

A380

Facility Planning Manual Maintenance Facility Planning MFP

PRELIMINARY ISSUE

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Issue : Jan 04

MAINTENANCE FACILITY PLANNING

HIGHLIGHTS

PRELIMINARY ISSUE - JAN 30/04

Description of technical changes :

SECTION	PAGE(S)	REASON FOR CHANGE
LEP	P1 to P3	Revised to reflect this revision indicating new, revised and/or deleted pages.
ТОС	P1 to P3	Revised to reflect this revision.
0–1	P1	Revised paragraph "Correspondence"
0–2	P1 to P2	Revised pages to reflect this revision
0-3	P1 to P2	Revised pages to reflect this revision
1–0	P1	Revised pages to reflect this revision
1–6	P1 to P3	New section "Wing Ribs/Stations"
1–9	P2 to P3	Updated figures "Ground Clearances"
1–10	P11 to P12	
	P14 to P16	Added complementary dimensions on figures "Door clearances – cargo compartment doors".
1–16	P1 to P10	New section "Wing Profile"
2–8	Р3	Revised ″Turning Radii tables″ : updated values
3–0	P1	Revised pages to reflect this revision
3–14	P1 to P5	New section "Power Plant Handling" – RB 211 Trent Engine.
3–15	P1 to P8	New section "Component Weights"
3–16	P1 to P5	New section "Component handling"
3–18	P1	New section "Landing Gear Maintenance Pits"
4-0	P1	Revised pages to reflect this revision
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MAINTENANCE FACILITY PLANNING

INTRODUCTION

1. PURPOSE

This A380 MAINTENANCE FACILITY PLANNING (MFP) manual is issued for the A380-800 and A380-800F series aircraft to provide preliminary data needed by airlines for maintenance facilities planning.

The A380-800 is a subsonic, very long range, very high capacity, civil transport aircraft.

There are two models in the A380-800 series :

- A380-841 model equipped with Rolls-Royce Trent 970 engine,

- A380-861 model equipped with Engine Alliance GP 7270 engine.

The A380-800F is a subsonic, very long range, civil freighter aircraft.

There are two models in the A380-800F series :

- A380-843F model equipped with Rolls-Royce Trent 977 engine,
- A380-863F model equipped with Engine Alliance GP 7277 engine.

In this manual, effectivity is managed as follows :

- by default, the data is effective for all A380-800 and A380-800F models,
- "A380-800/800F models" indicates that the related data or page is effective for all A380-800 and A380-800F models,
- "A380-800 models" restricts the effectivity of the related data or page to the A380-841 and A380-861 models,
- "A380-800F models" restricts the effectivity of the related data or page to the A380-843F and A380-863F models,
- the mention of a specific model (e.g. A380-841 model, A380-863F model, etc.) restricts the effectivity of the related data or page to that specific model.

The data contained in this manual is preliminary data and may be subject to change.

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MAINTENANCE FACILITY PLANNING

3. CONTENTS

This manual comprises 5 sections :

Section 0 : INTRODUCTION

Section 1 : GENERAL INFORMATION

This section contains general dimensional and other basic data.

It covers :

- aircraft dimensions,
- zoning, fuselage frame and wing stations,
- cross-sections and profile for fuselage, wings and tail,
- ground clearances and travel limits of movable parts,
- aircraft center of gravity limits and aircraft attitude.

Section 2 : TERMINAL AND RAMP

This section contains the ground equipment required for the aircraft servicing at turn-round stations.

It covers :

- suggested servicing arrangement around the aircraft,
- estimated servicing times for turn-round,
- ground service connections and locations with their characteristics,
- cargo compartment loading and unloading,
- ground maneuvering capabilities and characteristics.

Section 3 : LINE MAINTENANCE AND HANGAR

This section outlines the technical data and requirements related to maintenance functions, regardless of whether these would be performed inside or outside the hangar or on the ramp.

It includes :
 description of the main aircraft systems,
 the aircraft jacking, leveling and the landing gear lifting,
 the main removable components weight and handling,
 the suggested hangar arrangement with the corresponding workstands.

Section 4 : COMPONENT REPAIR/OVERHAUL AND FUNCTIONAL TEST

This section contains the data and requirements relative to aircraft components repair/overhaul and functional testing.

Section 5 : VENDORS LIST

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MAINTENANCE FACILITY PLANNING

GLOSSARY

1.

List of Ab	breviations
A/C	Aircraft
APU	Auxiliary Power Unit
ATA	Air Transport Association of America
BLG	Body Landing Gear
CAS	Calibrated Air Speed
CG	Center of Gravity
C/L	Center Line
FAA	Federal Aviation Administration
FDL	Fuselage Datum Line
FR	Frame
FSTE	Full Size Trolley Equivalent
FWD	Forward
GPU	Ground Power Unit
GSE	Ground Support Equipment
IERA	Instrument, Electric, Radio and navigation, Avionic
ISA	International Standard Atmosphere
L	Left
LPS	Last Pax Seating
MAC	Mean Aerodynamic Chord
MAX	Maximum
MIN	Minimum Mavimum Daaian Landing Unisht
MLW	Maximum Design Landing Weight Maximum Design Dome Weight
MRW MTOW	Maximum Design Ramp Weight Maximum Design Take-Off Weight
MTW	Maximum Design Taxi Weight
MZFW	Maximum Design Zero Fuel Weight
NDT	Non-Destructive Test
NLG	Nose Landing Gear
OAT	Outside Air Temperature
OWE	Operating Weight Empty
PAX	Passenger
PB/D	Passenger Boarding/Deboarding
R	Right
RC	Reference Chord
SLS	Sea Level Static condition
STA	Station
TBD	To Be Determined
TBIL	To Be Issued Later
ULD	Unit Load Device
US	United States
VF	Variable Frequency
Vref	Landing reference speed
WLG	Wing Landing Gear

MAINTENANCE FACILITY PLANNING

2. Units of Measurement

o	degree (angle)
%	percent
°C	degree Celsius
°F	degree Fahrenheit
bar	bar
cm	centimeter
deg	degree (angle)
ft	foot
ft/s	foot per second
ft/s²	foot per second squared
ft²	square foot
ft ³	cubic foot
in	inch
kg	kilogram
kg/l	kilogram per liter
km/h	kilometer per hour
kt	knot
kVA	kiloVolt Ampere
l	liter
l/m²	liter per square meter
lb/in²	pound per square inch
lb	pound
lm/m²	lumen per square meter
m	meter
m/s	meter per second
m ²	square meter
m ³	cubic meter
m³/h	cubic meter per hour
min	minute
mm	millimeter
nm	nautical mile
psi	pound-force per square inch
t	tonne
US gal	United States gallon

⊘A380 Preliminary data

MAINTENANCE FACILITY PLANNING

3. Design Weight Terminology

Maximum Design Ramp Weight (MRW) :

Maximum weight for ground maneuver (including weight of taxi and runup 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 less usable fuel.

Operating Weight Empty (OWE) :

Weight of structure, powerplant, furnishings, systems, and other items of equipment that are an integral part of a particular aircraft configuration plus the operator's items. The operator's items are the flight and cabin crew and their baggage, unusable fuel, engine oil, emergency equipment, toilet chemical and fluids, galley structure, catering equipment, seats, documents, etc.

Maximum Payload :

Maximum Design Zero Fuel Weight (MZFW) minus Operating Weight Empty (OWE).

Maximum Seating Capacity :

Maximum number of passengers specifically certified or anticipated for certification.

Maximum Cargo Volume :

Maximum usable volume available for cargo.

Usable Fuel :

Fuel available for aircraft propulsion.

MAINTENANCE FACILITY PLANNING

SECTION 1 - GENERAL INFORMATION

Table Of Contents Subject Section Table Of Contents 1-0 Airplane Overall Dimensions and 1-1 Outline Basic Reference Drawing 1-2 Airplane Dimensions General Airplane Characteristics 1-3 Zoning 1-4 Fuselage Frames/Stations 1-5 Wing Ribs/Stations 1-6 Airplane Attitude (TBIL) 1-7 Center of Gravity Limits 1-8 Ground Clearances 1-9 Door Clearances 1-10 Fuselage Cross-sections 1 - 11Nose Contours 1-12 Vertical Stabilizer Contours (TBIL) 1-13 Horizontal Stabilizer Contours 1 - 14Tail Contours 1-15 Wing Profile 1-16 Nacelle Contours (TBIL) 1-17

R

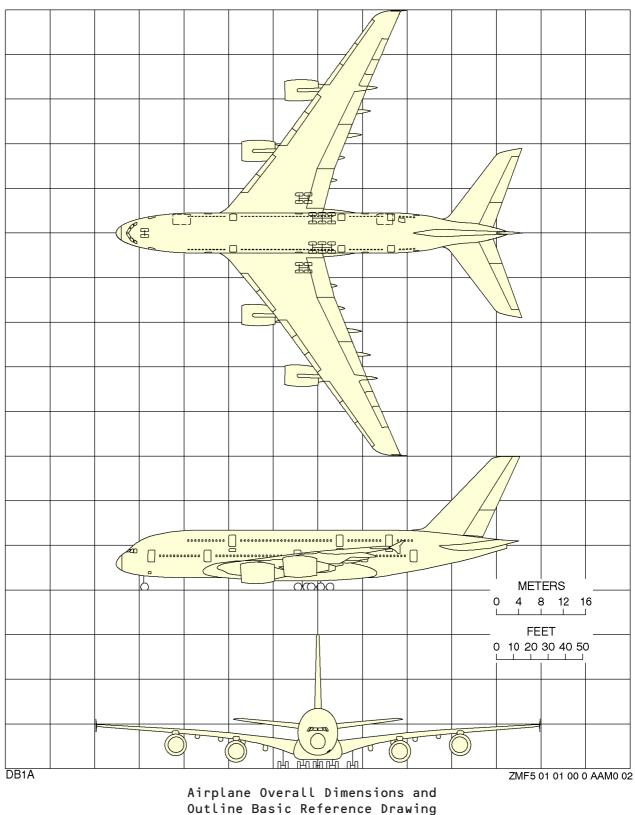


AIRPLANE OVERALL DIMENSIONS AND OUTLINE

BASIC REFERENCE DRAWING

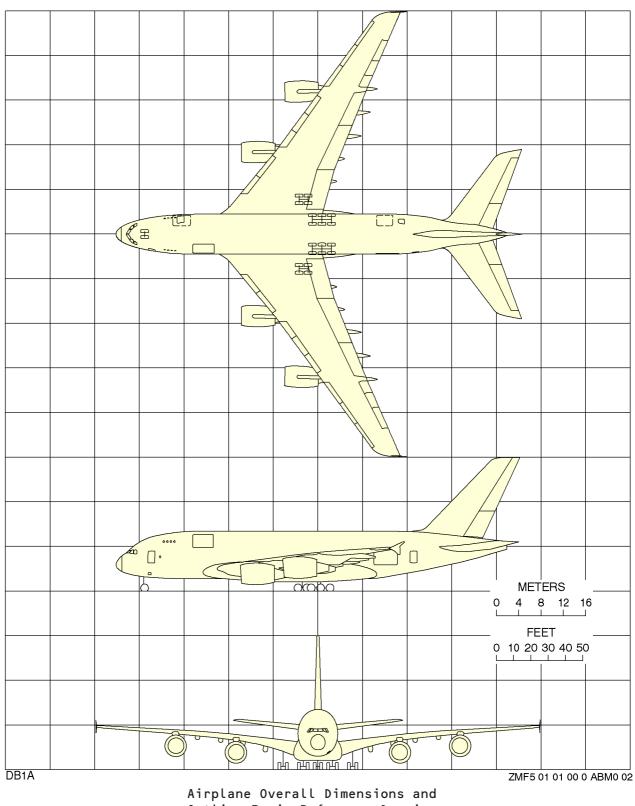
This section gives the airplane overall dimensions and outline basic reference drawing.

MAINTENANCE FACILITY PLANNING



A380-800 Models

MAINTENANCE FACILITY PLANNING



Outline Basic Reference Drawing A380-800F Models

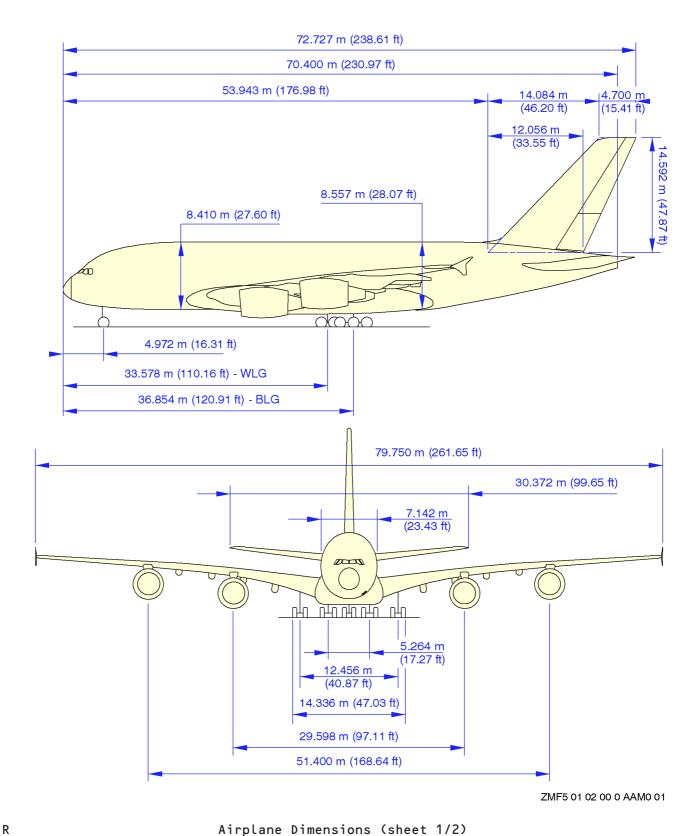


AIRPLANE DIMENSIONS

This section gives the airplane dimensions.

GA380 Preliminary data

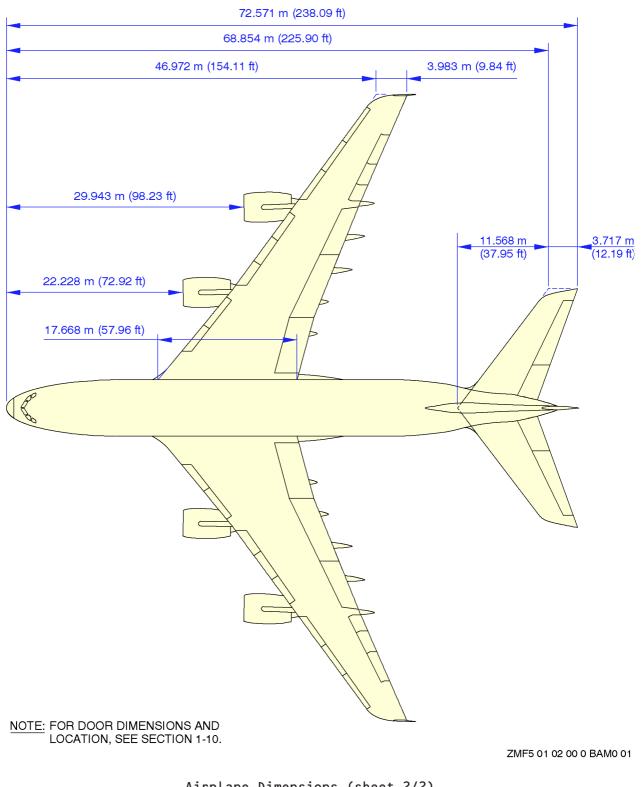
MAINTENANCE FACILITY PLANNING



Airplane Dimensions (sheet 1/2) A380-800/800F Models

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MAINTENANCE FACILITY PLANNING



Airplane Dimensions (sheet 2/2) A380-800/800F Models

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GENERAL AIRPLANE CHARACTERISTICS

This section gives the general airplane characteristics data.

GA380 Preliminary data

MAINTENANCE FACILITY PLANNING

Airplane Model	A380-841 TRENT 970	A380-861 GP 7270	
Engines			
Maximum Design Ramp	kilograms	562 000	562 000
Weight (MRW)	pounds	1 238 998	1 238 998
Maximum Design TakeOff	kilograms	560 000	560 000
Weight (MTOW)	pounds	1 234 588	1 234 588
Maximum Design Landing	kilograms	386 000	386 000
Weight (MLW)	pounds	850 984	850 984
Maximum Design Zero	kilograms	361 000	361 000
Fuel Weight (MZFW)	pounds	795 869	795 869
Operating Weight	kilograms	280 713	280 724
Empty (OWE) – Typical	pounds	618 866	618 890
Maximum Payload	kilograms	84 320	84 140
	pounds	185 893	185 496
Standard Seating Capacity	Three-Class	555 (1)	555 (1)
Usable Fuel Capacity	liters	315 289	315 289
	US gallons	83 290	83 290
	kilograms (density = 0.785 kg/l)	247 502	247 502
	pounds	545 648	545 648
Volume of cargo compartments	cubic meters	175.2	175.2
(2)	cubic feet	6187	6187

NOTE : (1) 555 pax :

main deck : First Class 22 and Tourist Class 334
 upper deck : Business Class 96 and Tourist Class 103

- (2) Volume of cargo compartments :
 - lower deck forward cargo compartment (usable containerised volume) : 89.4 m³ (3 157 ft³)
 - lower deck aft cargo compartment (usable containerised volume) : 71.5 m³ (2 525 ft³)
 lower bulk cargo compartment
 - (usable volume) : 14.3 m^3 (505 ft³)

General Airplane Characteristics Data A380-800 Models

GA380 Preliminary data

MAINTENANCE FACILITY PLANNING

Airplane Model	A380-843F TRENT 977	A380-863F GP 7277	
Engines			
Maximum Design Ramp	kilograms	592 000	592 000
Weight (MRW)	pounds	1 305 136	1 305 136
Maximum Design TakeOff	kilograms	590 000	590 000
Weight (MTOW)	pounds	1 300 727	1 300 727
Maximum Design Landing	kilograms	427 000	427 000
Weight (MLW)	pounds	941 374	941 374
Maximum Design Zero	kilograms	402 000	402 000
Fuel Weight (MZFW)	pounds	886 258	886 258
Operating Weight	kilograms	251 900	252 080
Empty (OWE) – Typical	pounds	555 344	555 741
Maximum Payload	kilograms	150 100	149 920
	pounds	330 913	330 517
Usable Fuel Capacity	liters	315 289 (2)	315 289 (2)
	US gallons	83 290	83 290
	kilograms (density = 0.785 kg/l)	247 502	247 502
	pounds	545 648	545 648
Volume of cargo compartments	cubic meters	952.3	952.3
(1)	cubic feet	33 630	33 630

NOTE : (1) Volume of cargo compartments :

- lower deck forward cargo compartment (usable containerised volume) : 89.4 m³ (3 157 ft³)
 lower deck aft cargo compartment
 - (usable containerised volume) : 71.5 m^3 (2 525 ft³)
- lower bulk cargo compartment
- (usable volume) : 18.4 m³ (650 ft³) - main deck cargo compartment
- (usable palletized volume) : 516 m^3 (18 222 ft³)
- upper deck cargo compartment
- (usable palletized volume) : 257 m³ (9 075 ft³)
- (2) Usable fuel capacity with center tank : 355 850 l (94 005 US gal)

General Airplane Characteristics Data A380-800F Models

MAINTENANCE FACILITY PLANNING

ZONING

1. General

This section provides the zone division/delimitation.

2. Aircraft Zoning

- A. Identification Method
 - (1) Zones identification is based on ATA 100 Specification.
 - (2) The aircraft is broken down into Zones identified, each, by a three-digit number where the first digit (hundreds) corresponds to the Major Zones, the second digit (tens) corresponds to the Major Sub-Zones and the third digit (units) corresponds to the Zones.
- B. Identification of Major Zones, Major Sub-Zones and Zones

Locations and boundaries of the Major Zones and Major Sub-Zones are illustrated on the following pages.

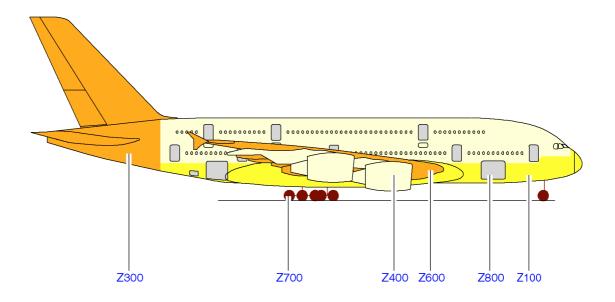
- NOTE : Locations and boundaries of the zones are not given in this manual.
- (1) Major Zones (hundreds)
 - (a) Major Zones boundaries are identified by :
 - Frame/Stations/Sringers for fuselage.
 - Ribs for wings and vertical/horizontal tail.
 - Stations for nacelle and pylon.
 - (b) The Major Zones are :
 - 100 Lower part of fuselage (below main deck floor lower datum), including radome to forward face of aft pressure bulkead.
 - 200 Upper part of fuselage (above main deck floor lower datum) to forward face of aft pressure bulkead.
 - 300 Stabilizer and fuselage rear section from rear of aft pressure bulkead (including rudder and elevators).
 - 400 Powerplants, nacelles and pylons.
 - 500 Left wing.
 - 600 Right wing.
 - 700 Landing gear and landing gear doors.
 - 800 Passenger/crew doors, cargo compartment doors, emergency exits and pressurized maintenance doors.

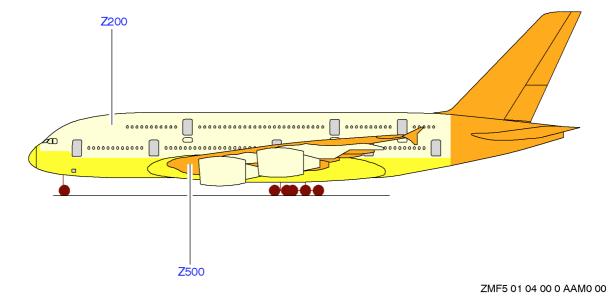
GA380 Preliminary data

MAINTENANCE FACILITY PLANNING

- (2) Major Sub-Zones (tens)
 - (a) These are divisions of the Major Zones, eg : 100 divided into 110, 120, 130, 140, etc.
 - (b) The sequence of Major Sub-Zones numbering for fuselage runs from the front to the rear.
- (3) Zones (units)
 - (a) These are divisions of Major Sub-Zones, eg : 120 divided into 121, 122, 123, etc.
 - (b) The sequence of Zones for fuselage runs from inboard to outboard, front to rear in the wing, forward to aft and away from the floor line in the fuselage and from root to tip in the vertical tail.
 - (c) Whenever feasible odd numbers are allocated to the zones left of fuselage or nacelle centerlines and even numbers to zones to the right.
 - <u>NOTE</u> : If no side differentiation is needed (eg. : pylon, bilge area), the old numbering for "center zones" is used.



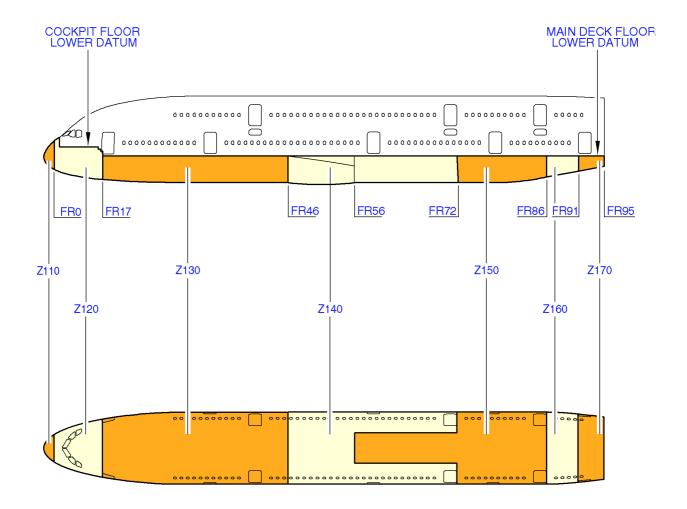




Major Zones A380-800 Models

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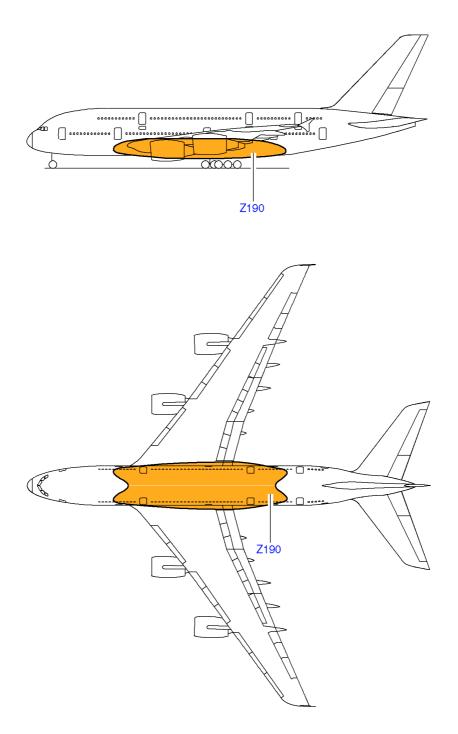
MAINTENANCE FACILITY PLANNING



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Major Sub-Zones Zone 100 (Sheet 1/2) A380-800 Models



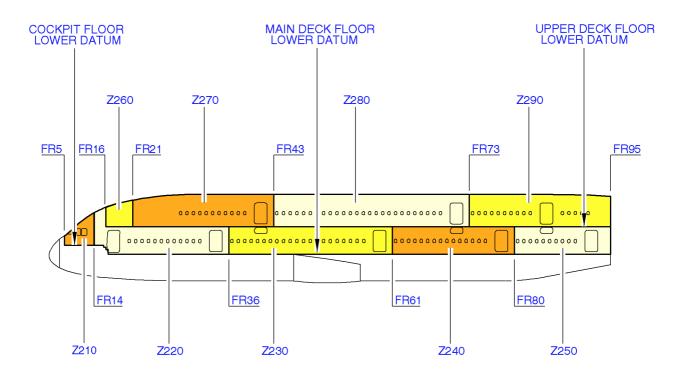


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Major Sub-Zones Zone 100 (Sheet 2/2) A380-800 Models

⊘A380 Preliminary data

MAINTENANCE FACILITY PLANNING

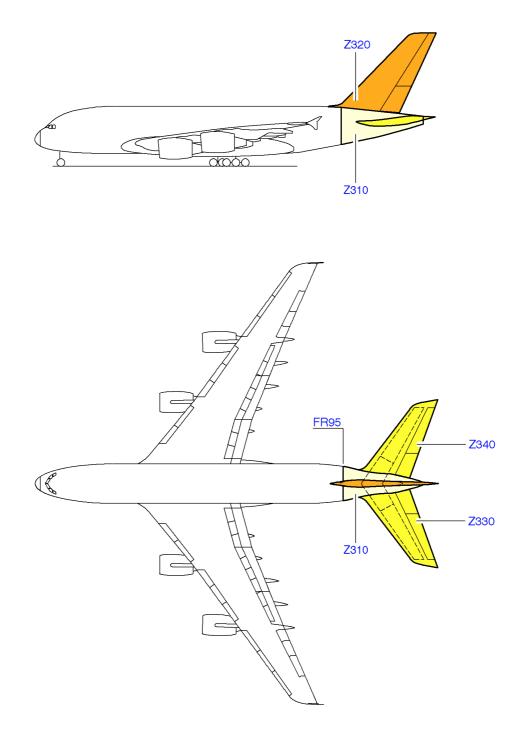


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Major Sub-Zones Zone 200 A380-800 Models

Printed in France





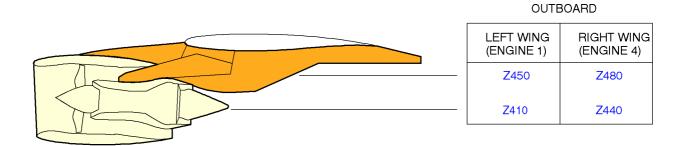
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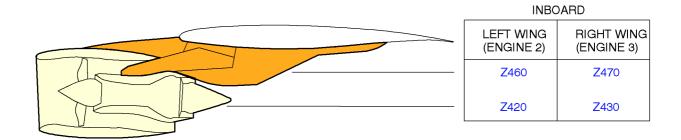
Major Sub-Zones Zone 300 A380-800/800F Models

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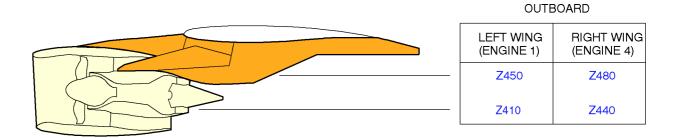


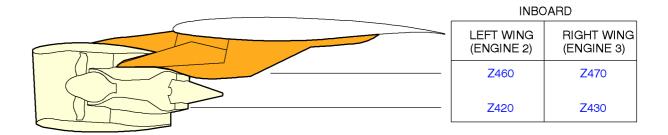


ZMF5 01 04 00 0 AFM0 00

Major Sub-Zones Zone 400 - TRENT 970/977 Engines A380-841/843F Models



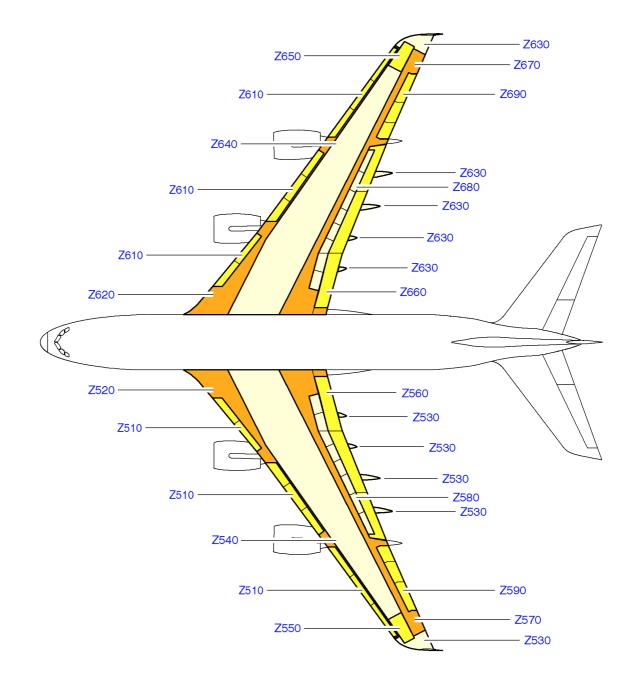




ZMF5 01 04 00 0 AKM0 00

Major Sub-Zones Zone 400 - GP 7270/7277 A380-861/863F Models





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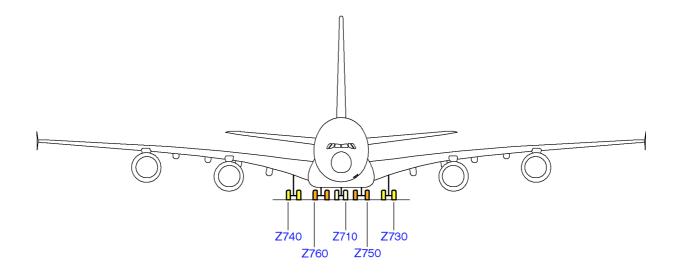
Major Sub-Zones
Zone 500/600
A380-800/800F Models

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♥ A380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING

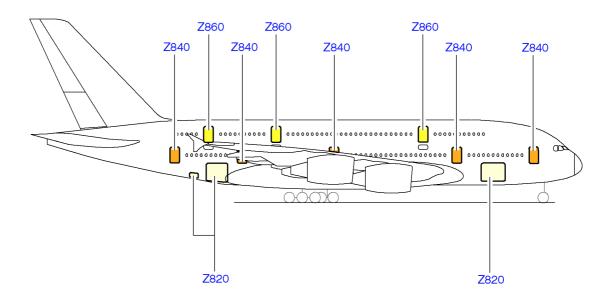


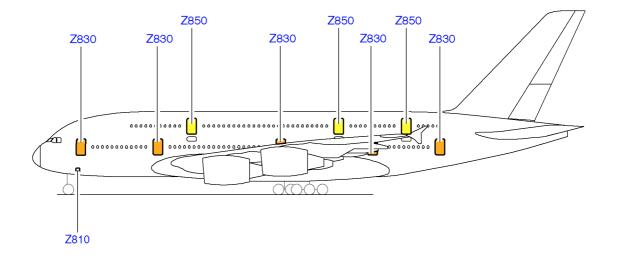
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Major Sub-Zones Zone 700 A380-800/800F Models

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Major Sub-Zones Zone 800 A380-800 Models ZMF5 01 04 00 0 AJM0 00

1-4 Page 12 JUL 01/02

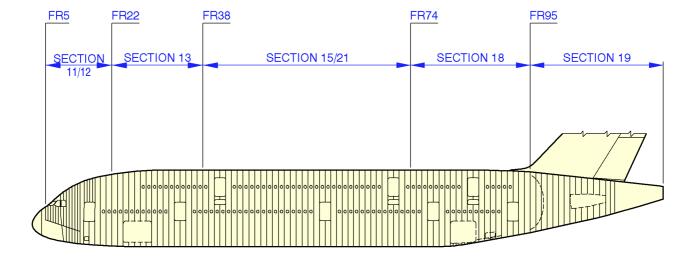
MAINTENANCE FACILITY PLANNING

FUSELAGE FRAMES/STATIONS

This section gives the fuselage frame stations measured along X datum at 7330 mm from the nose.

The stations (STA) are given in millimeters without conversion.





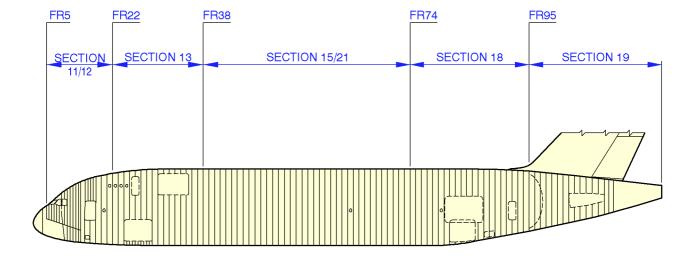
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Fuselage Frames/Stations Sections Identification A380-800 Models

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♥ A380 PRELIMINARY DATA

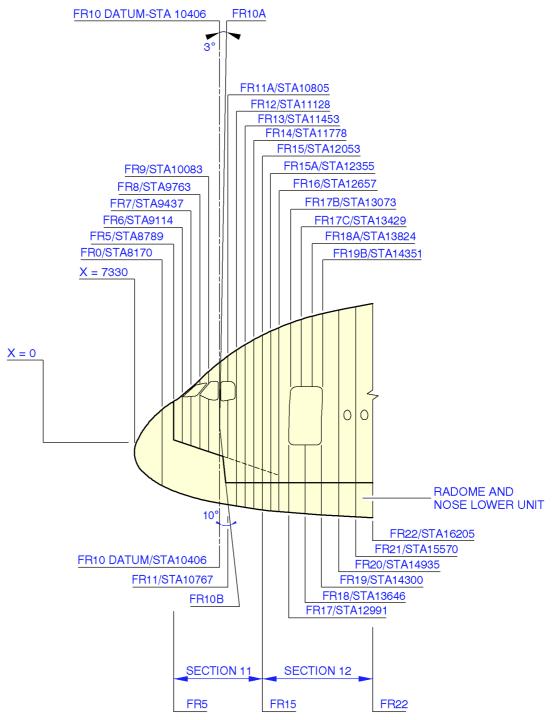
MAINTENANCE FACILITY PLANNING



R R R Fuselage Frames/Stations Sections Identification A380-800F Models ZMF5 01 05 00 0 BAM0 01

☞ A380 PRELIMINARY DATA

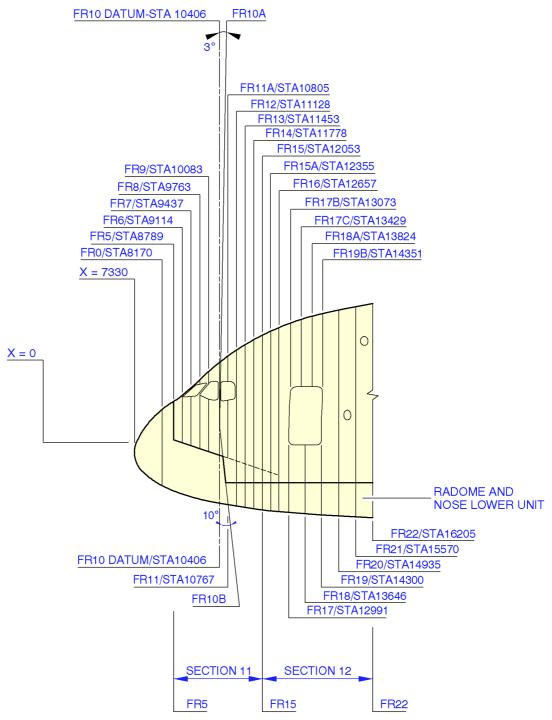
MAINTENANCE FACILITY PLANNING



ZMF5 01 05 00 0 ABM0 00

Fuselage Frames/Stations Section 11/12 A380-800 Models ☞ A380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING

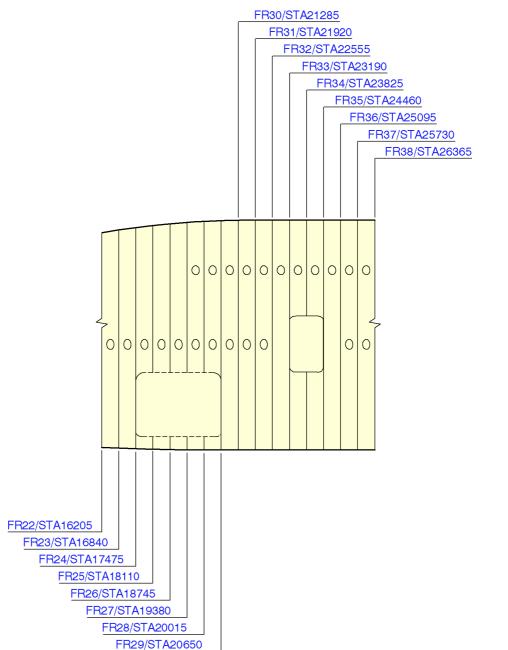


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Fuselage Frames/Stations Section 11/12 A380-800F Models

GA380 PRELIMINARY DATA

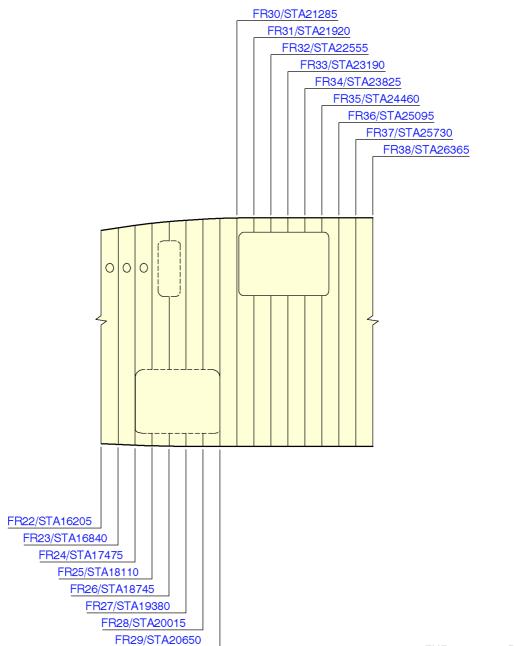
MAINTENANCE FACILITY PLANNING



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Fuselage Frames/Stations Section 13 A380-800 Models





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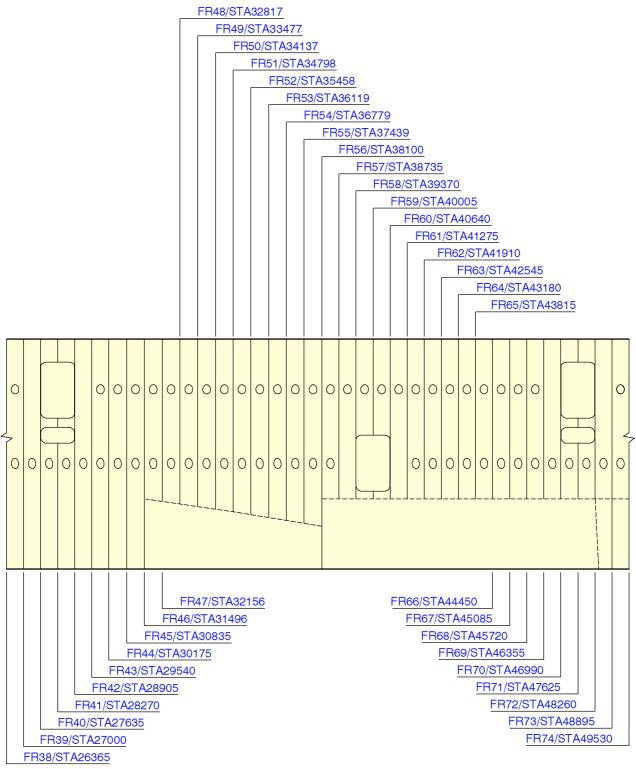
Fuselage Frames/Stations Section 13 A380-800F Models

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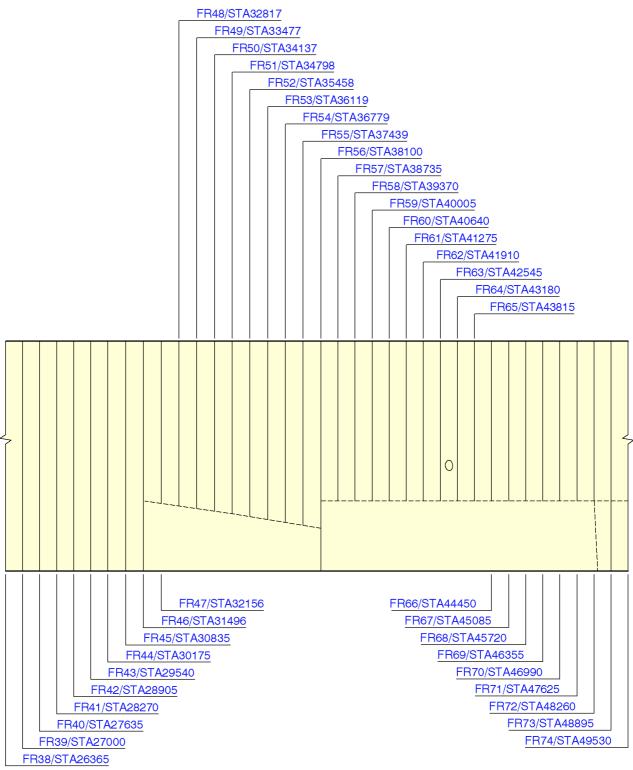
MAINTENANCE FACILITY PLANNING



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Fuselage Frames/Stations Section 15/21 A380-800 Models **GA380** Preliminary data

MAINTENANCE FACILITY PLANNING

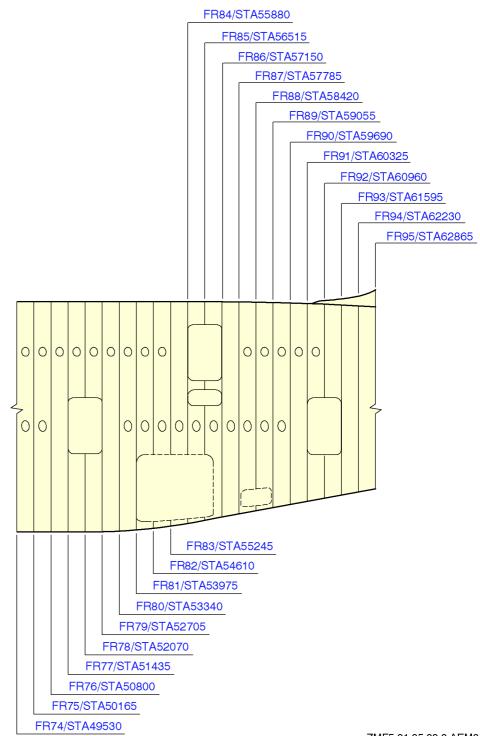


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Fuselage Frames/Stations Section 15/21 A380-800F Models

GA380 PRELIMINARY DATA

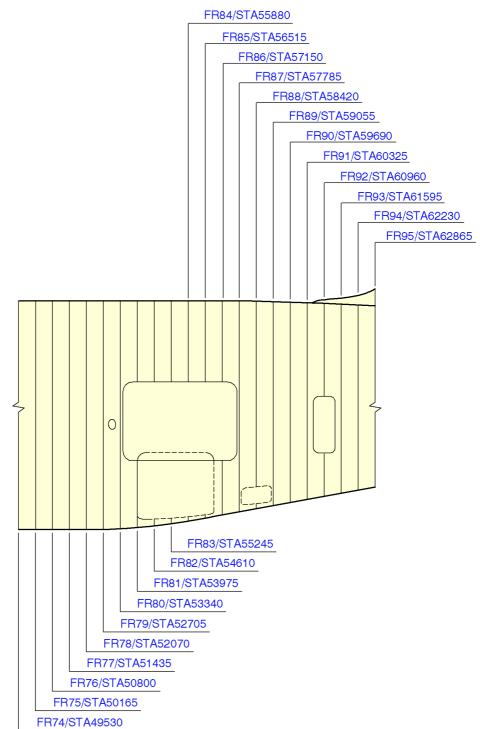
MAINTENANCE FACILITY PLANNING



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Fuselage Frames/Stations Section 18 A380-800 Models





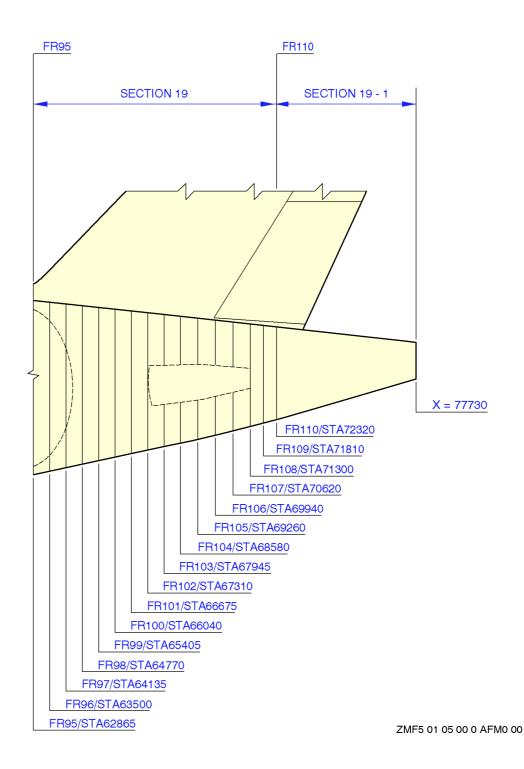
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Fuselage Frames/Stations Section 18 A380-800F Models

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Fuselage Frames/Stations Section 19 A380-800/800F Models

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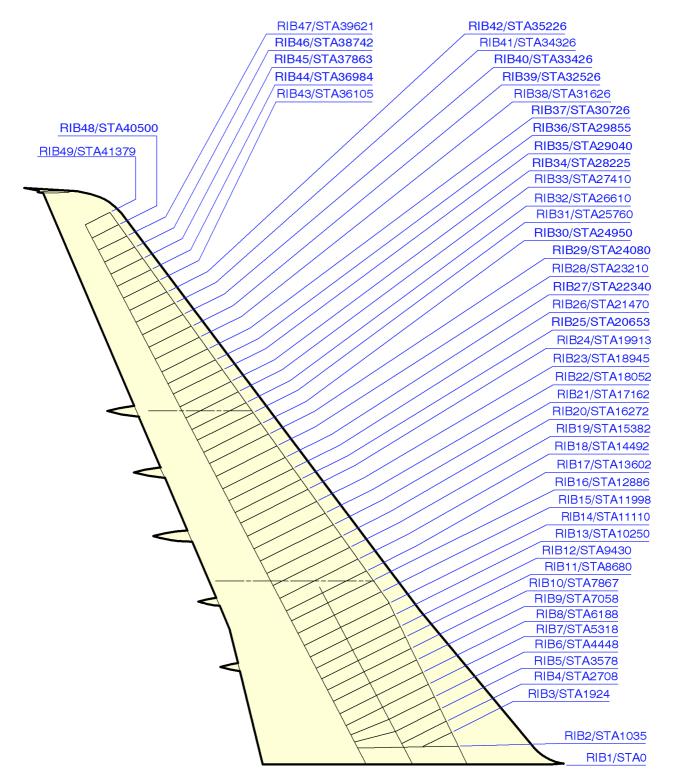


WING RIBS/STATIONS

This section shows wing ribs/stations and dimensions.

GA380 Preliminary data

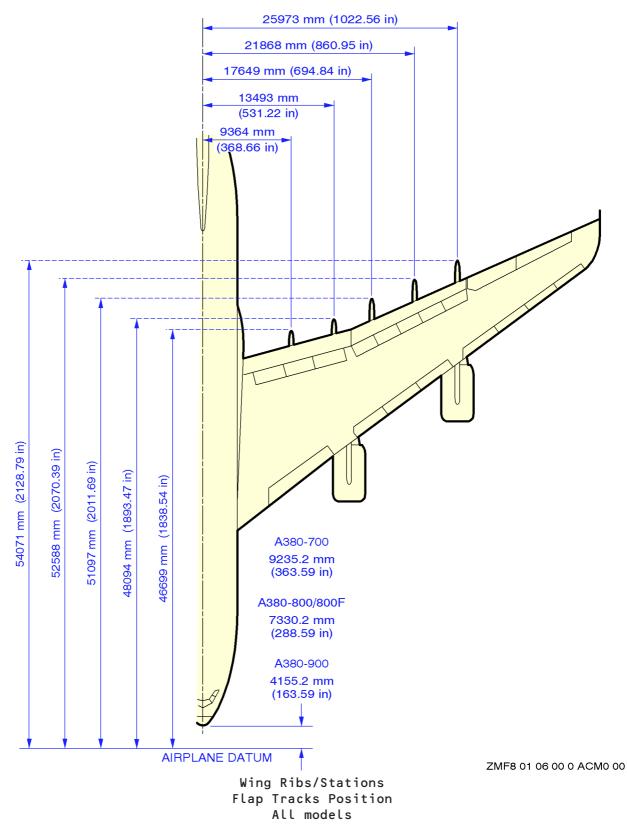
MAINTENANCE FACILITY PLANNING



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Wing Ribs/Stations All models **GA380** Preliminary data

MAINTENANCE FACILITY PLANNING



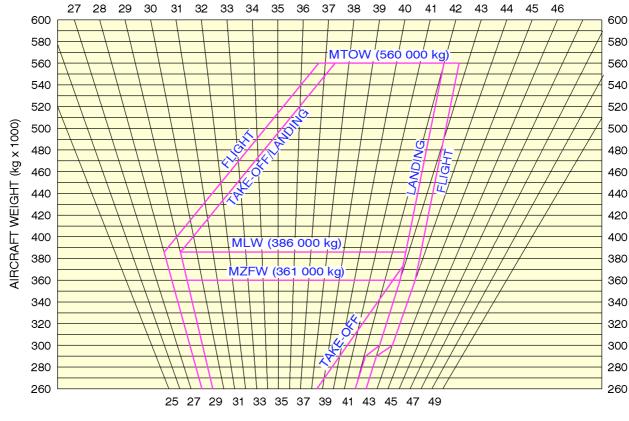


CENTER OF GRAVITY LIMITS

This section gives the center of gravity limits.

♥ A380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING

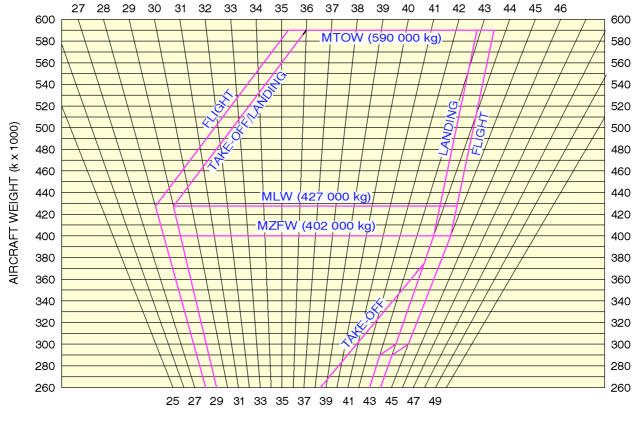


CG (%RC)

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Center of Gravity Limits A380-800 Models

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CG (%RC)

ZMF8 01 08 00 0 ACM0 03

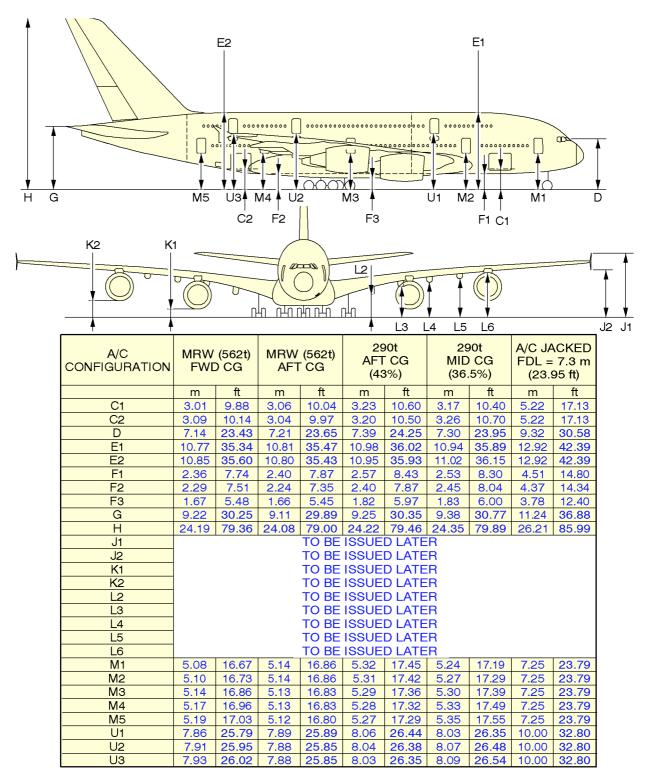
Center of Gravity Limits A380-800F Models

Printed in France



GROUND CLEARANCES

This section gives the heights 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 and conditions.



NOTE: MAXIMUM JACKING WEIGHT = 333 700 kg

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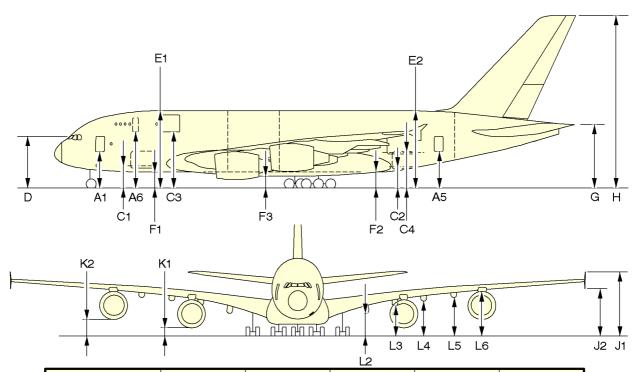
Ground Clearances A380-800 Models

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GA380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING

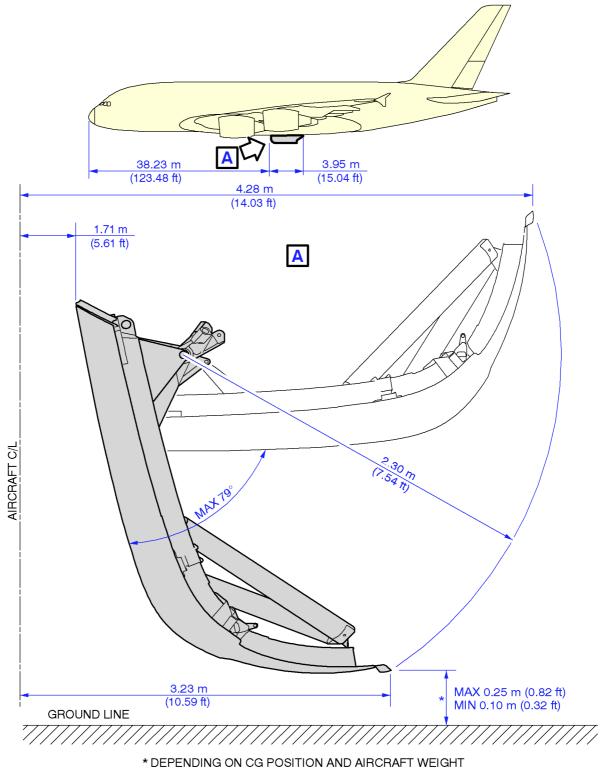


A/C CONFIGURATION	MRW FWD CG		MRW AFT CG		300t AFT CG		OWE MID CG		A/C JACKED FDL = 7.2 m (23.6 ft)	
	m	ft	m	ft	m	ft	m	ft	m	ft
A1	5.09	16.7	5.18	17.0	5.40	17.7			7.15	23.5
A5	5.13	16.8	5.06	16.6	5.20	17.1			7.15	23.5
A6	7.85	25.8	7.92	26.0	8.13	26.7			9.90	32.5
C1	3.07	10.1	3.14	10.3	3.35	11.0	ш	<u> </u>	5.12	16.8
C2	3.09	10.2	3.05	10.0	3.20	10.5	TO BE ISSUED LATER TO BE ISSUED LATER	ATE	5.12	16.8
C3	7.97	26.2	8.03	26.3	8.23	27.0			10.02	32.9
C4	5.12	16.8	5.08	16.7	5.22	17.1			7.15	23.5
D	7.16	23.5	7.26	23.8	7.48	24.5			9.22	30.2
E1	10.77	35.3	10.83	35.5	11.04	36.2			12.82	42.1
E2	10.80	35.4	10.75	35.3	10.89	35.7		<u>ŏ</u>	12.82	42.1
F1	2.36	7.8	2.43	8.0	2.63	8.6			4.41	14.5
F2	2.24	7.3	2.20	7.2	2.35	7.7			4.27	14.0
F3	1.64	5.4	1.65	5.4	1.82	6.0			3.68	12.1
G	9.13	30.0	9.01	29.5	9.11	29.9			11.14	36.6
Н	24.10	79.1	23.98	78.7	24.08	79.0			26.11	85.7
J1	TO BE ISSUED LATER									
J2	TO BE ISSUED LATER									
K1	TO BE ISSUED LATER									
K2	TO BE ISSUED LATER									
L2	TO BE ISSUED LATER									
L3	TO BE ISSUED LATER									
L4	TO BE ISSUED LATER									
L5	TO BE ISSUED LATER									
L6	TO BE ISSUED LATER									

ZMF8 01 09 00 0 ACM0 01

R R ♥ A380 PRELIMINARY DATA

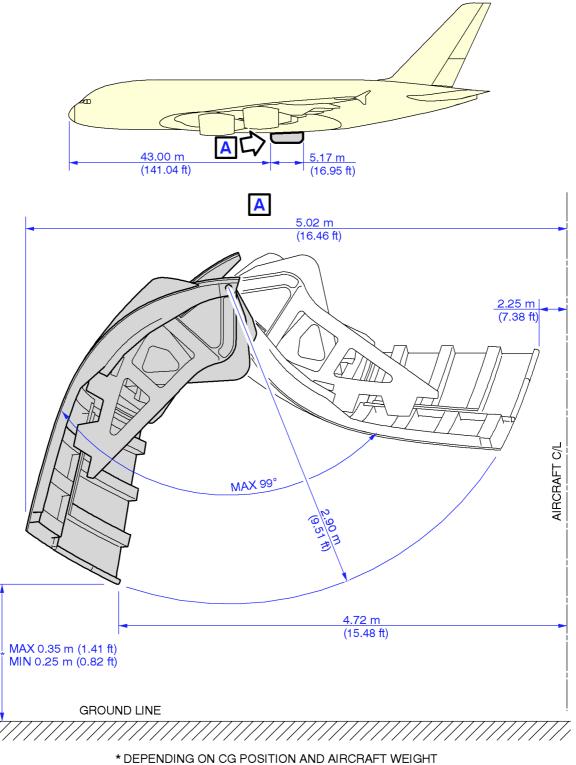
MAINTENANCE FACILITY PLANNING



ZMF0 01 09 00 0 AAM0 00

Ground Clearances Wing Landing Gear Doors A380-800/800F Models ♥ A380 PRELIMINARY DATA

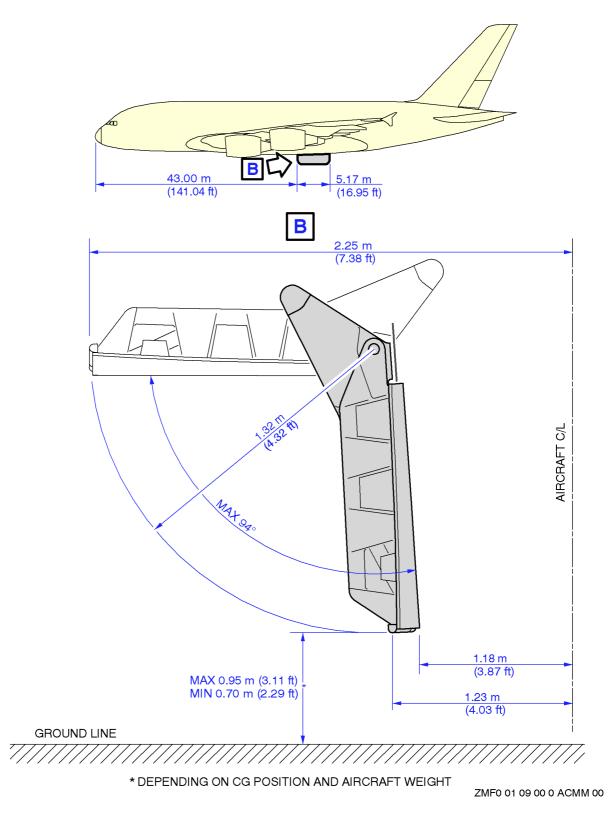
MAINTENANCE FACILITY PLANNING



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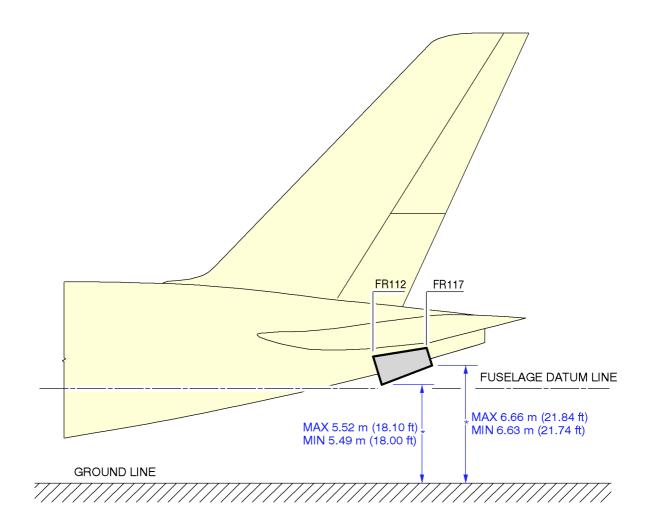
Ground Clearances Body Landing Gear Doors (Sheet 1/2) A380-800/800F Models **GA380** PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING



Ground Clearances Body Landing Gear Doors (Sheet 2/2) A380-800/800F Models





* DEPENDING ON CG POSITION AND AIRCRAFT WEIGHT

ZMF5 01 09 00 0 AEM0 00

Ground Clearances APU Gear Doors A380-800/800F Models

Printed in France

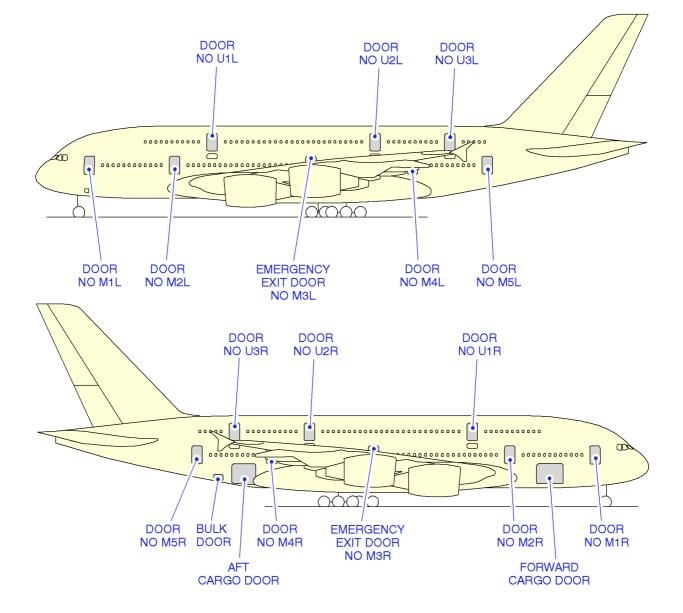


DOOR CLEARANCES

This section gives the identification/location, dimensions and clearances of :
 passenger/crew doors (passenger A/C)
 courrier/crew doors (freighter A/C)
 cargo compartment doors
 emergency exit doors.

NOTE : For ground clearances of door stills, refer to Section 1-9.



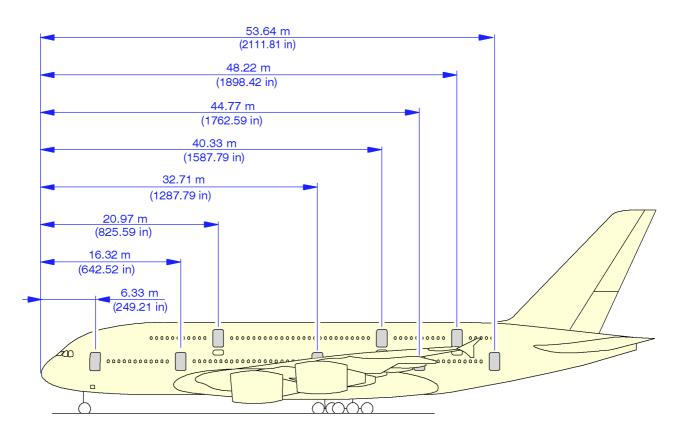


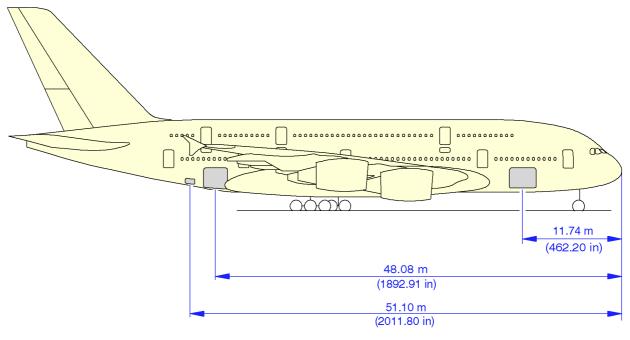
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	Door Clea	arances	
Door	Location	(Sheet	1/2)
	A380-800	Models	

R R R **©A380** Preliminary data

MAINTENANCE FACILITY PLANNING

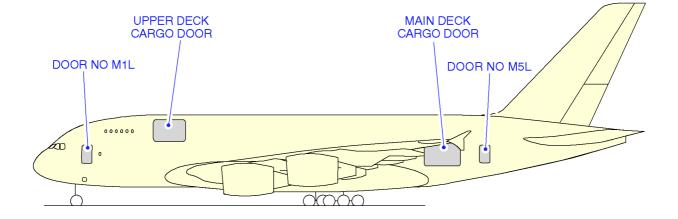


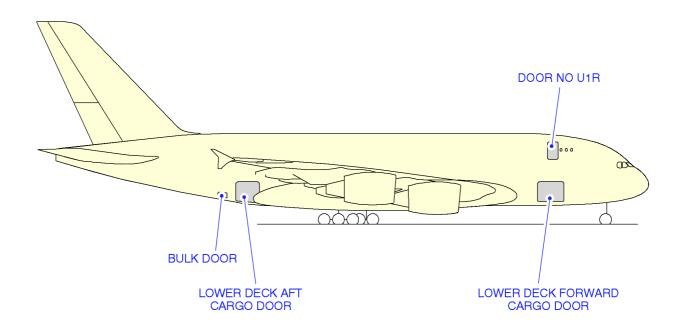


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Door Clearances Door Location (Sheet 2/2) A380-800 Models







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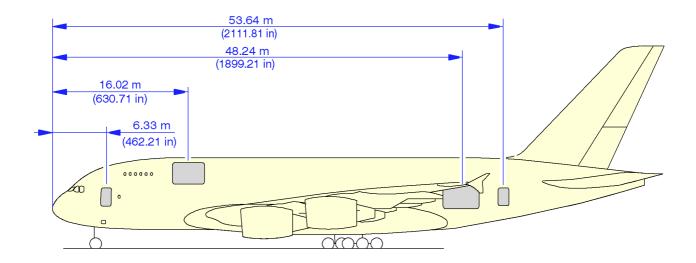
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Door	Locat	ion	(Sheet	1/2)
	A380-8	300F	Models	

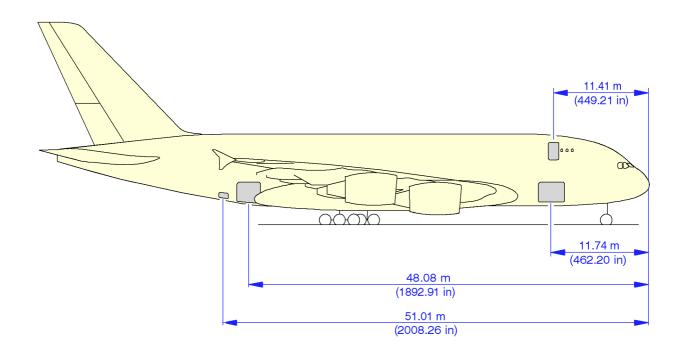
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GA380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING





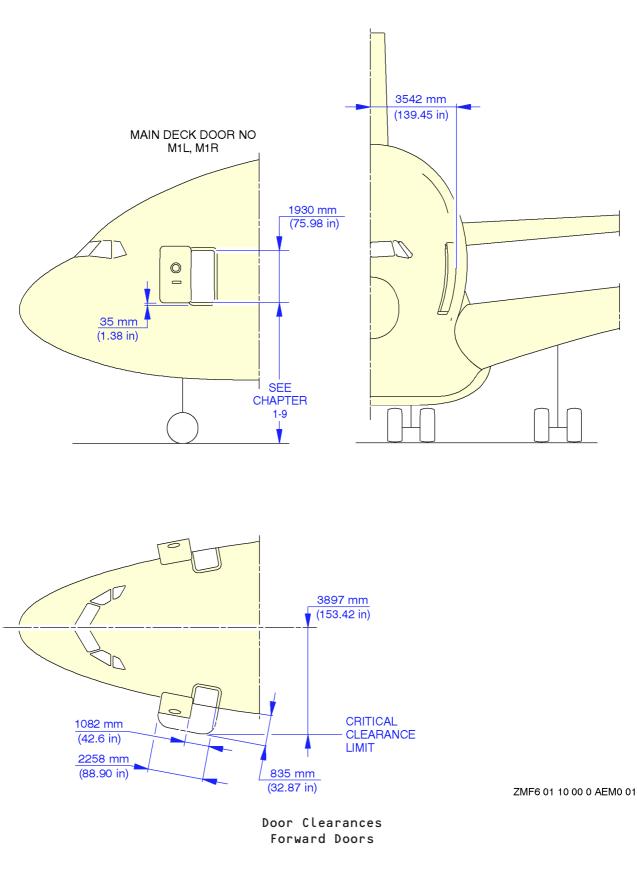
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Door Clearances Door Location (Sheet 2/2) A380-800F Models

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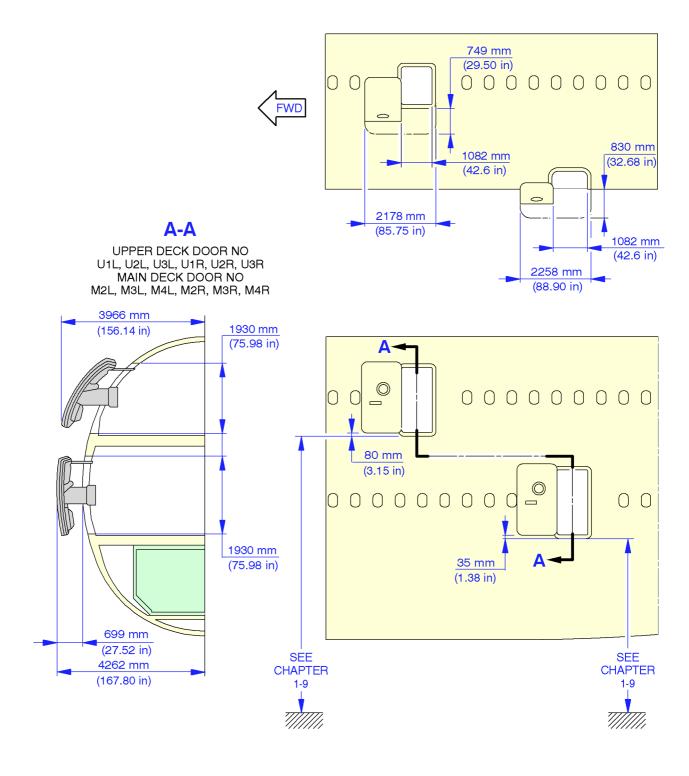
MAINTENANCE FACILITY PLANNING



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GA380 Preliminary data

MAINTENANCE FACILITY PLANNING



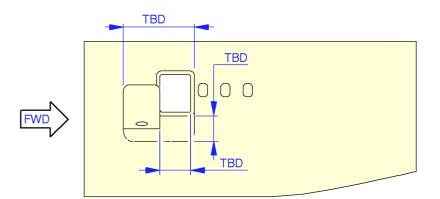
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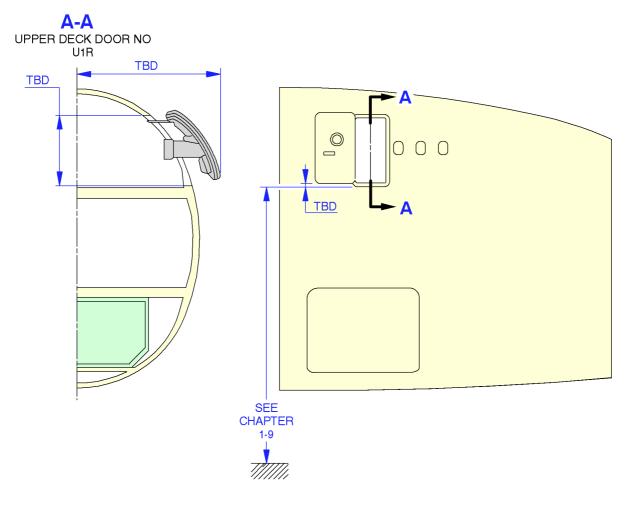
Door Clearances Main and Upper Deck Doors A380-800 Models

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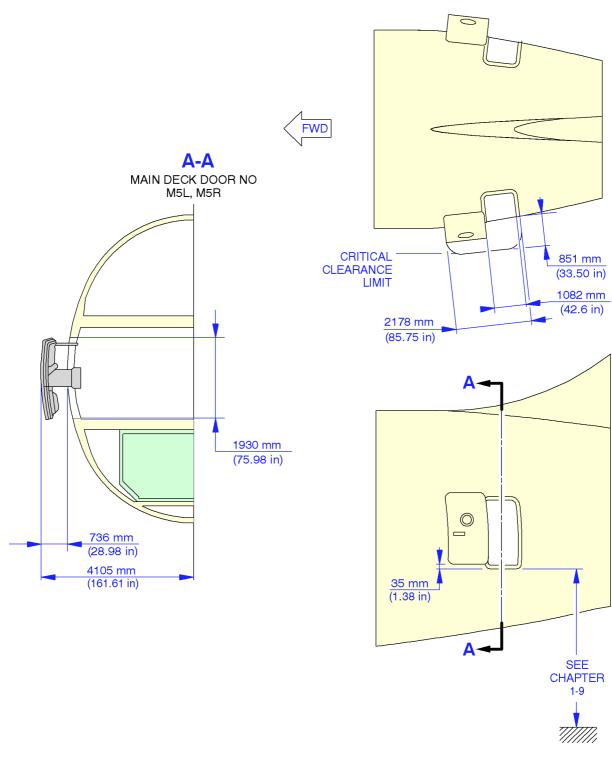




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R R R Door Clearances Main and Upper Deck Doors A380–800F Models

MAINTENANCE FACILITY PLANNING



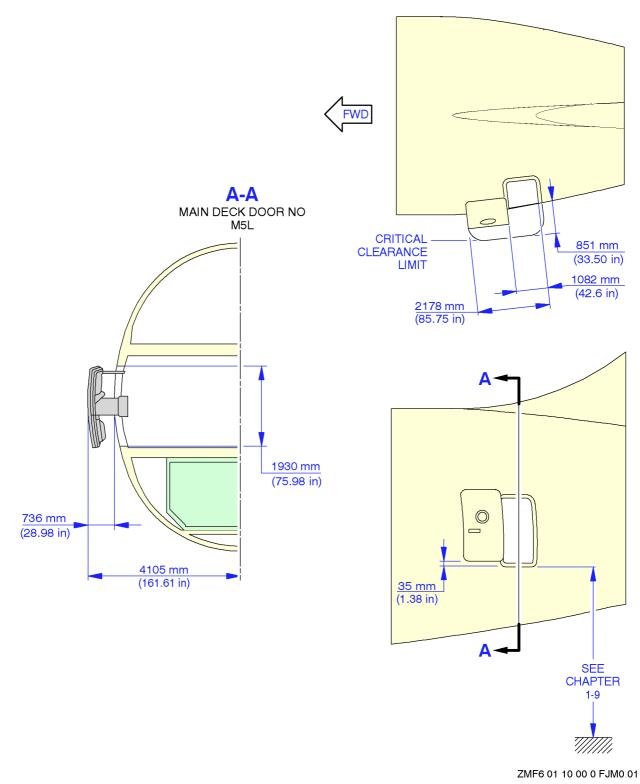
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Door Clearances Aft Doors A380-800 Models

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MAINTENANCE FACILITY PLANNING



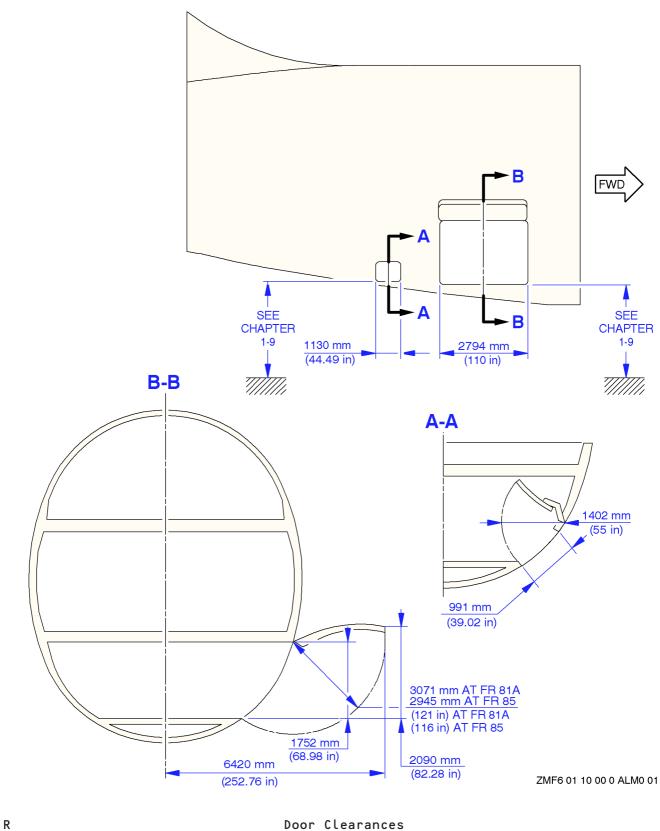
Door Clearances Aft Doors A380-800F Models

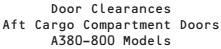
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©A380 Preliminary data

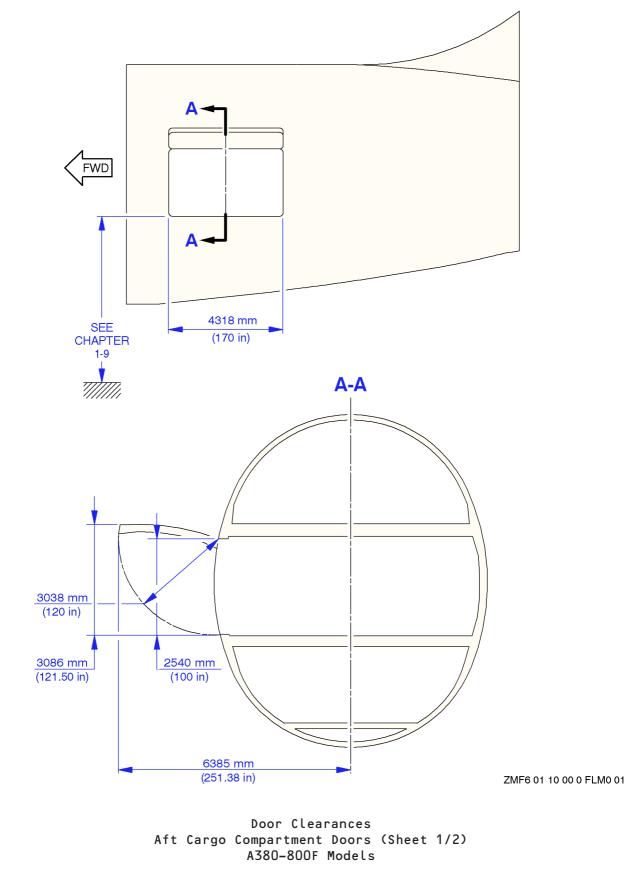
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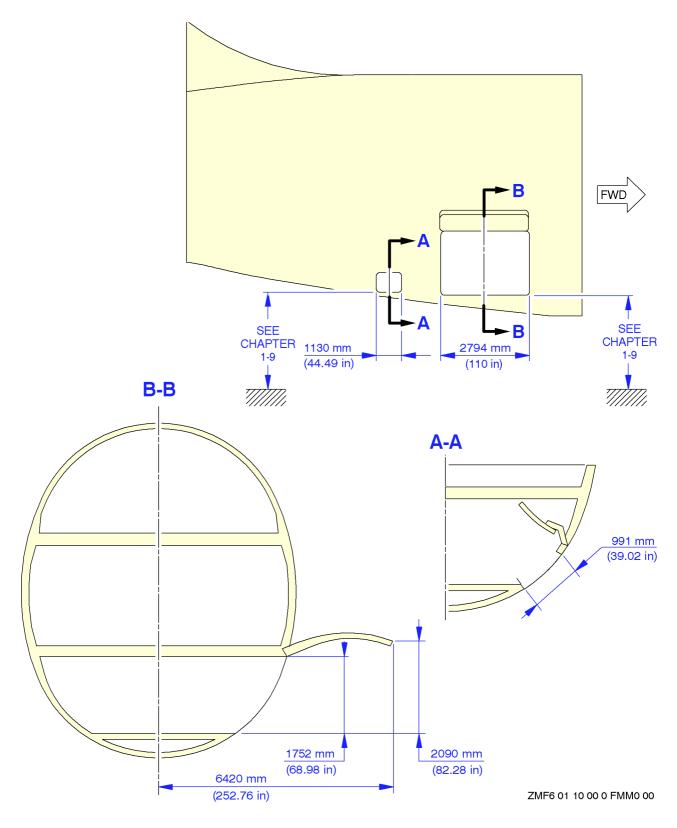
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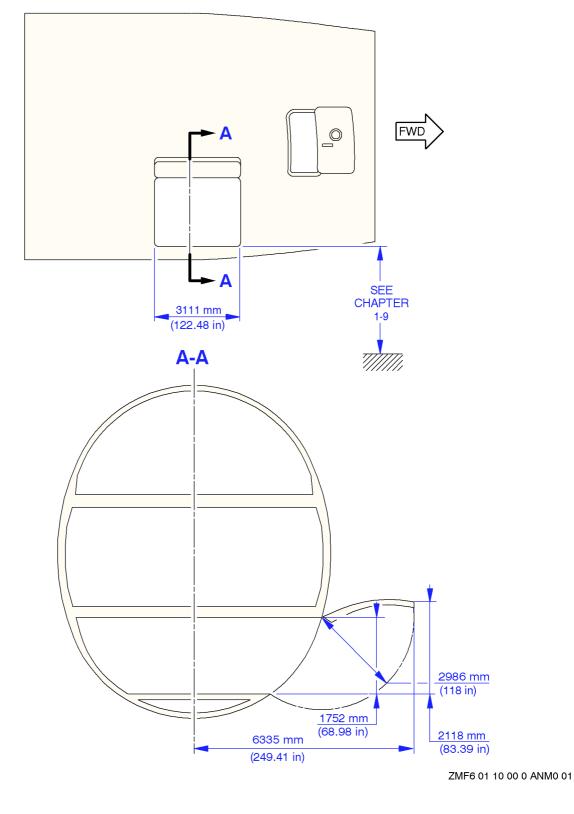
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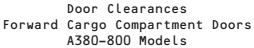
MAINTENANCE FACILITY PLANNING





MAINTENANCE FACILITY PLANNING

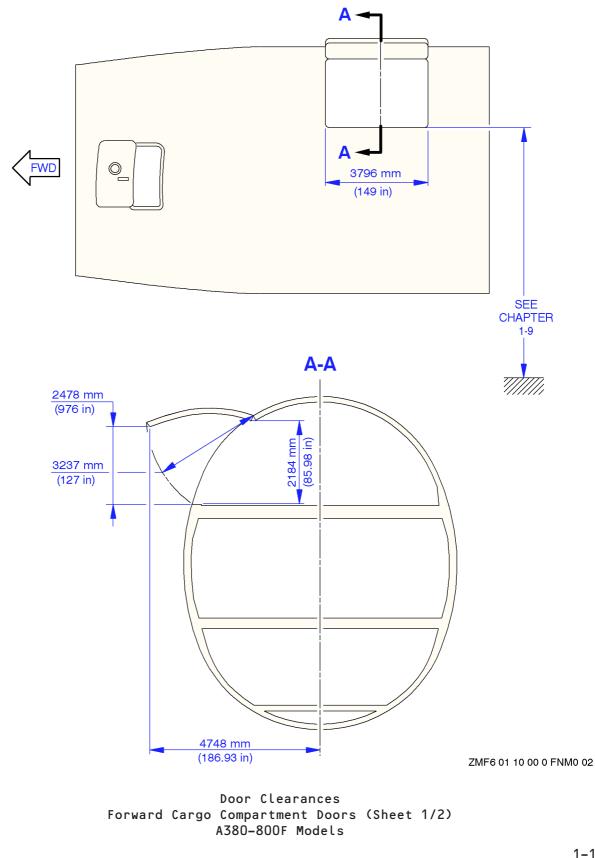




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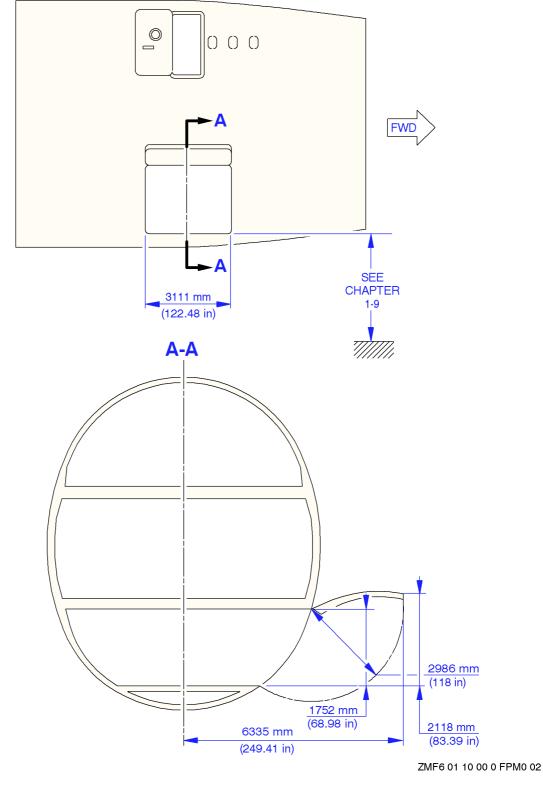
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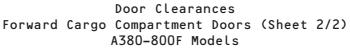


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MAINTENANCE FACILITY PLANNING





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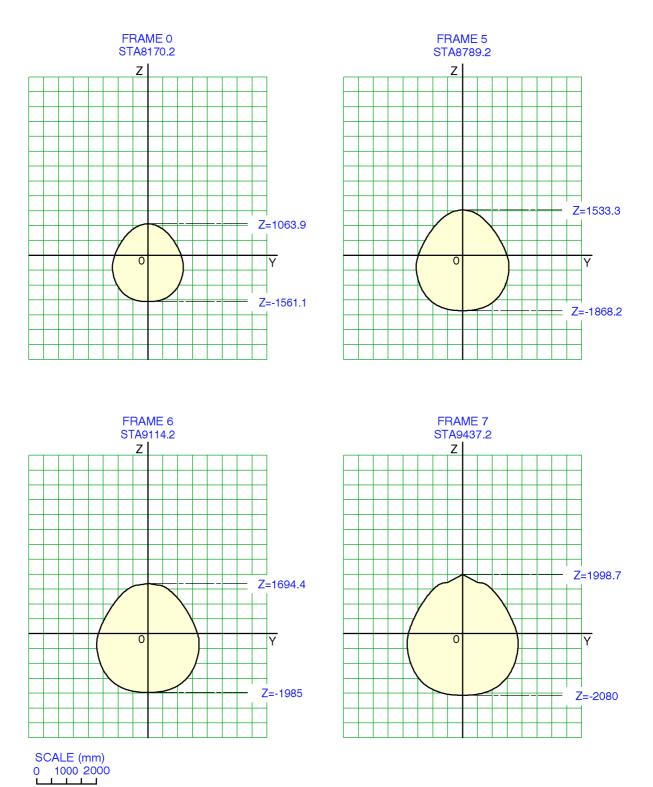
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FUSELAGE CROSS-SECTIONS

1-11 Page 1 0CT 15/03

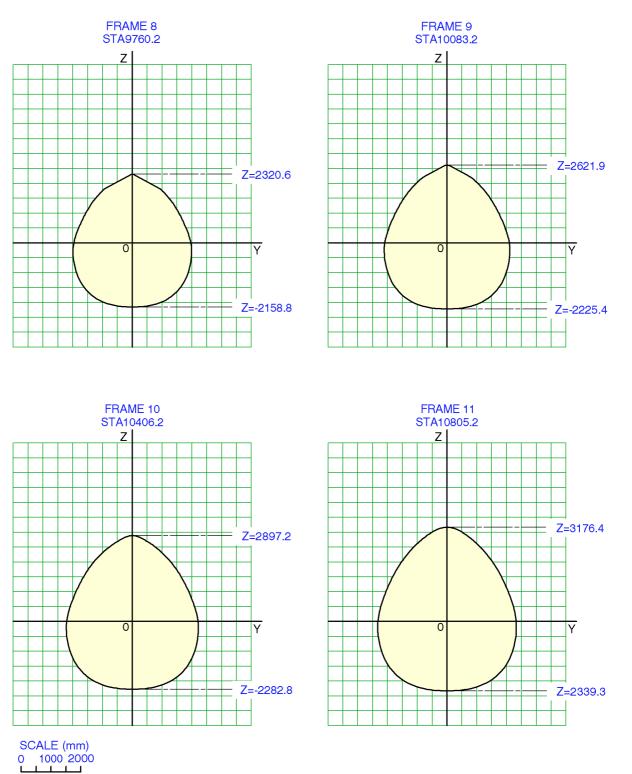
MAINTENANCE FACILITY PLANNING



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Fuselage Cross-Section Section 11/12 A380-800/800F Models

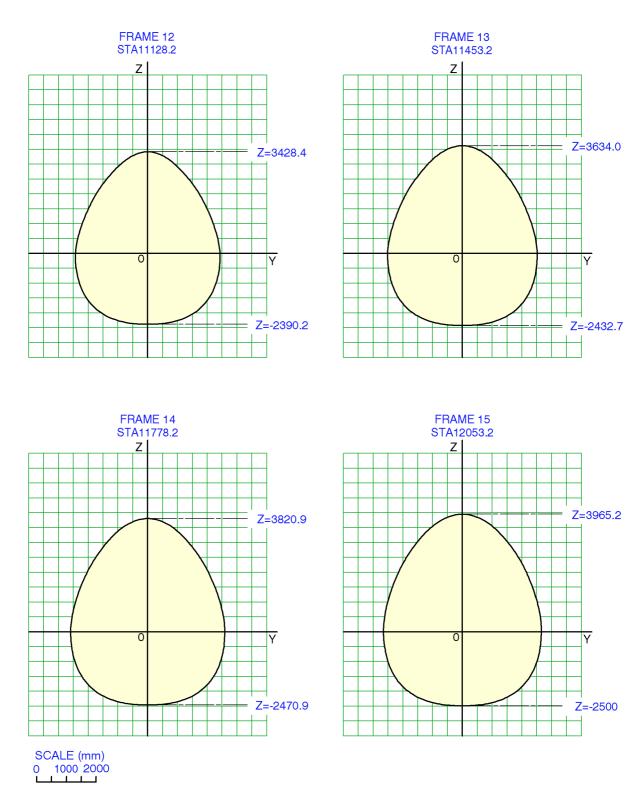
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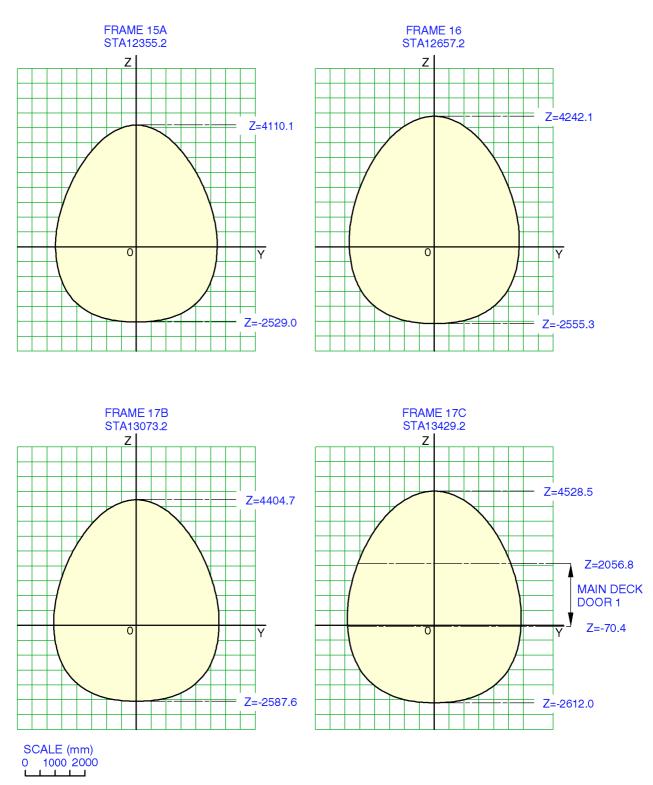
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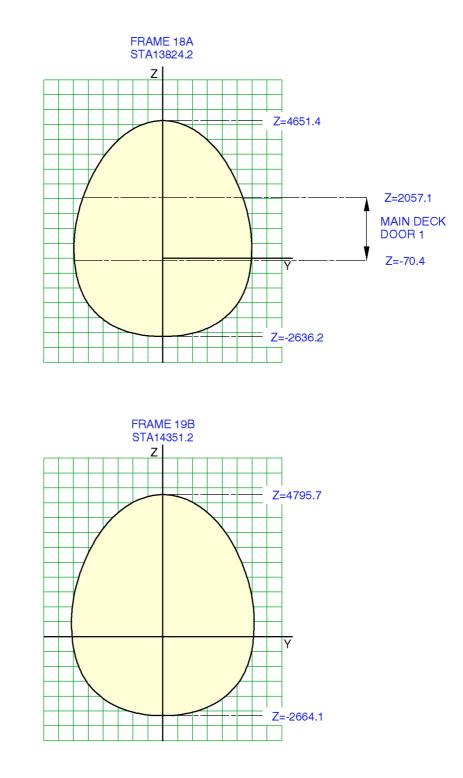
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MAINTENANCE FACILITY PLANNING

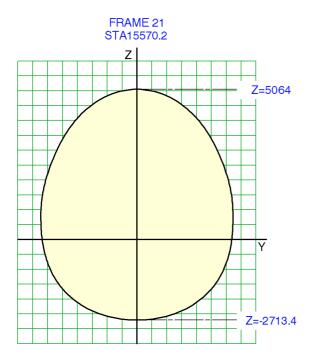


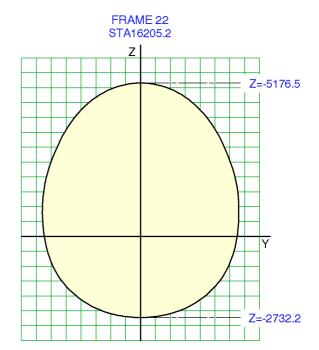


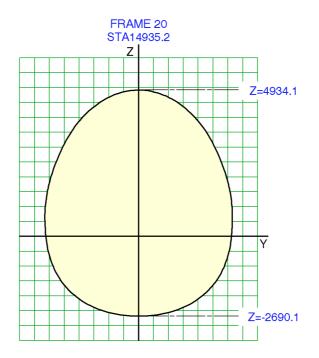
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Fuselage Cross-Section Section 11/12 A380-800/800F Models

MAINTENANCE FACILITY PLANNING





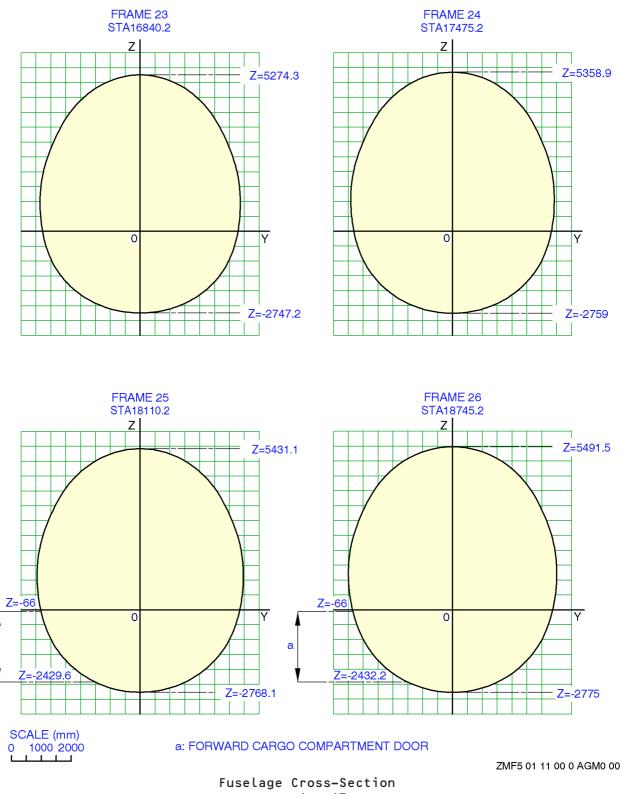




Fuselage Cross-Section Section 11/12 A380-800/800F Models ZMF5 01 11 00 0 AFM0 00

1-11 Page 7 0CT 15/03

MAINTENANCE FACILITY PLANNING



Fuselage Cross-Sectio Section 13 A380-800 Models

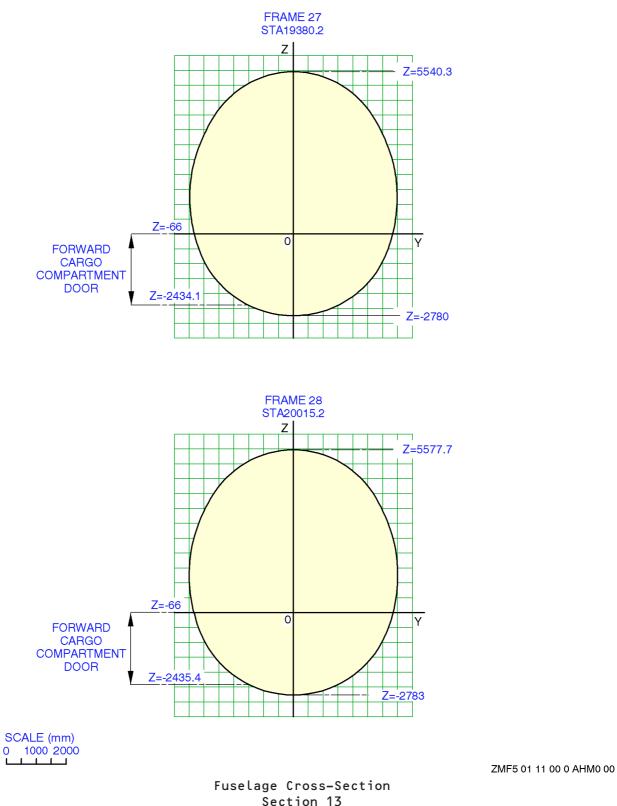
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MAINTENANCE FACILITY PLANNING

To Be Issued Later

Fuselage Cross-Section Section 13 A380-800F Models





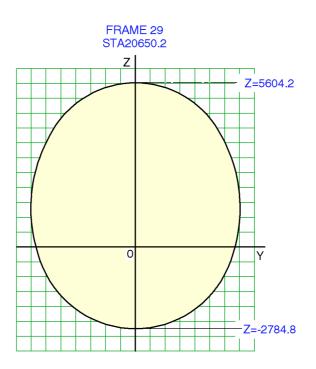
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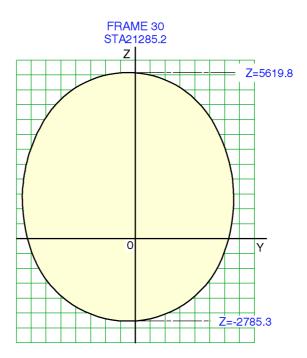


TBIL

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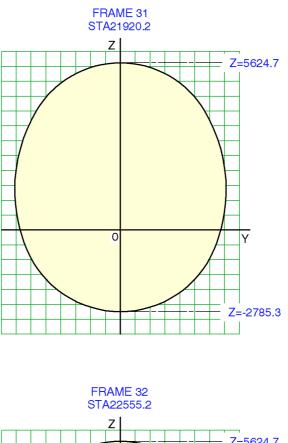
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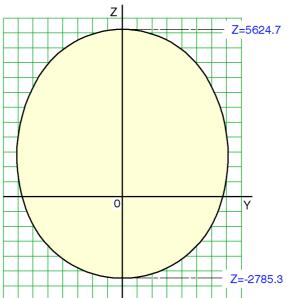


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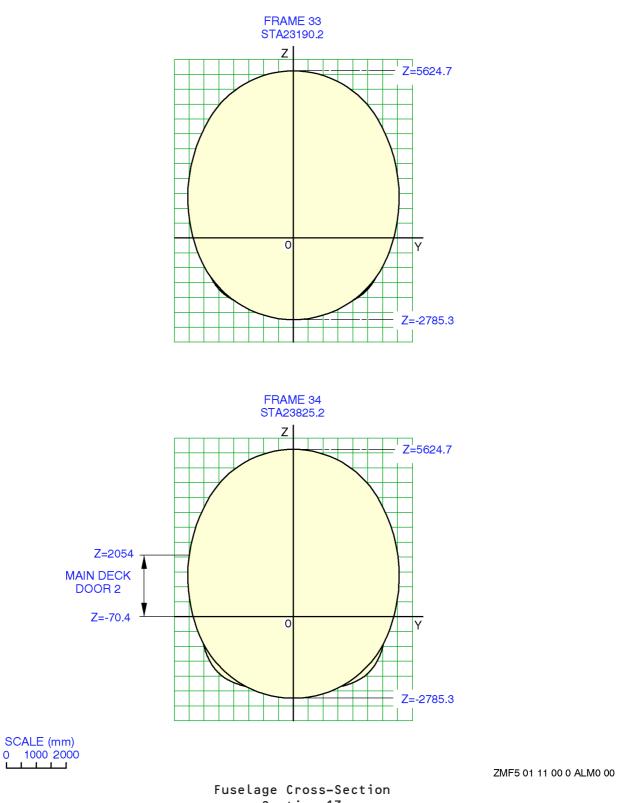
Fuselage Cross-Section Section 13 A380-800 Models



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Fuselage Cross-Section Section 13 A380-800F Models





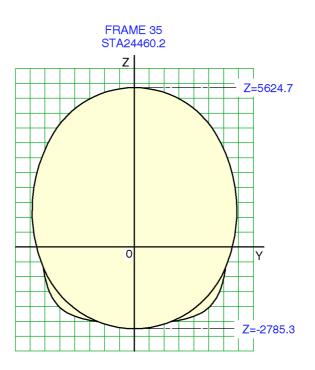
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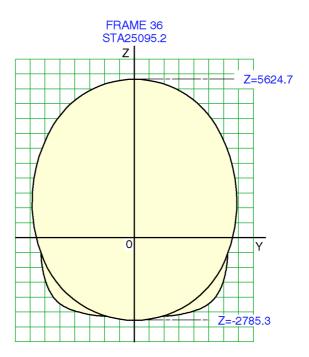


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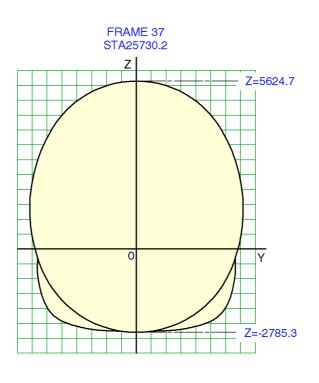
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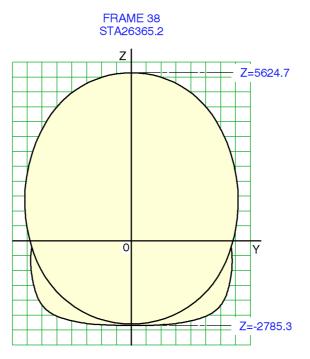


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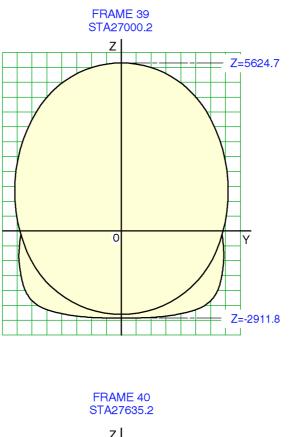
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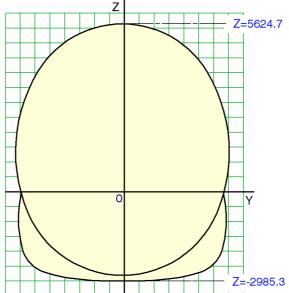


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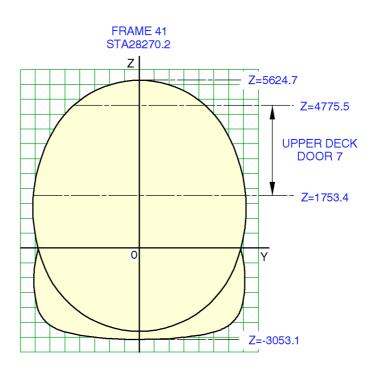
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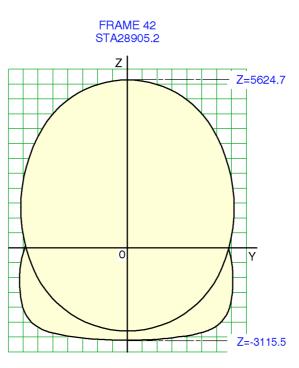


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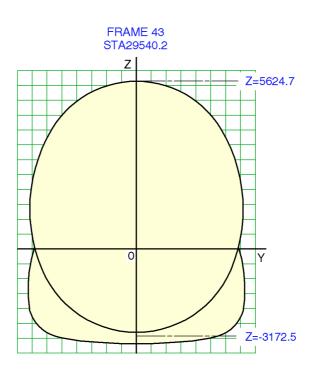
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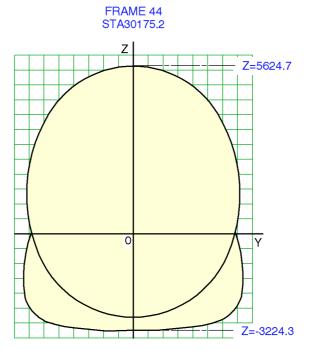


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Fuselage Cross-Section Section 15/21 A380-800F Models









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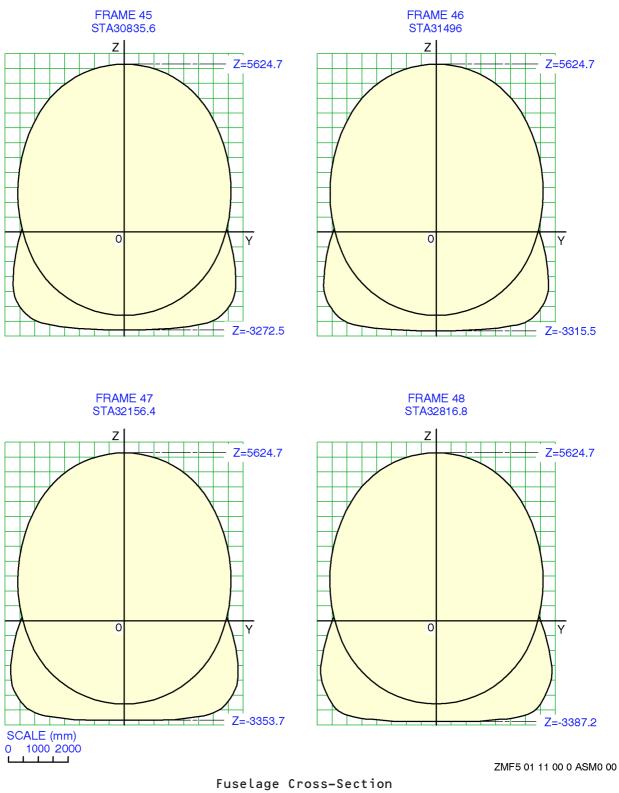
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Fuselage Cross-Section Section 15/21 A380-800F Models **GA380** PRELIMINARY DATA

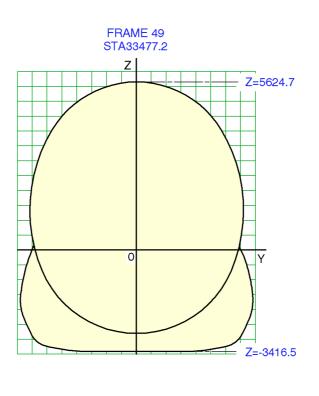
MAINTENANCE FACILITY PLANNING

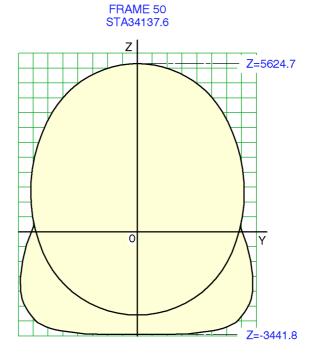




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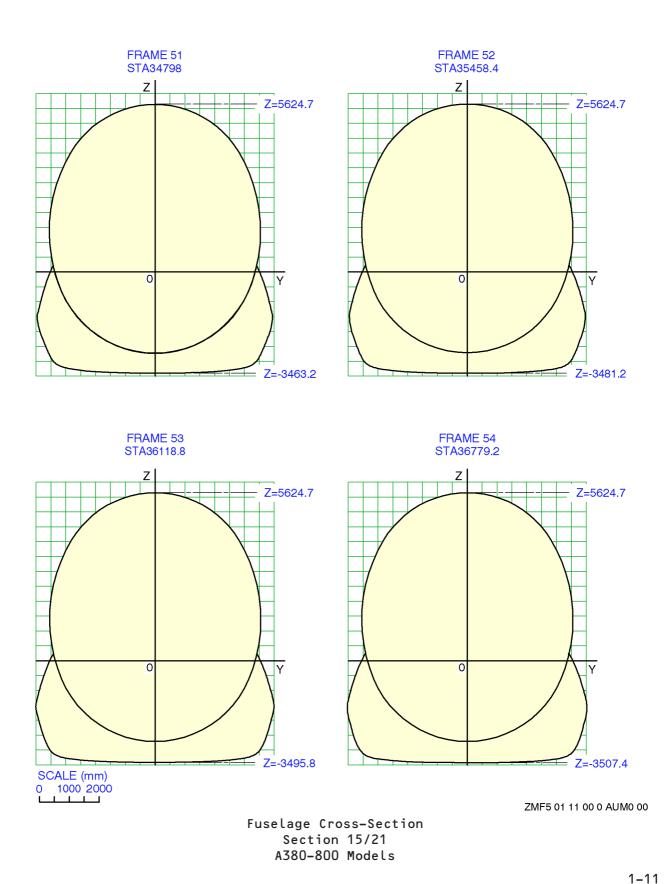
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GA380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING



Printed in France

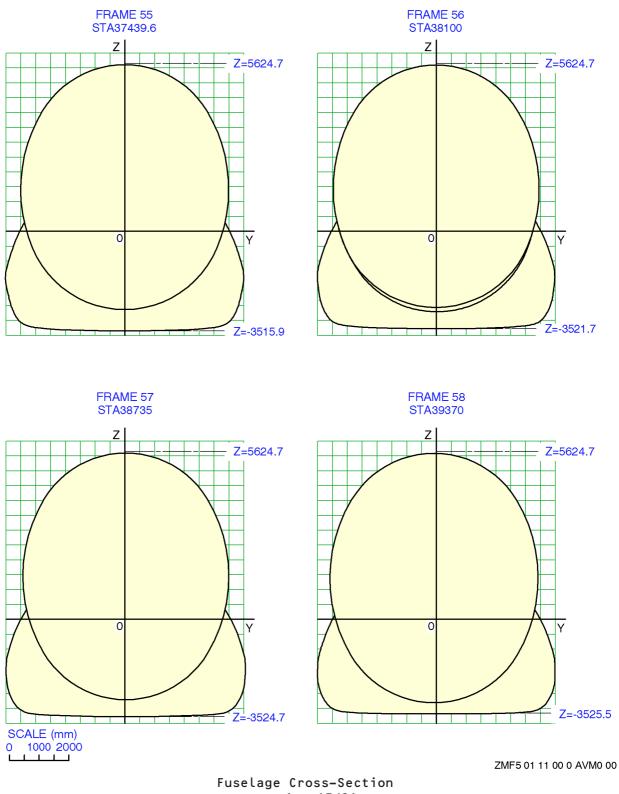
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GA380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING

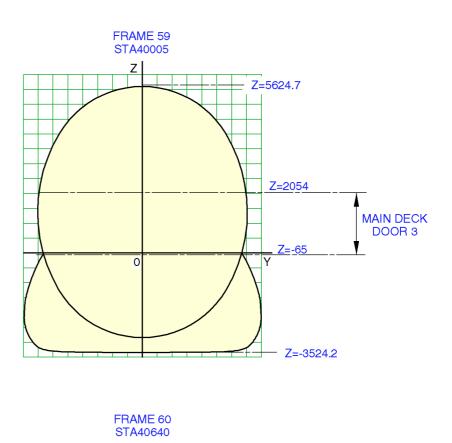


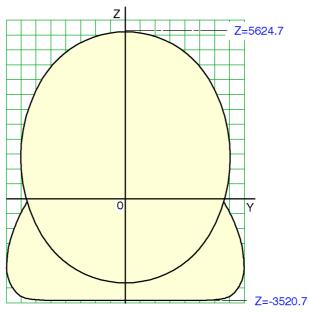
Section 15/21 A380-800 Models



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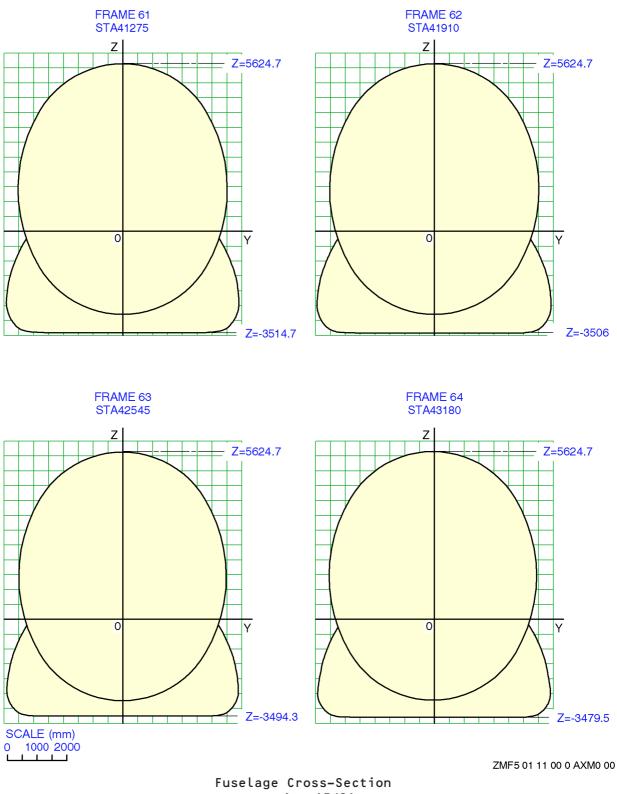
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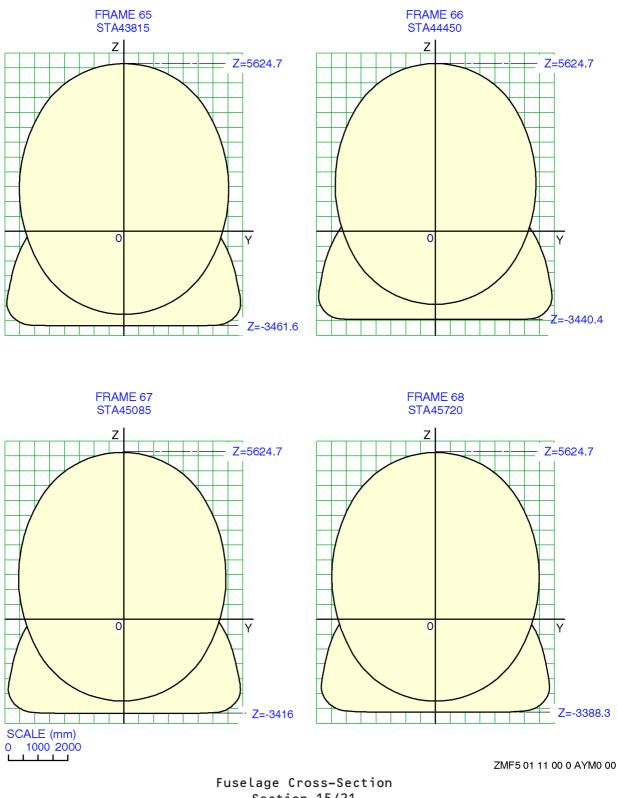




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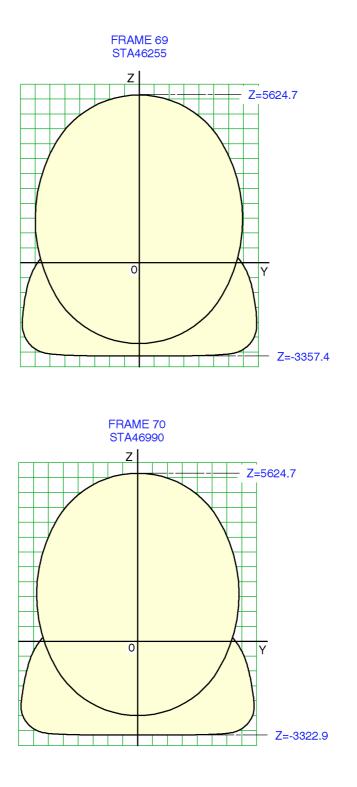
MAINTENANCE FACILITY PLANNING





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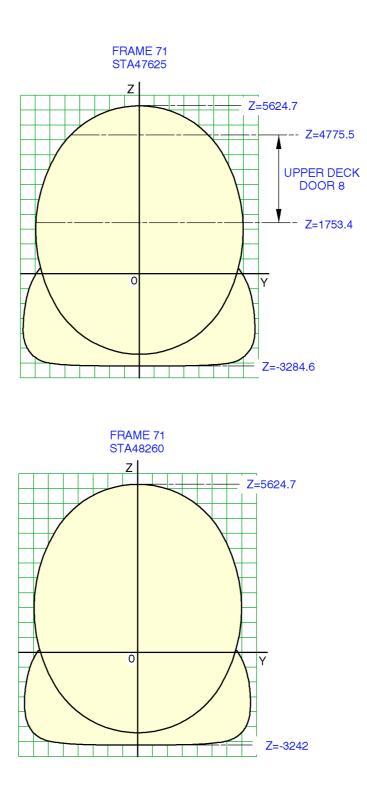


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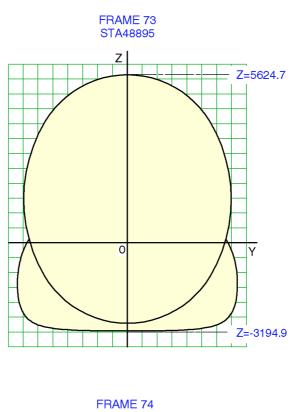


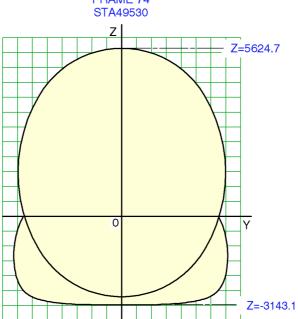
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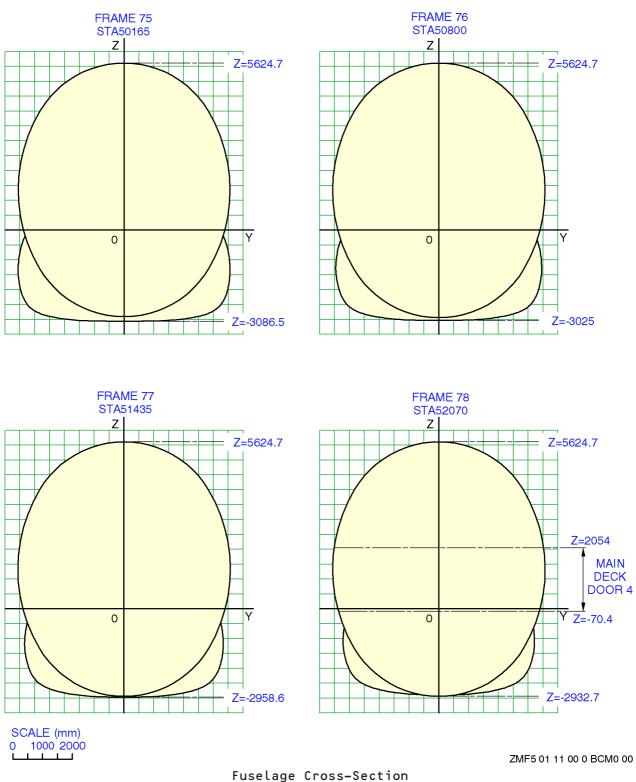




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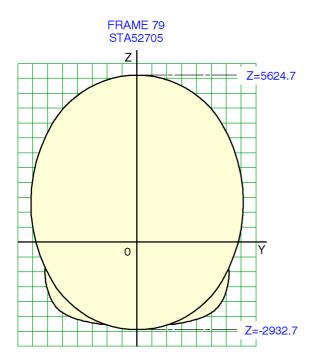


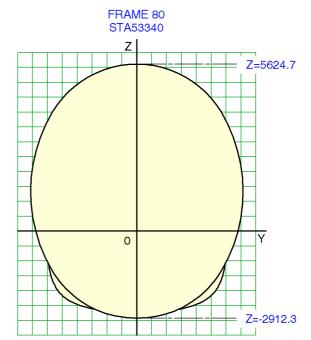
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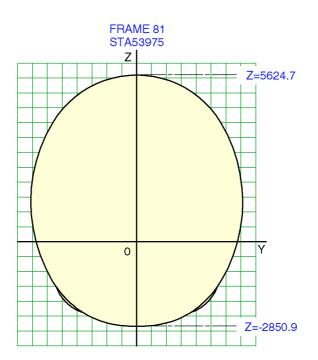




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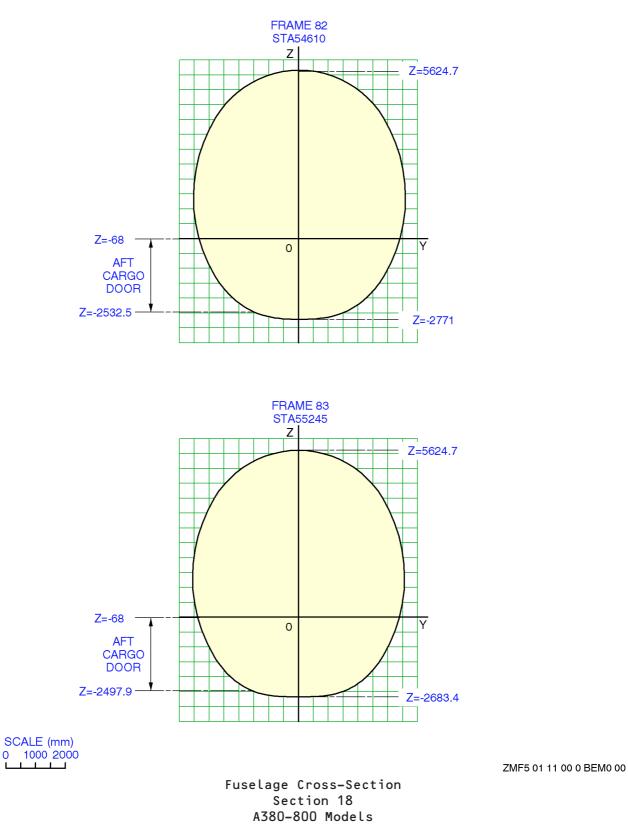


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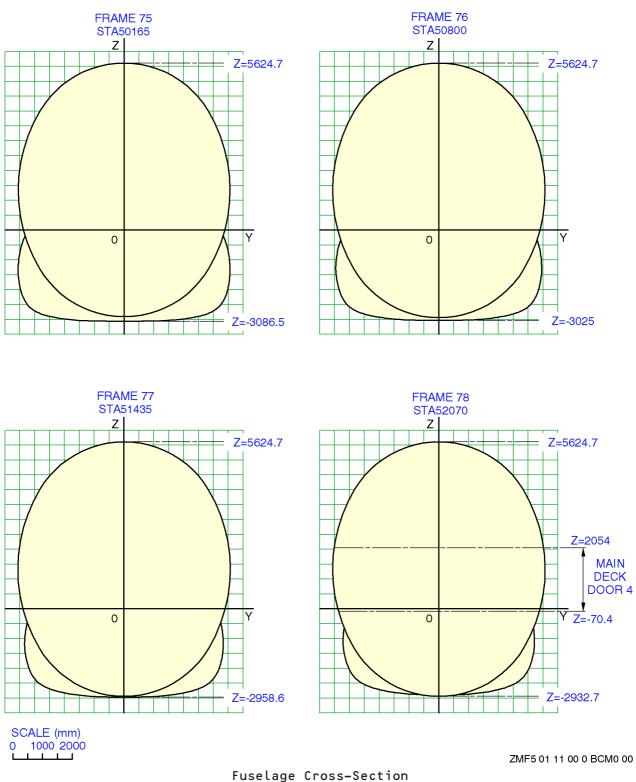
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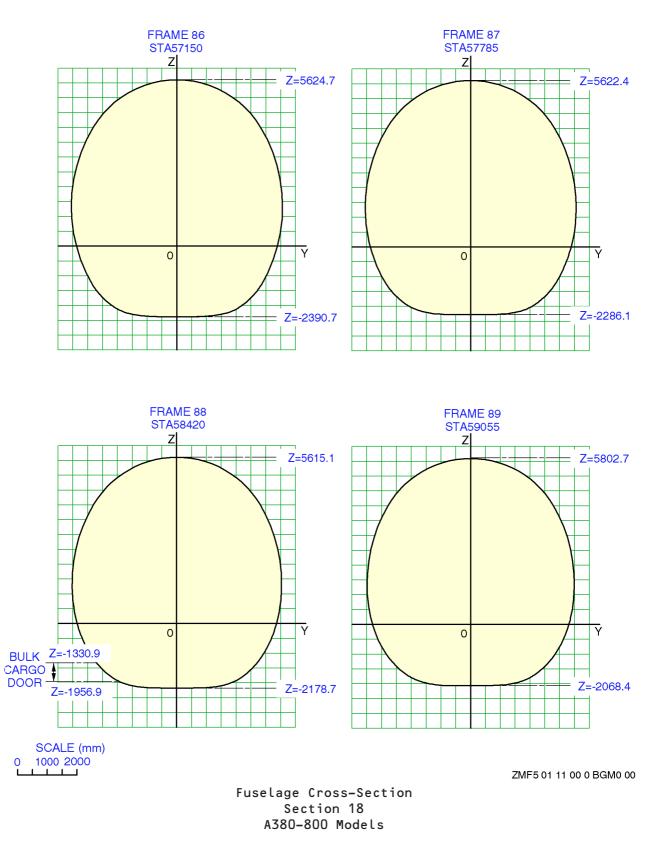




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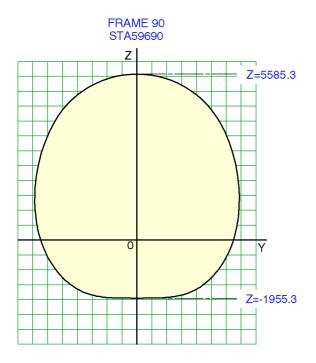
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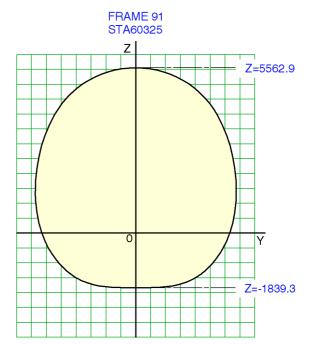
MAINTENANCE FACILITY PLANNING

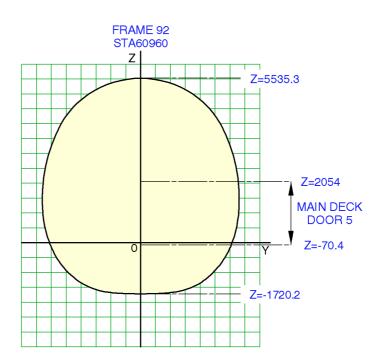




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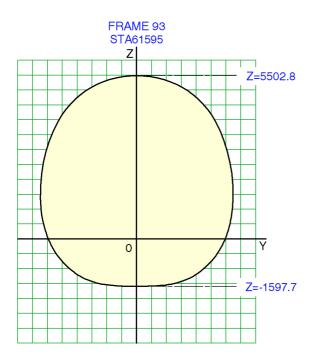
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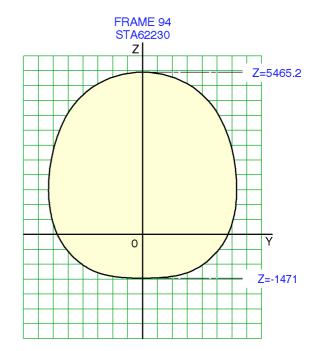
Fuselage Cross-Section Section 18 A380-800 Models

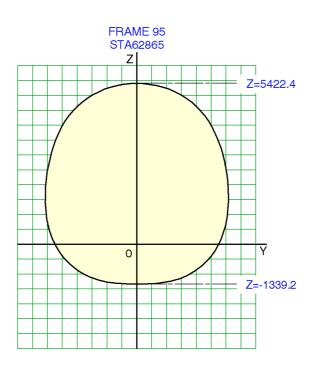
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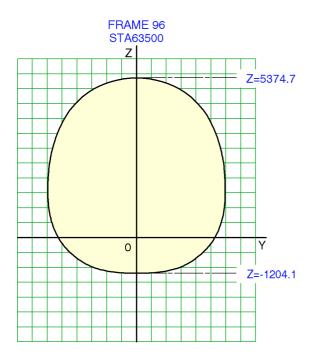


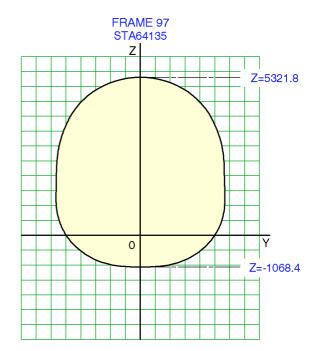
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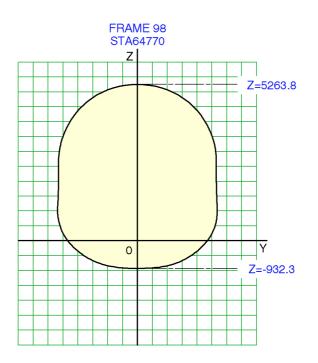
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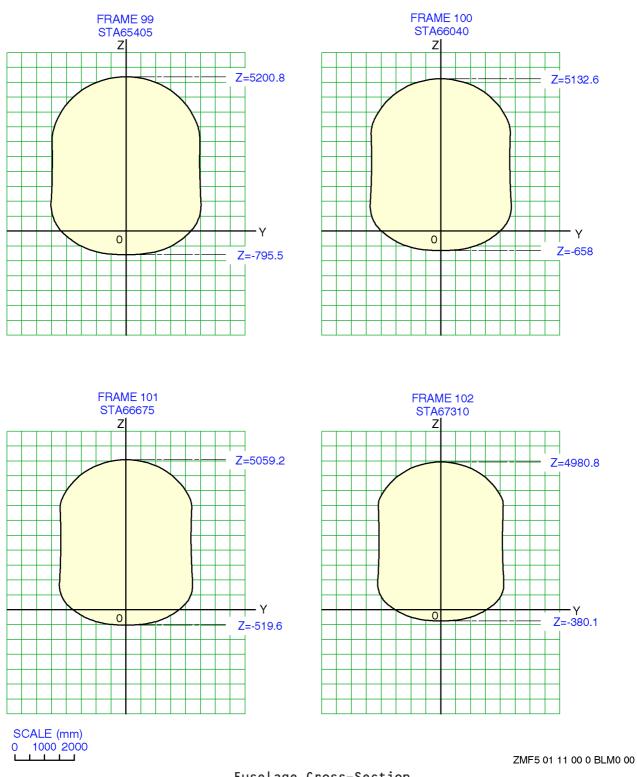


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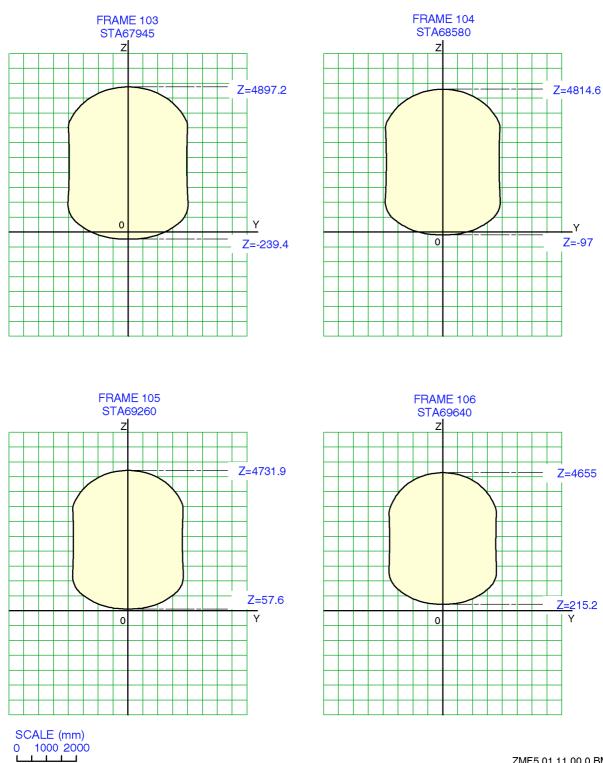
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GA380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING



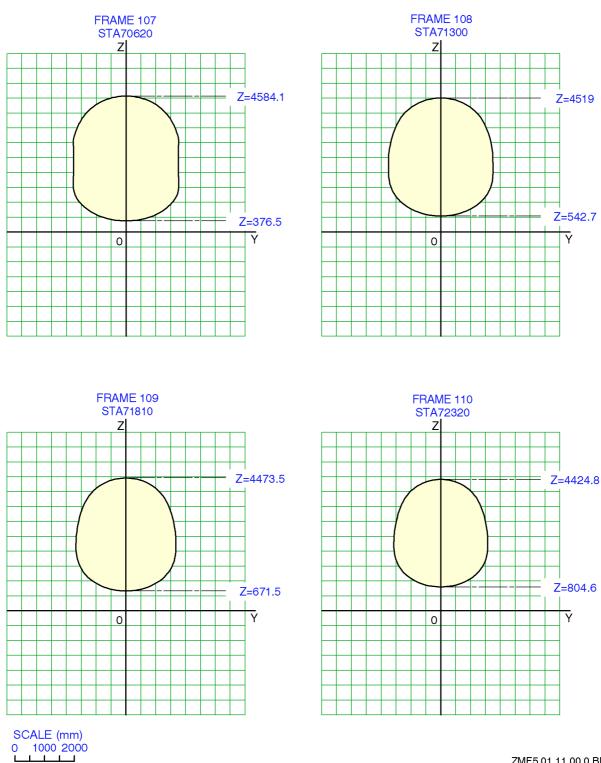
MAINTENANCE FACILITY PLANNING



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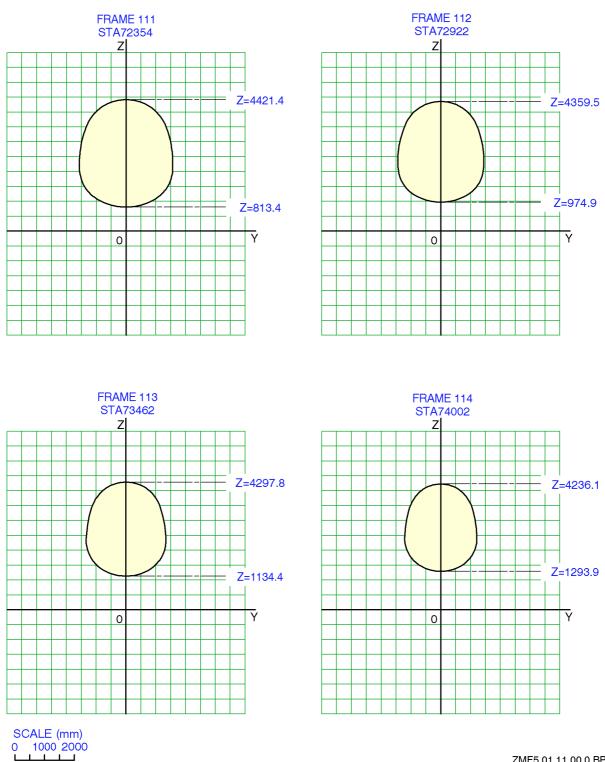
MAINTENANCE FACILITY PLANNING



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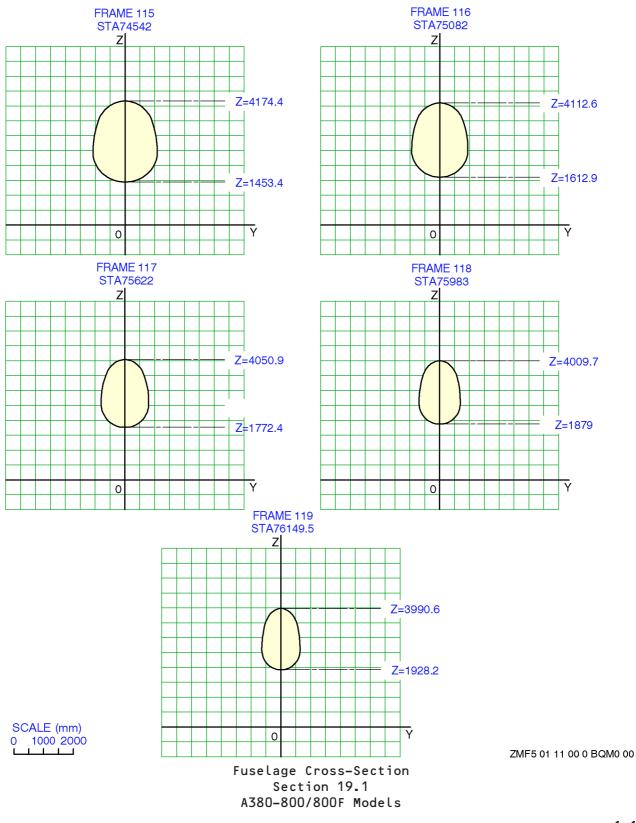
MAINTENANCE FACILITY PLANNING



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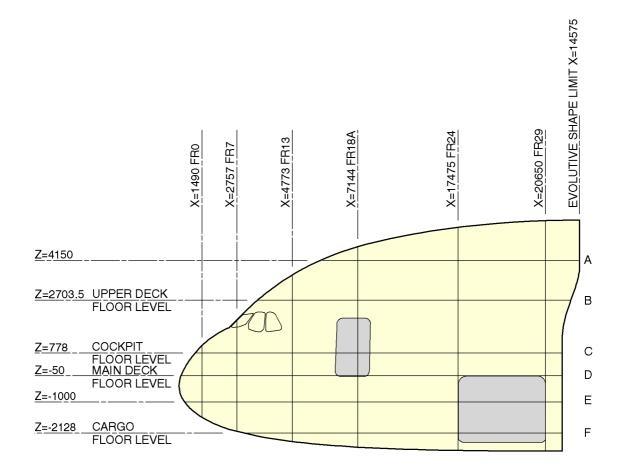
Fuselage Cross-Section Section 19.1 A380-800/800F Models

MAINTENANCE FACILITY PLANNING





NOSE CONTOURS



MAINTENANCE FACILITY PLANNING

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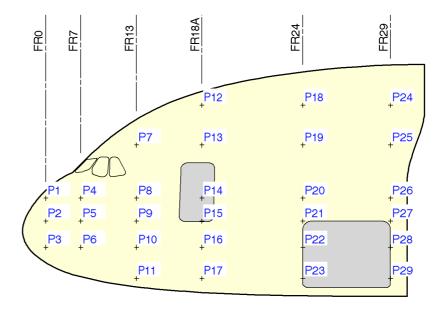
Nose Contours Level Positions A380-800 Models

MAINTENANCE FACILITY PLANNING

TBIL

Nose Contours Level Positions A380-800F Models





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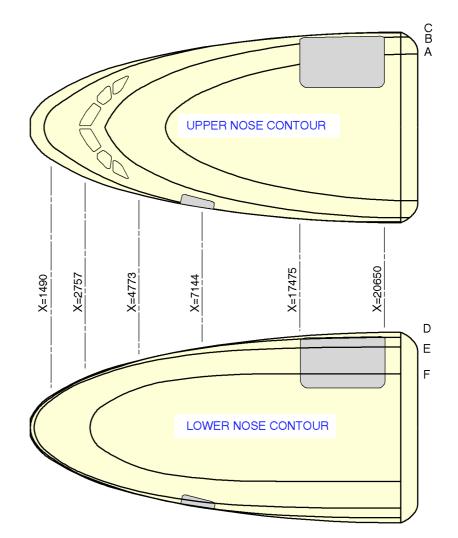
Nose Contours A380-800 Models



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Nose Contours A380-800F Models





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Nose Contours A380-800 Models



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Nose Contours A380-800F Models

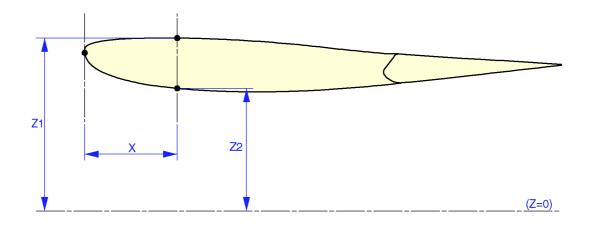


HORIZONTAL STABILIZER CONTOURS

Horizontal stabilizer contours shown in this subject have been selected to assist in designing stands or equipment. These levels provide access to important maintenance areas such as servo controls, elevator hinges, trimmable horizontal stabilizer hinges, leading edge, trailing edge.

The contours given are on the surface of body skin ; clearance space allowances will have to be made as required.

Ground clearance will depend on whether the airplane is on jacks or on wheels and in this case what the CG and weight conditions are.

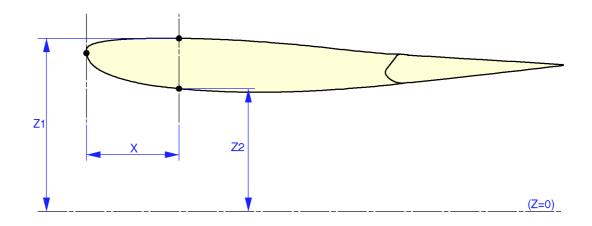


,	Y	×							
mm		(0 750		50	1500		2250	
	in	()	29	.53	59	.06	88	.58
		Z1	Z2	Z1	Z2	Z1	Z2	Z1	Z2
mm	2500	2671	2671	2957	2221	2983	2114	2970	2060
in	98.43	105.14	105.14	116.40	87.46	117.43	83.23	116.92	81.10
mm	3500	2782	2782	3030	2290	3051	2237	3036	2204
in	137.80	109.55	109.55	119.30	90.15	120.11	88.08	119.53	86.78
mm	4500	2894	2894	3107	2503	3123	2408	3107	2362
in	177.17	113.92	113.92	122.33	98.53	122.95	94.81	122.34	92.98
mm	5500	3003	3003	3187	2635	3199	2546	3184	2503
in	216.54	118.22	118.22	125.47	103.75	125.96	100.25	125.34	98.55
mm	6500	3108	3108	3281	2755	3289	2670	3270	2630
in	255.91	122.37	122.37	129.16	108.45	129.49	105.11	128.74	103.55
mm	7500	3213	3213	3376	2872	3380	2791	3357	2755
in	295.28	126.51	126.51	132.93	113.07	133.08	109.87	132.15	108.45
mm	8500	3319	3319	3472	2989	3471	2912	3442	2879
in	334.65	130.65	130.65	136.69	117.69	136.65	114.64	135.52	113.36
mm	9500	3424	3424	3567	3107	3561	3033	3526	3005
in	374.02	134.80	134.80	140.42	122.32	140.18	119.42	138.84	118.30
mm	10500	3529	3529	3661	3225	3649	3155	3609	3131
in	413.39	138.94	138.94	144.14	126.95	143.67	124.21	142.08	123.26
mm	11500	3634	3634	3755	3342	3737	3277	3689	3257
in	452.76	143.08	143.08	147.83	131.59	147.12	129.00	145.24	128.24
mm	12500	3739	3739	3848	3460	3823	3399	3767	3385
in	492.13	147.22	147.22	151.50	136.23	150.51	133.81	148.29	133.26
mm	13500	3825	3825	3923	3567	3891	3514	3825	3511
in	531.50	150.60	150.60	154.45	140.42	153.20	138.35	150.57	138.23

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Horizontal Stabilizer Contours A380-800/800F Models (Sheet 1)

MAINTENANCE FACILITY PLANNING

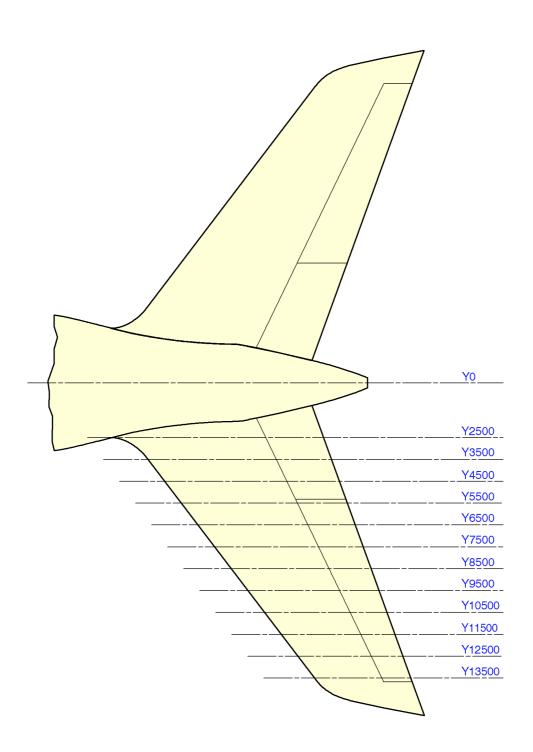


,	Y	×							
mm		30	3000 3750		50	4500		5250	
i	in	118	3.11	147	7.64	177	7.17	206	6.69
		Z1	Z2	Z1	Z2	Z1	Z2	Z1	Z2
mm	2500	2931	2039	2875	2046	2807	2077	2735	2130
in	98.43	115.41	80.29	113.18	80.55	110.51	81.79	107.68	83.84
mm	3500	2998	2195	2943	2213	2876	2264	2805	2364
in	137.80	118.03	86.43	115.86	87.14	113.21	89.12	110.43	93.07
mm	4500	3071	2346	3016	2357	2948	2392	2880	2445
in	177.17	120.90	92.37	118.76	92.80	116.06	94.17	113.37	96.26
mm	5500	3148	2490	3093	2504	3022	2541	2957	2595
in	216.54	123.95	98.05	121.79	98.59	118.98	100.06	116.42	102.15
mm	6500	3230	2621	3170	2640	3097	2681	3035	2735
in	255.91	127.18	103.20	124.81	103.92	121.91	105.55	119.50	107.70
mm	7500	3312	2750	3245	2774	3172	2819	3114	2874
in	295.28	130.38	108.27	127.74	109.20	124.89	110.98	122.60	113.16
mm	8500	3391	2880	3318	2909	3249	2957	3192	3012
in	334.65	133.49	113.38	130.61	114.52	127.90	116.42	125.68	118.59
mm	9500	3468	3010	3390	3045	3326	3095	3269	3149
in	374.02	136.52	118.52	133.47	119.87	130.93	121.84	128.70	123.97
mm	10500	3542	3142	3464	3181	3402	3231	3343	3284
in	413.39	139.44	123.71	136.40	125.23	133.95	127.21	131.63	129.29
mm	11500	3613	3275	3539	3317	3477	3366		
in	452.76	142.26	128.93	139.34	130.59	136.91	132.52		
mm	12500	3684	3408	3614	3452	3550	3499		
in	492.13	145.04	134.19	142.28	135.89	139.76	137.74		
mm	13500	3743	3544	3676	3588				
in	531.50	147.35	139.52	144.74	141.28				

ZMF0 01 14 00 0 ACMM 00

Horizontal Stabilizer Contours A380-800/800F Models (Sheet 2)





ZMF0 01 14 00 0 AAM0 00

Horizontal Stabilizer Contours Level Positions

MAINTENANCE FACILITY PLANNING

TAIL CONTOURS

Tail contours shown in this section have been selected to assist in designing stands or equipment.

The levels provide access to maintenance areas such as APU, aft passenger/crew doors.

The contours given are on the surface of body skin ; clearance allowances will have to be made as required. Ground clearances will depend on whether the airplane is on jacks or on wheels in this last case what the C.G and weight conditions are.

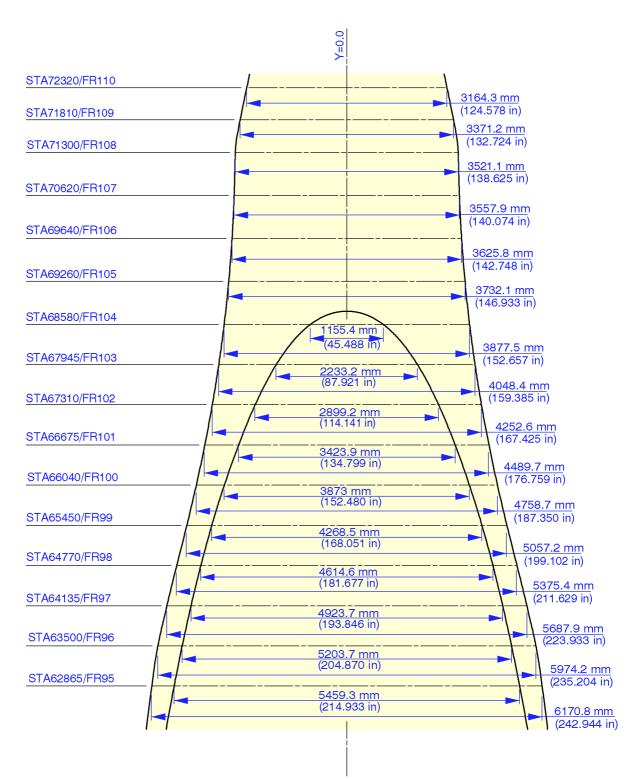
MAINTENANCE FACILITY PLANNING

FR120/STA77204.5
FR119/STA76677
FR118/STA76149.5
FR117/STA75622
FR116/STA75132
FR115/STA74592
FR114/STA74002
FR113/STA73462
FR112/STA72922
FR111/STA72354 FR110/STA72320
FR109/STA71810
FR108/STA71300
FR107/STA70620
FR106/STA69940
FR105/STA69260
FR104/STA68580
FR103/STA67945
FR102/STA67310
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FR100/STA66040
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FR98/STA64770
FR97/STA64135
FR96/STA63500
FR95/STA62865

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Tails Contours A380-800/800F Models

MAINTENANCE FACILITY PLANNING



ZMF0 01 15 00 0 ACMA 00

Tails Contours Level Position A380–800/800F Models

MAINTENANCE FACILITY PLANNING

WING PROFILE

1. General

Positions and dimensions of the wing ribs, from the centerline of the aircraft are given in Figures 1 and 2.

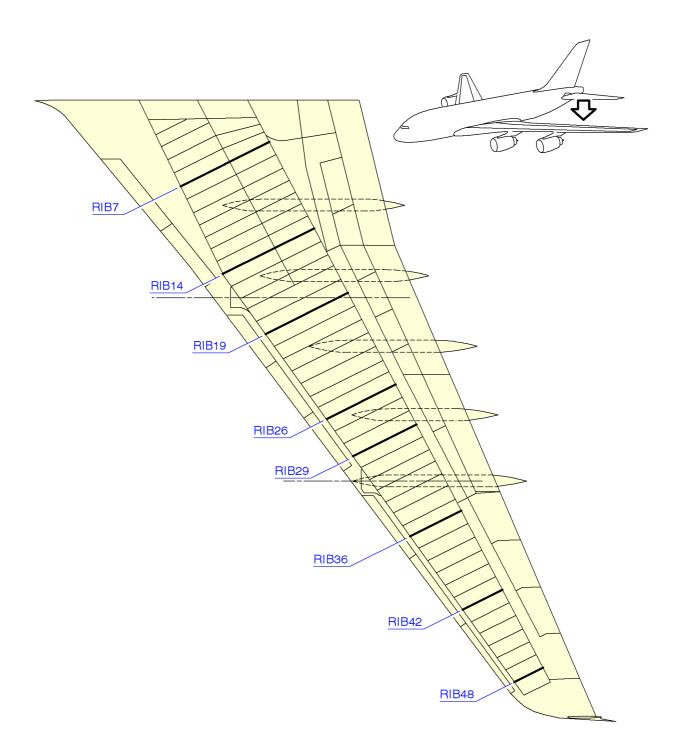
Figure 2 also shows a typical aerofoil cross-section with dimensions for Y and Z.

The selection of these rib positions along the wing is to give the aircraft operator the necessary heights to make aircraft servicing stands, supports or trestles.

The dimensions for the wing profiles (dimensions Y and Z) at each of the rib positions are given in para. 2. to 9.

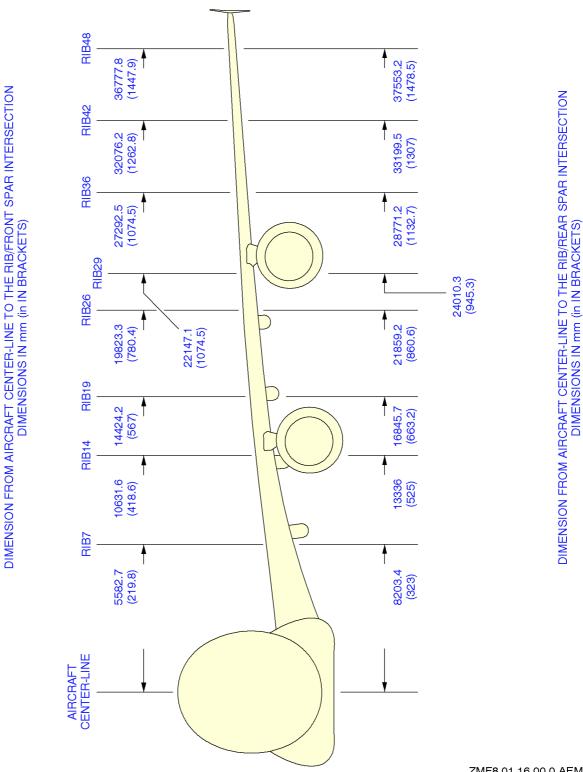
These dimensions (when plotted from datum VZO) give the shape of the aerofoil cross-section and full slope of the wing from wingtip to wingroot.

All the dimensions for the profiles are taken from the local datum position (at the wing leading edge, with the slats retracted) and from the horizontal datum VZO.



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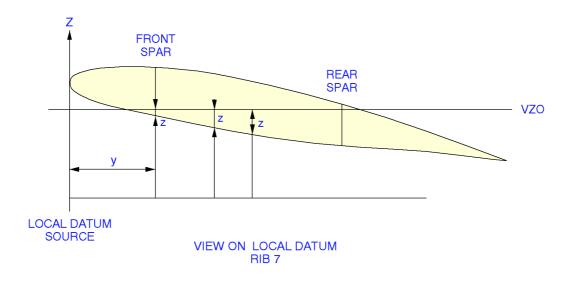
Wing Profile, Rib Locations Fig. 1

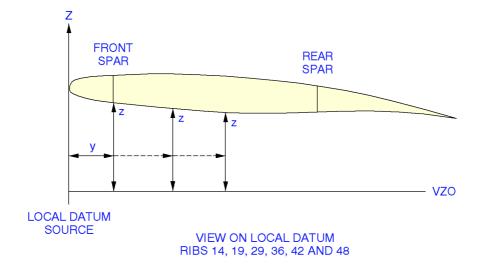


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Wing Profile - Rib Position Fig. 2

MAINTENANCE FACILITY PLANNING





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Wing Profile

MAINTENANCE FACILITY PLANNING

2. <u>RIB 7</u>

Intersection of Front Spar and rib 7. Source of Local datum for rib 7.

Skin Profile Points to Local Datum

Х	Х	Y	Y	Z
mm	in	mm	in	
2746.23	108.12	- 228.28	- 8.99	0
3056.71	120.34	- 295.96	- 11.65	0
3367.68	132.59	- 361.41	- 14.23	0
3679.15	144.85	- 424.45	- 16.71	0
3991.12	157.13	- 484.90	- 19.09	0
4303.61	169.43	- 542.68	- 21.37	0
4616.57	181.75	- 597.79	- 23.54	0
4929.98	194.09	- 650.33	- 25.60	0
5243.77	206.45	- 700.49	- 27.58	0
5557.90	218.81	- 748.55	- 29.47	0
5872.30	231.19	- 794.74	- 31.29	0
6186.95	243.58	- 839.27	- 33.04	0
6501.81	255.98	- 882.23	- 34.73	0
6816.89	268.38	- 923.59	- 36.36	0
7132.19	280.79	- 963.20	- 37.92	0
7447.74	293.22	- 1000.79	- 39.40	0
7763.55	305.65	- 1036.09	- 40.79	0
8079.64	318.10	- 1068.81	- 42.08	0
8396.00	330.55	- 1098.80	- 43.26	0
8712.61	343.02	- 1126.08	- 44.33	0

3. <u>RIB 14</u>

Intersection of Front Spar and rib 14. Source of Local datum for rib 14.

Skin Profile Points to Local Datum

		e bacam		
Х	Х	Y	Y	Z
mm	in	mm	in	
1357.81	53.46	974.01	38.35	0
1672.93	65.86	917.43	36.12	0
1988.25	78.28	861.91	33.93	0
2303.97	90.71	808.69	31.84	0
2620.15	103.16	758.35	29.86	0
2936.75	115.62	710.65	27.98	0
3253.66	128.10	665.07	26.18	0
3570.82	140.58	621.31	24.46	0
3888.24	153.08	579.46	22.81	0
4205.98	165.59	540.05	21.26	0
4524.09	178.11	503.88	19.84	0
4842.65	190.66	471.76	18.57	0
5161.63	203.21	444.34	17.49	0
5481 . 01	215.79	421.92	16.61	0
5800.70	228.37	404.52	15.93	0
6120.61	240.97	391.71	15.42	0
6440.66	253.57	382.90	15.07	0
6760.78	266.17	377.46	14.86	0
7080.94	278.78	374.54	14.75	0
7401.10	291.38	373.01	14.69	0

4. <u>RIB 19</u>

Intersection of Front Spar and rib 19. Source of Local datum for rib 19.

Skin Profile Points to Local Datum

Х	X	Y	Y	Z
mm	in	mm	in	
1208.34	47.57	1430.76	56.33	0
1490.67	58.69	1384.62	54.51	0
1773.38	69.82	1340.85	52.79	0
2056.60	80.97	1300.54	51.20	0
2340.38	92.14	1264.43	49.78	0
2624.70	103.33	1232.80	48.54	0
2909.48	114.55	1205.61	47.47	0
3194.63	125.77	1182.68	46.56	0
3480.08	137.01	1163.72	45.82	0
3765.74	148.26	1148.42	45.21	0
4051.57	159.51	1136.49	44.74	0
4337.51	170.77	1127.69	44.40	0
4623.53	182.03	1121.98	44.17	0
4909.59	193.29	1119.41	44.07	0
5195.66	204.55	1120.16	44.10	0
5481.71	215.82	1124.09	44.26	0
5767.72	227.08	1130.67	44.51	0
6053.68	238.33	1138.95	44.84	0
6339.62	249.59	1147.76	45.19	0
6625.58	260.85	1155.96	45.51	0

MAINTENANCE FACILITY PLANNING

5. <u>RIB 26</u>

Intersection of Front Spar and rib 26. Source of Local datum for rib 26.

Skin Profile Points to Local Datum

Х	Х	Y	Y	Z
mm	in	mm	in	
1078.37	42.46	1926.80	75.86	0
1342.52	52.86	1888.34	74.34	0
1607.23	63.28	1853.93	72.99	0
1872.47	73.72	1823.99	71.81	0
2138.20	84.18	1798.63	70.81	0
2404.32	94.66	1777.83	69.99	0
2670.76	105.15	1761.59	69.35	0
2937.44	115.65	1750.03	68.90	0
3204.29	126.15	1743.34	68.64	0
3471.22	136.66	1741.76	68.57	0
3738.13	147.17	1745.42	68.72	0
4004.91	157.67	1754.31	69.07	0
4271.48	168.17	1768.29	69.62	0
4537.75	178.65	1787.01	70.35	0
4803.74	189.12	1809.53	71.24	0
5069.53	199.59	1834.22	72.21	0
5335.34	210.05	1858.72	73.18	0
5601.37	220.53	1880.68	74.04	0

6. <u>RIB 29</u>

Intersection of Front Spar and rib 29. Source of Local datum for rib 29.

Skin Profile Points to Local Datum

Х	Х	Y	Y	Z
mm	in	mm	in	
1023.63	40.30	2111.24	83.12	0
1317.16	51.86	2069.15	81.46	0
1611.41	63.44	2032.40	80.02	0
1906.44	75.06	2002.66	78.84	0
2202.15	86.70	1980.57	77.98	0
2498.30	98.36	1965.59	77.39	0
2794.70	110.03	1956.84	77.04	0
3091.22	121.70	1953.66	76.92	0
3387.74	133.38	1955.80	77.00	0
3684.18	145.05	1963.33	77.30	0
3980.43	156.71	1976.28	77.81	0
4276.40	168.36	1994.49	78.52	0
4572.05	180.00	2017.36	79.42	0
4867.48	191.63	2043.06	80.44	0
5162.95	203.27	2068.22	81.43	0

7. RIB 36

Intersection of Front Spar and rib 36. Source of Local datum for rib 36.

Skin Profile Points to Local Datum

Х	Х	Y	Y	Z
mm	in	mm	in	
905.61	36.96	2510.61	102.47	0
1139.12	46.49	2479.20	101.19	0
1372.92	56.04	2450.08	100.00	0
1607.16	65.60	2424.69	98.97	0
1841.91	75.18	2404.70	98.15	0
2077.11	84.78	2390.91	97.59	0
2312.59	94.39	2383.03	97.27	0
2548.18	104.01	2380.19	97.15	0
2783.78	113.62	2381.50	97.20	0
3019.34	123.24	2386.46	97.41	0
3254.81	132.85	2394.74	97.74	0
3490.16	142.46	2405.81	98.20	0
3725.40	152.06	2418.94	98.73	0
3960.57	161.66	2433.33	99.32	0
4195.75	171.25	2447.71	99.91	0

8. <u>RIB 42</u>

Intersection of Front Spar and rib 42. Source of Local datum for rib 42.

Skin Profile Points to Local Datum

			-	
Х	Х	Y	Y	Z
mm	in	mm	in	
799.38	31.47	2862.47	112.70	0
1076.17	42.37	2831.00	111.46	0
1353.12	53.27	2801.03	110.28	0
1630.57	64.20	2776.08	109.29	0
1908.64	75.14	2759.57	108.64	0
2187.13	86.11	2753.27	108.40	0
2465.66	97.07	2756.86	108.54	0
2743.96	108.03	2769.03	109.02	0
3021.90	118.97	2787.73	109.75	0
3299.67	129.91	2808.93	110.59	0

9. RIB 48

Intersection of Front Spar and rib 48. Source of Local datum for rib 48.

Skin Profile Points to Local Datum

Х	Х	Y	Y	Z	
mm	in	mm	in		
698.44	27.50	3158.68	124.36	0	
889.44	35.02	3139.88	123.62	0	
1080.60	42.54	3122.74	122.94	0	
1272.02	50.08	3109.03	122.40	0	
1463.74	57.63	3100.28	122.06	0	
1655.63	65.18	3097.23	121.94	0	
1847.53	72.74	3099.73	122.04	0	
2039.29	80.29	3107.32	122.34	0	
2230.84	87.83	3119.28	122.81	0	
2422.17	95.36	3134.28	123.40	0	

MAINTENANCE FACILITY PLANNING

SECTION 2 - TERMINAL AND RAMP

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Airplane Parking	2-9
Towing (TBIL)	2-10
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MAINTENANCE FACILITY PLANNING

AIRPLANE SERVICING ARRANGEMENT

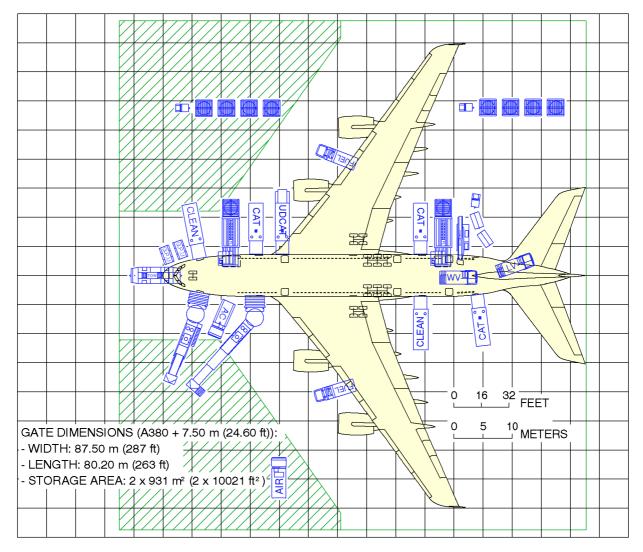
This section provides typical ramp layouts, showing the various GSE items in position during typical turn-round scenarios.

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

For each ramp layout, the associated typical turn-round time is given in a Chart in the section 2-2.

MAINTENANCE FACILITY PLANNING

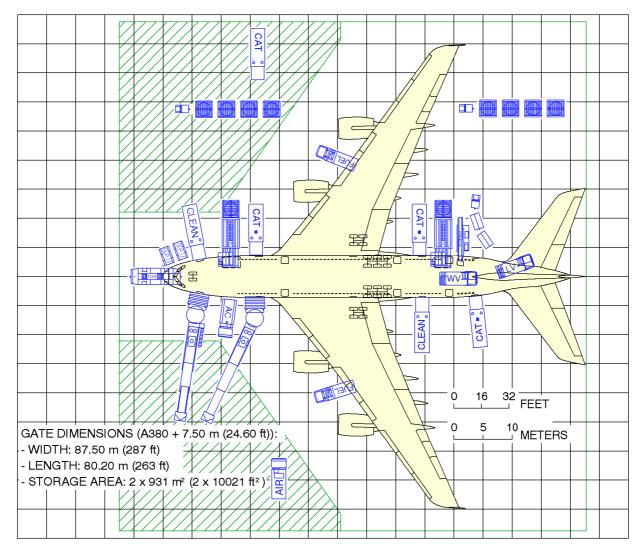
AC: AIR COND UNIT AIR: AIR START UNIT CAT: CATERING VEHICLE CLEAN: CLEANING VEHICLE CONVEYOR: CONVEYOR BELT FUEL: FUEL HYDRANT DISPENSER GPU: GROUND POWER UNIT LV: LAVATORY VEHICLE PL: PALLET/CONTAINER LOADER TOW: TOWING TRACTOR WV: POTABLE WATER VEHICLE



RL28/B1A/800/STD		ZMF5 02 01 00 0 AAM0 01
R R R	Typical Ramp Layout – Two Bridges Standard Servicing Via Main and Upper Decks A380–800 Models	

MAINTENANCE FACILITY PLANNING

AC: AIR COND UNIT AIR: AIR START UNIT CAT: CATERING VEHICLE CLEAN: CLEANING VEHICLE CONVEYOR: CONVEYOR BELT FUEL: FUEL HYDRANT DISPENSER GPU: GROUND POWER UNIT LV: LAVATORY VEHICLE PL: PALLET/CONTAINER LOADER TOW: TOWING TRACTOR WV: POTABLE WATER VEHICLE



RL01/B1A/800/STD	
	Typical Ramp Layout – Two Bridges
	Servicing Via Main Deck
	A380-800 Models

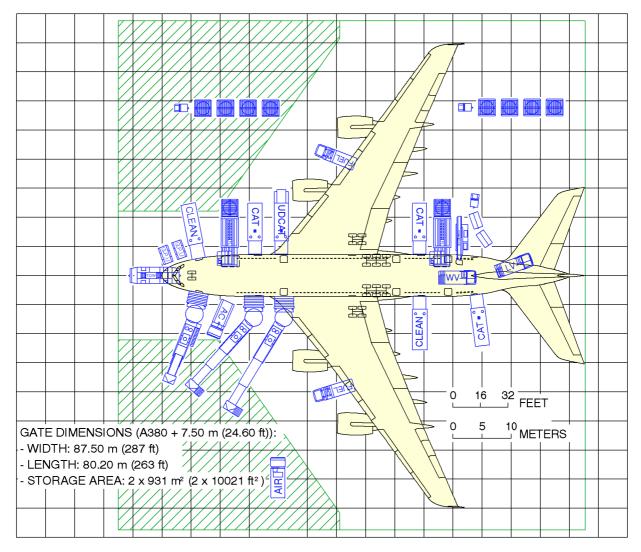
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2-1 Page 3 OCT 15/03

R R R

MAINTENANCE FACILITY PLANNING

AC: AIR COND UNIT AIR: AIR START UNIT CAT: CATERING VEHICLE CLEAN: CLEANING VEHICLE CONVEYOR: CONVEYOR BELT FUEL: FUEL HYDRANT DISPENSER GPU: GROUND POWER UNIT LV: LAVATORY VEHICLE PL: PALLET/CONTAINER LOADER TOW: TOWING TRACTOR WV: POTABLE WATER VEHICLE



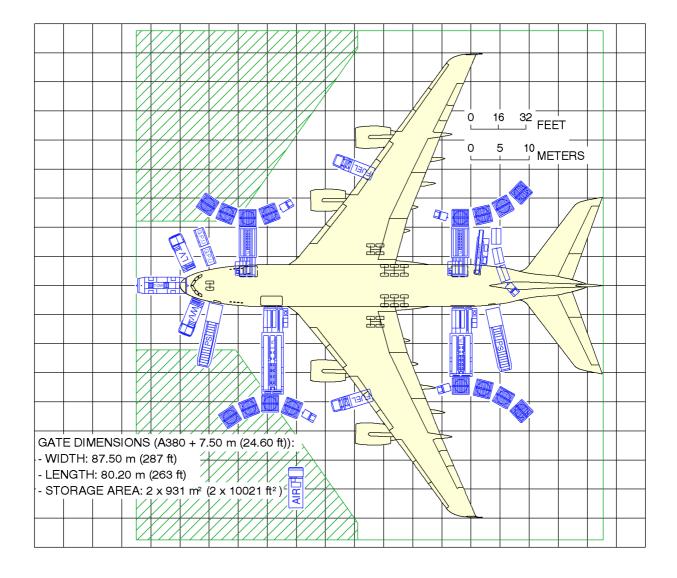
RL02/B1A/800/STD

- R R
- R R

Typical Ramp Layout - Three Bridges Servicing Via Main and Upper Decks A380-800 Models ZMF5 02 01 00 0 ACM0 01

MAINTENANCE FACILITY PLANNING

AC: AIR COND UNIT AIR: AIR START UNIT CONVEYOR: CONVEYOR BELT FUEL: FUEL HYDRANT DISPENSER GPU: GROUND POWER UNIT LV: LAVATORY VEHICLE PL: PALLET/CONTAINER LOADER PS: PASSENGER STAIRS TOW: TOWING TRACTOR WV: POTABLE WATER VEHICLE



RL04/B1/800F/STD

ZMF5 02 01 00 0 CCM0 01

Typical Ramp Layout A380-800F Models

R

R

MAINTENANCE FACILITY PLANNING

TERMINAL OPERATION

This section provides typical turn-round time charts showing the typical times for ramp activities during aircraft turn-round.

Actual times may vary due to each operator's specific practice and operating conditions.

For each turn-round time chart, the associated typical ramp layout is given in section 2–1.

MAINTENANCE FACILITY PLANNING

ASSUMED TURN-ROUND TIME PARAMETERS

```
PASSENGER BOARDING/DEBOARDING (PB/D) \rightarrow 100% (555 pax) passenger exchange :
- Doors (type A - 42" wide) used : M1L and M2L (main deck) and U1R (upper deck).
- PB/D rate : boarding = 15 pax/min / deboarding = 25 pax/min
- Last Pax Seating Allowance (LPS) = + 4 min
- 60" stair flow rate : up-flow = 14 pax/min / down-flow = 18 pax/min
CARGO \rightarrow Full LD-3 exchange (22 + 16) LD-3 and bulk exchange of 2 000 kg
         (4 409 lb) :
• LD-3 off-loading/loading times :
  off-loading = 1.4 min/LD-3 / loading = 1.7 min/LD-3

    Pallet loading times :

  off-loading = 2.5 min/pallet / loading = 2.9 min/pallet
• bulk off-loading/loading times :
  off-loading = 9.2 min/t / loading = 10.5 min/t
\texttt{REFUELLING} \rightarrow \texttt{Block} fuel for Nominal Range through 4 nozzles :
• 255 000 liters (67 364 US gallons) at 40 psi (48 min)
- dispenser positioning or removal = 3 min (fuel truck change) / if any = 5 min
CLEANING \rightarrow Full cleaning :
- Crew adapted to match catering time
CATERING \rightarrow Full catering :
- average truck capacity = 30 Full Size Trolley Equivalent (FSTE)
- simultaneous catering and PB/D = not represented
inbound/outbound FSTE = mixed in the same truck
• FSTE exchange time :
  - dedicated door-galley = 1.5 min/FSTE
  - cart circulation (1 seat zone) = + 0.5 min/FSTE
  - cart circulation (> 1 seat zone) = + 1.0 min/FSTE
  - via lift :
   - dedicated door to single lift = 2.0 min/FSTE
GROUND HANDLING/SERVICING
- start of operations :
  - bridges = t0 = 0
  - others = t0 + 1 \min
• vehicle positioning/removal = 2 min (fuel truck excluded)
- upper deck vehicle positioning/removal = 3 min
- clearance between GSE = 0.5 m (20 in)
- Ground Power Unit (GPU) = up to 4 \times 90 kVA
- air conditioning = two carts
- potable water (standard/option) = 1 875/2 500 liters (495/660 US gal) at
                                      87.5 l/min (23 US gal/min).
• waste water = discharge and rinsing
- dollies per tractor = 4 to 6
```

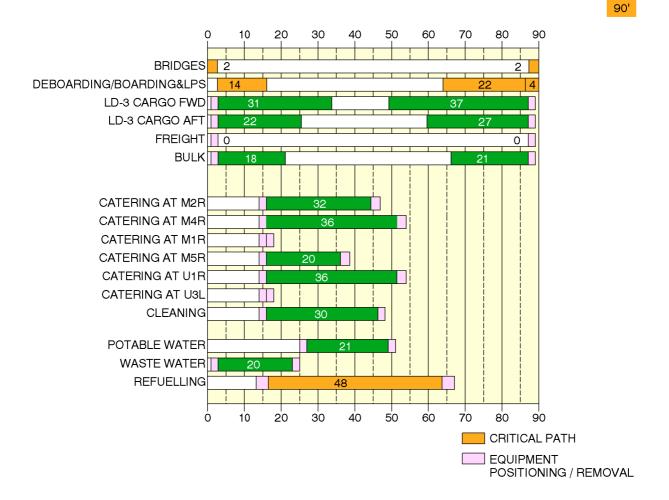
Standard Servicing Via Main and Upper Decks

A380-800 Models

TURN-ROUND TIME IN MINUTES

MAINTENANCE FACILITY PLANNING

©A380 Preliminary data

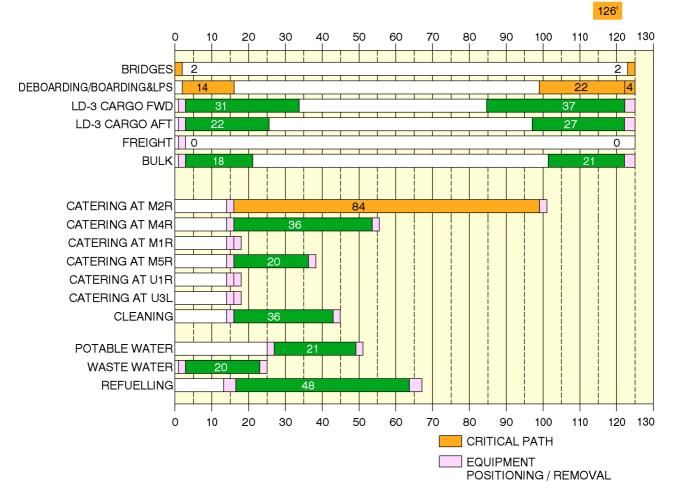


DB1A

R R R

R





TURN-ROUND TIME IN MINUTES

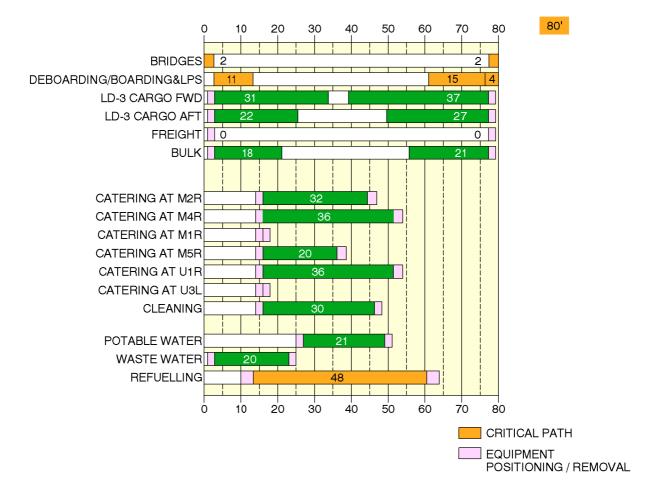
NOTE: IF REQUIRED, THE A380 CABIN LAYOUT CAN BE OPTIMIZED TO GIVE SHORTER TURN-ROUND TIME WITH ONLY MAIN DECK ACCESS

DB1A

R	Typical Turn-Round Time - Two Bridges
R	Servicing Via Main Deck
R	A380-800 Models

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TURN-ROUND TIME IN MINUTES

DB1A

R R R Typical Turn-Round Time - Three Bridges Servicing Via Main and Upper Decks A380-800 Models ZMF5 02 02 00 0 CAM0 01

©A380 Preliminary data

MAINTENANCE FACILITY PLANNING

The A380-800F can achieve turn-round times of 120 \pm 20 minutes depending on ULD layouts on the three decks.

<u>NOTE</u> : These values are similar to other wide-body freighter aircraft in similar operating conditions.

Typical Turn-Round Time A380-800F Models

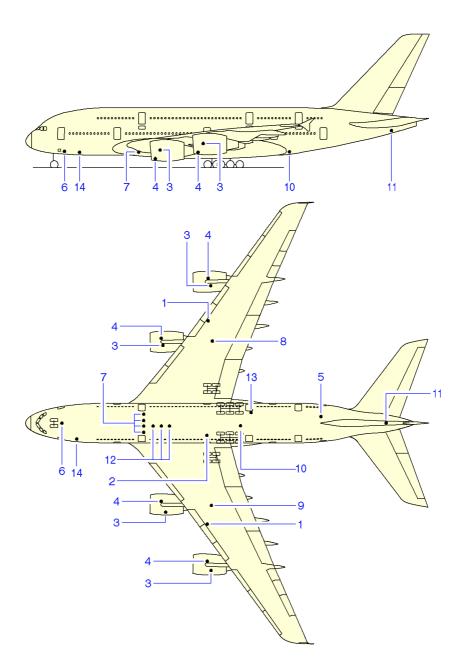


GROUND SERVICE CONNECTIONS AND LOCATIONS

This section gives the ground service connections and locations.

©A380 Preliminary data

MAINTENANCE FACILITY PLANNING



1 - PRESSURE REFUEL CONNECTORS 2 - HYDRAULIC RESERVOIR SERVICING PANEL 8 - YELLOW HYDRAULIC GROUND CONNECTOR 9 - GREEN HYDRAULIC GROUND CONNECTOR (RESERVOIR FILLING AND RESERVOIR PRESSURISATION) **10 - POTABLE WATER SERVICE PANEL** 11 - APU OIL FILLING 3 - ÈNGINE OIL FILLING 12 - HIGH PRESSURE AIR ENGINE START 13 - REFUEL/DEFUEL CONTROL PANEL 4 - VF GENERATOR OIL FILLING 5 - TOILET AND WASTE SERVICE PANEL 6 - GROUND ELECTRICAL POWER

- - 14 OXYGEN SYSTEM

ZMF5 02 03 00 0 AAM0 01

DB1A

7 - LOW PRESSURE PRECONDITIONED AIR

R

R

Ground Service Connections Layout A380-800 Models

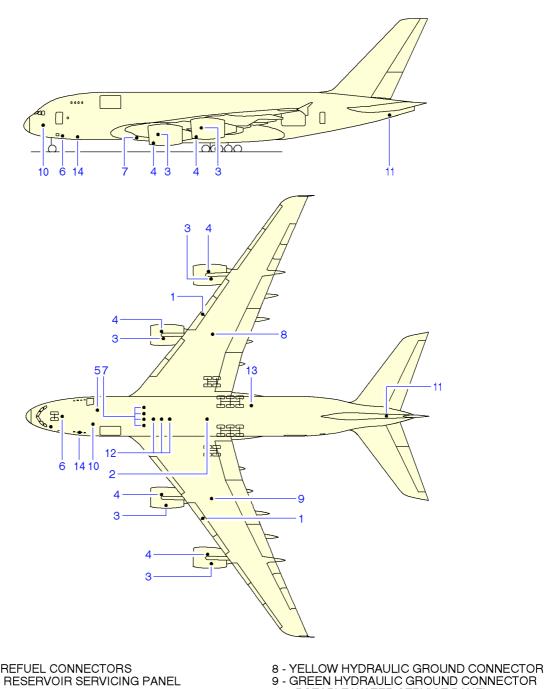
10 - POTABLE WATER SERVICE PANEL

12 - HIGH PRESSURE AIR ENGINE START 13 - REFUEL/DEFUEL CONTROL PANEL

11 - APU OIL FILLING

14 - OXYGEN SYSTEM

MAINTENANCE FACILITY PLANNING



- 1 PRESSURE REFUEL CONNECTORS 2 HYDRAULIC RESERVOIR SERVICING PANEL (RESERVOIR FILLING AND RESERVOIR PRESSURISATION)
- 3 ÈNGINE OIL FILLING
- 4 VF GENERATOR OIL FILLING 5 TOILET AND WASTE SERVICE PANEL 6 GROUND ELECTRICAL POWER
- 7 LOW PRESSURE PRECONDITIONED AIR

DB1A

R R Ground Service Connections Layout A380-800F Models

ZMF5 02 03 00 0 BAM0 01

MAINTENANCE FACILITY PLANNING

HYDRAULIC SYSTEM

- A. Doors description :
 - Green hydraulic ground connectors : (Access door 198CB)
 - Yellow hydraulic ground connector : (Access door 198JB)
 - Hydraulic Reservoir Servicing Panel : (Access door 197CB)
 - (1) Reservoir pressurization
 one connector TBD, 1/4 in.
 - (2) Reservoir filling
 one connector AE96993E, 1/4 in.

DISTANCE : Meters (ft)				
AFT OF NOSE	FROM AIRPLANE CENTERLINE		MEAN HEIGHT	
	R SIDE	L SIDE	FROM GROUND	
34.67		14.90	5.08	
(113.7)		(48.88)	(16.66)	
34.67	14.90		5.08	
(113.7)	(48.88)		(16.66)	
30.17		2.34	1.71	
(98.98)		(7.67)	(5.61)	

Ground Service Connections Hydraulic System A380-800 Models **ØA380** Preliminary data

MAINTENANCE FACILITY PLANNING

ELECTRICAL SYSTEM

- A. Ground Service Panel for External Electrical Power Receptacles :
 - Right side access door : 134AR
 - Left side access door : 134AL

DISTANCE : Meters (ft)				
AFT OF NOSE	FROM AIRPLANE CENTERLINE		MEAN HEIGHT	
	R SIDE	L SIDE	FROM GROUND	
5.99 (19.65)	0.45 (1.47)		2.59 (8.49)	
5.99 (19.65)		0.45 (1.47)	2.59 (8.49)	

- (1) External Power Receptacles :
 four standard ISO R461 receptacles 90 KVA each.
- (2) Power supply :
 three phase, 115V, 360-800 Hz.
- (3) Electrical connectors for servicing :
 AC outlets : HUBBEL 5258
 DC outlets : HUBBEL 7472
 Vacuum cleaner outlets : HUBBEL 5258

Ground Service Connections Electrical System A380-800 models

MAINTENANCE FACILITY PLANNING

FUEL SYSTEM

- A. Ground Service Panel for :
 - Refuel/Defuel control panel : (Access door 199KB)
- B. Refuel/Defuel connectors
 - refuel/defuel coupling, left (Access door 522GB)
 - refuel/defuel coupling, right (Access door 622GB)

DISTANCE : Meters (ft)			
AFT OF NOSE	FROM AIRPLANE CENTERLINE		MEAN HEIGHT
	R SIDE	L SIDE	FROM GROUND
45.74 (150.06)	2.59 (8.49)		2.98 (9.77)

(31.89 (104.62)		17.97 (58.95)	5.77 (18.93)
(31.89 (104.62)	17.97 (58.95)		5.77 (18.93)

- (1) Refuel/Defuel couplings :
 standard ISO R45, 2.5 in., two per wing
- (2) Refuel pressure : - max. pressure : 3.45 bar (50 psi)

Ground Service Connections Fuel System A380-800 Models

MAINTENANCE FACILITY PLANNING

PNEUMATIC SYSTEM

- A. Low Pressure Air Connectors for Preconditionned Air :
 - access doors 191GB, 191JB
 - access doors 192HB, 192KB

DISTANCE : Meters (ft)				
AFT OF NOSE	FROM AIRPLANE CENTERLINE		MEAN HEIGHT	
	R SIDE	L SIDE	FROM GROUND	
22.13 (72.6)		1.21 (3.97)	2.08 (6.82)	
22.13 (72.6)	1.21 (3.97)		2.08 (6.82)	

- (1) Connectors :
 four standard MS33562 (IS01034), 8 in.
- B. High Pressure Air Connectors for Cabin Heating, Cooling and Engine Starting :

DISTANCE : Meters (ft)			
AFT OF NOSE	FROM AIRPLANE CENTERLINE		MEAN HEIGHT FROM
	R SIDE	L SIDE	GROUND
25.37 (83.23)		3.4 (11.15)	1.82 (5.97)

- access doors 193BB
- (1) Connectors :
 three standard MS33740 (IS02026), 3 in.

Ground Service Connections Pneumatic System A380-800 Models

MAINTENANCE FACILITY PLANNING

POTABLE WATER SYSTEM

A. Potable Water Ground Service Panel :

DISTANCE : Meters (ft)				
AFT OF NOSE	FROM AIRPLANE CENTERLINE		MEAN HEIGHT FROM	
	R SIDE	L SIDE	GROUND	
43.67 (143.27)		0.37 (1.21)	2.13 (6.99)	

- access door 199NB

- (1) Connectors : - 3/4 in.
- (2) Capacity :
 standard configuration six tanks : 1700 L (449 USgal)
 optional : 2266 L (598 USgal)
- (3) Filling pressure :
 50 lbf/in² (345 kPa)

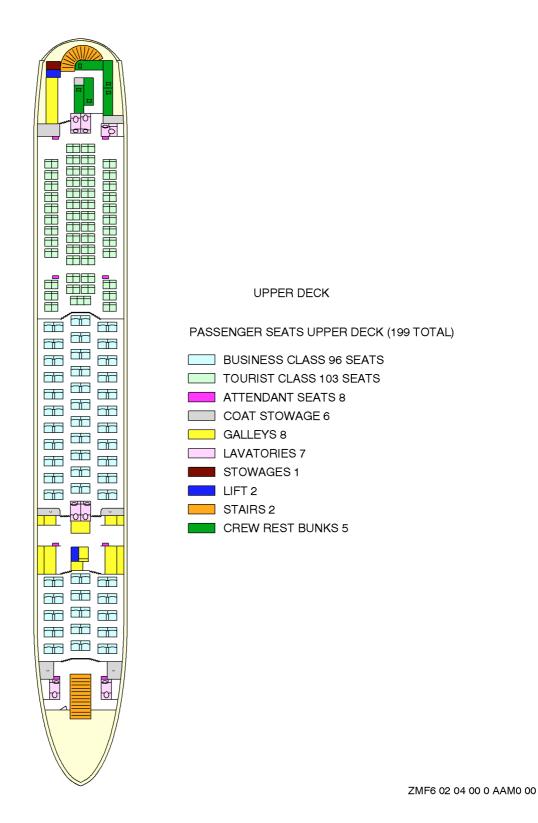
Ground Service Connections Potable Water System A380-800 Models



INTERIOR ARRANGEMENTS

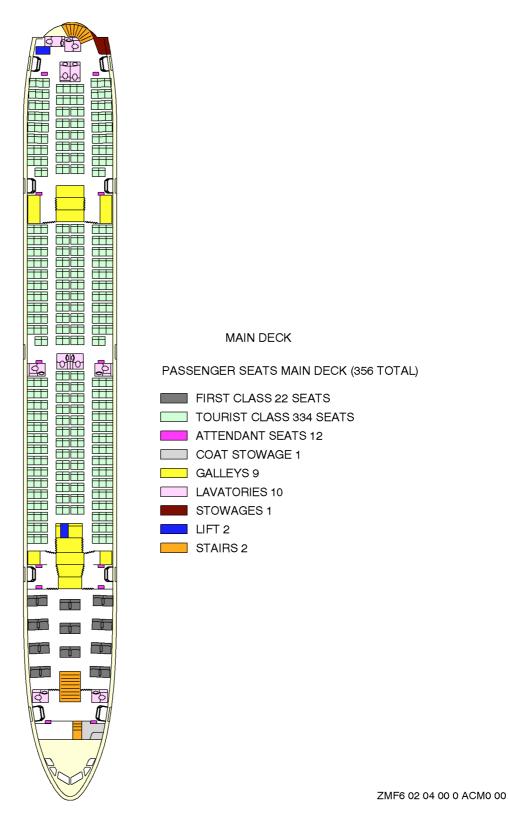
This section gives the standard interior arrangements.

MAINTENANCE FACILITY PLANNING



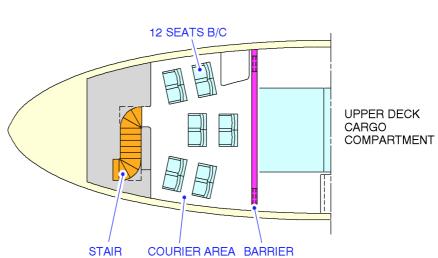
Interior Arrangements - Plan View Standard Configuration (Sheet 1/2) A380-800 Models

MAINTENANCE FACILITY PLANNING



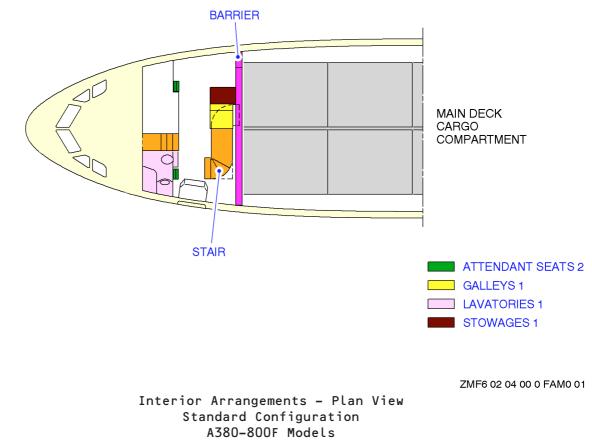
Interior Arrangements - Plan View Standard Configuration (Sheet 2/2) A380-800 Models

MAINTENANCE FACILITY PLANNING



UPPER DECK COURIER AREA

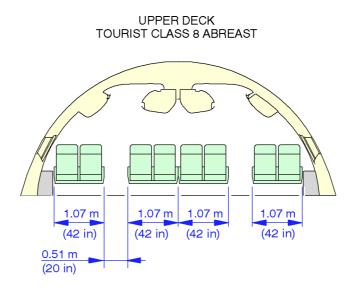
MAIN DECK SERVICE AREA



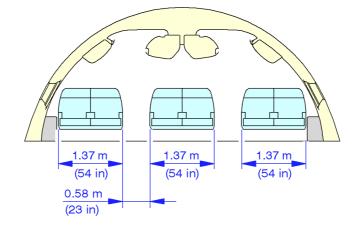
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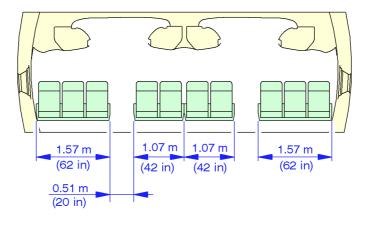
UPPER DECK BUSINESS CLASS 6 ABREAST



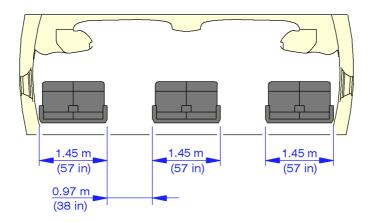
Interior Arrangements - Cross-section Typical Configuration (Sheet 1/2) A380-800 Models ZMF6 02 04 00 0 AEM0 00



MAIN DECK TOURIST CLASS 10 ABREAST



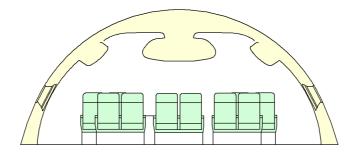
MAIN DECK FIRST CLASS 6 ABREAST



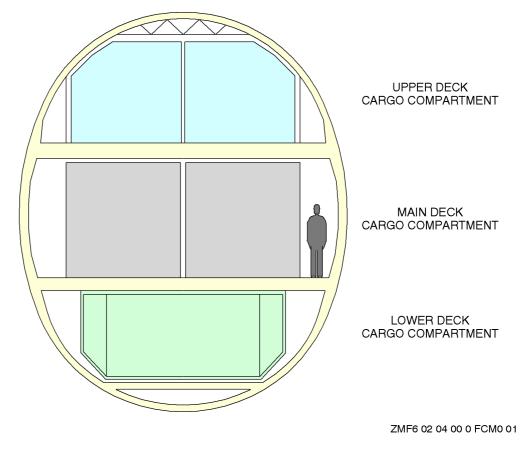
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Interior Arrangements – Cross-section Typical Configuration (Sheet 2/2) A380-800 Models





UPPER DECK COURIER AREA



Interior Arrangements - Cross-section Typical Configuration A380-800F Models

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MAINTENANCE FACILITY PLANNING

ESCAPE SLIDES/RAFTS

This section gives the location of cabin escape facilities and related clearances (TBIL).

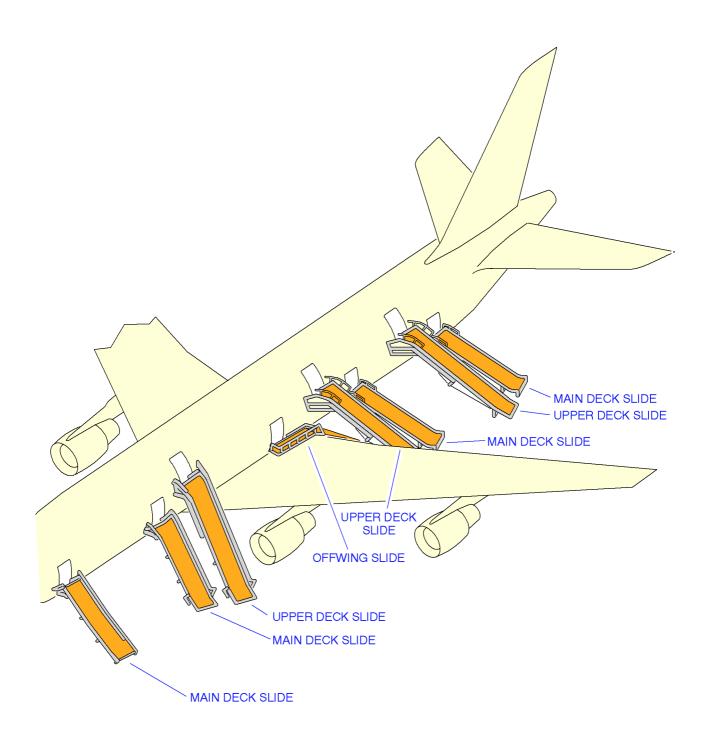
- A. Location
 - (1) A380-800 Models

Escape facilities are provided at the following locations :

- (b) Main deck evacuation :
 - one slide-raft at each passenger/crew door (total eight)one slide for each emergency exit door (total two). The slides
 - are housed in the belly fairing for off-the-wing evacuation.
- (2) A380-800F Models

Escape facilities are provided at the following locations :





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Escape Slides/Rafts Location A380-800 Models



GALLEYS

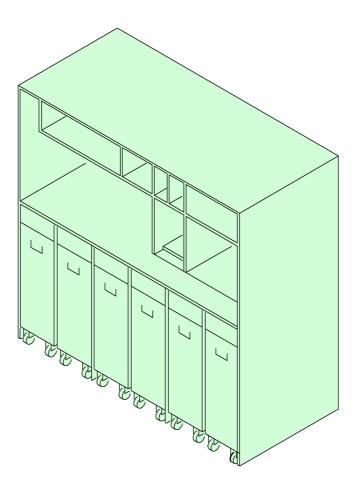


ĺ D UPPER DECK MAIN DECK MAX FLEX AREA LATERAL MAX FLEX AREA CENTER MAX FLEX AREA CENTER MAX FLEX AREA LATERAL ĺ _ _ ZMF6 02 06 00 0 AAM0 00 General Location of Transversal Galleys A380-800 Models

FLEXIBLE INSTALLATION ZONES FOR TRANSVERSAL GALLEYS



TRANSVERSAL GALLEY MODUL

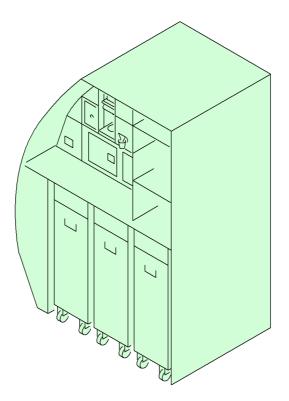


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General Layout Transversal Galley A380–800 Models

MAINTENANCE FACILITY PLANNING

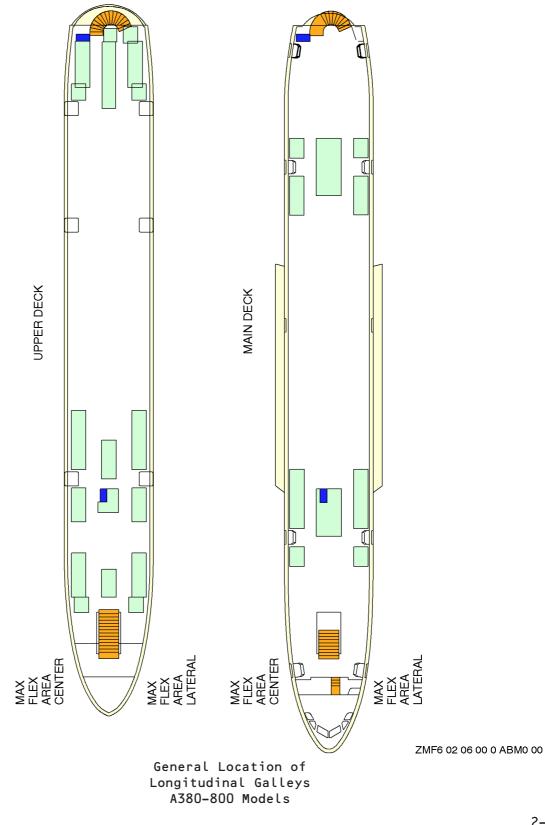
TRANSVERSAL GALLEY MODUL



ZMF6 02 06 00 0 AFM0 00

General Layout Transversal Galley A380–800 Models

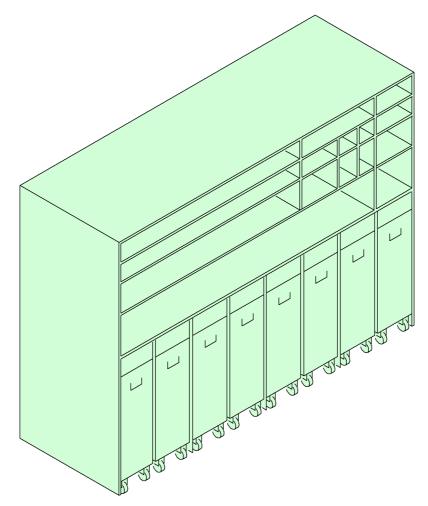




FLEXIBLE INSTALLATION ZONES FOR LONGITUDINAL GALLEYS



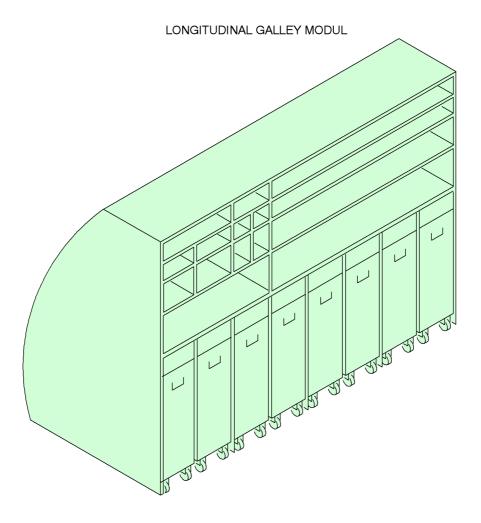
LONGITUDINAL GALLEY MODUL



ZMF6 02 06 00 0 AHM0 00

General Layout Longitudinal Galley A380-800 Models





ZMF6 02 06 00 0 AJM0 00

General Layout Longitudinal Galleys A380-800 Models

MAINTENANCE FACILITY PLANNING

CARGO COMPARTMENTS

LOADING AND UNLOADING

This section gives information related to cargo compartment location/dimensions and loading.

NOTE : For cargo door clearances, refer to Section 1-10.

- A. Arrangements
 - (1) A380-800 Models

There are three cargo compartments (forward, aft and bulk), all located on the lower deck.

- (2) A380-800F Models
 - There are five cargo compartments as follows :
 - three lower deck cargo compartments (forward, aft and bulk),
 - one main deck cargo compartment,
 - one upper deck cargo compartment.

B. Loading/Unloading

All the cargo compartments can be used independently within the overall weight and performance limitations of the aircraft. All the cargo compartments (except the lower deck bulk cargo compartment) are equipped for semi-automatic power assisted cargo handling.

(1) Lower deck forward and aft cargo compartments (A380-800/800F Models)

These compartments can accommodate the following Unit Load Devices
(ULDs) :
 Half-size containers,
 Full-size containers,

- 60.4 in x 61.5 in pallets,
- 60.4 in x 125 in pallets,
- 88 in x 125 in pallets,
- 96 in x 125 in pallets.
- (2) Lower deck bulk cargo compartment (A380-800/800F Models)

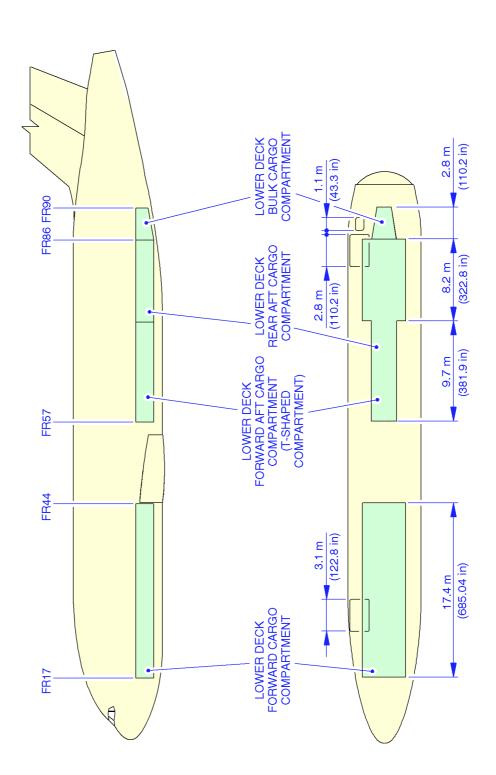
This compartment can accommodate bulk cargo and/or be used for the transportation of live animals (as limited by the compartment's characteristics and conditions). The usable volume is approximately 18.4 m³ (650 ft³) for the A380-800F model, and 14.3 m³ (505 ft³) for the A380-800 model.

(3) Main and upper deck cargo compartments (A380-800F Models)

These compartments can accommodate the following Unit Load Devices (ULDs) : - 96 in x 125 in containers, - 96 in x 125 in pallets.

R

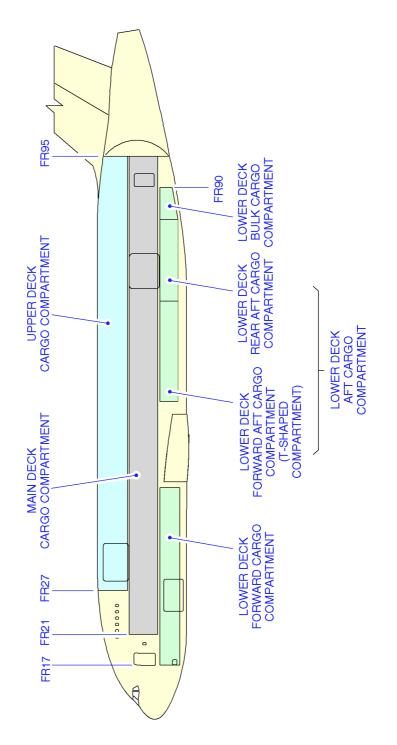
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Cargo Compartments Location and Dimensions A380-800 Models



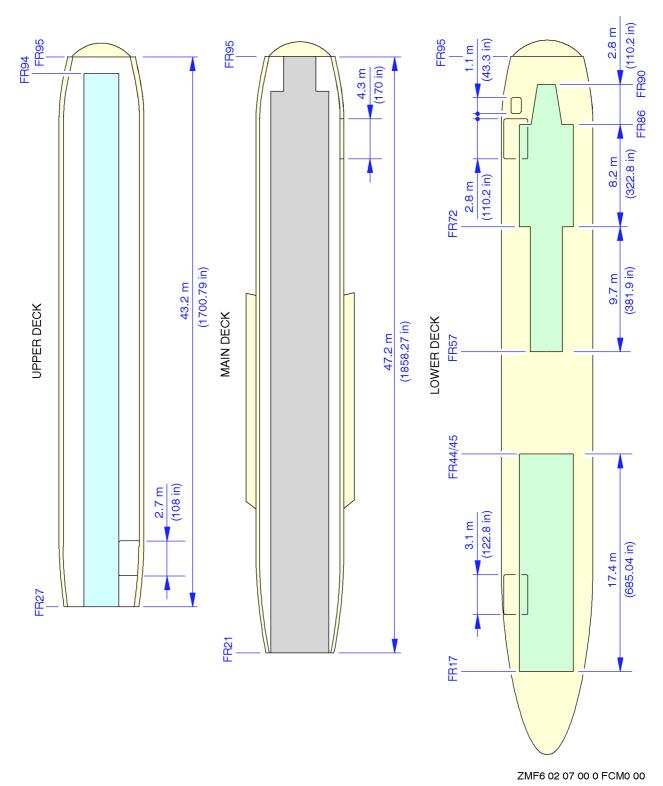


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Cargo Compartments Location and Dimensions (Sheet 1/2) A380-800F Models

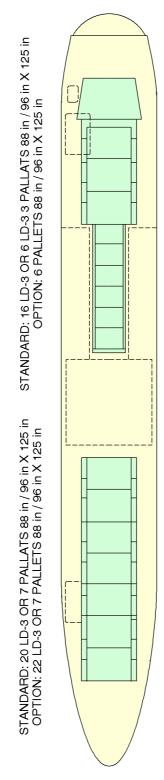
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MAINTENANCE FACILITY PLANNING



Cargo Compartments Location and Dimensions (Sheet 2/2) A380-800F Models



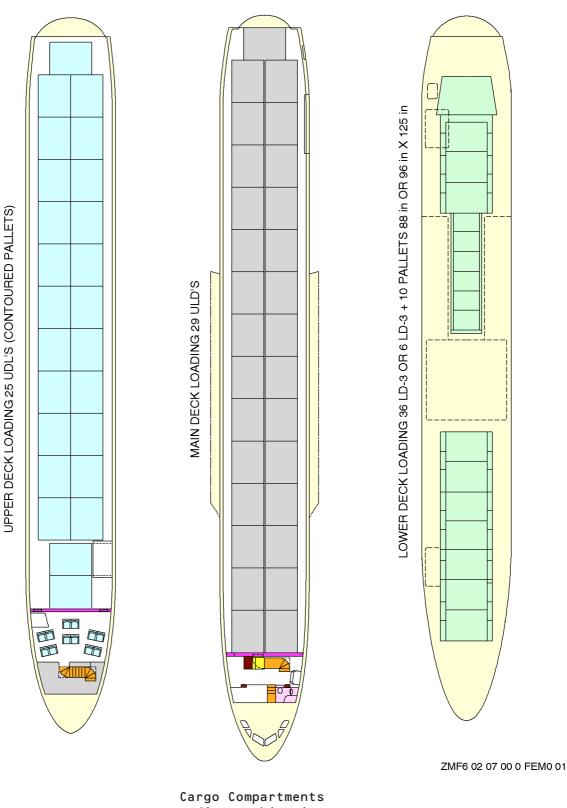


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Cargo Compartments Loading Combinations A380-800 Models



MAINTENANCE FACILITY PLANNING

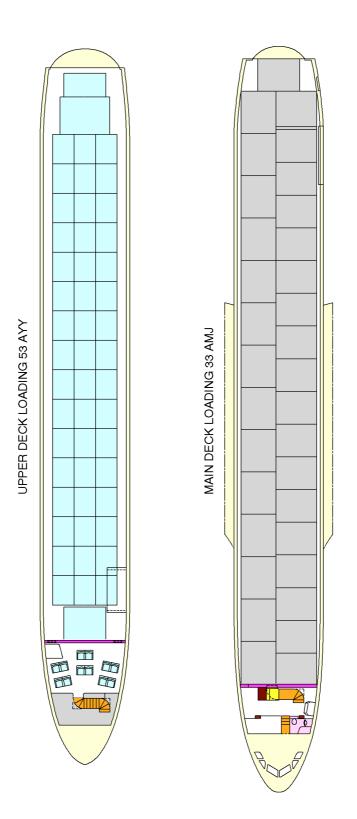


Loading Combinations A380-800F Models

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MAINTENANCE FACILITY PLANNING



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Cargo Compartments Loading Combinations A380-800F Models

⊘A380 Preliminary data

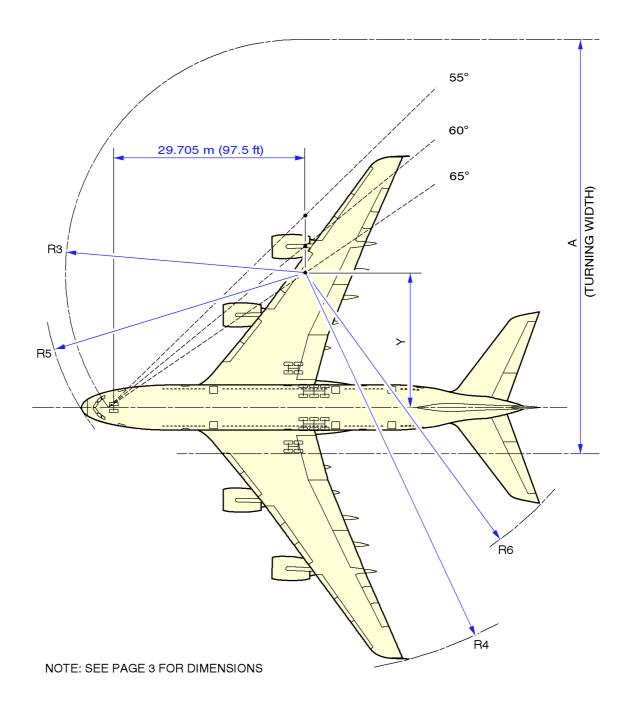
MAINTENANCE FACILITY PLANNING

GROUND MANEUVERING

This section provides airplane 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 guidelines for the method of determination of such parameters and for the maneuvering characteristics of this aircraft type.

In the 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 high risk of jet blast damage. For these reasons, ground maneuvering requirements should be coordinated with the using airlines prior to layout planning.



ZMF8 02 08 00 0 AAM0 01

Turning Radii A380-800/800F Models

MAINTENANCE FACILITY PLANNING

Туре	NLG	Effective	Y		A		R3		R4		R5		R6	
of	Angle	Steering												
Turn		Angle	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
1	70°	69.8°	10.93	35.9	50.73	166.4	32.64	107.1	53.61	175.9	36.5	119.7	45.9	150.6
2	65°	51.2 °	23.49	77.1	69.19	227.0	38.54	126.4	65.73	215.7	41.7	136.8	54.3	178.2
2	60 °	49.9°	24.76	81.2	71.33	234.0	39.4	129.3	66.94	219.6	42.49	139.4	55.16	181.0
2	55°	47.2°	27.26	89.4	75.5	247.7	41.07	134.8	69.34	227.5	44.03	144.4	56.97	186.9
2	50°	43.8°	30.83	101.2	81.59	267.7	43.6	143.0	72.8	238.8	46.35	152.1	59.65	195.7
2	45°	40.0°	35.27	115.7	89.37	293.2	46.92	154.0	77.11	253.0	49.45	162.2	63.12	207.1
2	40°	35.7°	41.22	135.2	100.04	328.2	51.65	169.4	82.9	272	53.89	176.8	67.93	222.9
2	35°	31.3 °	48.98	160.7	114.3	375.0	58.16	190.8	90.49	296.9	60.08	197.1	74.46	244.3
2	30 °	26.7°	59.5	195.2	134.09	439.9	67.42	221.2	100.82	330.8	69.0	226.4	83.64	274.4
2	25°	22.0°	74.7	245.1	163.23	535.5	81.36	266.9	115.79	379.9	82.55	270.8	97.37	319.5
2	20°	17.1°	98.89	324.4	210.34	690.1	104.28	342.1	139.73	458.4	105.07	344.7	119.95	393.5

A380-800

Туре	NLG	Effective		Y	A	١	R	3	R4		R5		R6	
of	Angle	Steering												
Turn		Angle	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
1	70 °	69.5°	11.08	36.3	50.97	167.2	32.73	107.4	53.75	176.3	36.54	119.9	45.98	150.9
2	65°	54.9°	20.65	67.7	64.79	212.6	36.98	121.0	62.96	206.6	40.27	132.1	52.22	171.3
2	60 °	53.3°	22.02	72.3	67.02	219.9	37.82	124.1	64.27	210.9	41.05	134.7	53.14	174.3
2	55°	50.2°	24.67	80.9	71.31	233.9	39.47	129.5	66.81	219.2	42.54	139.6	55.0	180.5
2	50 °	46.2°	28.35	93.0	77.45	254.1	41.93	137.6	70.37	230.9	44.79	147.0	57.72	189.4
2	45°	42°	32.93	108.1	85.34	280.0	45.23	148.4	74.82	245.5	47.85	157.0	61.23	200.9
2	40 °	37.5°	38.78	127.2	95.69	314.0	49.75	163.2	80.5	264.1	52.07	170.8	65.89	216.2
2	35°	32.8°	46.25	151.7	109.31	358.6	55.9	183.4	87.8	288.1	57.9	189.9	72.1	236.5
2	30 °	28°	56.21	184.4	127.92	419.7	64.55	211.8	97.57	320.1	66.19	217.2	80.7	264.8
2	25°	23.2°	70.31	230.7	154.83	508.0	77.35	253.8	111.45	365.7	78.61	257.9	93.33	306.2
2	20°	18.3°	92.12	302.2	197.15	646.8	97.87	321.1	133.01	436.4	98.72	323.9	113.53	372.5

A380-800F

NOTE:

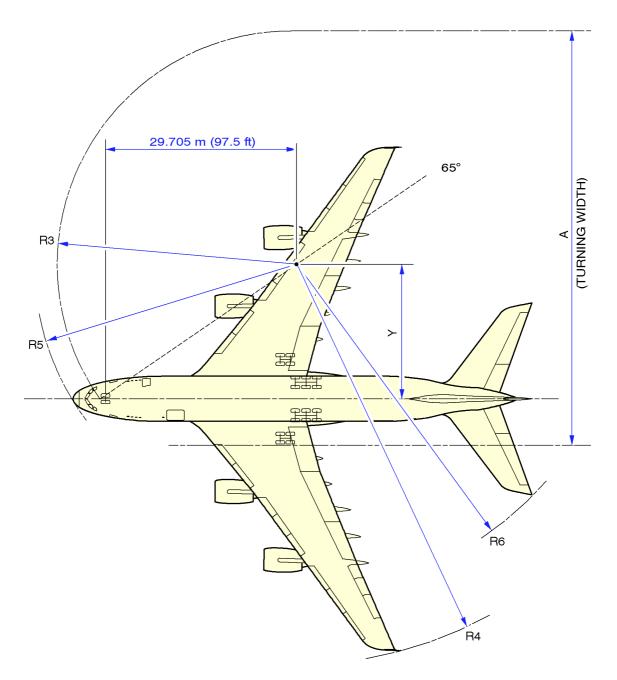
TYPE 1 TURNS USE: ASYMMETRIC THRUST - BOTH ENGINES ON THE INSIDE OF THE TURN TO BE AT IDLE THRUST DIFFERENTIAL BRAKING - BRAKING APPLIED TO THE WING GEAR WHEELS ON THE INSIDE OF THE TURN.

TYPE 2 TURNS USE: SYMMETRIC THRUST AND NO BRAKING.

ZMF8 02 08 00 0 ACM0 03

Turning Radii A300-800/800F Models

R R



NOTE: SEE PAGE 5 FOR DIMENSIONS

ZMF8 02 08 00 0 AEM0 02

Minimum Turning Radii A380-800/800F Models

MAINTENANCE FACILITY PLANNING

NLG Angle	Effective Steering Angle	Y		A		R3		R4		R5		R6	
		m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
78°	73.7°	8.53	28.0	47.55	156.0	31.85	104.5	51.34	168.5	35.86	117.7	44.57	146.2

NOTE: TURN PERFORMED WITH ASYMMETRIC THRUST (IDLE THRUST ON BOTH ENGINES ON INSIDE OF TURN) AND DIFFERENTIAL BRAKING (BRAKING APPLIED TO ALL WING AND BODY GEAR WHEELS ON ONE SIDE OF AIRCRAFT)

NLG Angle	Effective Steering Angle	Y		A		R3		R4		R5		R6	
		m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
65°	53.7°	21.34	70.0	65.75	215.7	37.24	122.2	63.66	208.8	40.57	133.1	52.77	173.1

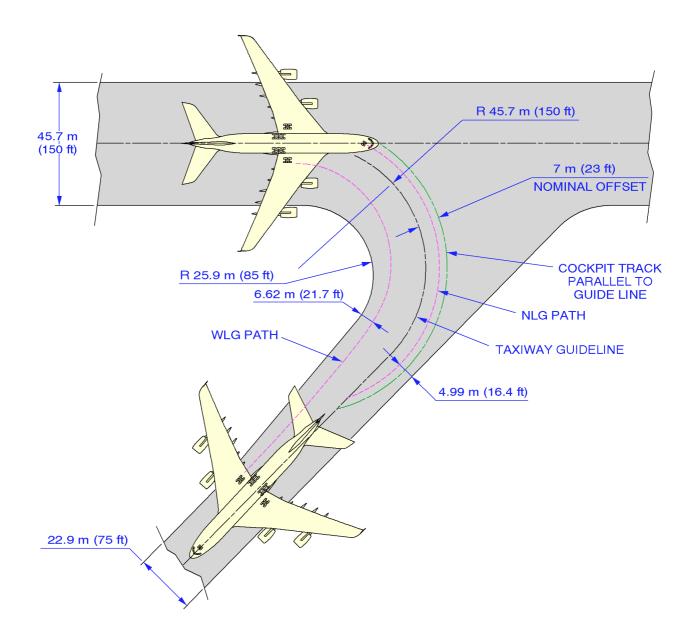
NOTE: TURN PERFORMED WITH SYMMETRIC THRUST AND NO BRAKING

ZMF8 02 08 00 0 AGM0 00

Minimum Turning Radii A380-800/800F Models

Printed in France



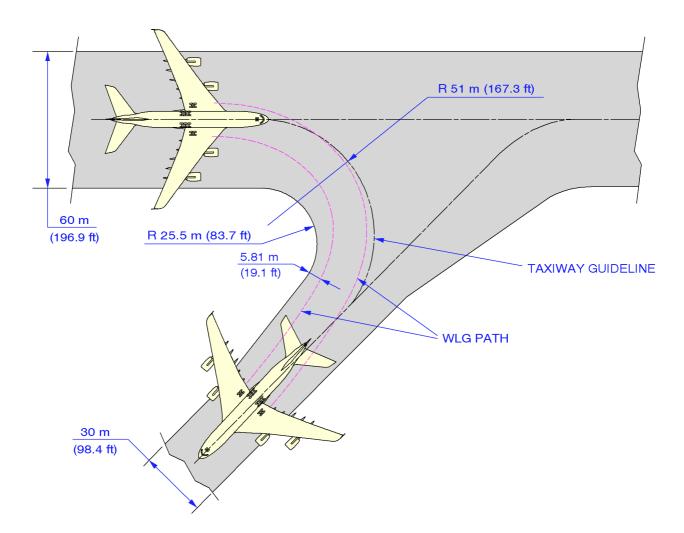


NOTE: FAA GROUP V JUDGEMENTAL OVERSTEER METHOD

ZMF8 02 08 00 0 AJM0 02

135 Deg. Turn - Runway to Taxiway A380-800/800F Models





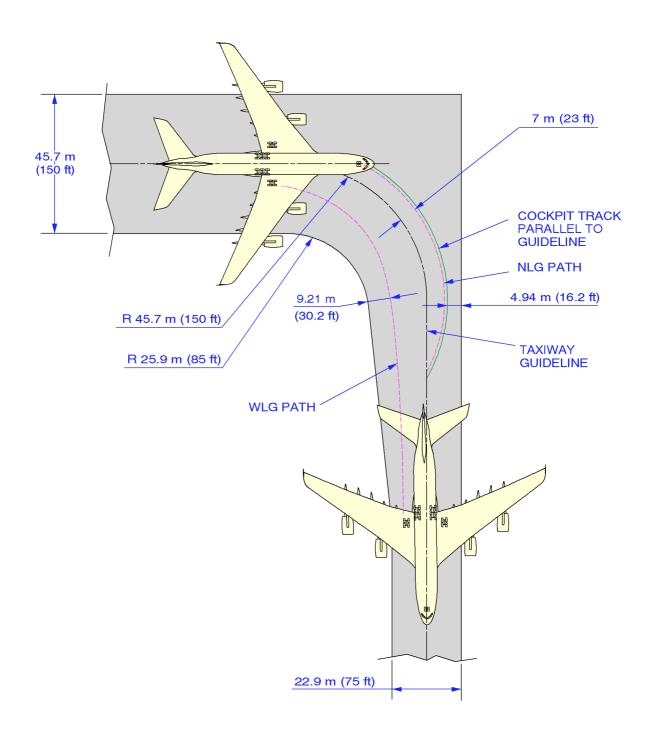
NOTE: FAA GROUP VI COCKPIT TRACKS CENTRELINE METHOD

ZMF8 02 08 00 0 ABM0 00

135 Deg. Turn - Runway to Taxiway A380-800/800F Models

Printed in France

MAINTENANCE FACILITY PLANNING



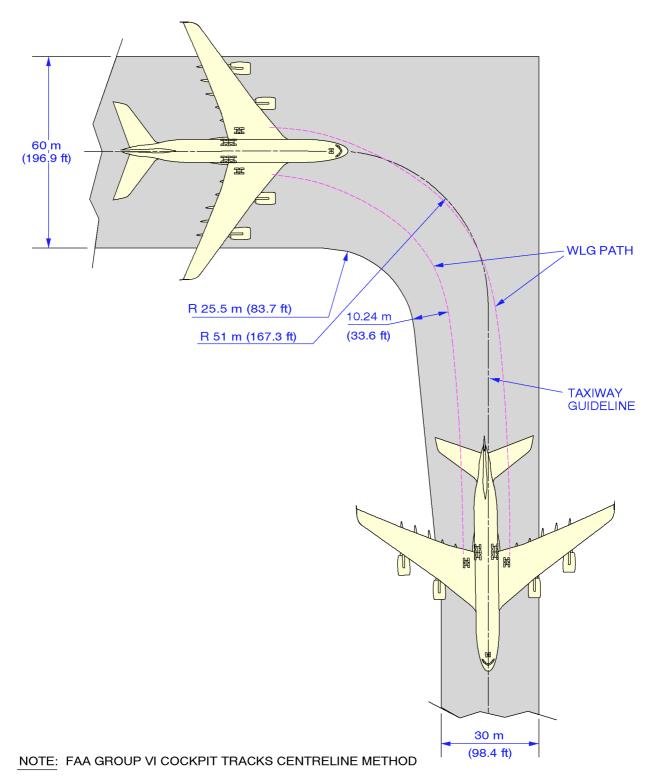
NOTE: FAA GROUP V JUDGEMENTAL OVERSTEER METHOD

ZMF8 02 08 00 0 ALM0 02

90 Deg. Turn - Runway to Taxiway A380-800/800F Models

Printed in France

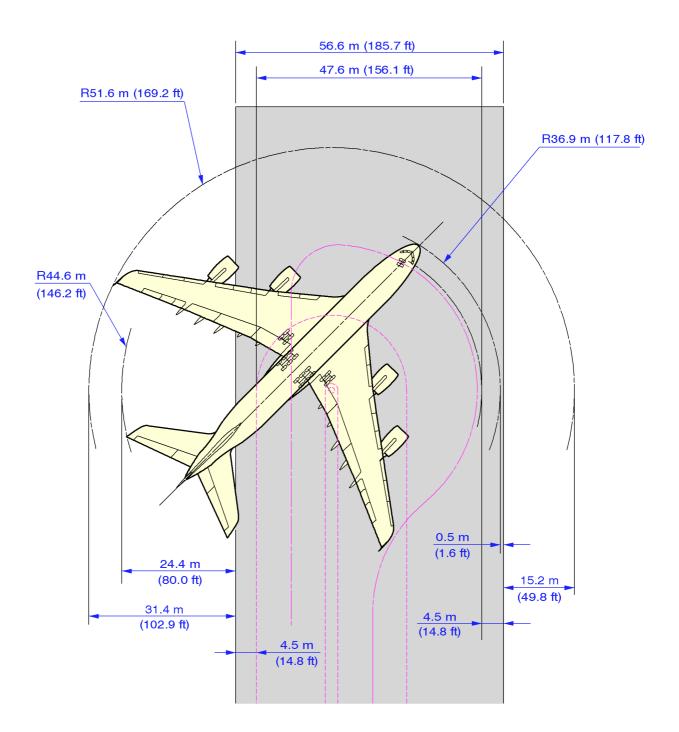
MAINTENANCE FACILITY PLANNING



ZMF8 02 08 00 0 AFM0 00

90 Deg. Turn - Runway to Taxiway A380-800/800F Models

MAINTENANCE FACILITY PLANNING

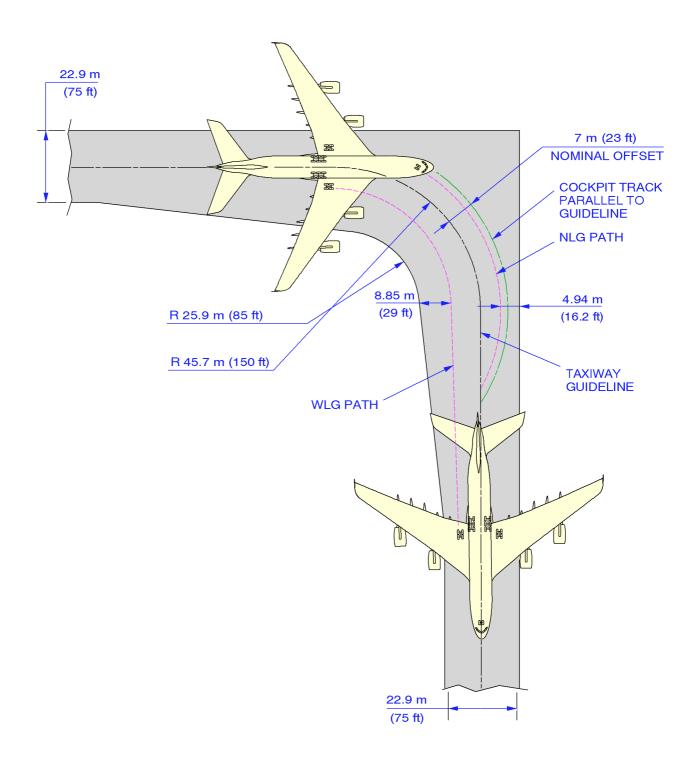


NOTE: 78° NOSE GEAR STEERING ASYMMETRIC THRUST AND BRAKING

ZMF8 02 08 00 0 ANM0 01

180 Deg. Turn on a Runway A380-800/800F Models

R R



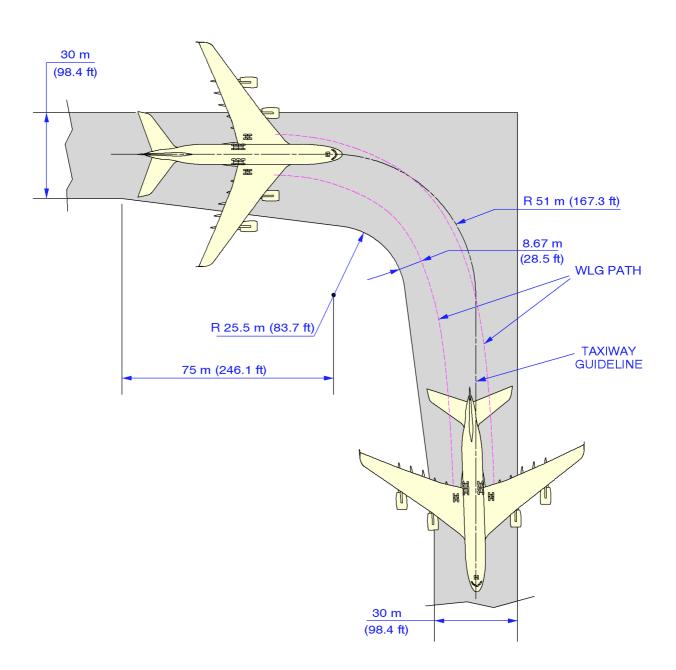
NOTE: FAA GROUP V JUDGEMENTAL OVERSTEER METHOD

ZMF8 02 08 00 0 AQM0 02

90 Deg. Turn - Taxiway to Taxiway A380-800/800F Models

♥ A380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING

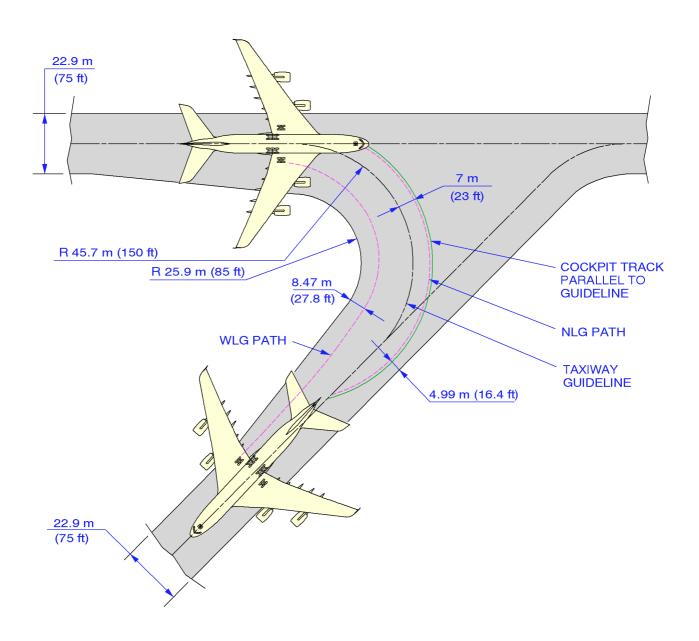


NOTE: FAA GROUP VI COCKPIT TRACKS CENTRELINE METHOD

ZMF8 02 08 00 0 AHM0 00

90 Deg. Turn - Taxiway to Taxiway A380-800/800F Models

Printed in France



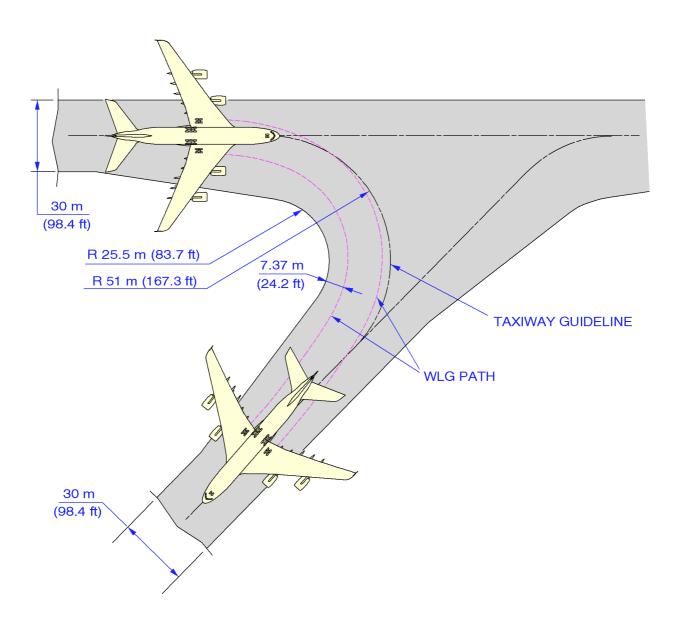
NOTE: FAA GROUP V JUDGEMENTAL OVERSTEER METHOD

ZMF8 02 08 00 0 ASM0 02

135 Deg. Turn - Taxiway to Taxiway A380-800/800F Models

♥ A380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING



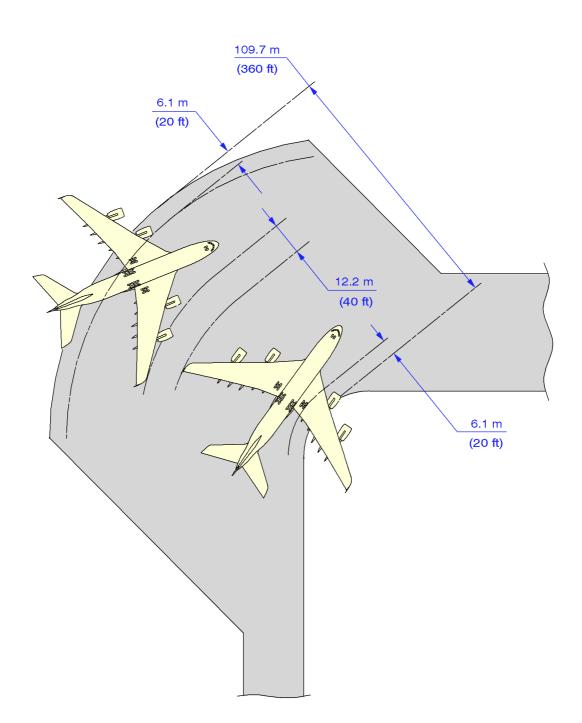
NOTE: FAA GROUP VI COCKPIT TRACKS CENTRELINE METHOD

ZMF8 02 08 00 0 ADM0 00

135 Deg. Turn - Taxiway to Taxiway A380-800/800F Models

Printed in France





NOTE: COORDINATE WITH USING AIRLINE FOR SPECIFIC PLANNED OPERATING PROCEDURE

ZMF8 02 08 00 0 AUM0 01

Runway Holding Bay (Apron) A380-800/800F Models

Printed in France

MAINTENANCE FACILITY PLANNING

AIRPLANE PARKING

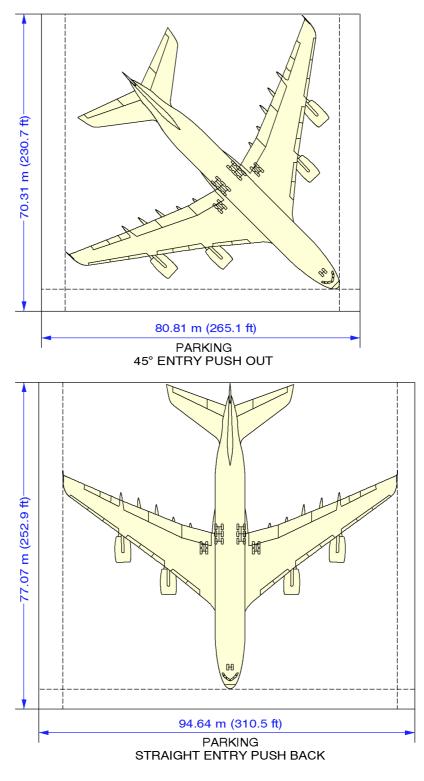
The following figures and charts show the rectangular space required for parking against the terminal building :

- Steering Geometry : Page 2

- Minimum Parking Space Requirements : Page 3

♥ A380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING

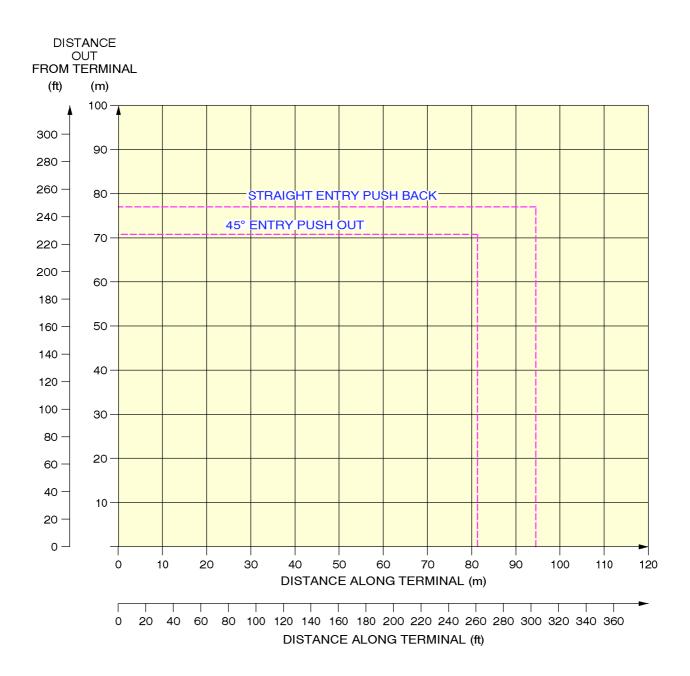


ZMF8 02 09 00 0 AAM0 01

Airplane Parking Steering Geometry A380-800/800F Models

♥ A380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING



ZMF8 02 09 00 0 ACM0 02

Airplane Parking Minimum Parking Space Requirements A380-800/800F Models



OPERATING CONDITIONS

1. Engine Operating Conditions

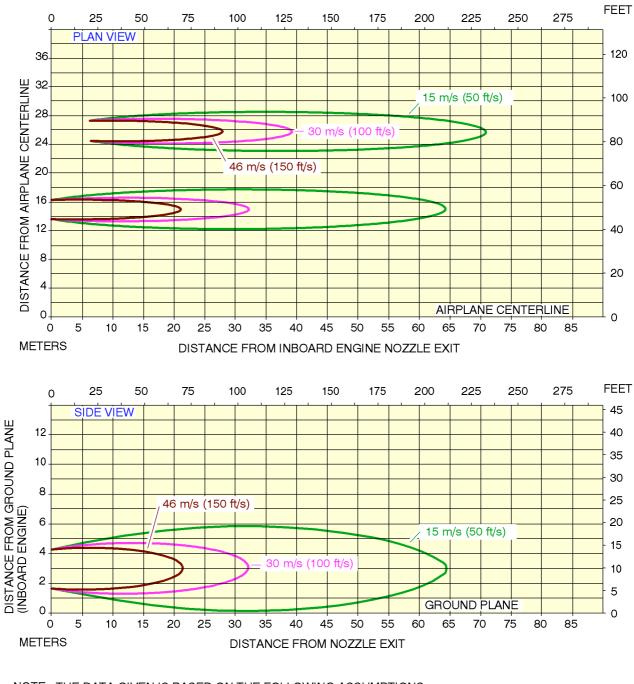
The illustrations show the exhaust characteristics relative to :

- exhaust velocities and temperatures,
- airport and community noise data (TBIL),
- danger areas (TBIL).

2. APU Operating Conditions

The illustration shows the exhaust characteristics relative to : - exhaust velocities (TBIL) and temperatures.

MAINTENANCE FACILITY PLANNING

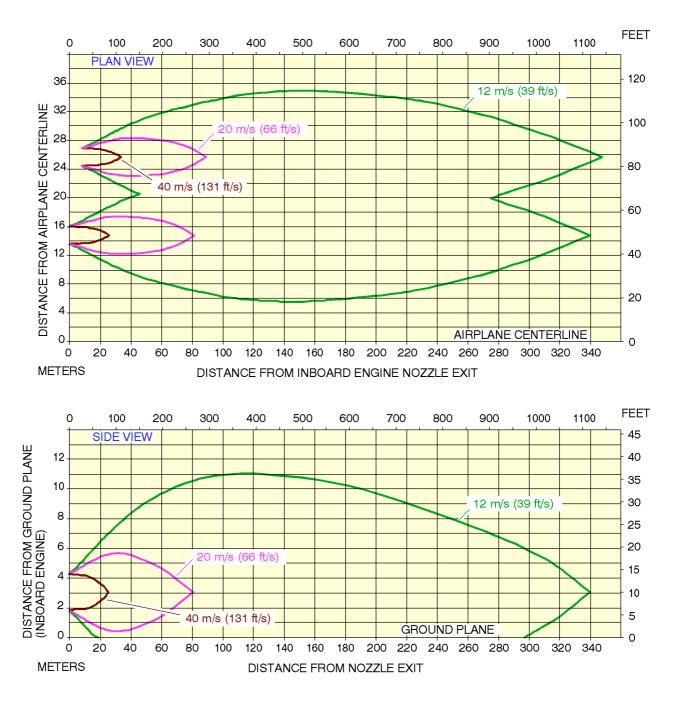


NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS: - SEA LEVEL STATIC CONDITIONS - ISA + 15° C (59° F) - NO WIND

ZMF5 02 11 00 0 RAM0 00

Engine Exhaust Velocities Ground Idle Power – TRENT 970/977 Engines A380-841/843F Models

MAINTENANCE FACILITY PLANNING

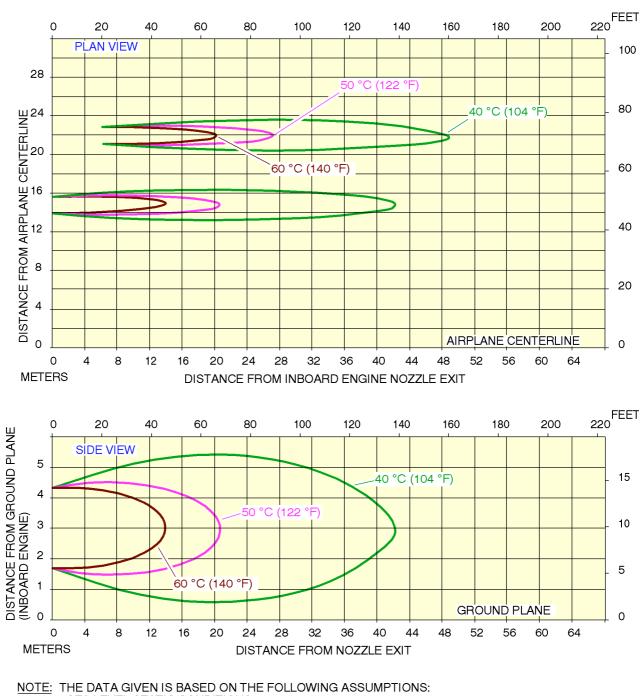


NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS: - SEA LEVEL STATIC CONDITIONS - ISA CONDITIONS - 20 kt (37 km/h) HEADWIND

ZMF5 02 11 00 0 GAM0 00

Engine Exhaust Velocities Ground Idle Power - GP 7270/7277 Engines A380-861/863F Models ♥ A380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING



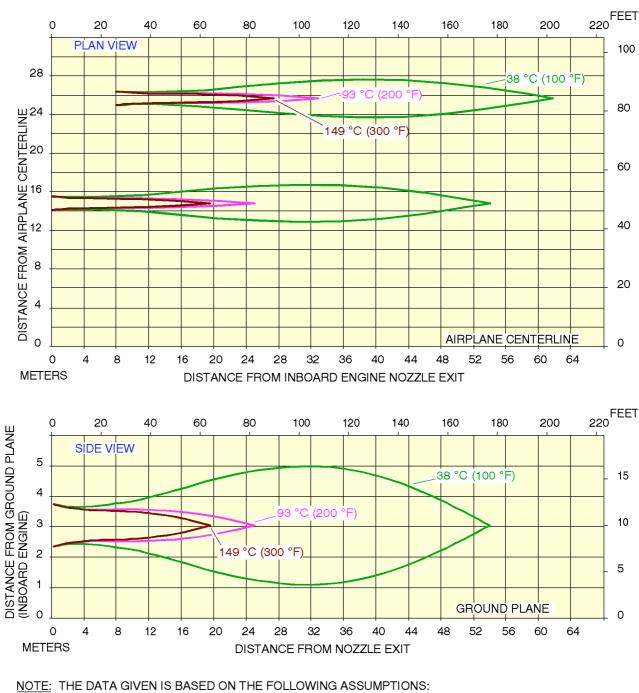
- SEA LEVEL STATIC CONDITIONS

- ISA + 15 °C (59 °F) - NO WIND

ZMF5 02 11 00 0 RBM0 00

Engine Exhaust Temperatures Ground Idle Power - TRENT 970/977 Engines A380-841/843F Models

MAINTENANCE FACILITY PLANNING



- SEA LEVEL STATIC CONDITIONS

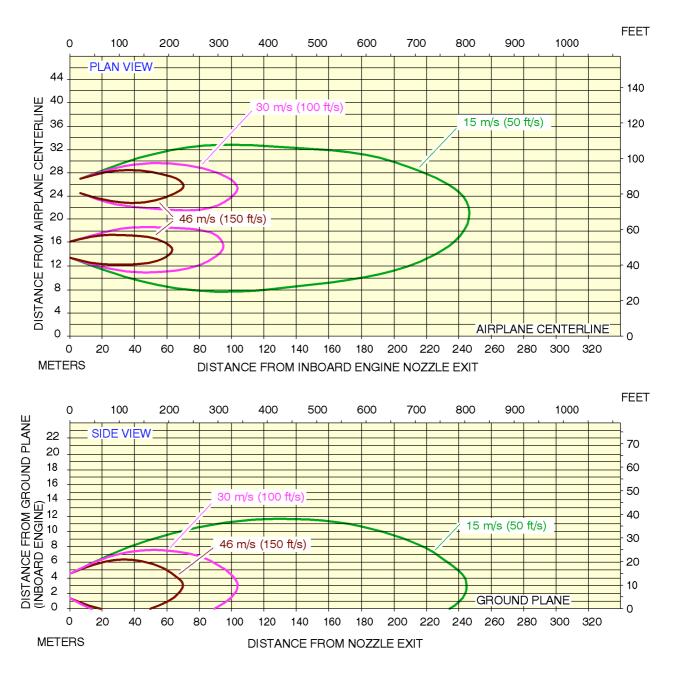
- ISA CONDITIONS

- 20 kt (37 km/h) HEADWIND

ZMF5 02 11 00 0 GBM0 00

Engine Exhaust Temperatures Ground Idle Power - GP 7270/7277 Engines A380-861/863F Models

MAINTENANCE FACILITY PLANNING



NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS: - SEA LEVEL STATIC CONDITIONS

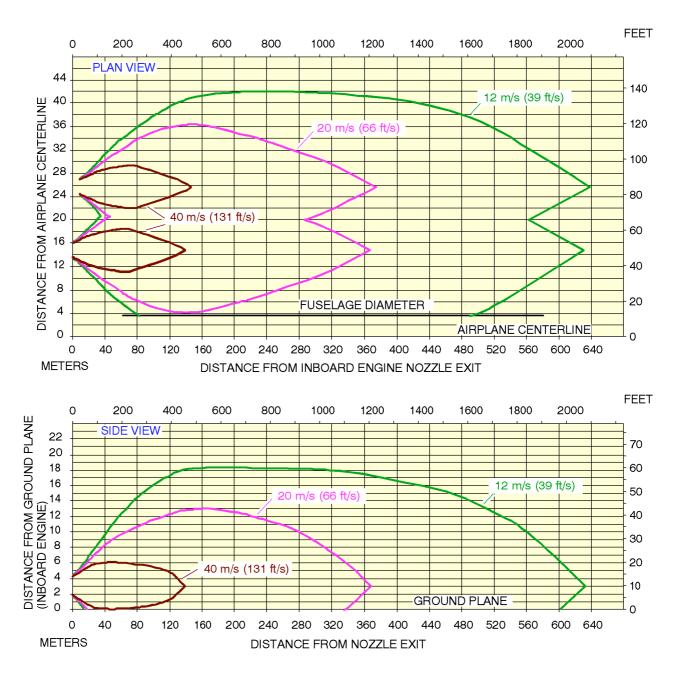
- ISA + 15 °C (59 °F) CONDITIONS

- NO WIND

ZMF5 02 11 00 0 RCM0 00

Engine Exhaust Velocities Breakaway Power - TRENT 970 Engines A380-841 Model

MAINTENANCE FACILITY PLANNING

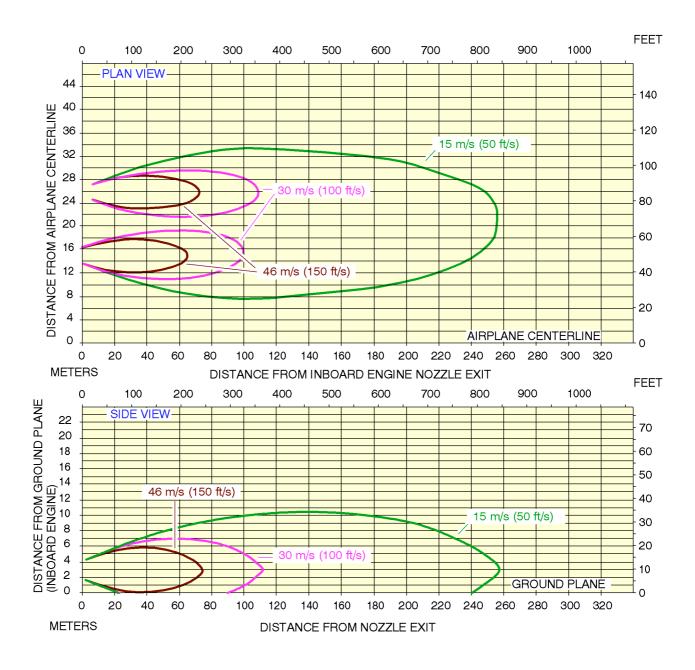


NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS: - SEA LEVEL STATIC CONDITIONS - ISA CONDITIONS - 20 kt (37 km/h) HEADWIND

ZMF5 02 11 00 0 GCM0 00

Engine Exhaust Velocities Breakaway Power - GP 7270 Engines A380-861 Model

MAINTENANCE FACILITY PLANNING

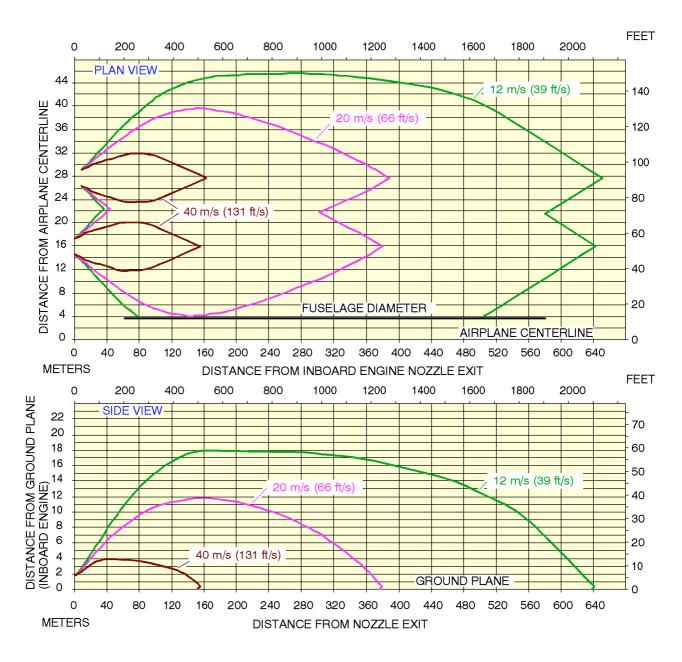


NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS: - SEA LEVEL STATIC CONDITIONS - ISA + 15 °C (59 °F) CONDITIONS - NO WIND

ZMF5 02 11 00 0 RDM0 00

Engine Exhaust Velocities Breakaway Power - TRENT 977 Engines A380-843F Model

MAINTENANCE FACILITY PLANNING



NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS: - SEA LEVEL STATIC CONDITIONS - ISA CONDITIONS

- 20 kt (37 km/h) HEADWIND

ZMF5 02 11 00 0 GDM0 00

Engine Exhaust Velocities Breakaway Power - GP 7277 Engines A380-863F Model

FEET PLAN VIEW DISTANCE FROM AIRPLANE CENTERLINE 40 °C (104 °F 60 °C (140 °F) AIRPLANE CENTERLINE0 20 24 28 32 36 40 44 48 52 56 60 64 68 72 76 80 84 METERS DISTANCE FROM INBOARD ENGINE NOZZLE EXIT FEET DISTANCE FROM GROUND PLANE (INBOARD ENGINE) 40 °C (104 °F) °C (122 °F З 60 °C (140 °F) GROUND PLANE 24 28 32 36 40 44 48 52 56 60 64 68 72 76 80 84 METERS DISTANCE FROM NOZZLE EXIT

MAINTENANCE FACILITY PLANNING

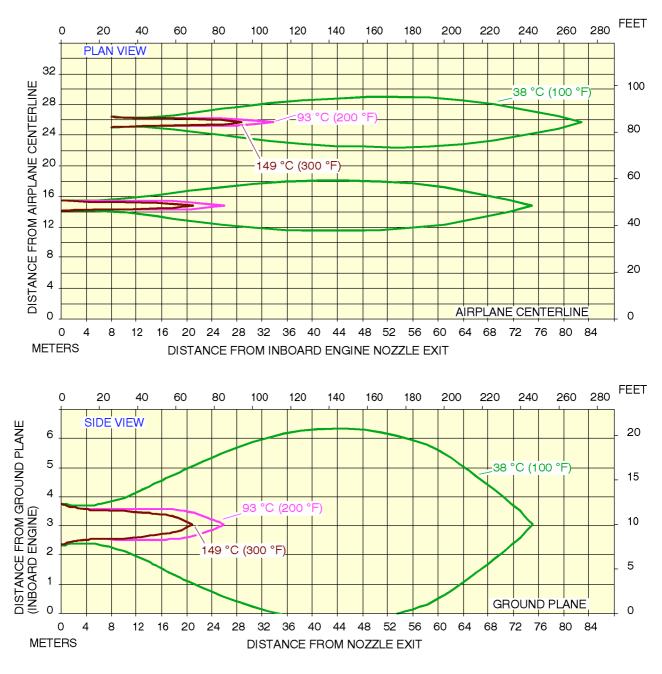
NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS: - SEA LEVEL STATIC CONDITIONS - ISA + 15 $^\circ C$ (59 $^\circ F$)

- ISA + 15 °C (- NO WIND

ZMF5 02 11 00 0 REM0 00

Engine Exhaust Temperatures Breakaway Power - TRENT 970 Engines A380-841 Model

MAINTENANCE FACILITY PLANNING



NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS: - SEA LEVEL STATIC CONDITIONS

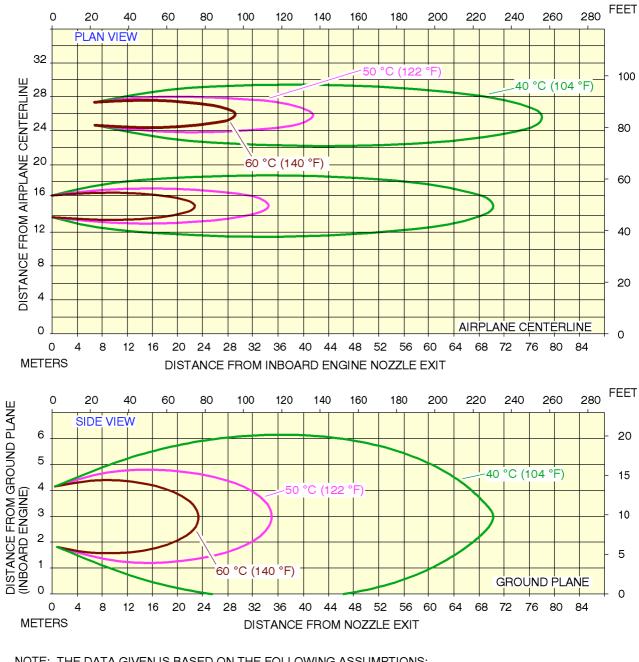
- ISA CONDITIONS

- 20 kt (37 km/h) HEADWIND

ZMF5 02 11 00 0 GEM0 00

Engine Exhaust Temperatures Breakaway Power - GP 7270 Engines A380-861 Model

MAINTENANCE FACILITY PLANNING

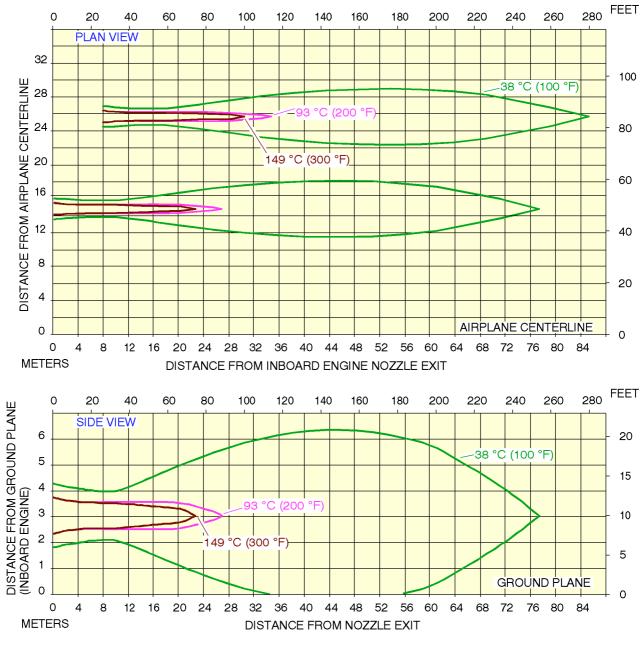


NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS: - SEA LEVEL STATIC CONDITIONS - ISA + 15 °C (59 °F) - NO WIND

ZMF5 02 11 00 0 RFM0 00

Engine Exhaust Temperatures Breakaway Power - TRENT 977 Engines A380-843F Model

MAINTENANCE FACILITY PLANNING

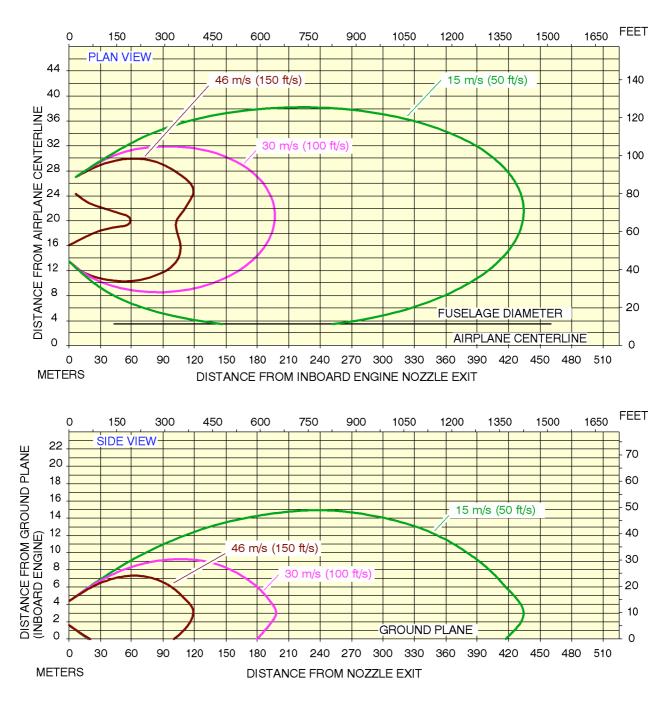


NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS: - SEA LEVEL STATIC CONDITIONS - ISA CONDITIONS - 20 kt (37 km/h) HEADWIND

ZMF5 02 11 00 0 GFM0 00

Engine Exhaust Temperatures Breakaway Power - GP 7277 Engines A380-863F Model

MAINTENANCE FACILITY PLANNING



NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

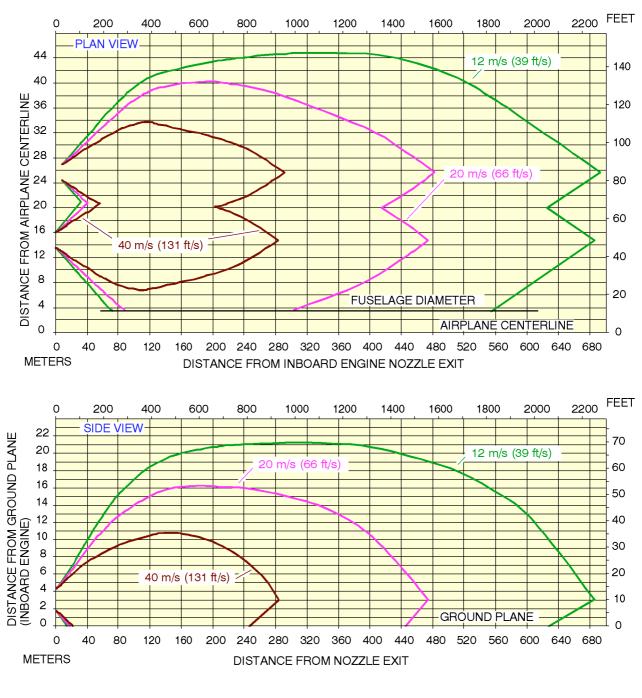
- SEA LEVEL STATIC CONDITIONS
- ISA + 15 °C (59 °F) CONDITIONS

- NO WIND

ZMF5 02 11 00 0 RGM0 00

Engine Exhaust Velocities Max. Take-Off Power - TRENT 970 Engines A380-841 Model

MAINTENANCE FACILITY PLANNING



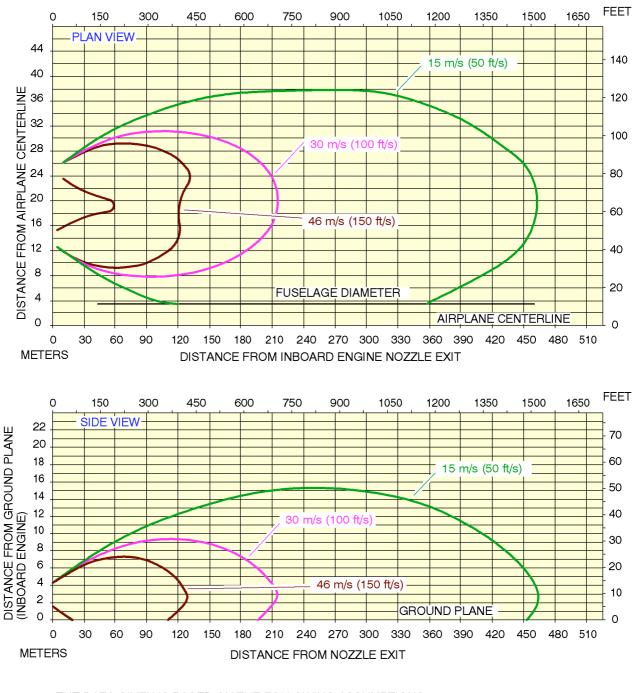
NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS: - SEA LEVEL STATIC CONDITIONS - ISA CONDITIONS

- 20 kt (37 km/h) HEADWIND

ZMF5 02 11 00 0 GGM0 00

Engine Exhaust Velocities Max. Take-Off Power - GP 7270 Engines A380-861 Model

MAINTENANCE FACILITY PLANNING

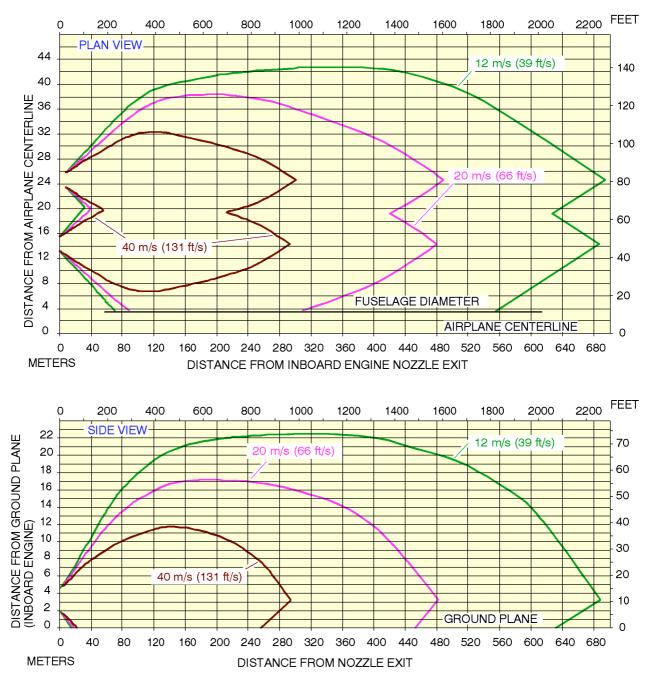


NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS: - SEA LEVEL STATIC CONDITIONS - ISA + 15 °C (59 °F) CONDITIONS - NO WIND

ZMF5 02 11 00 0 RHM0 00

Engine Exhaust Velocities Max. Take-Off Power - TRENT 977 Engines A380-843F Model





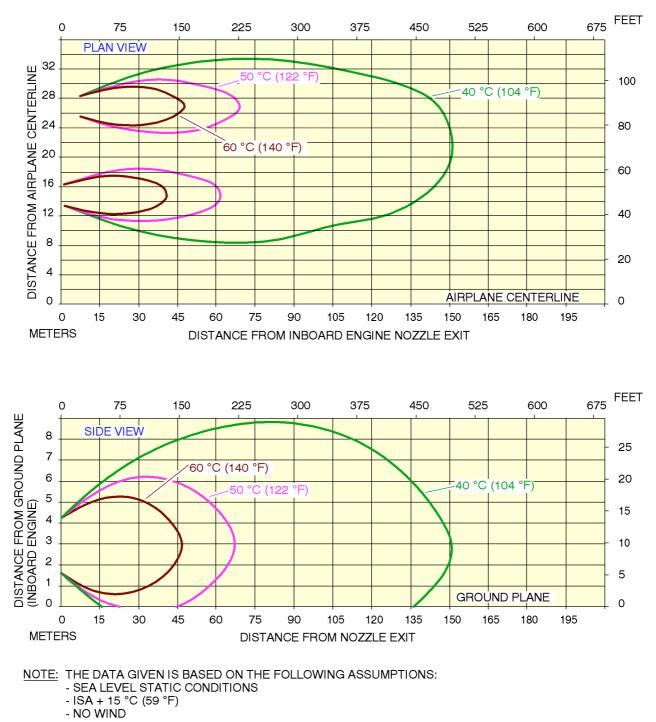
NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

- SEA LEVEL STATIC CONDITIONS
- ISA CONDITIONS
- 20 kt (37 km/h) HEADWIND

ZMF5 02 11 00 0 GHM0 00

Engine Exhaust Velocities Max. Take-Off Power - GP 7277 Engines A380-863F Model

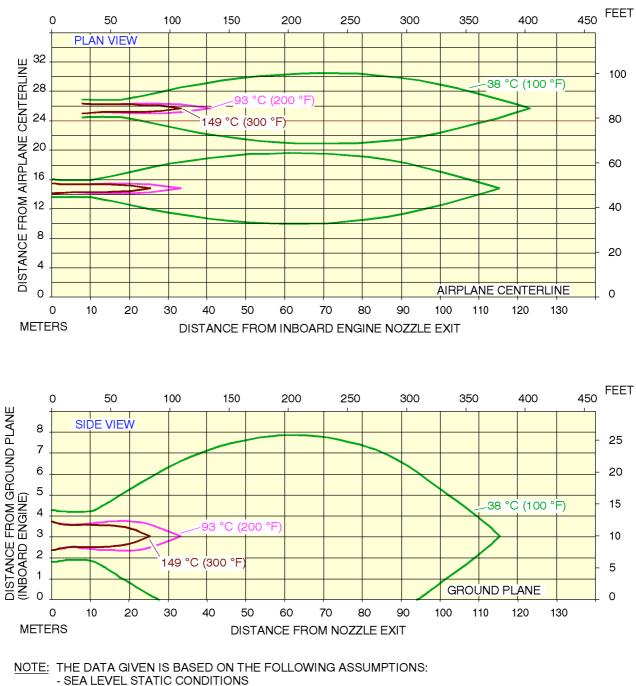
MAINTENANCE FACILITY PLANNING



ZMF5 02 11 00 0 RJM0 00

Engine Exhaust Temperatures Max. Take-Off Power - TRENT 970 Engines A380-841 Model ♥ A380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING



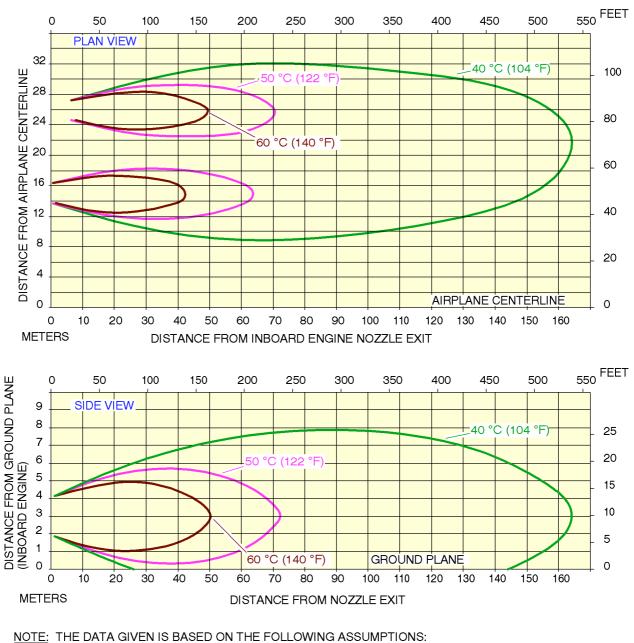
- ISA CONDITIONS

- 20 kt (37 km/h) HEADWIND

ZMF5 02 11 00 0 GJM0 00

Engine Exhaust Temperatures Max. Take-Off Power - GP 7270 Engines A380-861 Model **GA380** Preliminary data

MAINTENANCE FACILITY PLANNING

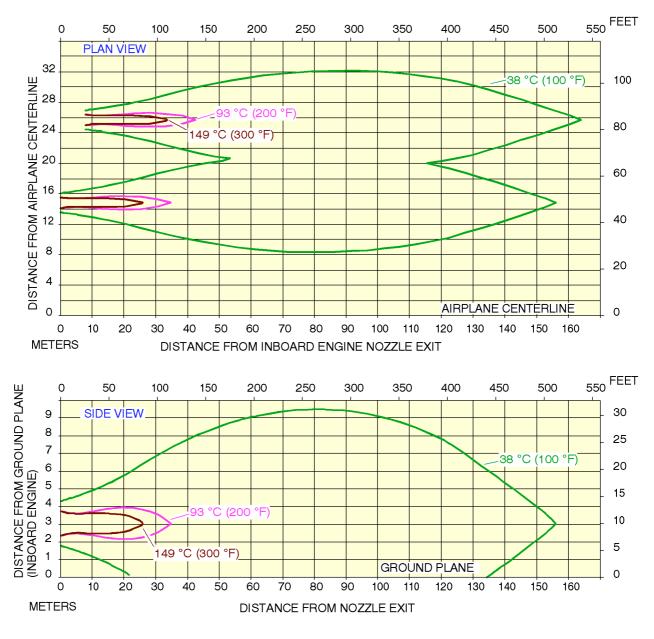


- SEA LEVEL STATIC CONDITIONS
- ISA + 15 °C (59 °F)
- NO WIND

ZMF5 02 11 00 0 RKM0 00

Engine Exhaust Temperatures Max. Take-Off Power - TRENT 977 Engines A380-843F Model **GA380** Preliminary data

MAINTENANCE FACILITY PLANNING



NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

- SEA LEVEL STATIC CONDITIONS

- ISA CONDITIONS

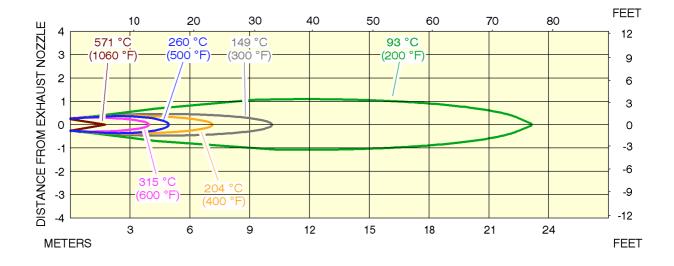
- 20 kt (37 km/h) HEADWIND

ZMF5 02 11 00 0 GKM0 00

Engine Exhaust Temperatures Max. Take-Off Power - GP 7277 Engines A380-863F Model

©A380 Preliminary data

MAINTENANCE FACILITY PLANNING



ZMF6 02 11 00 0 AAMO 00 APU Exhaust Velocities (TBIL) and Temperatures PW 980A APU A380-800/800F Models

MAINTENANCE FACILITY PLANNING

SECTION 3 - LINE MAINTENANCE AND HANGAR

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⊘A380 Preliminary data

MAINTENANCE FACILITY PLANNING

AIRPLANE MAINTENANCE JACKING

- 1. Aircraft Jacking Points for Maintenance
 - A. General
 - (1) The A380 aircraft can be jacked :
 - at not more than the maximum permitted aircraft weight for jacking and,
 - within the limits of the permissible wind speed when the aircraft is jacked outside a closed environnement.
 - B. Primary jacking Points
 - (1) The aircraft are provided with three primary jacking points (Ref. Fig OO1) :
 - one located under the forward fuselage,
 - two located under the wings (one under each wing).
 - (2) Three jack adapters (ground equipment) are used as intermediary parts between the aircraft jacking points and the jacks (Ref. Fig. 002) :
 one male spherical jack adapter at the forward fuselage,
 two female jack pad adapters at the wings (one at each wing).
 - C. Auxiliary stabilizing Point (Safety point)
 - (1) When the aircraft is on jacks, a safety stay is installed under the aft fuselage (Ref. Fig. 001) to prevent tail tipping caused by accidental displacement of the aircraft center of gravity.
 - (2) The safety point must not be used for lifting the aircraft.
 - (3) One male spherical stay adapter (ground equipment) is used as intermediary part between the aircraft safety point and the stay.
- 2. Jacks and Safety Stay Specifications (Ref. Fig. 003)
 - A. Jacks Specifications

	Capacity (min.)	Full extended (min.)	Fully retracted (min.)
Forward Jack	51000 daN	4600 mm	1900 mm
	114652 lbf	181.10 in.	74.80 in.
Wing jacks	190000 daN	7100 mm	4000 mm
	427137 lbf	279.5 in.	157.48 in.

(1) In fully retracted position (jack stroke at minimum), the height of the jacks is such that they may be placed beneath the airplane under the most adverse conditions, namely, tires deflated and chock absorbers depressurized and, in addition, with a sufficient clearence between the aircraft jacking point and the jack upper end.

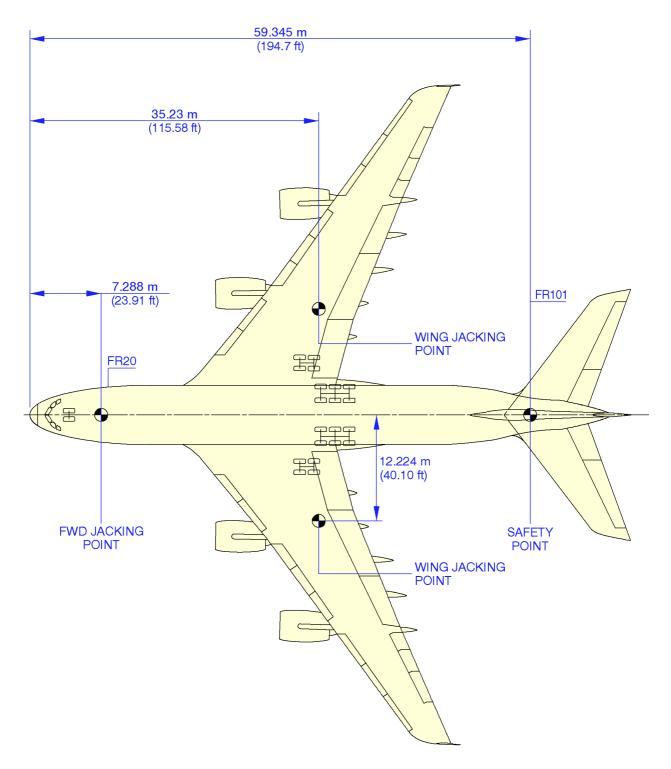


- (2) The jacks stroke enables the aircraft to be jacked up so that the Fuselage Datum Line (FDL) may be positioned up to 7300 mm (23.95 ft) from the ground to allow all required maintenance procedure and in particular, the Landing Gear shock absorbers removal/installation.
- B. Safety stay Specifications

	Capacity (min.)	Full extended (min.)	Fully retracted (min.)
Safety stay	12000 daN	6700 mm	5000 mm
	26977 lbf	263.77 in.	196.85 in.

(1) The stay stroke enables the aircraft tail to be supported up to the Fuselage Datum Line (FDL) positioned at 7300 mm (23.95 ft) from the ground. **ØA380** Preliminary data

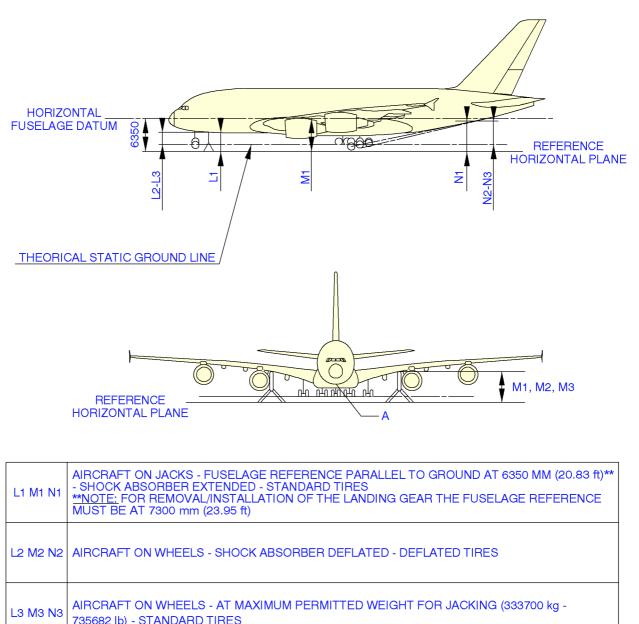
MAINTENANCE FACILITY PLANNING



ZMF5 03 01 00 0 AAM0 00

Location of the Jacking and Safety points Figure 001 A380-800 Model

MAINTENANCE FACILITY PLANNING



	L1	M1	N1	L2	M2	N2	L3	МЗ	N3
mm	3673	6283	5790	1937	4399	4064	2354	4893	4498
in	144.60	247.36	227.95	76.25	173.18	160	92.67	192.63	177.08

ZMF5 03 01 00 0 ABM0 00

Jacking design Figure 002 A380-800 Model

MAINTENANCE FACILITY PLANNING

FLIGHT CONTROLS

1. General

There are two types of flight controls :

- the Primary controls
- the Secondary controls.
- A. Primary Controls
 - (1) The roll control is achieved on each wing by the inner and outer aileron complemented with six spoilers.
 - (2) The yaw control is achieved by a rudder attached to the vertical stabilizer with a hinge.
 - (3) The pitch control is achieved by two elevators attached to the Trimmable Horizontal Stabilizer (THS) (trim function) with hinges.
- B. Secondary Controls

The lift augmenting is achieved by the surfaces on each wing as follows : - two trailing edge flaps

- seven leading edge slats
- two ailerons which droop when the flaps are extended.
- 2. Operation
 - A. Roll Control

Hydraulic servo controls, which receive electrical signals and are independently supplied, operate the spoilers and ailerons.

Two servo controls are on each aileron and one on each spoiler. Signals by the side stick controllers are analyzed by the electrical control computers which give the calculated control surface position.

B. Yaw Controls

The rudder is operated by three independently supplied hydraulic servo-controls. The servo-controls receive signals through interconnected pedals by a single cable. The single cable runs up to a spring-loaded artificial feed unit. Yaw trim is signalled from a switch located on the center pedestal and analyzed by the flight augmentation computers which control the rudder trim actuator.

MAINTENANCE FACILITY PLANNING

C. Pitch Control

The two elevators are operated by independent hydraulic servo controls. The servo controls are operated hydraulically and controlled electrically with hydraulic pressure. Two servo controls are installed on each elevator.

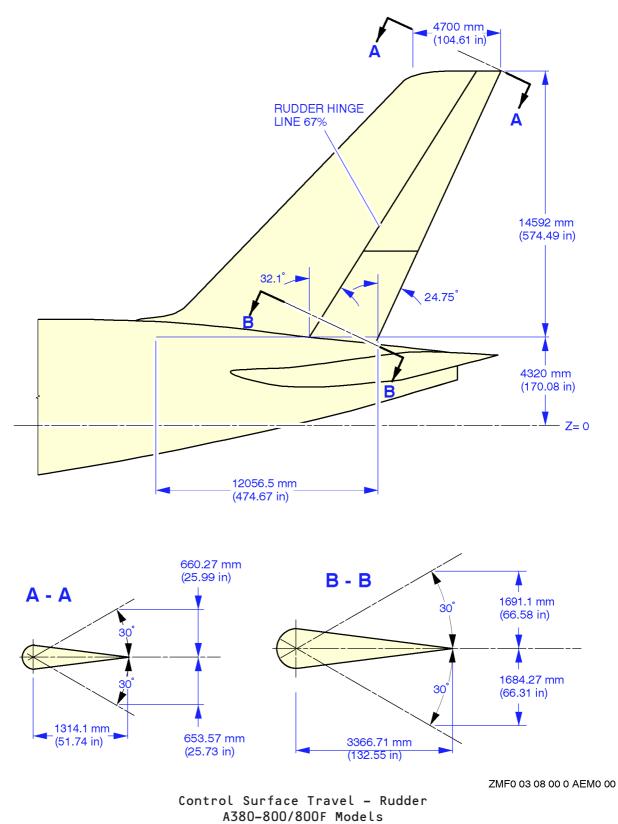
Pitch trim is provided by adjustment of the Trimmable Horizontal Stabilizer (THS). Control of the THS position can be achieved automatically in the normal (electrical) operating mode, via the elevator and the Aileron computer, or mechanically by operation of the interconnected handwheels located on the center pedestal.

D. Lift Augmentation

Each trailing edge flap moves by means of the carriages. The flaps are actuated by a power control unit which has two hydraulic motors which drive the rotary actuator by means of a shaft transmmission.

Each leading edge slat moves by means of the tracks. The slats are actuated by a power control unit which has two hydraulic motors. The two hydraulic motors drive the rotary actuator by means of a shaft tansmmission.

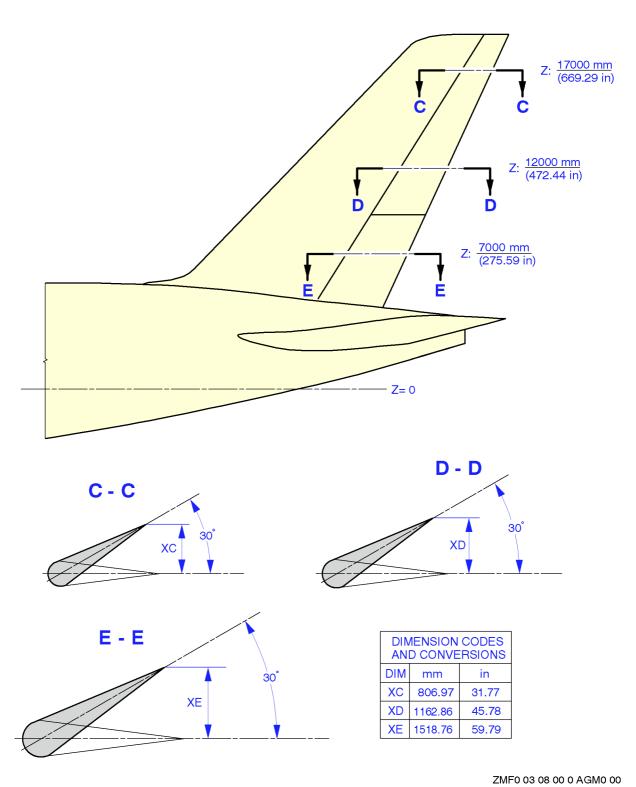
MAINTENANCE FACILITY PLANNING



(Sheet 1)

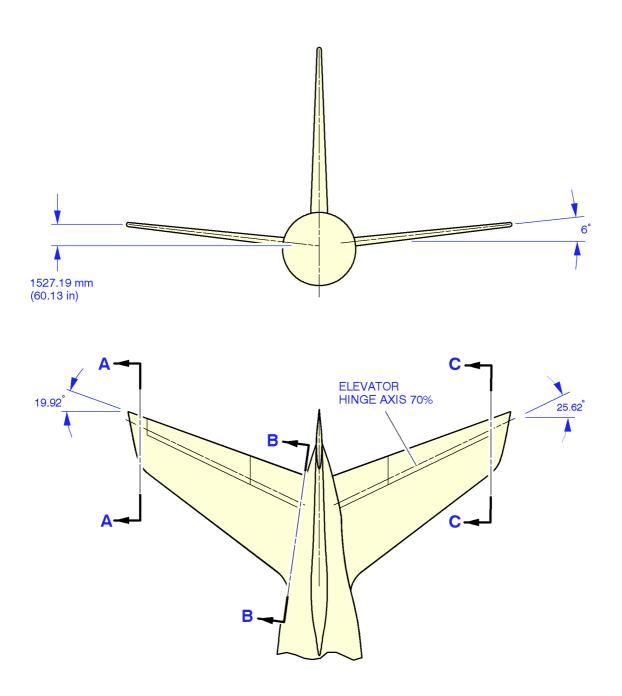
ØA380 Preliminary data

MAINTENANCE FACILITY PLANNING



Control Surface Travel – Rudder A380-800/800F Models (Sheet 2)

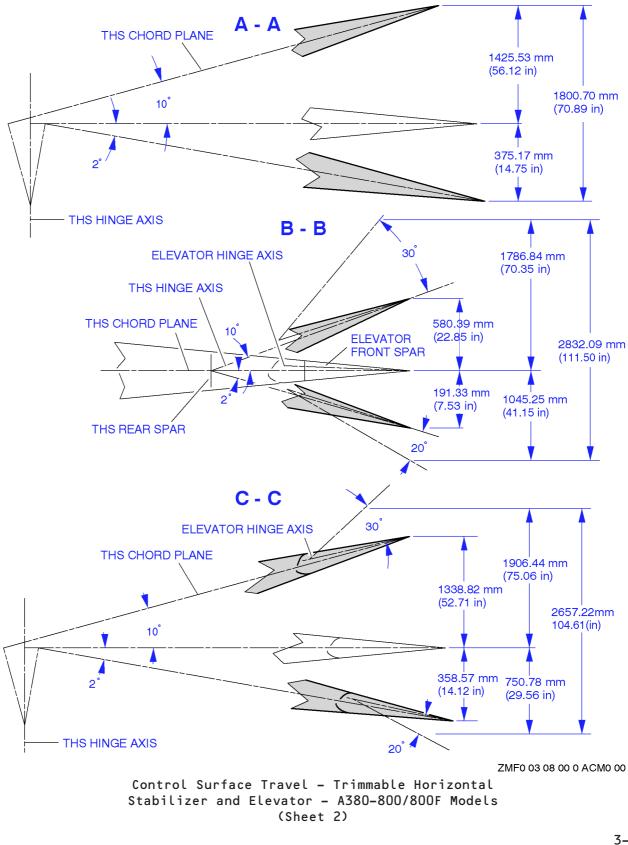




ZMF0 03 08 00 0 AAM0 00

Control Surface Travel – Trimmable Horizontal Stabilizer and Elevator – A380-800/800F Models (Sheet 1)

MAINTENANCE FACILITY PLANNING

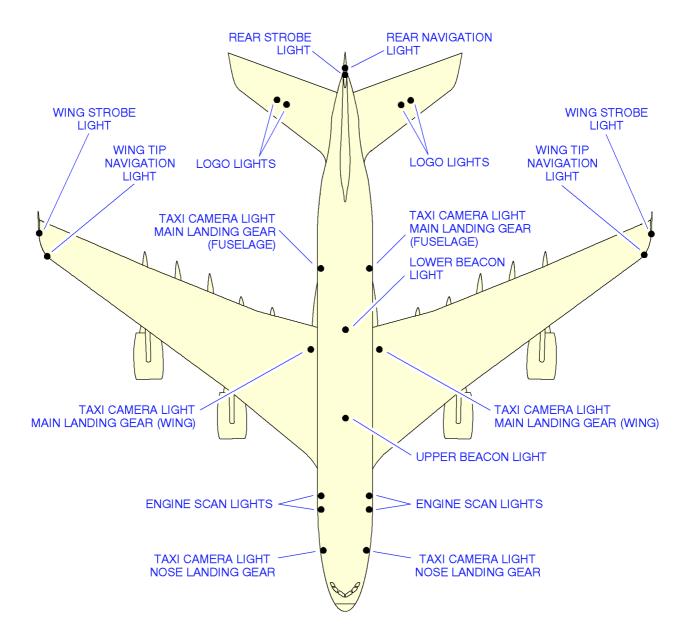




EXTERIOR LIGHTING

This section gives the location of the aircraft exterior lighting.

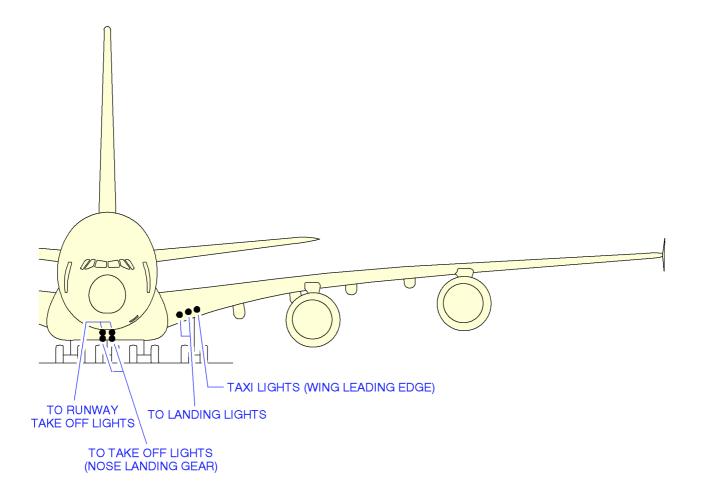




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Exterior Lighting Available in Flight (Sheet 1/2) A380-800/800F Models

MAINTENANCE FACILITY PLANNING

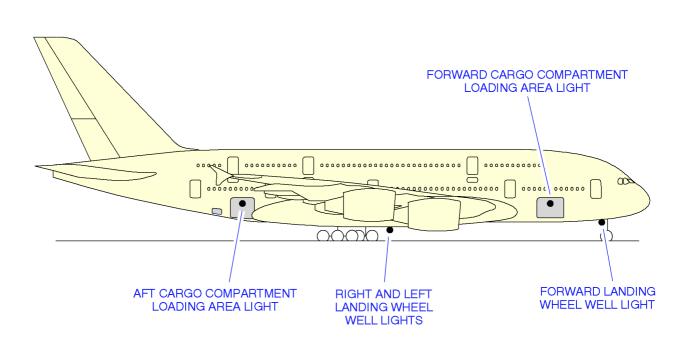


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Exterior Lighting Available in Flight (Sheet 2/2) A380-800/800F Models

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MAINTENANCE FACILITY PLANNING



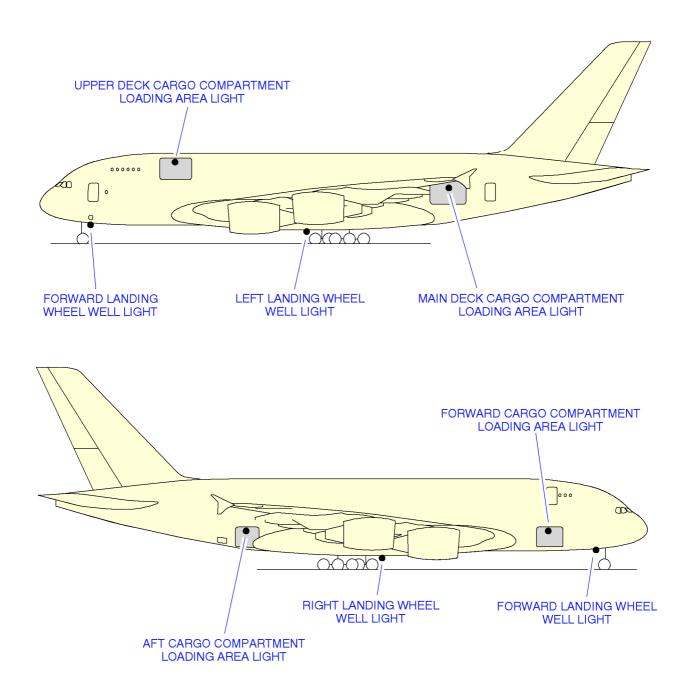
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Exterior Lighting for Ground Use A380-800 Models

Printed in France

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MAINTENANCE FACILITY PLANNING



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Exterior Lighting of for Ground Use A380-800F Models

R

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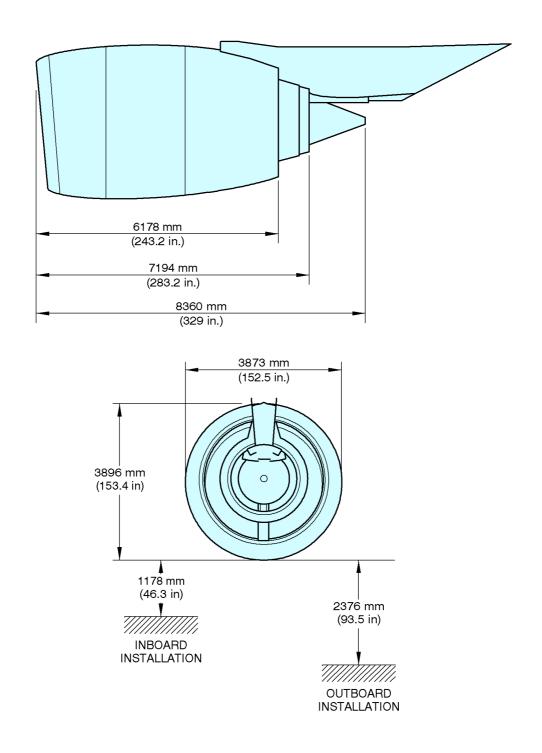
MAINTENANCE FACILITY PLANNING

POWER PLANT HANDLING

1. Dimensions

This section contains data necessary for determining the platforms and associated facilities required for power plant handling.

MAINTENANCE FACILITY PLANNING



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Engine Dimensions RB211 - Trent Engine

MAINTENANCE FACILITY PLANNING

To Be Issued Later

Nacelle Dimensions RB211 – Trent Engine

MAINTENANCE FACILITY PLANNING

To Be Issued Later

Fan Cowls RB211 - Trent Engine

MAINTENANCE FACILITY PLANNING

To Be Issued Later

Thrust Reverser Halves RB211 - Trent Engine

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MAINTENANCE FACILITY PLANNING

COMPONENT WEIGHTS

1. General

This topic details the weights of the primary removable components on the A380 aircraft for models -800 and -800F. Weights in para. A are for components fitted to each wing. All weights are approximate values and are given in kg (lb).

A. Wing

(1)	Slats:	Model -800/Model -800F
	Droop Nose 1 Droop Nose 2 Slat 2 Slat 3 Slat 4 Slat 5 Slat 6 Slat 7	219kg(482lb)/221kg(487lb)200kg(441lb)/202kg(445lb)148kg(326lb)/149kg(328lb)145kg(319lb)/146kg(322lb)150kg(330lb)/152kg(335lb)131kg(288lb)/132kg(291lb)115kg(253lb)/116kg(255lb)108kg(238lb)/109kg(240lb)
(2)	Flaps:	
	Inner Midboard Outer	656 kg (1446 lb)/687 kg (1514 lb) 681 kg (1501 lb)/709 kg (1563 lb) 395 kg (870 lb)/410 kg (904 lb)
(3)	Tracks:	Model -800/Model -800F
	Equipped Track 1 Equipped Track 2 Equipped Track 3 Equipped Track 4 Equipped Track 5 Equipped Track 6	212 kg (467 lb)/229 kg (505 lb) 455 kg (1003 lb)/478 kg (1053 lb) 366 kg (807 lb)/383 kg (844 lb) 343 kg (756 lb)/360 kg (793 lb) 334 kg (736 lb)/350 kg (771 lb) 192 kg (423 lb)/198 kg (436 lb)
		All Models
	Flap Track Fairing 2 (LH wing)* Flap Track Fairing 2 (RH wing) Flap Track Fairing 3 Flap Track Fairing 4 Flap Track Fairing 5 Flap Track Fairing 6 * RAT installed.	209 kg (460 lb) 179 kg (394 lb) 139 kg (306 lb) 149 kg (328 lb) 139 kg (306 lb) 89 kg (196 lb)

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MAINTENANCE FACILITY PLANNING

(4) Ailerons:	All Models
Inner Midboard Outer	215 kg (474 lb) 235 kg (518 lb) 256 kg (564 lb)
(5) Spoilers:	
Spoiler 1	96 kg (211 lb)
Spoiler 2	91 kg (200 lb)
Spoiler 3	77 kg (169 lb)
Spoiler 4	84 kg (185 lb)
Spoiler 5	77 kg (169 lb)
Spoiler 6	85 kg (187 lb)
Spoiler 7	79 kg (174 lb)
Spoiler 8	78 kg (172 lb)

MAINTENANCE FACILITY PLANNING

B. Landing gear

To Be Issued Later

MAINTENANCE FACILITY PLANNING

C. Fuselage (1) Nose Fuselage: All Models 60 kg (132 lb) Radome Windshield panel 36 kg (79 lb) Lateral Sliding Window panel 21 kg (46 lb) (including mecanism) 46 kg (101 lb) 21 kg (46 lb) Lateral Fixed Window panel (2) Passenger Doors and associated slides - Main Deck: Door n° M1 + Slide 125 kg (275 lb) + 102 kg (225 lb) Door n° M2 + Slide 122 kg (269 lb) + 96 kg (216 lb) 118 kg (260 lb) + 85 kg (187 lb) Door n° M3 + Slide Door n° M4 + Slide 122 kg (269 lb) + 88 kg (194 lb) Door n° M5 + Slide 124 kg (273 lb) + 88 kg (194 lb) - Upper Deck: Door n° U1 + Slide 125 kg (275 lb) + 136 kg (299 lb) Door n° U2 + Slide 125 kg (275 lb) + 134 kg (295 lb) Door n° U3 + Slide 125 kg (275 lb) + 134 kg (295 lb) (3) Cargo Doors: Forward Cargo Door 300 kg (661 lb) Aft Cargo Door 270 kg (595 lb) 40 kg (88 lb) Bulk Cargo Door Upper Deck Cargo Door 410 kg (904 lb) Main Deck Cargo Door 470 kg (1036 lb) (4) Rear fuselage section 19.1: Structure 433 kg (954 lb) Systems 236 kg (520 lb) (5) Miscellaneous: All Models Nose Landing gear doors: - forward (each) 58 kg (128 lb) - rear (each) 25.5 kg (56 lb) Body Landing gear doors TBD TBD Wing Landing gear doors

MAINTENANCE FACILITY PLANNING

Control Units: – Flaps – Slats	TBD TBD
Air Conditionning Pack (one side)	397 kg (875 lb)
APU access door APU exhaust APU electrical system	TBD 96 kg (211 lb) 49 kg (108 lb)

MAINTENANCE FACILITY PLANNING

D. Stabilizers

(1) Vertical tail:	<u>All Models</u>
Box (equipped without rudder)	2491 kg (5491 lb)
Rudder	693 kg (1527 lb)
Leading edge	171 kg (377 lb)
Dorsal fin	25 kg (55 lb)
Tip	30 kg (66 lb)
Fuselage fairing	62 kg (136 lb)
(2) Horizontal Tail:	
Box	3982 kg (8778 lb)
Outer elevator	388 kg (855 lb)
Inner elevator	508 kg (1119 lb)
Leading edge	467 kg (1029 lb)
Trailing edge	688 kg (1516 lb)
Tip	100 kg (220 lb)
Fuselage fairing	TBD
Miscellaneous	114 kg (251 lb)
Systems	241 kg (531 lb)

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MAINTENANCE FACILITY PLANNING

E. Miscellaneous

Ram air turbine assembly	TBD
Battery	TBD
Engine fire extinguisher bottle	TBD
Pneumatic system bleed air precooler	TBD

F. Engine and nacelle

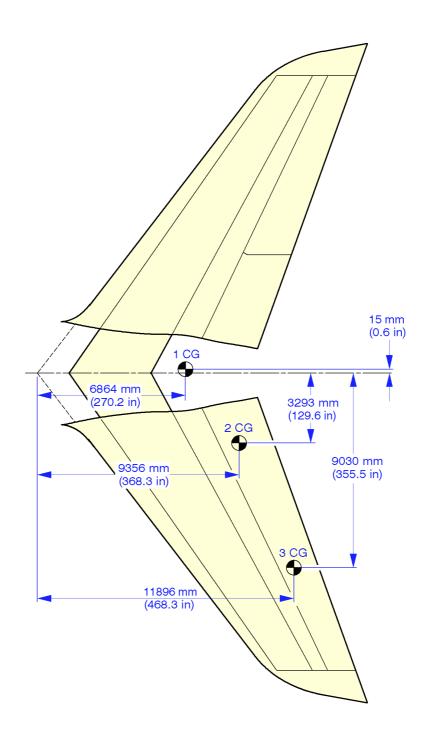
Engine	TBD
Inlet Cowl	TBD
Fan Cowl	TBD
Thrust Reverser	TBD
Primary Nozzle	TBD
Pylon (Outer)	TBD
Pylon (Inner)	TBD



COMPONENT HANDLING

Section 3–16 gives the information on dimensions and on the Center of Gravity (C.G.) locations of the various control surfaces. All the dimensions are in millimeters and inches.

MAINTENANCE FACILITY PLANNING

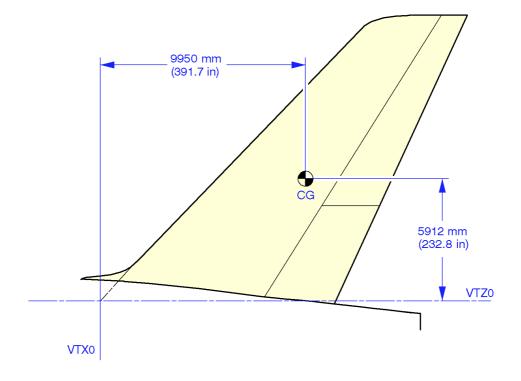


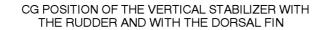
1. CG POSITION OF HORIZONTAL STABILIZER WITHOUT THE ELEVATORS 2. CG POSITION OF THE INNER ELEVATOR 3. CG POSITION OF THE OUTER ELEVATOR

ZMF0 03 16 00 0 AAM0 00

Horizontal Stabilizer CG Location



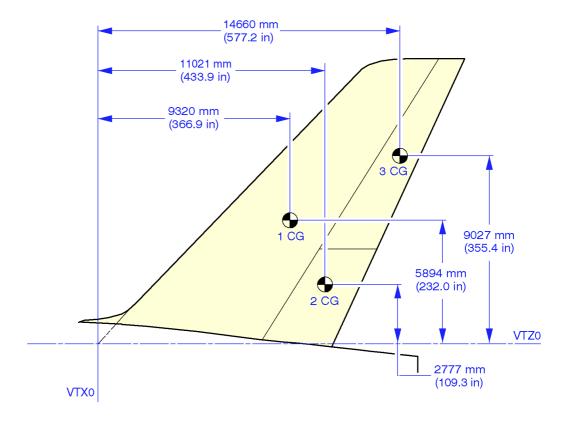




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Vertical Stabilizer and Rudder CG Location



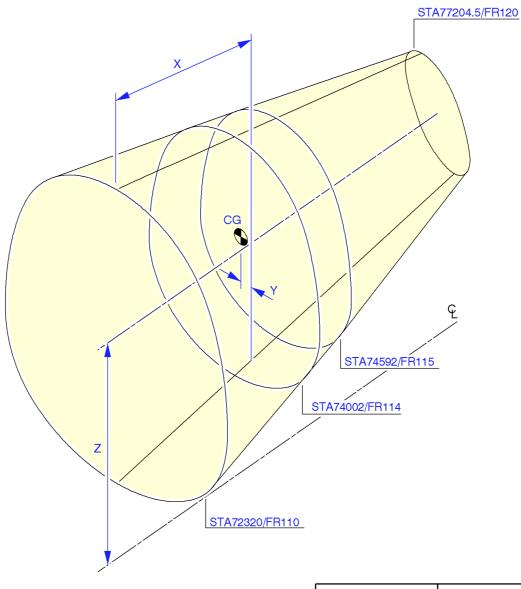


 CG POSITION OF THE VERTICAL STABILIZER WITHOUT THE RUDDER AND DORSAL FIN
 CG POSITION OF THE UPPER RUDER
 CG POSITION OF THE LOWER RUDDER

ZMF0 03 16 00 0 ACM0 00

Vertical Stabilizer and Rudder CG Location





	AP	WITH U GENEF		WITH APU GEN	
	mm in		mm in		
	Х	2066	81.34	2146	84.49
I	Y	22	0.87	35	1.38
l	Ζ	2420	95.28	2609	102.72

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Tail cone CG Location

♥ A380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING

SUGGESTED HANGAR ARRANGEMENT

The purpose of a maintenance hangar is to provide a weather-safe space for aircraft servicing, maintenance and repair activities. It may also include space for aircraft component workshops, support equipment and administrative facilities.

та	ICILITIES.
	intenance hangar planning should take the following factors into onsideration :
_	level of maintenance to be performed,
	capacity including storage space,
	NOTE : The number of hangar bays depends on :
	- fleet size,
	- aircraft utilization,
	- maintenance check intervals,
	 number of aircraft requiring maintenance action at the same time,
	- maintenance check elapsed time,
	- working hours available.
	local labor regulations,
-	clearances : external (e.g. hangar doors) and internal (e.g. for aircraft
	jacking),
	tractor drive-through capability,
	special features (see paragraph A.),
	ground support equipment (see paragraph B.),
	environmental control (lighting/heating/air conditioning) : temperature (hot
	or cold climate), dust or humidity, prevailing winds,
	<u>NOTE</u> : Hangar lighting levels should be 75 footcandles (800 lm/m^2).
-	structural materials/design (the roof is the most expensive part of the
	hangar),
-	security,
-	safety equipment and fire protection (see paragraph C.),
-	local building codes,
_	site location with respect to :
	- aprons, taxiways, runways,
	- electromagnetic constraints.
_	geotechnical investigation,
	extension capability.
Α.	Special Features :
	- Cranes,
	- landing gear maintenance pits,
	- mezzanine,
	- fixed work stands,
	 aircraft cleaning, stripping and painting capabilities,
	- drainage,

- ventilation (work in fuel tank),
- pneumatic, electrical and hydraulic connections,
- computer system (aircraft maintenance and planning).

⊘A380 PRELIMINARY DATA

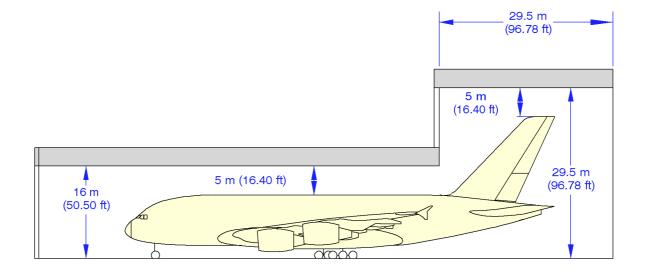
MAINTENANCE FACILITY PLANNING

B. Ground Support Equipment :

- Air conditioning unit,
- nitrogen cart,
- oxygen cart,
- hydraulic rig,
- air starter unit,
- air compressor,
- electrical ground power unit,
- fuel tank ventilation unit,
- lavatory service unit,
- tractor,
- tow bars,
- engine cradles and trolleys (engine Removal/Installation),
- mobile maintenance docks/platforms,
- jacks,
- elevating platforms,
- stairways,
- access steps,
- mobile scissor platform,
- weighing devices,
- storage racks.
- C. Safety Equipment and Fire Equipment :
 - safety harnesses with damping device,
 - explosive atmosphere detection devices,
 - sprinkler network using a mixture of water and emulsifying agent,
 - NOTE : Quantity required is 10 l/m² per minute minimum. Water storage tanks should have enough capacity for one hour's use.
 - foam spray gun(s) using same mixture as the sprinkler system,
 - NOTE : Minimum flow rage : $200 \text{ m}^3/\text{h}$.
 - portable fire-fighting devices using dry chemical (powder), water or CO2.

♥ A380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING



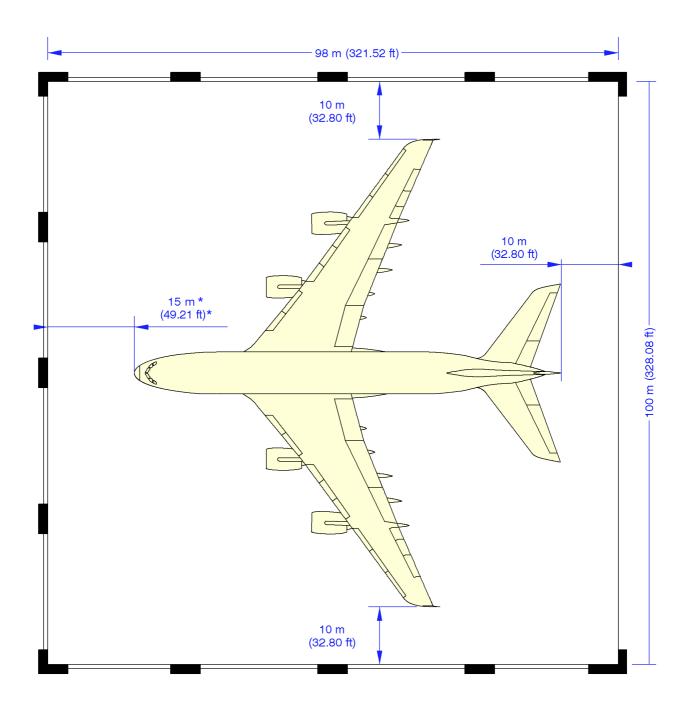
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Suggested Hangar Arrangement Nose-in Position (Sheet 1/2) A380-800/800F Models

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* : MINIMUM NECESSARY DISTANCE TO MOVE AWAY A TRACTOR WITH A TOW BAR

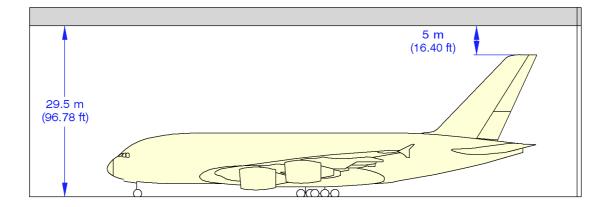


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Suggested Hangar Arrangement Nose-in Position (Sheet 2/2) A380-800/800F Models

♥ A380 PRELIMINARY DATA

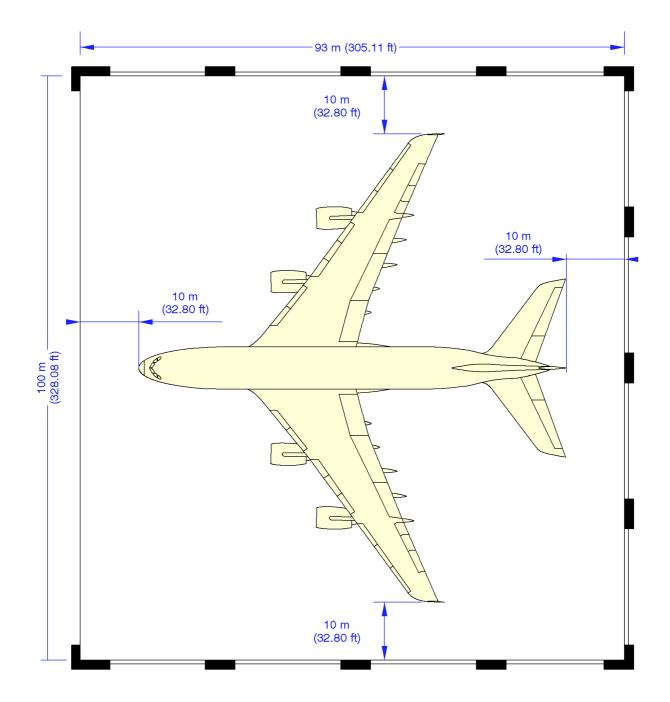
MAINTENANCE FACILITY PLANNING



ZMF5 03 17 00 0 BAM0 00

Suggested Hangar Arrangement Tail-in Position (Sheet 1/2) A380-800/800F Models **GA380** PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING



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Suggested Hangar Arrangement Tail-in Position (Sheet 2/2) A380-800/800F Models

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MAINTENANCE FACILITY PLANNING

LANDING GEAR MAINTENANCE PITS

Landing Gear maintenance pits are not required for the removal of the shock absorbers.

The shock absorber can be removed when the wheels, brakes and bogie are removed, and with :

- the aircraft on jacks
- the Fuselage Horizontal Datum 7.2 m above the ground
- the appropriate equipment available.

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MAINTENANCE FACILITY PLANNING

RECOMMENDED WORKSTANDS

The essential aspects that affect a decision to build a fixed dock or a movable dock are :

- the fleet size of one type of aircraft,
- the different types of aircraft in operation which demand the same hangar facilities,
- the hangar facilities must comply for both light maintenance or major maintenance.

It would appear logical to build a fixed dock facility where the fleet size of one type of aircraft provides for an adequate workload. This therefore implies that the fixed dock is in use most of the time.

When the fleet size is small or adaptability is required, movable workstands are more economic and proficient. Movable workstands are a facility that can be used for different types of aircraft.

Illustrations which show the movable workstands have been incorporated to help develop base facilities.

GA380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING

Item	No. of	Description	Access to
1	4	Cargo Compartment Platform	Cargo Compartments
2	4	Engine Platform	Engine/Pylon/Radome Nose Landing Gear
3	1	WLG/BLG Compartment Platform	Wing and Body Landing Gear Compartments
4	1	Rear Fuselage Platform	Rear Fuselage
5	1	Hydraulic Platform-Giraffe	Vertical/Horizontal Stabilizer/APU Compartment/Fuselage
6	6	Pax Door Platform – Main and Upper Decks	Passenger Doors/Cabin/Flight Deck
7	1	Fuselage Platform	Fuselage
8	2	Inner Wing Platform	Wing Root and Flap/Slat System
9/10	4	Outer Wing Platform	Flap/Slat and Spoiler System

Summary of Recommended Movable Workstands Aircraft on Wheels A380-800 Models

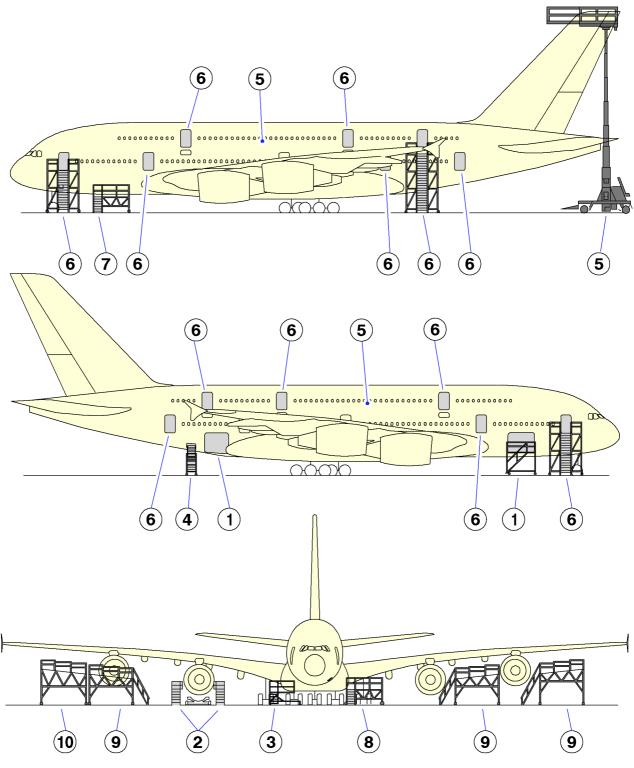
GA380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING

Item	No. of	Description	Access to
1	4	Cargo Compartment Platform	Cargo Compartments
2	4	Engine Platform	Engine/Pylon/Radome Nose Landing Gear
3	1	WLG/BLG Compartment Platform	Wing and Body Landing Gear Compartments
4	1	Rear Fuselage Platform	Rear Fuselage
5	1	Hydraulic Platform-Giraffe	Vertical/Horizontal Stabilizer/APU Compartment/Fuselage
6	2	Pax Door Platform – Main and Upper Decks	Passenger Doors/Cabin/Flight Deck
7	1	Fuselage Platform	Fuselage
8	2	Inner Wing Platform	Wing Root and Flap/Slat System
9/10	4	Outer Wing Platform	Flap/Slat and Spoiler System

Summary of Recommended Movable Workstands Aircraft on Wheels A380-800F Models **©A380** Preliminary data

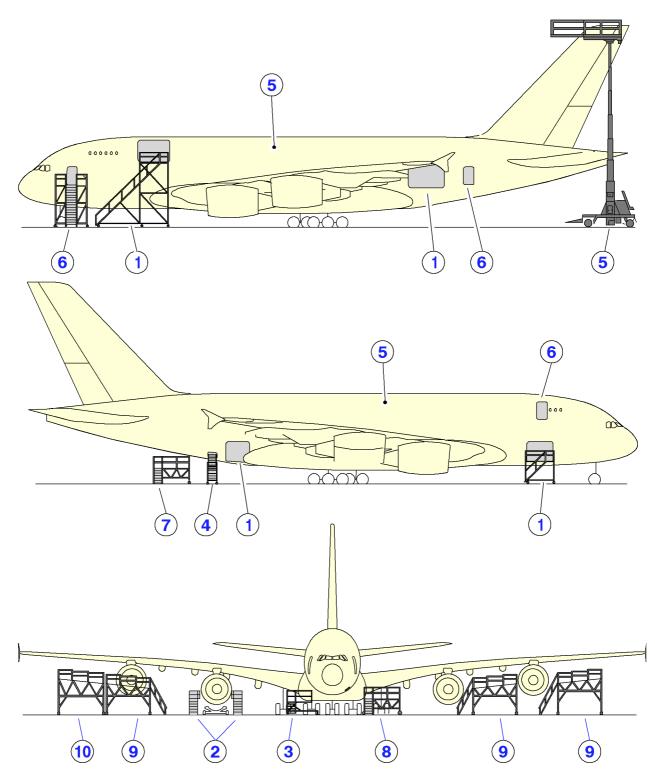
MAINTENANCE FACILITY PLANNING



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General Arrangement A380-800 Models **GA380** PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING



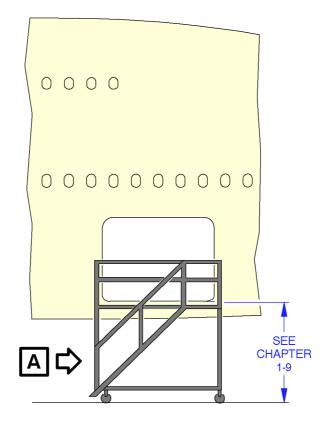
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General Arrangement A380-800F Models

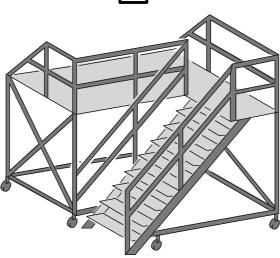
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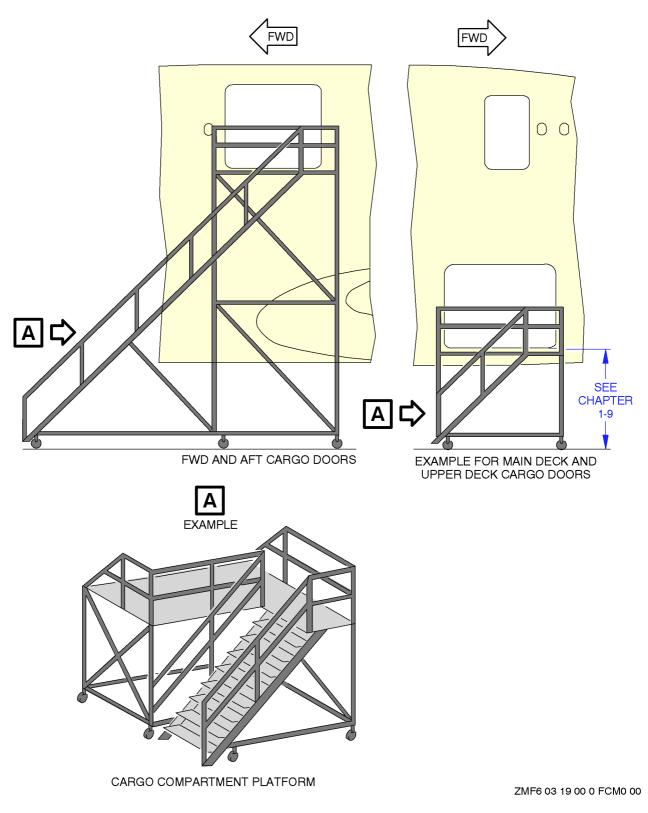
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Cargo Compartment Platform A380-800 Models

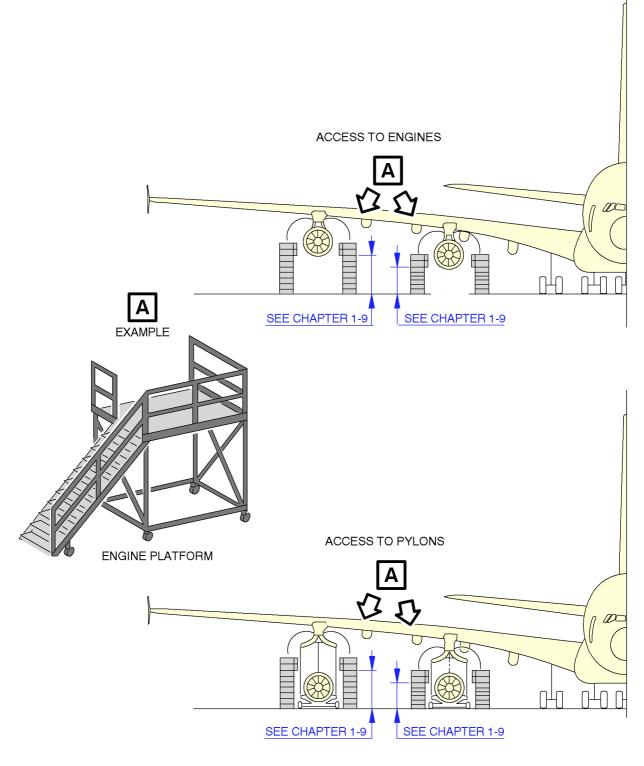




Cargo Compartment Platform A380-800F Models

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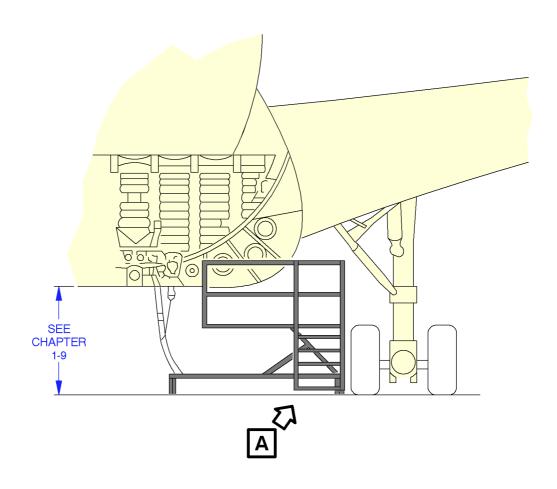


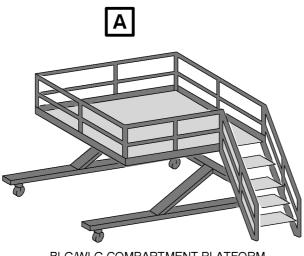


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Engine Platform





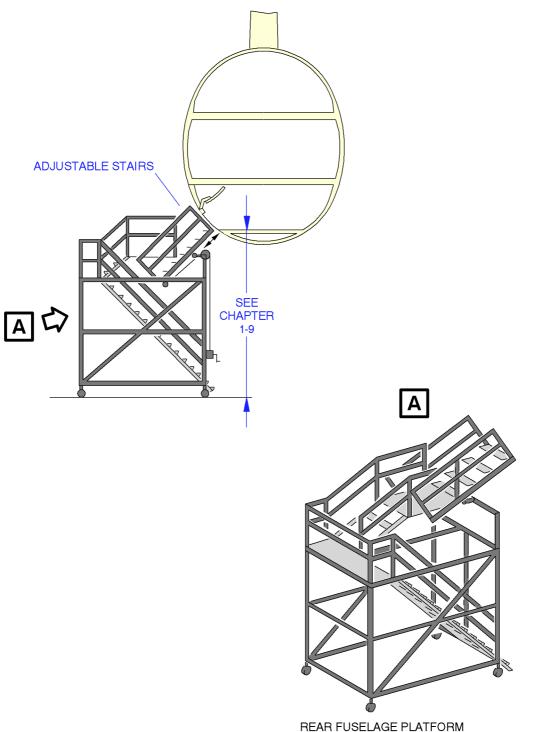


BLG/WLG COMPARTMENT PLATFORM

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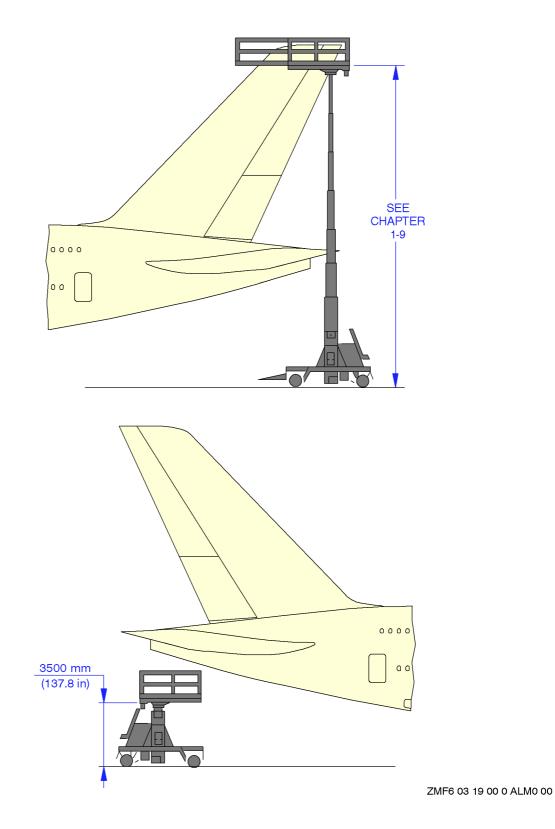
EAR FUSELAGE FLATFORM

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Rear Fuselage Platform

♥ A380 PRELIMINARY DATA

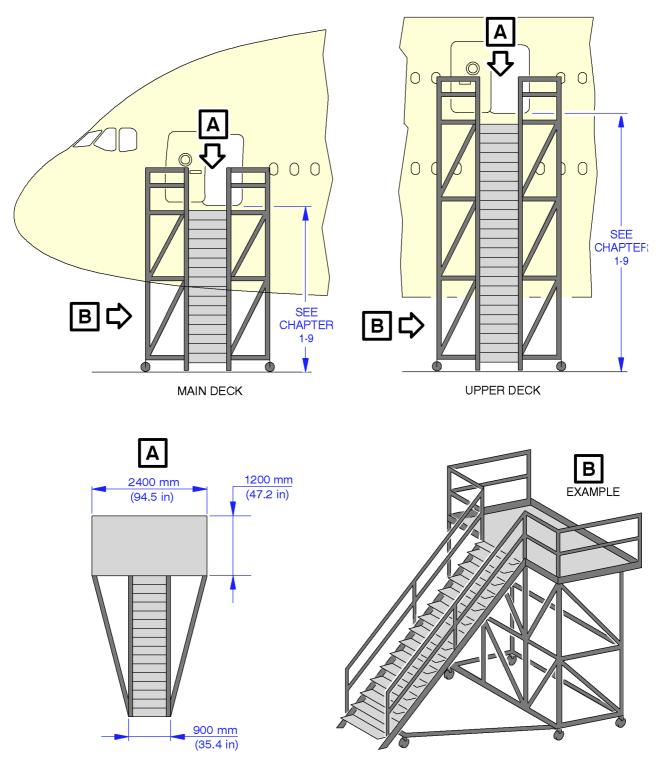
MAINTENANCE FACILITY PLANNING





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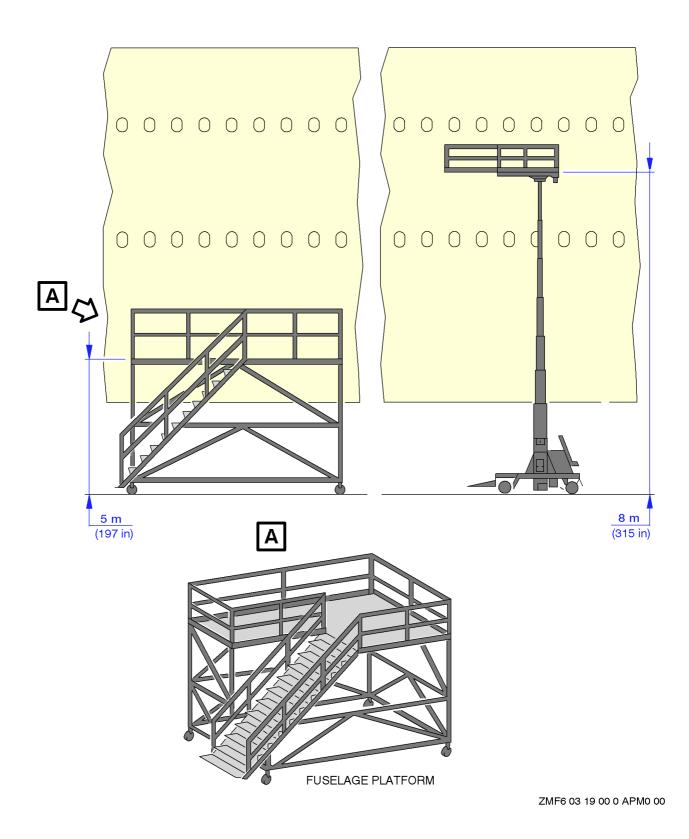


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Pax Door Platform - Main and Upper Decks

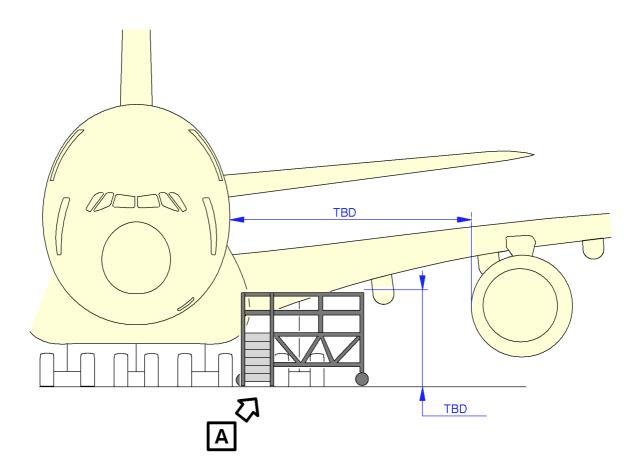
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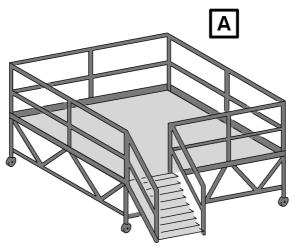
MAINTENANCE FACILITY PLANNING



Fuselage Platform







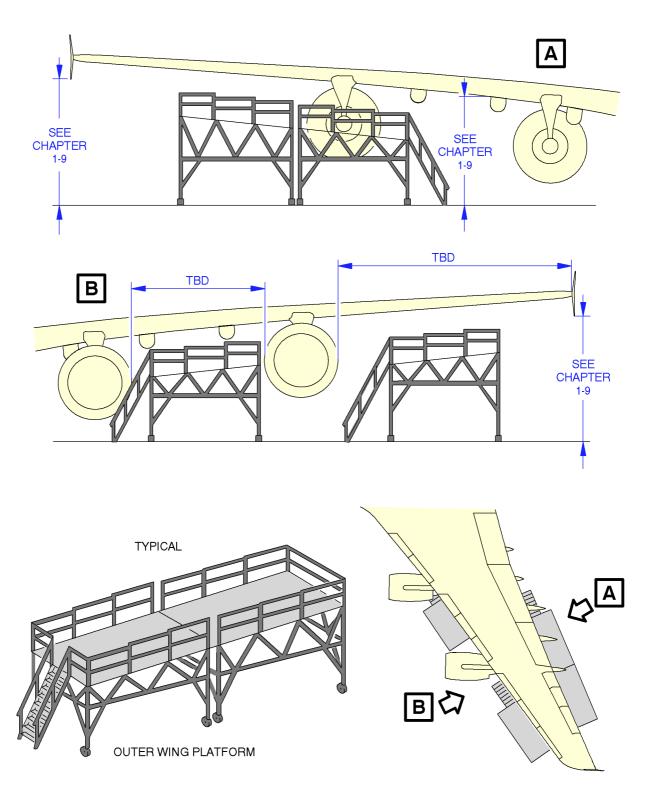
INNER WING PLATFORM

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Inner Wing Platform

♥ A380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING



ZMF6 03 19 00 0 ATM0 00

Outer Wing Platform

GA380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING

SECTION 4 - COMPONENT REPAIR/OVERHAUL AND FUNCTIONAL TEST

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VFG Generator Shop	4-3
Composite Repair Shop	4-4
Electrical Accessories Shop	4-5
Electrical Wire Marking Shop (TBIL)	4-6
Engine and APU Shop	4-7
Fuel Component Shop	4-8
Hydraulic Component Shop	4-9
I E R A Shop	4-10
Interior Equipment Shop	4-11
Laboratory Test of Fluids	4-12
Machine Shop	4-13
Sheet Metal Shop	4-14
NDT Shop	4–15
Painting Hall (TBIL)	4–16
Painting Shop	4–17
Pneumatic Component Shop	4–18
Life Jacket, Escape Slide/raft Shop	4–19
Surface Heat Treatment Shop	4-20
Tube Repair Shop	4–21
Tire/Wheel and Brake Shop	4-22

⊘A380 Preliminary data

MAINTENANCE FACILITY PLANNING

WORKSHOPS

1. General

The workshops should be located as close as possible to the maintenance hangar. Certain support shops are closely associated with on-aircraft maintenance.

They should be designed to allow future extension of the Airline fleet and to accept test and repair of components coming from other Airlines. The capability and consequently the size of the shops will depend on the level of on and off-aircraft maintenance that they support.

They should be located in the same area and arrangement should consider the following:

- Rapid transit between hangar floor, workshops and stores.
- Minimal movement and minimal administrative tracking.
- Bring aircraft maintenance activities and workshops services "to the aircraft".

They could be divided/regrouped in three main activities:

- A. Aircraft Maintenance
 - Interior equipment shop
 - Life jacket, slide/raft equipment shop
 - Seat shop
 - Sheet metal shop/Welding shop
 - Machine shop
 - Composite shop
 - Tube repair shop
 - Electrical wire marking shop.

B. Aircraft Components and Engines

- (1) Avionic
 - Battery shop
 - CSD/IDG Generator shop
 - Electrical accessories shop
 - I.E.R.A. (Instrument, Electric, Radio and navigation, Avionic) shop.
- (2) Hydro/mechanic
 - Engine and APU shop
 - Fuel components shop
 - Hydraulic components shop
 - Pneumatic components shop
 - Tire/wheel and brake shop.

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MAINTENANCE FACILITY PLANNING

C. Aircraft Support

- N.D.T. shop
- Calibration shop
- Laboratory test of fluids/metallurgical
- Painting shop
- Surface and heat treatment shop.

They should be at different floor level e.g.: wheel and brake, machine tool, surface protection... at ground level, cabin interior, safety equipment... at first floor.

Stores and offices should be air conditioned. Shop lighting should be 50 foot-candles (800 lumens/m²) with a 100 foot-candle local task lighting for inspection or detailed work. Non destructive test, composite repair, avionic shops and safety equipment shop should be equipped with air moisture and temperature control device.

GA380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING

BATTERIES SHOP

The shop is dedicated to discharge, test, overhaul, build-up recharge and storage of wet cell and dry cell batteries installed on aircraft, trucks and ground support equipment.

Service facilities for nickel-cadmium batteries must be entirely separate from those for lead-acid batteries. Fumes from lead-acid batteries or small traces of sulfuric acid entering a nickel-cadmium battery can damage it permanently.

Temperature controlled 20 to 26°C Work table with ceramic tile cover Ventilation system: air extraction over work table Storage racks Wash basin minimum size 0.8 m long, 0.4 m large, 0.2 m deep with cold water tap Explosion proof neon lamp with switch outside the room Compressed air supply with nozzle, 2-3 bar Demineralized/distilled water container

Charger analyzer

Safety equipment: adequate fire extinguisher, eye rinse device, rubber gloves.

Do not use petroleum spirits, trichloroethylene or other solvents for cleaning the battery.

Possible Vendors:

CHRISTIE ELECTRIC CORP.: GARDENA - CALIFORNIA - USA SAFT: ROMAINVILLE - FRANCE AERO QUALITY - STAMFORD CT USA - HESTON - ENGLAND

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MAINTENANCE FACILITY PLANNING

CALIBRATION SHOP

To Be Issued Later

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MAINTENANCE FACILITY PLANNING

VFG GENERATOR SHOP

The shop is dedicated to overhaul, test and repair all components of electrical generation system.

- VFG generator test stand
- VFG governor test stand
- Flushing cart IDG cooling system

CONTACT VENDOR FOR SPECIFICATIONS

- Standard and specific adapters
- Standard tools

Possible Vendors:

AVTRON - Cleveland - Ohio - USA TESTFUCHS - A3812 Gross-Siegharts - AUSTRIA TESTEK - Livonia - Michigan - USA

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MAINTENANCE FACILITY PLANNING

COMPOSITE REPAIR SHOP

The shop is dedicated to composite and fibreglass repair according to SRM procedures.

- The room or surrounding temperature has to remain between 18°C and 30°C (64-86°F) during the repair.
- The preparation area has to be dust cleaned (air filtration = 10 micron m) and dry.
- The relative humidity has not to be greater than 75 %.
- Condensation on the repair area has to be avoided.
- Environmental data: temperature and humidity, have to be recorded.
- 1. Paint Removal/cleaning
 - A. Scraper
 - B. Cutter
 - C. Abrasive rotating disk
 - D. Abrasive paper
 - E. "Scotch brite" brown
 - F. Ethyl acetate
 - G. Demineralized water
 - H. Tweezers
- 2. Machining/specific Tooling
 - A. Polymerized material
 - (1) Fibreglass/carbon
 - Drills has or carbide
 - Diamante shark cutters: spot face cutter, rose countersink, cone countersink, circular saw cutter...
 - Countersink micro stop 100° adjustable drive
 - Pneumatic drilling machine
 - Pneumatic router equipped with vacuum system
 - Specific adaptors.
 - (2) Kevlar
 - Specific twist cutter or alternate teeth carbide cutter
 - Cutter
 - Abrasive disk/paper.
 - (3) Honeycomb
 - Diamante shark cutter
 - Cutter
 - Metal saw
 - Abrasive disk/paper
 - Adhesive tape double face.

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MAINTENANCE FACILITY PLANNING

- B. Prepreg/dry fabric
 - (1) Fibreglass/carbon
 - Scissors standard
 - Cutter
 - Templates
 - (2) Kevlar
 - Specific ceramic scissors
- C. GLARE
- 3. Standard Tools
 - A. Spatula
 - B. High precision weighing device
 - C. Squeegee
 - D. Containers (for resin)
 - E. Glass rods
 - F. Plastic film
 - G. Bottles
 - H. Spring pin type clamps
 - I. C Clamp
 - J. Adhesive tape
 - K. Syringe with hypodermic needle
 - L. Gloves (rubber and cotton)
 - M. Mask
 - N. Pair of glasses
 - 0. Sanding block
 - P. White ink "rotring"
 - Q. Riveting machine for blind rivets
- 4. Heating and Pressure Equipment
 - A. Hot bonding and vacuum control unit
 - B. Heating blankets
 - C. Anti humidity heat blankets or radiant panels
 - D. Nylon vacuum bag films (3 grades)
 - E. Breather fabrics
 - F. Peel/bleed fabric
 - G. Shrink tapes
 - H. Perforated plastic film
 - I. Mosite
 - J. Sealant tape
 - K. Oven
 - L. Autoclave (1 m dia x 2.5 m)*

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MAINTENANCE FACILITY PLANNING

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5. Test Equipment
    A. Ultra sonic test equipment
    B. Tool for tap test
    C. Compression/traction and peeling testers**
    D. Lamp
    E. Inspection mirror
   Possible Vendors:
    GMI: 9, rue BUFFAULT - 75009 PARIS - FRANCE
      TEL: 1 42821144
                                     FAX: 1 42829838
    *FRANCE AUTOCLAVE
      2, allée Bernard Palissy - BP 115 - 26001 VALENCE FRANCE
      TEL: 4 75 409277
                                     FAX: 4 75 443966
    *EFCO LTD
      Forsyth road, SHEERWATER, WOKING. SURREY GU21 5RZ ENGLAND
      TEL: (0483) 726 433
                                     FAX: (0483) 773 818
    *PEQUET TESSON
      183, avenue du Général LECLERC - 78220 VIROLAY FRANCE
      TEL: 1 30243800
                                     FAX: 1 30243943
    **ADAMEL LHOMARGY DIVISION D'INSTRUMENTS SA
      15, avenue Jean JAURES BP 238 - 94203 IVRY/SEINE CEDEX FRANCE
      TEL: 1 46701180
                                     FAX: 1 46583514
    **ZWICK FRANCE S.A.R.L. - BP 60044 - 95971 ROISSY AEROPORT CHARLES DE
                                                GAULLE CEDEX
      Or ZAC Paris Nord II - 22, avenue des Nations - 93420 VILLEPINTE
      TEL: 1 48 63 21 40
                                     FAX: 1 48 63 84 31
    **INSTRON S.A. - 11, Parc Club Ariane - 78284 GUYANCOURT CEDEX
      TEL: 1 30 57 23 53
                                     FAX: 1 30 64 67 11
    **CARL SCHENCK AG - PO Box 4018 - D-6100 DARMSTADT 1
                                     FAX: 6151/893686
      TEL: 6151/32-0
    **SCHENCK S.A. - Chemin Neuf - BP 17 - 78240 CHEMBOURCY
      TEL: 1 39 79 79 00
                                     FAX: 1 30 74 44 07
    **LLOYD Instruments PLC - Whittle Avenue, Segensworth West, Fareham -
                               Hants P015 5SH - ENGLAND
                                     FAX: 489 885118
      TEL: 489 574221
    **PRODEMAT Centre de Samouraïs - 2, allée Henri Georges Clouzot -
BP 2029 - 69916 VILLERBANNE
      TEL: 4 78 94 06 30
                                     FAX: 4 78 94 95 53
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MAINTENANCE FACILITY PLANNING

ELECTRICAL ACCESSORIES SHOP

The shop is dedicated to the overhaul, test and repair of all aircraft electrical accessories.

- General test stand ac/dc power requirements
- Amplifier control test
- Test stand for lights
- Test stand coffee makers and refrigerators
- Functional test stand for linear actuators and control dampers
- Functional test stand for rotary actuators
- Test set static inverters.

Possible Vendor:

BAUER AEROSPACE: AVON - CONNECTICUT - USA TESTFUCHS - A3812 Gross Siegharts - AUSTRIA



ELECTRICAL WIRE MARKING SHOP

To Be Issued Later

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MAINTENANCE FACILITY PLANNING

ENGINE AND APU SHOP

The shop is dedicated to disassembly/assembly (modules exchange) and repair engines and APU.

- Overhead cranes
- Specify Engine size and weight
- Specific jigs and tools
- Press
- Standard hand tools TO BE UPDATED ACCORDING TO VENDOR REQUIREMENTS
- Balancing machine: static and dynamic balance
- Grinding machine
- Plasma spray and welding machines

♥ A380 PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING

FUEL COMPONENTS SHOP

The shop is dedicated to overhaul, test and repair all fuel system components.

- Universal main engine fuel control/accessories test stand
- Test stand
 - Specify maximum flow rate and pressure requirement
 - Fuel boost
 - Fuel pump
- Standard adapters and tools
- Low flow fuel accessory test stand.

Possible Vendors:

A.M.S.: FRESNES - FRANCE AAI ACL TECHNOLOGIES: SANTA ANNA - CALIFORNIA - USA BAUER AEROSPACE: AVON - CONNECTICUT - USA AVTRON: CLEVELAND - OHIO - USA TESTEK Inc: LIVONIA - MICHIGAN - USA TESTFUCHS - A3812 Gross Siegharts - AUSTRIA



HYDRAULIC COMPONENTS SHOP

The shop is dedicated to test bench capabilities for hydraulic fluids-Working and static tests-Overhaul, inspection and component replacement of most hydraulic actuators and accumulators.

- Hydraulic generation and accessory test bench
 Specify maximum pressure and flow rate
 Specify aircraft standard filtration
- Pump hydraulic test stand
- Servo valves and actuators test stand
- Standard adapters and tools.

Possible Vendors:

A.M.S.: FRESNES - FRANCE AAI ACL TECHNOLOGIES: SANTA ANNA - CALIFORNIA - USA BAUER AEROSPACE: AVON - CONNECTICUT - USA TESTEK Inc: LIVONIA - MICHIGAN - USA TESTFUCHS - A3812 Gross Siegharts - AUSTRIA AVTRON: INDEPENDENCE - OHIO - USA

MAINTENANCE FACILITY PLANNING

I.E.R.A. SHOP

The I.E.R.A. shop is dedicated to the overhaul and repair of all Instruments, Electric components, Radio and Avionic equipments.

- Test bench radio
- Test bench vor/ils
- Test bench dme
- Test bench adf
- Test bench SATCOM
- Test bench Weather Radar
- Automatic Test Equipment
- Dedicated test equipment
- Personal computers
- Oscilloscopes
- Arinc reader/generators
- Magnetic tapes/disc/cassettes eraser (TBC)
- Data loaders

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MAINTENANCE FACILITY PLANNING

INTERIOR EQUIPMENT SHOP

The shop is dedicated to carpet, seats and cabin panels and partitions repair and fabrication.

- 1. Cabin Interior
 - Drilling machine
 - Painting booth
 - Washing booth
 - Vaccum cleaner
 - Binding machine
 - Engraving machine
 - Sewing machine
 - Press, heat/vacuum pressure equipment
 - Polishing windows machine
 - Shear bench
 - Oven
 - Freezer
 - Hand grinder
 - Circular saw
 - Sander belt
 - Kevlar driller
 - Cutting tools
 - Work bench
 - Standard hand tools.
- 2. Seats
 - Sewing machine
 - Drilling machine
 - Bending machine
 - Grinding wheel
 - Belt grinder
 - Circular saw
 - Riveting gun
 - Riveting block
 - Work bench
 - Standard hand tools.

No special tools or specific equipment are required for maintenance or overhaul work to be carried out on the passenger seats. Standard tools are sufficient for these operations.

In addition to standard tools, only few specific tools or equipment are required for maintenance and overhaul work to be carried out on the pilot seats. (Refer to relevant CMM)

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MAINTENANCE FACILITY PLANNING

LABORATORY TEST OF FLUIDS

The laboratory is dedicated to analyse all fluids used on aircraft.

- 1. Hydraulic fluid fire resistant phosphoric ester based
 - Reference documents
 - NSA307110
 - AMM A300. CHAPTER 12.32.28
 - SAE ARP 598
 - SAE ARP 785
 - NF T 60-100
 - NF T 60-101
 - NF T 60-112 (ASTM D974)
 - NF T 20-052 (ASTM D1744)
 - NAS 1638.

The values below represent the max. Allowable limits of the fluid in service. These limits are also specified in the aircraft maintenance manual.

- Viscosity
- Water content
- Density
- Acidity
- Chlorine content
- Conductivity
- Particles fluid contamination.

MAINTENANCE FACILITY PLANNING

MACHINE SHOP

Fabrication of all metallic parts involving milling boring and turning. All welding processes for all aircraft metals and alloys.

- Universal lathe 1.5 x 2 x 2
- Milling machine 1.6 x 0.4
- Boring machine 0.75 x 0.75 x 0.6
- Centerless grinding machine
- Cylindrical grinding machine
- Universal drilling machine
- Radial drilling machine
- Grinders
- Circular saws
- Hydraulic press (3 t)
- Drilling machines set
- Standard hand tools set
- Benches

MAINTENANCE FACILITY PLANNING

METAL SHOP

Manufacturing and repair of aircraft sheet metal parts and tools.

1. Sheet Metal Machines and Tools

- Roller forming machine (general rolling + double curvature forming)
- Cutting/shearing machine (aluminium and steel)
- Bending machine
- Folding/hydraulic press
- Nibbling machine
- Furnace (heat treatment)
- Freezer
- Tank/quench/water
- Belt grinder
- Circular saw
- Planer-joiner
- Pneumatic drilling machine/drills
- Riveting machine
- Work bench
- Welding equipment
- Notching machine
- Shrinking machine
- Standard hand tool set

MAINTENANCE FACILITY PLANNING

NDT SHOP

The shop is dedicated to perform all non destructive tests on aircraft and aircraft components.

- 1. Visual Inspection
 - Borescope
 - Fluorescent dye penetrant blacklight viewing
 - Die penetrant developer viewing
 - Magnifying glass
 - Photograph means
- 2. Magnetoscopy
 - Magnetoscope
 - Accessories
- 3. Ultrasonic
 - Ultrasonic test set
 - Bonding test set
 - Probes
 - Measuring equipment
 - Reference calibrations
 - Calibration standards set
- 4. HF Eddy Current
 - Eddy current test equipment
 - Elotest
 - Locators
 - Probes
 - Reference calibrations
- 5. X Ray
 - X ray fix and mobile sets
 - Development room and accessories
- 6. Miscellaneous
 - De-magnetizer
 - Detector magnetic crack
 - Meter coating thickness
 - Conductivity meter



MAINTENANCE FACILITY PLANNING

PAINTING HALL

To Be Issued Later

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MAINTENANCE FACILITY PLANNING

PAINTING SHOP

The shop is dedicated for painting aircraft parts and components.

- Surface treatment rooms
 - Sand blasting
 - Washing
 - Decreasing
 - Phosphating cleaning
 - Drying
- Painting
 - Closed spray booth with downdraft ventilation
 - * With multiple wording zones in line
 - * With ventilation zones
 - * With drying device + oven
 - Open booth with dry filter
 - Open "waterscreen" spray booth
 - Painting guns
 - Air compressed sources
 - Special room for product storage
 - Special room for paint preparation
 - Safety equipment: masks, gloves, gas detectors, fire extinguishers.

MAINTENANCE FACILITY PLANNING

PNEUMATIC COMPONENTS SHOP

The shop is dedicate to overhaul, test and repair all pneumatic components.

Workshop test conditions: Atmospheric ambient pressure Ambient temperature Relative ambient humidity Dust Air source Capable of supplying clean, dry	<pre>: TBD : TBD : normal protection (conventional dust cleaning at regular intervals) : : CONTACT RELATED VENDORS FOR</pre>	
	SPECIFICATIONS	
<u>NOTE</u> : Hot air source: TBD.		
Possible vendors:		
- Test stands		
BAUER AEROSPACE AVON - CONNECTICUT - USA		
TESTEK Inc LIVONIA - MICHIGAN - USA		
TESTFUCHS A3812 Gross Siegharts - AUST	TRIA	
 Cleaning and drying equipment 		
CHAUMECA INTERNATIONAL 59020 LILLE CEDEX - FRANCE		

LAUTRETTE INDUSTRIES SA 95102 ARGENTEUIL CEDEX - FRANCE

MAINTENANCE FACILITY PLANNING

LIFE RAFTS & SLIDE SHOP

LIFE JACKET SHOP

The shop is dedicated to the periodic tests and repair of the on-board safety devices.

THE SHOP AREA MUST BE CLEAN AND COVERED WITH A TARPAULIN, CARPETING OR OTHER PROTECTIVE COVERING. DO NOT WALK ON THE EQUIPMENT. USE SPECIFIC SHOES.

1. Cleaning

- . Moderate duty : simple liquid detergent
- . Heavy duty : toluene (C6H5CH3) and isopropyl alcohol (according to vendor equipment spec.)
- Dry cleaning solvent for metal parts
- Stiff bristle brush
- Soft bristle brush
- Brush paint
- Gloves Rubber.
- 2. Testing
 - Compressed air source (oil and moisture free, 20 micron filter) with pressure regulator.
 - Leak test solution. Ivory clear. Mild liquid detergent.
 - Soft bristle brush.
 - Barometer. Scale increments not more than 0.10 inches.
 - Thermometer. Scale increments not more than 1°.
 - Push/pull gage 0-50 lbs 0.5 Lbs graduations.
 - Stopwatch, plain timer. 1/10 Seconds graduations.
 - Manometer (water). 0-0.5 psig.
 - Manometer (meriam fluid). 0-6.4 psig. (0.01 graduation).
 - Manometer (digital pressure). 0-20 psig.
 - Test set slide raft batteries.
 - Tester inertia reels.
 - Weighing devices for bottles and cylinders.

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MAINTENANCE FACILITY PLANNING

- 3. Disassembly/assembly/repair
 - Neoprene strap
 - Cotton clothes
 - Scour cloth
 - Talc or powdered soapstone
 - Sealer heat poly bags
 - Wrench open end set
 - Crowfoot wrench set
 - Hex key set
 - Torque wrench. 0-80 in.Lb
 - Strap wrench
 - Crescent pliers
 - Scissors. 5 inch blunt nose, plated
 - Spatula (pusher)
 - Hand roller
 - Vacuum cleaner. Household type
 - Chain vise
 - High pressure cap (AN929-4)
 - Cap filler valve (MS20813-1)
 - Valve core extraction/insertion tools (Specific. Vendor equipment items)
 - O-ring installation tools (specific. Vendor equipment items)
 - Heat gun
 - Fixture check maximum envelope
 - Sewing machine.
- 4. Ingredients
 - Refer to vendor equipment recommendation.
- 5. Reconditioning
 - Refer to reconditioning method described in relevant CMM.

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MAINTENANCE FACILITY PLANNING

SURFACE AND HEAT TREATMENT SHOP

This shop is dedicated to surface and heat treatment.

1. Surface Treatment

Chemical cleaning baths

- Acid
- Alkaline descaler
- Alkaline permanganate
- Caustic cleaner
- Corrosion inhibitor
- Emulsion.

Hot water rinse bath

Cold water rinse bath

Chemical plating bath

- Cadmium
- Nickel
- Chromium
- Salt nitriding
- Alodine
- Chromate
- Phosphating
- Passivation
- Sulphuric/chromic acid anodisin.

Shot peening equipment

Sand blasting

- 2. Heat Treatment
 - Oven Baths Freezer Standard tools

Liquid effluent decontamination system

Extracted effluvium washing system.

MAINTENANCE FACILITY PLANNING

TUBE REPAIR SHOP

The shop is dedicated to the repair and manufacturing of all kind of tubes.

- 1. Rigid tubes
 - A. Bending machine

Bending machines with internal mandrels shall be used. For each nominal diameter there must be several mandrels. For titanium pipes it is recommended to use plastic mandrels.

- B. Tube end forming device
- C. Cutting, facing and deburing

Standard hacksaw, band saw, circular saw and conical milling cutter can be used.

D. Cleaning and degreasing

Standard equipment: compressed air, perchloroethylene vapour bath....

- E. Test equipment
 - (1) Pressure test

Standard pressure test bench with capacity of TBD min. (Pressure test with gas and with liquid).

(2) Dimensions and shape check

Standard equipment + master, template....

F. Tube repair equipment

Refer to AMM chapter 20.23.11 for permaswage repair kit and harrison/sierracin (TO BE VERIFIED) fittings installation.

2. Flexible hoses

Due to very specific equipment necessary to manufacture or repair flexible hoses it is suggested to contact directly the vendors mentionned hereafter.

MAINTENANCE FACILITY PLANNING

Possible Vendors:

Rigid tubes

BONNAMY - 77176 SAVIGNY LE TEMPLE - FRANCE FAX : (33) 1 60631030

MINGORI - 51206 EPERNAY - FRANCE FAX : (33) 26550848

PARKER HANNIFIN CORPORATION - OHIO - USA PHONE : (1) 216 531 3000

ADAMS BIRD INC - CALIFORNIA - USA FAX : (1) 408 363 9814

Flexible hoses:

AEROQUIP CORPORATION 300 SOUTH EAST AVENUE JACKSON - USA FAX : (1) 517 787 5758

TITELEX CORP. 603 HENDEE STREET SPRINGFIELD - USA FAX : (1) 413 788 7593

MAINTENANCE FACILITY PLANNING

TIRE/WHEEL AND BRAKE SHOP

This shop is dedicated to complete overhaul, inspection, limited repair, component replacement, build-up and tests.

It is important to separate the work on brakes and wheels to "dirty" and "clean" procedures, because components that arrive to overhaul are dirty and dusty.

The performance of "dirty" and "clean" tasks is preferably in separate rooms.

1. Tire Shop

- Nitrogen bottles
- Pressure gauge
- Inflating gauge
- Inflating/deflating adapters
- Safety cage for tire pressure tests
- Storage racks.
- 2. Wheel Shop

"Dirty" work on wheel overhaul consists of disassembly of the wheel and rim-cleaning. Cleaning can be done manually: hot water high pressure washing device, combined with semi-automatic devices: solvent baths including treatment bath + rinsing bath + drying bath or with a "tunnel" type machine. Cleaning of small parts like bearings or bolts can be done using an ultrasonic washing module or a vertical agitation and total turbulence machine.

"Clean" procedures for wheels start NDT for crack detection. Eddy Current and ultrasonic testing devices can be used for this purpose.

<u>NOTE</u> : Complete process of wheel cleaning may include paint stripping which can be done using media plastic blasting equipment or solvent baths.

- A. Standard equipment
 - Tire bead breaker universal
 - High pressure washing device
 - and
 - Ultrasonic bath or vertical agitation machine for wheel bearing cleaning
 - Hydraulic press
 - Hand tool set
 - Torque wrench
 - Wheel support
 - Trolley crane.

MAINTENANCE FACILITY PLANNING

B. Specific tools

According to the relevant CMM.

3. Brake shop

"Dirty" work on brake overhaul includes disassembly and cleaning of the brake. An intensive cleaning is necessary to avoid damages of the piston bearing, as the remaining dirt can create a leak when the pistons are repressed.

"Clean" procedures follow after the brakes has been visually inspected. Cleaning can be done using ultrasonic bath or vertical agitation and total turbulence machine.

The brake pistons are returned to their original position. When it has been accomplished, test for leak are performed.

- A. Standard equipment
 - Bath solvent cleaning
 - Trolley crane
 - Hydraulic test bench (315 bars)
 - Dummy body for functioning test
 - Tester brake unit spring tension
 - Press for resetting the brake piston to the zero, position
 - Hardness test machine.

Carbon brake disk repair Subcontracted to specialized repair centre

B. Specific tools

According to the relevant CMM.

4. Storage

Aircraft tire storage conditions are determined by the tire manufacturers. There is no Airbus document dealing with this subject.

Tires should be stored in a cool, dry environment and protected from direct sunlight. Particular care should be taken to store tires away from fluorescent lights, electrical motor, battery chargers, electric welding equipment, electric generator since they all create ozone which cause a rapid ageing of rubber.

The store room temperature should be comprised between 0 and 40°C. Tires should be store vertically in a suitable rack, away from oil, grease, hydraulic fluid or other contaminants.

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MAINTENANCE FACILITY PLANNING

Possible Vendors:
Safety cage:

KUNZ Gmbh - FAX: (49) 404 250 9531
TMH - FAX: (33) 494 08 20 87

Cleaning equipment:

KARCHER - Type HDS801E - See local representative

Ultrasonic washing machine:

CREST ULTRASONICS FRANCE - FAX: (33) 169 43 68 61

Paint stripping:

VAPOR BLAST - FAX: (33) 130 69 09 27

Painting booth:

OMNIA SECOMAT - FAX: (33) 545 20 51 80

Standard equipment for wheels and brakes: Tires bead breaker, adapters, pressure test stand,

KUNZ Gmbh TMH

- Specific equipment and tools:

Contact directly the appropriate vendor: MHB or Bendix.

MAINTENANCE FACILITY PLANNING

SECTION 5 - VENDORS LIST

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MAINTENANCE FACILITY PLANNING

VENDORS INFORMATION

The vendors information is contained in the Vendors Information Manual (VIM) and in the Vendors Information Manual/Ground Support Equipment (VIM/GSE).

The Vendor Information Manual (VIM) gives contact names and addresses of AIRBUS equipment vendors and their product support organizations. This manual covers all aircraft types.

In addition the VIM/GSE gives contact names and addresses of Ground Support Equipment Vendors which fabricate market facilities or maintenance equipment to test or to overhaul the aircraft. It contains also the Vendors product support organizations. This manual covers all aircraft types.