDG Oil Pressure Filling Connection:	11.04 m (36.22 ft)	5.30 m (17.39 ft)	6.14 m (20.14 ft)	0.75 m (2.46 ft)

NOTE : Distances are approximate.

A. Tank capacity: 4.10 l (1 US gal).

6. Starter Oil Replenishment for IAE V2500 Series Engine (See FIGURE 5-4-8-991-008-B):
One gravity filling cap per engine.

ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		ENGINE 1 (LH)	ENGINE 2 (RH)	
Starter Oil Filling Connection:	11.04 m (36.22 ft)	5.30 m (17.39 ft)	6.14 m (20.14 ft)	0.75 m (2.46 ft)

NOTE : Distances are approximate.

A. Tank capacity: 0.35 l (0.09 US gal).

****ON A/C A319-100 A319neo**

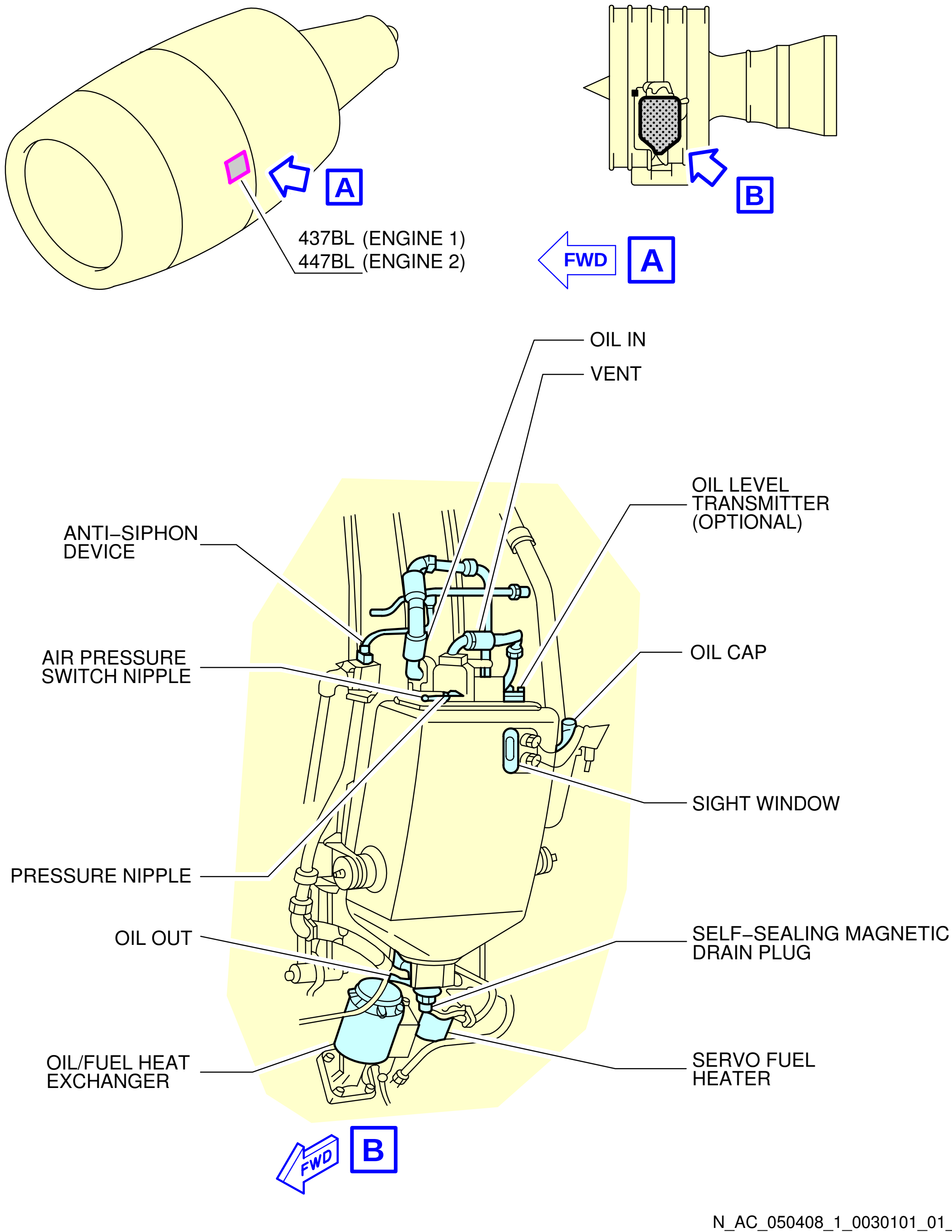
7. APU Oil System (See FIGURE 5-4-8-991-009-A):
APU oil gravity filling cap.

ACCESS	DISTANCE			
	AFT OF NOSE	FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		ENGINE 1 (LH)	ENGINE 2 (RH)	
GTCP 36-300	31.76 m (104.20 ft)	0.30 m (0.98 ft)	-	4.83 m (15.85 ft)
APS 3200	31.76 m (104.20 ft)	0.30 m (0.98 ft)	-	4.78 m (15.68 ft)
131-9	31.66 m (103.87 ft)	0.35 m (1.15 ft)	-	4.32 m (14.17 ft)

NOTE : Distances are approximate.

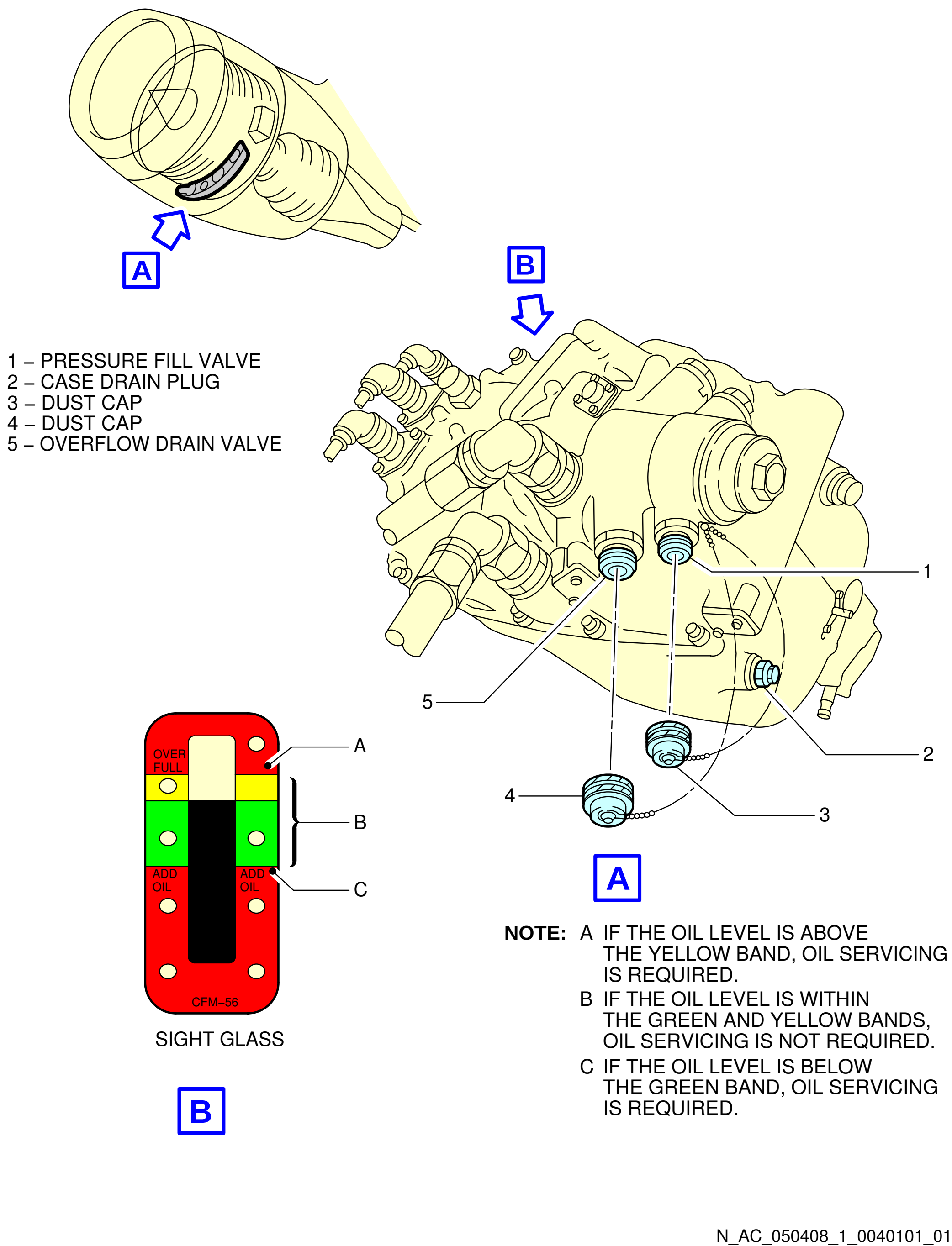
A. Tank capacity (usable):
- APU type GTCP 36-300: 6.20 l (2 US gal),
- APU type APS 3200: 5.40 l (1 US gal),
- APU type 131-9: 6.25 l (2 US gal).

**ON A/C A319-100



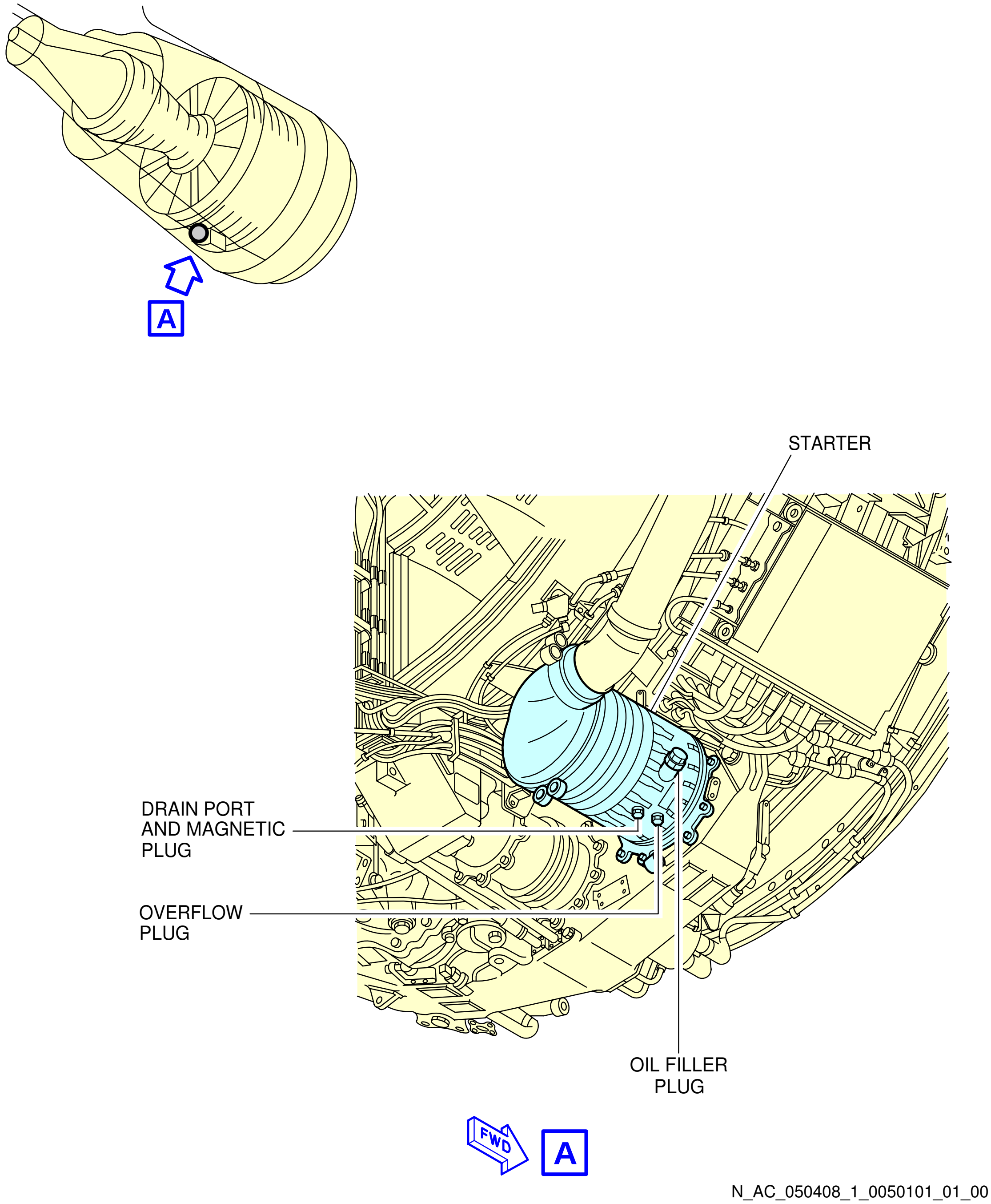
Ground Service Connections
Engine Oil Tank − CFM56 Series Engine
FIGURE-5-4-8-991-003-A01

**ON A/C A319-100



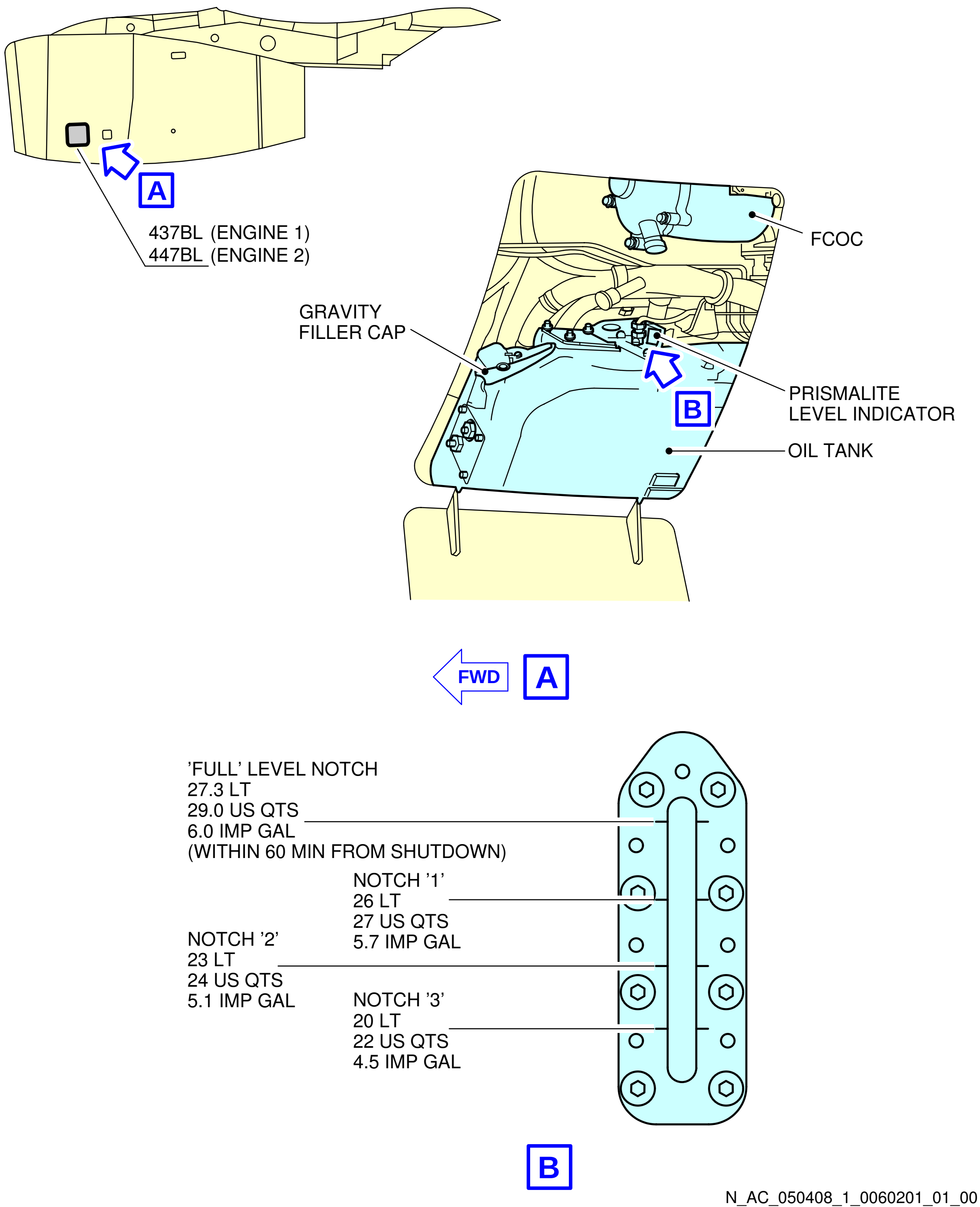
Ground Service Connections
IDG Oil Tank – CFM56 Series Engine
FIGURE-5-4-8-991-004-A01

**ON A/C A319-100



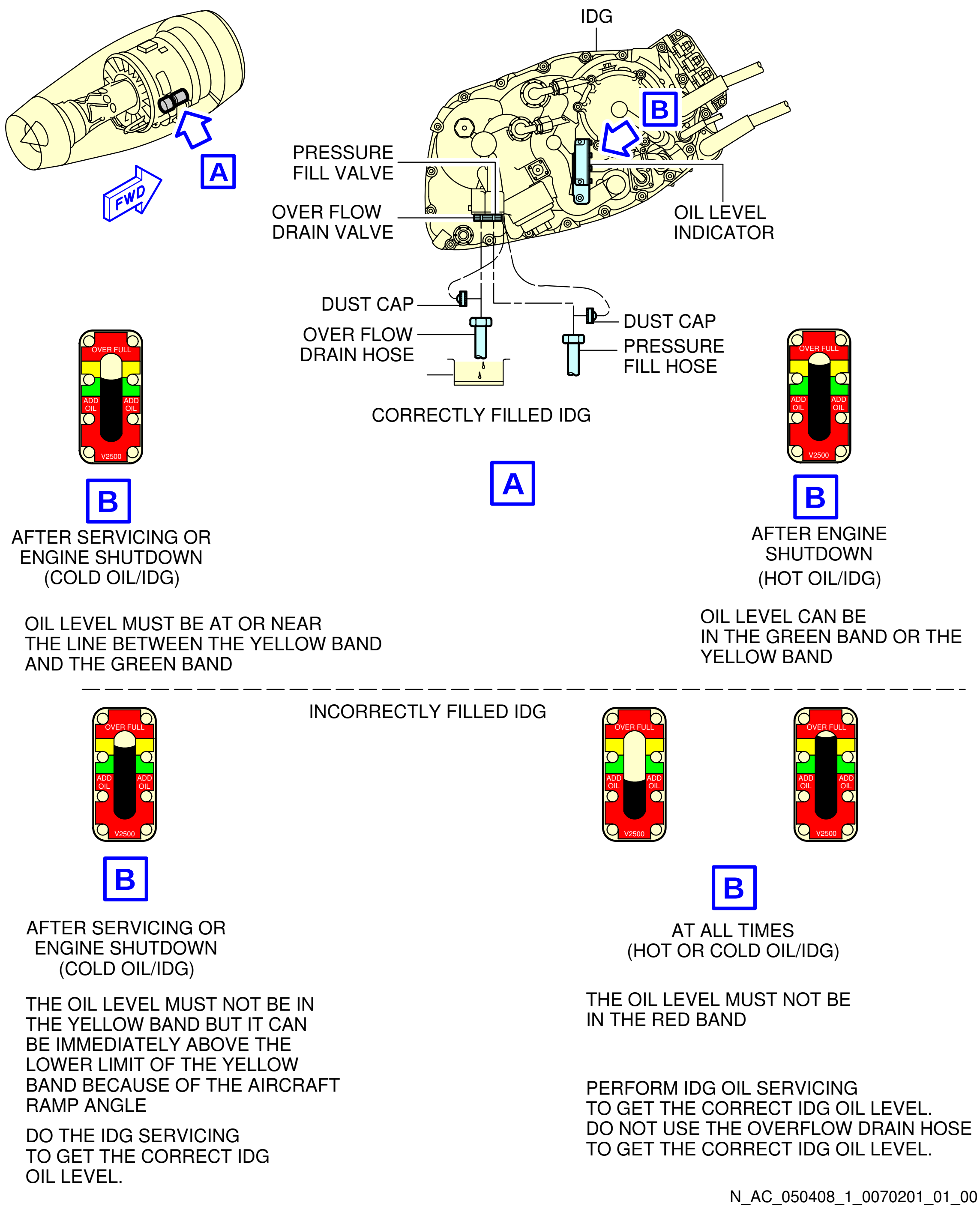
Ground Service Connections
Starter Oil Tank – CFM56 Series Engine
FIGURE-5-4-8-991-005-A01

**ON A/C A319-100



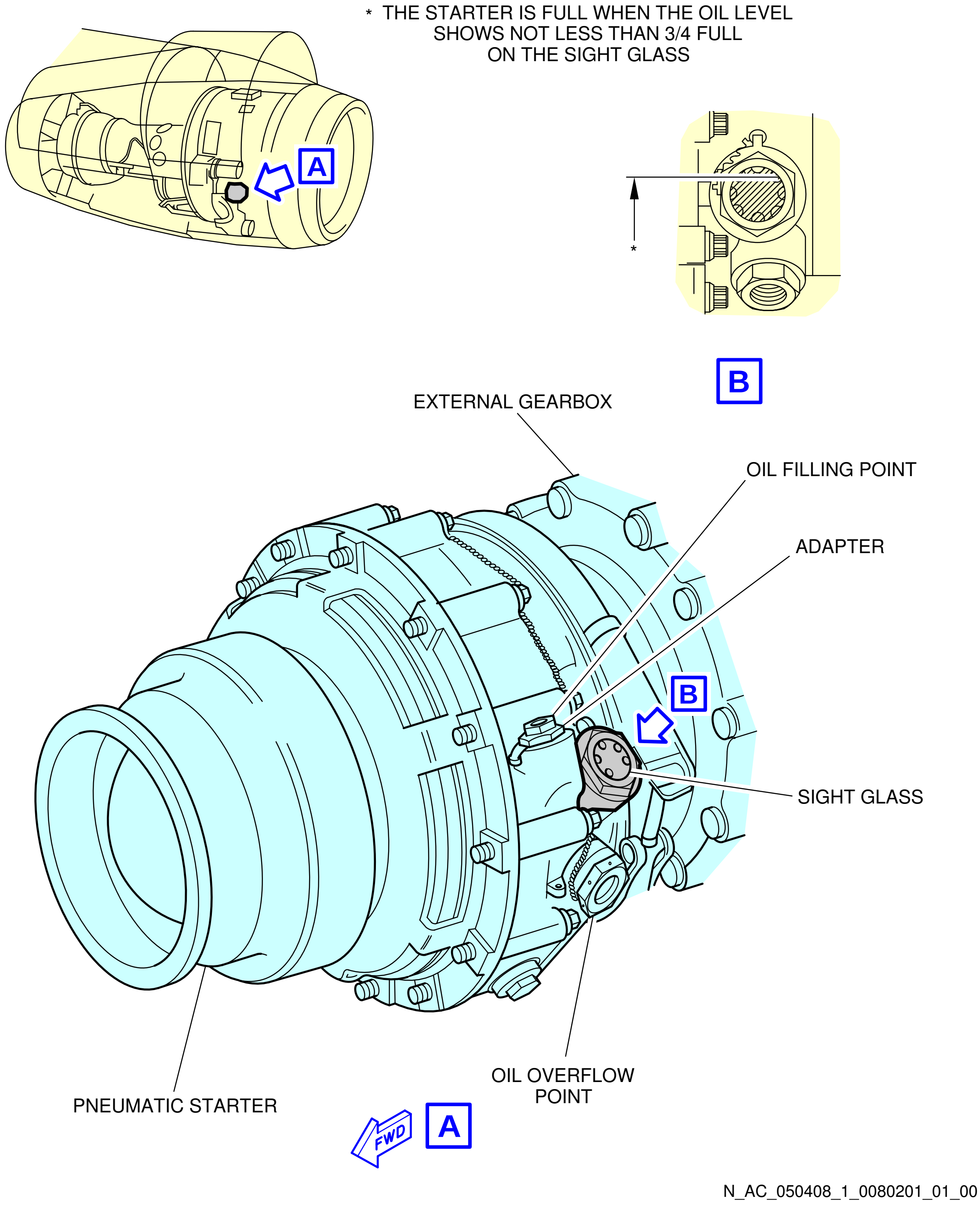
Ground Service Connections
Engine Oil Tank – IAE V2500 Series Engine
FIGURE-5-4-8-991-006-B01

**ON A/C A319-100



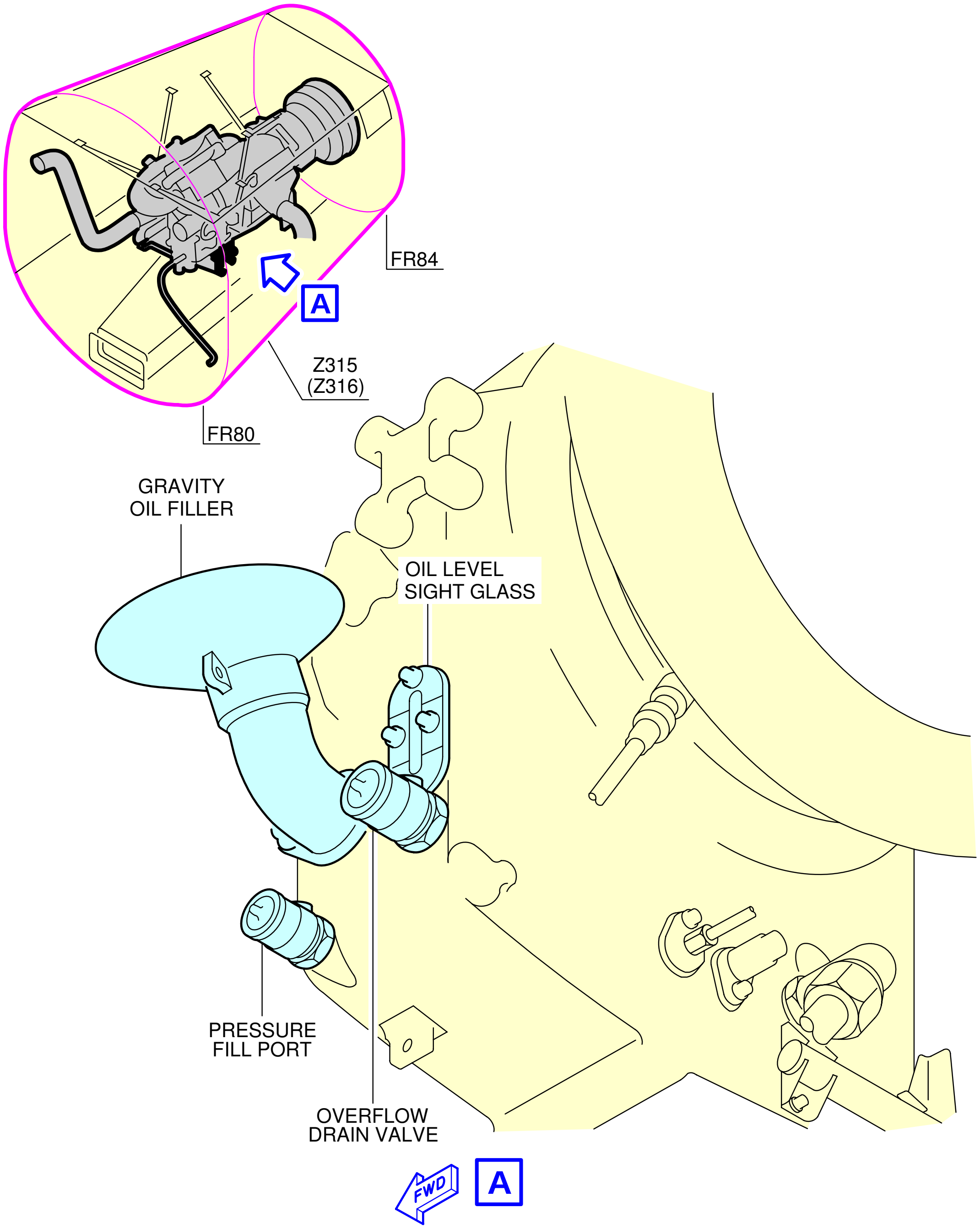
Ground Service Connections
IDG Oil Tank – IAE V2500 Series Engine
FIGURE-5-4-8-991-007-B01

**ON A/C A319-100



Ground Service Connections
Starter Oil Tank – IAE V2500 Series Engine
FIGURE-5-4-8-991-008-B01

****ON A/C A319-100 A319neo**



Ground Service Connections
APU Oil Tank
FIGURE-5-4-8-991-009-A01

5-4-9 Potable Water System

**ON A/C A319-100 A319neo

Potable Water System

1. Potable Water Ground Service Panels

ACCESS	DISTANCE			
	AFT OF NOSE	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		LH SIDE	RH SIDE	
Potable-Water Service Panel: Access Door 171AL	27.5 m (90.22 ft)	0.3 m (0.98 ft)	-	2.6 m (8.53 ft)
Potable-Water Drain Panel: Access Door 133AL	11.8 m (38.71 ft)	0.15 m (0.49 ft)	-	1.75 m (5.74 ft)

NOTE : Distances are approximate.

2. Technical Specifications

A. Connectors:

(1) On the potable-water service panel (Access Door 171AL)
- Fill/Drain Nipple 3/4 in. (ISO 17775).
- One ground air-pressure connector.

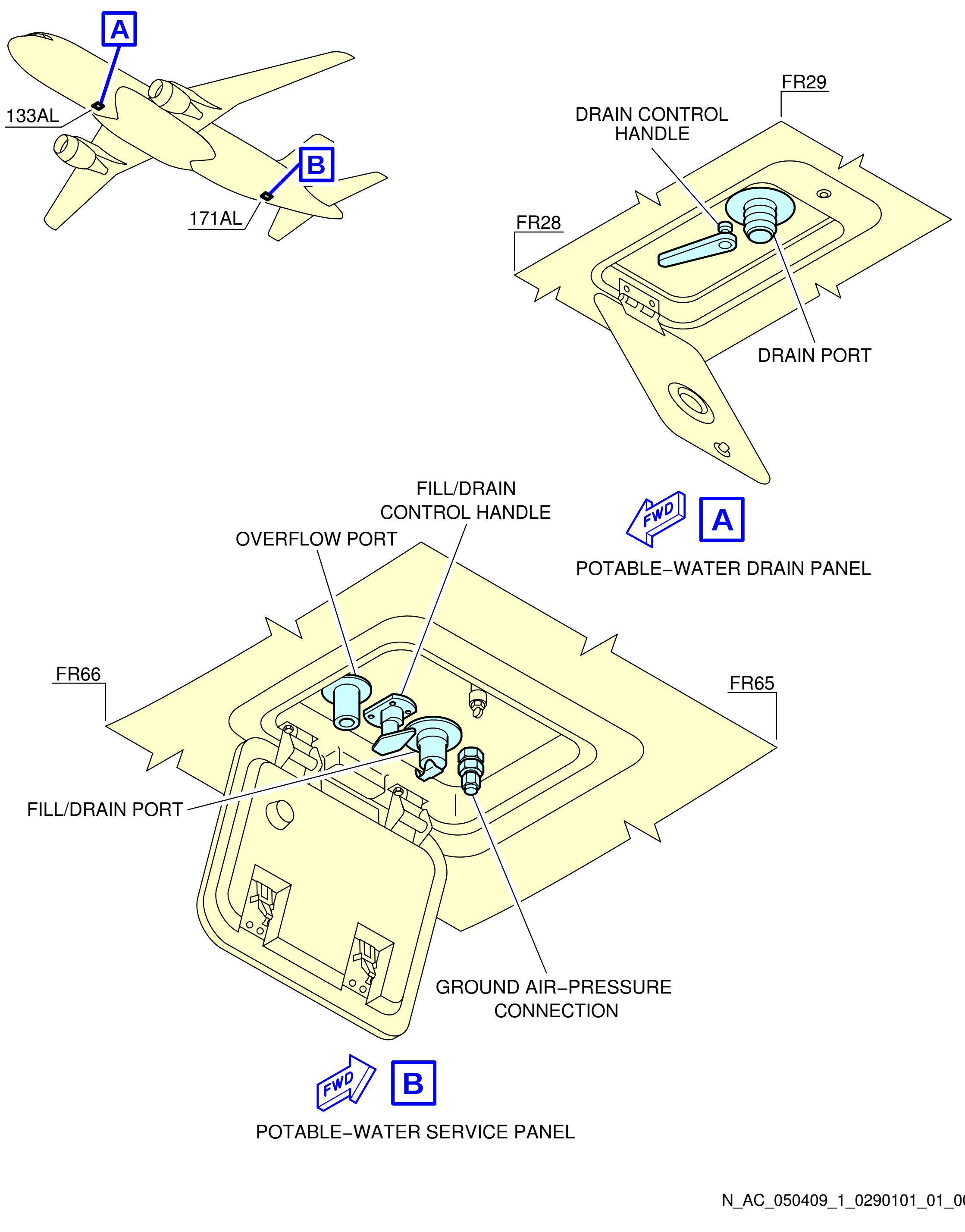
(2) On the potable-water drain panel (Access Door 133AL)
- Drain Nipple 3/4 in. (ISO 17775).

B. Usable capacity:
- Standard configuration - one tank: 200 l (53 US gal).

C. Filling pressure:
- 3.45 bar (50 psi).

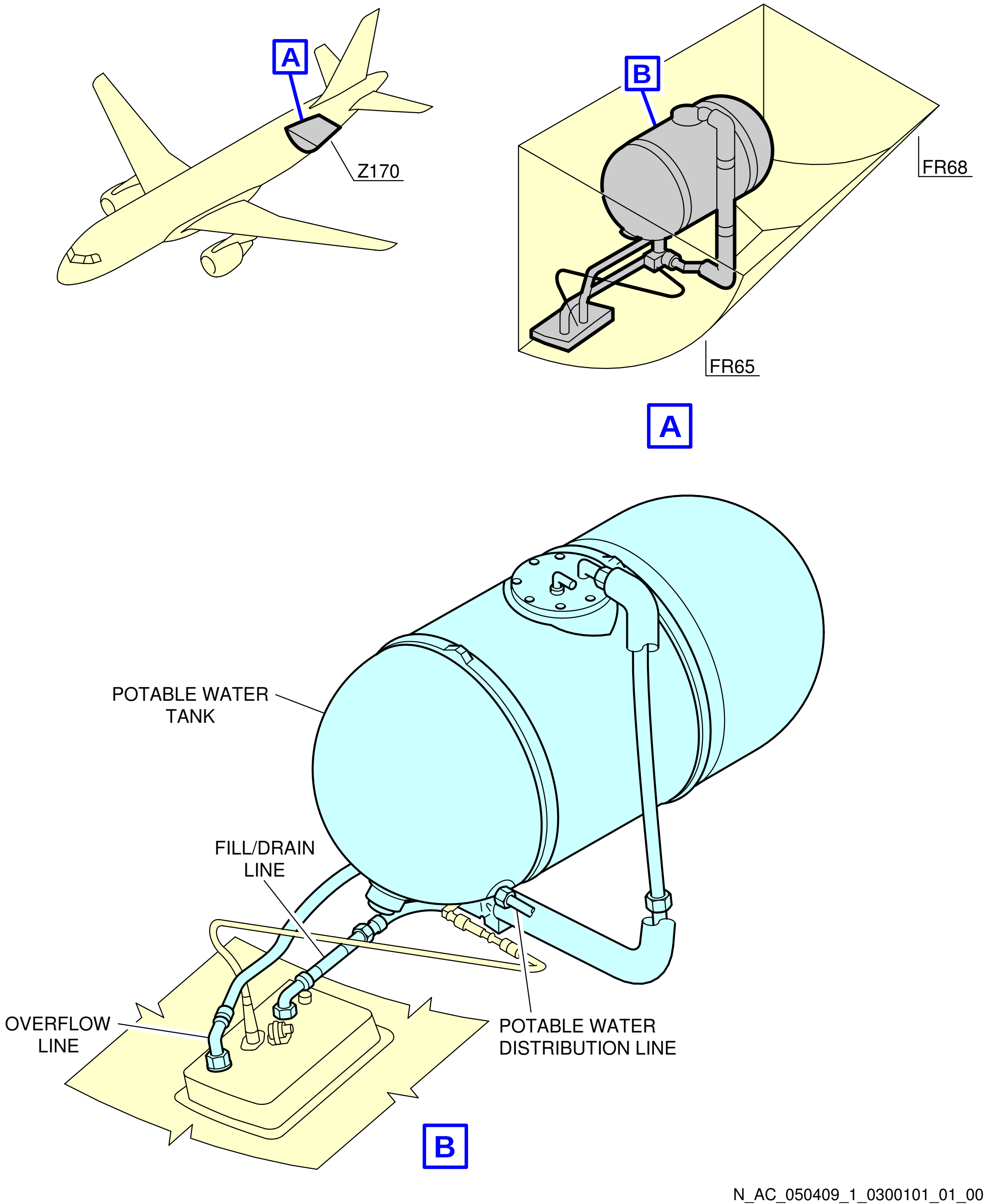
D. Typical flow rate:
- 50 l/min (13 US gal/min).

**ON A/C A319-100 A319neo



Ground Service Connections
Potable Water Ground Service Panels
FIGURE-5-4-9-991-029-A01

****ON A/C A319-100 A319neo**



Ground Service Connections
Potable Water Tank Location
FIGURE-5-4-9-991-030-A01

5-4-10 Waste Water System

****ON A/C A319-100 A319neo**

Waste Water System

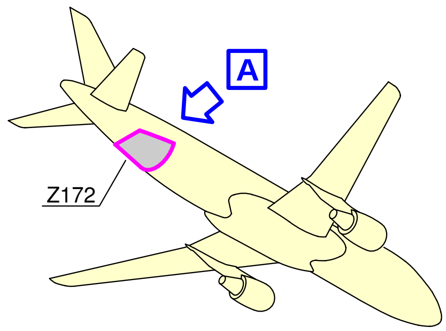
1. Waste Water System

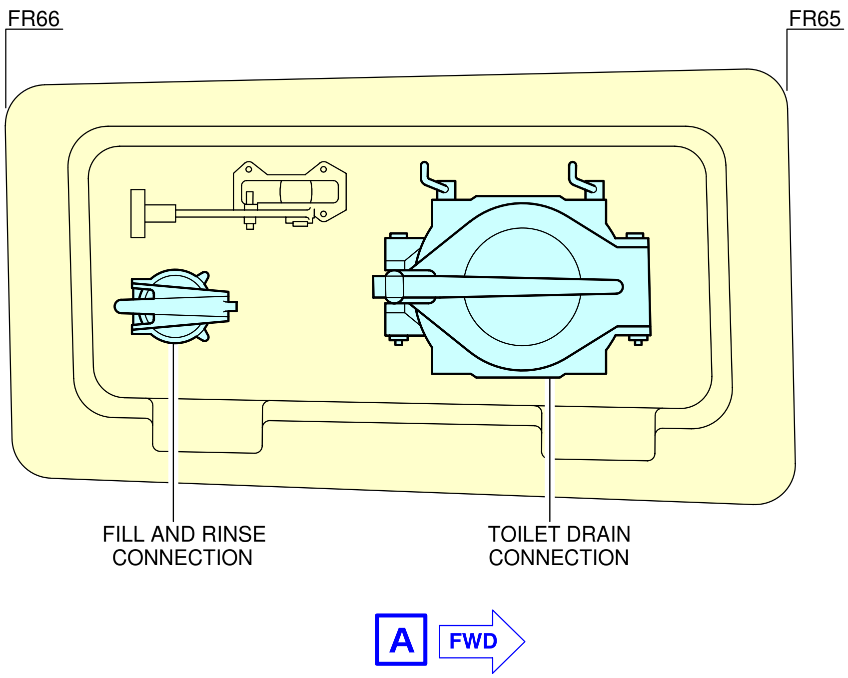
ACCESS	DISTANCE			
	AFT OF NOSE	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
		LH SIDE	RH SIDE	
Waste-Water Ground Service Panel: Access door 172AR	27.5 m (90.22 ft)	-	0.8 m (2.62 ft)	2.8 m (9.19 ft)

NOTE : Distances are approximate.

2. Technical Specifications
   A. Connectors:
      - Draining: 4 in. (ISO 17775).
      - Flushing and filling: 1 in. (ISO 17775).
   B. Usable waste tank capacity:
      - Standard configuration - one tank: 177 l (47 US gal).
   C. Waste tank - Rinsing:
      - Operating pressure: 3.45 bar (50 psi).
   D. Waste tank - Precharge:
      - 10 l (3 US gal).

****ON A/C A319-100 A319neo**

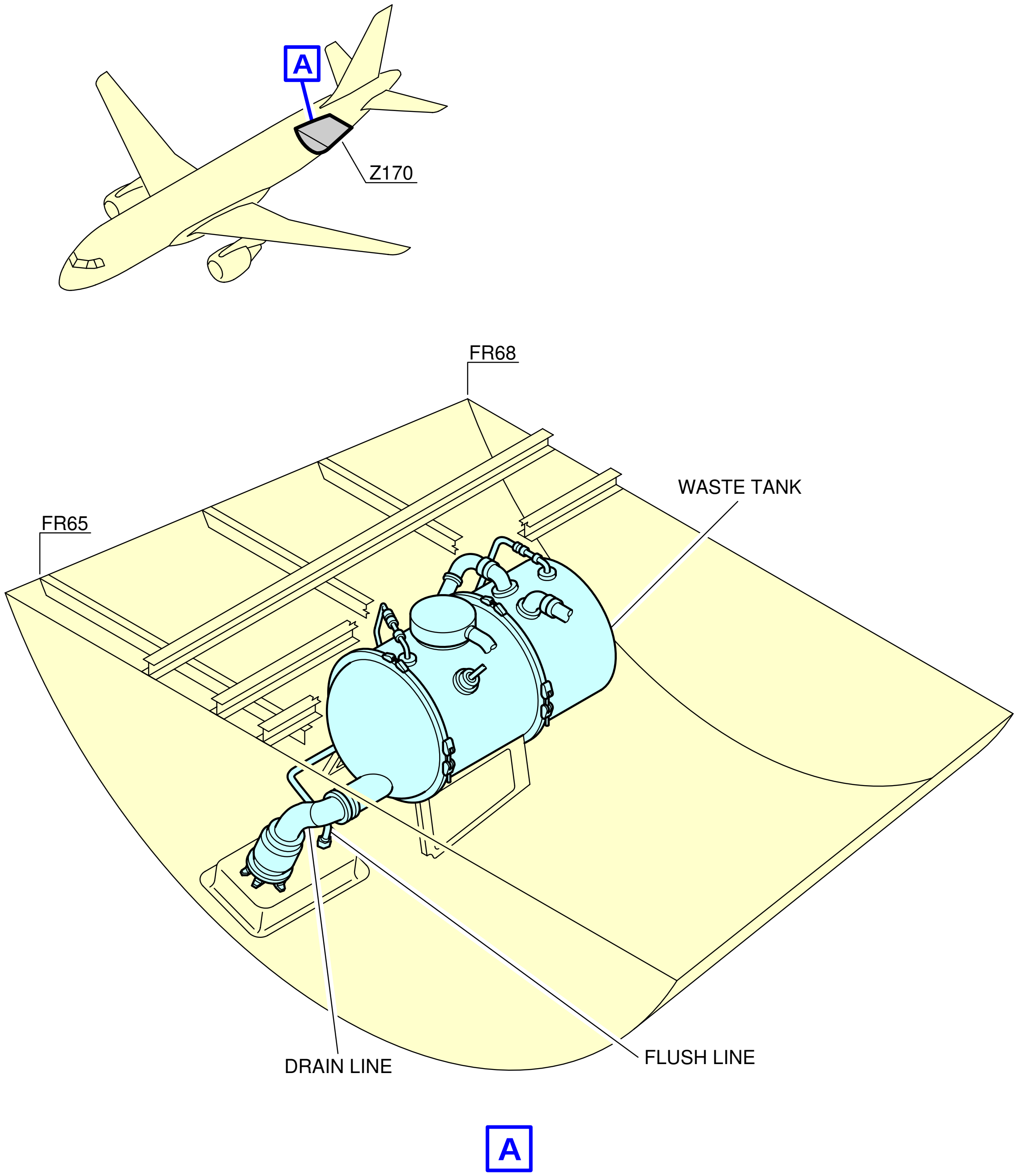




N_AC_050410_1_0010101_01_00

Ground Service Connections
Waste Water Ground Service Panel
FIGURE-5-4-10-991-001-A01

**ON A/C A319-100 A319neo



N_AC_050410_1_0040101_01_00

Ground Service Connections
Waste Tank Location
FIGURE-5-4-10-991-004-A01

5-5-0 Engine Starting Pneumatic Requirements

ON A/C A319-100 A319neo

Engine Starting Pneumatic Requirements

1. The purpose of this section is to provide the minimum air data requirements at the aircraft connection, needed to start the engine within no more than 60 seconds, at sea level (0 feet), for a set of Outside Air Temperatures (OAT).

ABBREVIATION	DEFINITION
A/C	Aircraft
ASU	Air Start Unit
HPGC	High Pressure Ground Connection
OAT	Outside Air Temperature

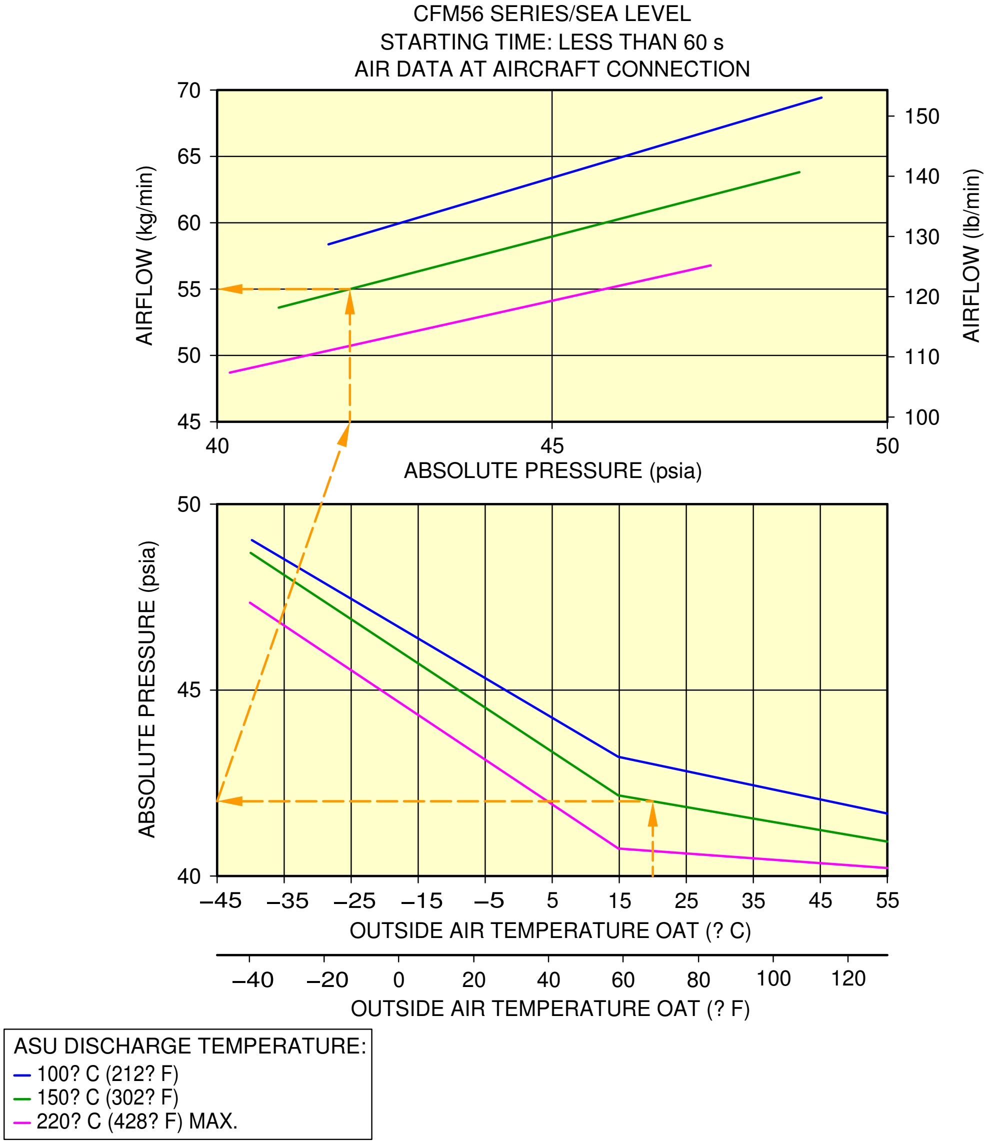
A. Air data (discharge temperature, absolute discharge pressure) are given at the HPGC.

B. For a given OAT the following charts are used to determine an acceptable combination for air discharge temperature, absolute discharge pressure and mass flow rate.

C. This section addresses requirements for the ASU only, and is not representative of the start performance of the aircraft using the APU or engine cross bleed procedure.

D. To protect the A/C, the charts feature, if necessary:
- The maximum discharge pressure at the HPGC
- The maximum discharge temperature at the HPGC.

****ON A/C A319-100 A319neo**



EXAMPLE:

FOR AN OAT OF 20? C (68? F) AND AN ASU PROVIDING A DISCHARGE TEMPERATURE OF 150? C (302? F) AT HPGC:

– THE REQUIRED PRESSURE AT HPGC IS 42 psia
– THE REQUIRED AIRFLOW AT A/C CONNECTION IS 55 kg/min.

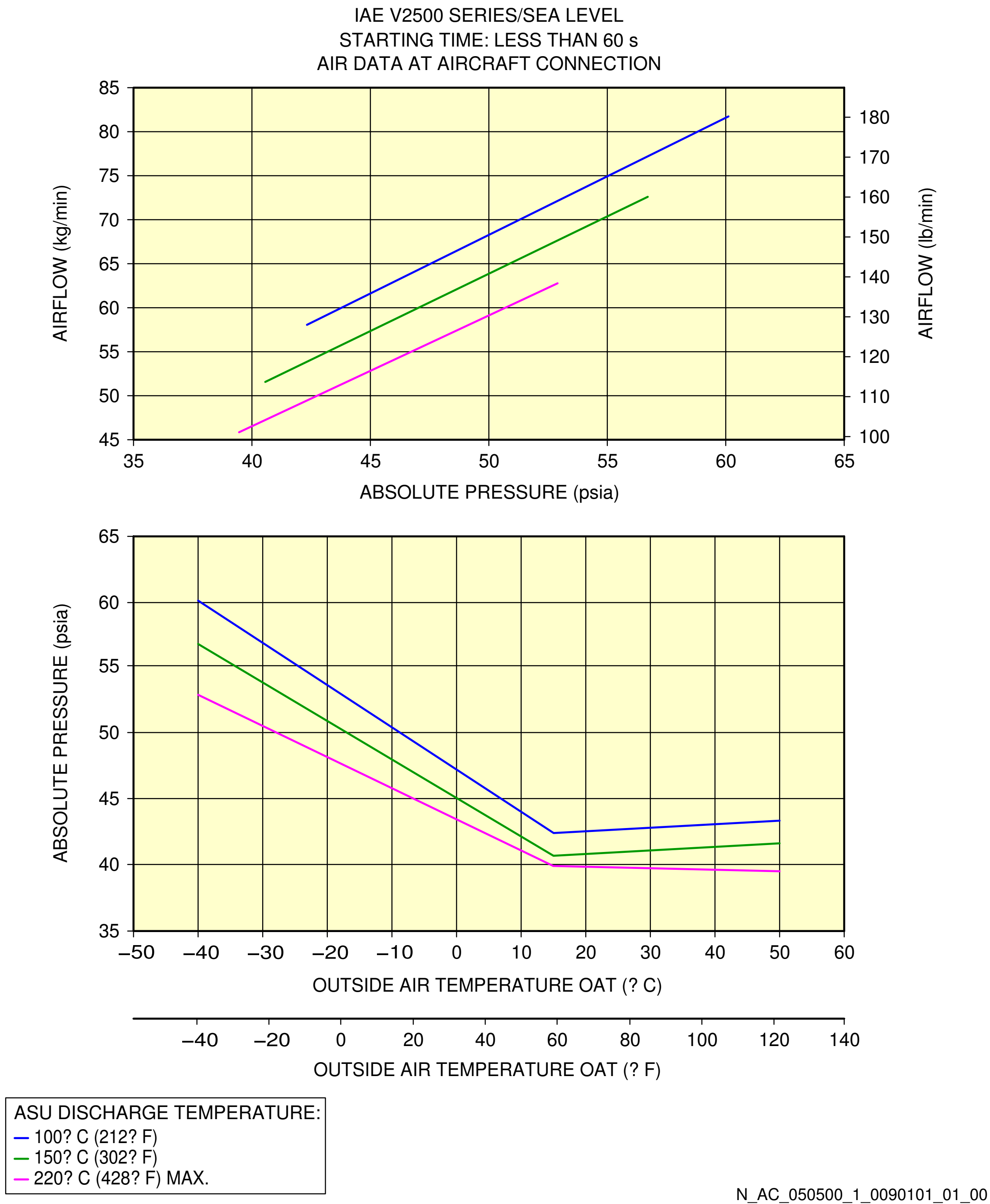
NOTE:

IN CASE THE ACTUAL DISCHARGE TEMPERATURE OF THE ASU DIFFERS SUBSTANTIALLY FROM THE ONES GIVEN IN THE CHARTS, A SIMPLE INTERPOLATION (LINEAR) IS SUFFICIENT TO DETERMINE THE REQUIRED AIR DATA.

N_AC_050500_1_0080101_01_00

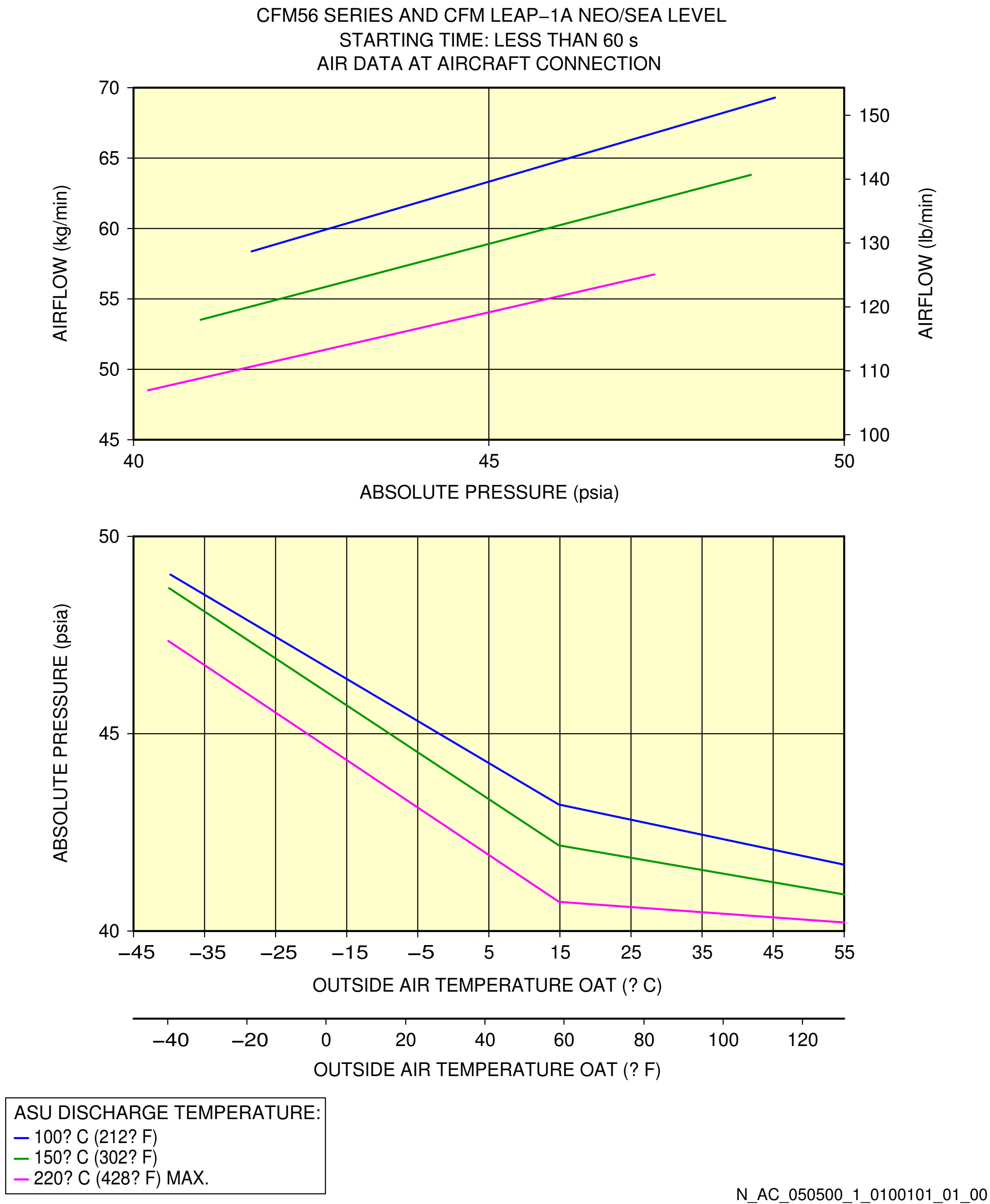
Example for Use of the Charts
FIGURE-5-5-0-991-008-A01

**ON A/C A319-100



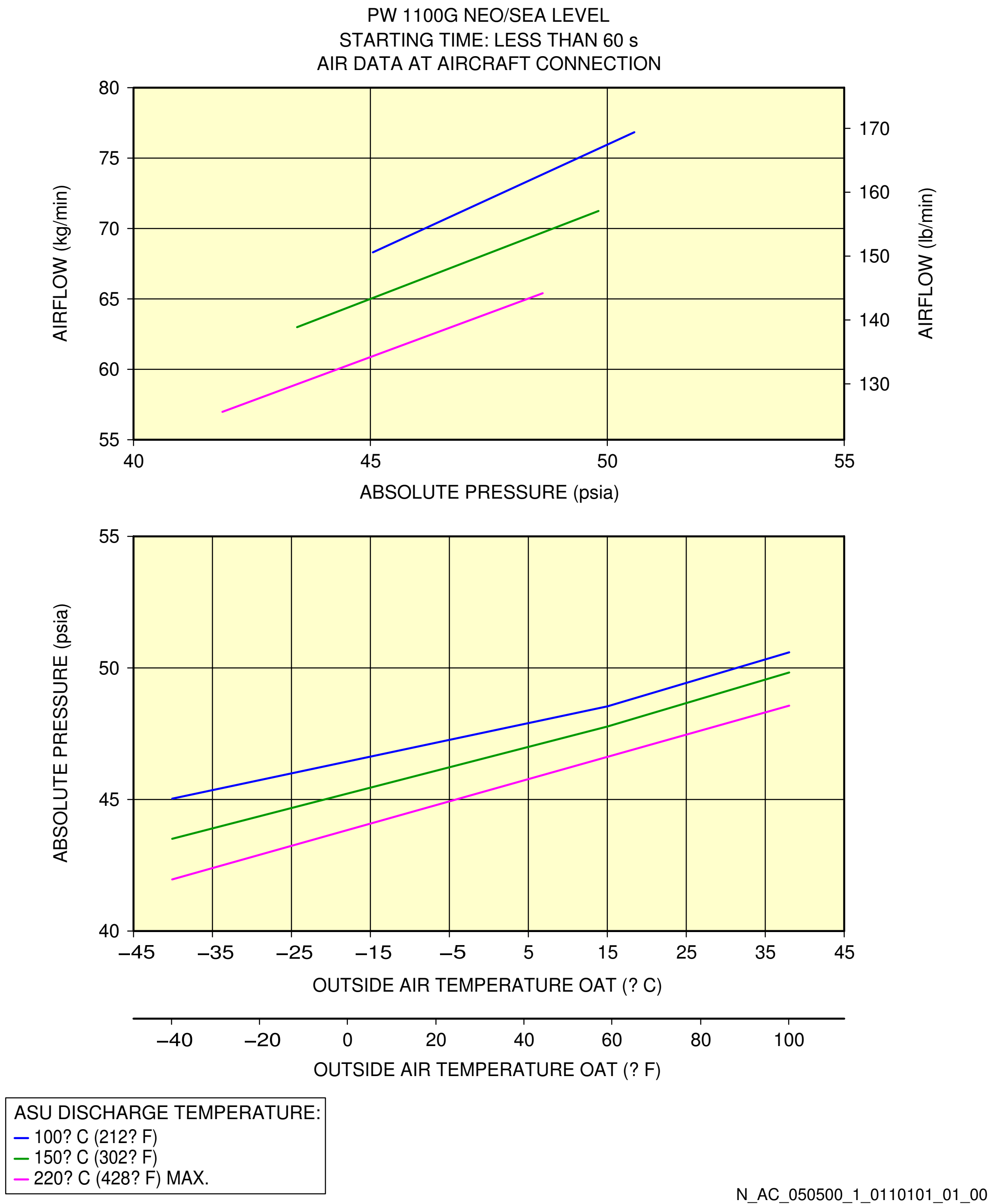
Engine Starting Pneumatic Requirements
IAE V2500 Series Engine
FIGURE-5-5-0-991-009-A01

**ON A/C A319-100 A319neo



Engine Starting Pneumatic Requirements
CFM56 Series and CFM LEAP-1A NEO Engine
FIGURE-5-5-0-991-010-A01

****ON A/C A319neo**



Engine Starting Pneumatic Requirements
PW 1100G NEO Engine
FIGURE-5-5-0-991-011-A01

5-6-0 Ground Pneumatic Power Requirements

****ON A/C A319-100 A319neo**

Ground Pneumatic Power Requirements

1. General
   This section describes the required performance for the ground equipment to maintain the cabin temperature at 27 ˚C (80.6 ˚F) for the cooling or 21 ˚C (69.8 ˚F) for heating cases after boarding (Section 5.7 - steady state), and provides the time needed to cool down or heat up the aircraft cabin to the required temperature (Section 5.6 - dynamic cases with aircraft empty).

ABBREVIATION	DEFINITION
A/C	Aircraft
AHM	Aircraft Handling Manual
AMM	Aircraft Maintenance Manual
GC	Ground Connection
GSE	Ground Service Equipment
IFE	In-Flight Entertainment
OAT	Outside Air Temperature
PCA	Pre-Conditioned Air

   A. The air flow rates and temperature requirements for the GSE, provided in Sections 5.6 and 5.7, are given at A/C ground connection.

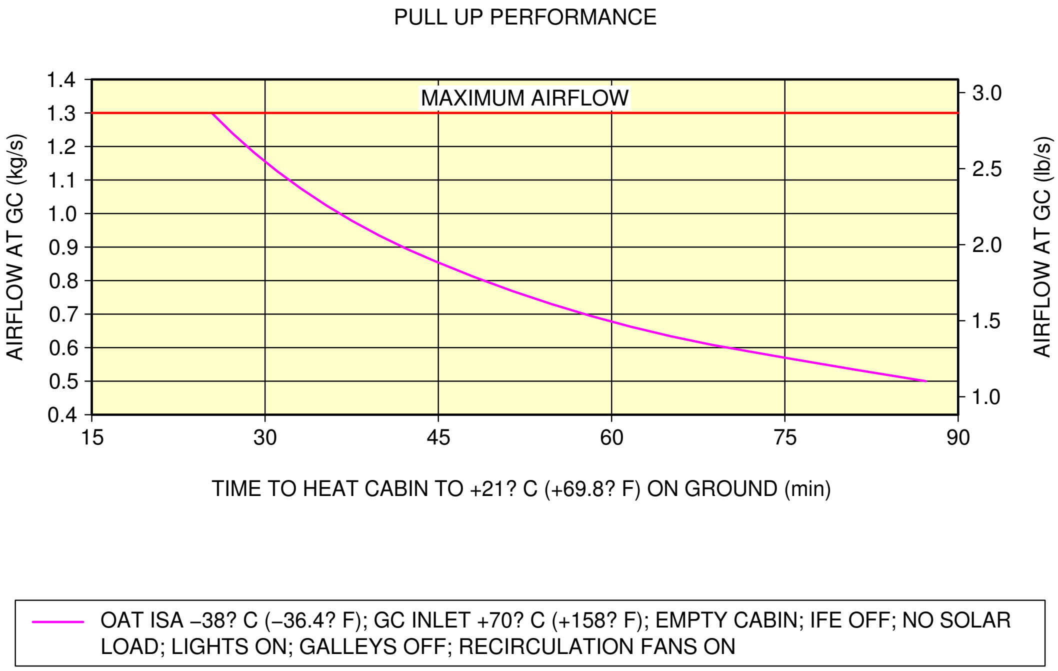
      NOTE : The cooling capacity of the equipment (kW) is only indicative and is not sufficient by itself to ensure the performance (outlet temperature and flow rate combinations are the requirements needed for ground power). An example of cooling capacity calculation is given in Section 5.7.

      NOTE : The maximum air flow is driven by pressure limitation at the ground connection.

   B. For temperatures at ground connection below 2 ˚C (35.6 ˚F) (Subfreezing), the ground equipment shall be compliant with the Airbus document "Subfreezing PCA Carts - Compliance Document for Suppliers" (contact Airbus to obtain this document) defining all the requirements with which Subfreezing Pre-Conditioning Air equipment must comply to allow its use on Airbus aircraft. These requirements are in addition to the functional specifications included in the IATA AHM997.

2. Ground Pneumatic Power Requirements
   This section provides the ground pneumatic power requirements for:
   - Heating (pull up) the cabin, initially at OAT, up to 21 ˚C (69.8 ˚F) (see FIGURE 5-6-0-991-001-A)
   - Cooling (pull down) the cabin, initially at OAT, down to 27 ˚C (80.6 ˚F) (see FIGURE 5-6-0-991-002-A).

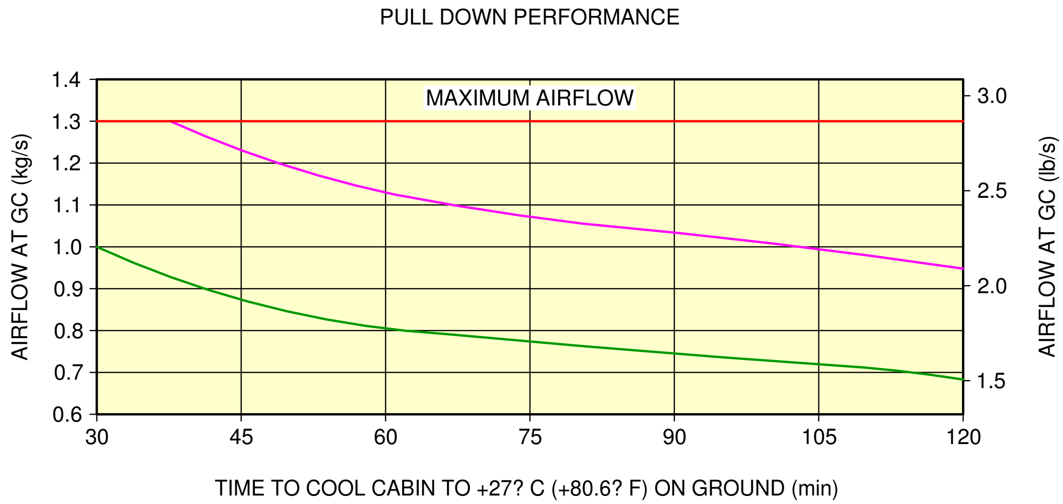
**ON A/C A319-100 A319neo



N_AC_050600_1_0010101_01_00

Ground Pneumatic Power Requirements
Heating
FIGURE-5-6-0-991-001-A01

****ON A/C A319-100 A319neo**



OAT ISA +23? C (+73.4? F); GC INLET +2? C (+35.6? F); EMPTY CABIN; IFE OFF; NO SOLAR LOAD; LIGHTS ON; GALLEYS OFF; RECIRCULATION FANS ON

OAT ISA +23? C (+73.4? F); GC INLET −10? C (+14? F); EMPTY CABIN; IFE OFF; NO SOLAR LOAD; LIGHTS ON; GALLEYS OFF; RECIRCULATION FANS ON

N_AC_050600_1_0020101_01_00

Ground Pneumatic Power Requirements
Cooling
FIGURE-5-6-0-991-002-A01

5-7-0 Preconditioned Airflow Requirements

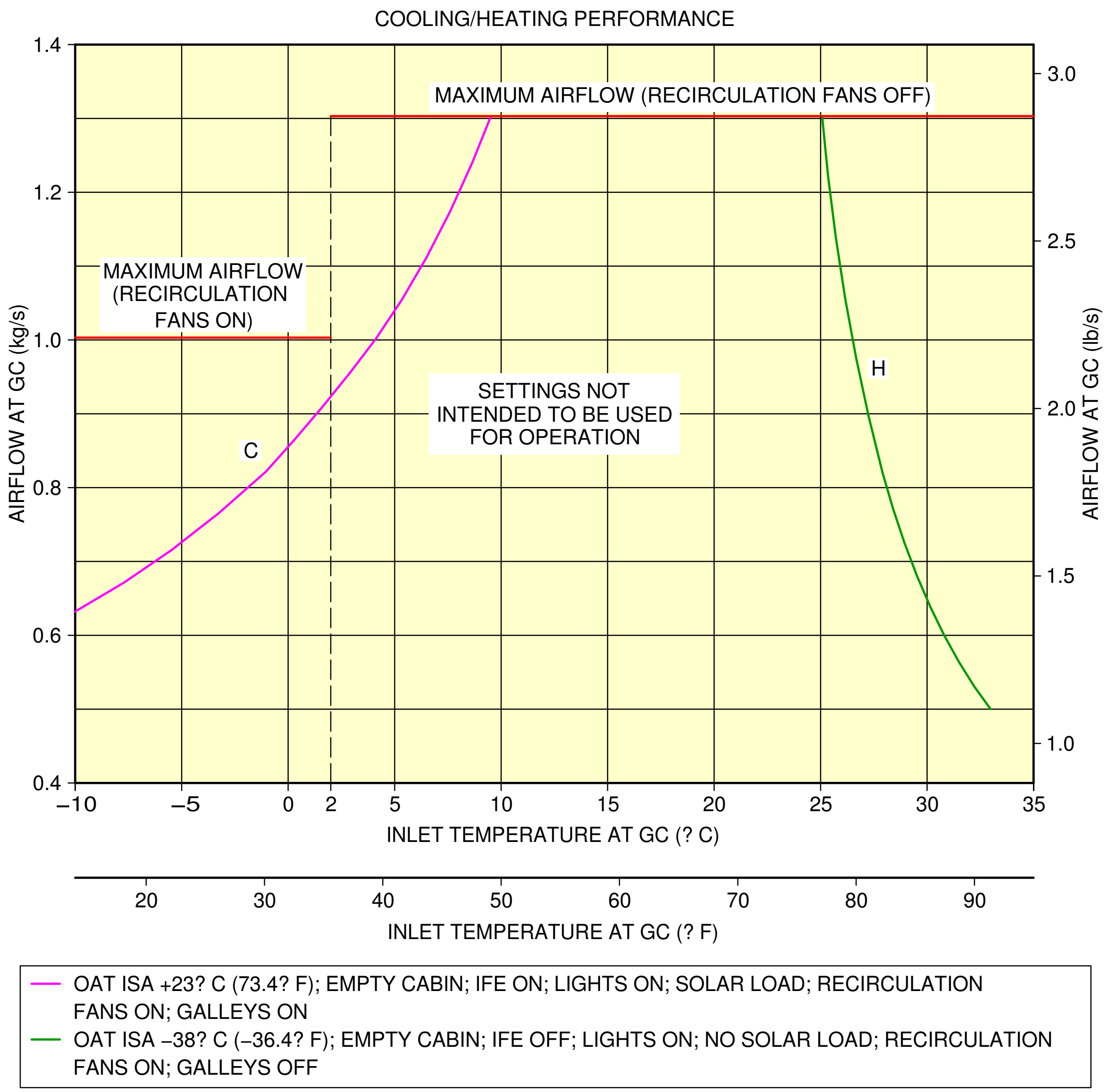
****ON A/C A319-100 A319neo**

Preconditioned Airflow Requirements

1. This section provides the preconditioned airflow rate and temperature needed to maintain the cabin temperature at 27 °C (80.6 °F) for the cooling or 21 °C (69.8 °F) for the heating cases.

   These settings are not intended to be used for operation (they are not a substitute for the settings given in the AMM). They are based on theoretical simulations and give the picture of a real steady state.
   The purpose of the air conditioning (cooling) operation (described in the AMM) is to maintain the cabin temperature below 27 °C (80.6 °F) during boarding (therefore it is not a steady state).

**ON A/C A319-100 A319neo



N_AC_050700_1_0010101_01_04

Preconditioned Airflow Requirements
FIGURE-5-7-0-991-001-A01

5-8-0 Ground Towing Requirements

****ON A/C A319-100**

Ground Towing Requirements

1. This section provides information on aircraft towing.
   This aircraft is designed with means for conventional or towbarless towing. Information/procedures can be found for both in AMM 09.
   Status on towbarless towing equipment qualification can be found in ISI 09.11.00001.

   NOTE : The NLG steering deactivation pin has the same design for all Airbus programs.

   One towbar fitting is installed at the front of the leg.
   The main landing gears have attachment points for towing or debogging (for details, refer ARM 07).

   This section shows the chart to determine the drawbar pull and tow tractor mass requirements as a function of the following physical characteristics:
   - Aircraft weight,
   - Number of engines at idle,
   - Slope.

   The chart is based on the engine type with the highest idle thrust level.

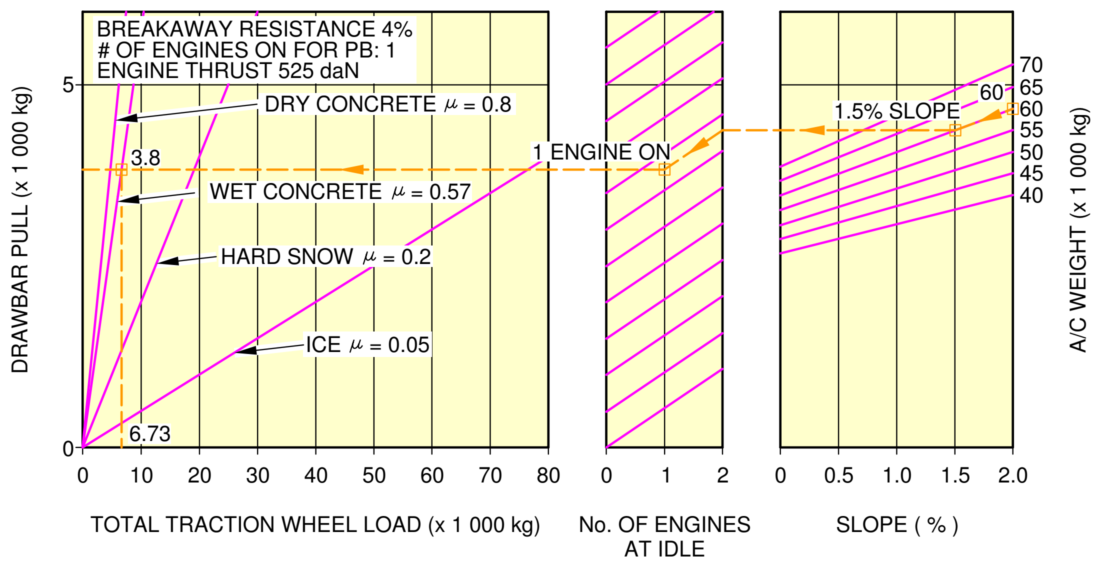
2. Towbar design guidelines

   The aircraft towbar shall comply with the following standards:
   - ISO 8267-1, "Aircraft - Towbar Attachment Fitting - Interface Requirements - Part 1: Main Line Aircraft",
   - SAE AS 1614, "Main Line Aircraft Towbar Attach Fitting Interface",
   - SAE ARP 1915, "Aircraft Towbar",
   - ISO 9667, "Aircraft Ground Support Equipment - Towbar - Connection to Aircraft and Tractor",
   - EN 12312-7, "Aircraft Ground Support Equipment - Specific Requirements - Part 7: Aircraft Movement Equipment",
   - IATA Airport Handling Manual AHM 958, "Functional Specification for an Aircraft Towbar".

   A conventional type towbar is required which should be equipped with a damping system (to protect the nose gear against jerks) and with towing shear pins:
   - A traction shear pin calibrated at 9 425 daN (21 188 lbf),
   - A torsion pin calibrated at 826 m.daN (6 092 lbf.ft).

   The towing head is designed according to ISO 8267-1, cat. I.

****ON A/C A319-100**



EXAMPLE HOW TO DETERMINE THE MASS REQUIREMENT TO TOW A A319 AT 60 000 kg, AT 1.5% SLOPE, 1 ENGINE AT IDLE AND FOR WET TARMAC CONDITIONS:

- —ON THE RIGHT HAND SIDE OF THE GRAPH, CHOOSE THE RELEVANT AIRCRAFT WEIGHT (60 000 kg),
- —FROM THIS POINT DRAW A PARALLEL LINE TO THE REQUIRED SLOPE PERCENTAGE (1.5%),
- —FROM THE POINT OBTAINED DRAW A STRAIGHT HORIZONTAL LINE UNTIL No. OF ENGINES AT IDLE = 2,
- —FROM THIS POINT DRAW A PARALLEL LINE TO THE REQUESTED No. OF ENGINES (1),
- —FROM THIS POINT DRAW A STRAIGHT HORIZONTAL LINE TO THE DRAWBAR PULL AXIS,
- —THE Y−COORDINATE OBTAINED IS THE NECESSARY DRAWBAR PULL FOR THE TRACTOR (3 800 kg),
- —SEARCH THE INTERSECTION WITH THE "WET CONCRETE" LINE.

THE OBTAINED X−COORDINATE IS THE TOTAL TRACTION WHEEL LOAD (6 730 kg).

NOTE:
USE A TRACTOR WITH A LIMITED DRAWBAR PULL TO PREVENT LOADS ABOVE THE TOW−BAR SHEAR−PIN CAPACITY.

N_AC_050800_1_0010201_01_06

Ground Towing Requirements
FIGURE-5-8-0-991-001-B01

5-9-0 De-Icing and External Cleaning

****ON A/C A319-100 A319neo**

De-Icing and External Cleaning

1. De-Icing and External Cleaning on Ground
   The mobile equipment for aircraft de-icing and external cleaning must be capable of reaching heights up to approximately 13 m (43 ft).
2. De-Icing

AIRCRAFT TYPE	Wing Top Surface (Both Sides)		Wingtip Devices (Both Inside and Outside Surfaces) (Both Sides)		HTP Top Surface (Both Sides)		VTP (Both Sides)	
	m^2	ft^2	m^2	ft^2	m^2	ft^2	m^2	ft^2
A319	100	1 076	2	22	27	291	43	463
A319 Sharklet/neo	100	1 076	10	108	27	291	43	463

AIRCRAFT TYPE	Fuselage Top Surface (Top Third - 120° Arc)		Nacelle and Pylon (Top Third - 120° Arc) (All Engines)		Total De-Iced Area	
	m^2	ft^2	m^2	ft^2	m^2	ft^2
A319	122	1 313	24	258	317	3 412
A319 Sharklet/neo	122	1 313	24	258	325	3 498

NOTE : Dimensions are approximate.

3. External Cleaning

AIRCRAFT TYPE	Wing Top Surface (Both Sides)		Wing Lower Surface (Including Flap Track Fairing) (Both Sides)		Wingtip Devices (Both Inside and Outside Surfaces) (Both Sides)	
	m^2	ft^2	m^2	ft^2	m^2	ft^2
A319	100	1 076	103	1 109	2	22
A319 Sharklet/neo	100	1 076	103	1 109	10	108

AIRCRAFT TYPE	HTP Top Surface (Both Sides)		HTP Lower Surface (Both Sides)		VTP (Both Sides)	
	m^2	ft^2	m^2	ft^2	m^2	ft^2
A319	27	291	27	291	43	463

AIRCRAFT TYPE	HTP Top Surface (Both Sides)		HTP Lower Surface (Both Sides)		VTP (Both Sides)	
	m^2	ft^2	m^2	ft^2	m^2	ft^2
A319 Sharklet/neo	27	291	27	291	43	463

AIRCRAFT TYPE	Fuselage and Belly Fairing		Nacelle and Pylon (All Engines)		Total Cleaned Area	
	m^2	ft^2	m^2	ft^2	m^2	ft^2
A319	374	4 026	73	786	750	8 073
A319 Sharklet/neo	374	4 026	73	786	758	8 159

NOTE : Dimensions are approximate.

OPERATING CONDITIONS

6-1-0 Engine Exhaust Velocities and Temperatures

****ON A/C A319-100 A319neo**

Engine Exhaust Velocities and Temperatures

****ON A/C A319-100**

1. General
   This section provides the estimated engine exhaust efflux velocities and temperatures contours for Ground Idle, Breakaway and Maximum Take-Off (MTO) conditions.

****ON A/C A319neo**

2. General
   This section provides the estimated engine exhaust velocity and temperature contours for MTO, Breakaway 12% MTO, Breakaway 24% MTO and Ground Idle conditions for the CFM LEAP-1A and PW 1100G engines.

   The MTO data are presented at the maximum thrust rating. The Breakaway data are presented at a rating that corresponds to the minimum thrust level necessary to start the movement of the A/C from a static position at its maximum ramp weight. Breakaway thrust corresponds to 12% MTO if applied on both engines and 24% MTO when applied on a single engine (Idle thrust on the other engine).

   The Idle data, provided by the engine manufacturer, are calculated for operational conditions ISA +15K (+15˚C), Sea Level, Static and no headwind. In the charts, the longitudinal distances are measured from the inboard engine core-nozzle exit section. The lateral distances are measured from the aircraft fuselage centerline.

   The effects of on-wing installation are not taken into account. The effects of ground proximity are not taken into account for PW 1100G engines, but they are taken into account for the CFM LEAP-1A engines.

   The velocity contours are presented at 50 ft/s (15 m/s), 100 ft/s (30 m/s) and 150 ft/s (46 m/s). The temperature contours are shown at 313K (+40˚C), 323K (+50˚C) and 333K (+60˚C). The velocity and temperature contours do not take into account possible variations affecting performance, such as ambient temperature, field elevation or failure cases leading to an abnormal bleed configuration. To evaluate the impact of these specific variables on the exhaust contours, a specific study of the airport where the aircraft is intended to operate should be carried out.

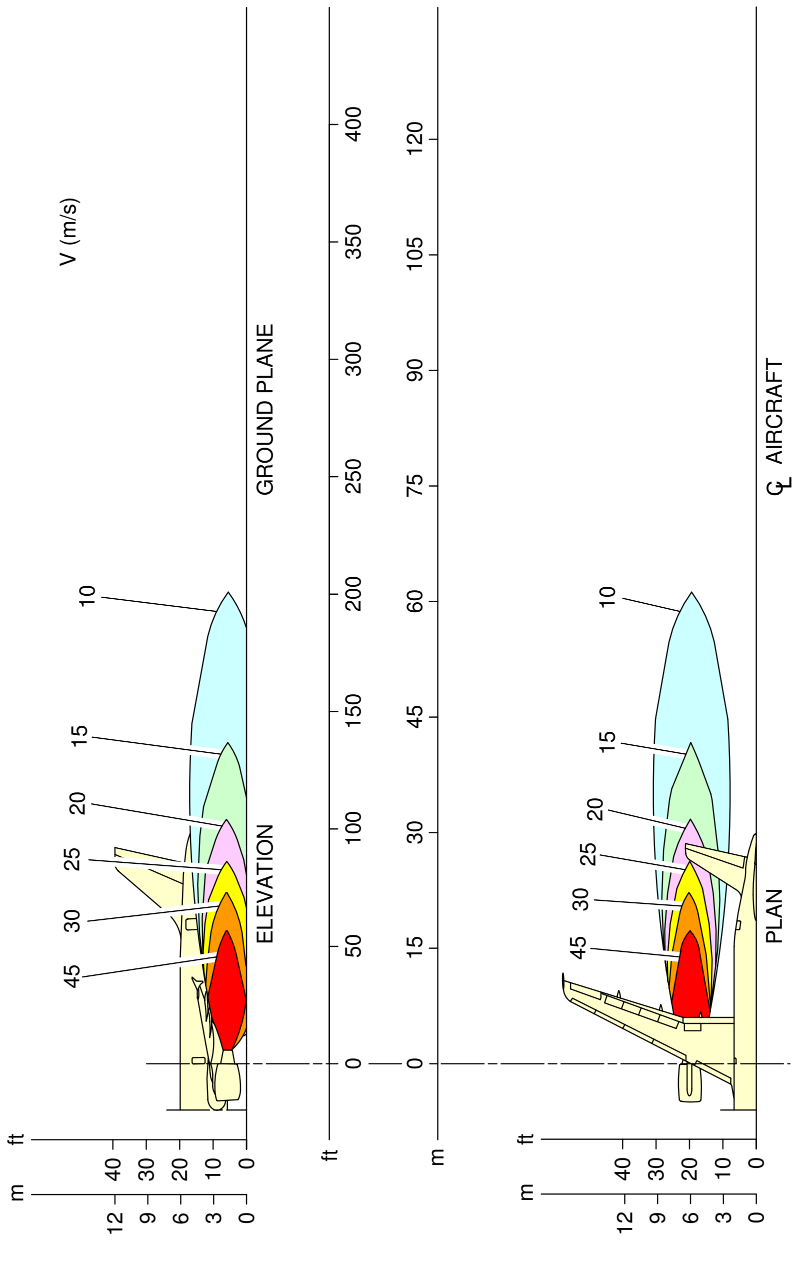
6-1-1 Engine Exhaust Velocities Contours - Ground Idle Power

****ON A/C A319-100 A319neo**

<u>Engine Exhaust Velocities Contours - Ground Idle Power</u>

1. This section provides engine exhaust velocities contours at ground idle power.

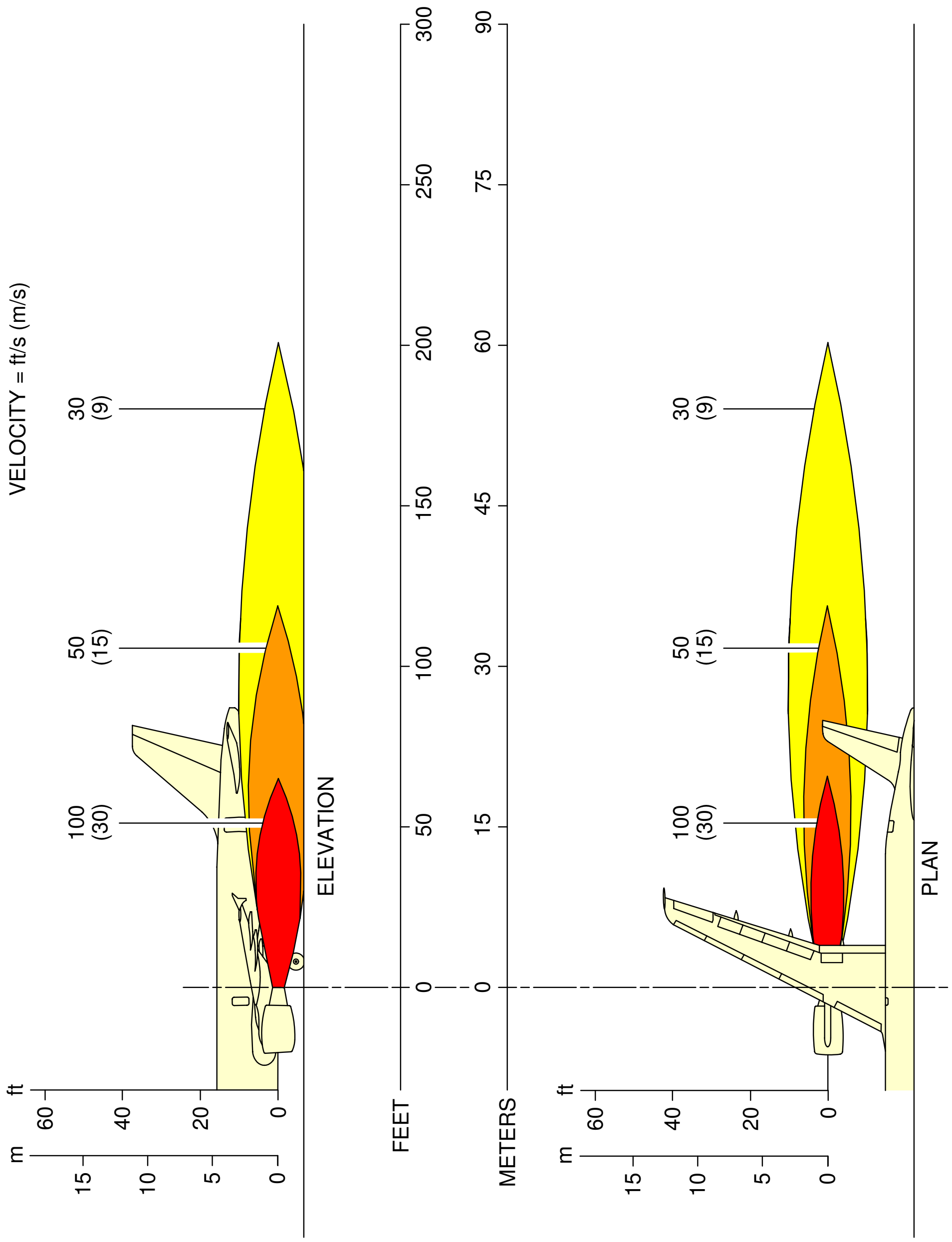
****ON A/C A319-100**



N_AC_060101_1_0030101_01_01

Engine Exhaust Velocities
Ground Idle Power – CFM56 Series Engine
FIGURE-6-1-1-991-003-A01

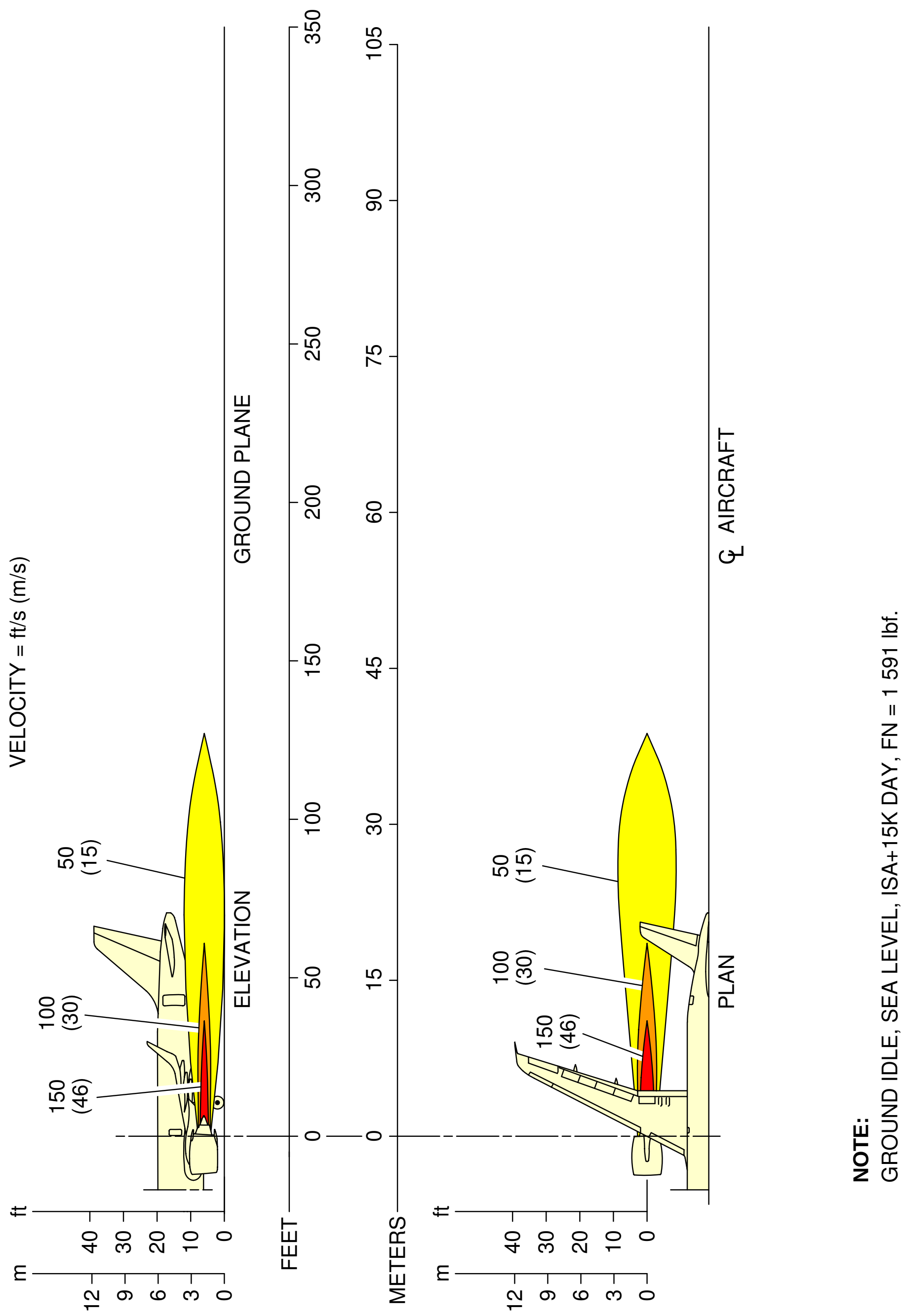
**ON A/C A319-100



N_AC_060101_1_0040101_01_00

Engine Exhaust Velocities
Ground Idle Power – IAE V2500 Series Engine
FIGURE-6-1-1-991-004-A01

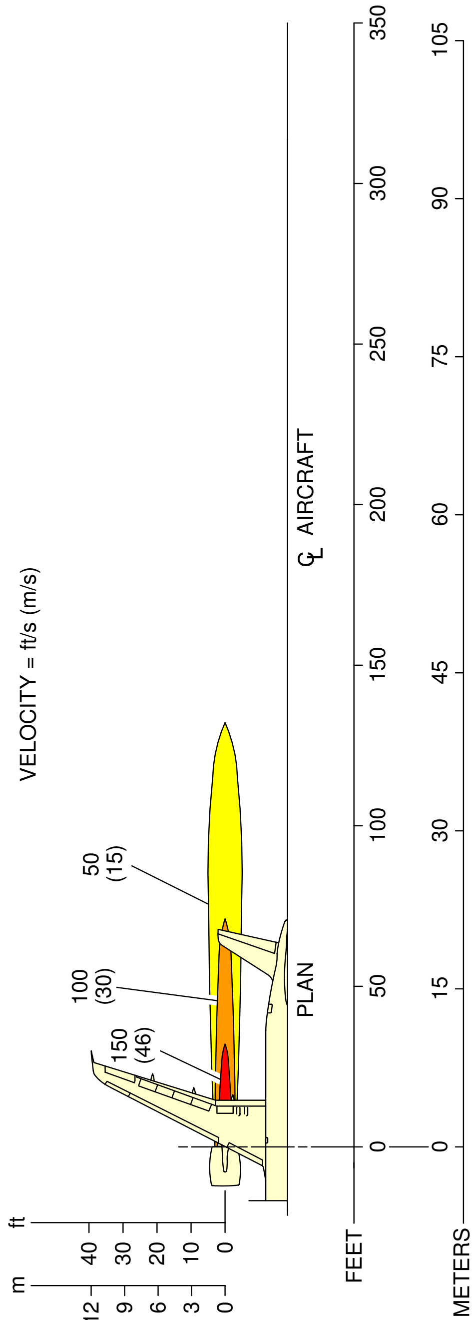
****ON A/C A319neo**



N_AC_060101_1_0090101_01_00

Engine Exhaust Velocities
Ground Idle Power – CFM LEAP-1A Engine
FIGURE-6-1-1-991-009-A01

****ON A/C A319neo**



N_AC_060101_1_0100101_01_00

Engine Exhaust Velocities
Ground Idle Power – PW 1100G Engine
FIGURE-6-1-1-991-010-A01

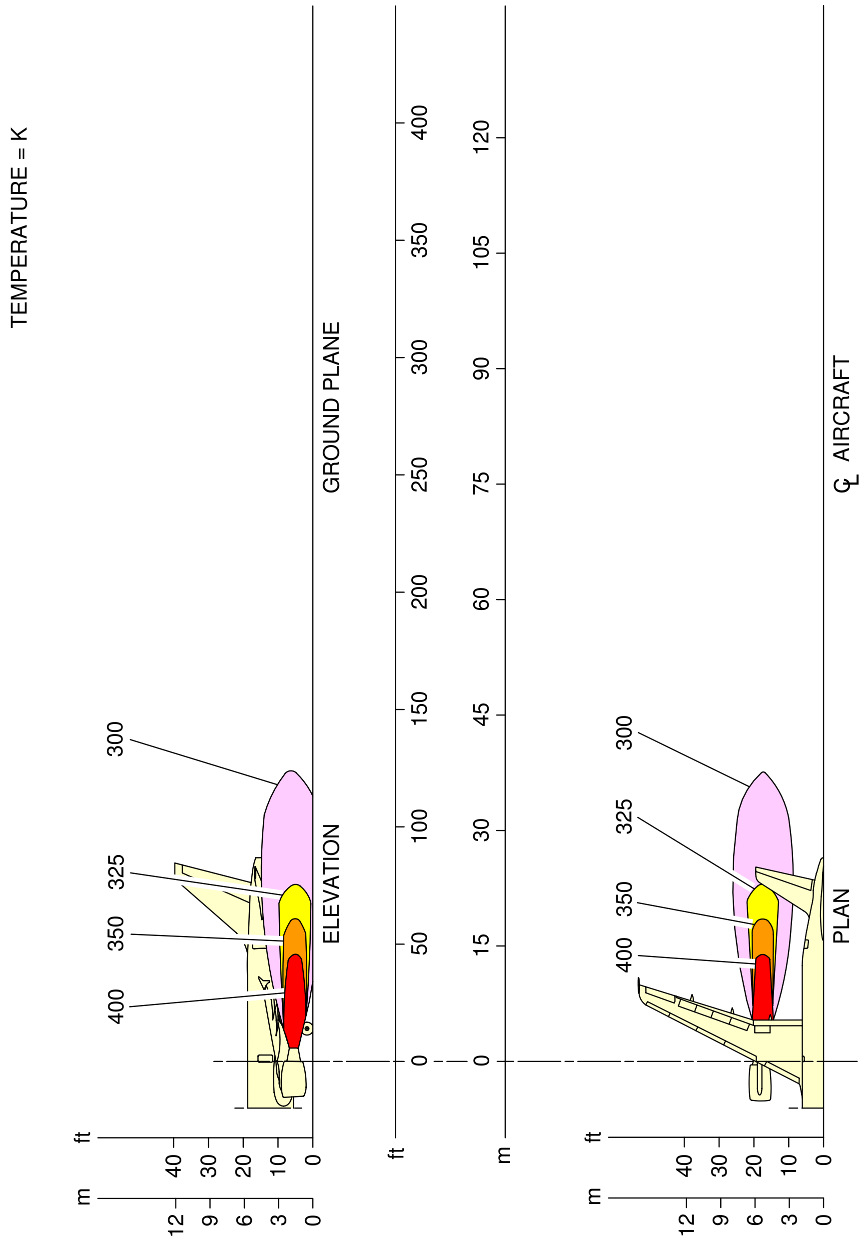
6-1-2 Engine Exhaust Temperatures Contours - Ground Idle Power

****ON A/C A319-100 A319neo**

Engine Exhaust Temperatures Contours - Ground Idle Power

1. This section provides engine exhaust temperatures contours at ground idle power.

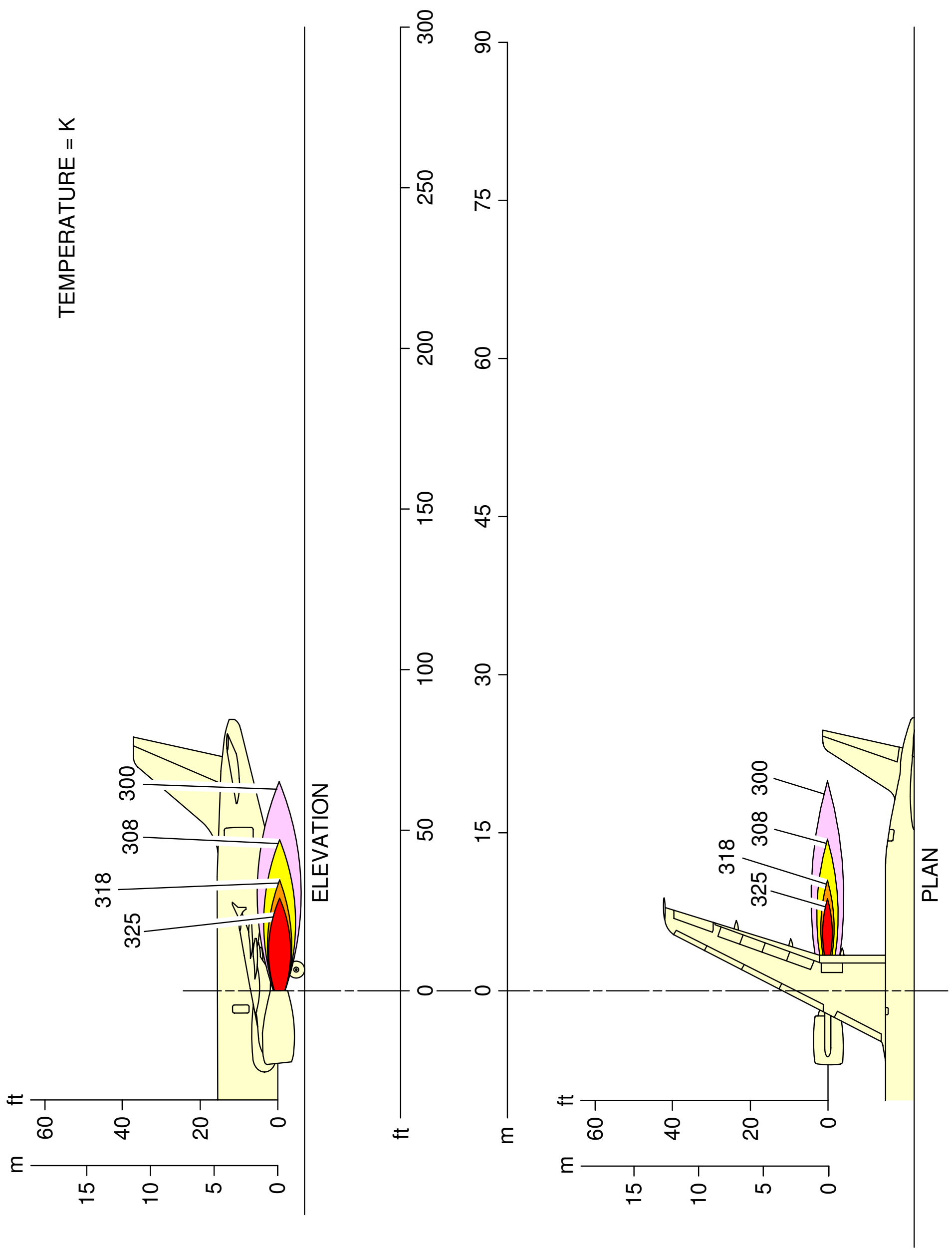
**ON A/C A319-100



N_AC_060102_1_0030101_01_01

Engine Exhaust Temperatures
Ground Idle Power – CFM56 Series Engine
FIGURE-6-1-2-991-003-A01

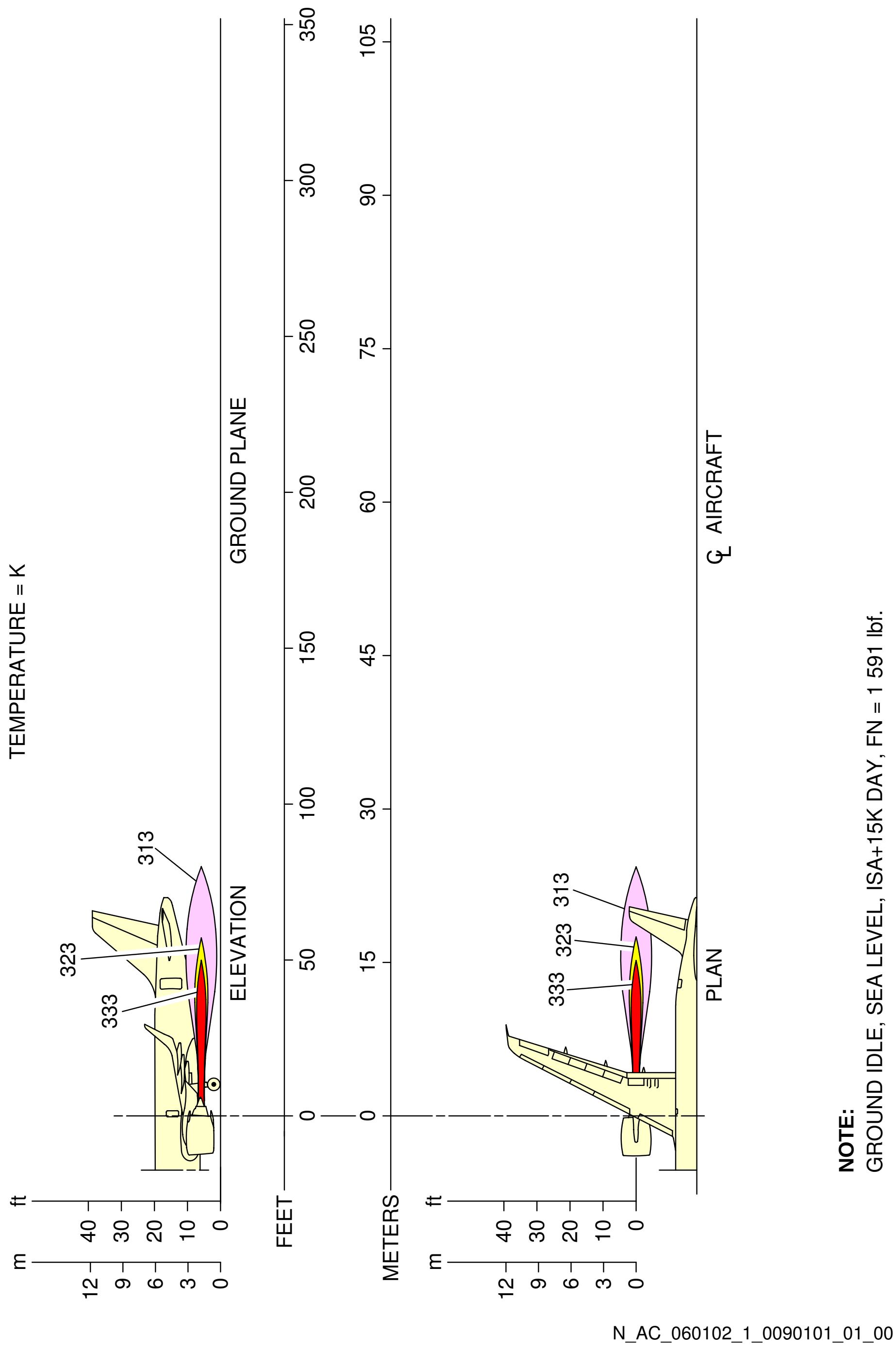
**ON A/C A319-100



N_AC_060102_1_0040101_01_01

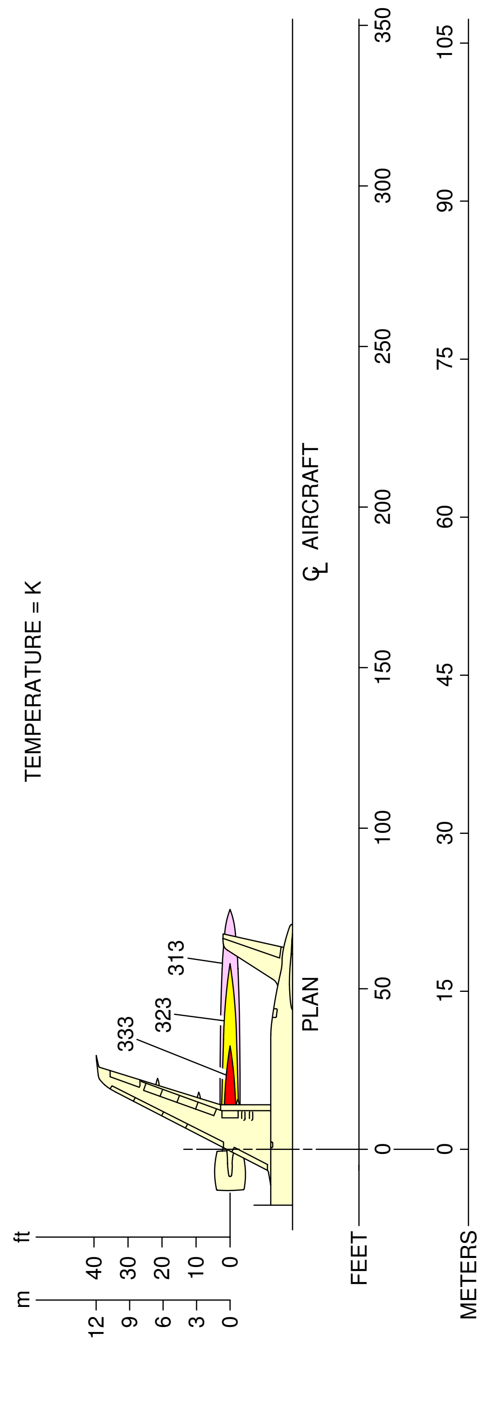
Engine Exhaust Temperatures
Ground Idle Power – IAE V2500 Series Engine
FIGURE-6-1-2-991-004-A01

****ON A/C A319neo**



Engine Exhaust Temperatures
Ground Idle Power – CFM LEAP-1A Engine
FIGURE-6-1-2-991-009-A01

****ON A/C A319neo**



N_AC_060102_1_0100101_01_00

Engine Exhaust Temperatures
Ground Idle Power – PW 1100G Engine
FIGURE-6-1-2-991-010-A01

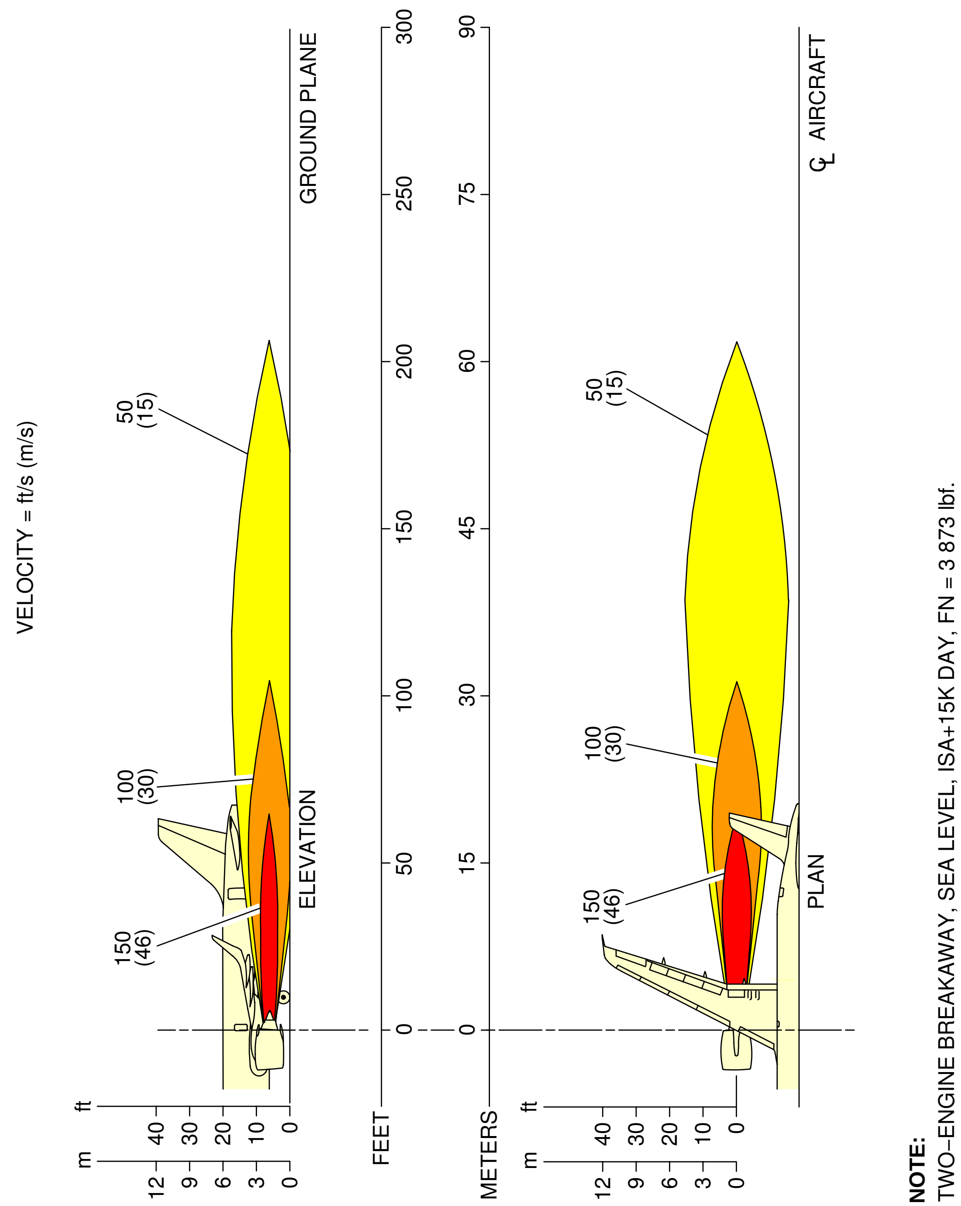
6-1-3 Engine Exhaust Velocities Contours - Breakaway Power

****ON A/C A319-100 A319neo**

Engine Exhaust Velocities Contours - Breakaway Power

1. This section provides engine exhaust velocities contours at breakaway power.

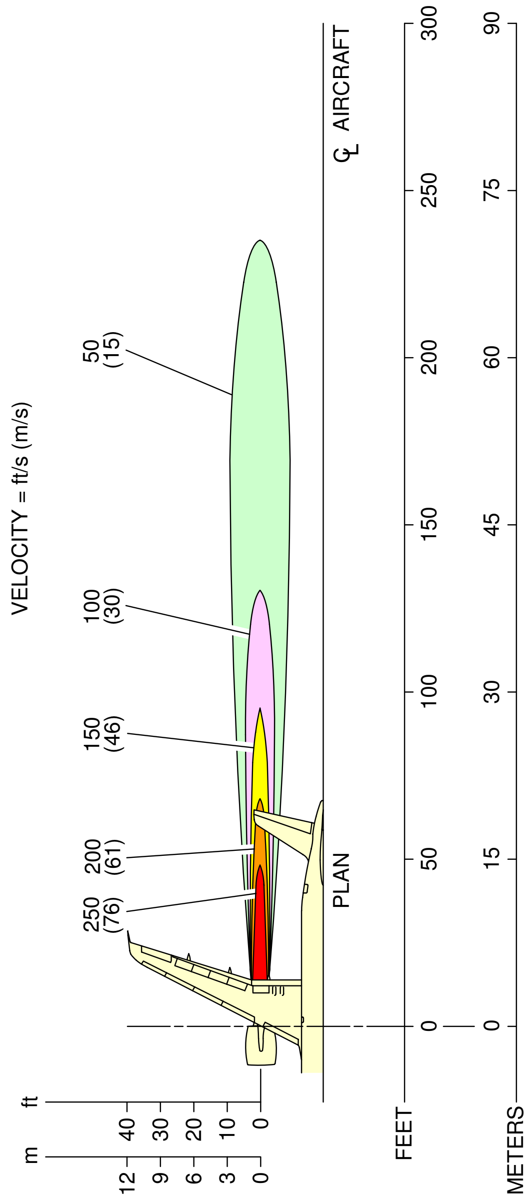
****ON A/C A319neo**



N_AC_060103_1_0090101_01_00

Engine Exhaust Velocities
Breakaway Power 12% MTO – CFM LEAP-1A Engine
FIGURE-6-1-3-991-009-A01

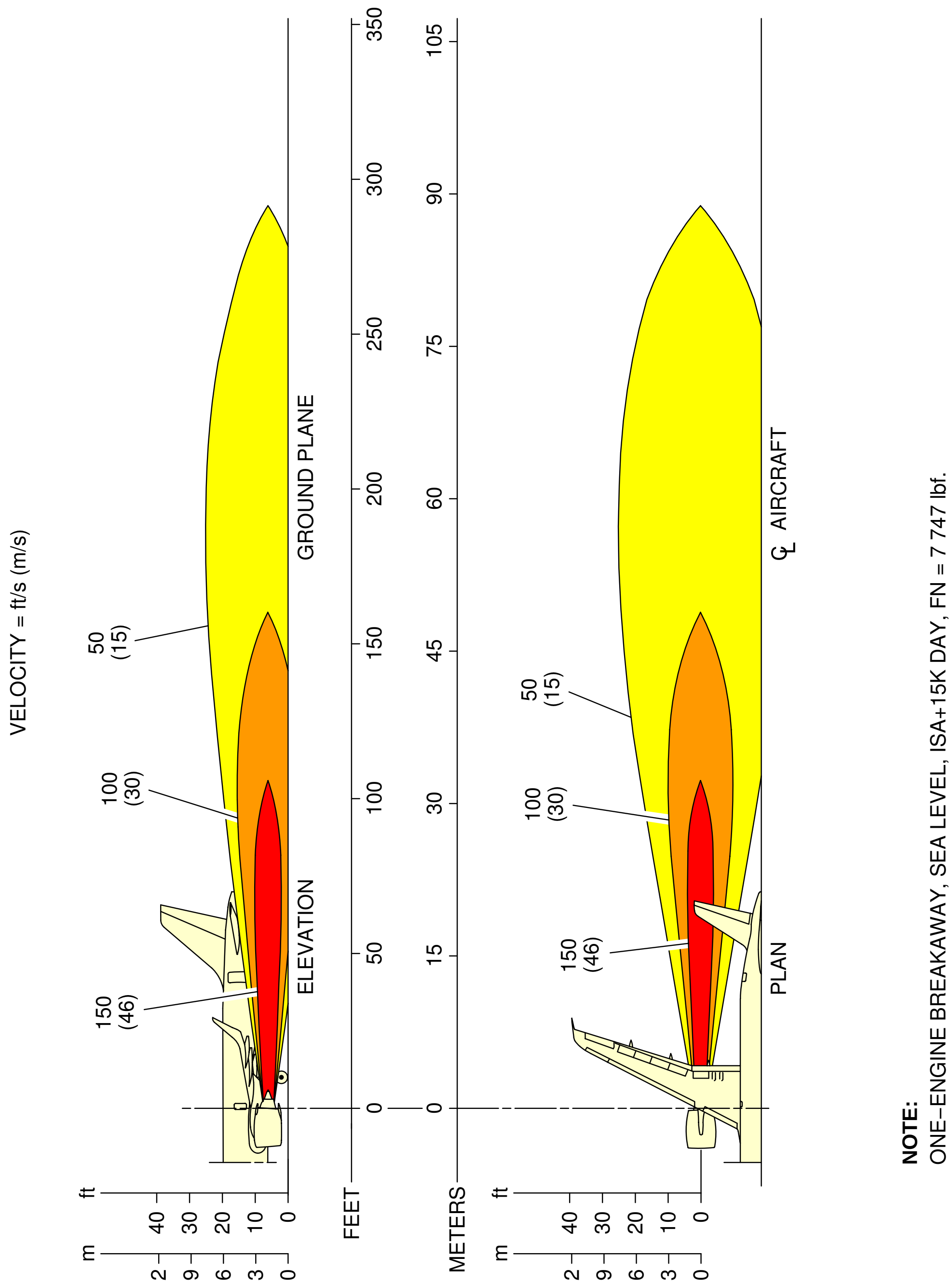
****ON A/C A319neo**



N_AC_060103_1_0100101_01_00

Engine Exhaust Velocities
Breakaway Power 12% MTO – PW 1100G Engine
FIGURE-6-1-3-991-010-A01

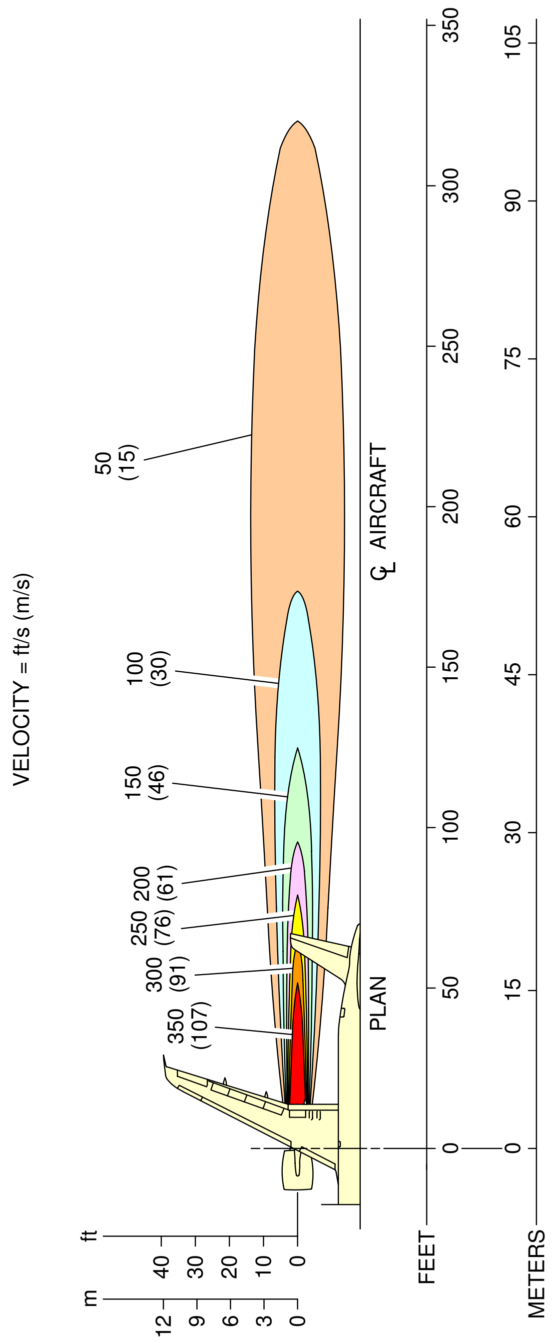
****ON A/C A319neo**



N_AC_060103_1_0170101_01_00

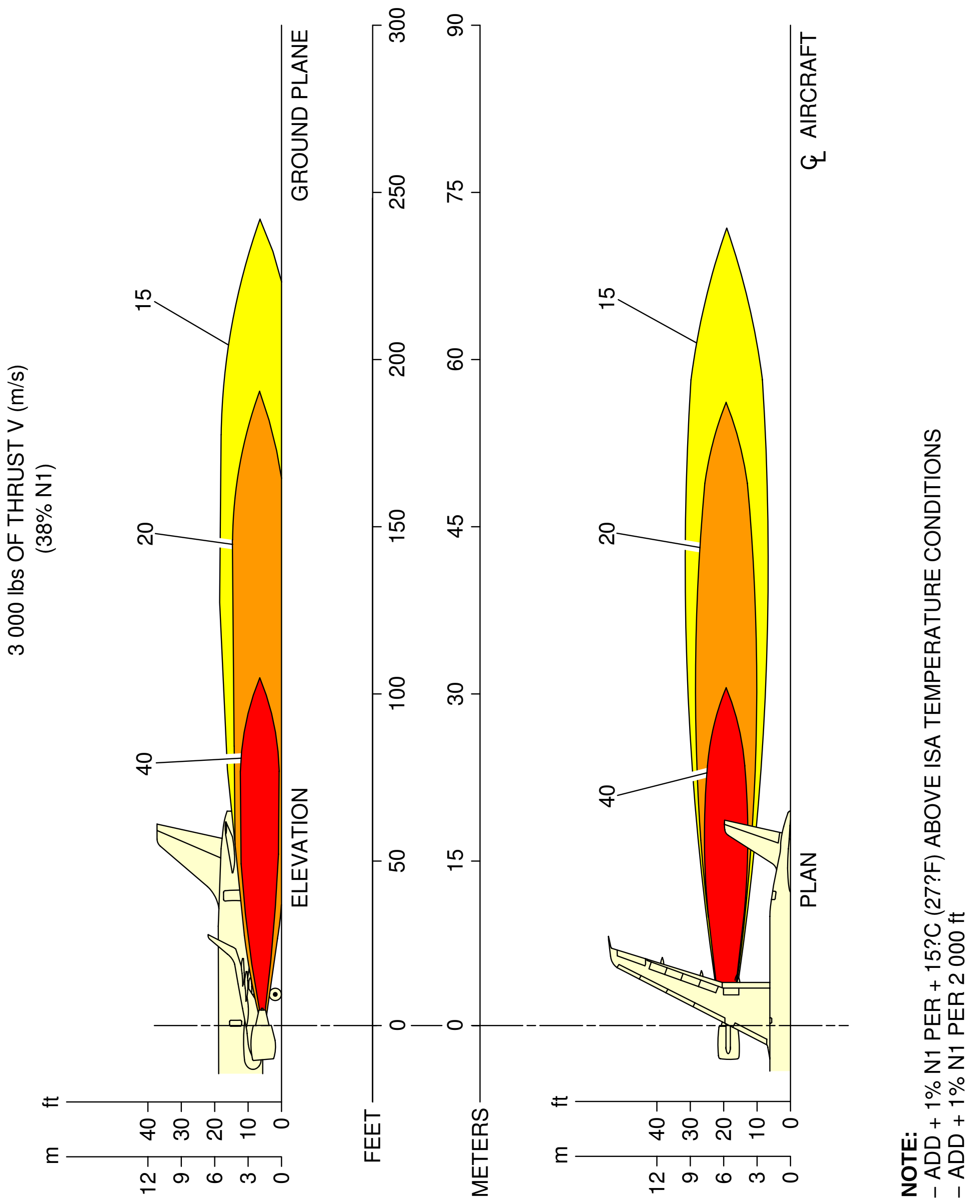
Engine Exhaust Velocities
Breakaway Power 24% MTO – CFM LEAP-1A Engine
FIGURE-6-1-3-991-017-A01

****ON A/C A319neo**



Engine Exhaust Velocities
Breakaway Power 24% MTO – PW 1100G Engine
FIGURE-6-1-3-991-018-A01

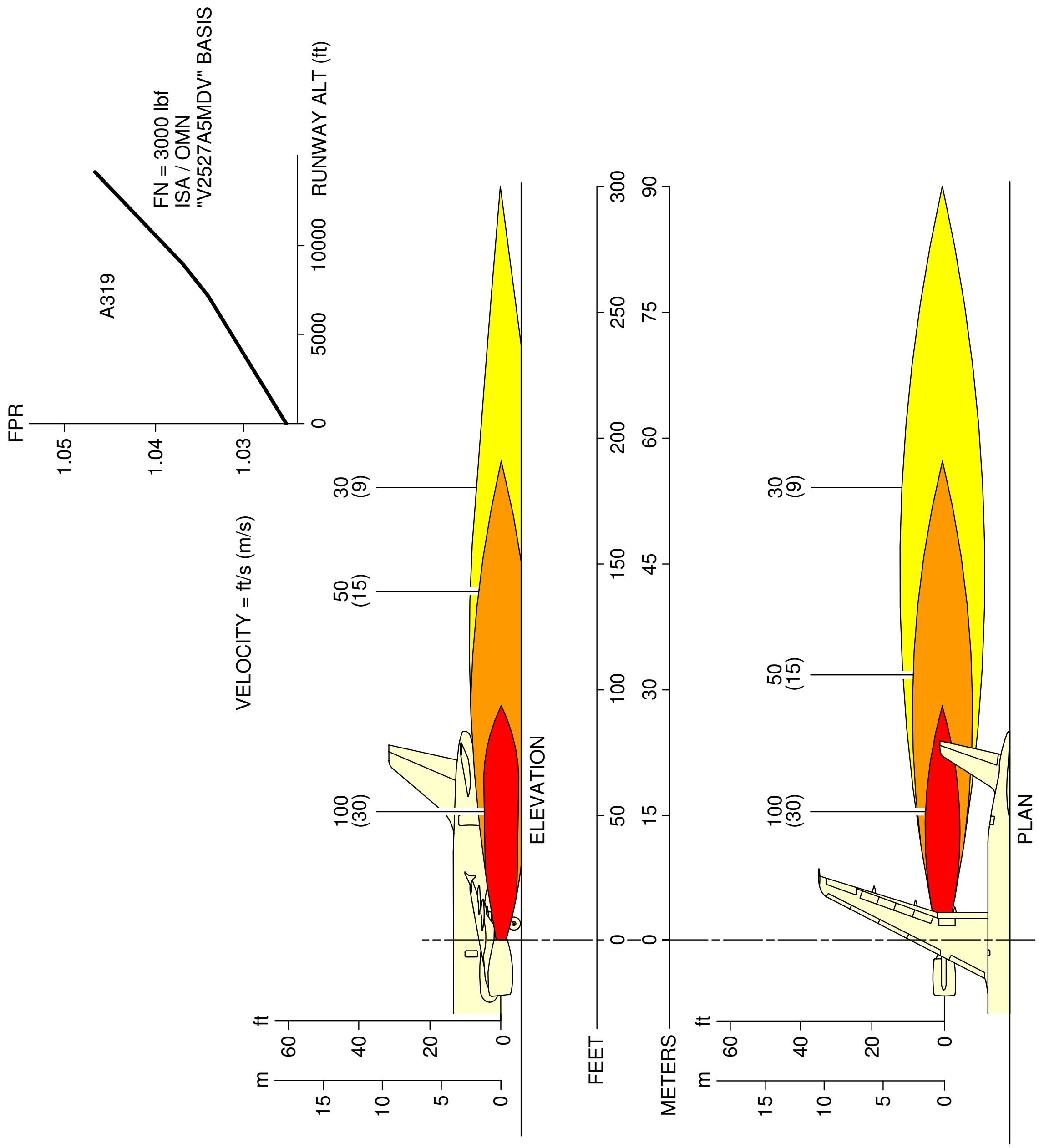
**ON A/C A319-100



N_AC_060103_1_0210101_01_00

Engine Exhaust Velocities
Breakaway Power - CFM56 Series Engine
FIGURE-6-1-3-991-021-A01

**ON A/C A319-100



N_AC_060103_1_0220101_01_00

Engine Exhaust Velocities
Breakaway Power - IAE V2500 Series Engine
FIGURE-6-1-3-991-022-A01

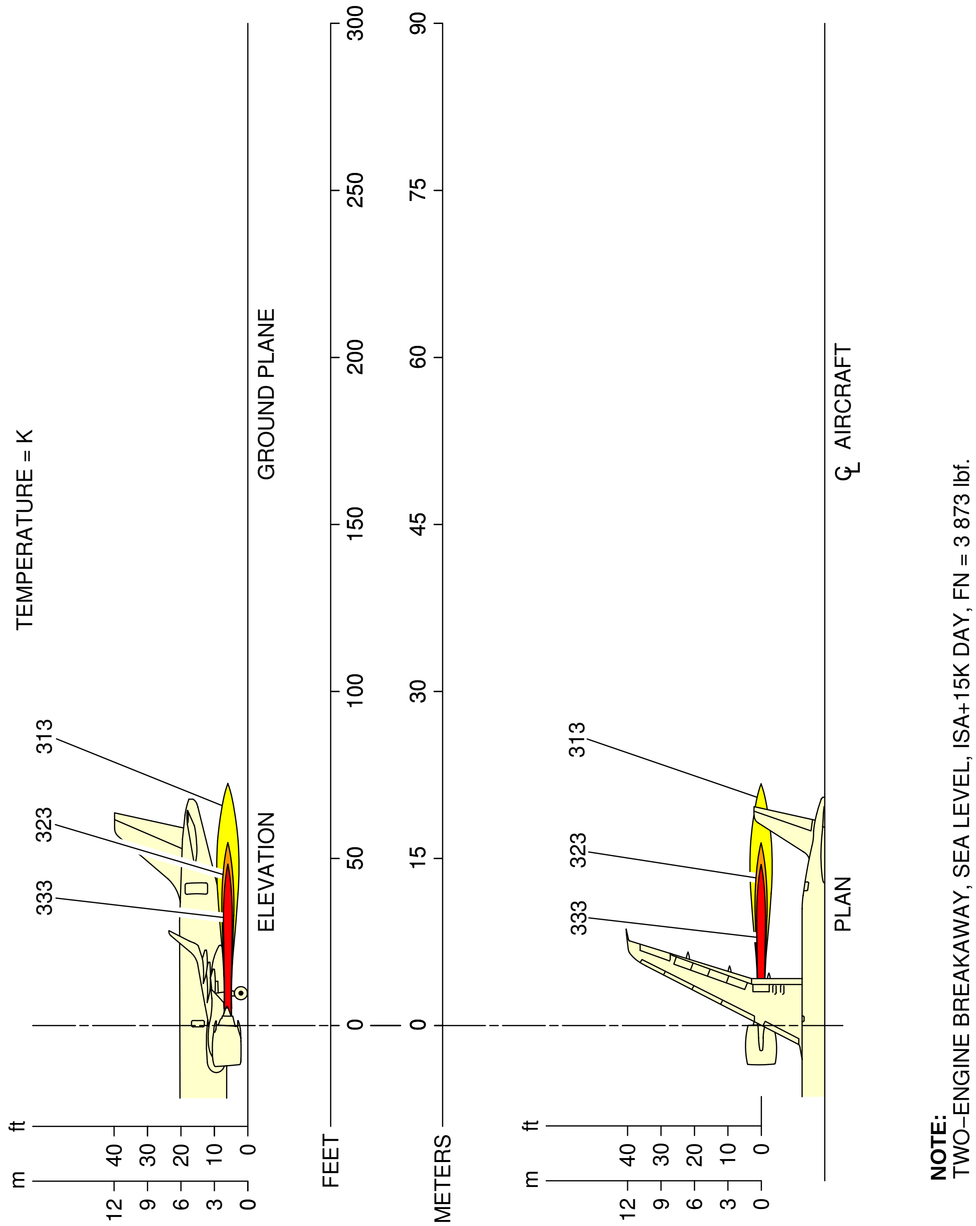
6-1-4 Engine Exhaust Temperatures Contours - Breakaway Power

****ON A/C A319-100 A319neo**

Engine Exhaust Temperatures Contours - Breakaway Power

1. This section provides engine exhaust temperatures contours at breakaway power.

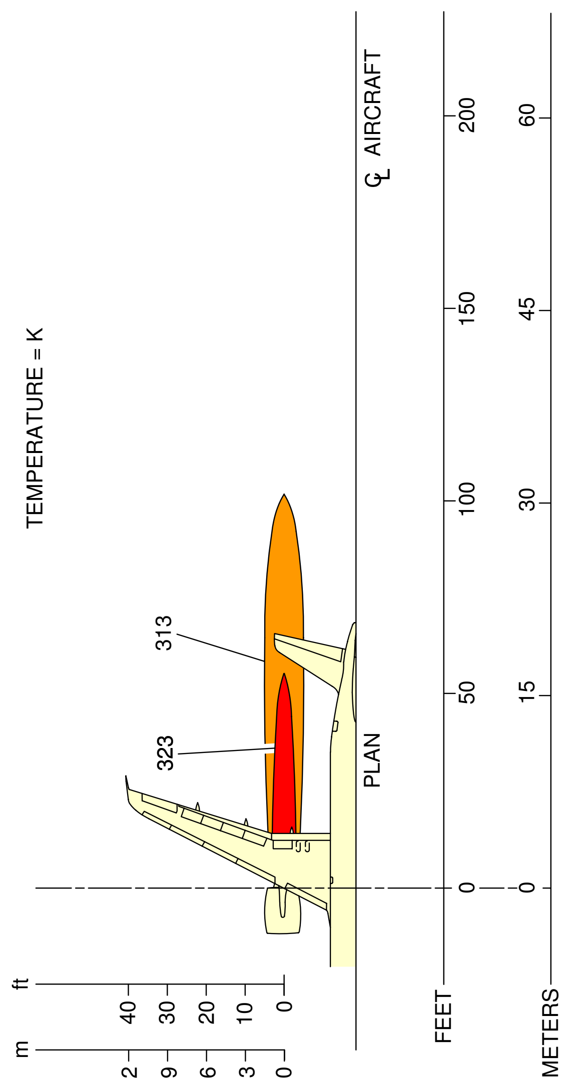
****ON A/C A319neo**



N_AC_060104_1_0130101_01_00

Engine Exhaust Temperatures
Breakaway Power 12% MTO - CFM LEAP-1A Engine
FIGURE-6-1-4-991-013-A01

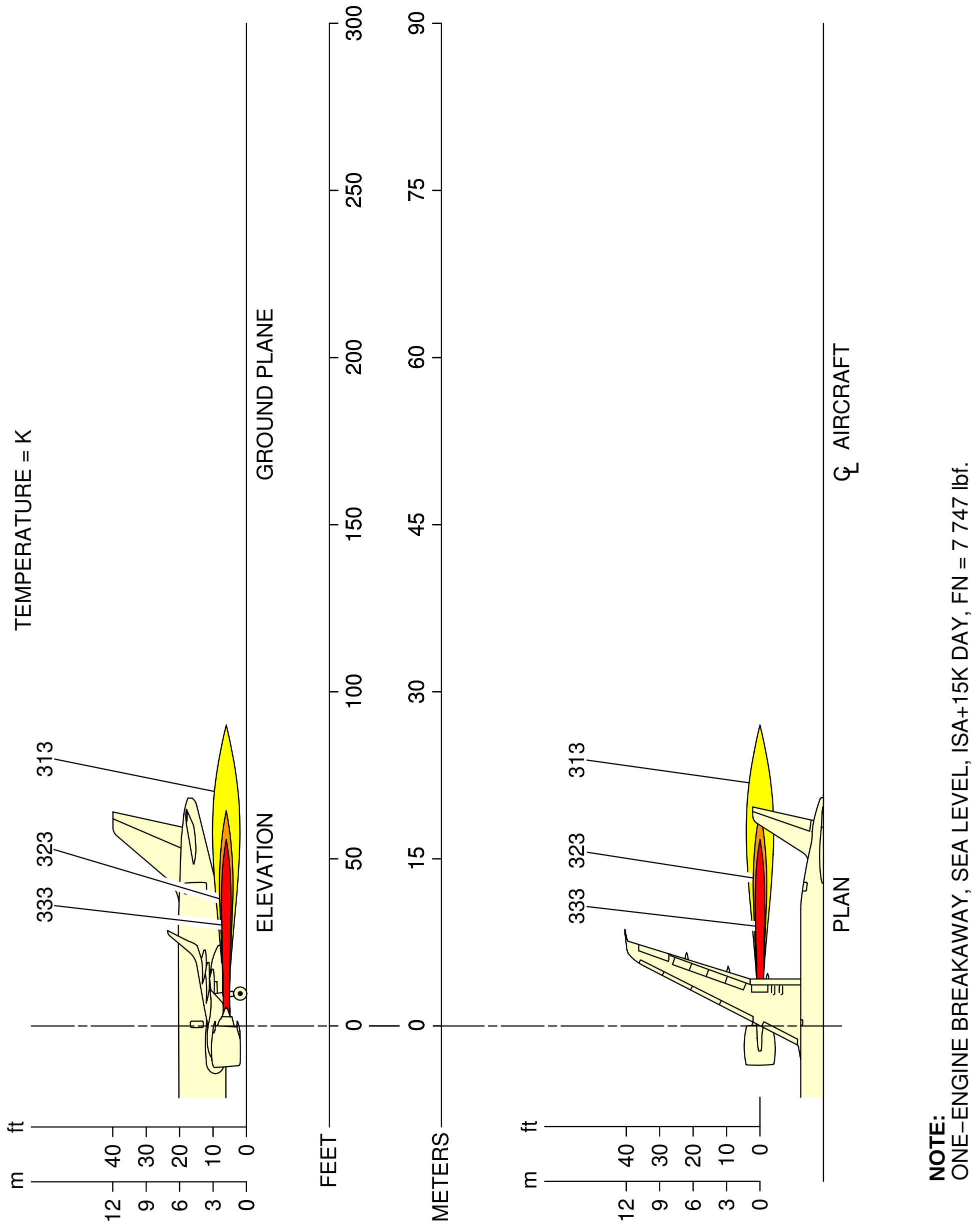
****ON A/C A319neo**



N_AC_060104_1_0140101_01_00

Engine Exhaust Temperatures
Breakaway Power 12% MTO - PW 1100G Engine
FIGURE-6-1-4-991-014-A01

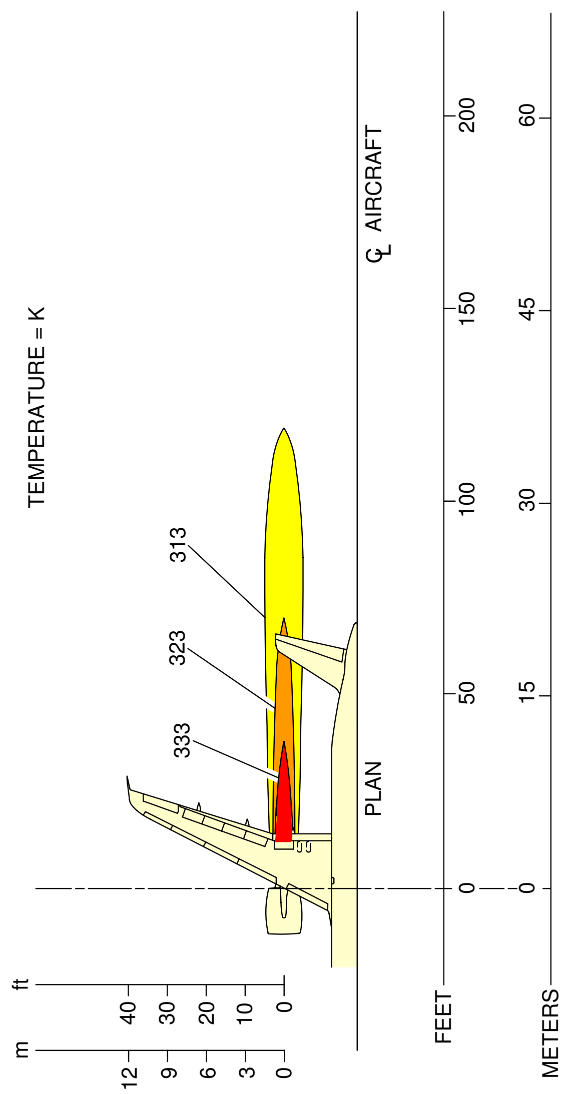
****ON A/C A319neo**



N_AC_060104_1_0150101_01_00

Engine Exhaust Temperatures
Breakaway Power 24% MTO - CFM LEAP-1A Engine
FIGURE-6-1-4-991-015-A01

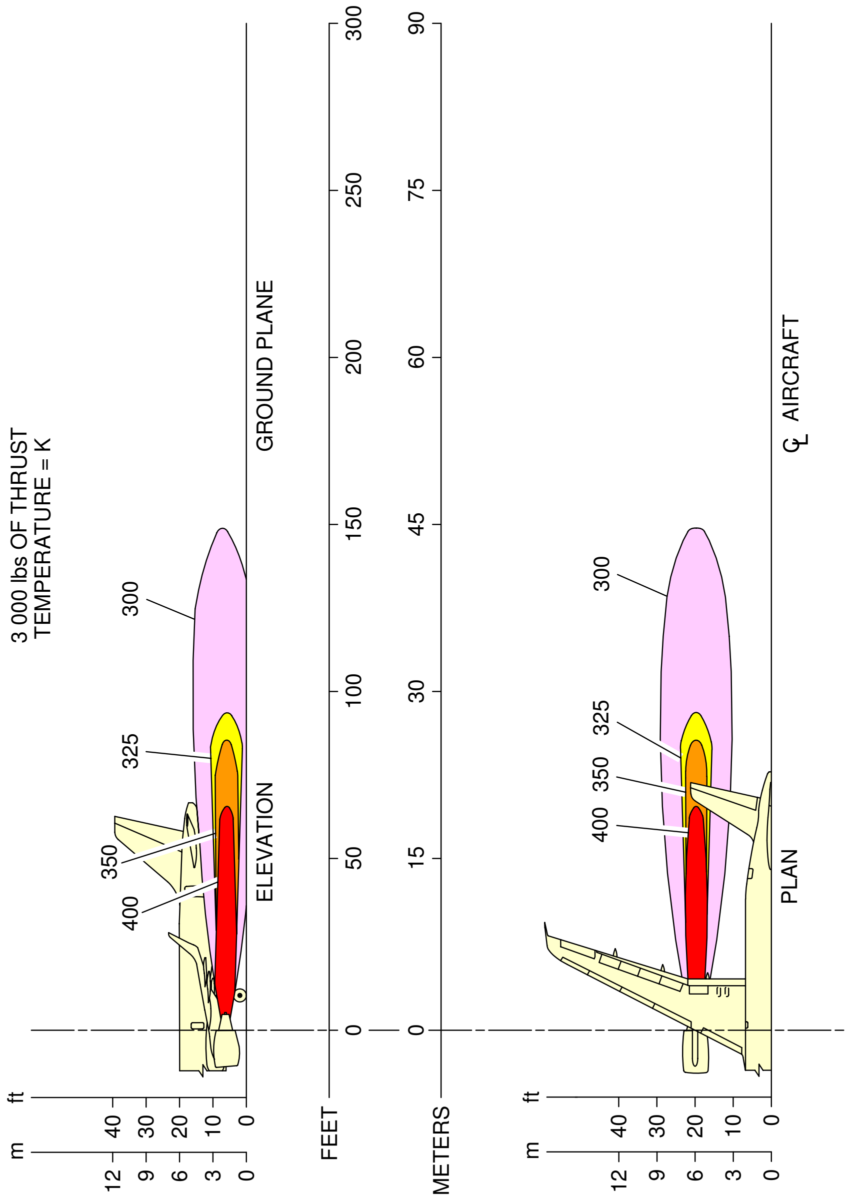
**ON A/C A319neo



N_AC_060104_1_0160101_01_00

Engine Exhaust Temperatures
Breakaway Power 24% MTO - PW 1100G Engine
FIGURE-6-1-4-991-016-A01

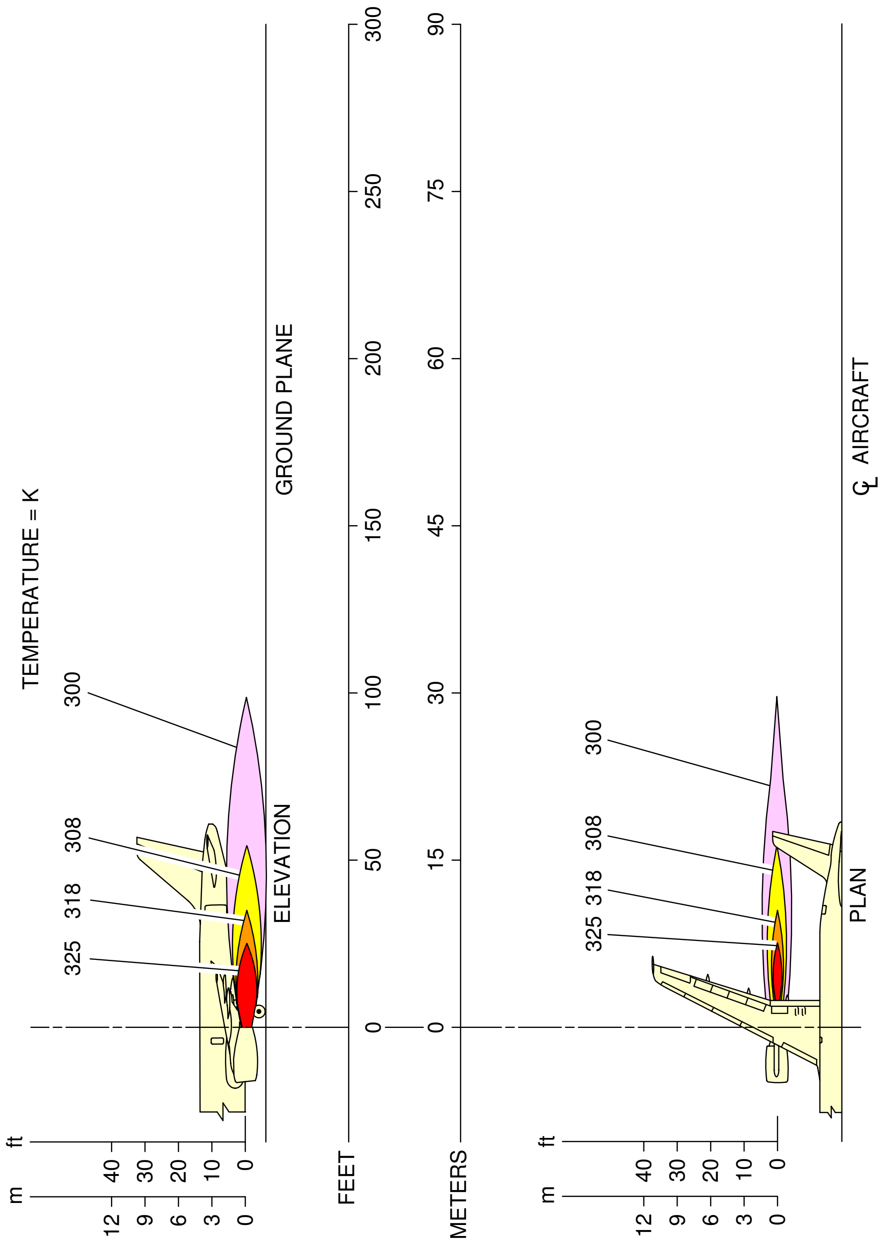
**ON A/C A319-100



N_AC_060104_1_0210101_01_00

Engine Exhaust Temperatures
Breakaway Power - CFM56 Series Engine
FIGURE-6-1-4-991-021-A01

**ON A/C A319-100



N_AC_060104_1_0220101_01_00

Engine Exhaust Temperatures
Breakaway Power - IAE V2500 Series Engine
FIGURE-6-1-4-991-022-A01

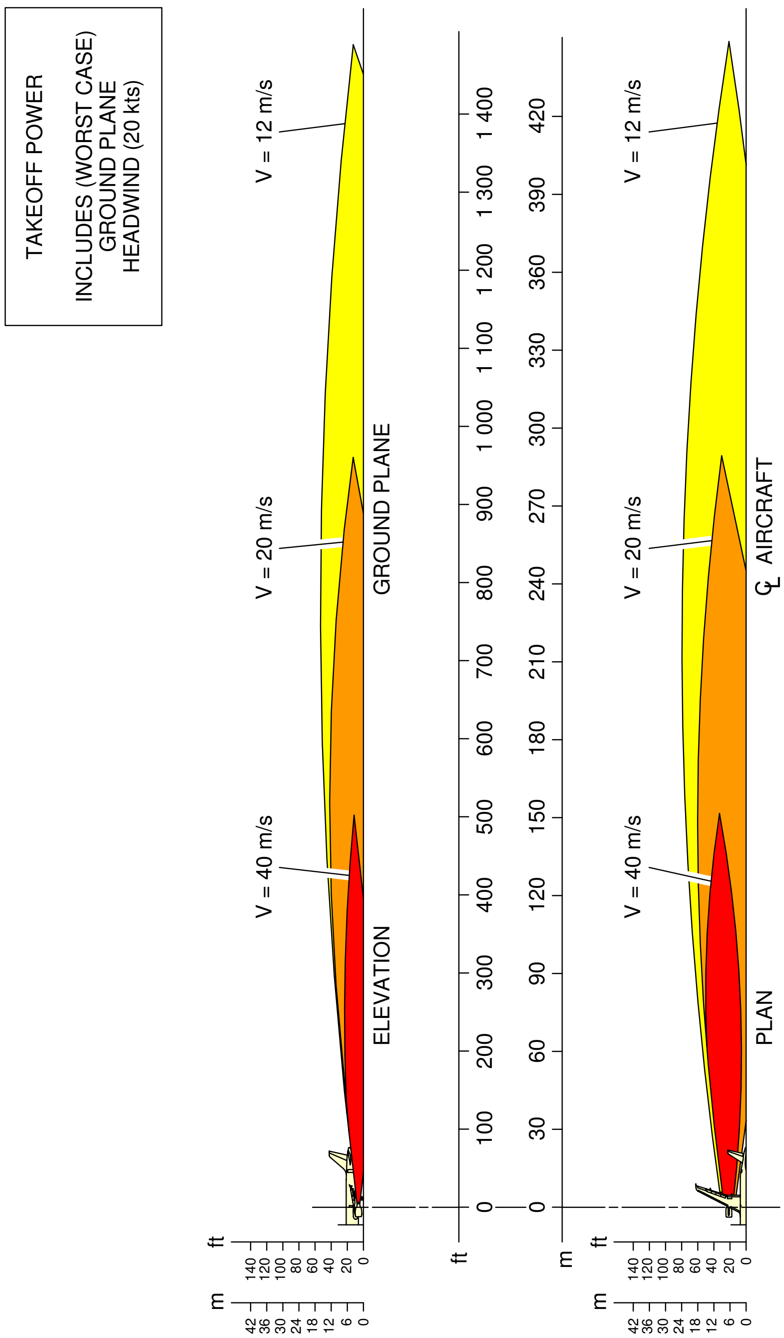
6-1-5 Engine Exhaust Velocities Contours - Takeoff Power

****ON A/C A319-100 A319neo**

Engine Exhaust Velocities Contours - Takeoff Power

1. This section provides engine exhaust velocities contours at takeoff power.

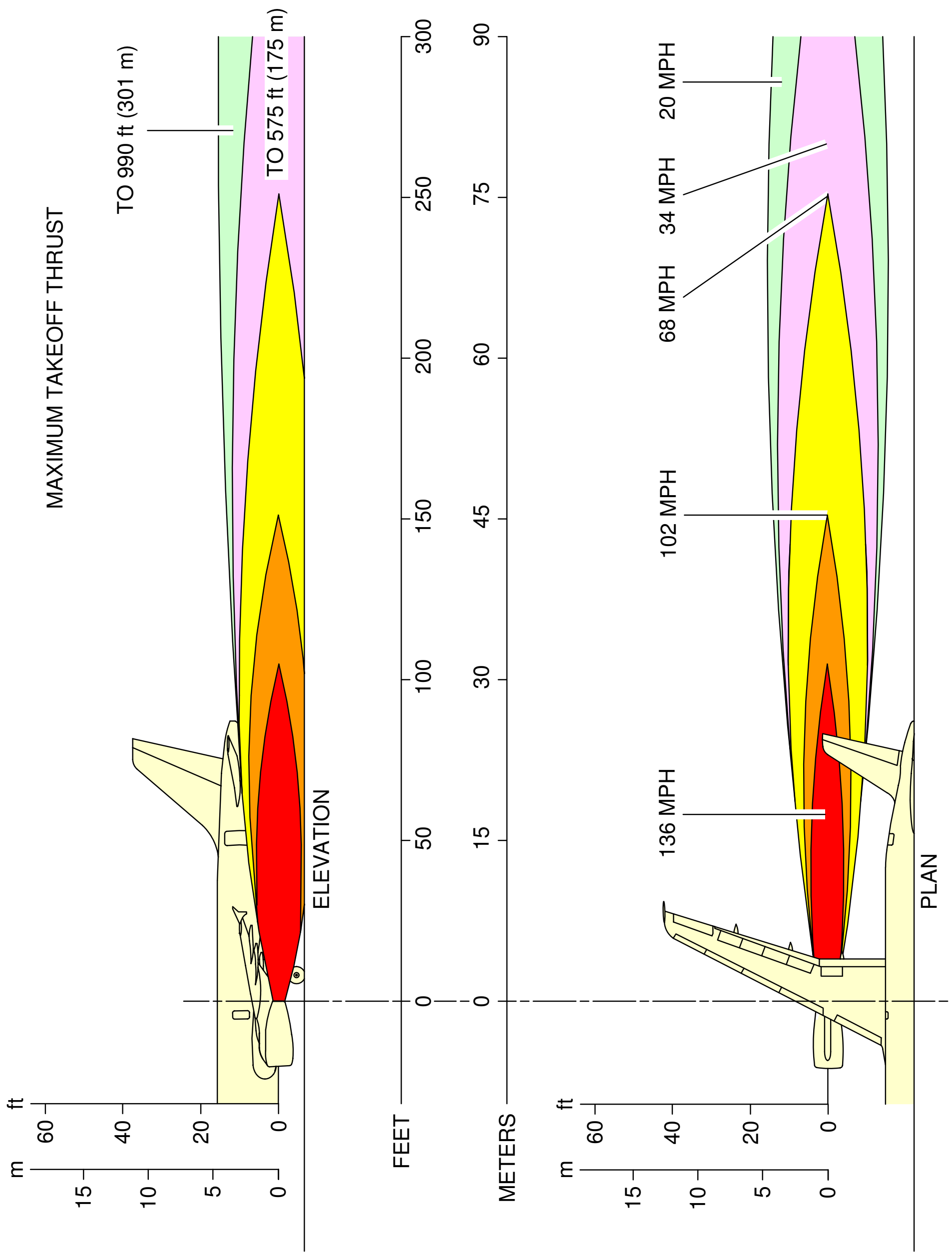
**ON A/C A319-100



N_AC_060105_1_0030101_01_01

Engine Exhaust Velocities
Takeoff Power – CFM56 Series Engine
FIGURE-6-1-5-991-003-A01

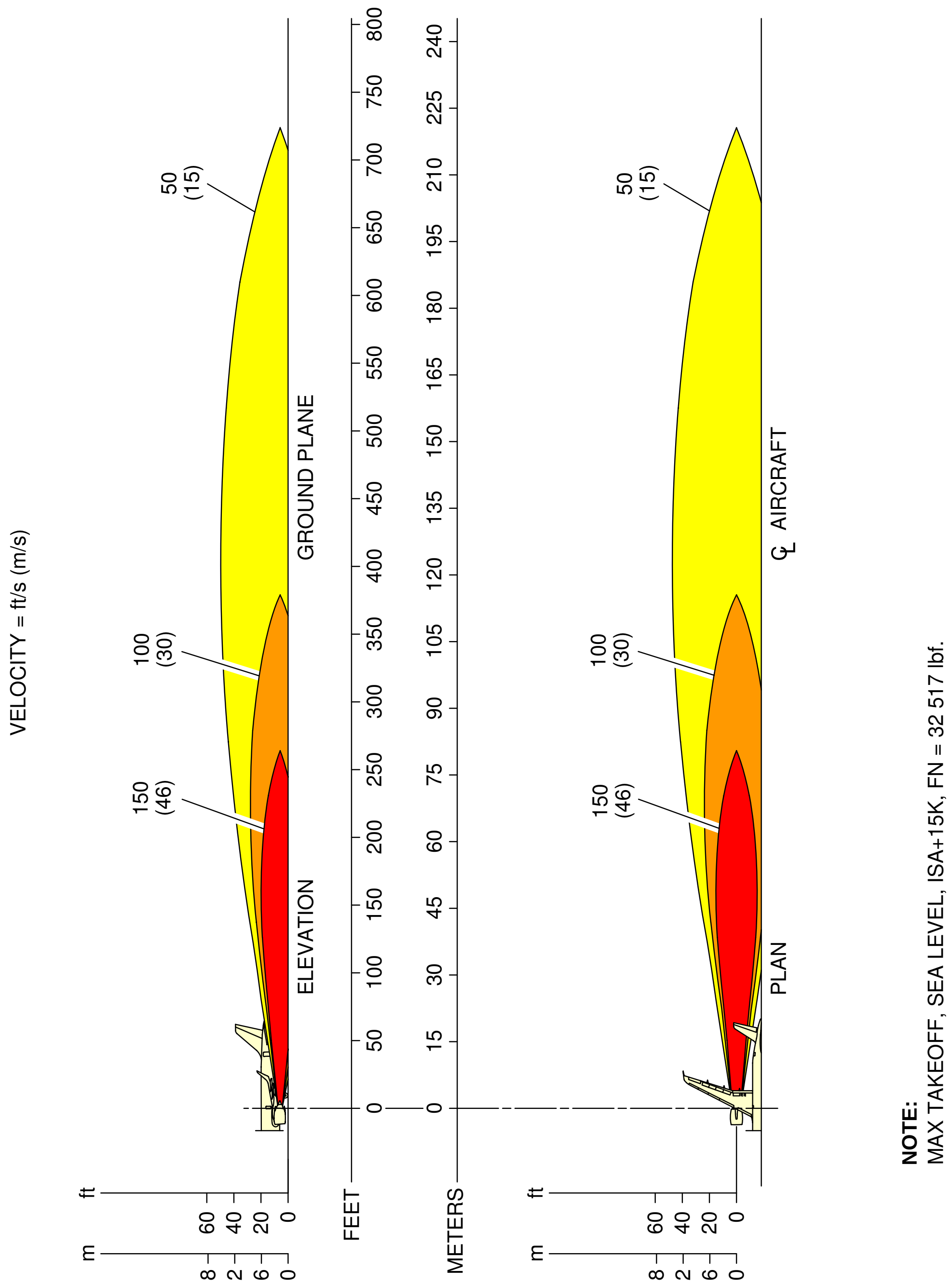
****ON A/C A319-100**



N_AC_060105_1_0040101_01_00

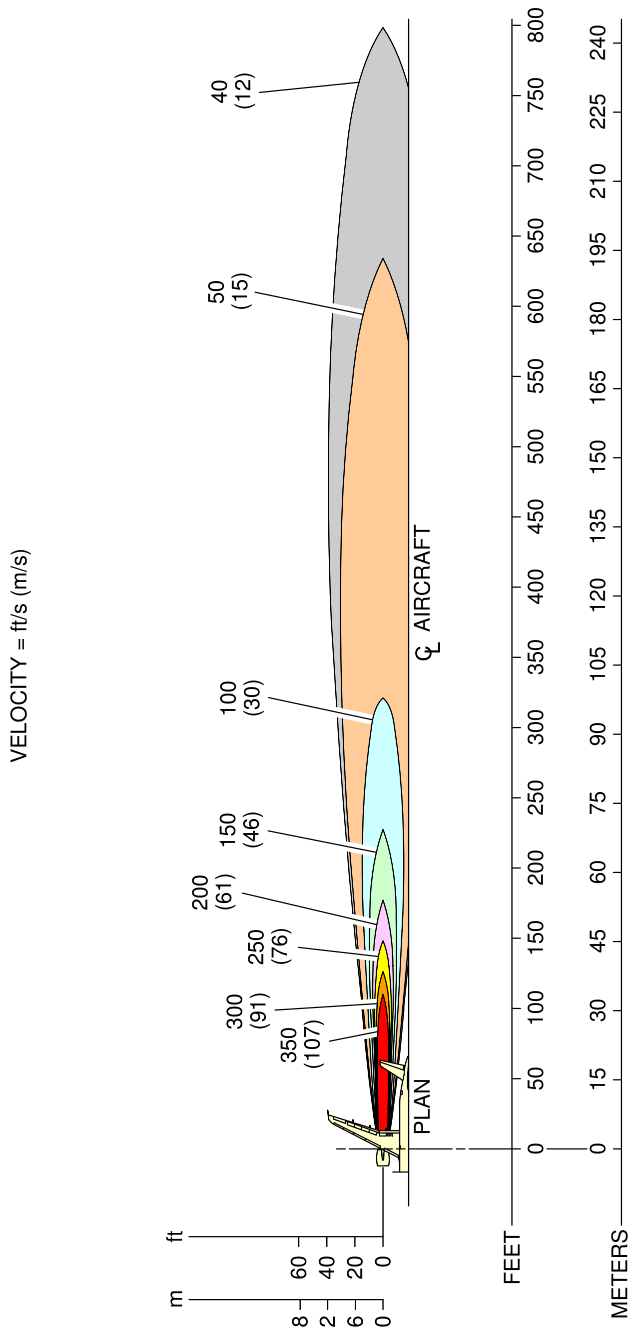
Engine Exhaust Velocities
Takeoff Power – IAE V2500 Series Engine
FIGURE-6-1-5-991-004-A01

**ON A/C A319neo



Engine Exhaust Velocities
Takeoff Power – CFM LEAP-1A Engine
FIGURE-6-1-5-991-009-A01

****ON A/C A319neo**



N_AC_060105_1_0100101_01_00

Engine Exhaust Velocities
Takeoff Power – PW 1100G Engine
FIGURE-6-1-5-991-010-A01

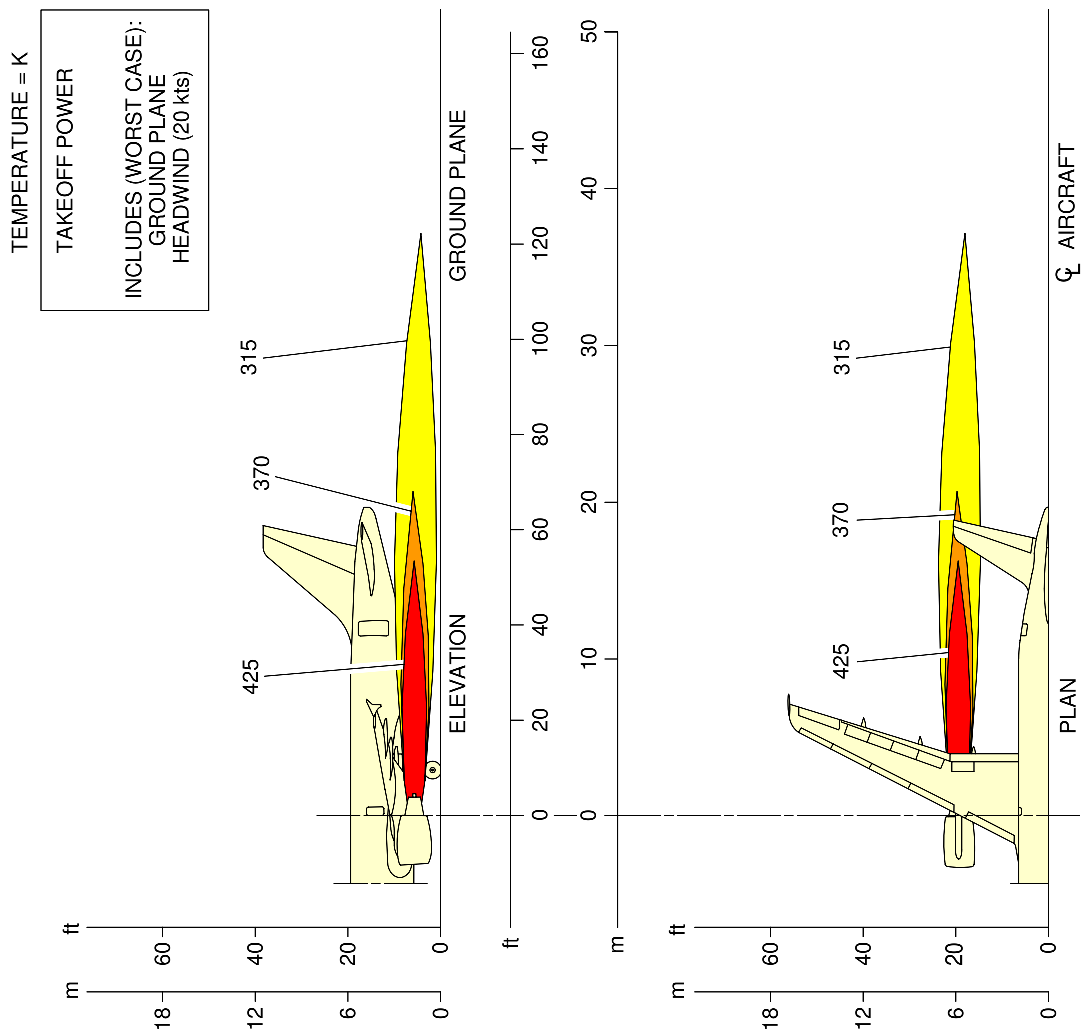
6-1-6 Engine Exhaust Temperatures Contours - Takeoff Power

****ON A/C A319-100 A319neo**

Engine Exhaust Temperatures Contours - Takeoff Power

1. This section provides engine exhaust temperatures contours at takeoff power.

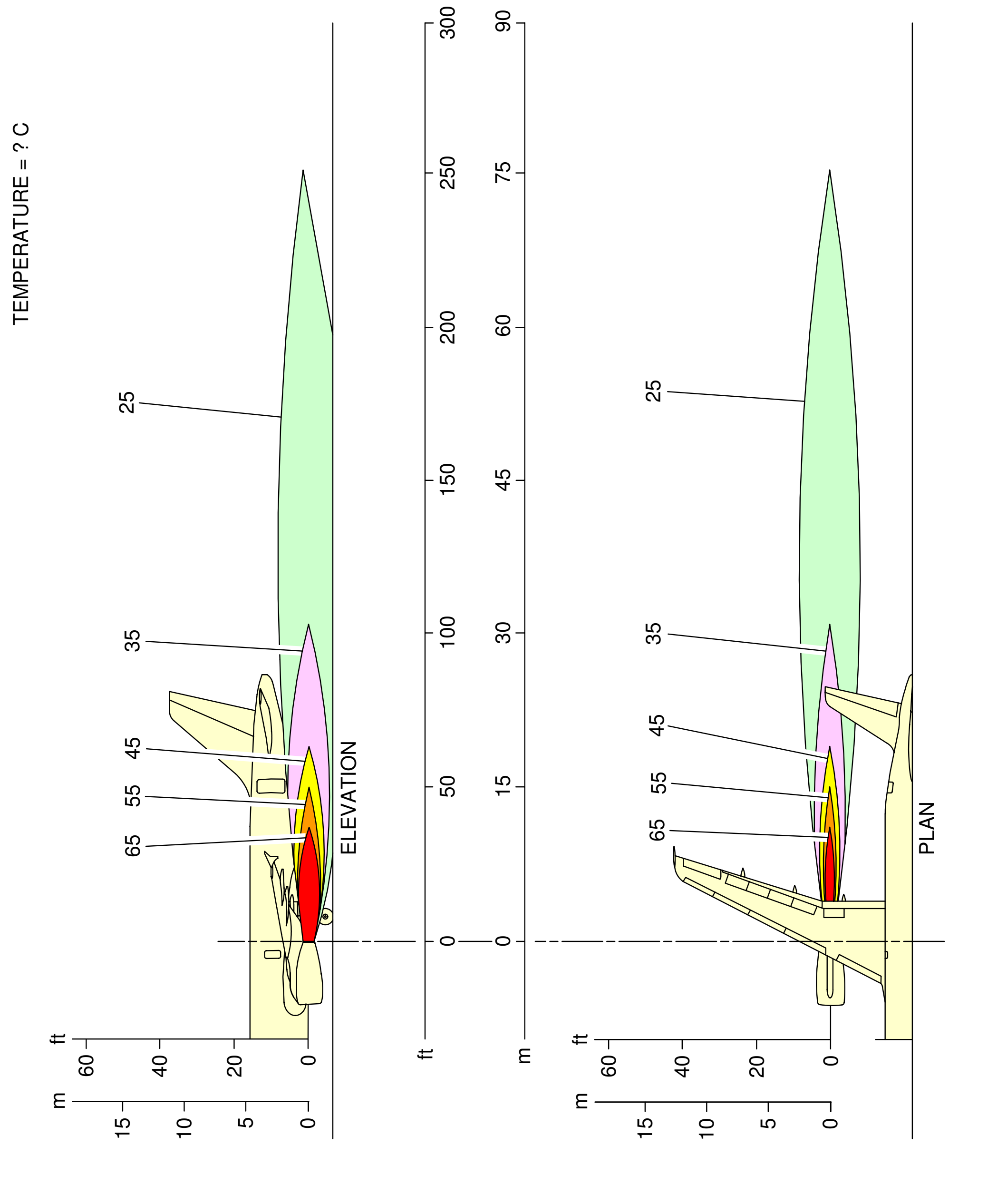
****ON A/C A319-100**



N_AC_060106_1_0030101_01_01

Engine Exhaust Temperatures
Takeoff Power – CFM56 Series Engine
FIGURE-6-1-6-991-003-A01

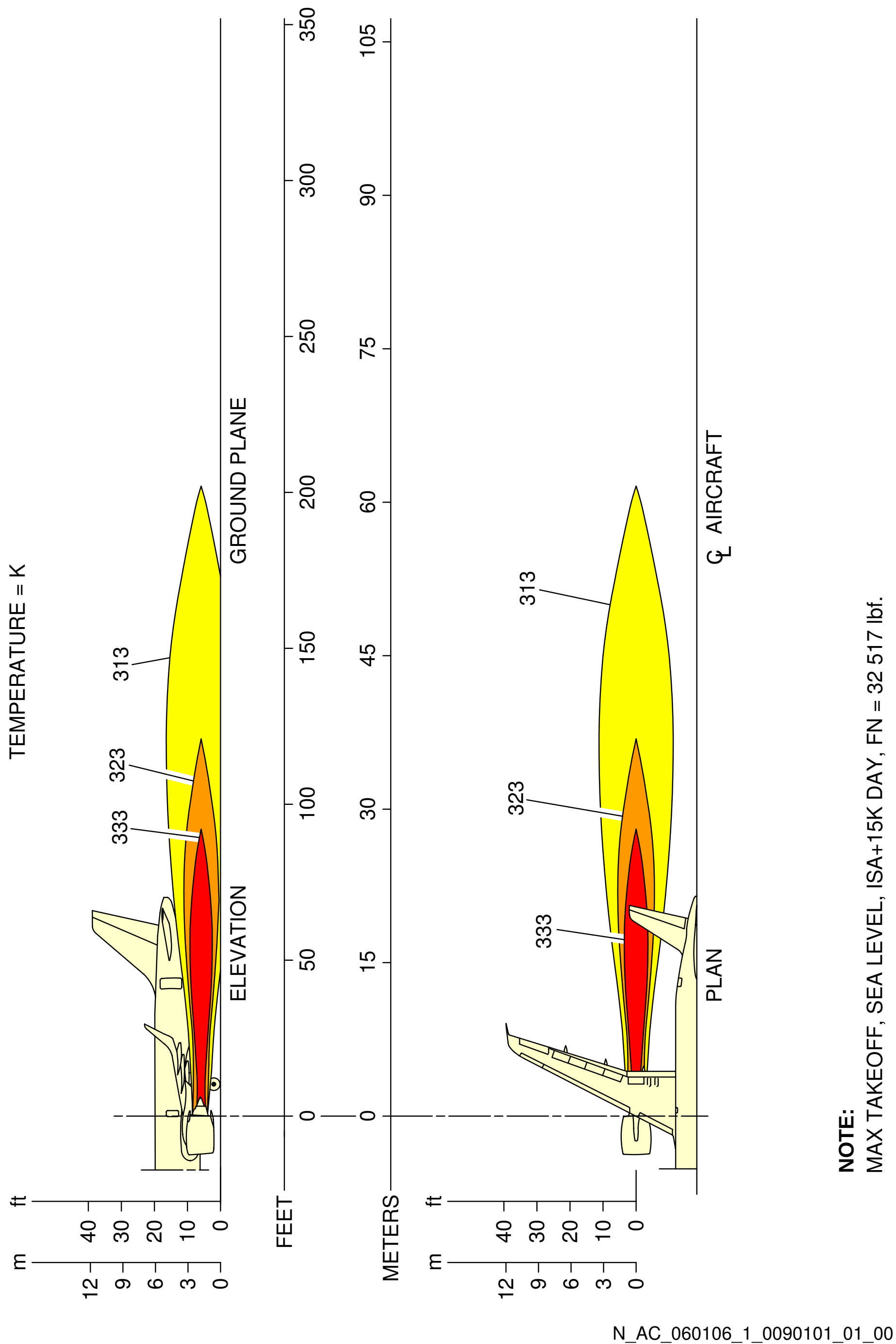
****ON A/C A319-100**



N_AC_060106_1_0040101_01_01

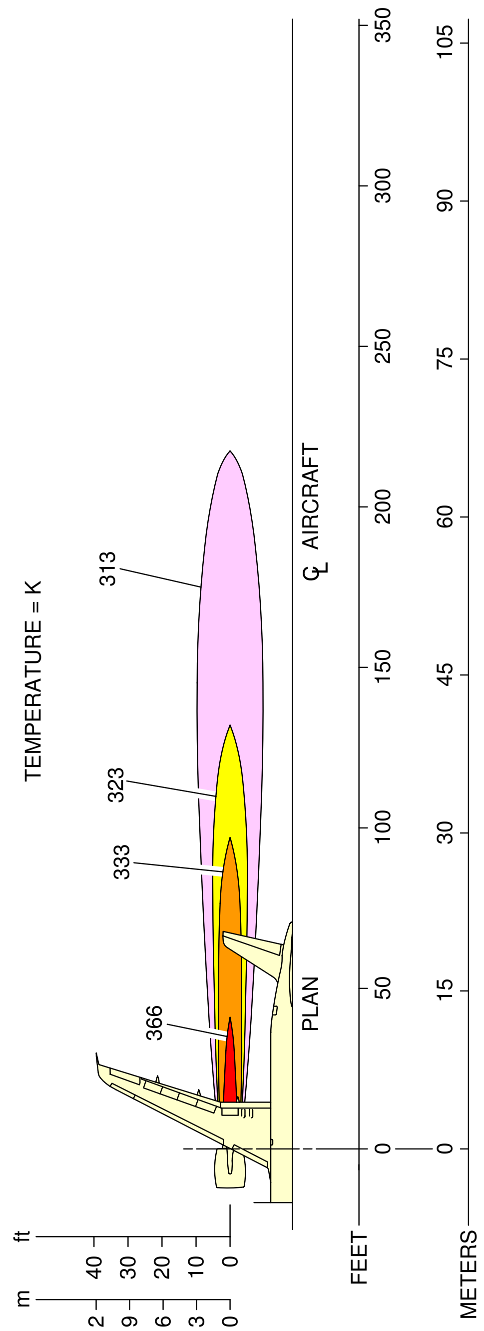
Engine Exhaust Temperatures
Takeoff Power – IAE V2500 Series Engine
FIGURE-6-1-6-991-004-A01

****ON A/C A319neo**



Engine Exhaust Temperatures
Takeoff Power – CFM LEAP-1A Engine
FIGURE-6-1-6-991-009-A01

**ON A/C A319neo



N_AC_060106_1_0100101_01_00

Engine Exhaust Temperatures
Takeoff Power – PW 1100G Engine
FIGURE-6-1-6-991-010-A01

6-3-0 Danger Areas of Engines

****ON A/C A319-100 A319neo**

Danger Areas of Engines

1. Danger Areas of the Engines
   A. The danger areas of the engines shown below are given in the normalized format:
      - Entry corridors are only available at ground idle.
      - Do not go into the areas between the engines.
      - The exhaust danger areas are given for 0 kt headwind (if not specified otherwise).

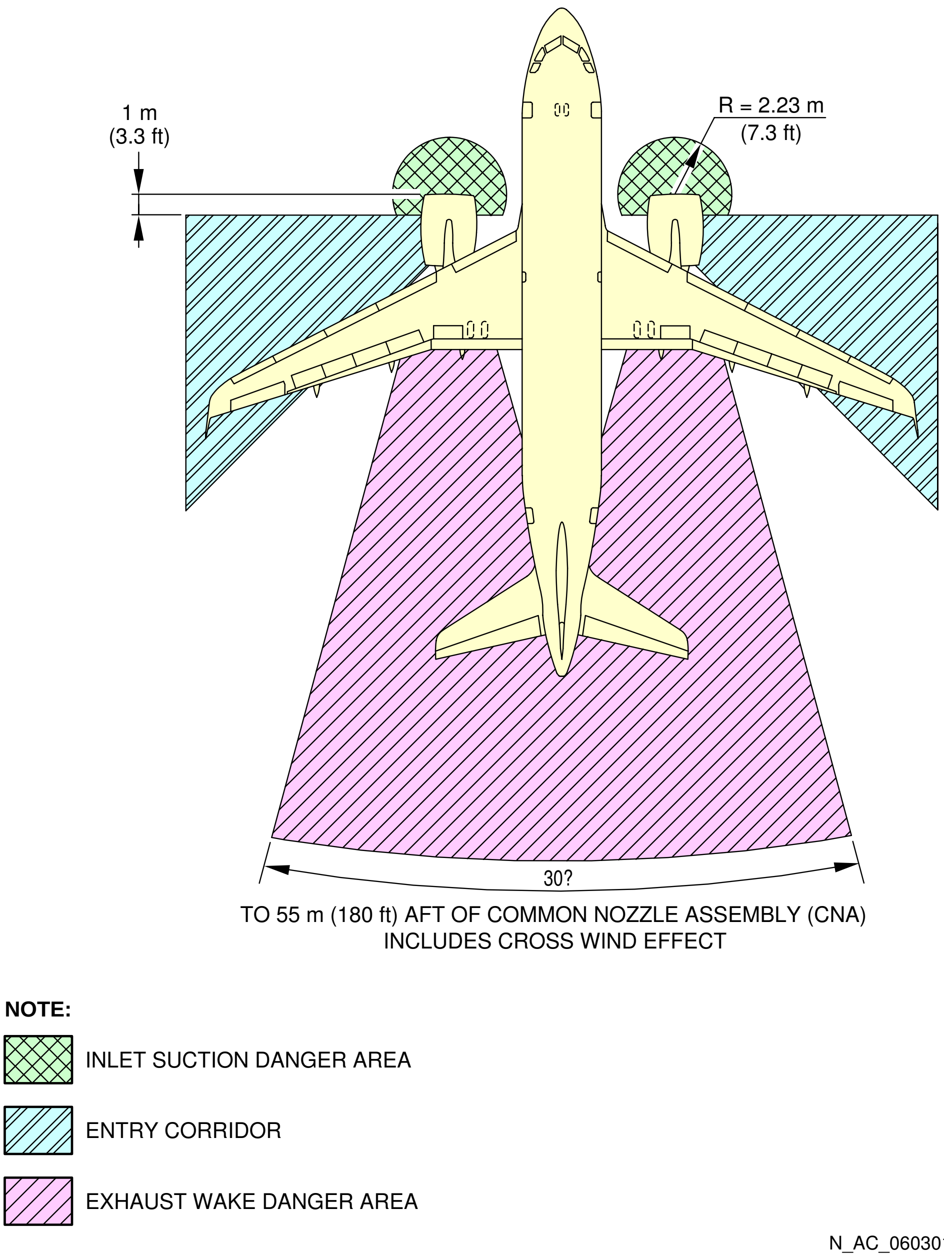
6-3-1 Ground Idle Power

**ON A/C A319-100 A319neo

Ground Idle Power

1. This section provides danger areas of the engines at ground idle power conditions.

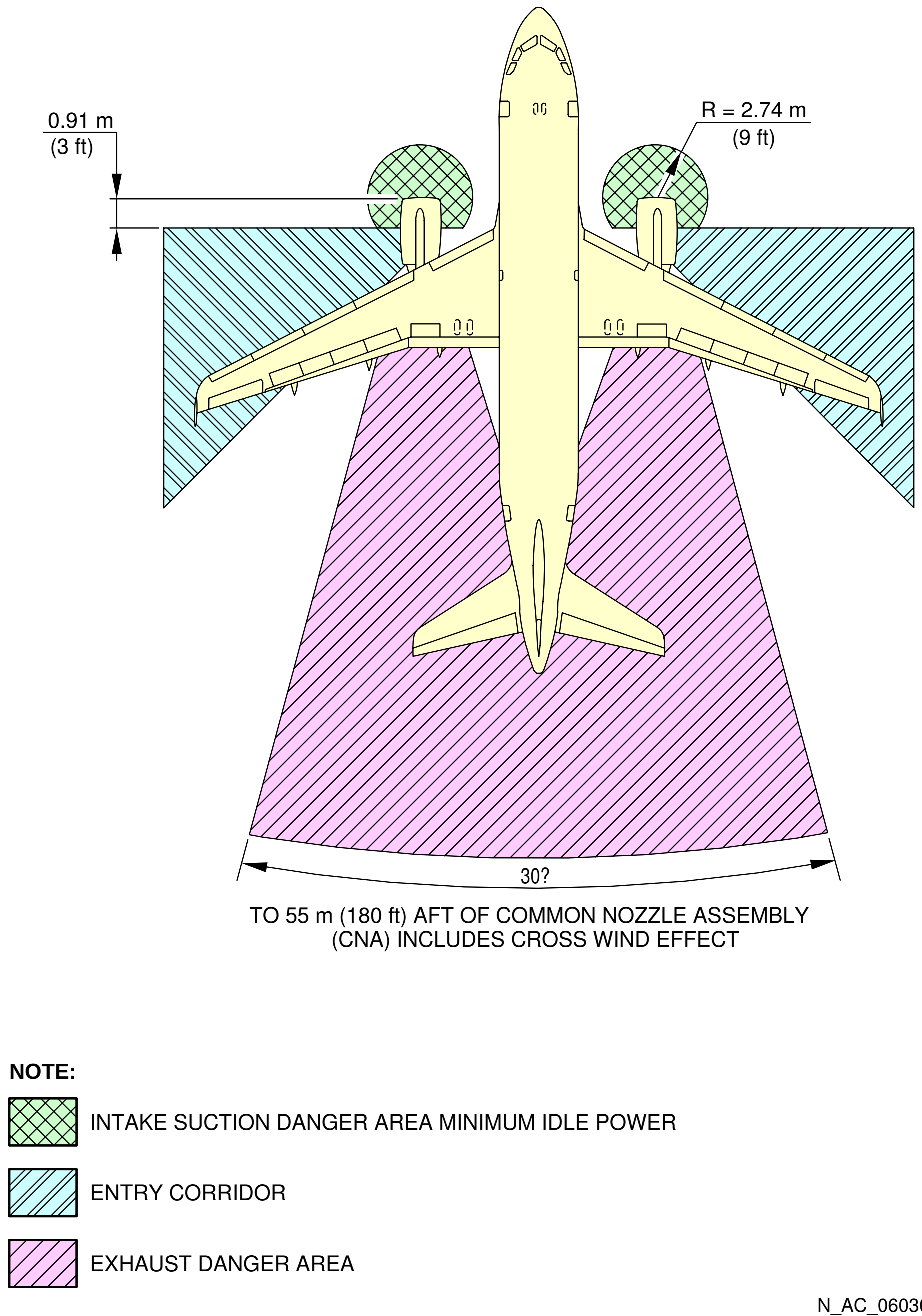
****ON A/C A319-100**



N_AC_060301_1_0030101_01_04

Danger Areas of the Engines
CFM56 Series Engine
FIGURE-6-3-1-991-003-A01

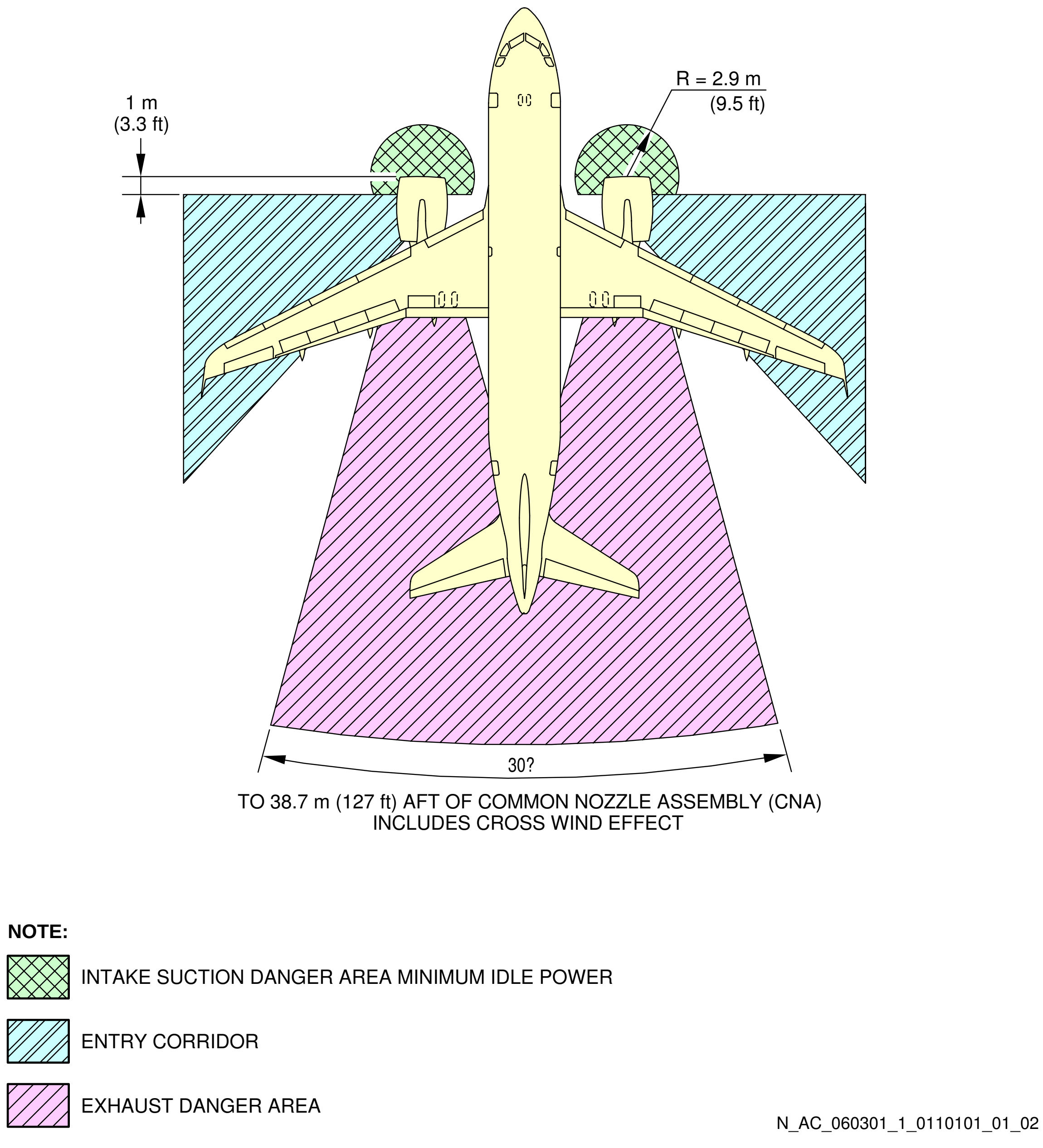
**ON A/C A319-100



N_AC_060301_1_0040101_01_04

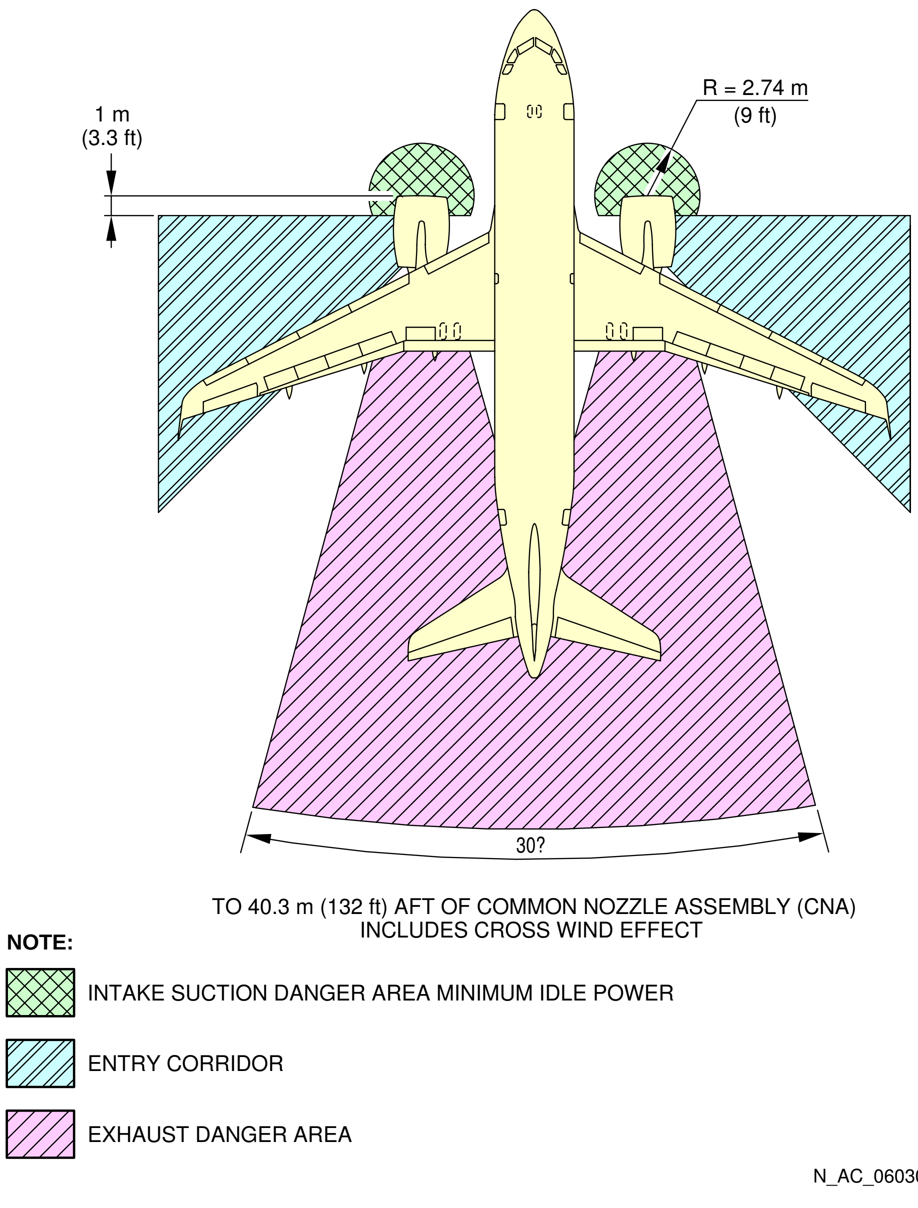
Danger Areas of the Engines
IAE V2500 Series Engine
FIGURE-6-3-1-991-004-A01

**ON A/C A319neo



Danger Areas of the Engines
CFM LEAP-1A Engine
FIGURE-6-3-1-991-011-A01

****ON A/C A319neo**



Danger Areas of the Engines
PW 1100G Engine
FIGURE-6-3-1-991-012-A01

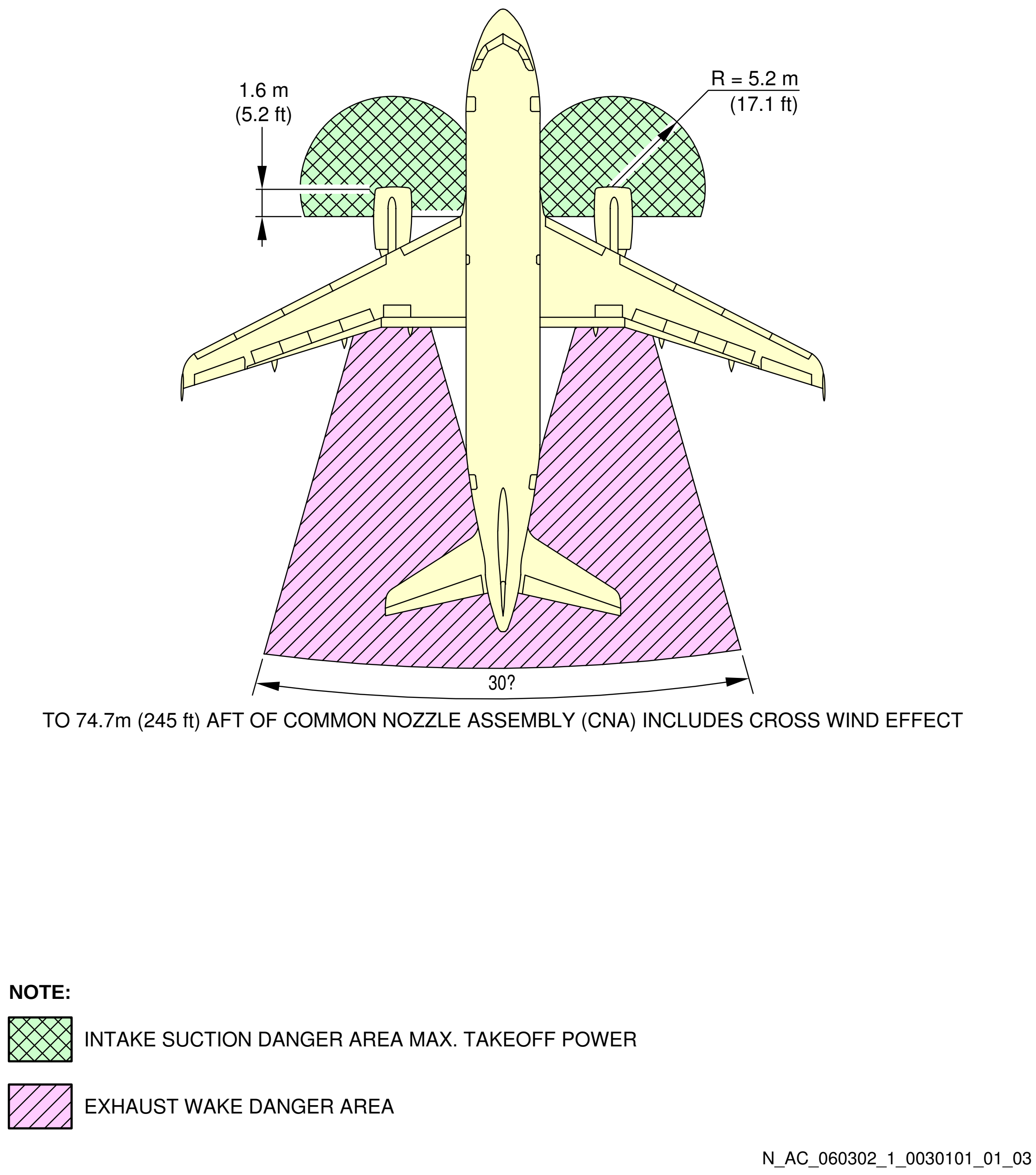
6-3-2 Breakaway Power

**ON A/C A319-100 A319neo

Breakaway Power

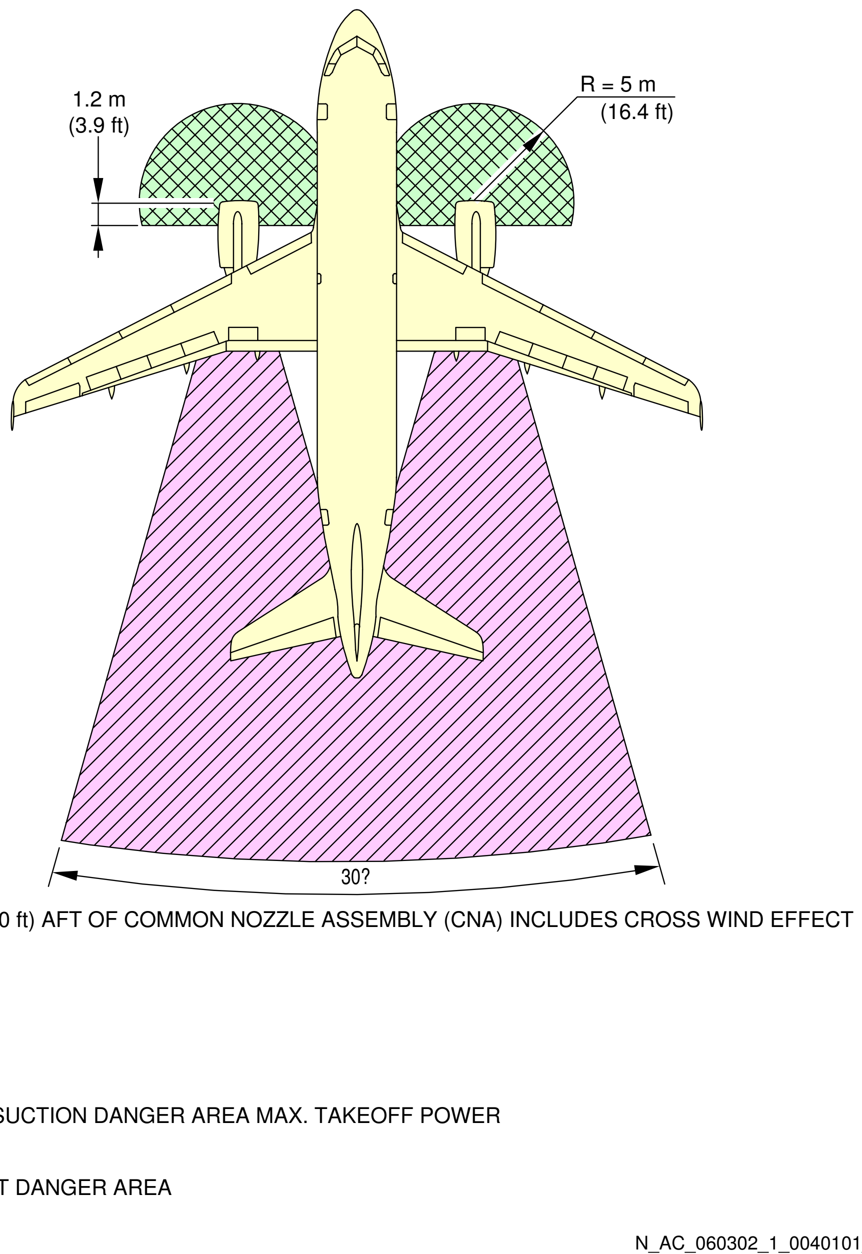
1. This section provides danger areas of the engines at breakaway power.

****ON A/C A319-100**



Danger Areas of the Engines
CFM56 Series Engine
FIGURE-6-3-2-991-003-A01

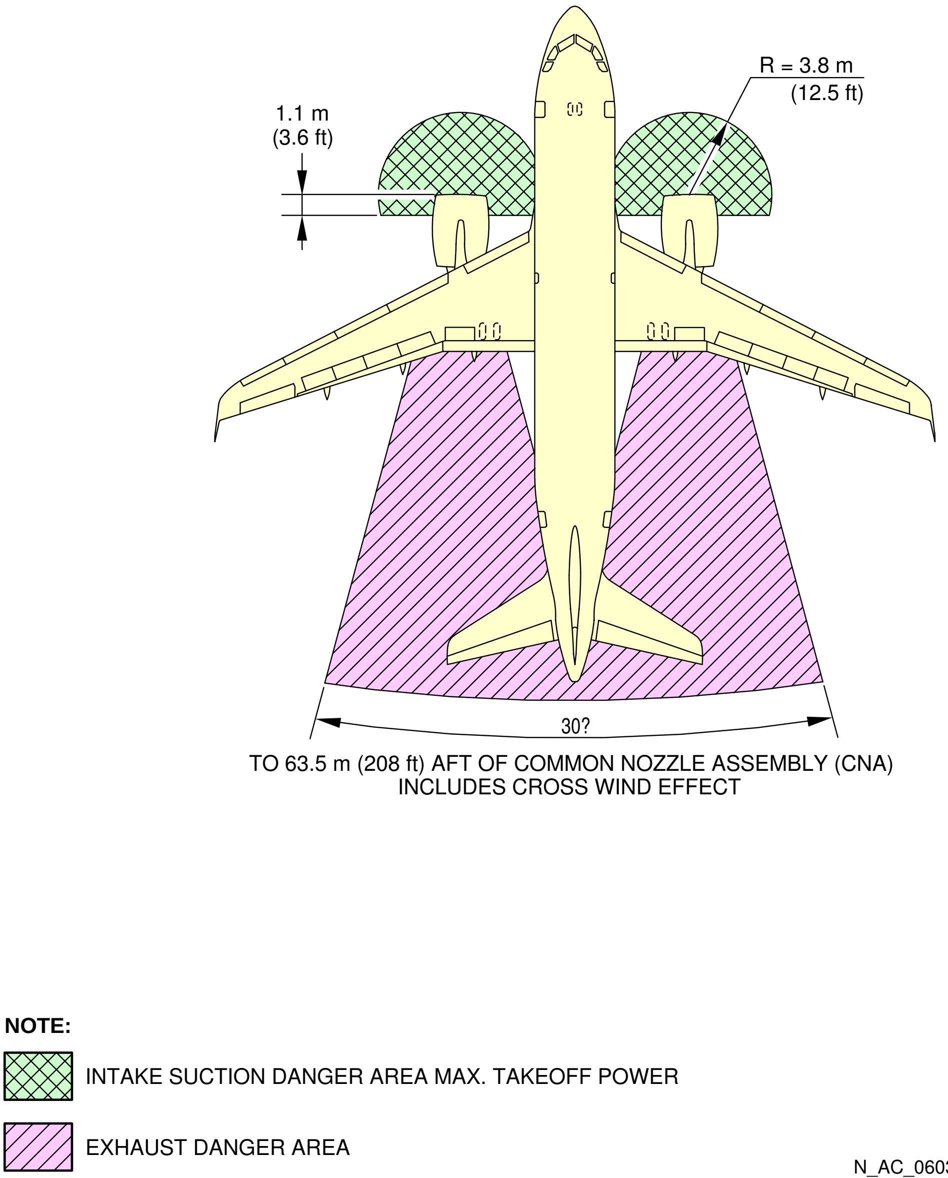
**ON A/C A319-100



N_AC_060302_1_0040101_01_03

Danger Areas of the Engines
IAE V2500 Series Engine
FIGURE-6-3-2-991-004-A01

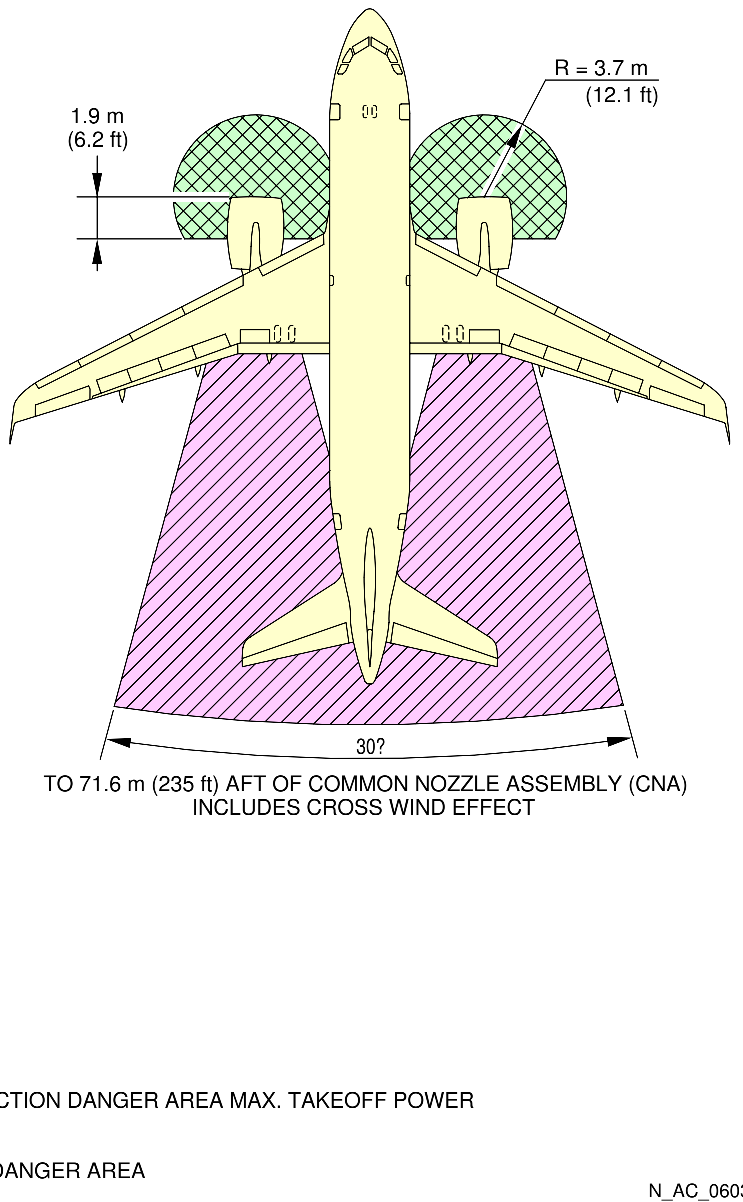
**ON A/C A319neo



N_AC_060302_1_0090101_01_02

Danger Areas of the Engines
CFM LEAP-1A Engine
FIGURE-6-3-2-991-009-A01

**ON A/C A319neo



Danger Areas of the Engines
PW 1100G Engine
FIGURE-6-3-2-991-010-A01

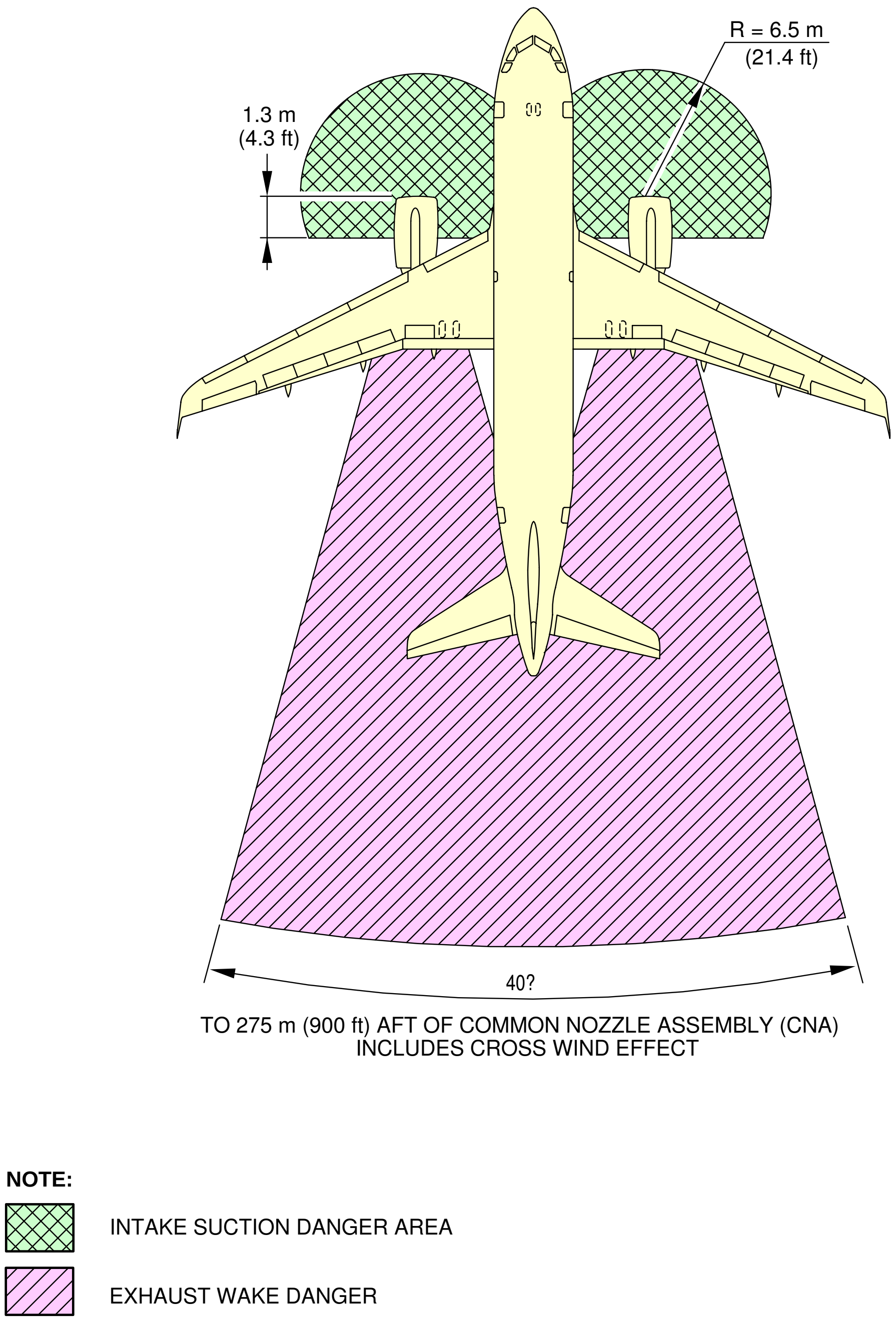
6-3-3 Max Take Off Power

****ON A/C A319-100 A319neo**

Take Off Power

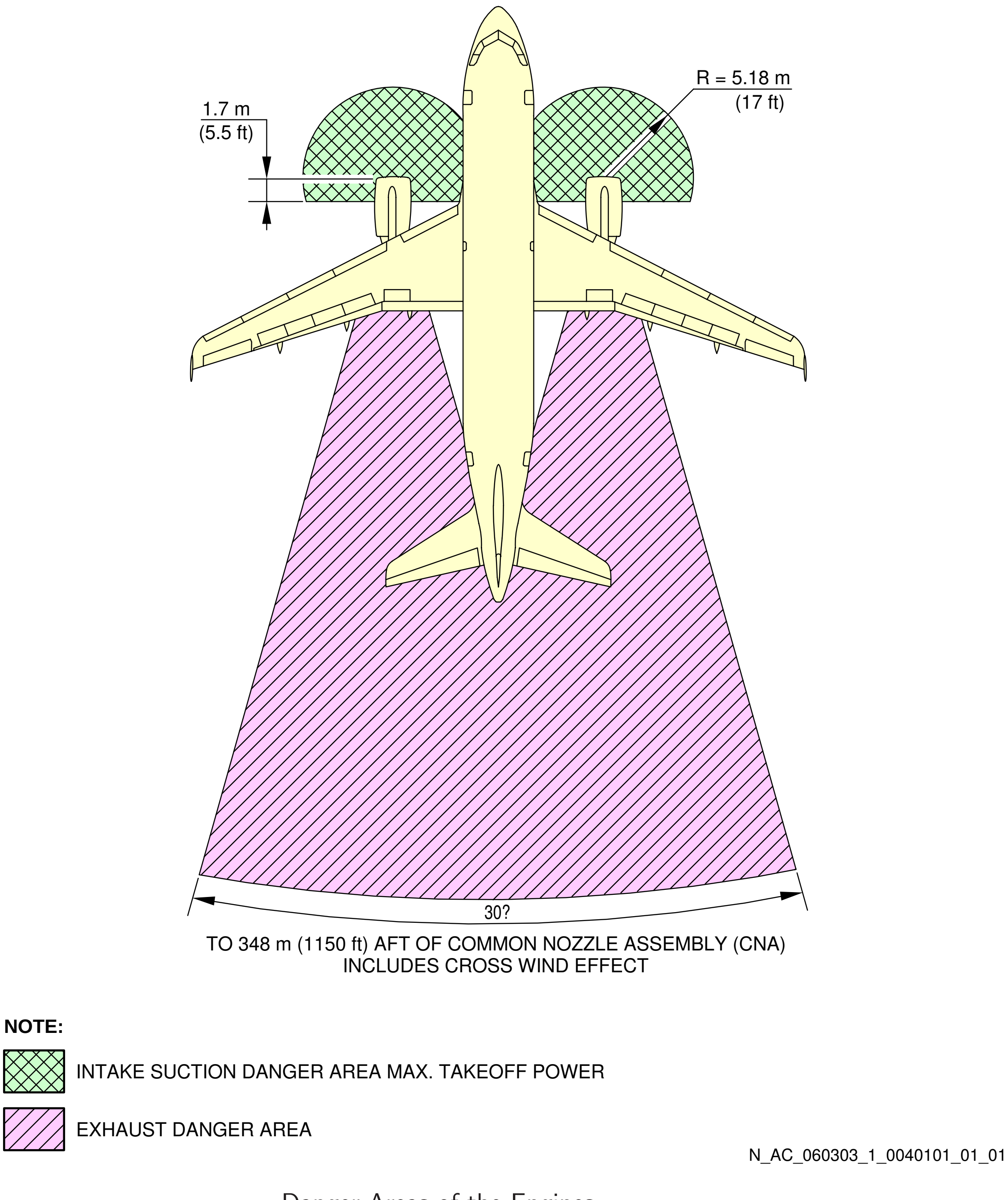
1. This section provides danger areas of the engines at maximum take-off power conditions.

**ON A/C A319-100



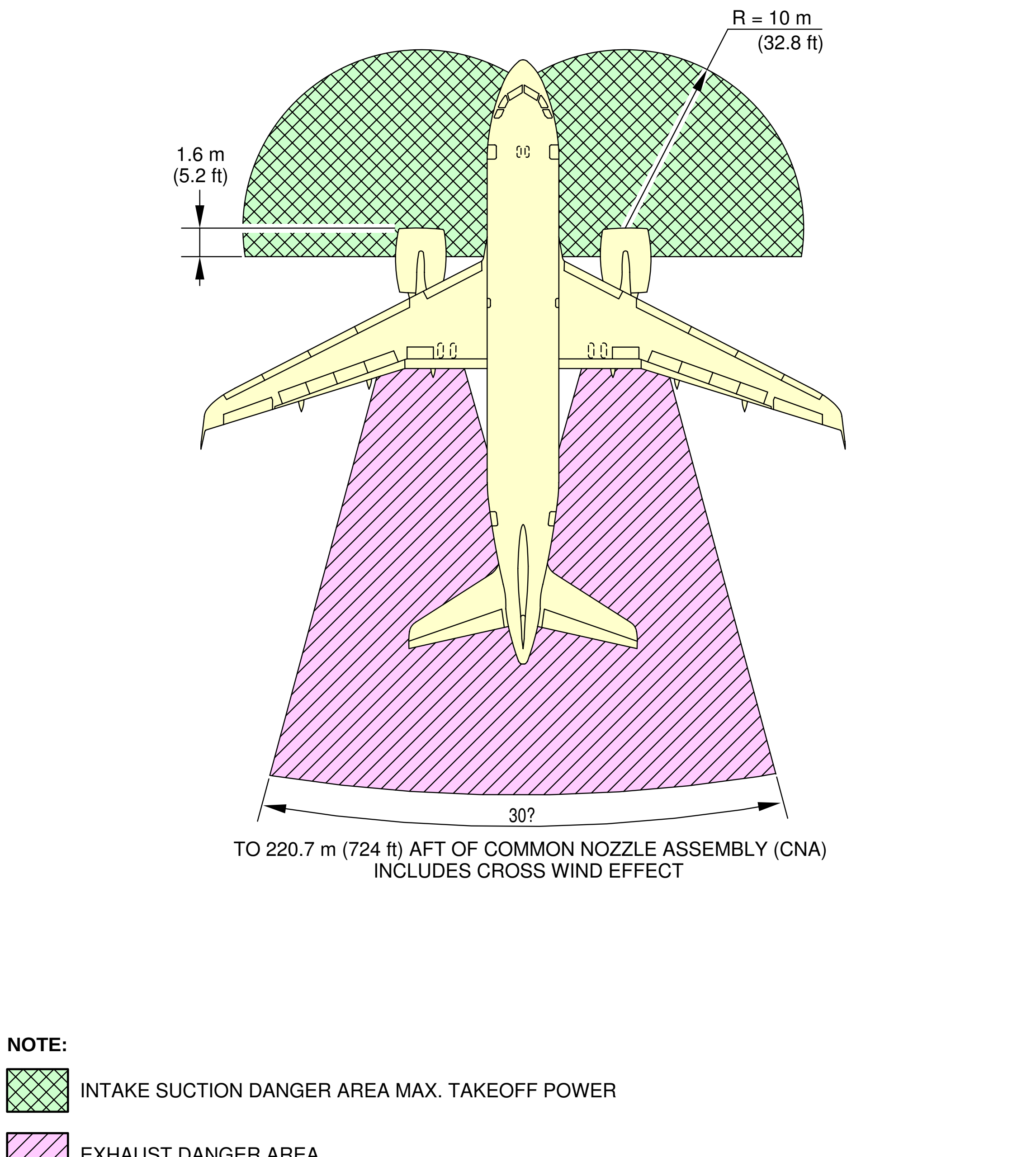
Danger Areas of the Engines
CFM56 Series Engine
FIGURE-6-3-3-991-003-A01

**ON A/C A319-100



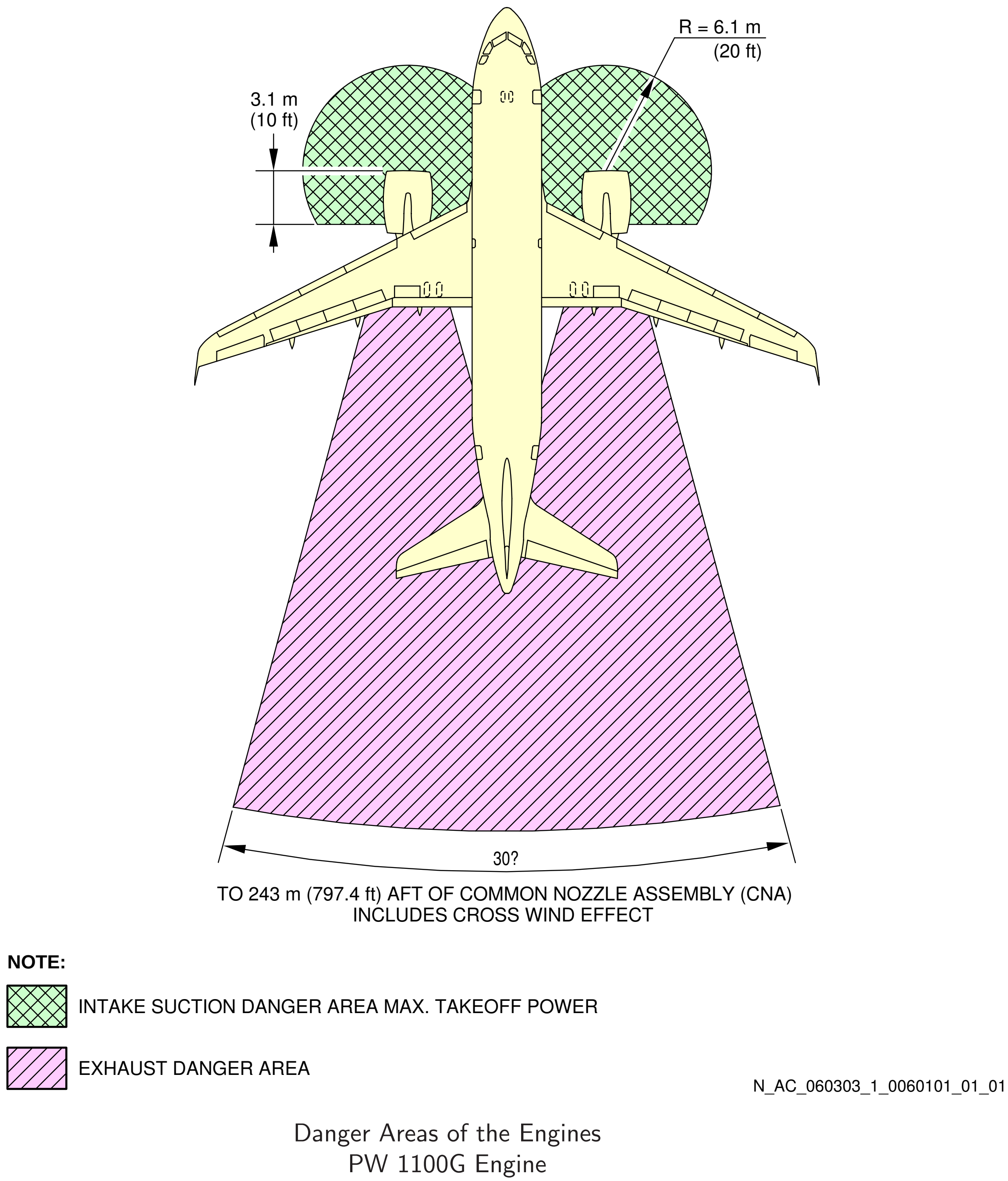
Danger Areas of the Engines
IAE V2500 Series Engine
FIGURE-6-3-3-991-004-A01

****ON A/C A319neo**



Danger Areas of the Engines
CFM LEAP-1A Engine
FIGURE-6-3-3-991-005-A01

****ON A/C A319neo**



Danger Areas of the Engines
PW 1100G Engine
FIGURE-6-3-3-991-006-A01

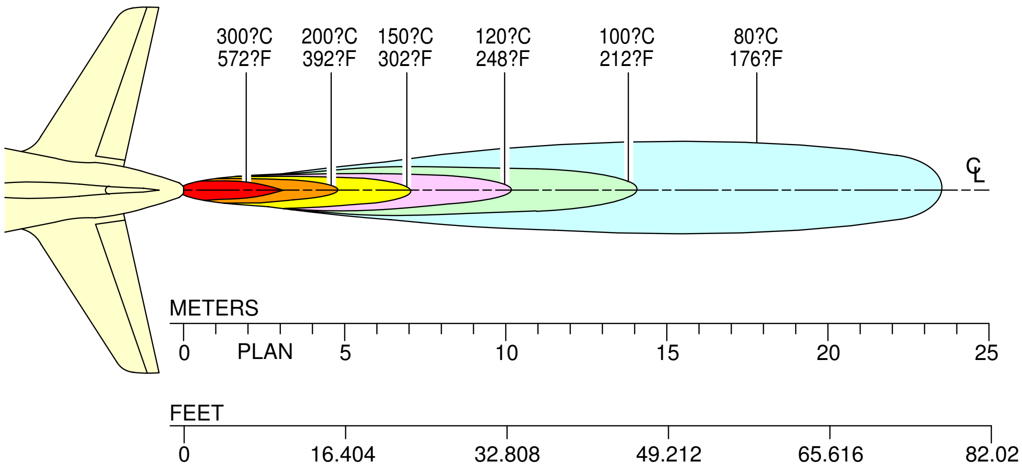
6-4-1 APU

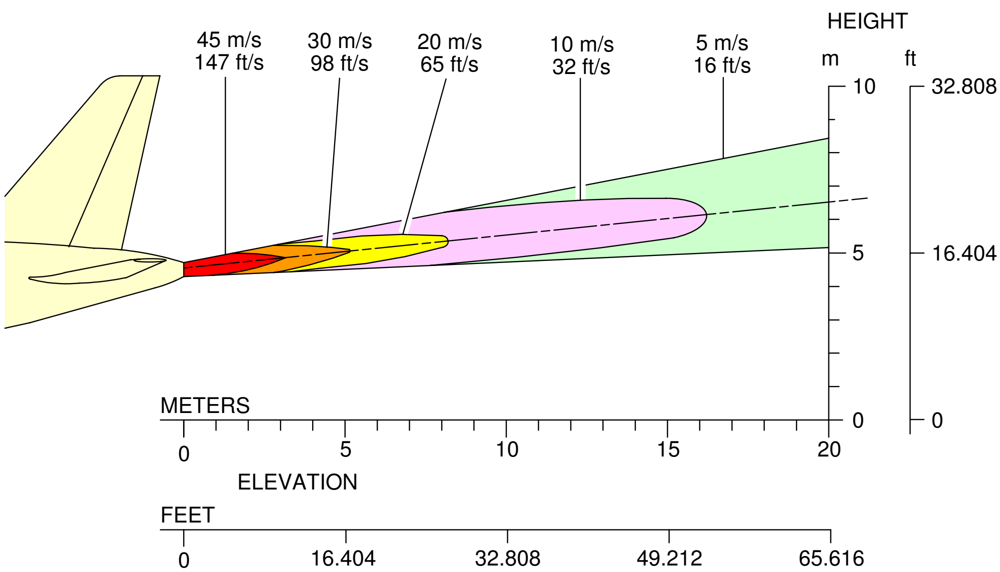
****ON A/C A319-100 A319neo**

APU - APIC & GARRETT

1. This section gives APU exhaust velocities and temperatures.

**ON A/C A319-100 A319neo





N_AC_060401_1_0020101_01_00

Exhaust Velocities and Temperatures
APU – APIC & GARRETT
FIGURE-6-4-1-991-002-A01

PAVEMENT DATA

7-1-0 General Information

**ON A/C A319-100 A319neo

General Information

1. A brief description of the pavement charts that follow will help in airport planning.

   To aid in the interpolation between the discrete values shown, each aircraft configuration is shown with a minimum range of five loads on the Main Landing Gear (MLG).

   All curves on the charts represent data at a constant specified tire pressure with:
   - The aircraft loaded to the Maximum Ramp Weight (MRW),
   - The CG at its maximum permissible aft position.

   Pavement requirements for commercial aircraft are derived from the static analysis of loads imposed on the MLG struts.

   Landing Gear Footprint:
   Section 07-02-00 presents basic data on the landing gear footprint configuration, MRW and tire sizes and pressures.

   Maximum Pavement Loads:
   Section 07-03-00 shows maximum vertical and horizontal pavement loads for certain critical conditions at the tire-ground interfaces.

   Landing Gear Loading on Pavement:
   Section 07-04-00 contains charts to find these loads throughout the stability limits of the aircraft at rest on the pavement.
   These MLG loads are used as the point of entry to the pavement design charts which follow, interpolating load values where necessary.

   Flexible Pavement Requirements - US Army Corps of Engineers Design Method:
   Section 07-05-00 uses procedures in Instruction Report No. S-77-1 "Procedures for Development of CBR Design Curves", dated June 1977 and as modified according to the methods described in ICAO Aerodrome Design Manual, Part 3. Pavements, 2nd Edition, 1983, Section 1.1 (The ACN-PCN Method), and utilizing the alpha factors approved by ICAO in October 2007.
   The report was prepared by the "U.S. Army Corps Engineers Waterways Experiment Station, Soils and Pavement Laboratory, Vicksburg, Mississippi".
   The line showing 10 000 coverages is used to calculate the Aircraft Classification Number (ACN).

   Flexible Pavement Requirements - LCN Conversion Method:

The Load Classification Number (LCN) curves are no longer provided in section 07-06-00 since the LCN system for reporting pavement strength is obsolete, having been replaced by the ICAO recommended ACN/PCN system in 1983.
For questions regarding the LCN system, contact Airbus.

Rigid Pavement Requirements - PCA (Portland Cement Association) Design Method:
Section 07-07-00 gives the rigid pavement design curves that have been prepared with the use of the Westergaard Equation.
This is in general accordance with the procedures outlined in the Portland Cement Association publications, "Design of Concrete Airport Pavement", 1973 and "Computer Program for Airport Pavement Design" (Program PDILB), 1967 both by Robert G. Packard.

Rigid Pavement Requirements - LCN Conversion:
The Load Classification Number (LCN) curves are no longer provided in section 07-08-00 since the LCN system for reporting pavement strength is obsolete, having been replaced by the ICAO recommended ACN/PCN system in 1983.
For questions regarding the LCN system, contact Airbus.

ACN/PCN Reporting System:
Section 07-09-00 provides ACN data prepared according to the ACN/PCN system as referenced in ICAO Annex 14, "Aerodromes", Volume 1 "Aerodrome Design and Operations" Fourth Edition, July 2004, incorporating Amendments 1 to 6.
The ACN/PCN system 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 corresponding Pavement Classification Number.
An aircraft having an ACN less than or equal to the PCN can operate without restriction on the pavement.
Numerically the ACN is two times the derived single wheel load expressed in thousands of kilograms.
The derived single wheel load is defined as the load on a single tire inflated to 1.25 MPa (181 psi) that would have the same pavement requirements as the aircraft.
Computationally the ACN/PCN system uses PCA program PDILB for rigid pavements and S-77-1 for flexible pavements to calculate ACN values.

The Airport Authority must decide on the method of pavement analysis and the results of their evaluation shown as follows:

PCN			
PAVEMENT TYPE	SUBGRADE CATEGORY	TIRE PRESSURE CATEGORY	EVALUATION METHOD
R – Rigid	A – High	W – No pressure limit	T – Technical
F – Flexible	B – Medium	X – High pressure limited to 1.75 MPa (254 psi)	U – Using Aircraft

PCN			
PAVEMENT TYPE	SUBGRADE CATEGORY	TIRE PRESSURE CATEGORY	EVALUATION METHOD
	C – Low	Y – Medium pressure limited to 1.25 MPa (181 psi)	
	D – Ultra Low	Z – Low pressure limited to 0.5 MPa (73 psi)	

For flexible pavements, the four subgrade categories (CBR) are:

- A. High Strength CBR 15
- B. Medium Strength CBR 10
- C. Low Strength CBR 6
- D. Ultra Low Strength CBR 3

For rigid pavements, the four subgrade categories (k) are:

- A. High Strength $k = 150$ MN/m^3 (550 pci)
- B. Medium Strength $k = 80$ MN/m^3 (300 pci)
- C. Low Strength $k = 40$ MN/m^3 (150 pci)
- D. Ultra Low Strength $k = 20$ MN/m^3 (75 pci)

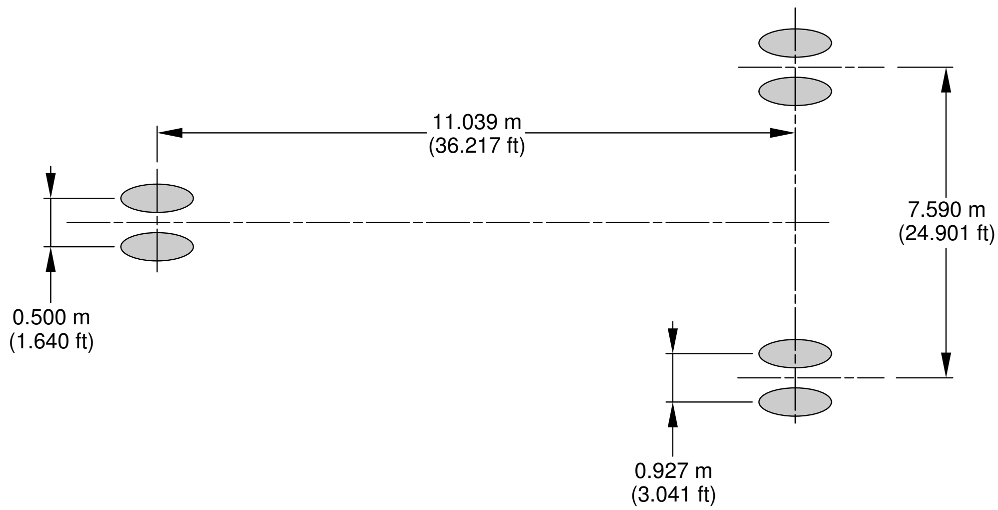
7-2-0 Landing Gear Footprint

****ON A/C A319-100 A319neo**

Landing Gear Footprint

1. This section provides data about the landing gear footprint in relation to the aircraft MRW and tire sizes and pressures.
   The landing-gear footprint information is given for all the operational weight variants of the aircraft.

**ON A/C A319-100



WEIGHT VARIANT	MAXIMUM RAMP WEIGHT	PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	NOSE GEAR TIRE SIZE	NOSE GEAR TIRE PRESSURE	MAIN GEAR TIRE SIZE	MAIN GEAR TIRE PRESSURE
A319–100 WV000 (CG 36%)	64 400 kg (141 975 lb)	91.4%	30x8.8R15 (30x8.8–15)	11.4 bar (165 psi)	46x17R20 (46x16–20)	11.9 bar (173 psi)
A319–100 WV000 (CG 39%)	64 400 kg (141 975 lb)	92.6%	30x8.8R15 (30x8.8–15)	11.4 bar (165 psi)	46x17R20 (46x16–20)	11.9 bar (173 psi)
A319–100 WV001 (CG 37.5%)	70 400 kg (155 200 lb)	92.1%	30x8.8R15 (30x8.8–15)	12.5 bar (181 psi)	46x17R20 (46x16–20)	12.9 bar (187 psi)
A319–100 WV001 (CG 36%)	70 400 kg (155 200 lb)	91.5%	30x8.8R15 (30x8.8–15)	12.5 bar (181 psi)	46x17R20 (46x16–20)	12.9 bar (187 psi)
A319–100 WV002	75 900 kg (167 325 lb)	91.6%	30x8.8R15 (30x8.8–15)	13.2 bar (191 psi)	46x17R20 (46x16–20)	13.8 bar (200 psi)
A319–100 WV003 (CG 38.1%)	68 400 kg (150 800 lb)	92.3%	30x8.8R15 (30x8.8–15)	12.1 bar (175 psi)	46x17R20 (46x16–20)	12.5 bar (181 psi)
A319–100 WV003 (CG 36%)	68 400 kg (150 800 lb)	91.5%	30x8.8R15 (30x8.8–15)	12.1 bar (175 psi)	46x17R20 (46x16–20)	12.5 bar (181 psi)

N_AC_070200_1_0040101_01_02

Landing Gear Footprint
(Sheet 1 of 2)
FIGURE-7-2-0-991-004-A01

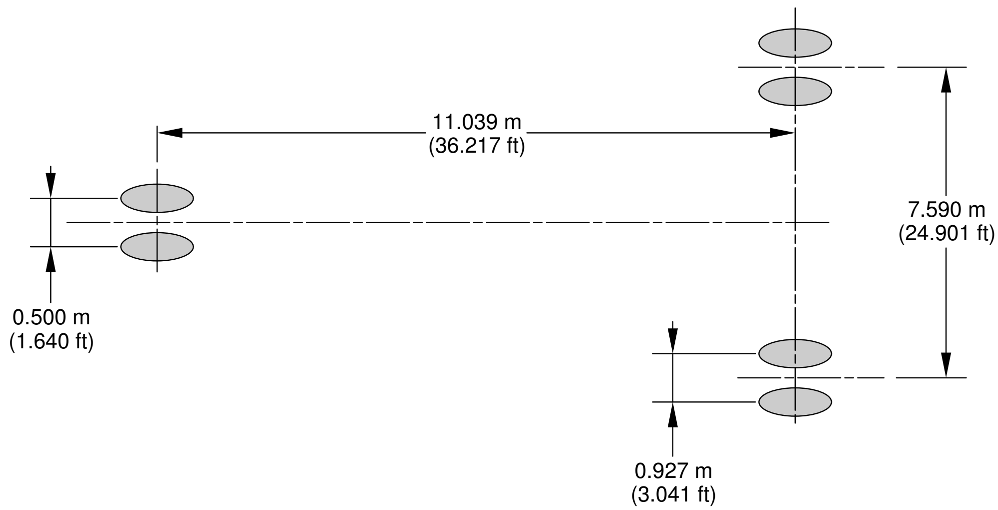
**ON A/C A319-100

WEIGHT VARIANT	MAXIMUM RAMP WEIGHT	PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	NOSE GEAR TIRE SIZE	NOSE GEAR TIRE PRESSURE	MAIN GEAR TIRE SIZE	MAIN GEAR TIRE PRESSURE
A319–100 WV004 (CG 38.1%)	68 400 kg (150 800 lb)	92.3%	30x8.8R15 (30x8.8–15)	12.1 bar (175 psi)	46x17R20 (46x16–20)	12.5 bar (181 psi)
A319–100 WV004 (CG 36%)	68 400 kg (150 800 lb)	91.5%	30x8.8R15 (30x8.8–15)	12.1 bar (175 psi)	46x17R20 (46x16–20)	12.5 bar (181 psi)
A319–100 WV005 (CG 37.5%)	70 400 kg (155 200 lb)	92.1%	30x8.8R15 (30x8.8–15)	12.5 bar (181 psi)	46x17R20 (46x16–20)	12.9 bar (187 psi)
A319–100 WV005 (CG 36%)	70 400 kg (155 200 lb)	91.5%	30x8.8R15 (30x8.8–15)	12.5 bar (181 psi)	46x17R20 (46x16–20)	12.9 bar (187 psi)
A319–100 WV005 (CG 36%)	70 400 kg (155 200 lb)	91.6%	30x8.8R15 (30x8.8–15)	13.9 bar (202 psi)	46x17R20 (46x16–20)	13.8 bar (200 psi)
A319–100 WV006 (CG 36.52%)	73 900 kg (162 925 lb)	91.7%	30x8.8R15 (30x8.8–15)	13.5 bar (196 psi)	46x17R20 (46x16–20)	13.4 bar (194 psi)
A319–100 WV006 (CG 36%)	73 900 kg (162 925 lb)	91.5%	30x8.8R15 (30x8.8–15)	13.9 bar (202 psi)	46x17R20 (46x16–20)	13.8 bar (200 psi)
A319–100 WV007	75 900 kg (167 325 lb)	91.6%	30x8.8R15 (30x8.8–15)	13.2 bar (191 psi)	46x17R20 (46x16–20)	13.8 bar (200 psi)
A319–100 WV008 (CG 39%)	64 400 kg (141 975 lb)	92.6%	30x8.8R15 (30x8.8–15)	11.4 bar (165 psi)	46x17R20 (46x16–20)	11.9 bar (173 psi)
A319–100 WV008 (CG 36%)	64 400 kg (141 975 lb)	91.4%	30x8.8R15 (30x8.8–15)	11.4 bar (165 psi)	46x17R20 (46x16–20)	11.9 bar (173 psi)
A319–100 WV009 (CG 38.8%)	66 400 kg (146 375 lb)	92.6%	30x8.8R15 (30x8.8–15)	12.1 bar (175 psi)	46x17R20 (46x16–20)	12.5 bar (181 psi)
A319–100 WV009 (CG 36%)	66 400 kg (146 375 lb)	91.5%	30x8.8R15 (30x8.8–15)	12.1 bar (175 psi)	46x17R20 (46x16–20)	12.5 bar (181 psi)
A319–100 WV010	76 900 kg (169 525 lb)	91.5%	30x8.8R15 (30x8.8–15)	13.9 bar (202 psi)	46x17R20	13.8 bar (200 psi)
A319–100 WV011 (CG 38.8%)	66 400 kg (146 375 lb)	92.6%	30x8.8R15 (30x8.8–15)	12.1 bar (175 psi)	46x17R20 (46x16–20)	12.5 bar (181 psi)
A319–100 WV011 (CG 36%)	66 400 kg (146 375 lb)	91.5%	30x8.8R15 (30x8.8–15)	12.1 bar (175 psi)	46x17R20 (46x16–20)	12.5 bar (181 psi)
A319–100 WV012 (CG 39%)	62 400 kg (137 575 lb)	92.6%	30x8.8R15 (30x8.8–15)	11.4 bar (165 psi)	46x17R20 (46x16–20)	11.9 bar (173 psi)
A319–100 WV012 (CG 36%)	62 400 kg (137 575 lb)	91.4%	30x8.8R15 (30x8.8–15)	11.4 bar (165 psi)	46x17R20 (46x16–20)	11.9 bar (173 psi)
A319–100 WV013	75 900 kg (167 325 lb)	91.6%	30x8.8R15 (30x8.8–15)	13.9 bar (202 psi)	46x17R20 (46x16–20)	13.8 bar (200 psi)

N_AC_070200_1_0040102_01_03

Landing Gear Footprint
(Sheet 2 of 2)
FIGURE-7-2-0-991-004-A01

**ON A/C A319neo



WEIGHT VARIANT	MAXIMUM RAMP WEIGHT	PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	NOSE GEAR TIRE SIZE	NOSE GEAR TIRE PRESSURE	MAIN GEAR TIRE SIZE	MAIN GEAR TIRE PRESSURE
A319NEO WV050	64 400 kg (141 975 lb)	91.8%	30x8.8R15	11.4 bar (165 psi)	46x17R20	11.9 bar (173 psi)
A319NEO WV051	64 400 kg (141 975 lb)	91.8%	30x8.8R15	11.4 bar (165 psi)	46x17R20	11.9 bar (173 psi)
A319NEO WV052	70 400 kg (155 200 lb)	91.9%	30x8.8R15	12.5 bar (181 psi)	46x17R20	12.9 bar (187 psi)
A319NEO WV053	70 400 kg (155 200 lb)	91.9%	30x8.8R15	12.5 bar (181 psi)	46x17R20	12.9 bar (187 psi)
A319NEO WV054	75 900 kg (167 325 lb)	92.0%	30x8.8R15	13.2 bar (191 psi)	46x17R20	13.8 bar (200 psi)
A319NEO WV055	75 900 kg (167 325 lb)	92.0%	30x8.8R15	13.2 bar (191 psi)	46x17R20	13.8 bar (200 psi)

N_AC_070200_1_0370101_01_02

Landing Gear Footprint
FIGURE-7-2-0-991-037-A01

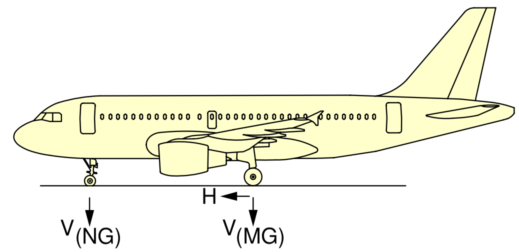
7-3-0 Maximum Pavement Loads

****ON A/C A319-100 A319neo**

Maximum Pavement Loads

1. This section provides maximum vertical and horizontal pavement loads for some critical conditions at the tire-ground interfaces.
   The maximum pavement loads are given for all the operational weight variants of the aircraft.

**ON A/C A319-100



$V_{(NG)}$ MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT FWD CG
$V_{(MG)}$ MAXIMUM VERTICAL MAIN GEAR GROUND LOAD AT AFT CG
H MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING

1	2	3		4	5		6	
		$V_{(NG)}$			$V_{(MG)}$ (PER STRUT)		H (PER STRUT)	
WEIGHT VARIANT	MAXIMUM RAMP WEIGHT	STATIC LOAD AT FWD CG		STATIC BRAKING AT 10 ft/s? DECELERATION	STATIC LOAD AT AFT CG		STEADY BRAKING AT 10 ft/s? DECELERATION	AT INSTANTANEOUS BRAKING COEFFICIENT = 0.8
A319−100 WV000 (CG 36 %)	64 400 kg (141 975 lb)	9 300 kg (20 500 lb)	21 % MAC (a)	15 310 kg (33 750 lb)	29 450 kg (64 925 lb)	36 % MAC (a)	10 010 kg (22 075 lb)	23 560 kg (51 925 lb)
A319−100 WV000 (CG 39 %)	64 400 kg (141 975 lb)	9 300 kg (20 500 lb)	21 % MAC (a)	15 310 kg (33 750 lb)	29 830 kg (65 775 lb)	39 % MAC (a)	10 010 kg (22 075 lb)	23 860 kg (52 600 lb)
A319−100 WV001 (CG 37.5 %)	70 400 kg (155 200 lb)	10 120 kg (22 325 lb)	21 % MAC (a)	16 660 kg (36 725 lb)	32 420 kg (71 475 lb)	37.5 % MAC (a)	10 940 kg (24 125 lb)	25 940 kg (57 175 lb)
A319−100 WV001 (CG 36 %)	70 400 kg (155 200 lb)	10 120 kg (22 325 lb)	21 % MAC (a)	16 660 kg (36 725 lb)	32 210 kg (71 000 lb)	36 % MAC (a)	10 940 kg (24 125 lb)	25 770 kg (56 800 lb)
A319−100 WV002	75 900 kg (167 325 lb)	10 720 kg (23 625 lb)	21 % MAC (b)	17 870 kg (39 400 lb)	34 750 kg (76 600 lb)	36 % MAC (a)	11 800 kg (26 000 lb)	27 800 kg (61 275 lb)

NOTE:
(a) LOADS CALCULATED USING AIRCRAFT AT MRW.
(b) LOADS CALCULATED USING AIRCRAFT AT 74 500 kg (164 250 lb).

N_AC_070300_1_0230101_01_02

Maximum Pavement Loads
(Sheet 1 of 3)
FIGURE-7-3-0-991-023-A01

****ON A/C A319-100**

1	2	3		4	5		6	
		$V_{(NG)}$			$V_{(MG)}$ (PER STRUT)		H (PER STRUT)	
WEIGHT VARIANT	MAXIMUM RAMP WEIGHT	STATIC LOAD AT FWD CG		STATIC BRAKING AT 10 ft/s? DECELERATION	STATIC LOAD AT AFT CG		STEADY BRAKING AT 10 ft/s? DECELERATION	AT INSTANTANEOUS BRAKING COEFFICIENT = 0.8
A319−100 WV003 (CG 38.1 %)	68 400 kg (150 800 lb)	9 860 kg (21 750 lb)	21 % MAC (a)	16 230 kg (35 775 lb)	31 560 kg (69 600 lb)	38.1 % MAC (a)	10 630 kg (23 425 lb)	25 250 kg (55 675 lb)
A319−100 WV003 (CG 36 %)	68 400 kg (150 800 lb)	9 860 kg (21 750 lb)	21 % MAC (a)	16 230 kg (35 775 lb)	31 280 kg (68 950 lb)	36 % MAC (a)	10 630 kg (23 425 lb)	25 020 kg (55 175 lb)
A319−100 WV004 (CG 38.1 %)	68 400 kg (150 800 lb)	9 860 kg (21 750 lb)	21 % MAC (a)	16 230 kg (35 775 lb)	31 560 kg (69 600 lb)	38.1 % MAC (a)	10 630 kg (23 425 lb)	25 250 kg (55 675 lb)
A319−100 WV004 (CG 36 %)	68 400 kg (150 800 lb)	9 860 kg (21 750 lb)	21 % MAC (a)	16 230 kg (35 775 lb)	31 280 kg (68 950 lb)	36 % MAC (a)	10 630 kg (23 425 lb)	25 020 kg (55 175 lb)
A319−100 WV005 (CG 37.5 %)	70 400 kg (155 200 lb)	10 120 kg (22 325 lb)	21 % MAC (a)	16 660 kg (36 750 lb)	32 420 kg (71 475 lb)	37.5 % MAC (a)	10 940 kg (24 125 lb)	25 940 kg (57 175 lb)
A319−100 WV005 (CG 36 %)	70 400 kg (155 200 lb)	10 120 kg (22 325 lb)	21 % MAC (a)	16 670 kg (36 750 lb)	32 210 kg (71 000 lb)	36 % MAC (a)	10 940 kg (24 125 lb)	25 770 kg (56 800 lb)
A319−100 WV005 (CG 36 %)	70 400 kg (155 200 lb)	11 550 kg (25 450 lb)	14 % MAC (c)	17 990 kg (39 650 lb)	32 240 kg (71 075 lb)	36 % MAC (a)	10 940 kg (24 125 lb)	25 800 kg (56 875 lb)
A319−100 WV006 (CG 36.52 %)	73 900 kg (162 925 lb)	10 610 kg (23 400 lb)	21 % MAC (a)	17 470 kg (38 500 lb)	33 890 kg (74 725 lb)	36.52 % MAC (a)	11 480 kg (25 325 lb)	27 110 kg (59 775 lb)
A319−100 WV006 (CG 36 %)	73 900 kg (162 925 lb)	10 610 kg (23 400 lb)	21 % MAC (a)	17 470 kg (38 500 lb)	33 820 kg (74 550 lb)	36 % MAC (a)	11 480 kg (25 325 lb)	27 050 kg (59 650 lb)
A319−100 WV007	75 900 kg (167 325 lb)	10 720 kg (23 625 lb)	21 % MAC (b)	17 880 kg (39 400 lb)	34 750 kg (76 600 lb)	36 % MAC (a)	11 800 kg (26 000 lb)	27 800 kg (61 275 lb)
A319−100 WV008 (CG 39 %)	64 400 kg (141 975 lb)	9 300 kg (20 500 lb)	21 % MAC (a)	15 310 kg (33 750 lb)	29 830 kg (65 775 lb)	39 % MAC (a)	10 010 kg (22 075 lb)	23 860 kg (52 600 lb)

NOTE:
(a) LOADS CALCULATED USING AIRCRAFT AT MRW.
(b) LOADS CALCULATED USING AIRCRAFT AT 74 500 kg (164 250 lb).
(c) LOADS CALCULATED USING AIRCRAFT AT 67 500 kg (148 812lb).

N_AC_070300_1_0230102_01_02

Maximum Pavement Loads
(Sheet 2 of 3)
FIGURE-7-3-0-991-023-A01

**ON A/C A319-100

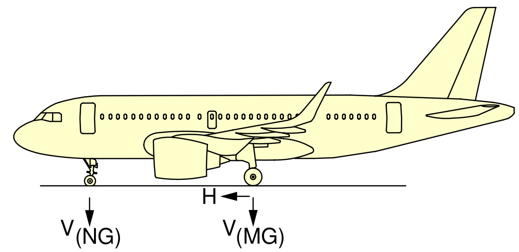
1	2	3		4	5		6	
		$V_{(NG)}$			$V_{(MG)}$ (PER STRUT)		H (PER STRUT)	
WEIGHT VARIANT	MAXIMUM RAMP WEIGHT	STATIC LOAD AT FWD CG		STATIC BRAKING AT 10 ft/s? DECELERATION	STATIC LOAD AT AFT CG		STEADY BRAKING AT 10 ft/s? DECELERATION	AT INSTANTANEOUS BRAKING COEFFICIENT = 0.8
A319–100 WV008 (CG 36 %)	64 400 kg (141 975 lb)	9 300 kg (20 500 lb)	21 % MAC (a)	15 310 kg (33 750 lb)	29 450 kg (64 925 lb)	36 % MAC (a)	10 010 kg (22 075 lb)	23 560 kg (51 925 lb)
A319–100 WV009 (CG 38.8 %)	66 400 kg (146 375 lb)	9 580 kg (21 125 lb)	21 % MAC (a)	15 770 kg (34 775 lb)	30 730 kg (67 750 lb)	38.8 % MAC (a)	10 320 kg (22 750 lb)	24 590 kg (54 200 lb)
A319–100 WV009 (CG 36 %)	66 400 kg (146 375 lb)	9 580 kg (21 125 lb)	21 % MAC (a)	15 770 kg (34 775 lb)	30 360 kg (66 950 lb)	36 % MAC (a)	10 320 kg (22 750 lb)	24 290 kg (53 550 lb)
A319–100 WV010	76 900 kg (169 525 lb)	11 540 kg (25 450 lb)	14 % MAC (b)	17 830 kg (39 300 lb)	35 180 kg (77 550 lb)	36 % MAC (a)	11 950 kg (26 350 lb)	28 140 kg (62 050 lb)
A319–100 WV011 (CG 38.8 %)	66 400 kg (146 375 lb)	9 580 kg (21 125 lb)	21 % MAC (a)	15 770 kg (34 775 lb)	30 730 kg (67 750 lb)	38.8 % MAC (a)	10 320 kg (22 750 lb)	24 590 kg (54 200 lb)
A319–100 WV011 (CG 36 %)	66 400 kg (146 375 lb)	9 580 kg (21 125 lb)	21 % MAC (a)	15 770 kg (34 775 lb)	30 360 kg (66 950 lb)	36 % MAC (a)	10 320 kg (22 750 lb)	24 290 kg (53 550 lb)
A319–100 WV012 (CG 39 %)	62 400 kg (137 575 lb)	9 170 kg (20 200 lb)	20.4 % MAC (a)	15 000 kg (33 075 lb)	28 900 kg (63 725 lb)	39 % MAC (a)	9 700 kg (21 375 lb)	23 120 kg (50 975 lb)
A319–100 WV012 (CG 36 %)	62 400 kg (137 575 lb)	9 170 kg (20 200 lb)	20.4 % MAC (a)	15 000 kg (33 075 lb)	28 530 kg (62 900 lb)	36 % MAC (a)	9 700 kg (21 375 lb)	22 820 kg (50 325 lb)
A319–100 WV013	75 900 kg (167 325 lb)	11 540 kg (25 450 lb)	14 % MAC (b)	17 910 kg (39 500 lb)	34 750 kg (76 625 lb)	36 % MAC (a)	11 800 kg (26 000 lb)	27 800 kg (61 300 lb)

NOTE:
(a) LOADS CALCULATED USING AIRCRAFT AT MRW.
(b) LOADS CALCULATED USING AIRCRAFT AT 67 500 kg (148 800 lb).

N_AC_070300_1_0230104_01_03

Maximum Pavement Loads
(Sheet 3 of 3)
FIGURE-7-3-0-991-023-A01

**ON A/C A319neo



$V_{(NG)}$ MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT FWD CG
$V_{(MG)}$ MAXIMUM VERTICAL MAIN GEAR GROUND LOAD AT AFT CG
H MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING

1	2	3		4	5		6	
		$V_{(NG)}$			$V_{(MG)}$ (PER STRUT)		H (PER STRUT)	
WEIGHT VARIANT	MAXIMUM RAMP WEIGHT	STATIC LOAD AT FWD CG		STATIC BRAKING AT 10 ft/s? DECELERATION	STATIC LOAD AT AFT CG		STEADY BRAKING AT 10 ft/s? DECELERATION	AT INSTANTANEOUS BRAKING COEFFICIENT = 0.8
A319NEO WV050	64 400 kg (141 975 lb)	TBD	TBD	TBD	29 570 kg (65 200 lb)	—	10 010 kg (22 075 lb)	23 660 kg (52 150 lb)
A319NEO WV051	64 400 kg (141 975 lb)	TBD	TBD	TBD	29 570 kg (65 200 lb)	—	10 010 kg (22 075 lb)	23 660 kg (52 150 lb)
A319NEO WV052	70 400 kg (155 200 lb)	TBD	TBD	TBD	32 350 kg (71 325 lb)	—	10 940 kg (24 125 lb)	25 880 kg (57 050 lb)
A319NEO WV053	70 400 kg (155 200 lb)	TBD	TBD	TBD	32 350 kg (71 325 lb)	—	10 940 kg (24 125 lb)	25 880 kg (57 050 lb)
A319NEO WV054	75 900 kg (167 325 lb)	TBD	TBD	TBD	34 900 kg (76 950 lb)	—	11 800 kg (26 000 lb)	27 920 kg (61 550 lb)
A319NEO WV055	75 900 kg (167 325 lb)	TBD	TBD	TBD	34 900 kg (76 950 lb)	—	11 800 kg (26 000 lb)	27 920 kg (61 550 lb)

N_AC_070300_1_0400101_01_03

Maximum Pavement Loads
FIGURE-7-3-0-991-040-A01

7-4-0 Landing Gear Loading on Pavement

****ON A/C A319-100**

Landing Gear Loading on Pavement

1. Landing Gear Loading on Pavement

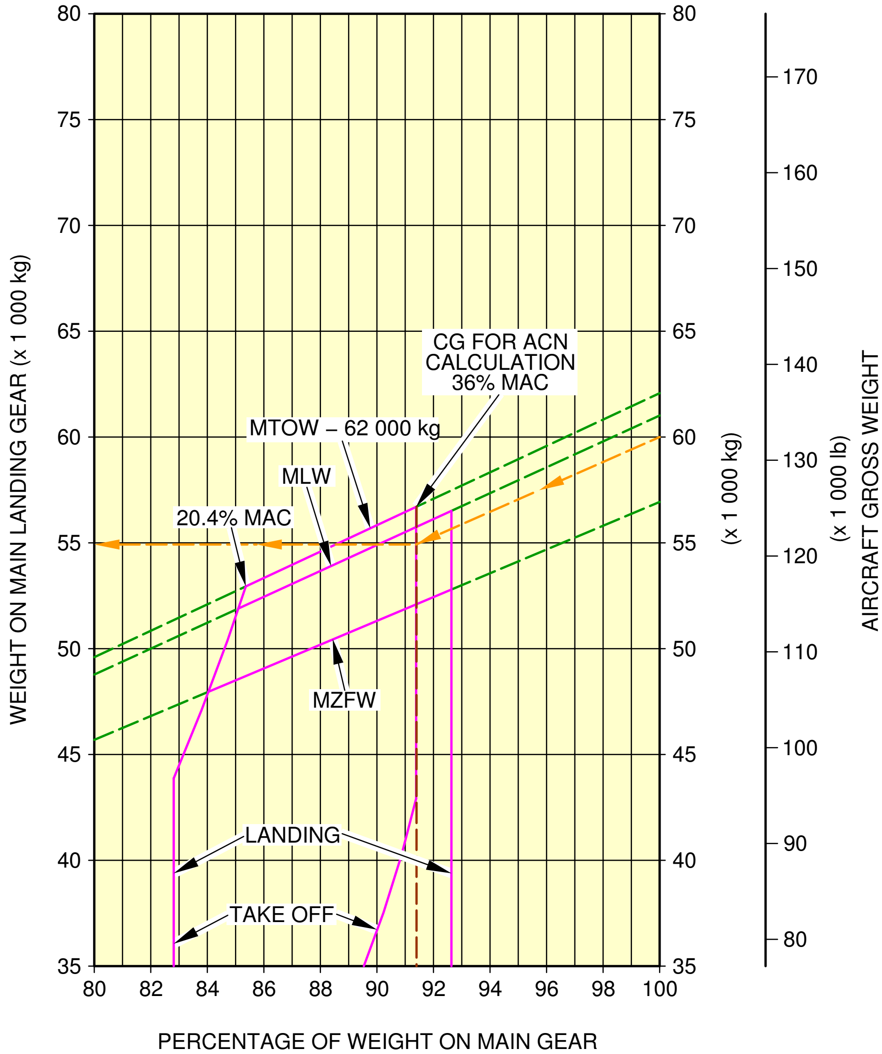
   This section provides data about the landing gear loading on pavement.
   The MLG loading on pavement graphs are given for the weight variants that produce (at the MRW and maximum aft CG) the lowest MLG load and the highest MLG load for each type of aircraft.

   Example, see FIGURE 7-4-0-991-003-A, calculation of the total weight on the MLG for:
   - An aircraft with a MRW of 62 400 kg (137 575 lb),
   - The aircraft gross weight is 60 000 kg (132 275 lb),
   - A percentage of weight on the MLG of 91.5% (percentage of weight on the MLG at MRW and maximum aft CG).

   The total weight on the MLG group is 54 890 kg (121 000 lb).

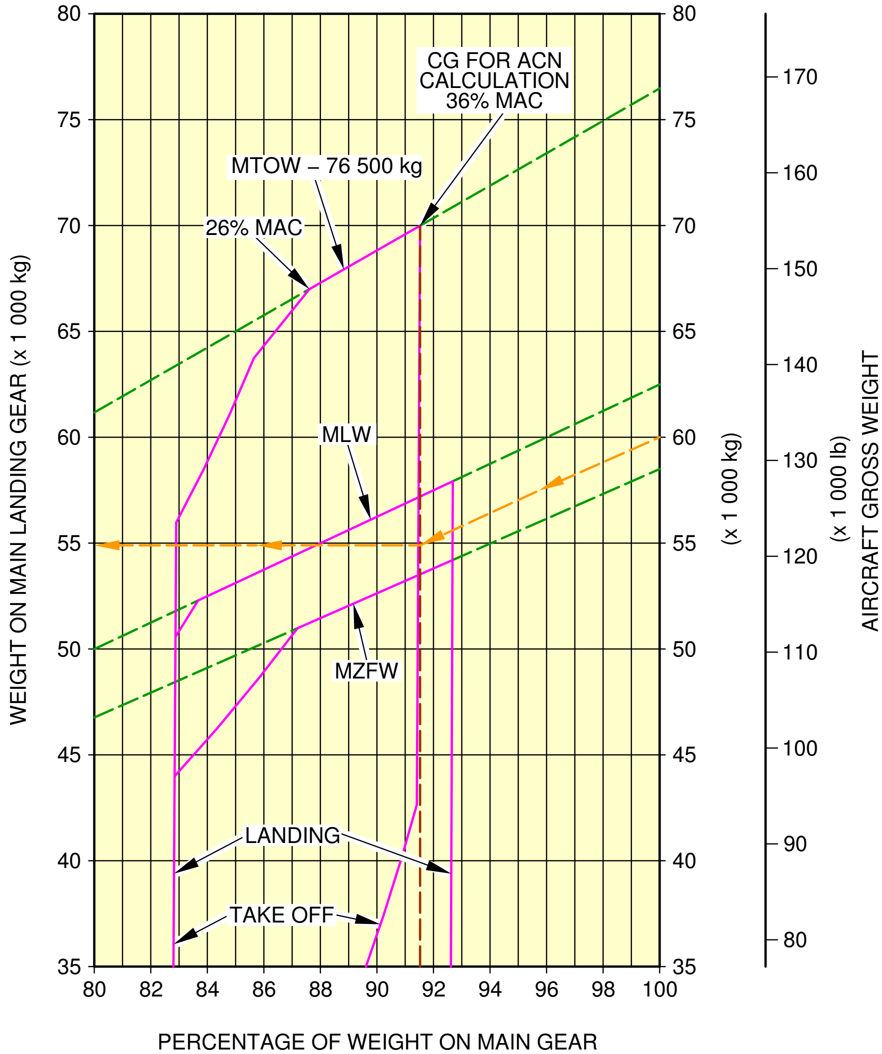
   NOTE : The CG in the figure title is the CG used for ACN/LCN calculation.

**ON A/C A319-100



Landing Gear Loading on Pavement
WV012, MRW 62 400 kg, CG 36%
FIGURE-7-4-0-991-003-A01

**ON A/C A319-100



N_AC_070400_1_0040101_01_00

Landing Gear Loading on Pavement
WV010, MRW 76 900 kg, CG 36%
FIGURE-7-4-0-991-004-A01

7-5-0 Flexible Pavement Requirements - U.S. Army Corps of Engineers Design Method

****ON A/C A319-100 A319neo**

Flexible Pavement Requirements - US Army Corps of Engineers Design Method

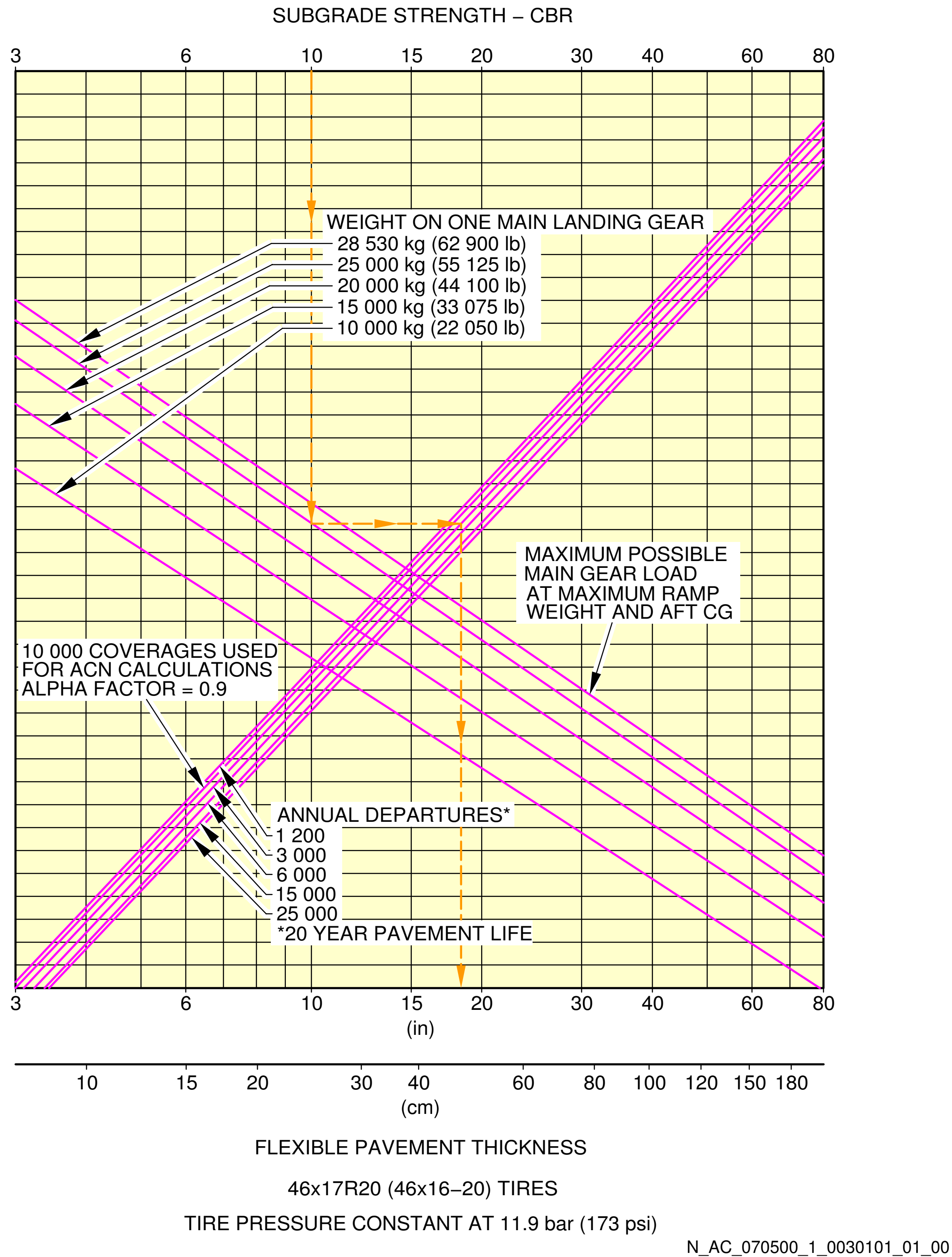
1. This section provides data about the flexible pavement requirements.
   The flexible pavement requirement graphs are given at standard tire pressure for the weight variants producing (at the MRW and maximum aft CG) the lowest MLG load and the highest MLG load for each type of aircraft.
   They are calculated with the US Army Corps of Engineers Design Method.
   To find a flexible pavement thickness, you must know the Subgrade Strength (CBR), the annual departure level and the weight on one MLG.
   The line that shows 10 000 coverages is used to calculate the Aircraft Classification Number (ACN).
   The procedure that follows is used to develop flexible pavement design curves:
   - With the scale for pavement thickness at the bottom and the scale for CBR at the top, a random line is made to show 10 000 coverages,
   - A plot is then made of the incremental values of the weight on the MLG,
   - Annual departure lines are made based on the load lines of the weight on the MLG that is shown on the graph.

   Example, see FIGURE 7-5-0-991-003-A, calculation of the thickness of the flexible pavement for MLG:
   - An aircraft with a MRW of 62 400 kg (137 575 lb),
   - A "CBR" value of 10,
   - An annual departure level of 3 000,
   - The load on one MLG of 25 000 kg (55 125 lb).

   The required flexible pavement thickness is 46.5 cm (18 in).

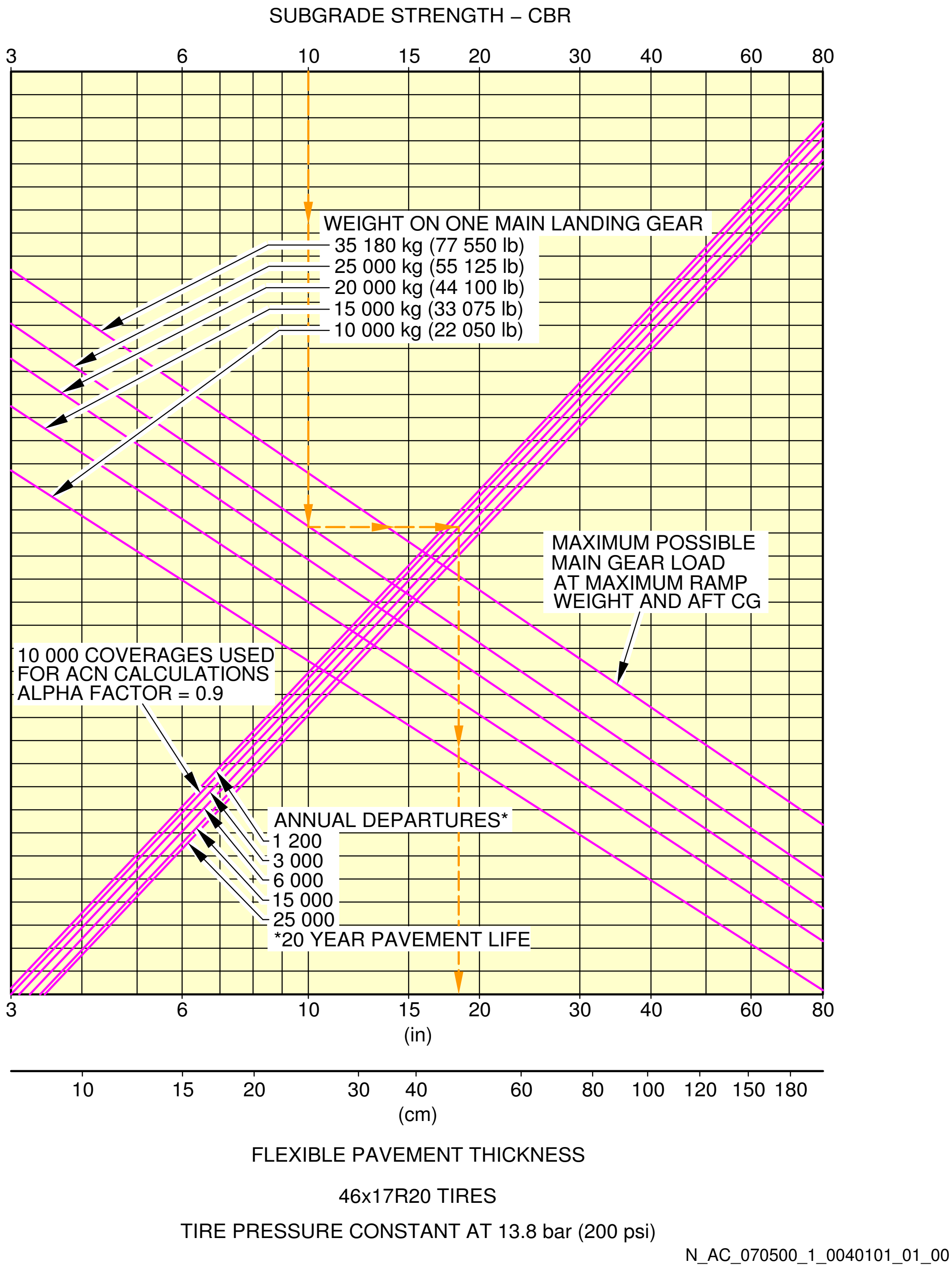
   NOTE : The CG in the figure title is the CG used for ACN calculation.

**ON A/C A319-100



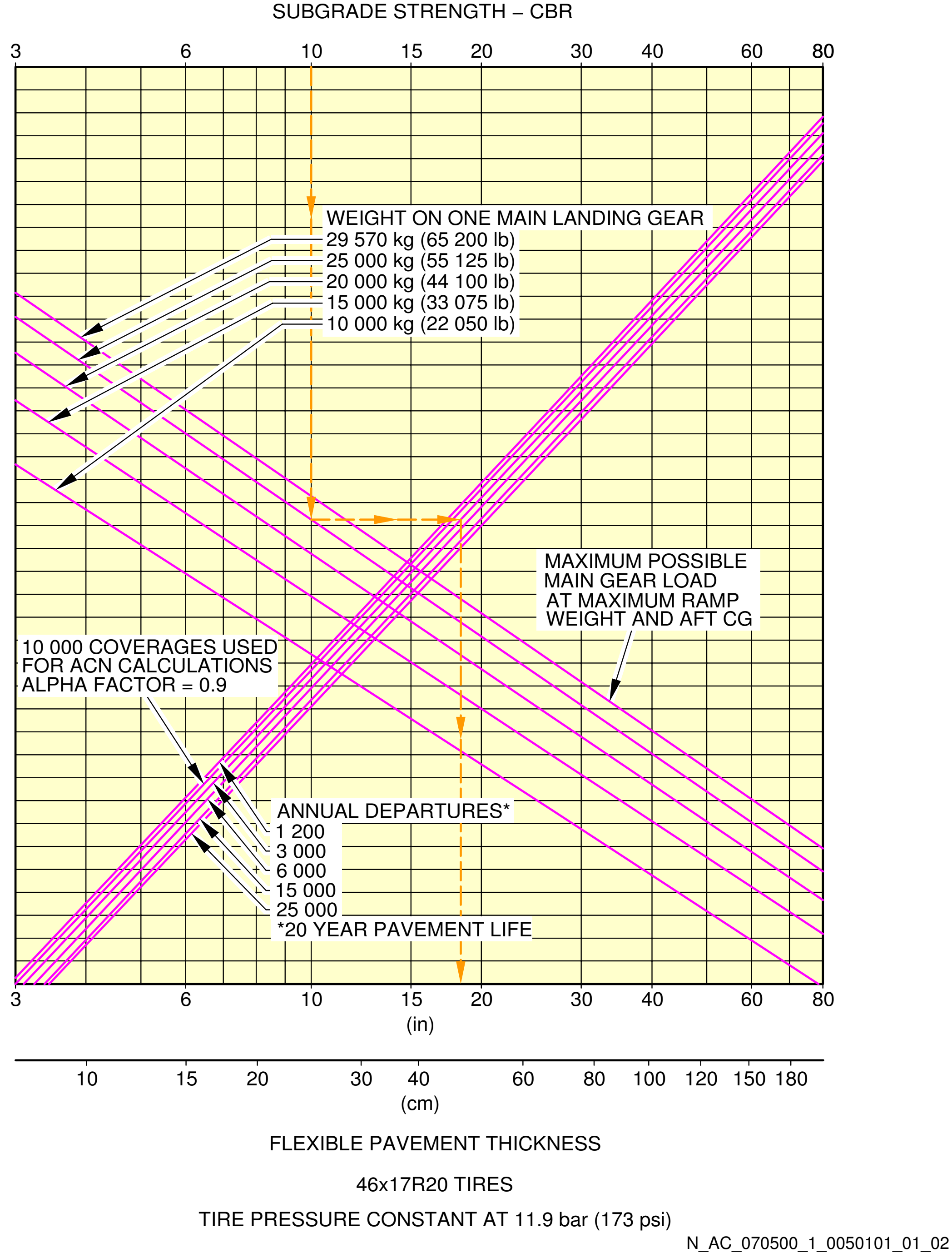
Flexible Pavement Requirements
WV012, MRW 62 400 kg, CG 36 %
FIGURE-7-5-0-991-003-A01

****ON A/C A319-100**



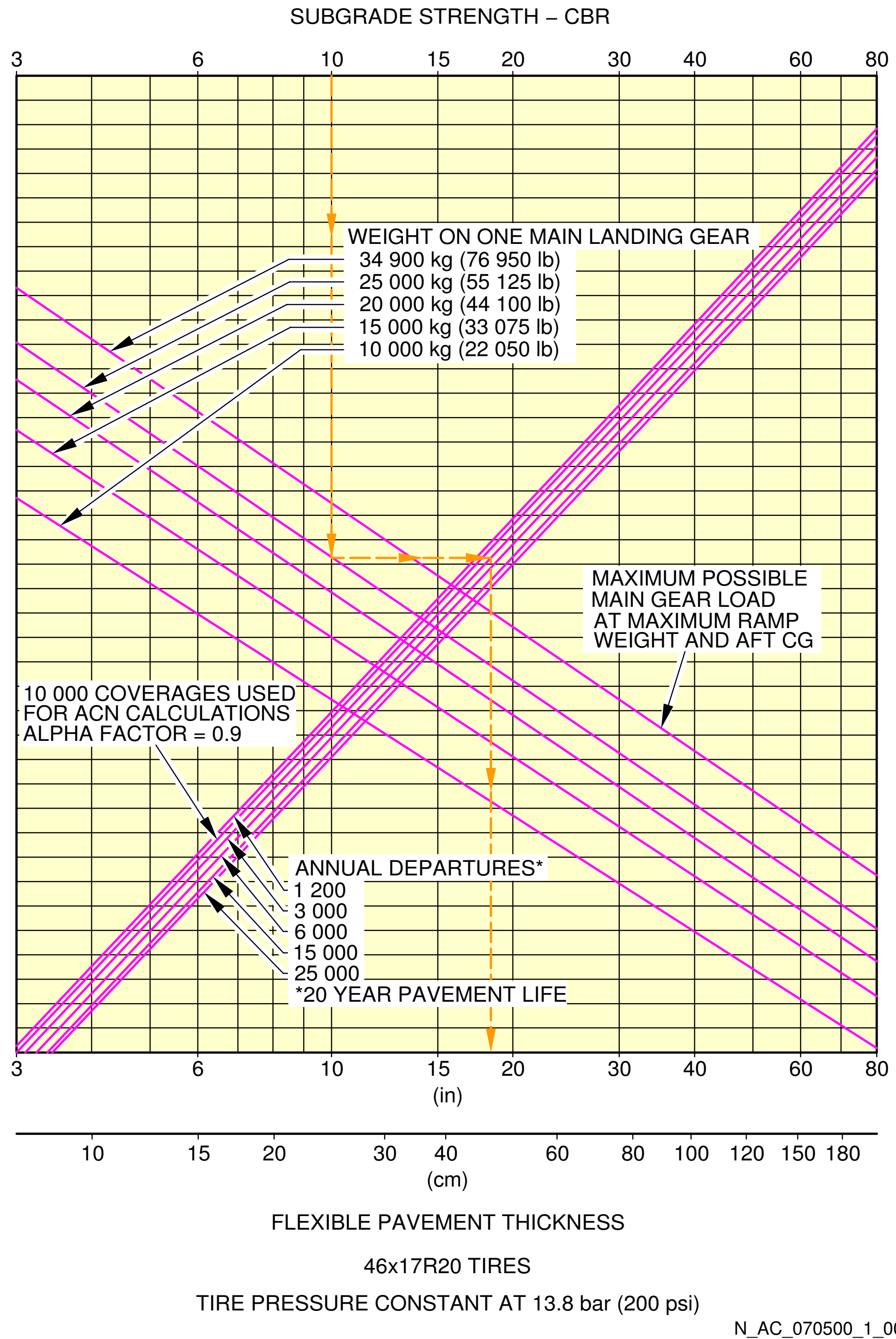
Flexible Pavement Requirements
WV010, MRW 76 900 kg, CG 36 %
FIGURE-7-5-0-991-004-A01

**ON A/C A319neo



Flexible Pavement Requirements
WV050, MRW 64 400 kg
FIGURE-7-5-0-991-005-A01

**ON A/C A319neo



Flexible Pavement Requirements
WV054, MRW 75 900 kg
FIGURE-7-5-0-991-006-A01

7-6-0 Flexible Pavement Requirements - LCN Conversion

****ON A/C A319-100 A319neo**

Flexible Pavement Requirements - LCN Conversion

1. The Load Classification Number (LCN) curves are no longer provided in section 07-06-00 since the LCN system for reporting pavement strength is obsolete, having been replaced by the ICAO recommended ACN/PCN system in 1983.
   For questions regarding the LCN system, contact Airbus.

7-7-0 Rigid Pavement Requirements - Portland Cement Association Design Method

****ON A/C A319-100 A319neo**

Rigid Pavement Requirements - Portland Cement Association Design Method

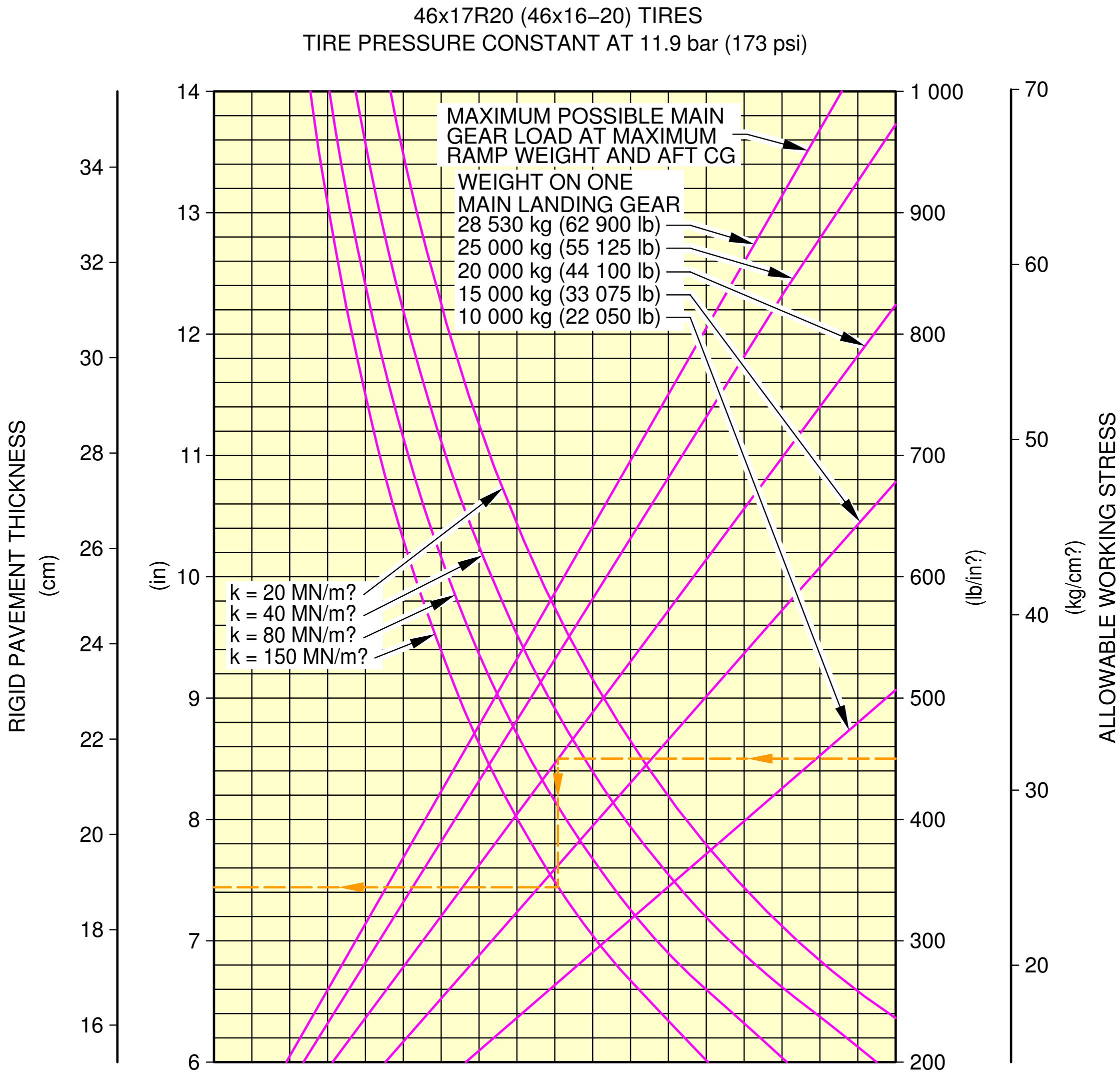
1. This section provides data about the rigid pavement requirements for the PCA (Portland Cement Association) design method.
   The rigid pavement requirement graphs are given at standard tire pressure for the weight variants producing (at the MRW and maximum aft CG) the lowest MLG load and the highest MLG load for each A/C type.
   They are calculated with the PCA design method.
   To find a rigid pavement thickness, you must know the Subgrade Modulus (k), the permitted working stress and the weight on one MLG.
   The procedure that follows is used to develop rigid pavement design curves:
   - With the scale for pavement thickness on the left and the scale for permitted working stress on the right, a random load line is made. This represents the MLG maximum weight to be shown,
   - A plot is then made of all values of the subgrade modulus (k values),
   - More load lines for the incremental values of the weight on the MLG are made based on the curve for k = 150 MN/m^3, which is already shown on the graph.

   Example, see FIGURE 7-7-0-991-005-A, calculation of the thickness of the rigid pavement for the MLG:
   - An aircraft with a MRW of 62 400 kg (137 575 lb),
   - A k value of 150 MN/m^3 (550 lbf/in^3),
   - A permitted working stress of 31.64 kg/cm^2 (450 lb/in^2),
   - The load on one MLG is 20 000 kg (44 100 lb).

   The required rigid pavement thickness is 186 mm (7 in).

   NOTE : The CG in the figure title is the CG used for ACN calculation.

**ON A/C A319-100



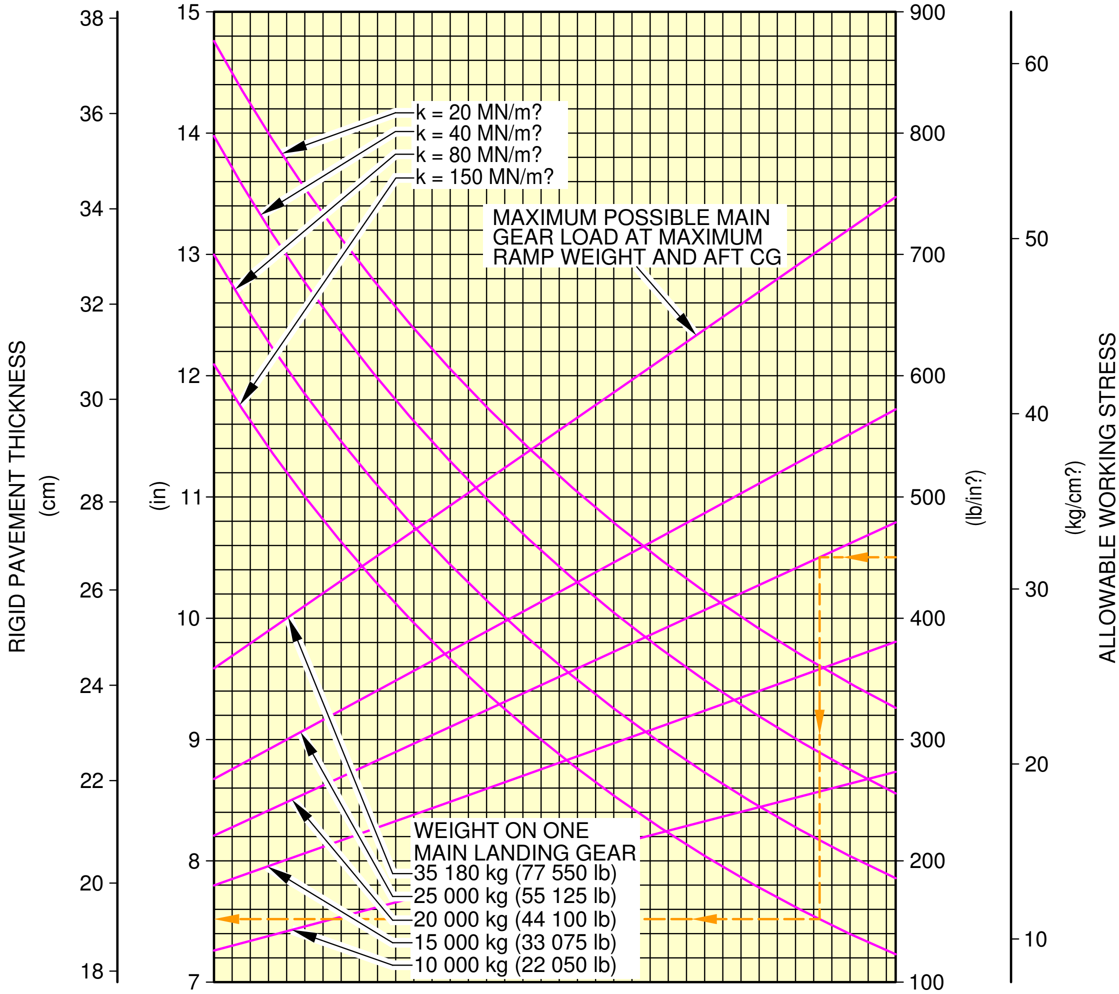
NOTE:
THE VALUES OBTAINED BY USING THE MAXIMUM LOAD REFERENCE LINE AND ANY VALUES FOR k ARE EXACT.
FOR LOADS LESS THAN MAXIMUM, THE CURVES ARE EXACT FOR k = 80 MN/m? BUT DEVIATE SLIGHTLY FOR ANY OTHER VALUES OF k.

REFERENCE:
"DESIGN OF CONCRETE AIRPORT PAVEMENTS" AND "COMPUTER PROGRAM FOR AIRPORT PAVEMENT DESIGN – PROGRAM PDILB" PORTLAND CEMENT ASSOCIATION.

N_AC_070700_1_0050101_01_00

Rigid Pavement Requirements
WV012, MRW 62 400 kg, CG 36 %
FIGURE-7-7-0-991-005-A01

**ON A/C A319-100



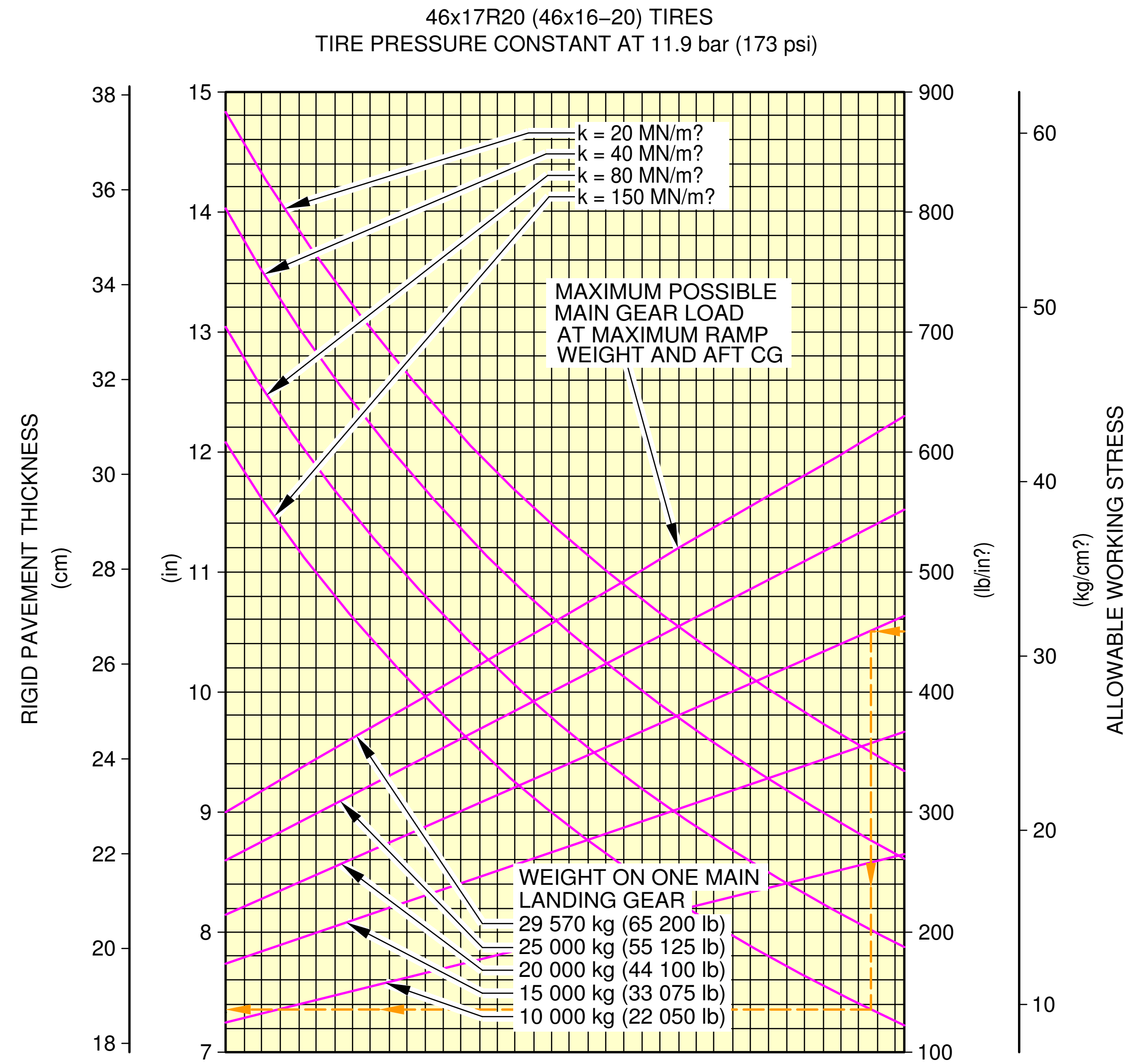
NOTE:
THE VALUES OBTAINED BY USING THE MAXIMUM LOAD REFERENCE LINE AND ANY VALUES FOR k ARE EXACT.
FOR LOADS LESS THAN MAXIMUM, THE CURVES ARE EXACT FOR k = 80 MN/m? BUT DEVIATE SLIGHTLY FOR ANY OTHER VALUES OF k.

REFERENCE:
"DESIGN OF CONCRETE AIRPORT PAVEMENTS" AND "COMPUTER PROGRAM FOR AIRPORT PAVEMENT DESIGN – PROGRAM PDILB" PORTLAND CEMENT ASSOCIATION.

N_AC_070700_1_0060101_01_00

Rigid Pavement Requirements
WV010, MRW 76 900 kg, CG 36 %
FIGURE-7-7-0-991-006-A01

**ON A/C A319neo



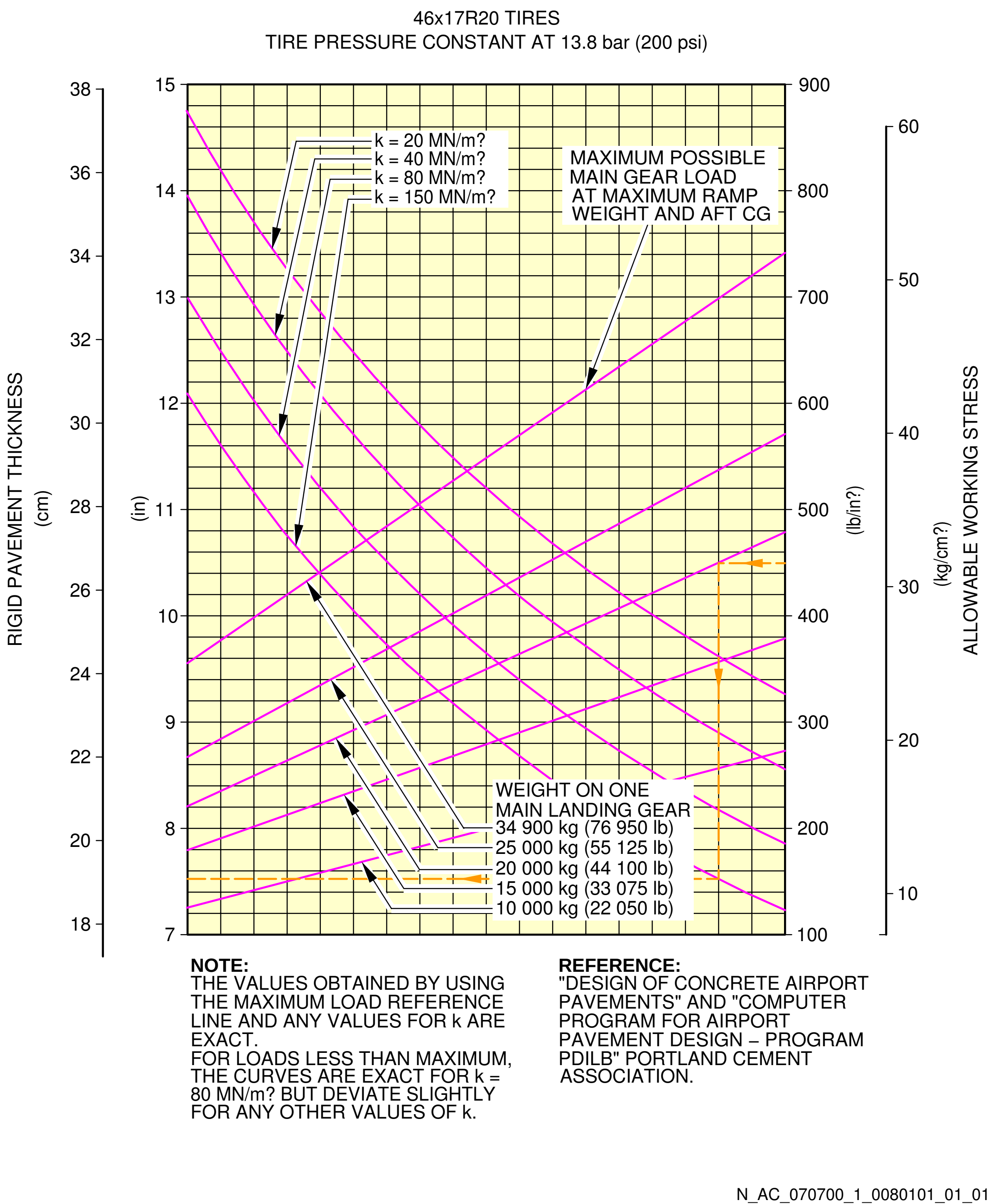
NOTE:
THE VALUES OBTAINED BY USING THE MAXIMUM LOAD REFERENCE LINE AND ANY VALUES FOR k ARE EXACT.
FOR LOADS LESS THAN MAXIMUM, THE CURVES ARE EXACT FOR k = 80 MN/m? BUT DEVIATE SLIGHTLY FOR ANY OTHER VALUES OF k.

REFERENCE:
"DESIGN OF CONCRETE AIRPORT PAVEMENTS" AND "COMPUTER PROGRAM FOR AIRPORT PAVEMENT DESIGN – PROGRAM PDILB" PORTLAND CEMENT ASSOCIATION.

N_AC_070700_1_0070101_01_02

Rigid Pavement Requirements
WV050, MRW 64 400 kg
FIGURE-7-7-0-991-007-A01

****ON A/C A319neo**



Rigid Pavement Requirements
WV054, MRW 75 900 kg
FIGURE-7-7-0-991-008-A01

7-8-0 Rigid Pavement Requirements - LCN Conversion

****ON A/C A319-100 A319neo**

Rigid Pavement Requirements - LCN Conversion

1. The Load Classification Number (LCN) curves are no longer provided in section 07-08-00 since the LCN system for reporting pavement strength is obsolete, having been replaced by the ICAO recommended ACN/PCN system in 1983.
   For questions regarding the LCN system, contact Airbus.

7-9-0 ACN/PCN Reporting System - Flexible and Rigid Pavements

****ON A/C A319-100 A319neo**

Aircraft Classification Number - Flexible and Rigid Pavements

1. This section provides data about the Aircraft Classification Number (ACN) for an aircraft gross weight in relation to a subgrade strength value for flexible and rigid pavement.
The flexible and rigid pavement requirement graphs are given at standard tire pressure for the weight variants producing (at the MRW and maximum aft CG) the lowest MLG load and the highest MLG load for each type of aircraft.
To find the ACN of an aircraft on flexible and rigid pavement, you must know the aircraft gross weight and the subgrade strength.

NOTE : An aircraft with an ACN equal to or less than the reported PCN can operate on that pavement, subject to any limitation on the tire pressure.
(Ref: ICAO Aerodrome Design Manual, Part 3, Chapter 1, Second Edition 1983).

Example, see FIGURE 7-9-0-991-007-A (sheet 1), calculation of the ACN for flexible pavement for:
- An aircraft with a MRW of 62 400 kg (137 575 lb),
- An aircraft gross weight of 55 000 kg (121 250 lb),
- A low subgrade strength (code C).

The ACN for flexible pavement is 29.
Example, see FIGURE 7-9-0-991-007-A (sheet 2), calculation of the ACN for rigid pavement for:
- An aircraft with a MRW of 62 400 kg (137 575 lb),
- An aircraft gross weight of 55 000 kg (121 250 lb),
- A medium subgrade strength (code B).

The ACN for rigid pavement is 30.

2. Aircraft Classification Number - ACN table
The tables in FIGURE 7-9-0-991-006-A and FIGURE 7-9-0-991-009-A provide ACN data in tabular format similar to the one used by ICAO in the "Aerodrome Design Manual Part 3, Pavements - Edition 1983" for all the operational weight variants of the aircraft.
As an approximation, use a linear interpolation in order to get the ACN at the required operating weight using the following equation:
- ACN = ACN min + (ACN max - ACN min) x (Operating weight - 41 000 kg)/(MRW - 41 000 kg)

As an approximation, also use a linear interpolation in order to get the aircraft weight at the pavement PCN using the following equation:
- Operating weight = 41 000 kg + (MRW - 41 000 kg) x (PCN - ACN min)/(ACN max - ACN min)

With ACN max: ACN calculated at the MRW in the table and with ACN min: ACN calculated at 41 000 kg.

NOTE : The CG in the figure title is the CG used for ACN calculation.

**ON A/C A319-100

WEIGHT VARIANT	ALL UP MASS (kg)	LOAD ON ONE MAIN GEAR LEG (%)	TIRE PRESSURE (MPa)	ACN FOR RIGID PAVEMENT SUBGRADES – MN/m?				ACN FOR FLEXIBLE PAVEMENT SUBGRADES – CBR			
				High 150	Medium 80	Low 40	Ultra–low 20	High 15	Medium 10	Low 6	Ultra–low 3
A319–100 WV000 (CG 36%)	64 400	45.7	1.19	34	36	39	41	32	32	36	41
	41 000	45.7		20	21	23	24	19	19	21	24
A319–100 WV000 (CG 39%)	64 400	46.3	1.19	35	37	39	41	32	33	36	42
	41 000	46.3		20	22	23	24	19	19	21	24
A319–100 WV001 (CG 37.5%)	70 400	46.1	1.29	39	42	44	46	35	36	41	46
	41 000	46.0		21	22	23	25	19	19	21	24
A319–100 WV001 (CG 36%)	70 400	45.8	1.29	39	41	44	46	35	36	40	46
	41 000	45.7		21	22	23	25	19	19	21	24
A319–100 WV002	75 900	45.8	1.38	44	46	48	50	39	40	44	50
	41 000	45.7		21	22	24	25	19	19	21	24
A319–100 WV003 (CG 38.1%)	68 400	46.1	1.25	38	40	42	44	34	35	39	45
	41 000	46.1		21	22	23	25	19	19	21	24
A319–100 WV003 (CG 36%)	68 400	45.7	1.25	37	40	42	44	34	35	39	44
	41 000	45.7		20	22	23	24	19	19	21	24
A319–100 WV004 (CG 38.1%)	68 400	46.1	1.25	38	40	42	44	34	35	39	45
	41 000	46.1		21	22	23	25	19	19	21	24
A319–100 WV004 (CG 36%)	68 400	45.7	1.25	37	40	42	44	34	35	39	46
	41 000	45.7		20	22	23	24	19	19	21	24
A319–100 WV005 (CG 37.5%)	70 400	46.1	1.29	39	42	44	46	35	36	41	46
	41 000	46.0		21	22	23	25	19	19	21	24
A319–100 WV005 (CG 36%)	70 400	45.8	1.29	39	41	44	46	35	36	40	46
	41 000	45.7		21	22	23	25	19	19	21	24
A319–100 WV005 (CG 36%)	70 400	45.8	1.38	40	42	44	46	35	37	40	46
	41 000	45.7		21	22	24	25	19	19	21	24
A319–100 WV006 (CG 36.52%)	73 900	45.9	1.34	42	44	47	49	37	39	43	49
	41 000	45.8		21	22	24	25	19	19	21	24
A319–100 WV006 (CG 36%)	73 900	45.8	1.34	42	44	47	49	37	39	43	49
	41 000	45.7		21	22	24	25	19	19	21	24

N_AC_070900_1_0060101_01_01

Aircraft Classification Number
ACN Table (Sheet 1 of 2)
FIGURE-7-9-0-991-006-A01

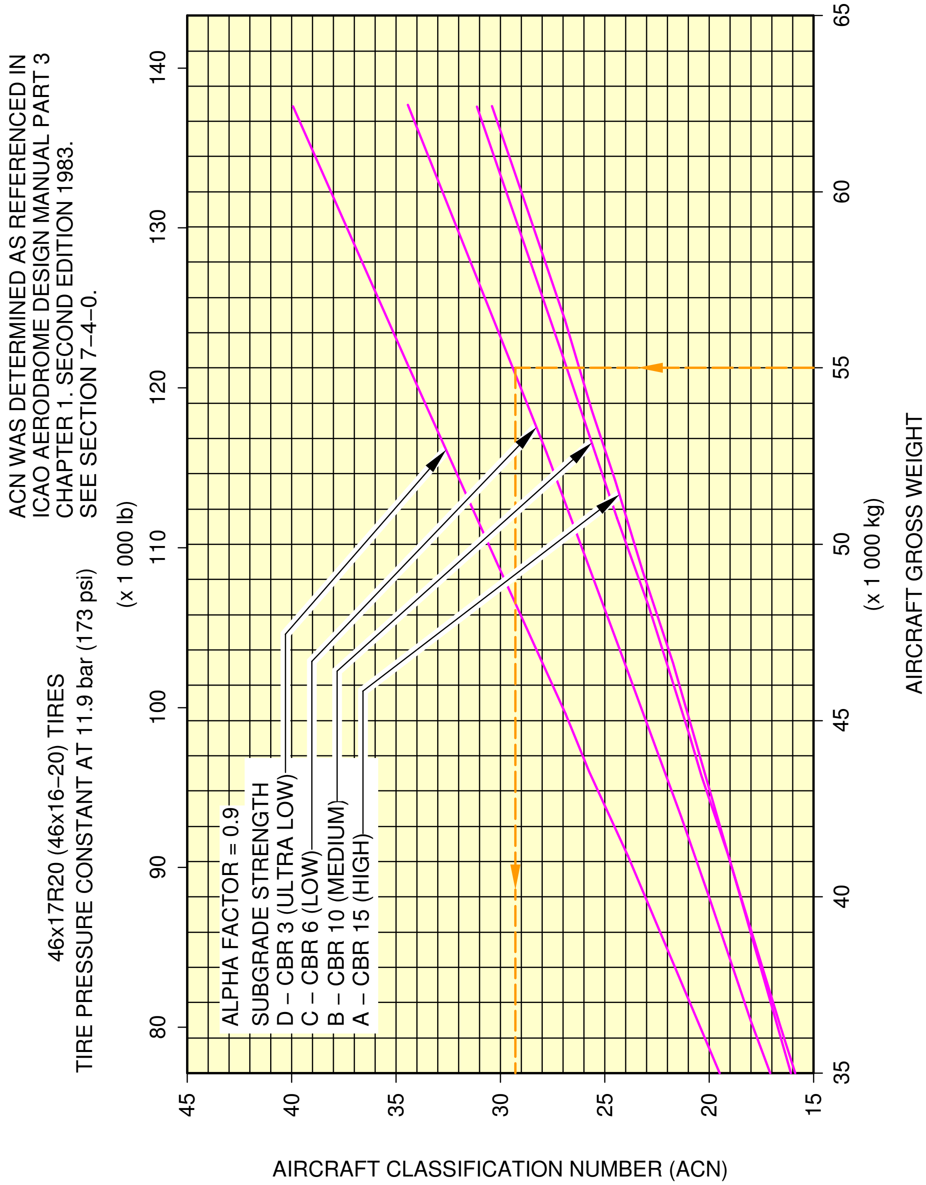
**ON A/C A319-100

WEIGHT VARIANT	ALL UP MASS (kg)	LOAD ON ONE MAIN GEAR LEG (%)	TIRE PRESSURE (MPa)	ACN FOR RIGID PAVEMENT SUBGRADES – MN/m?				ACN FOR FLEXIBLE PAVEMENT SUBGRADES – CBR			
				HIGH 150	MEDIUM 80	LOW 40	ULTRA –LOW 20	HIGH 15	MEDIUM 10	LOW 6	ULTRA –LOW 3
A319–100 WV007	75 900	45.8	1.38	44	46	48	50	39	40	44	50
	41 000	45.7		21	22	24	25	19	19	21	24
A319–100 WV008 (CG 39%)	64 400	46.3	1.19	35	37	39	41	32	33	36	42
	41 000	46.3		20	22	23	24	19	19	21	24
A319–100 WV008 (CG 36%)	64 400	45.7	1.19	34	36	39	41	32	32	36	41
	41 000	45.7		20	21	23	24	19	19	21	24
A319–100 WV009 (CG 38.8%)	66 400	46.3	1.25	36	39	41	43	33	34	38	44
	41 000	46.2		21	22	23	25	19	19	21	24
A319–100 WV009 (CG 36%)	66 400	45.7	1.25	36	38	41	42	33	34	37	43
	41 000	45.7		20	22	23	24	19	19	21	24
A319–100 WV010	76 900	45.7	1.38	44	47	49	51	39	41	45	51
	41 000	45.8		21	22	24	25	19	19	21	24
A319–100 WV011 (CG 38.8%)	66 400	46.3	1.25	36	39	41	43	33	34	38	44
	41 000	46.2		21	22	23	25	19	19	21	24
A319–100 WV011 (CG 36%)	66 400	45.7	1.25	36	38	41	42	33	34	37	43
	41 000	45.7		20	22	23	24	19	19	21	24
A319–100 WV012 (CG 39%)	62 400	46.3	1.19	33	36	38	40	31	32	35	41
	41 000	46.3		20	22	23	24	19	19	21	24
A319–100 WV012 (CG 36%)	62 400	45.7	1.19	33	35	37	39	30	31	34	40
	41 000	45.7		20	21	23	24	19	19	21	24
A319–100 WV013	75 900	45.8	1.38	44	46	48	50	39	40	44	50
	41 000	45.8		21	22	24	25	19	19	21	24

N_AC_070900_1_0060102_01_03

Aircraft Classification Number
ACN Table (Sheet 2 of 2)
FIGURE-7-9-0-991-006-A01

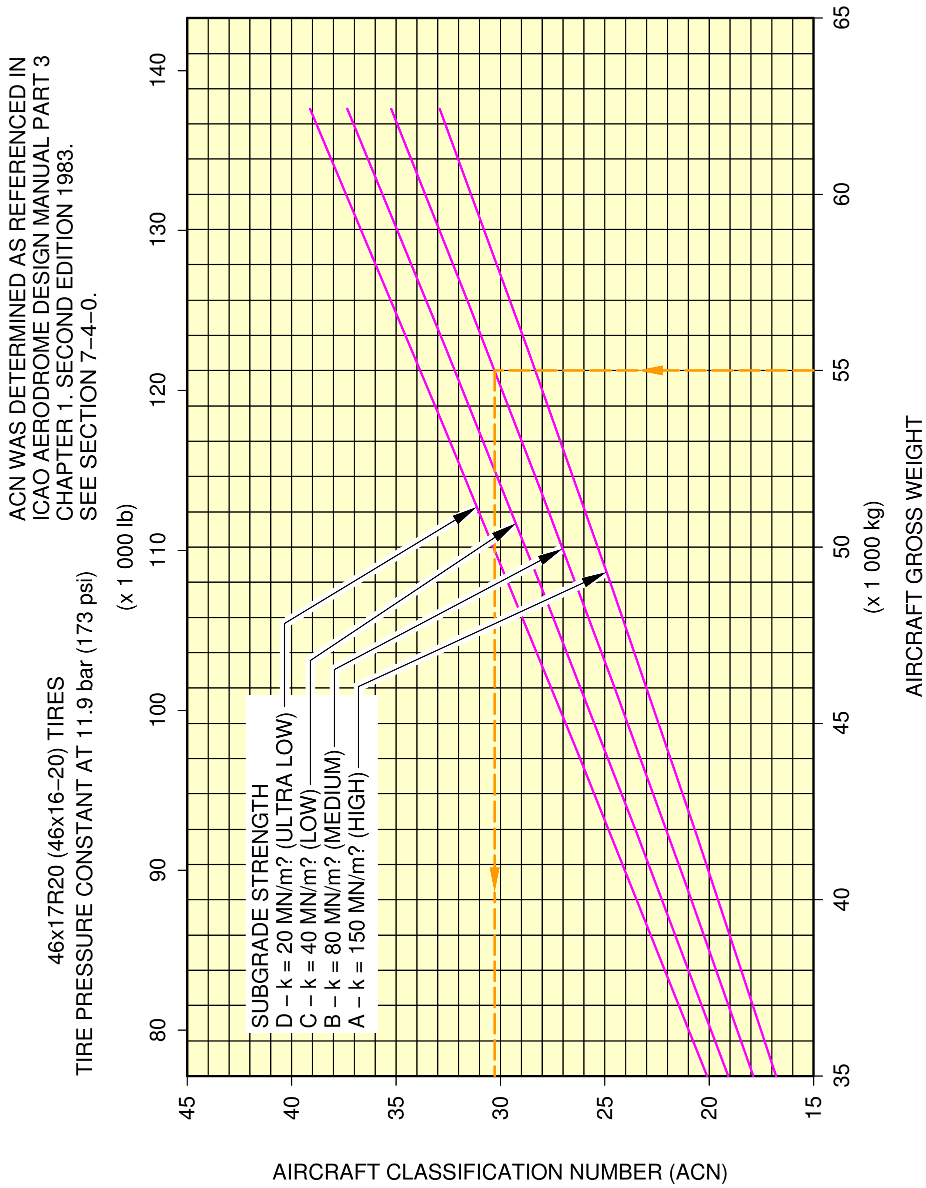
**ON A/C A319-100



N_AC_070900_1_0070101_01_00

Aircraft Classification Number
Flexible Pavement - WV012, MRW 62 400 kg, CG 36 % (Sheet 1 of 2)
FIGURE-7-9-0-991-007-A01

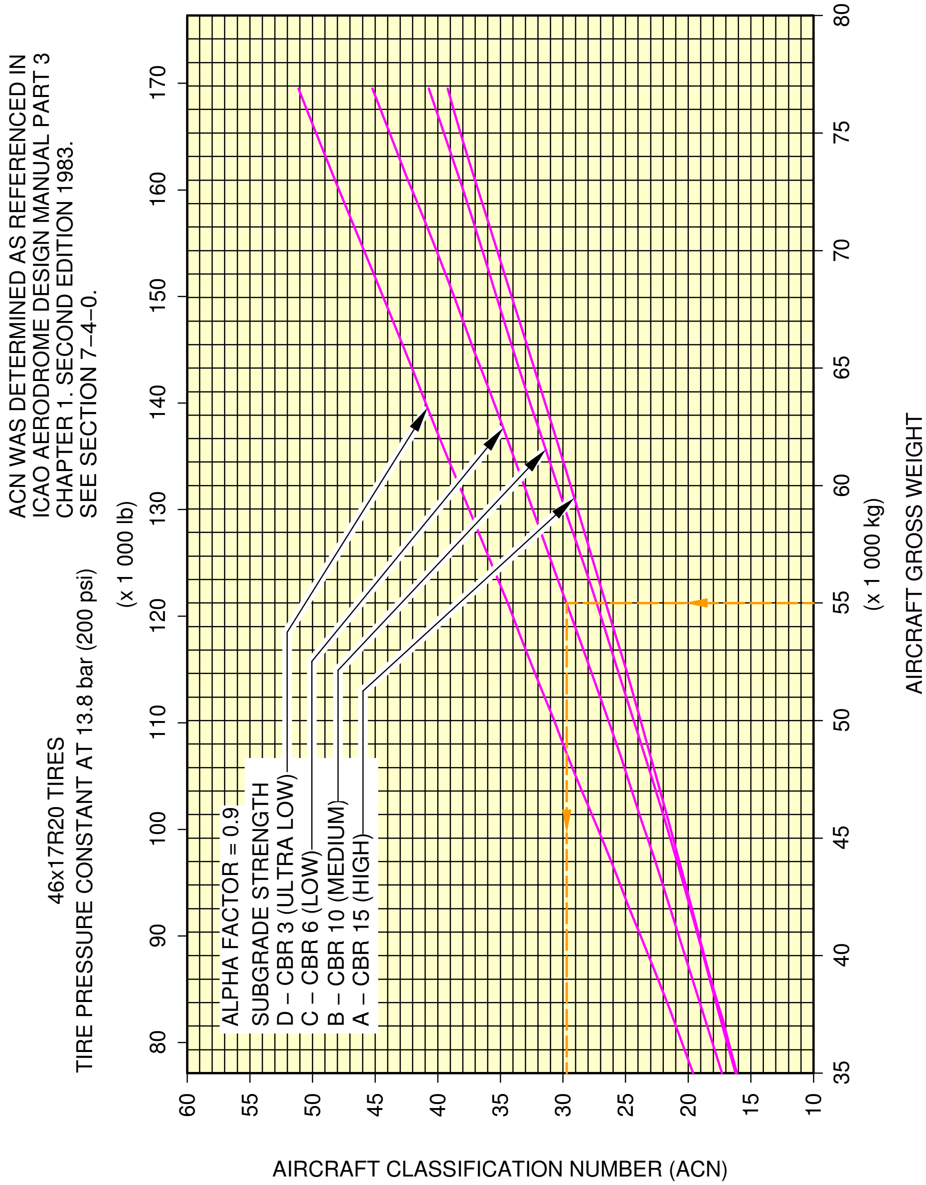
****ON A/C A319-100**



N_AC_070900_1_0070102_01_00

Aircraft Classification Number
Rigid Pavement - WV012, MRW 62 400 kg, CG 36 % (Sheet 2 of 2)
FIGURE-7-9-0-991-007-A01

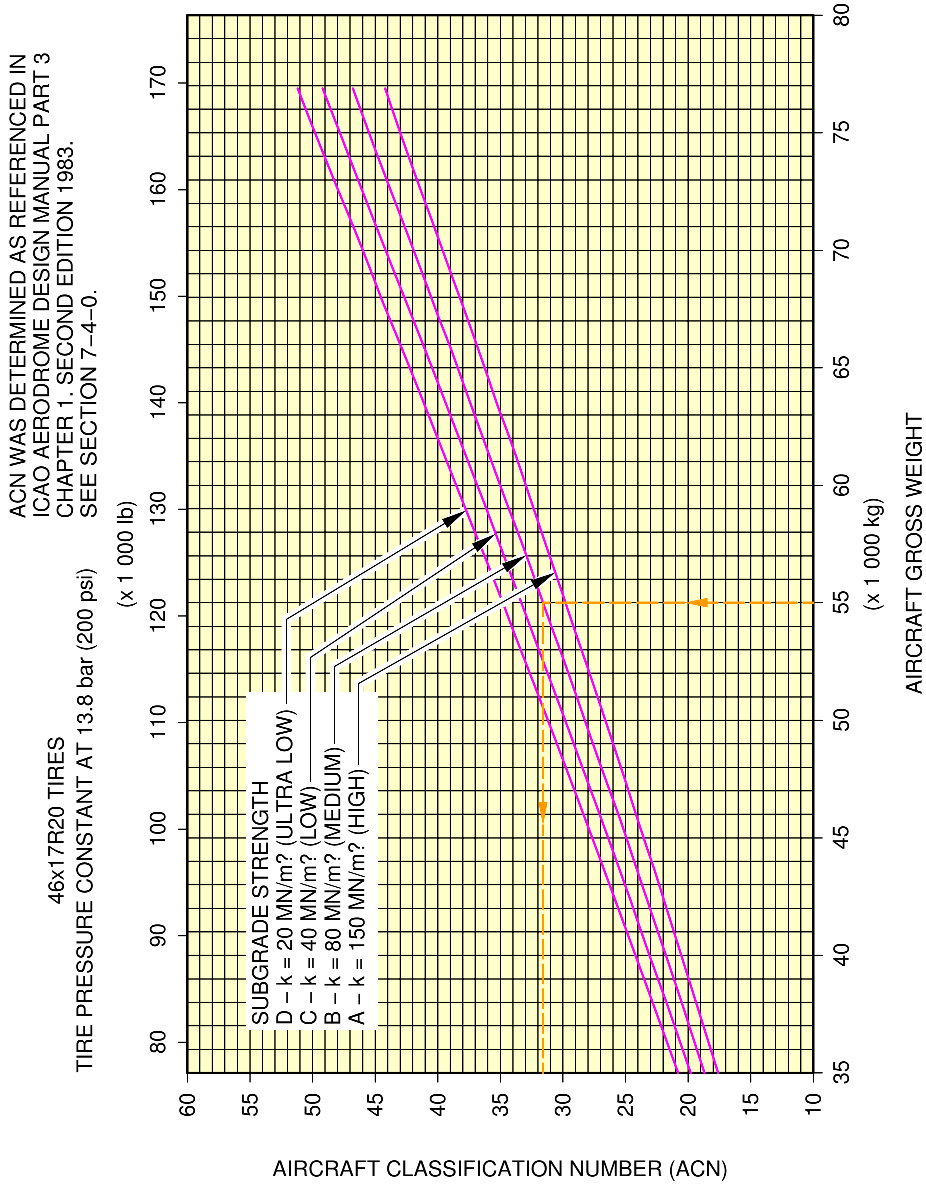
****ON A/C A319-100**



N_AC_070900_1_0080101_01_00

Aircraft Classification Number
Flexible Pavement - WV010, MRW 76 900 kg, CG 36 % (Sheet 1 of 2)
FIGURE-7-9-0-991-008-A01

**ON A/C A319-100



N_AC_070900_1_0080102_01_00

Aircraft Classification Number
Rigid Pavement - WV010, MRW 76 900 kg, CG 36 % (Sheet 2 of 2)
FIGURE-7-9-0-991-008-A01

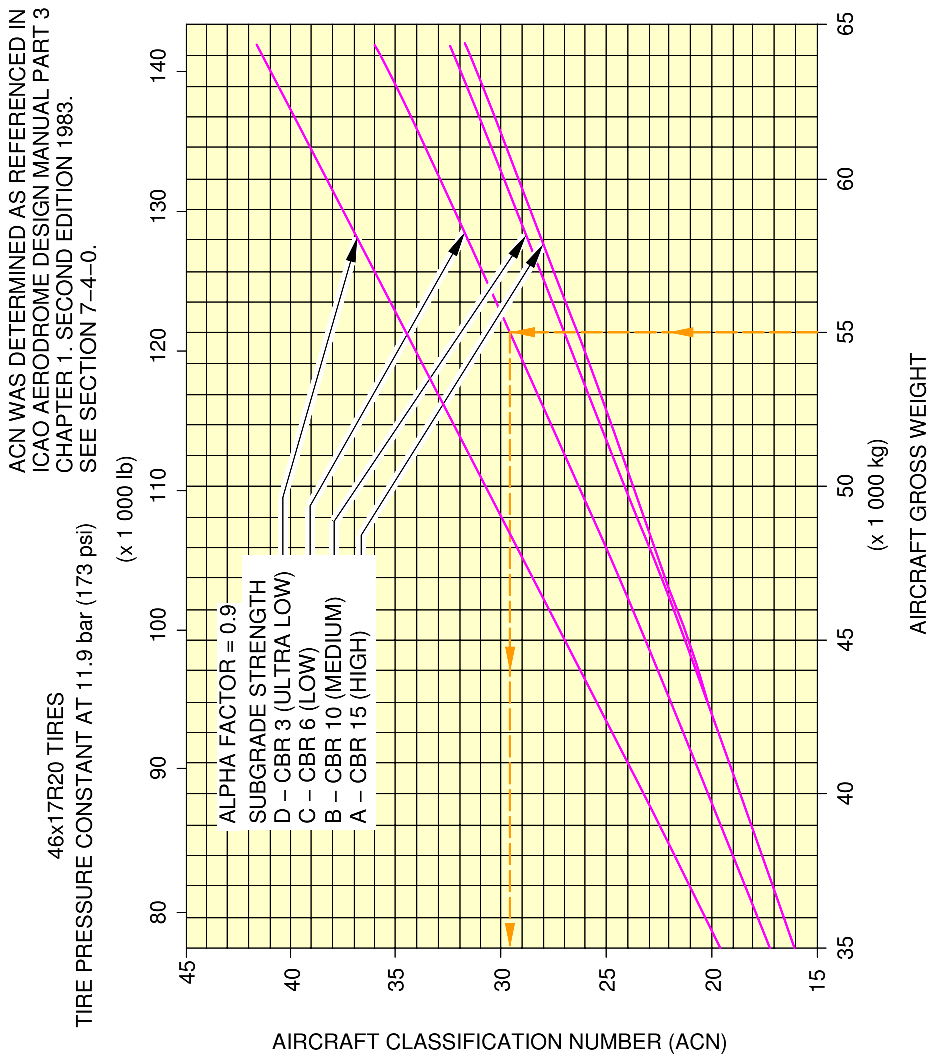
**ON A/C A319neo

WEIGHT VARIANT	ALL UP MASS (kg)	LOAD ON ONE MAIN GEAR LEG (%)	TIRE PRESSURE (MPa)	ACN FOR RIGID PAVEMENT SUBGRADES – MN/m?				ACN FOR FLEXIBLE PAVEMENT SUBGRADES – CBR			
				HIGH 150	MEDIUM 80	LOW 40	ULTRA –LOW 20	HIGH 15	MEDIUM 10	LOW 6	ULTRA –LOW 3
A319NEO WV050	64 400	44.9	1.19	33	36	38	40	31	32	35	41
	41 000	44.9		20	21	22	24	19	19	20	23
A319NEO WV051	64 400	46.3	1.19	35	37	39	41	32	33	36	42
	41 000	46.3		20	22	23	24	19	19	21	24
A319NEO WV052	70 400	46.1	1.29	39	42	44	46	35	36	41	46
	41 000	46.0		21	22	23	25	19	19	21	24
A319NEO WV053	70 400	46.1	1.29	39	42	44	46	35	36	41	46
	41 000	46.0		21	22	23	25	19	19	21	24
A319NEO WV054	75 900	46.0	1.38	44	46	49	51	39	40	45	51
	41 000	45.9		21	23	24	25	19	19	21	24
A319NEO WV055	75 900	45.0	1.38	43	45	47	49	38	39	43	49
	41 000	44.9		21	22	23	24	19	19	20	23

N_AC_070900_1_0090101_01_02

Aircraft Classification Number
ACN Table
FIGURE-7-9-0-991-009-A01

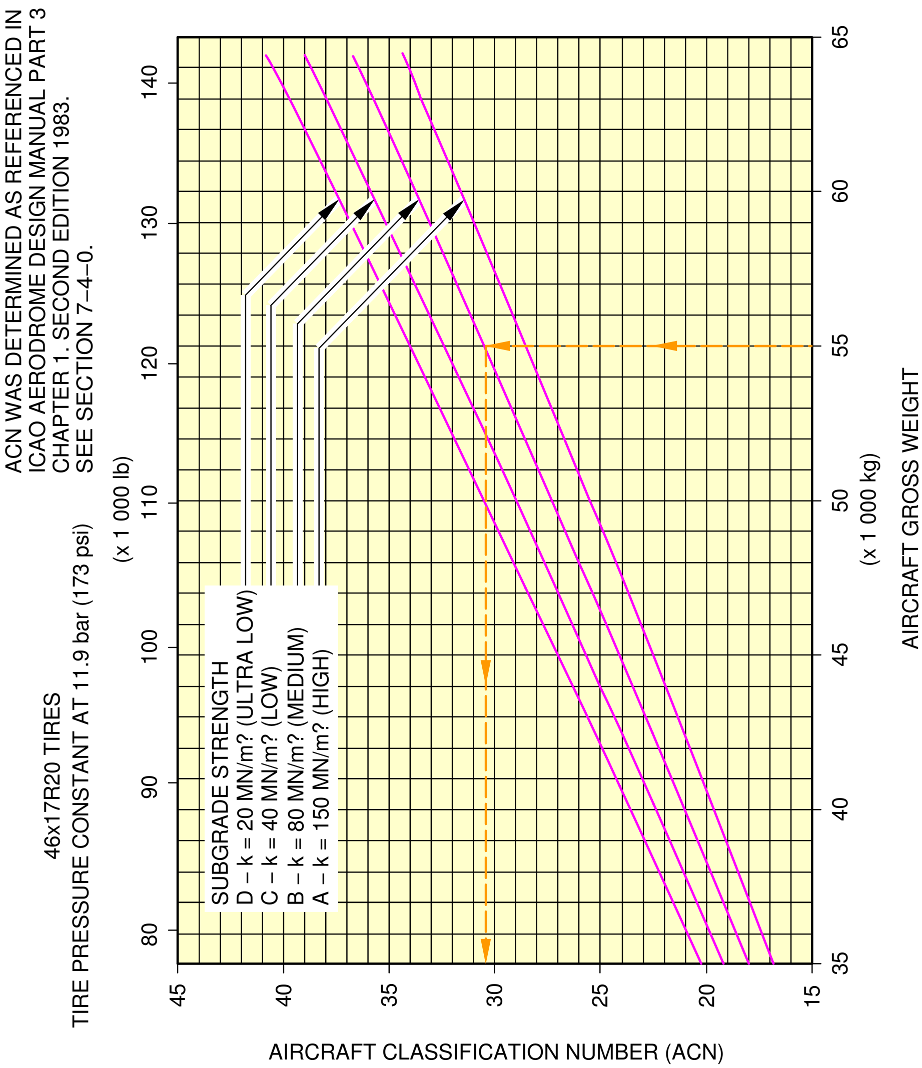
**ON A/C A319neo



N_AC_070900_1_0100101_01_02

Aircraft Classification Number
Flexible Pavement - WV050, MRW 64 400 kg (Sheet 1 of 2)
FIGURE-7-9-0-991-010-A01

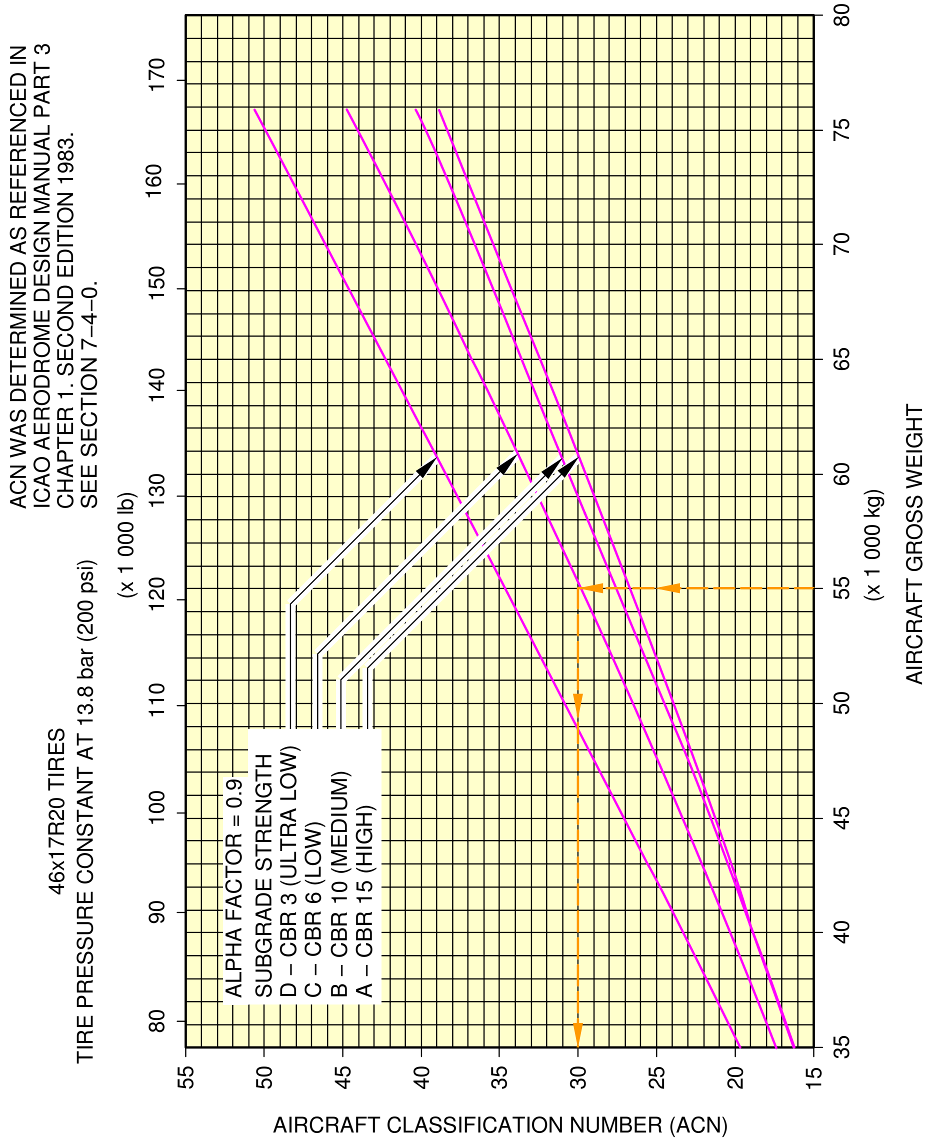
****ON A/C A319neo**



N_AC_070900_1_0100102_01_02

Aircraft Classification Number
Rigid Pavement - WV050, MRW 64 400 kg (Sheet 2 of 2)
FIGURE-7-9-0-991-010-A01

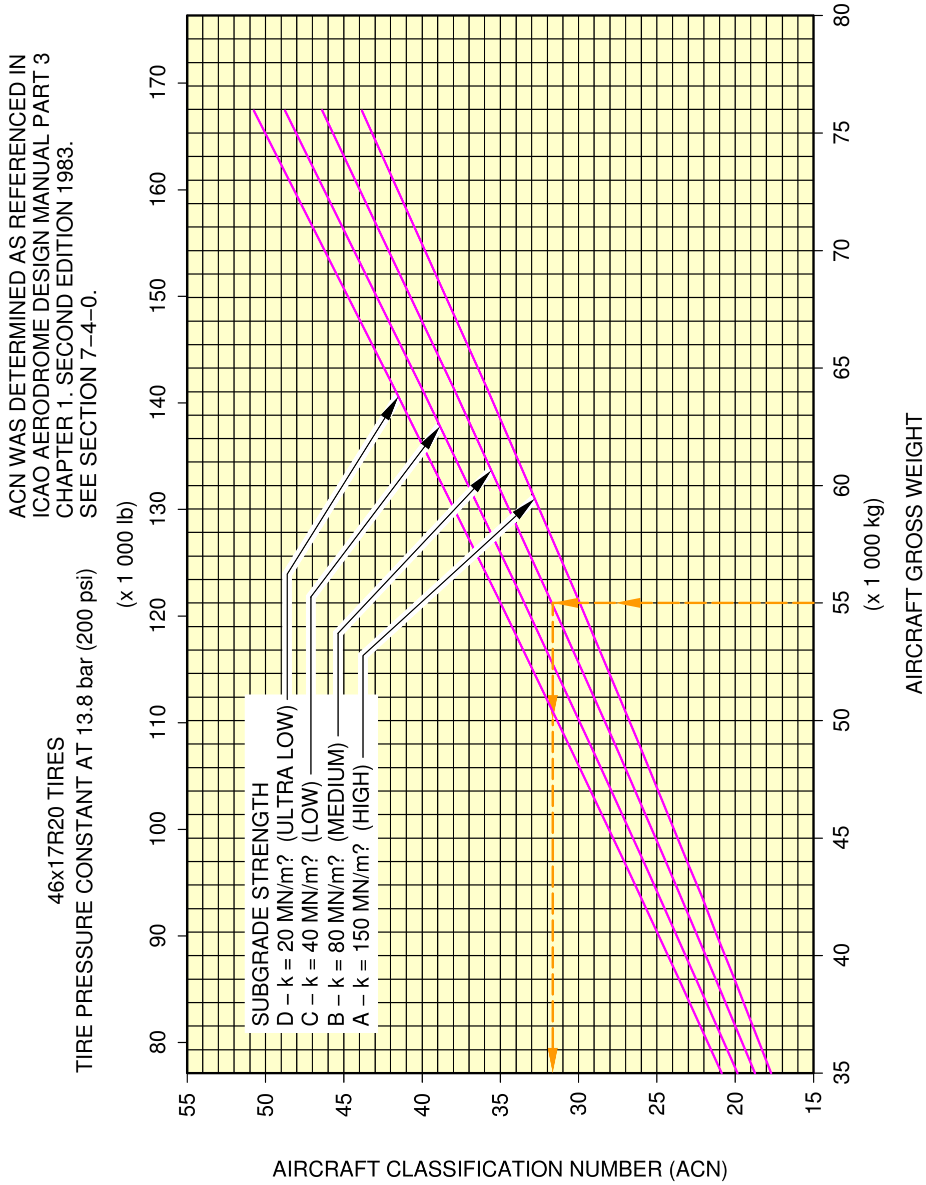
**ON A/C A319neo



N_AC_070900_1_0110101_01_01

Aircraft Classification Number
Flexible Pavement - WV054, MRW 75 900 kg (Sheet 1 of 2)
FIGURE-7-9-0-991-011-A01

****ON A/C A319neo**



N_AC_070900_1_0110102_01_01

Aircraft Classification Number
Rigid Pavement - WV054, MRW 75 900 kg (Sheet 2 of 2)
FIGURE-7-9-0-991-011-A01

SCALED DRAWINGS

8-0-0 SCALED DRAWINGS

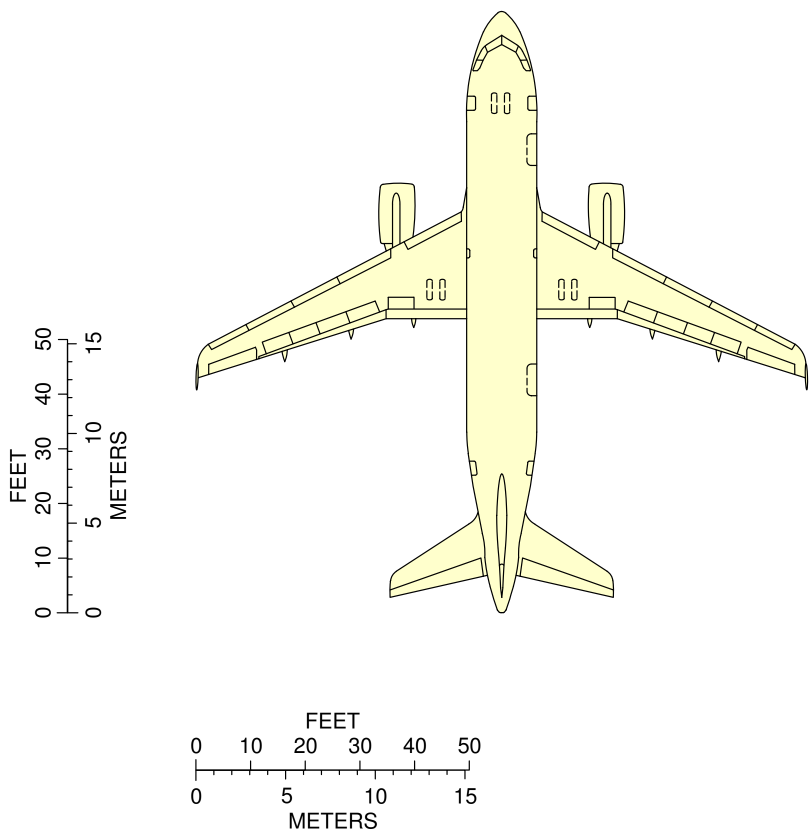
****ON A/C A319-100 A319neo**

Scaled Drawings

1. This section provides the scaled drawings.

   NOTE : When printing this drawing, make sure to adjust for proper scaling.

**ON A/C A319-100

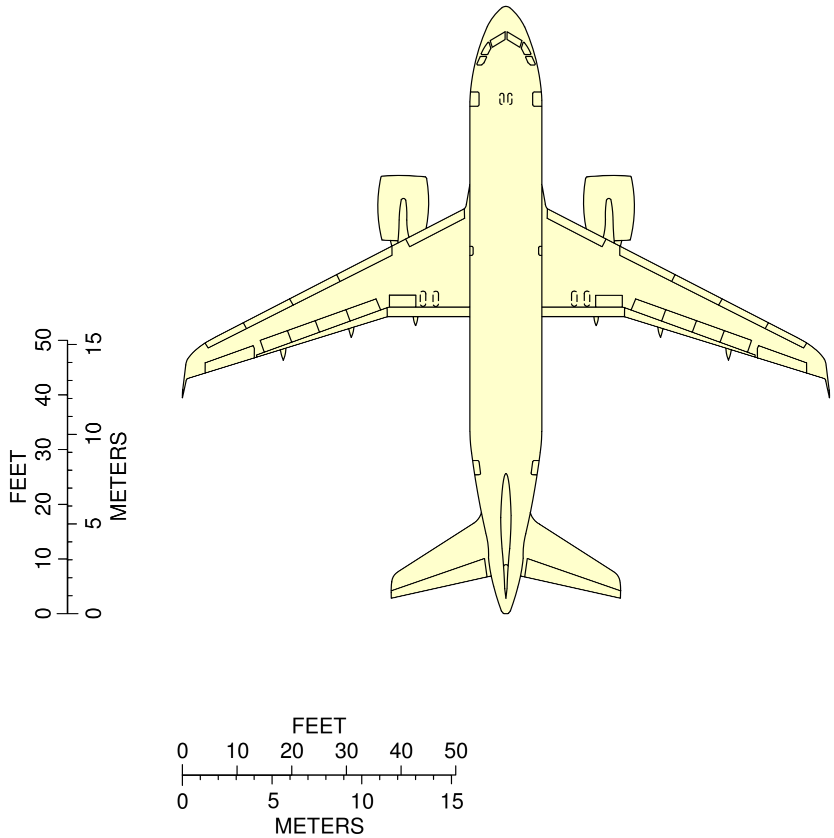


NOTE: WHEN PRINTING THIS DRAWING, MAKE SURE TO ADJUST FOR PROPER SCALING.

N_AC_080000_1_0020101_01_00

Scaled Drawing
FIGURE-8-0-0-991-002-A01

**ON A/C A319neo



NOTE:
WHEN PRINTING THIS DRAWING, MAKE SURE TO ADJUST FOR PROPER SCALING.

N_AC_080000_1_0050101_01_00

Scaled Drawing
FIGURE-8-0-0-991-005-A01

AIRCRAFT RESCUE AND FIRE FIGHTING

10-0-0 AIRCRAFT RESCUE AND FIRE FIGHTING

****ON A/C A319-100 A319neo**

Aircraft Rescue and Fire Fighting

1. Aircraft Rescue and Fire Fighting Charts
   This sections provides data related to aircraft rescue and fire fighting.
   The figures contained in this section are the figures that are in the Aircraft Rescue and Fire Fighting Charts poster available for download on AIRBUSWorld and the Airbus website.

**ON A/C A319-100 A319neo

AIRBUS
A319/A319neo
Aircraft Rescue and Fire Fighting Chart
ARFC

NOTE:
THIS CHART GIVES THE GENERAL LAYOUT OF THE A319 STANDARD VERSION.
THE NUMBER AND ARRANGEMENT OF THE INDIVIDUAL ITEMS VARY WITH THE CUSTOMERS.
FIGURES CONTAINED IN THIS POSTER ARE AVAILABLE SEPARATELY IN THE CHAPTER 10 OF THE
"AIRCRAFT CHARACTERISTICS – AIRPORT AND MAINTENANCE PLANNING" DOCUMENT.

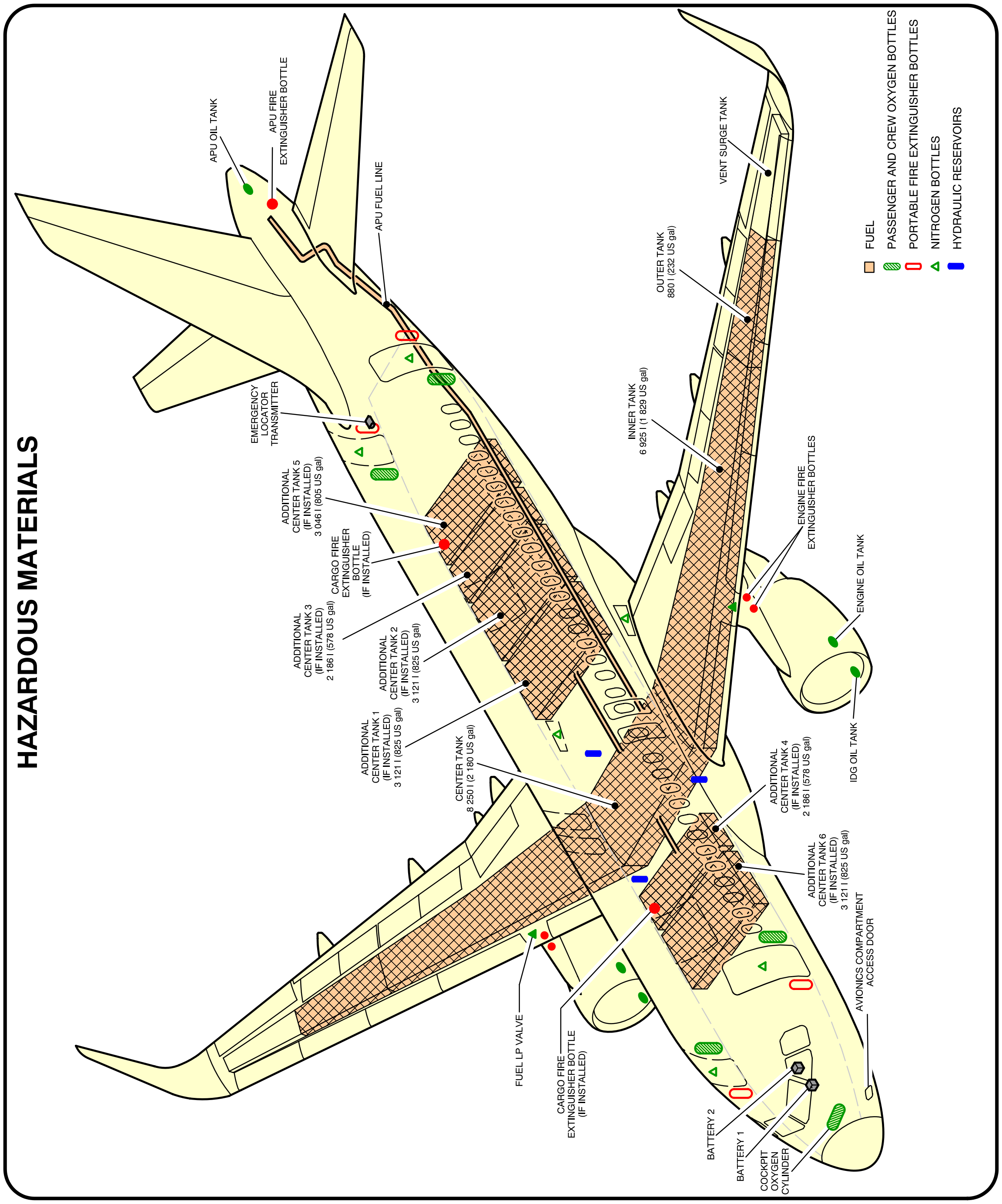
ISSUED BY:
AIRBUS S.A.S
CUSTOMER SERVICES
TECHNICAL DATA SUPPORT AND SERVICES
31707 BLAGNAC CEDEX
FRANCE

REVISION DATE: NOV 2019
REFERENCE : N_RF_000000_1_A319000
SHEET 1/2

N_AC_100000_1_0170101_01_04

Front Page
FIGURE-10-0-0-991-017-A01

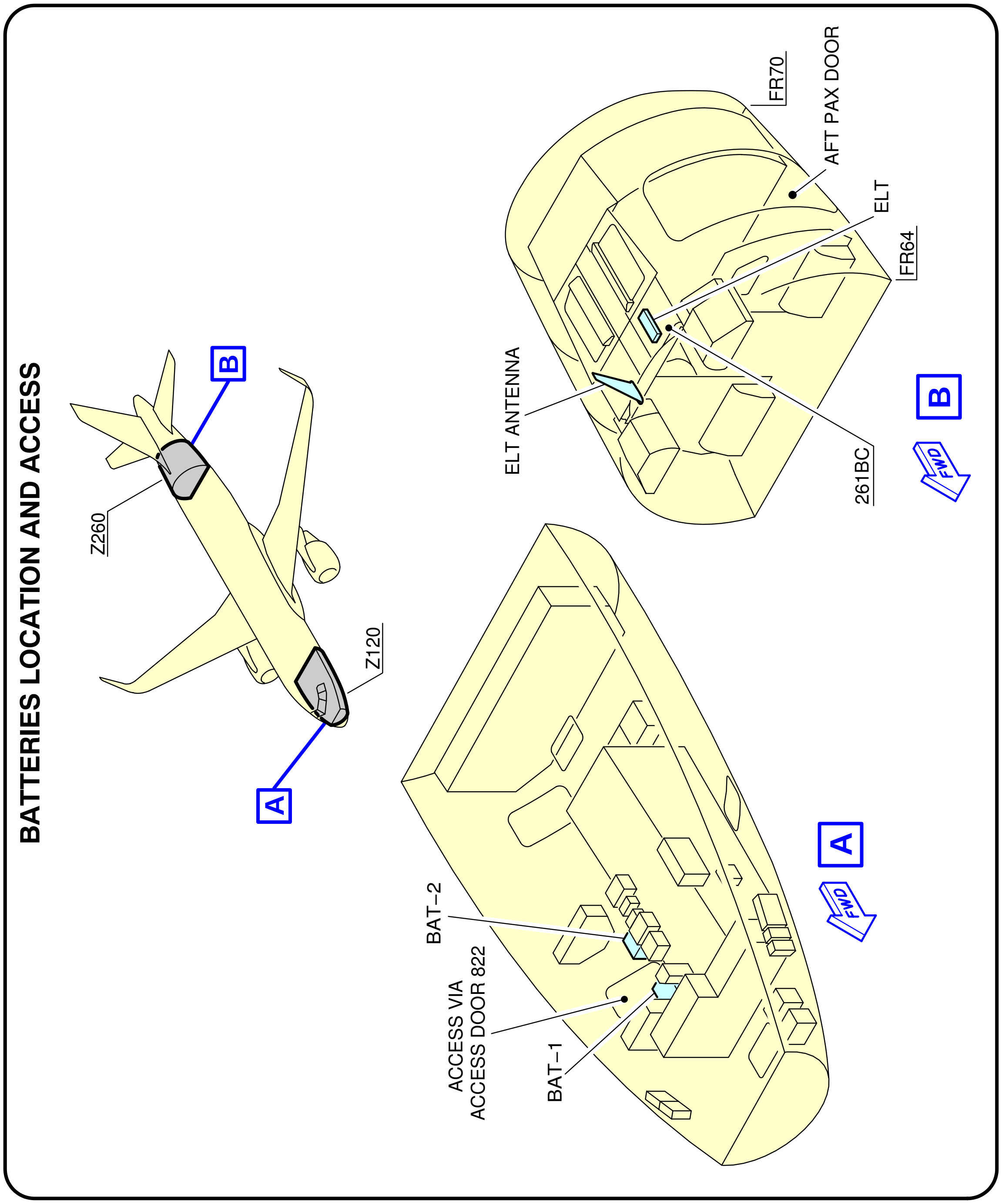
**ON A/C A319-100 A319neo



N_AC_100000_1_0180101_01_02

Highly Flammable and Hazardous Materials and Components
FIGURE-10-0-0-991-018-A01

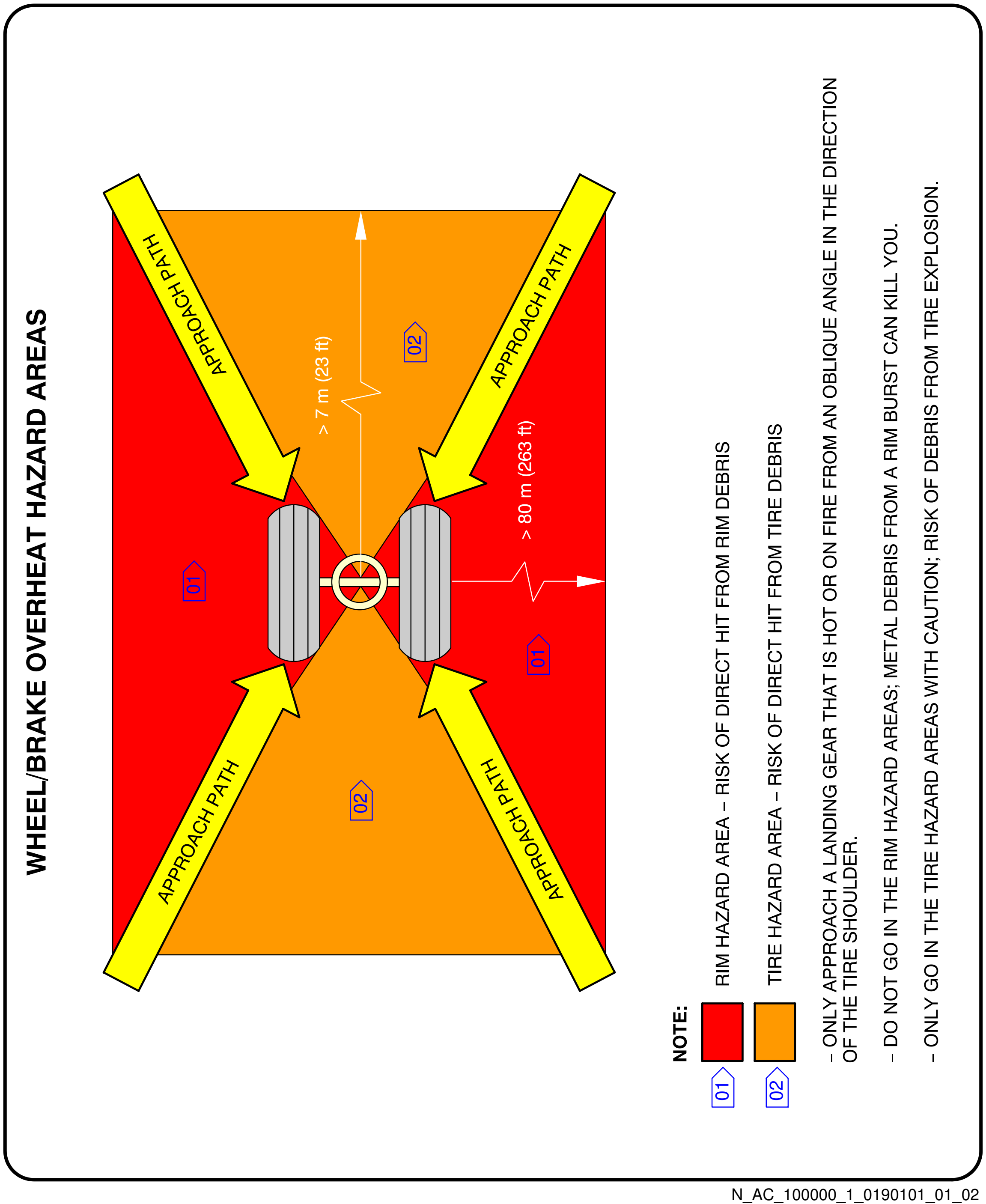
**ON A/C A319-100 A319neo



N_AC_100000_1_0560101_01_02

Batteries Location and Access
FIGURE-10-0-0-991-056-A01

**ON A/C A319-100 A319neo



Wheel/Brake Overheat
Wheel Safety Area (Sheet 1 of 2)
FIGURE-10-0-0-991-019-A01

****ON A/C A319-100 A319neo**

BRAKE OVERHEAT AND LANDING GEAR FIRE

WARNING: BE VERY CAREFUL WHEN THERE IS A BRAKE OVERHEAT AND/OR LANDING GEAR FIRE.
THERE IS A RISK OF TIRE EXPLOSION AND/OR WHEEL RIM BURST THAT CAN CAUSE DEATH OR INJURY.
MAKE SURE THAT YOU OBEY THE SAFETY PRECAUTIONS THAT FOLLOW.

THE PROCEDURES THAT FOLLOW GIVE RECOMMENDATIONS AND SAFETY PRECAUTIONS FOR THE COOLING OF VERY HOT BRAKES AFTER ABNORMAL OPERATIONS SUCH AS A REJECTED TAKE–OFF OR OVERWEIGHT LANDING. FOR THE COOLING OF BRAKES AFTER NORMAL TAXI–IN, REFER TO YOUR COMPANY PROCEDURES.

BRAKE OVERHEAT:

1 – GET THE BRAKE TEMPERATURE FROM THE COCKPIT OR USE A REMOTE MEASUREMENT TECHNIQUE.
THE REAL TEMPERATURE OF THE BRAKES CAN BE MUCH HIGHER THAN THE TEMPERATURE SHOWN ON THE ECAM.
NOTE: AT HIGH TEMPERATURES (>800°C), THERE IS A RISK OF WARPING OF THE LANDING GEAR STRUTS AND AXLES.

2 – APPROACH THE LANDING GEAR WITH EXTREME CAUTION AND FROM AN OBLIQUE ANGLE IN THE DIRECTION OF THE TIRE SHOULDER. DO NOT GO INTO THE RIM HAZARD AREA AND ONLY GO IN THE TIRE HAZARD AREA WITH CAUTION. (REF FIG. WHEEL/BRAKE OVERHEAT HAZARD AREAS). IF POSSIBLE, STAY IN A VEHICLE.

3 – LOOK AT THE CONDITION OF THE TIRES:
IF THE TIRES ARE STILL INFLATED (FUSE PLUGS NOT MELTED), THERE IS A RISK OF TIRE EXPLOSION AND RIM BURST.
DO NOT USE COOLING FANS BECAUSE THEY CAN PREVENT OPERATION OF THE FUSE PLUGS.

4 – USE WATER MIST TO DECREASE THE TEMPERATURE OF THE COMPLETE WHEEL AND BRAKE ASSEMBLY.
USE A TECHNIQUE THAT PREVENTS SUDDEN COOLING. SUDDEN COOLING CAN CAUSE WHEEL CRACKS OR RIM BURST.
DO NOT APPLY WATER, FOAM OR CO2. THESE COOLING AGENTS (AND ESPECIALLY CO2, WHICH HAS A VERY STRONG COOLING EFFECT) CAN CAUSE THERMAL SHOCKS AND BURST OF HOT PARTS.

LANDING GEAR FIRE:

CAUTION: AIRBUS RECOMMENDS THAT YOU DO NOT USE DRY POWDERS OR DRY CHEMICALS ON HOT BRAKES OR LANDING GEAR FIRES. THESE AGENTS CAN CHANGE INTO SOLID OR ENAMELED DEPOSITS. THEY CAN DECREASE THE SPEED OF HEAT DISSIPATION WITH A POSSIBLE RISK OF PERMANENT STRUCTURAL DAMAGE TO THE BRAKES, WHEELS OR WHEEL AXLES.

1 – IMMEDIATELY STOP THE FIRE:

A) APPROACH THE LANDING GEAR WITH EXTREME CAUTION AND FROM AN OBLIQUE ANGLE IN THE DIRECTION OF THE TIRE SHOULDER. DO NOT GO INTO THE RIM HAZARD AREA AND ONLY GO IN THE TIRE HAZARD AREA WITH CAUTION. IF POSSIBLE, STAY IN A VEHICLE.

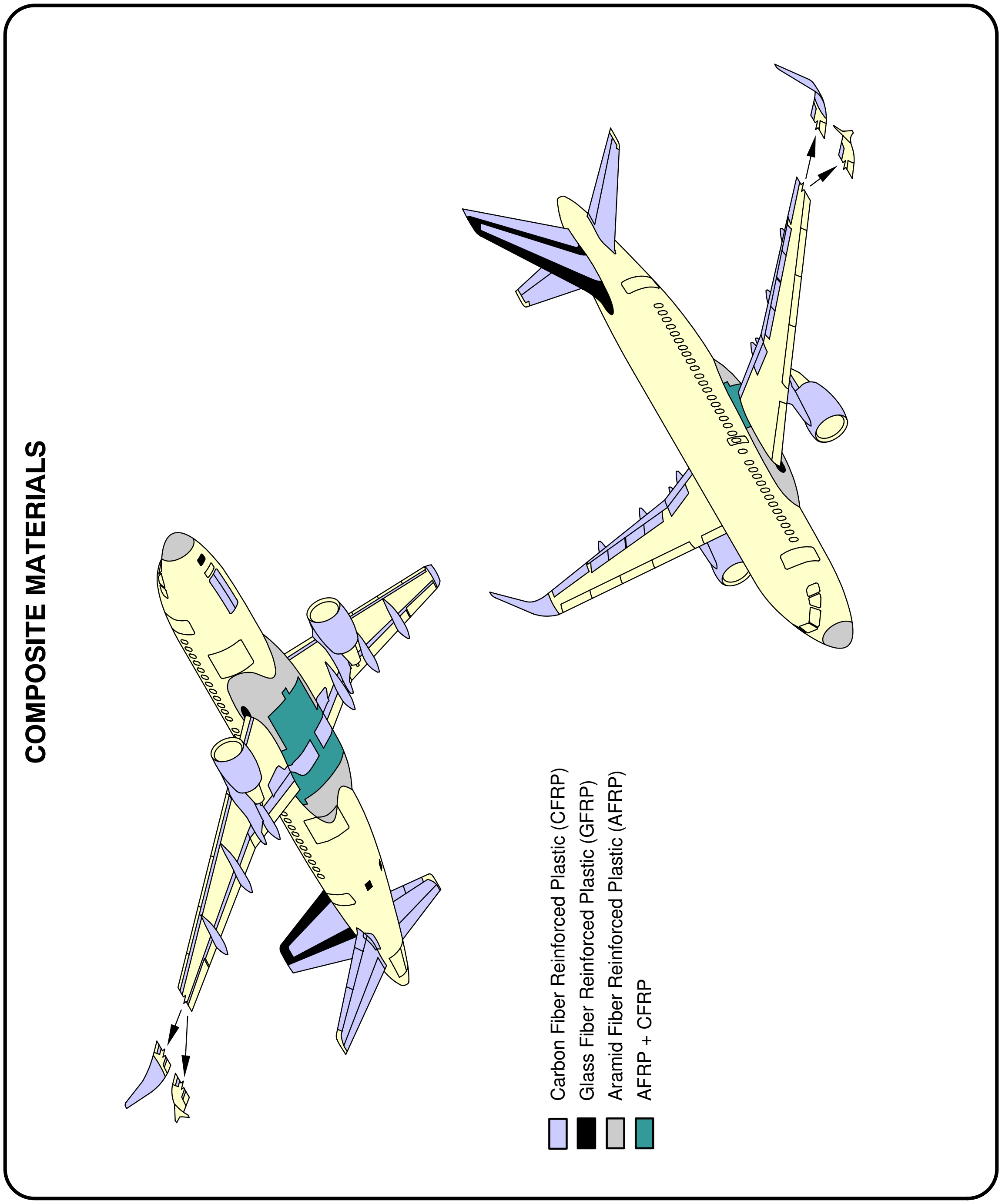
B) USE LARGE AMOUNTS OF WATER, WATER MIST; IF THE FUEL TANKS ARE AT RISK, USE FOAM.
USE A TECHNIQUE THAT PREVENTS SUDDEN COOLING. SUDDEN COOLING CAN CAUSE WHEEL CRACKS OR RIM BURST.

C) DO NOT USE FANS OR BLOWERS.

N_AC_100000_1_0190102_01_00

Wheel/Brake Overheat
Recommendations (Sheet 2 of 2)
FIGURE-10-0-0-991-019-A01

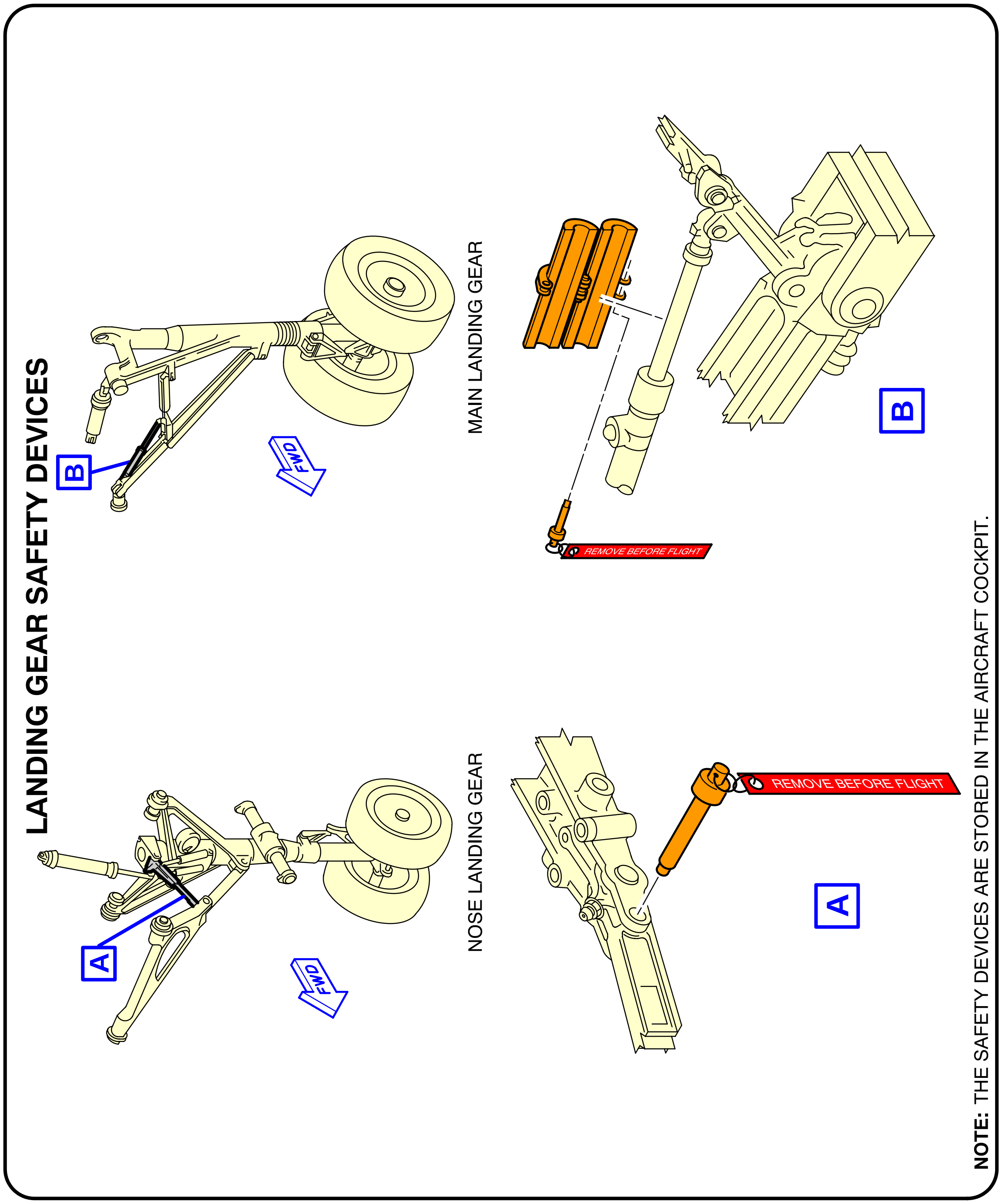
****ON A/C A319-100 A319neo**



N_AC_100000_1_0200101_01_00

Composite Materials
FIGURE-10-0-0-991-020-A01

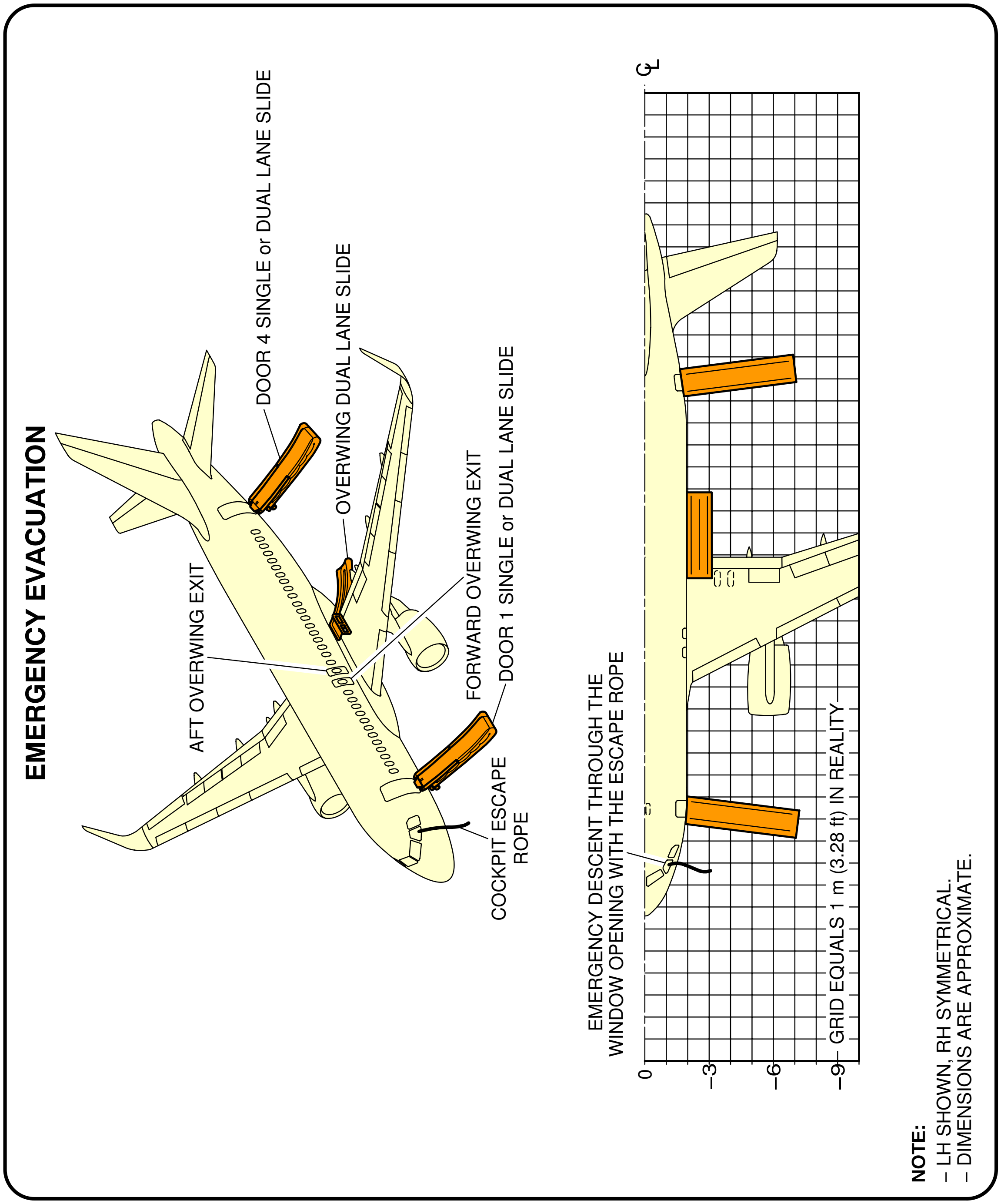
**ON A/C A319-100 A319neo



N_AC_100000_1_0210101_01_01

L/G Ground Lock Safety Devices
FIGURE-10-0-0-991-021-A01

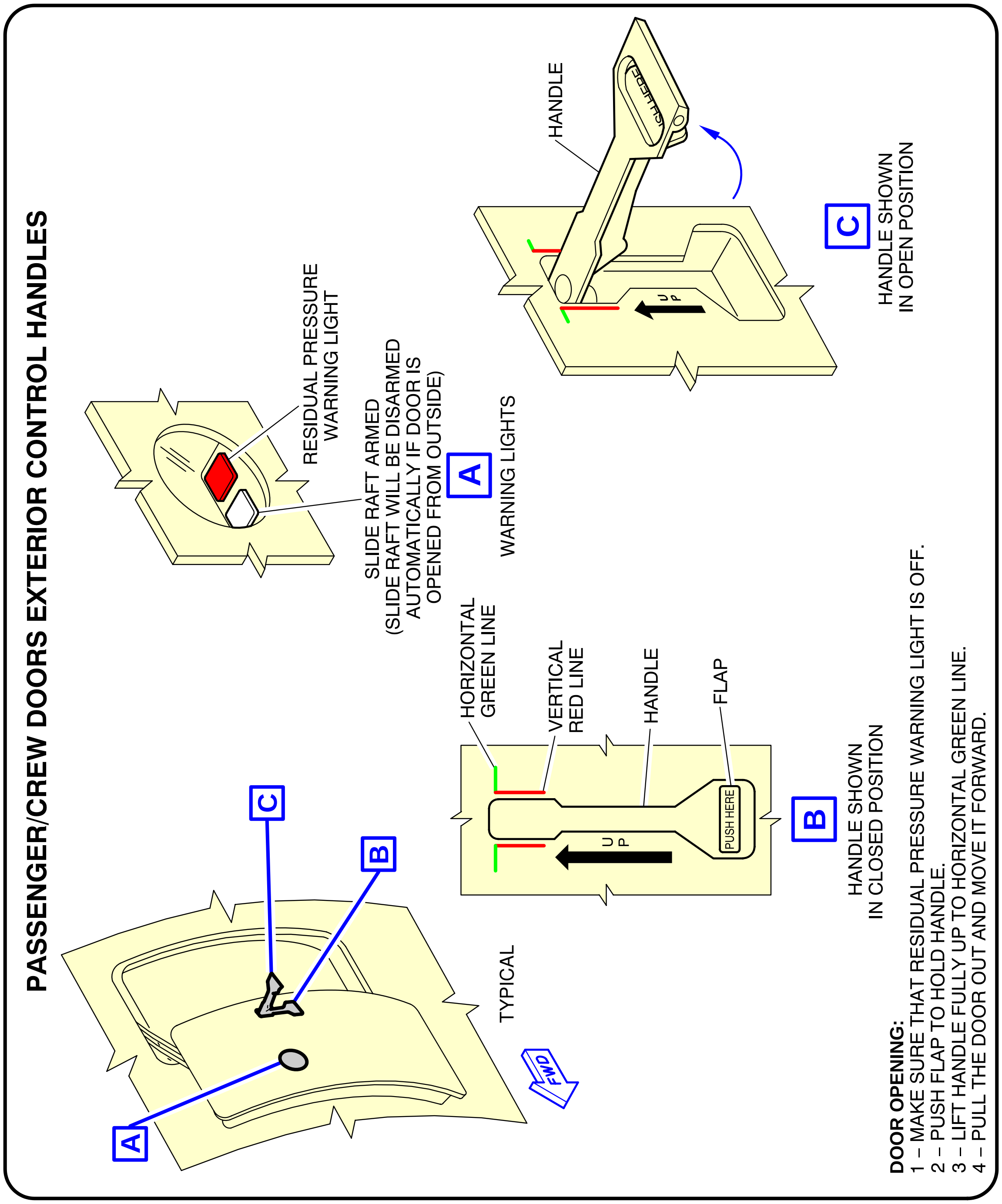
****ON A/C A319-100 A319neo**



N_AC_100000_1_0220101_01_04

Emergency Evacuation Devices
FIGURE-10-0-0-991-022-A01

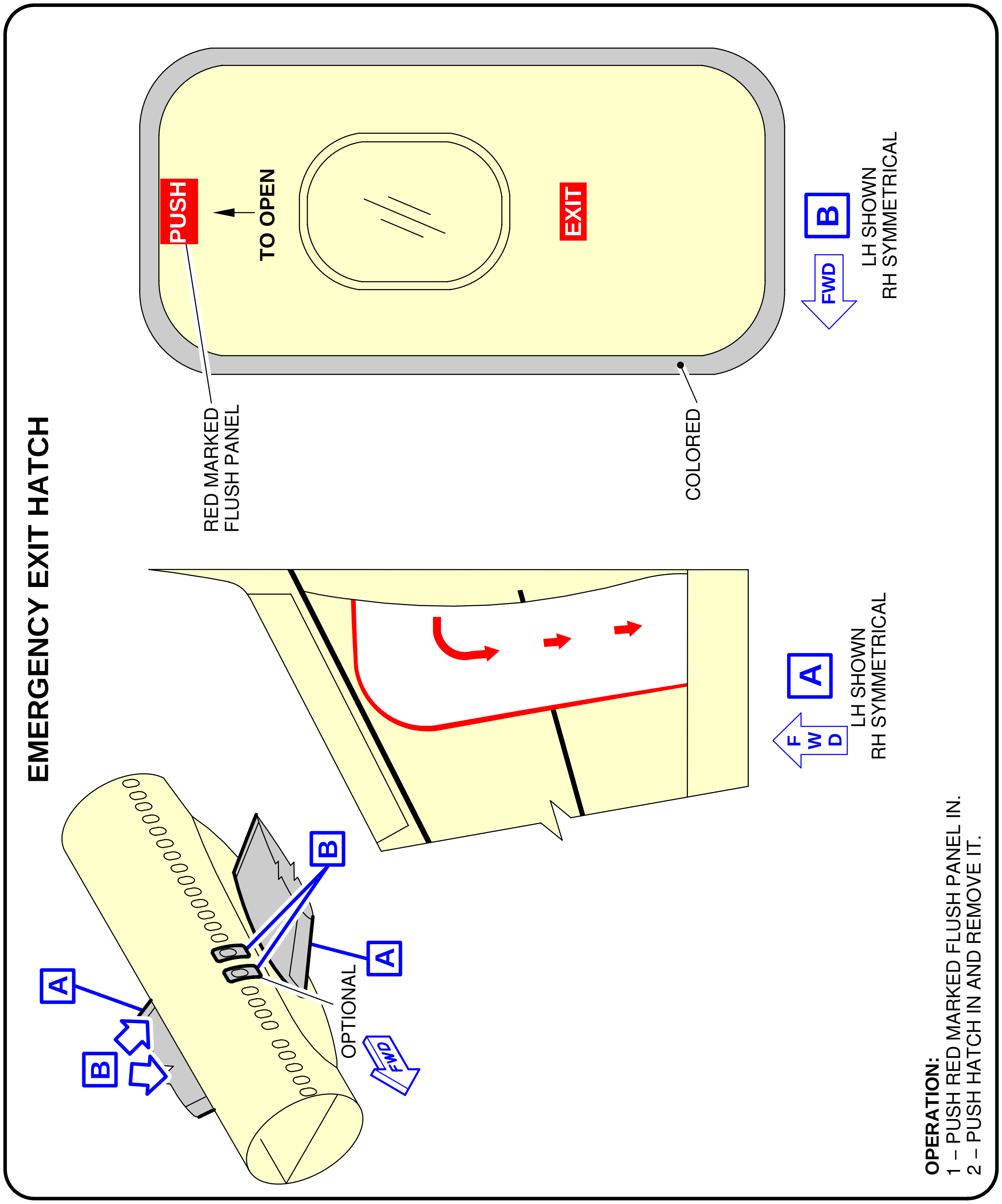
**ON A/C A319-100 A319neo



N_AC_100000_1_0230101_01_01

Pax/Crew Doors
FIGURE-10-0-0-991-023-A01

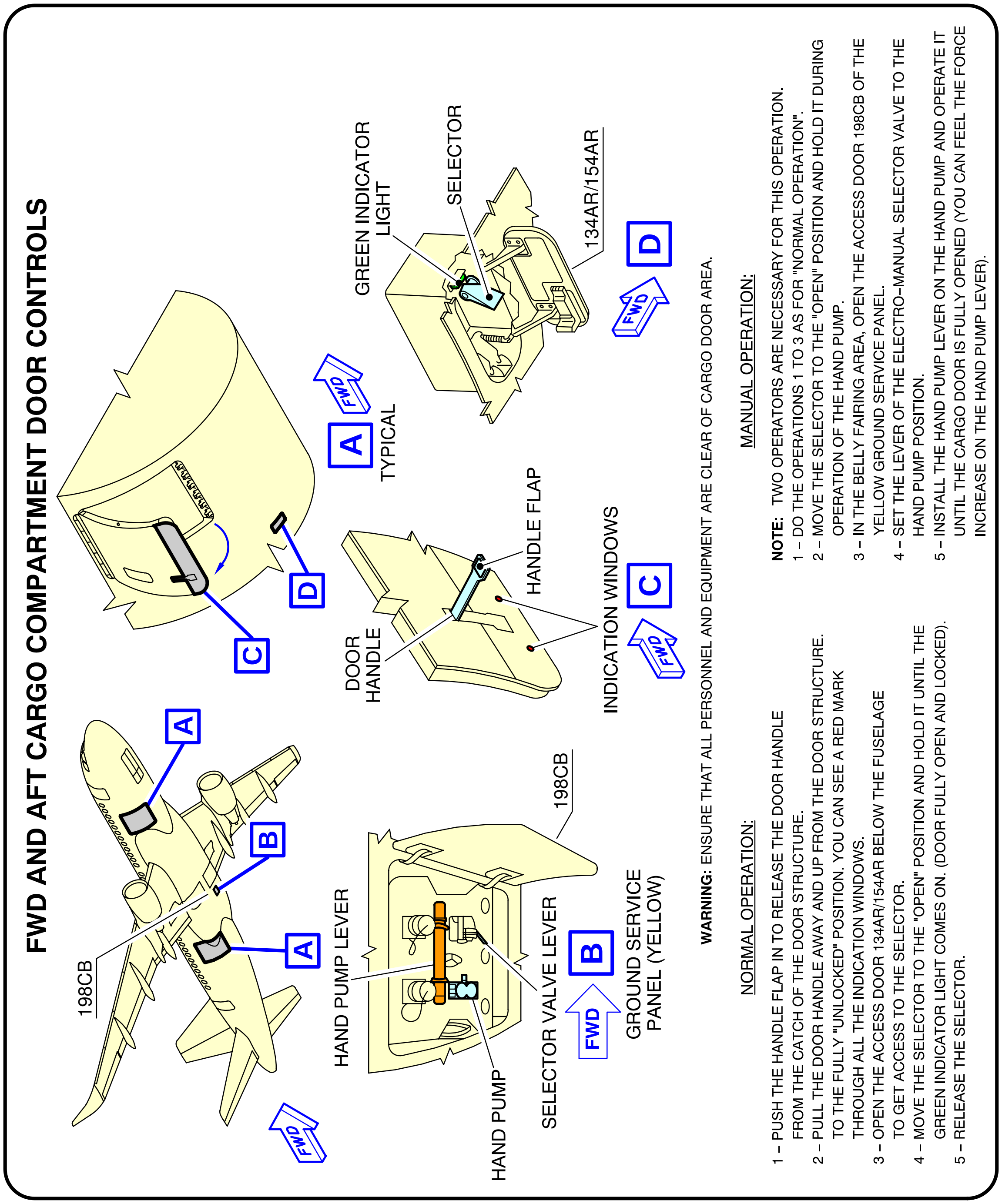
****ON A/C A319-100 A319neo**



N_AC_100000_1_0240101_01_01

Emergency Exit Hatch
FIGURE-10-0-0-991-024-A01

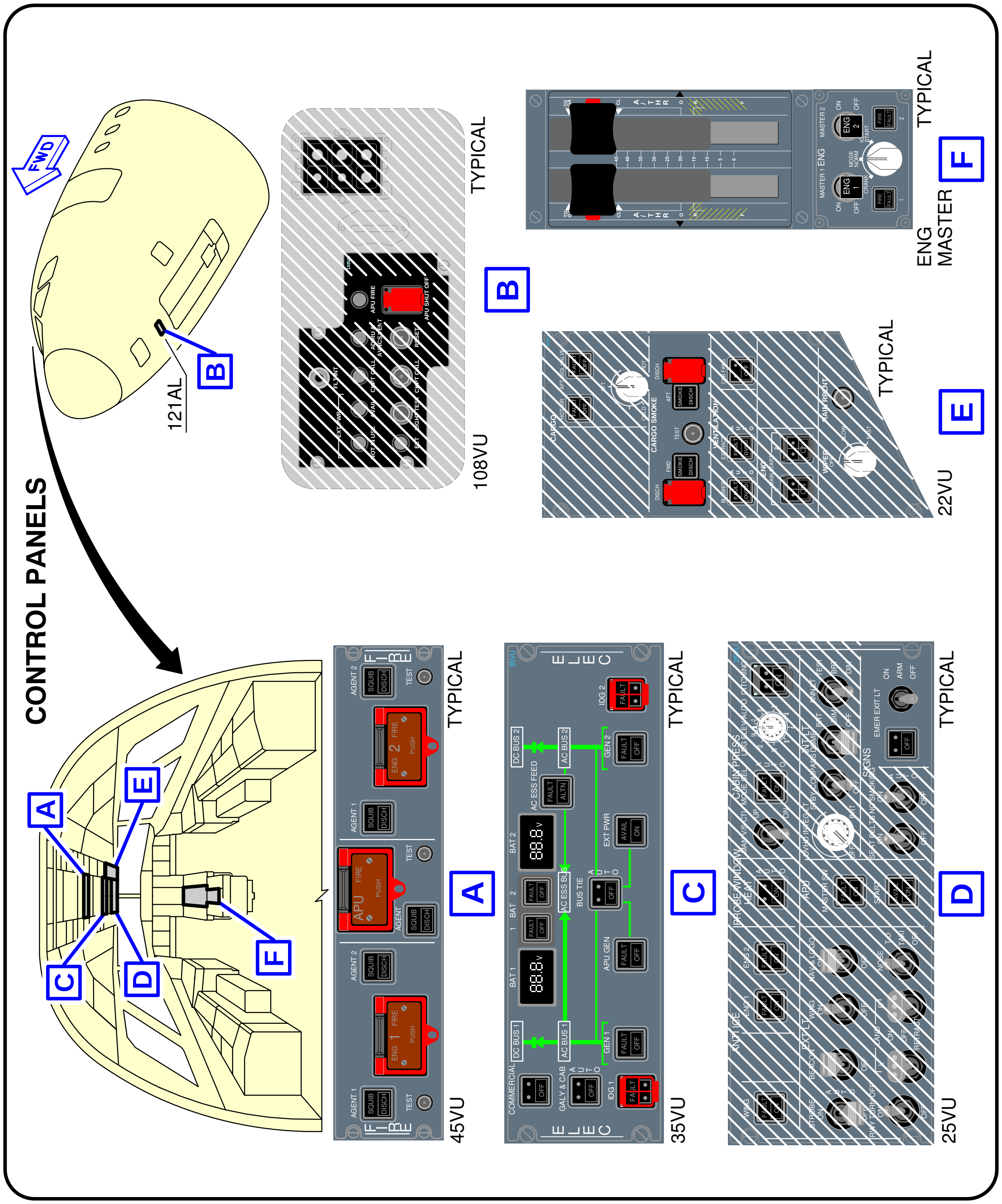
****ON A/C A319-100 A319neo**



N_AC_100000_1_0250101_01_01

FWD and AFT Lower Deck Cargo Doors
FIGURE-10-0-0-991-025-A01

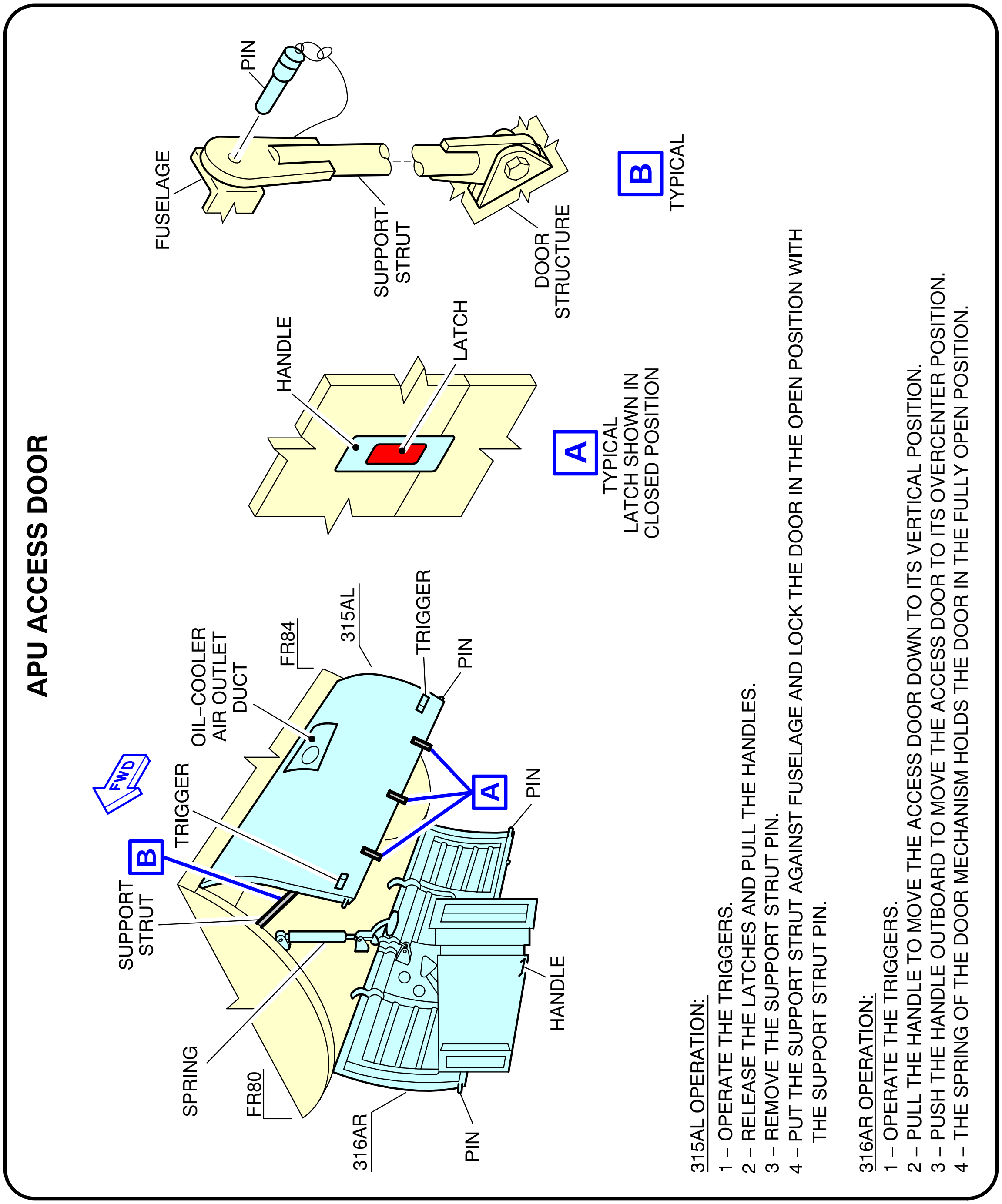
**ON A/C A319-100 A319neo



N_AC_100000_1_0260101_01_01

Control Panels
FIGURE-10-0-0-991-026-A01

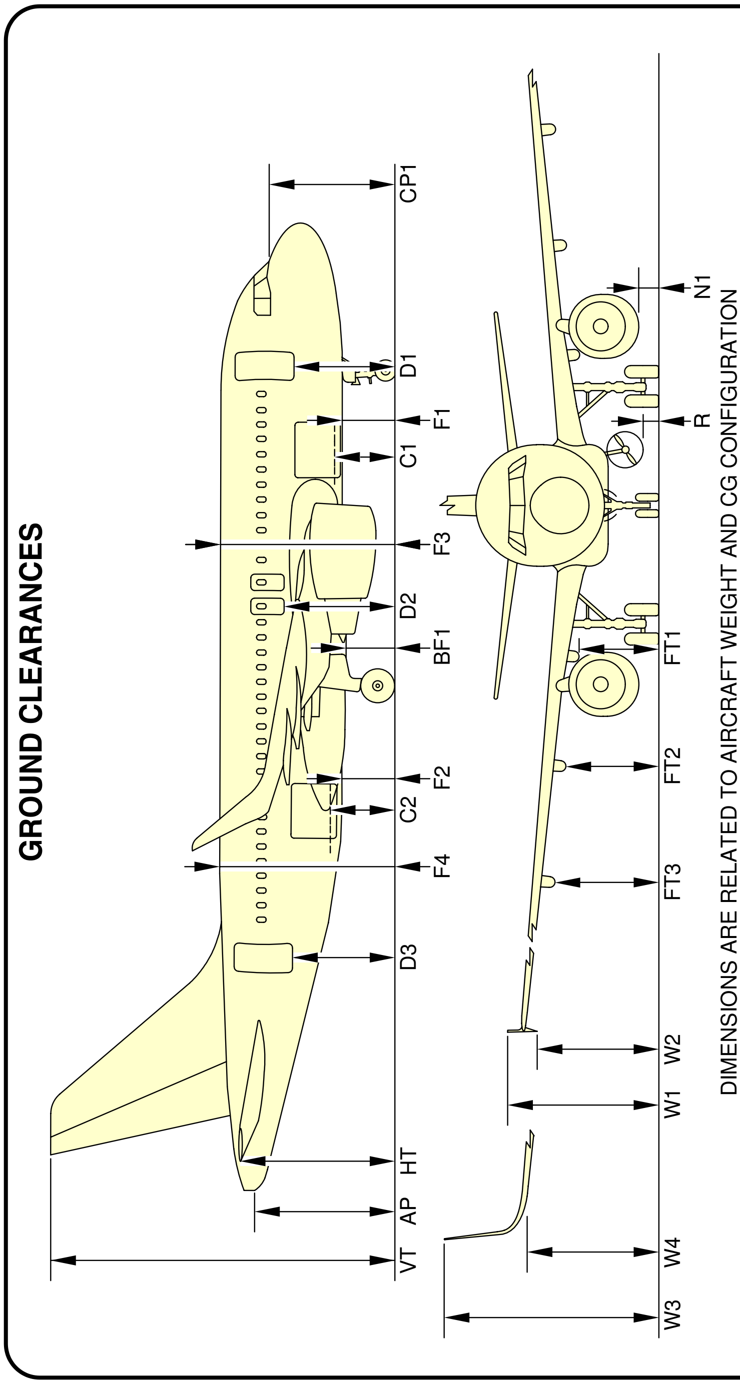
****ON A/C A319-100 A319neo**



N_AC_100000_1_0270101_01_01

APU Access Door
FIGURE-10-0-0-991-027-A01

**ON A/C A319-100 A319neo



DIMENSIONS ARE RELATED TO AIRCRAFT WEIGHT AND CG CONFIGURATION

A/C CONFIGURATION		40 000 kg (88 185 lb) AFT CG (28%) m	40 000 kg (88 185 lb) AFT CG (28%) ft
DOORS	D1	3.47	11.38
	D2	3.97	13.02
	D3	3.71	12.17
	C1	2.09	6.86
	C2	2.22	7.28

A/C CONFIGURATION		40 000 kg (88 185 lb) AFT CG (28%) m	40 000 kg (88 185 lb) AFT CG (28%) ft
FUSELAGE	F1	1.83	6.00
	F2	1.94	6.36
	F3	5.97	19.59
	F4	6.09	19.98
	BF1	1.73	5.68
	CP1	4.26	13.98
ENGINE/ NACELLE	N1 (CFM56)	0.67	2.20
	N1 (IAE V2500)	0.85	2.79
	N1 (CFM LEAP-1A)	0.56	1.84
	N1 (PW 1100G)	0.56	1.84

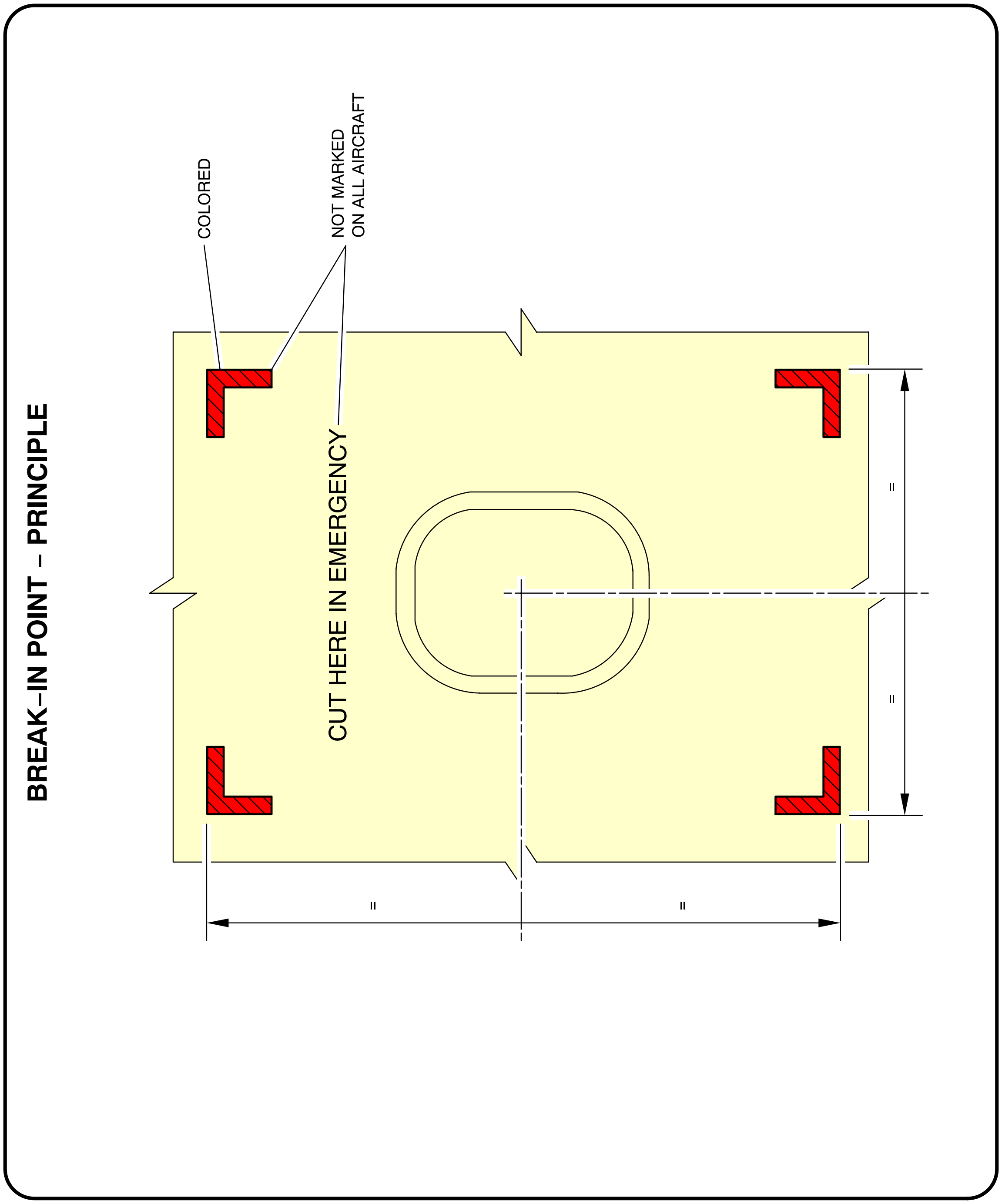
A/C CONFIGURATION		40 000 kg (88 185 lb) AFT CG (28%) m	40 000 kg (88 185 lb) AFT CG (28%) ft
WINGS	FT1	2.73	8.96
	FT2	3.16	10.37
	FT3	3.50	11.48
	W1	4.87	15.98
	W2	3.90	12.80
	W3	6.81	22.34
	W4	4.17	13.68
	R	0.64	2.10
TAILPLANE	HT	5.58	18.31
	AP	4.87	15.98
	VT	12.11	39.73

NOTE:
PASSENGER AND CARGO DOOR GROUND CLEARANCES ARE MEASURED FROM THE CENTER OF THE DOOR SILL AND FROM FLOOR LEVEL.

N_AC_100000_1_0280101_01_02

Aircraft Ground Clearances
FIGURE-10-0-0-991-028-A01

**ON A/C A319-100 A319neo



N_AC_100000_1_0290101_01_01

Structural Break-in Points
FIGURE-10-0-0-991-029-A01