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**CHAPTER 7**

Section 7-9

Subject 7-9-0

ACN/PCN Reporting System - Flexible and Rigid Pavements

FIGURE ACN Table

FIGURE Aircraft Classification Number - WV017, MRW 210 900 kg, CG 36%

FIGURE Aircraft Classification Number - WV013, MRW 280 900 kg, CG 31.2%

FIGURE ACN Table

FIGURE Aircraft Classification Number - WV007, MRW 260 900 kg, CG 41.1%

FIGURE Aircraft Classification Number - WV002, MRW 316 900 kg, CG 30.8%

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- FIGURE Standard Configuration
- FIGURE Standard Configuration

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- Interior Arrangements - Cross Section
- FIGURE Typical Configuration

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- FIGURE Cargo Compartments
- FIGURE Cargo Compartments
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### Subject 2-7-0

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- FIGURE Aft Cargo Compartment Door
- FIGURE Bulk Cargo Compartment Door
- FIGURE Nose Landing Gear Doors
- FIGURE Main Landing Gear Doors
- FIGURE Main Landing Gear Doors
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- FIGURE Door Identification and Location
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- FIGURE Aft Passenger/Crew Doors

### Subject 2-8-0

- Door Clearances and Location

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**INTRODUCTION**

The A350 AIRCRAFT CHARACTERISTICS - AIRPORT AND MAINTENANCE PLANNING (AC) manual is issued for the A350-900 and A350-1000 series aircraft to provide necessary data to airport operators, airlines and Maintenance/Repair Organizations (MRO) for airport and maintenance facilities planning.

The data given in this issue of the A350 AIRCRAFT CHARACTERISTICS - AIRPORT AND MAINTENANCE PLANNING (AC) can be subject to change pending completion of the design and flight test phase. It is given for guidance only and does not constitute a contractual commitment.

This document is not customized and must not be used for training purposes.

The A350 XWB is the world’s most modern and eco-efficient aircraft family that will shape the future of air travel. It is the long-range leader in the large wide-body market (300 to more than 400 seats).

The A350 XWB has the latest aerodynamic design, carbon fibre fuselage and wings, and new fuel efficient Rolls-Royce-Trent XWB engines. The Trent XWB engine has the most advanced technologies. It delivers the best aircraft performance and reliability with the lowest fuel consumption and environmental impact. Together with simple and robust systems, these latest technologies lead to unmatched operational efficiency (a reduction of 25 percent in fuel burn, emissions and operating costs) and important reduction in maintenance cost.

The A350 XWB has an Airspace cabin designed by Airbus that focuses on well-being on board thanks to its quiet twin-aisle cabin and the new air management systems.

The A350 XWB gives a high level of cargo hold capability and flexibility to meet the requirements of the market. Two wide cargo doors and a cargo loading system, compatible with the lower-deck cargo containers and pallet standards let interlining operations and make the loading easier.

The A350 XWB family includes two optimal and complementary models, the baseline A350-900 and its larger sibling aircraft, the A350-1000. The two aircrafts share the best operating efficiency and an exceptional level of comfort with the Airspace cabin. Based on a clean-sheet design, the A350 XWB by its essence is a very flexible platform that delivers unrivalled levels of efficiency and comfort. It is operated on domestic, regional, long haul or ultra-long-haul services.
The A350-900 is an important member of the A350 XWB family, in-service since January 2015, that accommodates 332 passengers in a standard three-class configuration. The A350-1000 is Airbus’ largest widebody aircraft in the twin-aisle category that measures nearly 74 meters nose-to-tail, has a 7 meters longer fuselage than the baseline model A350-900. It contains 40 more seats and a 40 percent larger space for premium cabin products than the A350-900. In a typical three-class configuration, the A350-1000 can accommodate a maximum of 400 passengers and made entry in-service in February 2018.

From 2018 onwards, the A350-900 comes with a better baseline. It consists of an aerodynamic performance improvement package that includes extended winglets, enhanced flap-support-fairings, wing re-twist and modified over-wing fairings and an increased Maximum Takeoff Weight (MTOW) option of 280 tonnes. These changes enhance the A350 XWB unrivalled operational flexibility and efficiency for all market segments. The A350-900 Ultra Long Range (ULR) is the most capable variant in the A350 XWB family with a range of 9,700 nm (18,000 km). It also has a higher fuel capacity and a modified fuel system relative to the baseline (relocation of sensors and pipes). The A350-900 ULR can fly over 20 hours non-stop. It gives the highest level of comfort for passenger and crew with best economics over long distances. The inherent flexibility of the A350 XWB aircraft means that the A350-900 ULR can easily change to a standard A350-900 configuration.

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Glossary

**ON A/C A350-1000 A350-900**

1. List of Abbreviations

A/C Aircraft

ACN Aircraft Classification Number

AMM Aircraft Maintenance Manual

APU Auxiliary Power Unit

B/C Business Class

CBR California Bearing Ratio

CC Cargo Compartment

CG Center of Gravity

CLS Cargo Loading System

E Young’s Modulus

ESWL Equivalent Single Wheel Load

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

ICAO International Civil Aviation Organisation

ISA International Standard Atmosphere

L Radius of relative stiffness

LCN Load Classification Number

LD Load Device

LD Lower Deck

LH Left Hand

LP Low Pressure

LPS Last Pax Seating

MAC Mean Aerodynamic Chord

MAX Maximum

MFC Maximum Fuel Capacity

MIN Minimum

MLG Main Landing Gear

NLG Nose Landing Gear
2. Design Weight Terminology

Maximum Design Ramp Weight (MRW): Maximum weight for ground maneuver (including weight of taxi and run-up fuel) as limited by aircraft strength and airworthiness requirements. It is also called Maximum Design Taxi Weight (MTW).

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

Maximum Design Takeoff Weight (MTOW): Maximum weight for takeoff as limited by aircraft strength and airworthiness requirements. (This is the maximum weight at start of the take-off run).


Maximum Seating Capacity: Maximum number of passengers specifically certified or anticipated for certification.

Usable Volume: Usable volume available for cargo, pressurized fuselage, passenger compartment and cockpit.

Water Volume: Maximum volume of cargo compartment.

Usable Fuel: Fuel available for aircraft propulsion.
2-1-0  General Aircraft Characteristics Data

**ON A/C A350-1000 A350-900**

General Aircraft Characteristics Data

**ON A/C A350-900**

1. The tables that follow give characteristics of A350–900 Models, this data is applicable to each Weight Variant:

### Aircraft Characteristics

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<td>275 900 kg</td>
<td>272 900 kg</td>
<td>268 900 kg</td>
<td>260 900 kg</td>
</tr>
<tr>
<td>(MTW)</td>
<td>(592 824 lb)</td>
<td>(608 256 lb)</td>
<td>(601 642 lb)</td>
<td>(592 824 lb)</td>
<td>(575 187 lb)</td>
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<tr>
<td><strong>Maximum Ramp Weight</strong></td>
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<td>272 900 kg</td>
<td>272 900 kg</td>
<td>268 900 kg</td>
<td>260 900 kg</td>
</tr>
<tr>
<td>(MRW)</td>
<td>(608 256 lb)</td>
<td>(601 642 lb)</td>
<td>(599 658 lb)</td>
<td>(590 839 lb)</td>
<td>(575 187 lb)</td>
</tr>
<tr>
<td><strong>Maximum Take-Off Weight</strong></td>
<td>268 000 kg</td>
<td>275 000 kg</td>
<td>272 000 kg</td>
<td>268 000 kg</td>
<td>260 000 kg</td>
</tr>
<tr>
<td>(MTOW)</td>
<td>(590 839 lb)</td>
<td>(606 272 lb)</td>
<td>(599 658 lb)</td>
<td>(590 839 lb)</td>
<td>(573 202 lb)</td>
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<td><strong>Maximum Landing Weight</strong></td>
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<td>207 000 kg</td>
<td>207 000 kg</td>
<td>207 000 kg</td>
</tr>
<tr>
<td>(MLW)</td>
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<td>(456 357 lb)</td>
<td>(456 357 lb)</td>
<td>(456 357 lb)</td>
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<tr>
<td><strong>Maximum Zero Fuel Weight</strong></td>
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<td>195 700 kg</td>
<td>194 000 kg</td>
<td>195 700 kg</td>
<td>195 700 kg</td>
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<tr>
<td>(MZFW)</td>
<td>(423 288 lb)</td>
<td>(431 445 lb)</td>
<td>(427 697 lb)</td>
<td>(431 445 lb)</td>
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<td>(531 094 lb)</td>
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<td>268 900 kg</td>
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<td>(592 824 lb)</td>
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<td>(529 110 lb)</td>
<td>(606 272 lb)</td>
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<td>268 000 kg</td>
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<td>(MTOW)</td>
<td>(551 156 lb)</td>
<td>(599 658 lb)</td>
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<td>(451 948 lb)</td>
<td>(456 357 lb)</td>
<td>(456 357 lb)</td>
<td>(456 357 lb)</td>
<td>(456 357 lb)</td>
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<td>Maximum Zero Fuel Weight (MZFW)</td>
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<td>195 700 kg (431 445 lb)</td>
<td>194 000 kg (427 697 lb)</td>
<td>195 700 kg (431 445 lb)</td>
<td>197 200 kg (434 752 lb)</td>
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<td>250 900 kg (553 140 lb)</td>
<td>280 900 kg (619 279 lb)</td>
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<td>255 000 kg (562 179 lb)</td>
<td>250 000 kg (551 156 lb)</td>
<td>280 000 kg (617 295 lb)</td>
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<td>207 000 kg (456 357 lb)</td>
<td>207 000 kg (456 357 lb)</td>
<td>205 000 kg (451 948 lb)</td>
<td>207 000 kg (456 357 lb)</td>
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<td>Maximum Landing Weight (MLW)</td>
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<td>195 700 kg (431 445 lb)</td>
<td>194 000 kg (427 697 lb)</td>
<td>192 000 kg (423 288 lb)</td>
<td>195 700 kg (431 445 lb)</td>
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2. The table that follows gives characteristics of A350–900 Models, this data is applicable to each Weight Variant:

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<td>Standard Seating Capacity</td>
<td>315 (48 BC / 267 EC)</td>
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<td>(in a two class layout)</td>
<td>173 (80 BC / 93 EC) for A350–900 (ULR)</td>
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<td>Usable Fuel Capacity</td>
<td>138 000 L (36 456 USgal)</td>
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<td>(density = 0.785 kg/l)</td>
<td>108 330 kg (238 827 lb)</td>
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<tr>
<td></td>
<td>165 000 L (43 589 USgal) for A350–900 (ULR)</td>
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<td>129 500 kg (285 499 lb) for A350–900 (ULR)</td>
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<td>Pressurized Fuselage Volume</td>
<td>971 m³ (34 291 ft³)</td>
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<tr>
<td>Cockpit Volume</td>
<td>8.23 m³ (291 ft³)</td>
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<td>Passenger Compartment Volume</td>
<td>473.7 m³ (16 729 ft³)</td>
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<td>Usable Volume, FWD CC</td>
<td>86.7 m³ (3 062 ft³)</td>
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<tr>
<td>(Based on LD3)</td>
<td>For A350–900 (ULR) configuration, the forward cargo hold is de-activated (no cargo operation is possible).</td>
</tr>
<tr>
<td>Usable Volume, AFT CC</td>
<td>69.3 m³ (2 447 ft³)</td>
</tr>
<tr>
<td>(Based on LD3)</td>
<td></td>
</tr>
<tr>
<td>Usable Volume, Bulk CC</td>
<td>11.4 m³ (403 ft³)</td>
</tr>
<tr>
<td>Water Volume, FWD CC</td>
<td>113.4 m³ (4 005 ft³)</td>
</tr>
<tr>
<td>Water Volume, AFT CC</td>
<td>95.8 m³ (3 383 ft³)</td>
</tr>
<tr>
<td>Water Volume, Bulk CC</td>
<td>13.4 m³ (473 ft³)</td>
</tr>
</tbody>
</table>
3. The table that follows gives characteristics of A350–1000 Models, this data is applicable to each Weight Variant:

<table>
<thead>
<tr>
<th>Aircraft Characteristics</th>
<th>WV000</th>
<th>WV001</th>
<th>WV002</th>
<th>WV004</th>
<th>WV005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Taxi Weight (MTW)</td>
<td>308 900 kg</td>
<td>311 900 kg</td>
<td>316 900 kg</td>
<td>308 900 kg</td>
<td>270 900 kg</td>
</tr>
<tr>
<td></td>
<td>(681 008 lb)</td>
<td>(687 622 lb)</td>
<td>(698 645 lb)</td>
<td>(681 008 lb)</td>
<td>(597 233 lb)</td>
</tr>
<tr>
<td>Maximum Ramp Weight (MRW)</td>
<td>308 000 kg</td>
<td>311 000 kg</td>
<td>316 000 kg</td>
<td>308 000 kg</td>
<td>270 000 kg</td>
</tr>
<tr>
<td></td>
<td>(679 024 lb)</td>
<td>(685 638 lb)</td>
<td>(696 661 lb)</td>
<td>(679 024 lb)</td>
<td>(595 249 lb)</td>
</tr>
<tr>
<td>Maximum Take-Off Weight (MTOW)</td>
<td>233 000 kg</td>
<td>236 000 kg</td>
<td>236 000 kg</td>
<td>236 000 kg</td>
<td>236 000 kg</td>
</tr>
<tr>
<td></td>
<td>(513 677 lb)</td>
<td>(520 291 lb)</td>
<td>(520 291 lb)</td>
<td>(520 291 lb)</td>
<td>(520 291 lb)</td>
</tr>
<tr>
<td>Maximum Landing Weight (MLW)</td>
<td>220 000 kg</td>
<td>223 000 kg</td>
<td>223 000 kg</td>
<td>223 000 kg</td>
<td>223 000 kg</td>
</tr>
<tr>
<td></td>
<td>(485 017 lb)</td>
<td>(491 631 lb)</td>
<td>(491 631 lb)</td>
<td>(491 631 lb)</td>
<td>(491 631 lb)</td>
</tr>
</tbody>
</table>

4. The table that follows gives characteristics of A350–1000 Models, this data is applicable to each Weight Variant:

<table>
<thead>
<tr>
<th>Aircraft Characteristics</th>
<th>WV007</th>
<th>WV009</th>
<th>WV010</th>
<th>WV011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Taxi Weight (MTW)</td>
<td>260 900 kg</td>
<td>290 900 kg</td>
<td>300 900 kg</td>
<td>316 900 kg</td>
</tr>
<tr>
<td></td>
<td>(575 187 lb)</td>
<td>(641 325 lb)</td>
<td>(663 371 lb)</td>
<td>(698 645 lb)</td>
</tr>
<tr>
<td>Maximum Ramp Weight (MRW)</td>
<td>260 000 kg</td>
<td>290 000 kg</td>
<td>300 000 kg</td>
<td>316 000 kg</td>
</tr>
<tr>
<td></td>
<td>(573 202 lb)</td>
<td>(639 341 lb)</td>
<td>(661 387 lb)</td>
<td>(696 661 lb)</td>
</tr>
<tr>
<td>Maximum Take-Off Weight (MTOW)</td>
<td>236 000 kg</td>
<td>233 000 kg</td>
<td>233 000 kg</td>
<td>233 000 kg</td>
</tr>
<tr>
<td></td>
<td>(520 291 lb)</td>
<td>(513 677 lb)</td>
<td>(513 677 lb)</td>
<td>(513 677 lb)</td>
</tr>
<tr>
<td>Maximum Landing Weight (MLW)</td>
<td>223 000 kg</td>
<td>220 000 kg</td>
<td>220 000 kg</td>
<td>220 000 kg</td>
</tr>
<tr>
<td></td>
<td>(491 631 lb)</td>
<td>(485 017 lb)</td>
<td>(485 017 lb)</td>
<td>(485 017 lb)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aircraft Characteristics</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Seating Capacity (in a two class layout)</td>
<td></td>
<td></td>
<td>369 (54 BC / 315 EC)</td>
<td></td>
</tr>
</tbody>
</table>
## Aircraft Characteristics

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Usable Fuel Capacity</strong></td>
<td>156 000 L (41 212 USgal)</td>
</tr>
<tr>
<td>(density = 0.785 kg/l)</td>
<td>122 460 kg (269 978 lb)</td>
</tr>
<tr>
<td><strong>Pressurized Fuselage Volume</strong></td>
<td></td>
</tr>
<tr>
<td>Cockpit Volume</td>
<td>8.23 m³ (291 ft³)</td>
</tr>
<tr>
<td><strong>Passenger Compartment Volume</strong></td>
<td></td>
</tr>
<tr>
<td>Usable Volume, FWD CC</td>
<td>104 m³ (3 673 ft³)</td>
</tr>
<tr>
<td>(Based on LD3)</td>
<td></td>
</tr>
<tr>
<td>Usable Volume, AFT CC</td>
<td>86.7 m³ (3 062 ft³)</td>
</tr>
<tr>
<td>(Based on LD3)</td>
<td></td>
</tr>
<tr>
<td>Usable Volume, Bulk CC</td>
<td>11.4 m³ (403 ft³)</td>
</tr>
<tr>
<td>Water Volume, FWD CC</td>
<td>138 m³ (4 873 ft³)</td>
</tr>
<tr>
<td>Water Volume, AFT CC</td>
<td>113 m³ (3 991 ft³)</td>
</tr>
<tr>
<td>Water Volume, Bulk CC</td>
<td>13.4 m³ (473 ft³)</td>
</tr>
</tbody>
</table>
2-2-0 General Aircraft Dimensions

**ON A/C A350-1000 A350-900**

General Aircraft Dimensions

1. This section provides general aircraft dimensions.
**ON A/C A350-1000**

NOTE:
RELATED TO AIRCRAFT ATTITUDE AND WEIGHT.

<table>
<thead>
<tr>
<th>01</th>
<th>FWD &amp; AFT AXLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>CENTRE AXLE</td>
</tr>
</tbody>
</table>

General Aircraft Dimensions
(Sheet 1 of 2)
FIGURE-2-2-0-991-002-C01
**ON A/C A350-1000

NOTE:
RELATED TO AIRCRAFT ATTITUDE AND WEIGHT.

General Aircraft Dimensions
(Sheet 2 of 2)
FIGURE-2-2-0-991-002-C01
**ON A/C A350-900**

General Aircraft Dimensions
(Sheet 1 of 2)
FIGURE-2-2-0-991-001-A01

**NOTE:**
RELATED TO AIRCRAFT ATTITUDE AND WEIGHT.

P_AC_020200_1_0010001_01_03
**ON A/C A350-900**

NOTE:
RELATED TO AIRCRAFT ATTITUDE AND WEIGHT.

General Aircraft Dimensions
(Sheet 2 of 2)
FIGURE-2-2-0-991-001-A01
**ON A/C A350-1000 A350-900

Ground Clearances

1. This section provides 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, weight and balance and other special conditions.

The dimensions are given for:
- A light weight, for an A/C in maintenance configuration with a FWD CG and an AFT CG,
- An aircraft at MRW with a FWD CG and an AFT CG,
- Aircraft on jacks, FDL at 6.50 m (21.33 ft.).

**NOTE:** Passenger and cargo door ground clearances are measured from the center of the door sill and from floor level.
**ON A/C A350-1000**

NOTE:
PAASSENGER AND CARGO DOOR GROUND CLEARANCES ARE MEASURED FROM THE CENTER OF THE DOOR SILL AND FROM FLOOR LEVEL.
THE VALUES GIVEN IN THE TABLE DEPEND ON THE POSITION OF THE CENTER OF GRAVITY (CG) AND ON THE AIRCRAFT WEIGHT.

Ground Clearances

**FIGURE-2-3-0-991-009-B01**
**ON A/C A350-1000**

---

**LEADING EDGE SLATS EXTENDED**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MRW</th>
<th>160 000 kg (352 739 lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FWD CG (25%)</td>
<td>AFT CG (34%)</td>
</tr>
<tr>
<td></td>
<td>m</td>
<td>ft</td>
</tr>
<tr>
<td>DN INBD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DN OUTBD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SLAT 1 INBD</td>
<td>C</td>
<td>4.63</td>
</tr>
<tr>
<td>SLAT 1/2</td>
<td>D</td>
<td>5.01</td>
</tr>
<tr>
<td>SLAT 2/3</td>
<td>E</td>
<td>5.36</td>
</tr>
<tr>
<td>SLAT 3/4</td>
<td>F</td>
<td>5.70</td>
</tr>
<tr>
<td>SLAT 4/5</td>
<td>G</td>
<td>6.02</td>
</tr>
<tr>
<td>SLAT 5/6</td>
<td>H</td>
<td>6.32</td>
</tr>
<tr>
<td>SLAT 6 OUTBD</td>
<td>J</td>
<td>6.66</td>
</tr>
</tbody>
</table>

**NOTE:**

DN – DROOP NOSE

The values given in the table depend on the position of the center of gravity (CG) and on the aircraft weight.

Ground Clearances
Leading Edge Slats - Extended
FIGURE-2-3-0-991-010-A01

---

P_AC_020300_1_0100001_01_01
**ON A/C A350-1000

AIRCRAFT CHARACTERISTICS - AIRPORT AND MAINTENANCE PLANNING

---

**Table: FLAPS EXTENDED**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MRW</th>
<th>160 000 kg (352 739 lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FWD CG (25%)</td>
<td>AFT CG (34%)</td>
</tr>
<tr>
<td></td>
<td>m</td>
<td>ft</td>
</tr>
<tr>
<td>FLAP 1 INBD</td>
<td>A</td>
<td>2.57</td>
</tr>
<tr>
<td>FLAP 3/4</td>
<td>E</td>
<td>4.90</td>
</tr>
<tr>
<td>FLAP 4/5</td>
<td>F</td>
<td>5.44</td>
</tr>
<tr>
<td>FLAP 5 OUTBD</td>
<td>G</td>
<td>5.69</td>
</tr>
</tbody>
</table>

---

NOTE:

THE VALUES GIVEN IN THE TABLE DEPEND ON THE POSITION OF THE CENTER OF GRAVITY (CG) AND ON THE AIRCRAFT WEIGHT.

---

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

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MRW</th>
<th>160 000 kg (352 739 lb)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>FWD CG (25%)</td>
<td>AFT CG (34%)</td>
</tr>
<tr>
<td></td>
<td>FWD CG (20%)</td>
<td>AFT CG (40%)</td>
</tr>
<tr>
<td>m</td>
<td>m</td>
<td>ft</td>
</tr>
<tr>
<td>----------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>SPOILER 1 INBD</td>
<td>A</td>
<td>5.03</td>
</tr>
<tr>
<td>SPOILER 1/2</td>
<td>B</td>
<td>5.49</td>
</tr>
<tr>
<td>SPOILER 2 OUTBD</td>
<td>C</td>
<td>6.95</td>
</tr>
<tr>
<td>SPOILER 5/6</td>
<td>G</td>
<td>6.73</td>
</tr>
<tr>
<td>SPOILER 6/7</td>
<td>H</td>
<td>6.91</td>
</tr>
<tr>
<td>SPOILER 7 OUTBD</td>
<td>J</td>
<td>7.08</td>
</tr>
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</table>

**NOTE:**
The values given in the table depend on the position of the center of gravity (CG) and on the aircraft weight.

Ground Clearances
Spoilers - Extended
FIGURE-2-3-0-991-012-A01
**ON A/C A350-900**

### A/C CONFIGURATION

<table>
<thead>
<tr>
<th>DOORS</th>
<th>MRW</th>
<th>140 000 kg (308 647 lb)</th>
<th>AC JACKED FDL = 6.5 m (21.33 ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FWD CG (26.2%)</td>
<td>AFT CG (33.2%)</td>
<td>FWD CG (20%)</td>
<td>AFT CG (40%)</td>
</tr>
<tr>
<td>D1</td>
<td>5.04</td>
<td>5.08</td>
<td>16.88</td>
</tr>
<tr>
<td>D2</td>
<td>5.11</td>
<td>5.15</td>
<td>16.82</td>
</tr>
<tr>
<td>D3</td>
<td>5.21</td>
<td>5.19</td>
<td>17.04</td>
</tr>
<tr>
<td>D4</td>
<td>5.28</td>
<td>5.24</td>
<td>17.20</td>
</tr>
<tr>
<td>D5</td>
<td>7.25</td>
<td>3.73</td>
<td>23.98</td>
</tr>
<tr>
<td>C1</td>
<td>3.08</td>
<td>10.12</td>
<td>10.22</td>
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<tr>
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<td>3.31</td>
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<tr>
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<td>2.55</td>
</tr>
<tr>
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<td>8.53</td>
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<tr>
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<td>1.96</td>
<td>6.42</td>
<td>1.96</td>
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<tr>
<td>CF1</td>
<td>2.56</td>
<td>14.11</td>
<td>5.87</td>
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<tr>
<td>CP1</td>
<td>5.82</td>
<td>19.11</td>
<td>5.87</td>
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<tr>
<td>RD1</td>
<td>3.95</td>
<td>12.96</td>
<td>4.00</td>
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<td>WING</td>
<td>MRW</td>
<td>140 000 kg (308 647 lb)</td>
<td>AC JACKED FDL = 6.5 m (21.33 ft)</td>
</tr>
<tr>
<td>FWD CG (26.2%)</td>
<td>AFT CG (33.2%)</td>
<td>FWD CG (20%)</td>
<td>AFT CG (40%)</td>
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<tr>
<td>W1</td>
<td>9.45</td>
<td>31.01</td>
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<td>23.05</td>
<td>7.03</td>
</tr>
<tr>
<td>TAILPLANE</td>
<td>MRW</td>
<td>140 000 kg (308 647 lb)</td>
<td>AC JACKED FDL = 6.5 m (21.33 ft)</td>
</tr>
<tr>
<td>FWD CG (26.2%)</td>
<td>AFT CG (33.2%)</td>
<td>FWD CG (20%)</td>
<td>AFT CG (40%)</td>
</tr>
<tr>
<td>HT</td>
<td>7.75</td>
<td>25.44</td>
<td>7.69</td>
</tr>
<tr>
<td>VT</td>
<td>17.26</td>
<td>56.63</td>
<td>17.20</td>
</tr>
<tr>
<td>ENGINE/ NACELLE</td>
<td>MRW</td>
<td>140 000 kg (308 647 lb)</td>
<td>AC JACKED FDL = 6.5 m (21.33 ft)</td>
</tr>
<tr>
<td>FWD CG (26.2%)</td>
<td>AFT CG (33.2%)</td>
<td>FWD CG (20%)</td>
<td>AFT CG (40%)</td>
</tr>
<tr>
<td>NT WTH DRAIN MAST</td>
<td>0.60</td>
<td>1.97</td>
<td>0.61</td>
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**NOTE:**

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

The values given in the table depend on the position of the center of gravity (CG) and on the aircraft weight.

Ground Clearances

FIGURE-2-3-0-991-001-A01

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**ON A/C A350-900**

![Diagram of Aircraft](image)

### LEADING EDGE SLATS EXTENDED

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MRW</th>
<th>140 000 kg (308 647 lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FWD CG (26.2%)</td>
<td>AFT CG (33.2%)</td>
</tr>
<tr>
<td></td>
<td>m</td>
<td>ft</td>
</tr>
<tr>
<td>DN INBD A</td>
<td>3.43</td>
<td>11.24</td>
</tr>
<tr>
<td>DN OUTBD B</td>
<td>4.60</td>
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<td>15.17</td>
</tr>
<tr>
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<td>17.57</td>
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<td>SLAT 5/6 H</td>
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</tr>
<tr>
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**NOTE:**

**01** DN – DROOP NOSE

The values given in the table depend on the position of the center of gravity (CG) and on the aircraft weight.

Ground Clearances
Leading Edge Slats - Extended
FIGURE-2-3-0-991-002-A01
**ON A/C A350-900**

**FLAPS EXTENDED**

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FWD CG (26.2%)</td>
<td>AFT CG (33.2%)</td>
</tr>
<tr>
<td></td>
<td>m</td>
<td>ft</td>
</tr>
<tr>
<td>FLAP 1 INBD</td>
<td>A</td>
<td>2.57</td>
</tr>
<tr>
<td>FLAP 1/2</td>
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<td>3.30</td>
</tr>
<tr>
<td>FLAP 2 OUTBD</td>
<td>C</td>
<td>4.10</td>
</tr>
<tr>
<td>FLAP 4/5</td>
<td>F</td>
<td>5.44</td>
</tr>
<tr>
<td>FLAP 5 OUTBD</td>
<td>G</td>
<td>5.69</td>
</tr>
</tbody>
</table>

**NOTE:**
The values given in the table depend on the position of the center of gravity (CG) and on the aircraft weight.

Ground Clearances
Trailing Edge Flaps - Extended

FIGURE-2-3-0-991-003-A01

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Oct 01/19
**ON A/C A350-900**

---

**SPOILERS EXTENDED**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MRW</th>
<th>140 000 kg (308 647 lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FWD CG (26.2%)</td>
<td>AFT CG (33.2%)</td>
</tr>
<tr>
<td>SPOILER 1 INBD</td>
<td>m</td>
<td>ft</td>
</tr>
<tr>
<td>A</td>
<td>5.03</td>
<td>16.50</td>
</tr>
<tr>
<td>SPOILER 1/2</td>
<td>B</td>
<td>5.49</td>
</tr>
<tr>
<td>SPOILER 3 INBD</td>
<td>D</td>
<td>6.09</td>
</tr>
<tr>
<td>SPOILER 5/6</td>
<td>G</td>
<td>6.73</td>
</tr>
<tr>
<td>SPOILER 6/7</td>
<td>H</td>
<td>6.91</td>
</tr>
<tr>
<td>SPOILER 7 OUTBD</td>
<td>J</td>
<td>7.08</td>
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</tbody>
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---

**NOTE:**

THE VALUES GIVEN IN THE TABLE DEPEND ON THE POSITION OF THE CENTER OF GRAVITY (CG) AND ON THE AIRCRAFT WEIGHT.

---

Ground Clearances
Spoilers - Extended
FIGURE-2-3-0-991-004-A01
**ON A/C A350-900

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MRW</th>
<th>140000 kg (308 647 lb)</th>
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<tbody>
<tr>
<td></td>
<td>FWD CG (26.2%)</td>
<td>AFT CG (33.2%)</td>
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<tr>
<td></td>
<td>m  ft</td>
<td>m  ft</td>
</tr>
<tr>
<td>AILERON 1 INBD</td>
<td>A  5.95 19.51</td>
<td>5.93 19.46</td>
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<tr>
<td>AILERON 1 OUTBD</td>
<td>B  6.36 20.87</td>
<td>6.34 20.81</td>
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<tr>
<td>AILERON 2 INBD</td>
<td>C  6.35 20.83</td>
<td>6.33 20.77</td>
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<tr>
<td>AILERON 2 OUTBD</td>
<td>D  6.84 22.45</td>
<td>6.82 22.38</td>
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</table>

NOTE:
The values given in the table depend on the position of the center of gravity (CG) and on the aircraft weight.

Ground Clearances
Ailerons - Down
FIGURE-2-3-0-991-005-A01
**ON A/C A350-900**

<table>
<thead>
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<tbody>
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<tr>
<td></td>
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<td>ft</td>
</tr>
<tr>
<td>AILERON 1 INBD</td>
<td>6.96</td>
<td>22.85</td>
</tr>
<tr>
<td>AILERON 1 OUTBD</td>
<td>7.21</td>
<td>23.64</td>
</tr>
<tr>
<td>AILERON 2 INBD</td>
<td>7.22</td>
<td>23.68</td>
</tr>
<tr>
<td>AILERON 2 OUTBD</td>
<td>7.49</td>
<td>24.59</td>
</tr>
</tbody>
</table>

**NOTE:**

The values given in the table depend on the position of the center of gravity (CG) and on the aircraft weight.

Ground Clearances
Ailerons - Up
FIGURE-2-3-0-991-006-A01
**ON A/C A350-900**

<table>
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<tr>
<th>DESCRIPTION</th>
<th>MRW</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>FWD CG (26.2%)</td>
<td>AFT CG (33.2%)</td>
</tr>
<tr>
<td></td>
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<td>ft</td>
</tr>
<tr>
<td>FLAP TRACK 1</td>
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<td>FLAP TRACK 2</td>
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<td>4.56</td>
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<tr>
<td>FLAP TRACK 3</td>
<td>C</td>
<td>5.21</td>
</tr>
</tbody>
</table>

**NOTE:**

The values given in the table depend on the position of the center of gravity (CG) and on the aircraft weight.

Ground Clearances
Flap Tracks - Retracted
FIGURE-2-3-0-991-007-A01
**ON A/C A350-900**

AIRCRAFT CHARACTERISTICS - AIRPORT AND MAINTENANCE PLANNING

---

**FLAPS TRACKS EXTENDED**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MRW</th>
<th>140 000 kg (308 647 lb)</th>
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<tbody>
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<td></td>
<td>FWD CG (26.2%)</td>
<td>AFT CG (33.2%)</td>
</tr>
<tr>
<td></td>
<td>m ft</td>
<td>m ft</td>
</tr>
<tr>
<td>FLAP TRACK 1</td>
<td>A</td>
<td>2.86 9.38</td>
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<tr>
<td>FLAP TRACK 2</td>
<td>B</td>
<td>3.37 11.07</td>
</tr>
</tbody>
</table>

**NOTE:**
The values given in the table depend on the position of the center of gravity (CG) and on the aircraft weight.

Ground Clearances
Flap Tracks - Extended
FIGURE-2-3-0-991-008-A01

---

P_AC_020300_1_0080001_01_02
AIRCRAFT CHARACTERISTICS - AIRPORT AND MAINTENANCE PLANNING

**ON A/C A350-1000**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MRW</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>FWD CG (25%)</td>
<td>AFT CG (34%)</td>
</tr>
<tr>
<td>AILERON 1 INBD A</td>
<td>m</td>
<td>ft</td>
</tr>
<tr>
<td>AILERON 2 OUTBD D</td>
<td>6.84</td>
<td>22.44</td>
</tr>
</tbody>
</table>

NOTE:
The values given in the table depend on the position of the center of gravity (CG) and on the aircraft weight.

Ground Clearances
Ailerons - Down
FIGURE-2-3-0-991-013-A01
**ON A/C A350-1000**

### AILeronS Up

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MRW</th>
<th>160 000 kg (352 739 lb)</th>
</tr>
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<tbody>
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<td></td>
<td>FWD CG (25%)</td>
<td>AFT CG (34%)</td>
</tr>
<tr>
<td></td>
<td>m</td>
<td>ft</td>
</tr>
<tr>
<td>AILERON 1 INBD</td>
<td>A</td>
<td>6.96</td>
</tr>
<tr>
<td>AILERON 1 OUTBD</td>
<td>B</td>
<td>7.20</td>
</tr>
<tr>
<td>AILERON 2 INBD</td>
<td>C</td>
<td>7.21</td>
</tr>
<tr>
<td>AILERON 2 OUTBD</td>
<td>D</td>
<td>7.49</td>
</tr>
</tbody>
</table>

**NOTE:**

The values given in the table depend on the position of the center of gravity (CG) and on the aircraft weight.

Ground Clearances
Ailerons - Up
FIGURE-2-3-0-991-014-A01
**ON A/C A350-1000**

### FLAPS TRACKS RETRACTED

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>MRW</th>
<th>160 000 kg (352 739 lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FWD CG (25%)</td>
<td>AFT CG (34%)</td>
</tr>
<tr>
<td></td>
<td>m</td>
<td>ft</td>
</tr>
<tr>
<td>FLAP TRACK 1</td>
<td>A</td>
<td>3.76</td>
</tr>
<tr>
<td>FLAP TRACK 3</td>
<td>C</td>
<td>5.21</td>
</tr>
</tbody>
</table>

**NOTE:**
The values given in the table depend on the position of the center of gravity (CG) and on the aircraft weight.

Ground Clearances
Flap Tracks - Retracted
FIGURE-2-3-0-991-015-A01
**ON A/C A350-1000

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>FWD CG (25%)</td>
<td>AFT CG (34%)</td>
</tr>
<tr>
<td></td>
<td>m</td>
<td>ft</td>
</tr>
<tr>
<td>FLAP TRACK 1</td>
<td>A</td>
<td>2.86</td>
</tr>
<tr>
<td>FLAP TRACK 2</td>
<td>B</td>
<td>3.37</td>
</tr>
<tr>
<td>FLAP TRACK 3</td>
<td>C</td>
<td>4.04</td>
</tr>
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NOTE:
THE VALUES GIVEN IN THE TABLE DEPEND ON THE POSITION OF THE CENTER OF GRAVITY (CG) AND ON THE AIRCRAFT WEIGHT.

Ground Clearances
Flap Tracks - Extended
FIGURE-2-3-0-991-016-A01

P_AC_020300_1_0160001_01_01

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**ON A/C A350-1000 A350-900**

Interior Arrangements - Plan View

1. This section provides the standard configuration.
**ON A/C A350-900**

Standard Configuration
(Sheet 1 of 2)
FIGURE-2-4-0-991-001-A01
**ON A/C A350-900

Standard Configuration
Standard Configuration (ULR) (Sheet 2 of 2)
FIGURE-2-4-0-991-001-A01
**ON A/C A350-1000

Standard Configuration

FIGURE-2-4-0-991-002-A01
2-5-0 Interior Arrangements - Cross Section

**ON A/C A350-1000 A350-900

Interior Arrangements - Cross Section

1. This section provides the typical configuration.
** ON A/C A350-1000 A350-900

**BUSINESS CLASS / FIRST CLASS 6 ABREAST**

![Business Class Diagram]

**BASELINE ECONOMY CLASS 9 ABREAST**

![Economy Class Diagram]

**NOTE:**
Aisle width may vary depending on actual cabin configuration selected by customer.

Typical Configuration

FIGURE-2-5-0-991-001-A01
**ON A/C A350-1000 A350-900**

Cargo Compartments

1. This section provides the following data about cargo compartments:
   - Locations and dimensions,
   - Loading combinations.
Cargo Compartments
Locations and Dimensions (Sheet 1 of 2)
FIGURE-2-6-0-991-002-A01
**ON A/C A350-900

Cargo Compartments
Loading Combinations (Sheet 2 of 2)

FIGURE-2-6-0-991-002-A01
**ON A/C A350-1000

Cargo Compartments
Loading Combinations (Sheet 2 of 2)
FIGURE-2-6-0-991-003-A01
**ON A/C A350-900

NOTE:
IN THE ULR CONFIGURATION BECAUSE OF THE DEACTIVATION OF THE FORWARD CARGO COMPARTMENT, NO CARGO OPERATION IS POSSIBLE.

Cargo Compartments
Locations and Dimensions (ULR) (Sheet 1 of 2)
FIGURE-2-6-0-991-004-A01
**ON A/C A350-900

NOTE:
IN THE ULR CONFIGURATION BECAUSE OF THE DEACTIVATION OF THE FORWARD CARGO COMPARTMENT, NO CARGO OPERATION IS POSSIBLE.

Cargo Compartments
Loading Combinations (ULR) (Sheet 2 of 2)
FIGURE-2-6-0-991-004-A01
2-7-0 Door Clearances and Location

**ON A/C A350-1000 A350-900**

Door Clearances and Location

1. This section provides door clearances and location.
**ON A/C A350-1000 A350-900

SEE CHAPTER 2–3

Forward Cargo Compartment Door
FIGURE-2-7-0-991-004-A01
**ON A/C A350-1000 A350-900**

SEE CHAPTER 2–3

Aft Cargo Compartment Door

FIGURE-2-7-0-991-005-A01
**ON A/C A350-1000 A350-900

Bulk Cargo Compartment Door
FIGURE-2-7-0-991-006-A01
Nose Landing Gear Doors
Forward Nose Landing Gear Doors (Sheet 1 of 2)
FIGURE-2-7-0-991-007-A01
**ON A/C A350-900

Main Landing Gear Doors
FIGURE-2-7-0-991-008-A01
**ON A/C A350-1000**

Main Landing Gear Doors
FIGURE-2-7-0-991-008-B01
Door Identification and Location
Door Identification (Sheet 1 of 2)
FIGURE-2-7-0-991-001-A01
**ON A/C A350-900

Door Identification and Location
Door Location (Sheet 2 of 2)
FIGURE-2-7-0-991-001-A01
**ON A/C A350-1000**

Door Identification and Location
Door Identification (Sheet 1 of 2)
FIGURE-2-7-0-991-001-D01
**ON A/C A350-1000**

Door Identification and Location

Door Location (Sheet 2 of 2)

FIGURE-2-7-0-991-001-D01
**ON A/C A350-1000 A350-900**

**Passenger/Crew Door**
1LH, 1RH

- 0.73 m (2.40 ft)
- 0.86 m (2.82 ft)
- 2.46 m (8.07 ft)

SEE CHAPTER 2-3

Forward Passenger/Crew Doors
(Sheet 1 of 2)
FIGURE-2-7-0-991-002-C01
**ON A/C A350-1000 A350-900**

PASSENGER/CREW DOOR
2LH, 2RH

0.69 m (2.26 ft)
0.84 m (2.76 ft)
2.47 m (8.10 ft)

SEE CHAPTER 2–3

Forward Passenger/Crew Doors
(Sheet 2 of 2)
FIGURE-2-7-0-991-002-C01
Aft Passenger/Crew Doors
(Sheet 1 of 2)
FIGURE-2-7-0-991-003-A01
Escape Slides

**ON A/C A350-1000 A350-900

Escape Slides

1. General
   This section provides the location of cabin escape facilities and related clearances.

2. Location
   Escape facilities are provided at the following locations:
   - One cockpit escape rope is kept in a dedicated stowage compartment adjacent to the escape hatch.
   - One single or dual lane slide-rafts can be installed at doors 1 to 3 (total 6).
   - One dual lane slide-raft at door 4 (total two).
**ON A/C A350-900

NOTE:
RH SHOWN, LH SYMMETRICAL.

Escape Slides
Escape Slides - Location (Sheet 1 of 2)
FIGURE-2-8-0-991-002-A01
**ON A/C A350-900

GRID EQUALS 1 m (3.28 ft) IN REALITY

*EMERGENCY DESCENT THROUGH THE ESCAPE HATCH WITH THE ESCAPE ROPE*

NOTE:
− RH SHOWN, LH SYMMETRICAL.
− DIMENSIONS ARE APPROXIMATE.

Escape Slides
Escape Slides - Dimensions (Sheet 2 of 2)
FIGURE-2-8-0-991-002-A01
**ON A/C A350-1000**

NOTE:
RH SHOWN, LH SYMMETRICAL.

Escape Slides
Escape Slides - Location (Sheet 1 of 2)
FIGURE-2-8-0-991-003-D01
**ON A/C A350-1000**

**NOTE:**
- RH SHOWN, LH SYMMETRICAL.
- DIMENSIONS ARE APPROXIMATE.

**GRID EQUALS 1 m (3.28 ft) IN REALITY**

**EMERGENCY DESCENT THROUGH THE ESCAPE HATCH WITH THE ESCAPE ROPE**

**EMERGENCY EVACUATION**

Escape Slides
Escape Slides - Dimensions (Sheet 2 of 2)
FIGURE-2-8-0-991-003-D01
2-9-0   Landing Gear

**ON A/C A350-1000 A350-900**

Landing Gear

**ON A/C A350-900**

1. MLG System Description
   The two MLGs are mounted in the LH and RH wing just outboard of the wing root within the trailing edge.
   The MLGs retract sideways into bays in the fuselage. Each MLG has a four wheel twin-tandem bogie.
   Each MLG has one related main door operated by a single door actuator.
   Each MLG has a gear uplock and a door uplock.
   The MLG has a double side stay arrangement to improve load distribution on the composite wing.
   Each side stay has a separate lock stay assembly to provide a positive means to lock the landing gear in the extended position for landing and ground manoeuvres.
   Each MLG leg contains a single-stage oleo shock strut consisting of a sliding piston and a main fitting that is supported by the two folding side stays and pivots on the top of the main fitting for extension/retraction.
   In-flight, the MLGs are retracted and locked up.
   The MLG doors are closed and locked to enclose the MLG bay in flight and on the ground, opening only when the landing gear is extending or retracting.
   Hydraulic power for the MLG extension/retraction comes from the green hydraulic system.

**ON A/C A350-1000**

2. MLG System Description
   The two MLGs are mounted in the LH and RH wing just outboard of the wing root within the trailing edge.
   The MLGs retract sideways into bays in the fuselage. Each MLG has a six wheel triple-tandem bogie.
   Each MLG has one related main door operated by a single door actuator.
   Each MLG has a gear uplock and a door uplock.
   The MLG has a double side stay arrangement to improve load distribution on the composite wing.
   Each side stay has a separate lock stay assembly to provide a positive means to lock the landing gear in the extended position for landing and ground manoeuvres.
   Each MLG leg contains a single-stage oleo shock strut consisting of a sliding piston and a main fitting that is supported by the two folding side stays and pivots on the top of the main fitting for extension/retraction.
   In-flight, the MLGs are retracted and locked up.
   The MLG doors are closed and locked to enclose the MLG bay in flight and on the ground, opening only when the landing gear is extending or retracting.
   Hydraulic power for the MLG extension/retraction comes from the green hydraulic system.
**ON A/C A350-1000 A350-900**

3. **NLG System Description**
   The NLG is located in the forward lower fuselage on the aircraft centerline below the cockpit. It is forward retracting and consists of a twin wheel axle mounted on a main fitting that incorporates a single-stage oleo shock strut supported by a forward drag stay.
   The NLG main fitting accommodates the steering assembly for the Nose Wheel Steering (NWS) system.
   In-flight, the NLG is retracted and locked up while the four sideways opening NLG Doors are closed and locked to enclose the NLG bay.
   The two forward doors are each operated by two independent door actuators.
   When retracted, the NLG is held by an uplock and the two main NLG doors are held by a single door uplock assembly, containing an uplock hook for each door.
   The hydraulically powered forward NLG doors are also closed after the NLG is extended.
   The aft doors are mechanically driven and remain open when the NLG is extended.
   Hydraulic power for the NLG extension/retraction comes from the yellow hydraulic system.
   Electric power to the navigation lights can be provided through the tow truck power connector on the 2GN service panel, See FIGURE 2-9-0-991-002-A. See AC 5-4-3 for connector definition.

4. **Landing Gear Extension and Retraction System**
   The Landing Gear Extension and Retraction System (LGERS) is made up of three sub-systems:
   - Normal extension and retraction system, for normal extension and retraction,
   - Alternate extension system, for extension in flight if the normal system is unavailable,
   - Ground door opening system, to allow on-ground access to the landing gear bays for maintenance purposes.
Nose Landing Gear
Doors Overview (Sheet 1 of 4)
FIGURE-2-9-0-991-002-A01
**ON A/C A350-1000 A350-900**

- Retraction Actuator
- Lock Stay Actuator
- Upper Drag Stay
- Lower Drag Stay
- Downlock Springs
- Steering Assembly
- Towing Fitting
- Upper Torque Link
- Sliding Piston
- Lower Torque Link

Nose Landing Gear Overview (Sheet 2 of 4)
FIGURE-2-9-0-991-002-A01
Nose Landing Gear
Safety Devices (Sheet 3 of 4)
FIGURE-2-9-0-991-002-A01
**ON A/C A350-1000 A350-900**

Nose Landing Gear
Service Panels (Sheet 4 of 4)
FIGURE-2-9-0-991-002-A01
**ON A/C A350-900**

Main Landing Gear Overview (Sheet 2 of 3)  
FIGURE-2-9-0-991-001-A01
**ON A/C A350-900**

Main Landing Gear
Safety Devices (Sheet 3 of 3)
FIGURE-2-9-0-991-001-A01

NOTE:

01 FORWARDED LOCK STAY SHOWN, AFT SIMILAR
Main Landing Gear
Doors Overview (Sheet 1 of 3)
FIGURE-2-9-0-991-001-B01

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Main Landing Gear
Overview (Sheet 2 of 3)
FIGURE-2-9-0-991-001-B01
**ON A/C A350-1000

Main Landing Gear
Safety Devices (Sheet 3 of 3)
FIGURE-2-9-0-991-001-B01
2-9-1 Landing Gear Maintenance Pits

**ON A/C A350-1000 A350-900

Landing Gear Maintenance Pits

**ON A/C A350-900

1. General
   The minimum maintenance pit envelopes for landing gear shock absorber maintenance are shown in Figures FIGURE 2-9-1-991-001-A, FIGURE 2-9-1-991-002-A, FIGURE 2-9-1-991-003-A and FIGURE 2-9-1-991-004-A.
   The landing gears are shown with simplified gear structure.

   The three envelopes show the minimum dimensions for these maintenance operations:
   - Extension and retraction
   - Gear removal
   - Piston removal.

   Pit envelopes shown represent minimum sizing required to accommodate landing gear tires and removal tooling. Dimensions for the below cases are to be added in the shown envelopes:
   - Clearance allowances for working area
   - Operator access
   - Functional clearances
   - Tooling
   - Civil engineering considerations.

   The maintenance pits are symmetrical about the aircraft centerline and all dimensions shown are minimum dimensions with zero clearances.
   The dimensions for the pits have been determined as follows:
   - The aircraft starting condition is with weight on wheels supported by jacks over the pits.
   - The pit depths are then based on the shock absorbers lowering to the fully extended position plus allowances for tooling.
   - The length and width of the pits allow the gear to rotate after the weight is taken off the landing gear
   - The landing gear tires are in the maximum grown condition
   - The MLG wheels, brakes and bogie beams are removed before the piston is removed
   - The NLG wheels are removed before the piston is removed
   - Both the MLG and the NLG pistons are removed vertically.

   The pit depth for the MLG piston removal is based on the removal pallet support leg being installed at its maximum length (upper pin hole position).
   The landing gear piston trolley for MLG and NLG may be positioned FWD or AFT of the landing gears depending on the chosen removal orientation (rotation FWD or AFT).
Dimensions for elevators and associated mechanisms must be added to those in Figures FIGURE 2-9-1-991-001-A, FIGURE 2-9-1-991-002-A, FIGURE 2-9-1-991-003-A and FIGURE 2-9-1-991-004-A.

A. Elevators

These can be either mechanical or hydraulic. They are used to:
- Permit easy movement of persons and equipment around the landing gears
- Lift and remove landing gear assemblies out of the pits.

B. Jacking

The aircraft must be in position over the pits to put the gear on the elevators. The jack must be installed and engaged with all the jacking points, AC 2-14-1 for aircraft maintenance jacking.

When lowering the elevators, the aircraft weight will be transferred from the wheels to the jacks.

The landing gears must not be in contact with the elevators during retraction/extension tests.

The aircraft must not bend when it is jacked and when its weight is off the wheels.

When tripod support jacks are used, the tripod-base circle radius must be limited because the locations required for positioning the columns are close to the sides of the pits.

**ON A/C A350-1000

2. General

The minimum maintenance pit envelopes for landing gear shock absorber maintenance are shown in Figures FIGURE 2-9-1-991-005-B, FIGURE 2-9-1-991-006-A, FIGURE 2-9-1-991-007-A and FIGURE 2-9-1-991-008-A.

The landing gears are shown with simplified gear structure.

The three envelopes show the minimum dimensions for these maintenance operations:
- Extension and retraction
- Gear removal
- Piston removal.

Pit envelopes shown represent minimum sizing required to accommodate landing gear tires and removal tooling. Dimensions for the below cases are to be added in the shown envelopes:
- Clearance allowances for working area
- Operator access
- Functional clearances
- Tooling
- Civil engineering considerations.

The maintenance pits are symmetrical about the aircraft centerline and all dimensions shown are minimum dimensions with zero clearances.

The dimensions for the pits have been determined as follows:
- The aircraft starting condition is with weight on wheels supported by jacks over the pits.
- The pit depths are then based on the shock absorbers lowering to the fully extended position plus allowances for tooling.
The length and width of the pits allow the gear to rotate after the weight is taken off the landing gear.
- The landing gear tires are in the maximum grown condition.
- The MLG wheels, brakes and bogie beams are removed before the piston is removed.
- The NLG wheels are removed before the piston is removed.
- Both the MLG and the NLG pistons are removed vertically.

The pit depth for the MLG piston removal is based on the removal pallet support leg being installed at its maximum length (upper pin hole position).

The landing gear piston trolley for NLG may be positioned FWD or AFT of the landing gear depending on the chosen removal orientation (rotation FWD or AFT).

The landing gear piston trolley for MLG will be positioned AFT of the landing gear, due to design of the tool.

Dimensions for elevators and associated mechanisms must be added to those in Figures FIGURE 2-9-1-991-005-B, FIGURE 2-9-1-991-006-A, FIGURE 2-9-1-991-007-A and FIGURE 2-9-1-991-008-A.

A. Elevators
   These can be either mechanical or hydraulic. They are used to:
   - Permit easy movement of persons and equipment around the landing gears.
   - Lift and remove landing gear assemblies out of the pits.

B. Jacking
   The aircraft must be in position over the pits to put the gear on the elevators. The jack must be installed and engaged with all the jacking points, AC 2-14-1 for aircraft maintenance jacking.
   When lowering the elevators, the aircraft weight will be transferred from the wheels to the jacks.
   The landing gears must not be in contact with the elevators during retraction/extension tests.
   The aircraft must not bend when it is jacked and when its weight is off the wheels.
   When tripod support jacks are used, the tripod-base circle radius must be limited because the locations required for positioning the columns are close to the sides of the pits.
**AIRCRAFT CHARACTERISTICS - AIRPORT AND MAINTENANCE PLANNING**

**ON A/C A350-900**

Maintenance Pit Envelopes

FIGURE-2-9-1-991-001-A01

NOTE:
ENVELOPES SHOWN WITH ZERO CLEARANCE TO OUTSIDE EDGE OF TIRES.
**ON A/C A350-900**

AIRCRAFT JACKED AT 20% MAC

- 0.38° REF
- NLG WEIGHT ON WHEELS
- NLG TIRES RETRACTION SWEEP
- NLG FULLY EXTENDED
- FUSELAGE DATUM LINE
- GROUND PLANE

AIRCRAFT JACKED AT 41% MAC

- 0.11° REF
- MLG FULLY EXTENDED
- MLG TIRES RETRACTION SWEEPS
- MLG WEIGHT ON WHEELS
- FUSELAGE DATUM LINE
- GROUND PLANE

MLG/MLG Extension/Retraction Pit

**FIGURE-2-9-1-991-002-A01**
**ON A/C A350-900**

**FUSELAGE DATUM LINE**

- **AIRCRAFT JACKED AT 20% MAC**
  - 0.38° REF
  - NLG FULLY EXTENDED
  - CLEARANCE BETWEEN BOTTOM OF MAIN FITTING AND TOP OF PISTON
  - 0.09 m (0.30 ft)
  - 1.85 m (6.07 ft)
  - 2.03 m (6.66 ft)

- **GROUND PLANE**
  - NLG WEIGHT ON WHEELS
  - SLIDING TUBE

**FUSELAGE DATUM LINE**

- **AIRCRAFT JACKED AT 41% MAC**
  - 0.11° REF
  - MLG FULLY EXTENDED
  - CLEARANCE BETWEEN BOTTOM OF MAIN FITTING AND TOP OF PISTON
  - 0.09 m (0.30 ft)
  - 2.25 m (7.38 ft)
  - 2.80 m (9.19 ft)

- **GROUND PLANE**
  - MLG WEIGHT ON WHEELS
  - MLG SHOCK ABSORBER REMOVAL PIT
  - MLG SLIDER TRANSPORTATION PALLET
  - TRANSPORTATION PALLET
  - 2.40 m (7.87 ft)
  - 2.80 m (9.19 ft)

**NLG/MLG Shock Absorber Removal Pit**
**FIGURE-2-9-1-991-003-A01**
**ON A/C A350-1000**

- **FUSELAGE DATUM LINE**
  - **AIRCRAFT JACKED AT 17.5% MAC**
  - **0.35° REF**
  - **NLG FULLY EXTENDED**
  - **CLEARANCE BETWEEN BOTTOM OF MAIN FITTING AND TOP OF PISTON**
  - **0.09 m (0.30 ft)**
  - **NLG WEIGHT ON WHEELS**
  - **SLIDING TUBE**
  - **GROUND PLANE**
  - **EXTENT OF PIT TO ALLOW REMOVAL OF THE NLG SHOCK ABSORBER WITH TROLLEY POSITIONED AFT OF NLG**
  - **NLG SHOCK ABSORBER REMOVAL PIT**
  - **NLG SHOCK ABSORBER REMOVAL TROLLEY**

- **AIRCRAFT JACKED AT 40% MAC**
  - **0.07° REF**
  - **MLG FULLY EXTENDED**
  - **CLEARANCE BETWEEN BOTTOM OF MAIN FITTING AND TOP OF PISTON**
  - **0.09 m (0.30 ft)**
  - **MLG WEIGHT ON WHEELS**
  - **SLIDING TUBE**
  - **GROUND PLANE**
  - **MLG SHOCK ABSORBER REMOVAL PIT**
  - **MLG SHOCK ABSORBER REMOVAL TROLLEY**

**NLG/MLG Shock Absorber Removal Pit**

FIGURE-2-9-1-991-007-A01
**ON A/C A350-1000**

**FUSELAGE DATUM LINE**

**NLG LOWERED UNTIL ZERO CLEARANCE BETWEEN TOP OF NLG AND NOSE FUSELAGE PROFILE**

**EXTENT OF PIT TO ALLOW REMOVAL OF THE NLG AND TROLLEY TO GROUND LEVEL WITH ZERO CLEARANCE TO THE NOSE FUSELAGE**

**NLG TROLLEY**

**NLG WEIGHT ON WHEELS**

**EXTENT OF PIT WITH NLG TROLLEY TOWING HANDLE EXTENDED**

**NLG TOWING HANDLE EXTENDED**

**0.96 m (3.15 ft)**

**3.52 m (11.55 ft)**

**4.60 m (15.09 ft)**

**7.70 m (25.26 ft)**

**8.79 m (28.84 ft)**

**0.62 m (2.03 ft)**

**3.52 m (11.55 ft)**

**7.70 m (25.26 ft)**

**8.79 m (28.84 ft)**

**0.62 m (2.03 ft)**

**3.52 m (11.55 ft)**

**7.70 m (25.26 ft)**

**8.79 m (28.84 ft)**

**0.62 m (2.03 ft)**

**3.52 m (11.55 ft)**

**7.70 m (25.26 ft)**

**8.79 m (28.84 ft)**

**0.62 m (2.03 ft)**

**3.52 m (11.55 ft)**

**7.70 m (25.26 ft)**

**8.79 m (28.84 ft)**

**0.62 m (2.03 ft)**

**3.52 m (11.55 ft)**

**7.70 m (25.26 ft)**

**8.79 m (28.84 ft)**

**0.62 m (2.03 ft)**

**3.52 m (11.55 ft)**

**7.70 m (25.26 ft)**

**8.79 m (28.84 ft)**

**0.62 m (2.03 ft)**

**3.52 m (11.55 ft)**

**7.70 m (25.26 ft)**

**8.79 m (28.84 ft)**

**0.62 m (2.03 ft)**

**3.52 m (11.55 ft)**

**7.70 m (25.26 ft)**

**8.79 m (28.84 ft)**

**0.62 m (2.03 ft)**

**3.52 m (11.55 ft)**

**7.70 m (25.26 ft)**

**8.79 m (28.84 ft)**

**0.62 m (2.03 ft)**

**3.52 m (11.55 ft)**

**7.70 m (25.26 ft)**

**8.79 m (28.84 ft)**

**0.62 m (2.03 ft)**

**3.52 m (11.55 ft)**

**7.70 m (25.26 ft)**

**8.79 m (28.84 ft)**

**0.62 m (2.03 ft)**

**3.52 m (11.55 ft)**

**7.70 m (25.26 ft)**

**8.79 m (28.84 ft)**

**0.62 m (2.03 ft)**

**3.52 m (11.55 ft)**

**7.70 m (25.26 ft)**

**8.79 m (28.84 ft)**

**0.62 m (2.03 ft)**

**3.52 m (11.55 ft)**

**7.70 m (25.26 ft)**

**8.79 m (28.84 ft)**

**0.62 m (2.03 ft)**

**3.52 m (11.55 ft)**

**7.70 m (25.26 ft)**

**8.79 m (28.84 ft)**

**0.62 m (2.03 ft)**

**NLG/MLG Removal Pit**

FIGURE-2-9-1-991-008-A01
**ON A/C A350-900**

---

**FIGURE-2-9-1-991-004-A01**

**NLG/MLG Removal Pit**

**FUSELAGE DATUM LINE**

- **NLG LOWERED UNTIL ZERO CLEARANCE BETWEEN TOP OF NLG AND NOSE FUSELAGE PROFILE**
- **EXTENT OF PIT TO ALLOW REMOVAL OF THE NLG AND TROLLEY TO GROUND LEVEL WITH ZERO CLEARANCE TO THE NOSE FUSELAGE**
- **NLG TROLLEY**
- **NLG PISTON**
- **NLG REMOVAL PIT**
- **NLG WEIGHT ON WHEELS**
- **EXTENT OF PIT WITH NLG TROLLEY TOWING HANDLE EXTENDED**
- **0.94 m (3.08 ft)**
- **0.63 m (2.07 ft)**
- **4.60 m (15.09 ft)**
- **7.66 m (25.13 ft)**
- **3.52 m (11.55 ft)**
- **8.74 m (28.67 ft)**

---

**FUSELAGE DATUM LINE**

- **MLG LOWERED UNTIL ZERO CLEARANCE BETWEEN TOP OF MLG AND LOWER WING O/S SKIN LINE**
- **MLG PISTON**
- **MLG REMOVAL PIT**
- **MLG WEIGHT ON WHEELS**
- **MLG TROLLEY**
- **EXTENT OF PIT WITH MLG TROLLEY TOWING HANDLE EXTENDED**
- **1.36 m (4.46 ft)**
- **1.12 m (3.67 ft)**
- **4.06 m (13.32 ft)**
- **5.55 m (18.21 ft)**

---

**P_AC_020901_1_0040001_01_00**
**ON A/C A350-1000**

Maintenance Pit Envelopes

FIGURE-2-9-1-991-005-B01
**ON A/C A350-1000**

AIRCRAFT JACKED AT 17.5% MAC

0.35° REF

NLG WEIGHT ON WHEELS
NLG TIRES RETRACTION SWEEP

0.46 m (1.51 ft)

NLG FULLY EXTENDED

FUSELAGE DATUM LINE

GROUND PLANE

FWD

NLG EXTENSION/RETRACTION PIT

2.31 m (7.58 ft)

MLG WEIGHT ON WHEELS
MLG TIRES RETRACTION SWEEP

0.91 m (2.99 ft)

MLG FULLY EXTENDED

FUSELAGE DATUM LINE

GROUND PLANE

FWD

NLG/MLG Extension/Retraction Pit

FIGURE-2-9-1-991-006-A01
**ON A/C A350-1000 A350-900**

Exterior Lighting

1. This section provides the location of the aircraft exterior lighting.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RIGHT NAVIGATION LIGHT (GREEN)</td>
</tr>
<tr>
<td>2</td>
<td>LEFT NAVIGATION LIGHT (RED)</td>
</tr>
<tr>
<td>3</td>
<td>TAIL NAVIGATION LIGHT (WHITE)</td>
</tr>
<tr>
<td>4</td>
<td>UPPER ANTI-COLLISION LIGHT/BEACON (RED)</td>
</tr>
<tr>
<td>5</td>
<td>LOWER ANTI-COLLISION LIGHT/BEACON (RED)</td>
</tr>
<tr>
<td>6</td>
<td>LOGO LIGHTS</td>
</tr>
<tr>
<td>7</td>
<td>ENGINE SCAN LIGHTS</td>
</tr>
<tr>
<td>8</td>
<td>WING SCAN LIGHTS</td>
</tr>
<tr>
<td>9</td>
<td>WING STROBE LIGHT (HIGH INTENSITY, WHITE)</td>
</tr>
<tr>
<td>10</td>
<td>TAIL STROBE LIGHT (HIGH INTENSITY, WHITE)</td>
</tr>
<tr>
<td>11</td>
<td>TAXI CAMERA LIGHTS (NLG)</td>
</tr>
<tr>
<td>12</td>
<td>TAXI CAMERA LIGHTS (MLG)</td>
</tr>
<tr>
<td>13</td>
<td>LANDING LIGHTS</td>
</tr>
<tr>
<td>14</td>
<td>RUNWAY TURN-OFF LIGHTS</td>
</tr>
<tr>
<td>15</td>
<td>TAXI LIGHTS</td>
</tr>
<tr>
<td>16</td>
<td>TAKE-OFF LIGHTS</td>
</tr>
<tr>
<td>17</td>
<td>CARGO COMPARTMENT FLOOD LIGHTS</td>
</tr>
<tr>
<td>18</td>
<td>LANDING GEAR BAY/WELL LIGHTS (DOME)</td>
</tr>
</tbody>
</table>
Exterior Lighting

FIGURE-2-10-0-991-003-B01
Exterior Lighting

FIGURE-2-10-0-991-004-A01
**ON A/C A350-900

EXAMPLE FOR LIGHT N° 17

CEILING LIGHT

SPOT LIGHT

Exterior Lighting

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

P_AC_021000_1_00500001_01_01

2-10-0

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**ON A/C A350-1000

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

FIGURE-2-10-0-991-002-A01
**ON A/C A350-1000

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

P_AC_021000_1_0070001_01_00
**ON A/C A350-1000

Exterior Lighting

FIGURE-2-10-0-991-008-A01
Exterior Lighting
FIGURE-2-10-0-991-009-A01
EXAMPLE FOR LIGHT N° 17

CEILING LIGHT

SPOT LIGHT

Exterior Lighting
FIGURE-2-10-0-991-010-A01
2-11-0 Antennas and Probes Location

**ON A/C A350-1000 A350-900

Antennas and Probes Location
1. This section provides the location of antennas and probes.
Antennas and Probes Location
FIGURE-2-11-0-991-001-A01
Antennas and Probes Location
FIGURE-2-11-0-991-002-A01
Engine and Nacelle

**ON A/C A350-1000 A350-900**

Engine and Nacelle

1. Power Plant
   The A350–900 and A350–1000 has two main power plants, one installed under each wing on a pylon. Each power plant can be lowered for removal from its pylon. The power plant comprises the:
   - Nacelle,
   - Engine.

2. Nacelle
   The nacelle comprises the following assemblies:
   - Air intake,
   - Fan cowls,
   - Thrust reverser,
   - Exhaust system.

   A. Fan Cowl
      A power door opening system is installed to assist in opening the cowls. The cowls have access doors for fan case-mounted components.

   B. Thrust Reverser
      The engine thrust reverser consists primarily of an inner fixed structure and an outer translating sleeve.
      The fan exhaust stream is reversed by the cascades and blocker doors, which form part of the translating sleeve actuated by an electrical Thrust Reverser Actuation System (TRAS).
      A power door opening system is used to assist thrust reverser cowl opening.
      The thrust reverser latching system is designed so that the remote latches close only when the hooks are engaged.
      Means are provided to latch and secure a thrust reverser in the stowed position.
      Means are provided to permit actuation of the thrust reversers without engine operation, for maintenance purposes, either using the TRAS powered by the aircraft or by manual drive with external Ground Support Equipment (GSE).

   C. Exhaust System
      The exhaust system consists of a primary nozzle and a center body plug.
      The exhaust system is designed to optimize aerodynamics and acoustic performance.

3. Engine
   A. Ignition
      Each engine is equipped with a dual ignition system controlled by the FADEC.
      Each engine is equipped with an automatic flame-out protection.
B. Cooling System
   A nacelle cooling and ventilating system automatically provides the airflow required for cooling engine and nacelle accessories and associated structure.

C. Power Control
   Forward thrust of each engine is controlled by a throttle control lever mounted on the center pedestal in the cockpit.
   Thrust reverser control is by means of a separate lever for each engine.

D. Engine Master Control
   Engine fuel shutoff is controlled by switches installed on the center pedestal.

E. Emergency Shutdown
   Actuation of the fire controls closes the associated LP valves.

F. Indicating
   Indications for each engine are displayed on the Control and Display System (CDS).

G. Oil
   The propulsion system has an independent integral oil system that is able to provide the appropriate quantity of oil, at the temperature necessary for continuous propulsion system operation, for all achievable conditions within the propulsion system operating envelope.
   Means are provided for gravity filling.
   It is possible to visually check and replenish the engine oil level without opening the fan cowl door.
   Magnetic chip detectors are installed in the lubrication system.

H. Starting
   The engine is equipped with a pneumatic air turbine starter.
   The starter can be supplied with air either from the APU, or the other engine, or an Air Start Unit (AS).
   Standard types of GSE can be used.
**ON A/C A350-1000 A350-900**

NOTE:
APPROXIMATE DIMENSIONS DEPENDING ON AIRCRAFT CONFIGURATION

Engine and Nacelle
(Sheet 1 of 3)
FIGURE-2-12-0-991-001-A01
**ON A/C A350-1000 A350-900**

NOTE:
APPROXIMATE DIMENSIONS DEPENDING ON AIRCRAFT CONFIGURATION.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR=28.5°</td>
<td>5.50 m (18.04 ft)</td>
<td>1.01 m (3.31 ft)</td>
<td>FC=37°</td>
<td>6.39 m (20.96 ft)</td>
</tr>
</tbody>
</table>

Engine and Nacelle
(Sheet 2 of 3)
FIGURE-2-12-0-991-001-A01
**ON A/C A350-1000 A350-900**

![Diagram of aircraft engine and nacelle]

**Approximate Dimensions Depending on Aircraft Configuration.**

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR=45°</td>
<td>6.42 m (21.06 ft)</td>
<td>1.51 m (4.95 ft)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC=50°</td>
<td>7.13 m (23.40 ft)</td>
<td>1.81 m (5.94 ft)</td>
</tr>
</tbody>
</table>

**NOTE:**

APPROXIMATE DIMENSIONS DEPENDING ON AIRCRAFT CONFIGURATION.

FC: FAN COWL AND TR: THRUST REVERSER

Engine and Nacelle
(Sheet 3 of 3)
FIGURE-2-12-0-991-001-A01
2-12-1 Auxiliary Power Unit

**ON A/C A350-1000 A350-900

Auxiliary Power Unit

1. General
   The Auxiliary Power Unit (APU) is installed at the rear part of the fuselage in the tail cone. An air intake system with a flap-type door is installed on the top right area of the tail cone. The exhaust gases pass overboard at the end of the fuselage cone.
**ON A/C A350-1000 A350-900**

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**FIGURE-2-12-1-991-001-A01**

Auxiliary Power Unit

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2-12-1
2-13-0 Leveling, Symmetry and Alignment

**ON A/C A350-1000 A350-900

Leveling, Symmetry and Alignment

1. Quick Leveling
   There are three alternative procedures to level the aircraft:
   - Quick leveling procedure with Air Data/Inertial Reference System (ADIRS),
   - Quick leveling procedure with a spirit level in the passenger compartment,
   - Quick leveling procedure with a spirit level in the FWD cargo compartment.

2. Precise Leveling
   For precise leveling, it is necessary to install sighting rods in the receptacles located under the fuselage (points 10 and 17 for longitudinal leveling) and under the wings (points 1 LH and 1 RH for lateral leveling) and use a sighting tube. With the aircraft on jacks, adjust the jacks until the reference marks on the sighting rods are aligned in the sighting plane (aircraft level).

3. Symmetry and Alignment Check
   Possible deformation of the aircraft is measured by photogrammetry.
**ON A/C A350-900

Location of Leveling Points
FIGURE-2-13-0-991-001-A01
Location of Leveling Points
FIGURE-2-13-0-991-002-A01
Jacking for Maintenance

**ON A/C A350-1000 A350-900

Jacking for Maintenance

**ON A/C A350-900

1. Aircraft Jacking Points for Maintenance
   A. The A350-900 can be jacked:
      - At not more than 164000 kg (361558 lb),
      - Within the limits of the permissible wind speed when the aircraft is jacked outside a closed environment.
   B. Primary Jacking Points
      The aircraft is provided with three primary jacking points:
      - One located on the forward lower left fuselage (FR12),
      - Two located under the wings (one under each wing, RIB9).
   C. Auxiliary Jacking Point (Safety Stay)
      - When the aircraft is on jacks, a safety stay is placed under the fuselage at FR98 to prevent tail tipping caused by accidental displacement of the aircraft center of gravity.
      - The safety point must not be used for lifting the aircraft.

**ON A/C A350-1000

2. Aircraft Jacking Points for Maintenance
   A. The A350-1000 can be jacked:
      - At not more than 189550 kg (417887 lb),
      - Within the limits of the permissible wind speed when the aircraft is jacked outside a closed environment.
   B. Primary Jacking Points
      The aircraft is provided with three primary jacking points:
      - One located on the forward lower left fuselage (FR12),
      - Two located under the wings (one under each wing, RIB9).
   C. Auxiliary Jacking Point (Safety Stay)
      - When the aircraft is on jacks, a safety stay is placed under the fuselage at FR98 to prevent tail tipping caused by accidental displacement of the aircraft center of gravity.
      - The safety point must not be used for lifting the aircraft.

**ON A/C A350-1000 A350-900

3. Jacks and Safety Stay
   A. Jack Design
      - The maximum eligible static load given in table (FIGURE 2-14-1-991-002-B) are the maximum loads applicable on jack fittings.
- In fully retracted position (jack stroke at minimum), the height of the jacks is such that the jack may be placed beneath the aircraft under the most adverse conditions, namely, tires deflated and shock absorbers depressurized, with a sufficient clearance between the aircraft jacking point and the jack upper end.
- The jacks stroke enables the aircraft to be jacked up so that the Fuselage Datum Line (FDL) may be positioned up to 6.50 m (21.33 ft.) from the ground to allow all required maintenance procedure and in particular, the removal/installation of the landing-gear shock absorbers.

B. Safety Stay
The stay stroke enables the aircraft tail to be supported up to the Fuselage Datum Line (FDL) positioned at 6.50 m (21.33 ft.) from the ground.
**ON A/C A350-900

<table>
<thead>
<tr>
<th></th>
<th>X</th>
<th>Y</th>
<th>MAXIMUM LOAD ELIGIBLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>m</td>
<td>ft</td>
<td>m</td>
</tr>
<tr>
<td>FORWARD FUSELAGE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JACKING POINT A</td>
<td>4.77</td>
<td>15.65</td>
<td>-1.72</td>
</tr>
<tr>
<td>WING JACKING</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POINT B</td>
<td>33.22</td>
<td>108.99</td>
<td>8.71</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WING JACKING</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAFETY STAY C</td>
<td>58.75</td>
<td>192.75</td>
<td>0</td>
</tr>
</tbody>
</table>

NOTE:
SAFETY STAY IS NOT USED FOR JACKING.
**ON A/C A350-900**

![Diagram of Aerial and Datum Line](image)

### FUSELAGE DATUM LINE

<table>
<thead>
<tr>
<th>CONFIGURATION</th>
<th>CG POSITION (% MAC)</th>
<th>HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
<td>M</td>
</tr>
<tr>
<td><strong>AIRCRAFT ON WHEELS, SHOCK–ABSORBER DEFLATED, TIRES DEFLATED (RH)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>3.08</td>
<td>10.10</td>
</tr>
<tr>
<td>42</td>
<td>3.37</td>
<td>11.06</td>
</tr>
<tr>
<td><strong>A/C ON JACKS, FDL AT 6.50 m (21.33 ft), A/C FUSELAGE PARALLEL TO THE GROUND, SHOCK–ABSORBER RELAXED, CLEARANCE OF MAIN GEAR WHEELS = 0.30 m (0.98 ft) (STANDARD TIRES [01]), CLEARANCE OF NOSE GEAR WHEELS = 0.85 m (2.79 ft) (STANDARD TIRES [01])</strong></td>
<td>20</td>
<td>4.32</td>
</tr>
<tr>
<td>42</td>
<td>4.32</td>
<td>14.17</td>
</tr>
<tr>
<td><strong>AIRCRAFT ON WHEELS (STANDARD TIRES [01]), MAXIMUM JACKING WEIGHT = 164 000 kg (361 558 lb)</strong></td>
<td>20</td>
<td>3.03</td>
</tr>
<tr>
<td>42</td>
<td>3.31</td>
<td>10.86</td>
</tr>
<tr>
<td><strong>AIRCRAFT ON WHEELS (STANDARD TIRES [01]), A/C WEIGHT = 130 727 kg (288 204 lb)</strong></td>
<td>20</td>
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<td>42</td>
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**NOTE:**

[01] STANDARD TIRES: NOSE LANDING GEAR = 1 050 x 395 R16
MAIN LANDING GEAR = 1 400 x 530 R23

P_AC_021401_1_0010001_02_02

Jacking for Maintenance
Jacking Dimensions (Sheet 2 of 5)
FIGURE-2-14-1-991-001-A01

2-14-1
Jacking for Maintenance
Forward Jacking Point (Sheet 3 of 5)
FIGURE-2-14-1-991-001-A01
**ON A/C A350-900**

Jacking for Maintenance  
Wing Jacking Point (Sheet 4 of 5)  
FIGURE-2-14-1-991-001-A01
Jacking for Maintenance
Auxiliary Jacking Point - Safety (Sheet 5 of 5)
FIGURE-2-14-1-991-001-A01
**ON A/C A350-1000

Jacking Points Location
FIGURE-2-14-1-991-002-B01

<table>
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<tr>
<th></th>
<th>X</th>
<th>Y</th>
<th>MAXIMUM LOAD ELIGIBLE</th>
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<tr>
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NOTE:
SAFETY STAY IS NOT USED FOR JACKING.
## **ON A/C A350-1000**

**FUSELAGE DATUM LINE**

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<th>CONFIGURATION</th>
<th>CG POSITION (% MAC)</th>
<th>HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIRCRAFT ON WHEELS, SHOCK–ABSORBER DEFLATED, TIRES DEFLATED (RH)</td>
<td>21.5 3.09 10.14</td>
<td>4.65 LH 15.26 LH 4.81 15.78</td>
</tr>
<tr>
<td></td>
<td>41.1 3.33 10.93</td>
<td>4.64 LH 15.22 LH 4.59 15.06</td>
</tr>
<tr>
<td>A/C ON JACKS, FDL AT 6.50 m (21.33 ft), A/C FUSELAGE PARALLEL TO THE GROUND, SHOCK–ABSORBER RELAXED, CLEARANCE OF MAIN GEAR WHEELS = 1.26 m (4.13 ft) (STANDARD TIRES [01]), CLEARANCE OF NOSE GEAR WHEELS = 1.40 m (4.59 ft) (STANDARD TIRES [01])</td>
<td>21.5 4.32 14.17 5.66 18.57 6.09 19.98</td>
<td></td>
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<tr>
<td></td>
<td>41.1 4.32 14.17 5.66 18.57 6.09 19.98</td>
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</tr>
<tr>
<td>AIRCRAFT ON WHEELS (STANDARD TIRES [01]) MAXIMUM JACKING WEIGHT = 189 550 kg (417 887 lb)</td>
<td>21.5 3.04 9.97 4.56 14.96 5.15 16.90</td>
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<tr>
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<td>41.1 3.27 10.73 4.55 14.93 4.92 16.14</td>
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<tr>
<td>AIRCRAFT ON WHEELS (STANDARD TIRES [01]) A/C WEIGHT = 145 986 kg (321 844 lb)</td>
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<td>41.1 3.39 11.12 4.60 15.09 4.91 16.11</td>
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**NOTE:**

[01] STANDARD TIRES: NOSE LANDING GEAR = 1 050 x 395 R16
MAIN LANDING GEAR = 1 400 x 530 R23

Jacking Dimensions

FIGURE-2-14-1-991-003-B01

2-14-1
**ON A/C A350-1000

Forward Jacking Point
FIGURE-2-14-1-991-004-B01
**ON A/C A350-1000**

Wing Jacking Point
FIGURE-2-14-1-991-005-A01
**ON A/C A350-1000

Auxiliary Jacking Point - Safety
FIGURE-2-14-1-991-006-A01
2-14-2 Jacking of the Landing Gear

**ON A/C A350-1000 A350-900**

Jacking of the Landing Gear

1. General
   To replace either the wheel or brake unit assemblies on any of the landing gears, it is necessary to lift the landing gear with a jack.
   The landing gear can be lifted by a pillar jack or with a cantilever jack.

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

2. Nose Landing Gear (NLG)
   To lift the NLG axle with a jack, a dome shaped pad is installed between the wheels.
   The reaction loads at the jacking position are shown in FIGURE 2-14-2-991-002-A.

   **NOTE**: The maximum load at NLG jacking point is 33 758 daN.

3. Main Landing Gear (MLG)
   To lift the MLG bogie with jacks, a dome shaped pad is installed below the FWD and AFT ends of each bogie beam.
   Each pair of wheels and brake units can be replaced on the end of the bogie that is lifted.
   Both FWD and AFT ends of the bogie beam can be lifted together, but the bogie beam must be kept level during the lift to prevent damage.
   The reaction loads at the jacking position are shown in FIGURE 2-14-2-991-003-A.

   **NOTE**: The maximum load at each MLG jacking point is 83 892.5 daN.

**ON A/C A350-900**

4. Nose Landing Gear (NLG)
   To lift the NLG axle with a jack, a dome shaped pad is installed between the wheels.
   The reaction loads at the jacking position are shown in FIGURE 2-14-2-991-004-A.

   **NOTE**: The maximum load at NLG jacking point is 34 609 daN.

5. Main Landing Gear (MLG)
   To lift the MLG bogie with jacks, a dome shaped pad is installed below the FWD and AFT ends of each bogie beam.
   Each pair of wheels and brake units can be replaced on the end of the bogie that is lifted. To lift the center MLG wheel off the ground, operate both the forward and aft MLG wheel-change jacks at the same time.
   Both FWD and AFT ends of the bogie beam can be lifted together, but the bogie beam must be kept level during the lift to prevent damage.
   The reaction loads at the jacking position are shown in FIGURE 2-14-2-991-005-A.
**NOTE**: The maximum load at each MLG jacking point is 95 803.5 daN.
**ON A/C A350-900**

- **A** : DOME HEIGHT
- **B** : DISTANCE BETWEEN TYRES

<table>
<thead>
<tr>
<th>CONFIGURATION (ASSUME ALL OTHER TYRES ON THE A/C ARE INTACT)</th>
<th>WEIGHT (T)</th>
<th>CG (% MAC)</th>
<th>DIM A (mm)</th>
<th>DIM B (mm)</th>
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Nose Landing Gear Jacking Point Heights
FIGURE-2-14-2-991-002-A01
**ON A/C A350-900**

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**CONFIGURATION (ASSUME ALL OTHER TYRES ON THE A/C ARE INTACT)**

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<thead>
<tr>
<th>WEIGHT (T)</th>
<th>CG (% MAC)</th>
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<th>DIM B FWD (mm)</th>
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**TYRE CHANGE**

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<th>DIM A AFT (mm)</th>
<th>DIM B FWD (mm)</th>
<th>DIM B AFT (mm)</th>
<th>DIM C FWD (mm)</th>
<th>DIM C AFT (mm)</th>
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Main Landing Gear Jacking Point Heights
FIGURE-2-14-2-991-003-A01

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**A350**

**AIRCRAFT CHARACTERISTICS - AIRPORT AND MAINTENANCE PLANNING**

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**ON A/C A350-1000**

- **A**: DOME HEIGHT
- **B**: DISTANCE BETWEEN TIRES

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<th>CONFIGURATION (ASSUME ALL OTHER TIRES ON THE A/C ARE INTACT)</th>
<th>WEIGHT (T)</th>
<th>CG (% MAC)</th>
<th>DIM A (mm)</th>
<th>DIM A (in)</th>
<th>DIM B (mm)</th>
<th>DIM B (in)</th>
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Nose Landing Gear Jacking Point Heights
FIGURE-2-14-2-991-004-A01
**ON A/C A350-1000**

- **A**: DOME HEIGHT
- **B**: DISTANCE BETWEEN TIRES
- **C**: DISTANCE BETWEEN BRAKE RODS AND GROUND

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<tr>
<th>CONFIGURATION (ASSUME ALL OTHER TIRES ON THE A/C ARE INTACT)</th>
<th>WEIGHT (T)</th>
<th>CG (% MAC)</th>
<th>DIM A FWD (mm)</th>
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<th>DIM C AFT (mm)</th>
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**ON A/C A350-1000**

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<th>DIM A AFT</th>
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<td>120</td>
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Main Landing Gear Jacking Point Heights
(Sheet 2 of 2)
FIGURE-2-14-2-991-005-A01
**ON A/C A350-1000 A350-900**

General Information

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

<table>
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<tr>
<th>ALTITUDE</th>
<th>METERS</th>
<th>°F</th>
<th>°C</th>
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<td>11.1</td>
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<tr>
<td>4 000</td>
<td>1 220</td>
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<td>7.1</td>
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<tr>
<td>6 000</td>
<td>1 830</td>
<td>37.6</td>
<td>3.1</td>
</tr>
<tr>
<td>8 000</td>
<td>2 440</td>
<td>30.5</td>
<td>-0.8</td>
</tr>
</tbody>
</table>
3-2-0 Payload/Range - ISA Conditions

**ON A/C A350-1000 A350-900

Payload/Range - ISA Conditions

1. This section provides the payload/range at ISA conditions.
THESE CURVES ARE GIVEN FOR INFORMATION ONLY. THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

**NOTE:**

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

---

**FIGURE-3-2-0-991-001-A01**

Payload/Range - ISA Conditions

3-2-0

Page 2

Oct 01/19
Payload/Range - ISA Conditions
FIGURE-3-2-0-991-002-A01

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

MTOW – 316,000 kg (696,661 lb); MFC 158,790 l (41,949 US gal)

- MAXIMUM STRUCTURAL PAYLOAD
- 366 PASSENGERS
- 95 kg PER PASSENGER INCLUDING BAGGAGE
- BASIC CONFIGURATION WITH CREW REST COMPARTMENTS AND OTHER OPTIONAL FEATURES
- STANDARD DAY CONDITIONS
- TYPICAL INTERNATIONAL FLIGHT PROFILE

These curves are given for information only. The approved values are stated in the operating manuals specific to the airline operating the aircraft.
3-3-0 Take-Off Weight Limitation

**ON A/C A350-1000 A350-900

Take-Off Weight Limitation

1. This section provides the take-off weight limitation at ISA conditions and ISA + 15 °C (ISA + 27 °F) conditions on a dry runway.
NOTE:
THESE CURVES ARE GIVEN FOR INFORMATION ONLY. THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.
**ON A/C A350-1000

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

ISA Conditions
FIGURE-3-3-0-991-001-E01
**ON A/C A350-900**

<table>
<thead>
<tr>
<th>TAKE-OFF WEIGHT (x 1,000 lb)</th>
<th>551</th>
<th>507</th>
<th>463</th>
<th>419</th>
<th>375</th>
<th>331</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUNWAY LENGTH (m)</td>
<td>1,500</td>
<td>2,000</td>
<td>2,500</td>
<td>3,000</td>
<td>3,500</td>
<td>4,000</td>
</tr>
<tr>
<td>0 ft</td>
<td>2,000 ft</td>
<td>4,000 ft</td>
<td>6,000 ft</td>
<td>8,000 ft</td>
<td></td>
<td></td>
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</table>

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

ISA + 15 °C (ISA + 27 °F) Conditions
FIGURE-3-3-0-991-002-A01

ISA + 15 °C (ISA + 27 °F) Conditions
FIGURE-3-3-0-991-002-A01
**ON A/C A350-1000 A350-900

1. A350-900 and A350-1000 are classified as code 4E as per ICAO Aerodrome Reference Code.
3-4-0 Landing Field Length

**ON A/C A350-1000 A350-900

Landing Field Length

1. This section gives the landing field length on a dry runway.
NOTE:
THESE CURVES ARE GIVEN FOR INFORMATION ONLY. THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.
**ON A/C A350-1000**

### Required Landing Distance (m)

<table>
<thead>
<tr>
<th>LANDING WEIGHT (x 1000 lb)</th>
<th>REQUIRED LANDING DISTANCE (m)</th>
</tr>
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<tbody>
<tr>
<td>1,600</td>
<td>150</td>
</tr>
<tr>
<td>1,800</td>
<td>160</td>
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<td>2,000</td>
<td>170</td>
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<tr>
<td>2,200</td>
<td>180</td>
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<tr>
<td>2,400</td>
<td>190</td>
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<td>2,600</td>
<td>200</td>
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<td>2,800</td>
<td>210</td>
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<tr>
<td>3,000</td>
<td>220</td>
</tr>
<tr>
<td>3,200</td>
<td>230</td>
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<tr>
<td>3,400</td>
<td>240</td>
</tr>
</tbody>
</table>

### Required Landing Distance (ft)

<table>
<thead>
<tr>
<th>LANDING WEIGHT (x 1000 kg)</th>
<th>REQUIRED LANDING DISTANCE (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,280</td>
<td>1714</td>
</tr>
<tr>
<td>5,780</td>
<td>1914</td>
</tr>
<tr>
<td>6,280</td>
<td>2114</td>
</tr>
<tr>
<td>6,780</td>
<td>2314</td>
</tr>
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<tr>
<td>8,280</td>
<td>2914</td>
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</table>

### NOTE:

Theses curves are given for information only. The approved values are stated in the "Operating Manuals" specific to the airline operating the aircraft.

---

Landing Field Length

FIGURE-3-4-0-991-002-B01
Final Approach Speed

**ON A/C A350-1000 A350-900**

Final Approach Speed

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

**ON A/C A350-900**

2. The final approach speed is 140 kt at a MLW of 205000 kg (451948 lb) and classifies the aircraft into the Aircraft Approach Category C.

   **NOTE**: This value is given for information only.

**ON A/C A350-1000**

3. The final approach speed is 147 kt at a MLW of 236000 kg (520291 lb) and classifies the aircraft into the Aircraft Approach Category D.

   **NOTE**: This value is given for information only.
GROUND MANEUVERING

4-1-0 General Information

**ON A/C A350-1000 A350-900

General Information

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

In 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 airlines in question prior to layout planning.

4-2-0 Turning Radii

**ON A/C A350-1000 A350-900

Turning Radii

1. This section provides the turning radii.
**ON A/C A350-900

NOTE:
FOR TURNING RADIUS VALUES, REFER TO SHEET 2.

Turning Radii
(Sheet 1 of 2)
FIGURE-4-2-0-991-001-A01
**ON A/C A350-900**

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<tr>
<th>TYPE OF TURN</th>
<th>STEERING ANGLE (deg)</th>
<th>EFFECTIVE STEERING ANGLE (deg)</th>
<th>R1 RMLG (m)</th>
<th>R2 LMLG (m)</th>
<th>R3 NLG (m)</th>
<th>R4 WING (m)</th>
<th>R5 NOSE (m)</th>
<th>R6 TAIL (m)</th>
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</thead>
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<td>19.6</td>
<td>76.3</td>
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<td>ft 227</td>
<td>ft 228</td>
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<td>ft 233</td>
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<td>ft 226</td>
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<td>36.7</td>
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<td>9.2</td>
<td>19.8</td>
<td>31.9</td>
<td>47.7</td>
<td>35.9</td>
<td>40.6</td>
</tr>
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<td>ft 156</td>
<td>ft 118</td>
<td>ft 133</td>
</tr>
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<td>72 (MAX)</td>
<td>66.1</td>
<td>8.5</td>
<td>19.1</td>
<td>31.6</td>
<td>47.0</td>
<td>35.6</td>
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</tr>
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<td>ft 117</td>
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</tbody>
</table>

**NOTE:**
ABOVE 50°, AIRLINES MAY USE TYPE 1 OR TYPE 2 TURNS DEPENDING ON THE SITUATION.
TYPE 1 TURNS USE: ASYMMETRIC THRUST DURING THE WHOLE TURN;
AND DIFFERENTIAL BRAKING TO INITIATE THE TURN ONLY.

TYPE 2 TURNS USE: SYMMETRIC THRUST DURING THE WHOLE TURN;
AND NO DIFFERENTIAL BRAKING AT ALL.

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

Turning Radii
(Sheet 2 of 2)
FIGURE-4-2-0-991-001-A01
**ON A/C A350-1000**

NOTE:
FOR TURNING RADI VALUES, REFER TO SHEET 2.

Turning Radii
(Sheet 1 of 2)
FIGURE-4-2-0-991-001-B01
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<tr>
<th>TYPE OF TURN</th>
<th>STEERING ANGLE (deg)</th>
<th>EFFECTIVE STEERING ANGLE (deg)</th>
<th>R1 RMLG (m)</th>
<th>R2 LMLG (m)</th>
<th>R3 NLG (m)</th>
<th>R4 WING (m)</th>
<th>R5 NOSE (m)</th>
<th>R6 TAIL (m)</th>
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<th>STEERING ANGLE (deg)</th>
<th>EFFECTIVE STEERING ANGLE (deg)</th>
<th>R1 RMLG (m)</th>
<th>R2 LMLG (m)</th>
<th>R3 NLG (m)</th>
<th>R4 WING (m)</th>
<th>R5 NOSE (m)</th>
<th>R6 TAIL (m)</th>
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<td>115</td>
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<td>129</td>
<td>140</td>
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</table>

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

Turning Radii
(Sheet 2 of 2)
FIGURE-4-2-0-991-001-B01
4-3-0 Minimum Turning Radii

**ON A/C A350-1000 A350-900

Minimum Turning Radii

1. This section provides the minimum turning radii.
**ON A/C A350-900**

### A350–900 Minimum Turning Radii

<table>
<thead>
<tr>
<th>Type of Turn</th>
<th>Steering Angle (deg)</th>
<th>Effective Steering Angle (deg)</th>
<th>X</th>
<th>Y</th>
<th>A</th>
<th>R3 NLG</th>
<th>R4 Wing</th>
<th>R5 Nose</th>
<th>R6 Tail</th>
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<td>159</td>
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<td>42</td>
<td>168</td>
<td>104</td>
<td>154</td>
<td>117</td>
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</tbody>
</table>

**NOTE:**
- Type 1 turns use: asymmetric thrust during the whole turn; and differential braking to initiate the turn only.
- Type 2 turns use: symmetric thrust during the whole turn; and no differential braking at all.
- It is possible to get lower values than those from Type 1 by applying differential braking during the whole turn.

Minimum Turning Radii

FIGURE-4-3-0-991-001-A01
**ON A/C A350-1000**

### A350–1000 Minimum Turning Radii

<table>
<thead>
<tr>
<th>TYPE OF TURN</th>
<th>STEERING ANGLE (deg)</th>
<th>EFFECTIVE STEERING ANGLE (deg)</th>
<th>X (m)</th>
<th>Y (m)</th>
<th>A (m)</th>
<th>R3 (m)</th>
<th>R4 (m)</th>
<th>R5 (m)</th>
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**NOTE:**

- TYPE 1 TURNS USE: ASYMMETRIC THRUST DURING THE WHOLE TURN; AND DIFFERENTIAL BRAKING TO INITIATE THE TURN ONLY.
- TYPE 2 TURNS USE: SYMMETRIC THRUST DURING THE WHOLE TURN; AND NO DIFFERENTIAL BRAKING AT ALL.
- IT IS POSSIBLE TO GET LOWER VALUES THAN THOSE FROM TYPE 1 BY APPLYING DIFFERENTIAL BRAKING DURING THE WHOLE TURN.

Minimum Turning Radii

FIGURE-4-3-0-991-001-B01
4-4-0 Visibility from Cockpit in Static Position

**ON A/C A350-1000 A350-900

Visibility from Cockpit in Static Position

1. This section gives the visibility from cockpit in static position.
**ON A/C A350-1000 A350-900**

NOTE:
- PILOT EYE POSITION WHEN PILOT'S EYES ARE IN LINE WITH THE RED AND WHITE BALLS.
- ZONE THAT CANNOT BE SEEN

Visibility from Cockpit in Static Position
FIGURE-4-4-0-991-001-A01
Runway and Taxiway Turn Paths

**ON A/C A350-1000 A350-900**

Introduction

1. This section provides the runway and taxiway turn paths for the following configurations:
   - 90° Turn — Runway to Taxiway
   - 135° Turn — Runway to Taxiway
   - 180° Turn on a Runway
   - 90° Turn — Taxiway to Taxiway
   - 135° Turn — Taxiway to Taxiway.

The turn paths Runway to Taxiway and Taxiway to Taxiway are defined using 2 methods:
   - Oversteering method,
   - Cockpit over centerline method.

The 180° Turn on runway is defined using the following method:
   - 180° Turn using edge of runway method.
4-5-1  90° Turn - Runway to Taxiway

**ON A/C A350-1000 A350-900

90° Turn – Runway to Taxiway

1. This section provides the 90° turn - runway to taxiway.
90° Turn - Runway to Taxiway
Oversteering Method (Sheet 1 of 2)
FIGURE-4-5-1-991-001-A01
**ON A/C A350-900**

90° Turn - Runway to Taxiway
Cockpit over Centerline Method (Sheet 2 of 2)

FIGURE-4-5-1-991-001-A01
90° Turn - Runway to Taxiway
Oversteering Method (Sheet 1 of 2)
FIGURE-4-5-1-991-002-A01
**ON A/C A350-1000

90° Turn - Runway to Taxiway
Cockpit over Centerline Method (Sheet 2 of 2)
FIGURE-4-5-1-991-002-A01
4-5-2 135° Turn - Runway to Taxiway

**ON A/C A350-1000 A350-900

135° Turn - Runway to Taxiway

1. This section provides the 135° turn - runway to taxiway.
**ON A/C A350-900

135° Turn - Runway to Taxiway
Oversteering Method (Sheet 1 of 2)
FIGURE-4-5-2-991-001-B01
135° Turn - Runway to Taxiway
Cockpit over Centerline Method (Sheet 2 of 2)
FIGURE-4-5-2-991-001-B01
**ON A/C A350-1000

135° Turn - Runway to Taxiway
Oversteering Method (Sheet 1 of 2)
FIGURE-4-5-2-991-002-B01
**ON A/C A350-1000

135° Turn - Runway to Taxiway
Cockpit over Centerline Method (Sheet 2 of 2)
FIGURE-4-5-2-991-002-B01
180° Turn on a Runway

**ON A/C A350-1000 A350-900

180° Turn on a Runway

1. This section provides the 180° turn on a runway.
**ON A/C A350-900

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

180° Turn on a Runway
FIGURE-4-5-3-991-001-A01
**ON A/C A350-1000

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

180° Turn on a Runway
FIGURE-4-5-3-991-002-B01
4-5-4 90° Turn - Taxiway to Taxiway

**ON A/C A350-1000 A350-900

90° Turn - Taxiway to Taxiway

1. This section provides the 90° turn - taxiway to taxiway.
90° Turn - Taxiway to Taxiway
Oversteering Method (Sheet 1 of 2)
FIGURE-4-5-4-991-001-A01
90° Turn - Taxiway to Taxiway
Cockpit over Centerline Method (Sheet 2 of 2)
FIGURE-4-5-4-991-001-A01
**ON A/C A350-1000

90° Turn - Taxiway to Taxiway
Oversteering Method (Sheet 1 of 2)
FIGURE-4-5-4-991-002-A01
90° Turn - Taxiway to Taxiway
Cockpit over Centerline Method (Sheet 2 of 2)
FIGURE-4-5-4-991-002-A01
4-5-5 135° Turn - Taxiway to Taxiway

**ON A/C A350-1000 A350-900**

135° Turn - Taxiway to Taxiway

1. This section provides the 135° turn - taxiway to taxiway.
**ON A/C A350-900

135° Turn - Taxiway to Taxiway
Oversteering Method (Sheet 1 of 2)
FIGURE-4-5-5-991-001-B01
**ON A/C A350-900**

135° Turn - Taxiway to Taxiway
Cockpit over Centerline Method (Sheet 2 of 2)
FIGURE-4-5-5-991-001-B01
**ON A/C A350-1000

135° Turn - Taxiway to Taxiway
Oversteering Method (Sheet 1 of 2)
FIGURE-4-5-5-991-002-A01
**ON A/C A350-1000**

135° Turn - Taxiway to Taxiway
Cockpit over Centerline Method (Sheet 2 of 2)
FIGURE-4-5-5-991-002-A01
4-6-0                  Runway Holding Bay

**ON A/C A350-1000 A350-900
Runway Holding Bay
1. This section provides the runway holding bay.
**ON A/C A350-1000 A350-900

NOTE:
COORDINATE WITH USING AIRCRAFT FOR SPECIFIC PLANNED OPERATING PROCEDURES.

Runway Holding Bay
FIGURE-4-6-0-991-001-A01
Minimum Line-Up Distance Corrections

**ON A/C A350-1000 A350-900**

1. The ground maneuvers were performed using asymmetric thrust and differential braking only to initiate the turn. 
Manoeuvres of this section are calculated with turn characteristics as given in chapter 4-2-0.
TODA: Take-Off Distance Available
ASDA: Acceleration-Stop Distance Available

2. 90° Turn on Runway Entry
This section provides the minimum line-up distance correction for a 90° turn on runway entry.
This maneuver consists in a 90° turn at minimum turn radius. It starts with the edge of the MLG at a distance of 4 m (13 ft.) from the taxiway edge, and finishes with the aircraft aligned on the centerline of the runway, FIGURE 4-7-0-991-001-A.
During the turn, all the clearances must meet the minimum value of 4 m (13 ft.) for this category of aircraft as recommended in ICAO Annex 14 (Eighth Edition).

3. 180° Turn on Runway Turn Pad
This section provides the minimum line-up distance correction for a 180° turn on the runway turn pad.
This maneuver consists in a 180° turn at minimum turn radius on a runway turn pad with standard ICAO geometry.
It starts with the edge of the MLG at a distance of 4 m (13 ft.) from the pavement edge, and it finishes with the aircraft aligned on the centerline of the runway, FIGURE 4-7-0-991-002-A.
During the turn, all the clearances must meet the minimum value of 4 m (13 ft.) for this category of aircraft as recommended in ICAO Annex 14 (Eighth Edition).

4. 180° Turn on Runway Width
This section provides the minimum line-up distance correction for a 180° turn on the runway width.
For this maneuver, the pavement width is considered to be the runway width, which is a frozen parameter (45 m (150 ft) and 60 m (200 ft)).
As per the standard operating procedures for the "180° turn on runway" (described in the Flight Crew Operating Manual), the aircraft is initially angled with respect to the runway centerline when starting the 180° turn, FIGURE 4-7-0-991-003-A.
The value of this angle depends on the aircraft type and is mentioned in the FCOM.
During the turn, all the clearances must meet the minimum value of 4 m (13 ft.) for this category of aircraft as recommended in ICAO Annex 14 (Eighth Edition).

**NOTE:** The minimum line-up distances may need a steering angle lower than the maximum one.
**ON A/C A350-1000 A350-900**

---

--- ASDA: ACCELERATION–STOP DISTANCE AVAILABLE
--- TODA: TAKE–OFF DISTANCE AVAILABLE

<table>
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<tr>
<th>AIRCRAFT TYPE</th>
<th>MAX STEERING ANGLE</th>
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<th>60 m (200 ft) WIDE RUNWAY</th>
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<td>MINIMUM LINE–UP DISTANCE CORRECTION</td>
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<td></td>
<td>ON TODA</td>
<td>ON ASDA</td>
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<td>80 ft</td>
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<tr>
<td>A350–1000</td>
<td>75°</td>
<td>30.6 m</td>
<td>100 ft</td>
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90° Turn on Runway Entry

FIGURE-4-7-0-991-001-A01
**ON A/C A350-1000 A350-900**

### 180° TURN ON RUNWAY TURN PAD

<table>
<thead>
<tr>
<th>AIRCRAFT TYPE</th>
<th>MAX STEERING ANGLE</th>
<th>45 m (150 ft) WIDE RUNWAY</th>
<th>60 m (200 ft) WIDE RUNWAY</th>
<th>REQUIRED MINIMUM PAVEMENT WIDTH</th>
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<td>MINIMUM LINE-UP DISTANCE CORRECTION</td>
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<td></td>
<td></td>
<td>ON TODA</td>
<td>ON ASDA</td>
<td>ON TODA</td>
</tr>
<tr>
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<td>140 ft</td>
<td>75.3 m</td>
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</tbody>
</table>

---

ASDA: ACCELERATION–STOP DISTANCE AVAILABLE
TODA: TAKE–OFF DISTANCE AVAILABLE

---

180° Turn on Runway Turn Pad

FIGURE-4-7-0-991-002-A01
180° Turn on Runway Width

**ON A/C A350-1000 A350-900**

<table>
<thead>
<tr>
<th>AIRCRAFT TYPE</th>
<th>MAX STEERING ANGLE</th>
<th>45 m (150 ft) WIDE RUNWAY</th>
<th>60 m (200 ft) WIDE RUNWAY</th>
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<td>NOT POSSIBLE</td>
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Aircraft Mooring

**ON A/C A350-1000 A350-900

1. This section provides information on aircraft mooring.
**ON A/C A350-1000 A350-900

Aircraft Mooring
FIGURE-4-8-0-991-001-A01
**5-1-0 Aircraft Servicing Arrangements**

**ON A/C A350-1000 A350-900**

**Aircraft Servicing Arrangements**

1. This section provides typical ramp layouts, showing the various GSE items in position during typical turn-round scenarios. These ramp layouts show typical arrangements only. Each operator will have its own specific requirements/regulations for positioning and operation on the ramp.

This table provides the symbols used on servicing diagrams.

<table>
<thead>
<tr>
<th>GROUND SUPPORT EQUIPMENT</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>AIR CONDITIONING UNIT</td>
</tr>
<tr>
<td>AS</td>
<td>AIR START UNIT</td>
</tr>
<tr>
<td>BULK</td>
<td>BULK TRAIN</td>
</tr>
<tr>
<td>CAT</td>
<td>CATERING TRUCK</td>
</tr>
<tr>
<td>CB</td>
<td>CONVEYOR BELT</td>
</tr>
<tr>
<td>CLEAN</td>
<td>CLEANING TRUCK</td>
</tr>
<tr>
<td>FUEL</td>
<td>FUEL HYDRANT DISPENSER or TANKER</td>
</tr>
<tr>
<td>GPU</td>
<td>GROUND POWER UNIT</td>
</tr>
<tr>
<td>LDCL</td>
<td>LOWER DECK CARGO LOADER</td>
</tr>
<tr>
<td>LV</td>
<td>LAVATORY VEHICLE</td>
</tr>
<tr>
<td>PBB</td>
<td>PASSENGER BOARDING BRIDGE</td>
</tr>
<tr>
<td>PS</td>
<td>PASSENGER STAIRS</td>
</tr>
<tr>
<td>TOW</td>
<td>TOW TRACTOR</td>
</tr>
<tr>
<td>ULD</td>
<td>ULD TRAIN</td>
</tr>
<tr>
<td>WV</td>
<td>POTABLE WATER VEHICLE</td>
</tr>
</tbody>
</table>
5-1-1 Typical Ramp Layout (Open Apron)

**ON A/C A350-1000 A350-900**

Typical Ramp Layout (Open Apron)

1. This section provides the typical ramp layout (Open Apron).
   The Stand Safety Line delimits the Aircraft Safety Area (minimum distance of 7.5 m (24.61 ft.) from the aircraft). No vehicle must be parked in this area before complete stop of the aircraft (wheel chocks in position on landing gears).
**ON A/C A350-900

Typical Ramp Layout (Open Apron)

FIGURE-5-1-1-991-001-A01
**ON A/C A350-1000

Typical Ramp Layout (Open Apron)
FIGURE-5-1-1-991-003-A01
Typical Ramp Layout (Gate)

**ON A/C A350-1000 A350-900**

Typical Ramp Layout (Gate)

1. This section provides the baseline ramp layout (gate).
   The Stand Safety Line delimits the Aircraft Safety Area (minimum distance of 7.50 m (24.61 ft.) from the aircraft). No vehicle must be parked in this area before complete stop of the aircraft (wheel chocks in position on landing gears).
Typical Ramp Layout (Gate)
FIGURE-5-1-2-991-003-A01
Terminal Operations - Full Servicing Turn Round Time

**ON A/C A350-1000 A350-900**

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

**ON A/C A350-900**

2. Assumptions used for full servicing turn round time chart

A. PASSENGER HANDLING
315 pax: 48 B/C + 267 Y/C.
   All passengers deplane and board the aircraft.
   2 Passenger Boarding Bridges (PBB) used at doors 1L and 2L.
   Equipment positioning + opening door = +3 min.
   Closing door + equipment removal = +3 min.
   No Passenger with Reduced Mobility (PRM) on board.
   Deplaning:
   - 158 pax at door 1L
   - 157 pax at door 2L
   - Deplaning rate = 25 pax/min per door
   - Priority deplaning for premium passengers.
   Boarding:
   - 158 pax at door 1L
   - 157 pax at door 2L
   - Boarding rate = 15 pax/min per door
   - Last Pax Seating (LPS) allowance + headcounting = +4 min.

B. CARGO
   2 cargo loaders + 1 belt loader.
   Opening door + equipment positioning = +2.5 min.
   Equipment removal + closing door = +2.5 min.
   100% cargo exchange:
   - FWD cargo compartment: 8 containers (LD3) + 4 (96 in) pallets
   - AFT cargo compartment: 4 containers (LD3) + 4 (96 in) pallets
   - Bulk compartment: 1 000 kg (2 205 lb).
   Container unloading/loading times:
   - Unloading = 1.2 min/container
   - Loading = 1.4 min/container.
Bulk unloading/loading times:
- Unloading = 110 kg/min (243 lb/min)
- Loading = 95 kg/min (209 lb/min).

Pallet unloading/loading times:
- Unloading = 2.4 min/pallet
- Loading = 2.8 min/pallet.

**CAUTION:** MAKE SURE THAT YOU REFUEL FROM ONE SIDE OF THE AIRCRAFT AT A TIME. THIS WILL PREVENT DAMAGE TO THE AIRCRAFT FUEL SYSTEM.

C. REFUELLING

Final fuel on board: 100 000 L (26 418 USgal), 40 psi (2.76 bar), 2 hoses.
Hydrant positioning + connection = +8 min.
Disconnection + Hydrant removal = +8 min.
Refuel with pax on board allowed.

D. CLEANING

Cleaning is performed in available time.

E. CATERING

3 catering trucks for servicing galleys simultaneously at doors 1R, 2R and 4R.
Equipment positioning + opening door = +5 min.
Closing door + equipment removal = +3 min.
Full Size Trolley Equivalent (FSTE) to unload and load: 40 FSTE
- 10 FSTE at door 1R
- 7 FSTE at door 2R
- 23 FSTE at door 4R.
Time for trolley exchange = 1.5 min per FSTE.

F. GROUND HANDLING/GENERAL SERVICING

Start of operations:
- Bridges/Stairs: t0=0
- Other equipment: t = t0.
Ground Power Unit (GPU): up to 2 × 90 kVA.
Air Conditioning: up to 2 hoses.
Potable water servicing: 100% uplift, 1 060 L (280 US gal).
Waste water servicing: draining and rinsing.

3. Assumptions used for full servicing turn round time chart for ULR

A. PASSENGER HANDLING

173 pax: 80 B/C + 93 Y/C.
All passengers deplane and board the aircraft.
2 PBB used at doors 1L and 2L.
Equipment positioning + opening door = +3 min.
Closing door + equipment removal = +3 min.
No PRM on board.
Deplaning:
- 87 pax at door 1L
- 86 pax at door 2L
- Deplaning rate = 25 pax/min per door
- Priority deplaning for premium passengers.
Boarding:
- 87 pax at door 1L
- 86 pax at door 2L
- Boarding rate = 15 pax/min per door
- LPS allowance + headcounting = +4 min.

B. CARGO
1 cargo loader + 1 belt loader.
Opening door + equipment positioning = +2.5 min.
Equipment removal + closing door = +2.5 min.
100% cargo exchange:
- FWD cargo compartment: Forward cargo hold inoperative
- AFT cargo compartment: 16 containers (LD3) or 5 pallets
- Bulk compartment: 1 000 kg (2 205 lb).
Container unloading/loading times:
- Unloading = 1.2 min/container
- Loading = 1.4 min/container.
Bulk unloading/loading times:
- Unloading = 110 kg/min (243 lb/min).
- Loading = 95 kg/min (209 lb/min).
Pallet unloading/loading times:
- Unloading = 2.4 min/pallet
- Loading = 2.8 min/pallet.

**CAUTION**: MAKE SURE THAT YOU REFUEL FROM ONE SIDE OF THE AIRCRAFT AT A TIME. THIS WILL PREVENT DAMAGE TO THE AIRCRAFT FUEL SYSTEM.

C. REFUELING
Final fuel on board: 165 000 L (43 589 USgal), 40 psi (2.76 bar), 2 hoses.
Hydrant positioning + connection = +8 min.
Disconnection + Hydrant removal = +8 min.
D. CLEANING
Cleaning is performed in available time.

E. CATERING
3 catering trucks for servicing galleys simultaneously at doors 1R, 2R and 4R.
Equipment positioning + opening door = +5 min.
Closing door + equipment removal = +3 min.
FSTE to unload and load: 59.5 FSTE
- 16.5 FSTE at door 1R
- 19 FSTE at door 2R
- 4 FSTE at door 3R
- 20 FSTE at door 4R.
Time for trolley exchange = 1.5 min per FSTE.

F. GROUND HANDLING/GENERAL SERVICING
Start of operations:
- Bridges/Stairs: t0=0
- Other equipment: t = t0.
(GPU: up to 2 × 90 kVA.
Air Conditioning: up to 2 hoses.
Potable water servicing: 100% uplift, 750 L (198 USgal).

**ON A/C A350-1000
4. Assumptions used for full servicing turn round time chart

A. PASSENGER HANDLING
369 pax: 54 B/C + 315 Y/C.
All passengers deplane and board the aircraft.
2 Passenger Boarding Bridges (PBB) used at doors 1L and 2L.
Equipment positioning + opening door = +3 min.
Closing door + equipment removal = +3 min.
No Passenger with Reduced Mobility (PRM) on board.
Deplaning:
- 184 pax at door 1L
- 185 pax at door 2L
- Deplaning rate = 25 pax/min per door
- Priority deplaning for premium passengers.
Boarding:
- 54 pax at door 1L
- 315 pax at door 2L
- Boarding rate = 15 pax/min per door
- Last Pax Seating (LPS) allowance + headcounting = +4 min.

B. CARGO
2 cargo loaders + 1 belt loader.
Opening door + equipment positioning = +2.5 min.
Equipment removal + closing door = +2.5 min.
100% cargo exchange:
  - FWD cargo compartment: 6 containers (LD3) + 6 (96 in) pallets
  - AFT cargo compartment: 14 containers (LD3) + 2 (96 in) pallets
  - Bulk compartment: 1 000 kg (2 205 lb).
Container unloading/loading times:
  - Unloading = 1.2 min/container
  - Loading = 1.4 min/container.
Bulk unloading/loading times:
  - Unloading = 110 kg/min (243 lb/min).
  - Loading = 95 kg/min (209 lb/min).
Pallet unloading/loading times:
  - Unloading = 2.4 min/pallet
  - Loading = 2.8 min/pallet.

**CAUTION**: MAKE SURE THAT YOU REFUEL FROM ONE SIDE OF THE AIRCRAFT AT A TIME. THIS WILL PREVENT DAMAGE TO THE AIRCRAFT FUEL SYSTEM.

C. REFUELLING
Final fuel on board: 100 000 L (26 418 USgal), 40 psi (2.76 bar), 2 hoses.
Hydrant positioning + connection = +8 min.
Disconnection + Hydrant removal = +8 min.
Refuel with pax on board allowed.

D. CLEANING
Cleaning is performed in available time.

E. CATERING
3 catering trucks for servicing galleys simultaneously at doors 1R, 2R and 4R.
Equipment positioning + opening door = +5 min.
Closing door + equipment removal = +3 min.
Full Size Trolley Equivalent (FSTE) to unload and load: 45 FSTE
  - 12 FSTE at door 1R
  - 8 FSTE at door 2R
  - 4 FSTE at door 3R (Stowage area)
  - 21 FSTE at door 4R.
Time for trolley exchange = 1.5 min per FSTE.
F. GROUND HANDLING/GENERAL SERVICING

Start of operations:
- Bridges/Stairs: t₀=0
- Other equipment: t = t₀.

Ground Power Unit (GPU): up to 2 × 90 kVA.
Air Conditioning: up to 2 hoses.
Potable water servicing: 100% uplift, 1 060 L (280 USgal).
Waste water servicing: draining and rinsing.
**ON A/C A350-900

TRT: 61 min

Full Servicing Turn Round Time Chart
FIGURE-5-2-0-991-001-A01
**ON A/C A350-1000

TRT: 70 min

Full Servicing Turn Round Time Chart
FIGURE-5-2-0-991-004-A01
**ON A/C A350-900**

TRT: 83 min

Full Servicing Turn Round Time Chart (ULR)

FIGURE-5-2-0-991-005-A01
5-3-0 Terminal Operations - Transit Turn Round Time

**ON A/C A350-1000 A350-900**

Terminal Operations - Transit Turn Round Time

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

**ON A/C A350-900**

2. Assumptions used for transit turn round time chart

   **A. PASSENGER HANDLING**
   315 pax: 48 B/C + 267 Y/C.
   50% passengers deplane and board the aircraft.
   1 Passenger Boarding Bridge (PBB) used at door 1L.
   Equipment positioning + opening door = +3 min.
   Closing door + equipment removal = +3 min.
   No Passenger with Reduced Mobility (PRM) on board.
   Deplaning:
   - 158 pax at door 1L
   - Deplaning rate = 25 pax/min per door.
   Boarding:
   - 158 pax at door 1L
   - Boarding rate = 15 pax/min per door
   - Last Pax Seating (LPS) allowance + headcounting = + 4 min.

   **B. CARGO**
   1 cargo loader + 1 belt loader.
   Opening door + equipment positioning = +2.5 min.
   Equipment removal + closing door = +2.5 min.
   50% cargo exchange:
   - AFT cargo compartment: 2 containers (LD3) + 2 (96 in) pallets
   - Bulk compartment: 500 kg (1 102 lb).
   Container unloading/loading times:
   - Unloading = 1.2 min/container
   - Loading = 1.4 min/container.
   Bulk unloading/loading times:
   - Unloading = 110 kg/min (243 lb/min)
   - Loading = 95 kg/min (209 lb/min).
Pallet unloading/loading times:
- Unloading = 2.4 min/pallet
- Loading = 2.6 min/pallet.

C. REFUELING
No refueling.

D. CLEANING
Cleaning is performed in available time.

E. CATERING
One catering truck for servicing the galleys as required.

F. GROUND HANDLING/GENERAL SERVICING
Start of operations:
- Bridges: \( t_0 = 0 \)
- Other equipment: \( t = t_0 \).
Ground Power Unit (GPU): up to \( 2 \times 90 \text{kVA} \).
Air conditioning: up to 2 hoses.
No potable water servicing.
No waste water servicing.

3. Assumptions used for transit turn round time chart for ULR

A. PASSENGER HANDLING
173 pax: 80 B/C + 93 Y/C.
All passengers deplane and board the aircraft.
1 PBB used at door 2L.
Equipment positioning + opening door = +3 min.
Closing door + equipment removal = +3 min.
No PRM on board.
Deplaning:
- 173 pax at door 2L
- Deplaning rate = 25 pax/min per door
- Priority deplaning for premium passengers.
Boarding:
- 173 pax at door 2L
- Boarding rate = 15 pax/min per door
- LPS allowance + headcounting = + 4 min.
B. CARGO
1 cargo loader + 1 belt loader.
Opening door + equipment positioning = +2.5 min.
Equipment removal + closing door = +2.5 min.
100% cargo exchange:
- FWD cargo compartment: Forward cargo hold inoperative
- AFT cargo compartment: 16 containers (LD3) or 5 pallets
- Bulk compartment: 1 000 kg (2 205 lb).

Container unloading/loading times:
- Unloading = 1.2 min/container
- Loading = 1.4 min/container.

Bulk unloading/loading times:
- Unloading = 110 kg/min (243 lb/min)
- Loading = 95 kg/min (209 lb/min).

Pallet unloading/loading times:
- Unloading = 2.4 min/pallet
- Loading = 2.8 min/pallet.

CAUTION: MAKE SURE THAT YOU REFUEL FROM ONE SIDE OF THE AIRCRAFT AT A TIME. THIS WILL PREVENT DAMAGE TO THE AIRCRAFT FUEL SYSTEM.

C. REFUELING
Final fuel on board: 165 000 L (43 589 USgal), 2 hoses, 40 psi (2.76 bar).
Hydrant positioning + connection = +8 min.
Disconnection + Hydrant removal = +8 min.

D. CLEANING
Cleaning is performed in available time.

E. CATERING
2 catering trucks for servicing galleys at doors 2R and 4R.
Equipment positioning + opening door = +5 min.
Closing door + equipment removal = +3 min.
FSTE to unload and load: 59.5 FSTE
- 16.5 FSTE at door 1R
- 19 FSTE at door 2R
- 4 FSTE at door 3R
- 20 FSTE at door 4R.
Servicing: Forward galleys thru 2R and 4R.
Time for trolley exchange = 1.5 min per FSTE.
Time for cart circulation 1 seat zone = 0.5 min.
Average truck capacity (FSTE) for full exchange: 52 FSTE.
F. GROUND HANDLING/GENERAL SERVICING

Start of operations:
- Bridges/Stairs: \( t_0 = 0 \)
- Other equipment: \( t = t_0 \).

GPU: up to \( 2 \times 90 \text{ kVA} \).
Air conditioning: up to 2 hoses.
Potable water servicing: 100% uplift, 750 L (198 USgal).

**ON A/C A350-1000**

4. Assumptions used for transit turn round time chart

A. PASSENGER HANDLING

369 pax: 54 B/C + 315 Y/C.
50% passengers deplane and board the aircraft.
1 Passenger Boarding Bridge (PBB) used at door 1L.
Equipment positioning + opening door = +3 min.
Closing door + equipment removal = +3 min.
No Passenger with Reduced Mobility (PRM) on board.
Deplaning:
- 184 pax at door 1L
  - Deplaning rate = 25 pax/min per door.
Boarding:
- 184 pax at door 1L
  - Boarding rate = 15 pax/min per door
  - Last Pax Seating (LPS) allowance + headcounting = + 4 min.

B. CARGO

1 cargo loader + 1 belt loader.
Opening door + equipment positioning = +2.5 min.
Equipment removal + closing door = +2.5 min.
50% cargo exchange:
- FWD cargo compartment: 3 containers (LD3) + 3 (96 in) pallets
- AFT cargo compartment: 7 containers (LD3) + 1 (96 in) pallets
- Bulk compartment: 500 kg (1 102 lb).
Container unloading/loading times:
- Unloading = 1.2 min/container
  - Loading = 1.4 min/container.
Bulk unloading/loading times:
- Unloading = 110 kg/min (243 lb/min).
- Loading = 95 kg/min (209 lb/min).
Pallet unloading/loading times:
- Unloading = 2.4 min/pallet
- Loading = 2.6 min/pallet.

C. REFUELING
No refueling.

D. CLEANING
Cleaning is performed in available time.

E. CATERING
3 catering trucks for servicing galleys simultaneously at doors 1R, 2R and 4R.
   Equipment positioning + opening door = +5 min.
   Closing door + equipment removal = +3 min.
Full Size Trolley Equivalent (FSTE) to unload and load: 22.5 FSTE
   - 6 FSTE at door 1R
   - 4 FSTE at door 2R
   - 2 FSTE at door 3R (Stowage area)
   - 10.5 FSTE at door 4R.
Time for trolley exchange = 1.5 min per FSTE.

F. GROUND HANDLING/GENERAL SERVICING
Start of operations:
- Bridges: t0 = 0
- Other equipment: t = t0.
Ground Power Unit (GPU): up to 2 × 90 kVA.
Air conditioning: up to 2 hoses.
Potable water servicing: 25% uplift, 265 L (70 USgal).
Waste water servicing: draining and rinsing.
**ON A/C A350-900**

TRT: 31 min

Transit Turn Round Time Chart
FIGURE-5-3-0-991-001-B01
**ON A/C A350-1000**

TRT: 34 min

Transit Turn Round Time Chart
FIGURE-5-3-0-991-002-A01
**ON A/C A350-900

TRT: 91 min

[Transit Turn Round Time Chart (ULR)]

Transit Turn Round Time Chart (ULR)
FIGURE-5-3-0-991-003-A01
Ground Service Connections Layout

**ON A/C A350-1000 A350-900**

Ground Service Connections Layout

1. This section provides the ground service connections layout.
**ON A/C A350-900**

1 – NLG GROUNDING (EARTHING) POINT
2 – GROUND ELECTRICAL POWER CONNECTORS
3 – OXYGEN SERVICING
4 – LOW PRESSURE AIR PRE-CONDITIONING
5 – HIGH PRESSURE AIR PRE-CONDITIONING
6 – YELLOW HYDRAULIC–SYSTEM SERVICE PANEL
7 – ENGINE OIL SERVICING
8 – STARTER OIL SERVICING
9 – VFG OIL SERVICING
10 – REFUEL/DEFUEL COUPLINGS (OPTIONAL–LH WING)
11 – OVERPRESSURE PROTECTOR
12 – NACA FLAME ARRESTER
13 – MLG GROUNDING (EARTHING) POINT
14 – GREEN HYDRAULIC–SYSTEM SERVICE PANEL
15 – REFUEL/DEFUEL CONTROL PANEL
16 – POTABLE WATER SERVICE PANEL
17 – WASTE WATER SERVICE PANEL
18 – APU OIL SERVICING

Ground Service Connections Layout
FIGURE-5-4-0-991-001-A01
**ON A/C A350-1000**

Ground Service Connections Layout
FIGURE-5-4-0-991-002-A01
5-4-1  Grounding (Earthing) Points

**ON A/C A350-1000 A350-900

Grounding (Earthing) Points

**ON A/C A350-900

1. Grounding (Earthing) Point Locations

   NOTE: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>Gear leg</td>
<td></td>
</tr>
<tr>
<td>On Nose Landing Gear leg</td>
<td>4.42 m (14.50 ft.)</td>
</tr>
<tr>
<td>On left Main Landing Gear leg</td>
<td>32.95 m (108.10 ft.)</td>
</tr>
<tr>
<td>On right Main Landing Gear leg</td>
<td>32.95 m (108.10 ft.)</td>
</tr>
</tbody>
</table>

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

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

   NOTE: In all other conditions, the electrostatic discharge through the tire is sufficient.

**ON A/C A350-1000

2. Grounding (Earthing) Point Locations

   NOTE: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>Gear leg</td>
<td></td>
</tr>
<tr>
<td>On Nose Landing Gear leg</td>
<td>4.42 m (14.50 ft.)</td>
</tr>
</tbody>
</table>
A. The grounding (earthing) stud on each landing gear leg is designed for use with a clip-on connector (such as an Appleton TGR).

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

**NOTE**: In all other conditions, the electrostatic discharge through the tire is sufficient.
**ON A/C A350-1000 A350-900

Grounding (Earthing) Point - NLG
FIGURE-5-4-1-991-001-A01
Grounding (Earthing) Point - MLG
FIGURE-5-4-1-991-002-A01
Grounding (Earthing) Point - MLG
FIGURE-5-4-1-991-003-A01
Hydraulic Servicing

**ON A/C A350-1000 A350-900**

1. Hydraulic Servicing
   The nominal operating pressure is 344.75 bar (5000 psi).
   
   A. Access
      
      **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>Green Ground Service Panel:</td>
<td></td>
<td>0.61 m</td>
</tr>
<tr>
<td>Access Door 197LB</td>
<td></td>
<td>(2.00 ft.)</td>
</tr>
<tr>
<td>Yellow Ground Service Panel:</td>
<td></td>
<td>1.51 m</td>
</tr>
<tr>
<td>Access Door 194KB</td>
<td></td>
<td>(4.95 ft.)</td>
</tr>
</tbody>
</table>

B. Reservoir Filling
   Centralized filling capability is on the Green ground service panel.
   Filling: Ground pressurized supply or hand pump.

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

**ON A/C A350-1000**

2. Hydraulic Servicing
   The nominal operating pressure is 344.74 bar (5000 psi).
   
   A. Access
      
      **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.
### DISTANCE

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>Green Ground Service Panel: Access Door 197LB</td>
<td>40.18 m (131.82 ft.)</td>
<td>0.61 m (2.00 ft.)</td>
</tr>
<tr>
<td>Yellow Ground Service Panel: Access Door 194KB</td>
<td>34.15 m (112.04 ft.)</td>
<td>1.51 m (4.95 ft.)</td>
</tr>
</tbody>
</table>

**ON A/C A350-1000 A350-900**

3. Technical Specifications

A. The hydraulic ground equipment must be able to start with the aircraft hydraulic circuit not pressurized.

B. The hydraulic ground equipment must be able to permanently operate with the aircraft reservoir pressures varying between 2.0 bar (29 psi) and 5 bar (73 psi).

C. After ground equipment shutdown, no further fluid exchange must occur between the aircraft reservoir and the ground equipment.
**ON A/C A350-1000 A350-900

Green Ground Service Panel
FIGURE-5-4-2-991-001-A01
**ON A/C A350-1000 A350-900

Yellow Ground Service Panel
FIGURE-5-4-2-991-002-A01
5-4-3 Electrical Servicing

**ON A/C A350-1000 A350-900**

Electrical Servicing

1. A/C External Power

   **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>A/C External Power:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access Door 122AR</td>
<td>6.63 m</td>
<td>0.91 m</td>
</tr>
<tr>
<td></td>
<td>(21.75 ft.)</td>
<td>(2.99 ft.)</td>
</tr>
</tbody>
</table>

2. Technical Specifications

   A. External Power Receptacle:
      - Two standard ISO 461 Style 3 – 90 kVA each.

   B. Power Supply:
      - Three-phase, 115 V, 400 Hz.

   C. Electrical Connectors for Servicing:
      - AC outlets: HUBBELL 5258
      - DC outlets: HUBBELL 7472.

3. Tow Truck Power

   **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>NLG Service Panel: 2GN</td>
<td>4.35 m</td>
<td>0.15 m</td>
</tr>
<tr>
<td></td>
<td>(14.27 ft.)</td>
<td>(0.49 ft.)</td>
</tr>
</tbody>
</table>

4. Technical Specifications

   A. Power Supply:
      - Two-Phase, 115 V, 400 Hz
      - 28V DC.

   B. Electrical Connector for Servicing:
C. Pin Allocation:

<table>
<thead>
<tr>
<th>Pin Identification</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>28V DC</td>
</tr>
<tr>
<td>B</td>
<td>0V DC</td>
</tr>
<tr>
<td>D</td>
<td>115V AC</td>
</tr>
<tr>
<td>E</td>
<td>0V AC</td>
</tr>
<tr>
<td>G</td>
<td>PWR SPLY</td>
</tr>
<tr>
<td>H</td>
<td>INT LOCK</td>
</tr>
</tbody>
</table>

**NOTE**: The power cable should be extendable in order to guarantee fit and non-interference with nose gear nor tow vehicle during the pick-up and the towing process. The connector shall be secured against pull-out by means of straps against the nose gear.

**ON A/C A350-900**

5. A/C Emergency Generation

**NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>RAT Safety-Pin Installation: Access Panel 198VR</td>
<td>39.48 m (129.53 ft.)</td>
<td>2.50 m (8.2 ft.)</td>
</tr>
</tbody>
</table>

**ON A/C A350-1000**

6. A/C Emergency Generation

**NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>RAT Safety-Pin Installation: Access Panel 198VR</td>
<td>44.00 m (144.36 ft.)</td>
<td>2.50 m (8.2 ft.)</td>
</tr>
</tbody>
</table>
Electrical Service Panel
FIGURE-5-4-3-991-001-A01
**ON A/C A350-1000 A350-900

RAT

FIGURE-5-4-3-991-003-A01
5-4-4 Oxygen Servicing

**ON A/C A350-1000 A350-900**

Oxygen Servicing

1. General
   The A350 XWB oxygen servicing is designed to supply oxygen to the cockpit and the cabin.

2. Technical Specifications
   - Refilling of the oxygen sources is accomplished by the replacement of the units.
   - An optional filling port and associated devices can be installed at the rear triangular area of the FWD cargo door to allow in-situ flight crew oxygen replenishment.
**ON A/C A350-900

Oxygen System
FIGURE-5-4-4-991-001-A01
**ON A/C A350-900

Crew Oxygen Storage - Location
FIGURE-5-4-4-991-002-A01
5-4-5 Fuel Servicing

**ON A/C A350-1000 A350-900

Fuel Servicing**

**ON A/C A350-900**

1. Refuel/Defuel Control Panel

   **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>Refuel/Defuel Control Panel: Access Door 197KB</td>
<td>36.20 m (118.77 ft.)</td>
<td>On centerline</td>
</tr>
</tbody>
</table>

2. Refuel/Defuel Connectors

   **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>Refuel/Defuel Coupling, Left (Optional): Access Door 523EB</td>
<td>32.57 m (106.86 ft.)</td>
<td>15.83 m (51.94 ft.)</td>
</tr>
<tr>
<td>Refuel/Defuel Coupling, Right: Access Door 623EB</td>
<td>32.57 m (106.86 ft.)</td>
<td>15.83 m (51.94 ft.)</td>
</tr>
</tbody>
</table>

   A. Refuel/Defuel couplings:
      - Two standard 2.5 in. ISO 45 connections on the right wing,
      - Two standard 2.5 in. ISO 45 connections on the left wing (optional).

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

3. Overpressure Protector and NACA Flame Arrestor

   **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.
<table>
<thead>
<tr>
<th>ACCESS</th>
<th>AFT OF NOSE</th>
<th>FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>LH SIDE</td>
<td>RH SIDE</td>
</tr>
<tr>
<td>Overpressure Protector</td>
<td>38.24 m</td>
<td>22.33 m</td>
<td>22.33 m</td>
</tr>
<tr>
<td></td>
<td>(125.46 ft.)</td>
<td>(73.26 ft.)</td>
<td>(73.26 ft.)</td>
</tr>
<tr>
<td>NACA Flame Arrestor</td>
<td>38.69 m</td>
<td>23.07 m</td>
<td>23.07 m</td>
</tr>
<tr>
<td></td>
<td>(126.94 ft.)</td>
<td>(75.69 ft.)</td>
<td>(75.69 ft.)</td>
</tr>
</tbody>
</table>

**ON A/C A350-1000**

4. Refuel/Defuel Control Panel

**NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE</th>
<th>FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
<td>RH SIDE</td>
</tr>
<tr>
<td>Refuel/Defuel Control Panel: Access Door 197KB</td>
<td>40.11 m</td>
<td>On centerline</td>
<td>2.18 m</td>
</tr>
<tr>
<td></td>
<td>(131.59 ft.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Refuel/Defuel Connectors

**NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE</th>
<th>FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
<td>RH SIDE</td>
</tr>
<tr>
<td>Refuel/Defuel Coupling, Left (Optional): Access Door 523EB</td>
<td>36.49 m</td>
<td>15.83 m</td>
<td>5.50 m</td>
</tr>
<tr>
<td></td>
<td>(119.72 ft.)</td>
<td>(51.94 ft.)</td>
<td>(18.04 ft.)</td>
</tr>
<tr>
<td>Refuel/Defuel Coupling, Right: Access Door 623EB</td>
<td>36.49 m</td>
<td>15.83 m</td>
<td>5.50 m</td>
</tr>
<tr>
<td></td>
<td>(119.72 ft.)</td>
<td>(51.94 ft.)</td>
<td>(18.04 ft.)</td>
</tr>
</tbody>
</table>

A. Refuel/Defuel couplings:
- Two standard 2.5 in. ISO 45 connections on the right wing,
- Two standard 2.5 in. ISO 45 connections on the left wing (optional).

B. Refuel pressure:
- Maximum pressure: 3.45 bar (50 psi).
6. Overpressure Protector and NACA Flame Arrestor

**NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>AFT OF NOSE</th>
<th>FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>LH SIDE</td>
<td>RH SIDE</td>
</tr>
<tr>
<td>Overpressure Protector</td>
<td>42.05 m</td>
<td>22.33 m</td>
<td>22.33 m</td>
</tr>
<tr>
<td></td>
<td>(137.96 ft.)</td>
<td>(73.26 ft.)</td>
<td>(73.26 ft.)</td>
</tr>
<tr>
<td>NACA Flame Arrestor</td>
<td>42.50 m</td>
<td>23.07 m</td>
<td>23.07 m</td>
</tr>
<tr>
<td></td>
<td>(139.44 ft.)</td>
<td>(75.69 ft.)</td>
<td>(75.69 ft.)</td>
</tr>
</tbody>
</table>
**ON A/C A350-1000 A350-900

Refuel/Defuel Control Panel
FIGURE-5-4-5-991-001-A01
**ON A/C A350-1000 A350-900**

Refuel/Defuel Couplings

FIGURE-5-4-5-991-002-B01
**ON A/C A350-1000 A350-900**

Overpressure Protectors and NACA Flame Arrestor

FIGURE-5-4-5-991-003-A01
5-4-6 Pneumatic Servicing

**ON A/C A350-1000 A350-900

Pneumatic Servicing

**ON A/C A350-900

1. Low Pressure Connectors

   **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>Access Door 193CB</td>
<td>23.58 m (77.36 ft.)</td>
<td>1.05 m (3.44 ft.)</td>
</tr>
<tr>
<td>Access Door 194CR</td>
<td>23.58 m (77.36 ft.)</td>
<td>1.87 m (6.14 ft.)</td>
</tr>
</tbody>
</table>

   A. Connectors:
      - Two standard 8 in. SAE AS4262 type B connections.

2. High Pressure Connectors

   **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>Access Door 193KB</td>
<td>26.81 m (87.96 ft.)</td>
<td>On Centerline</td>
</tr>
</tbody>
</table>

   A. Connectors:
      - Two standard 3 in. ISO 2026 connections.

**ON A/C A350-1000

3. Low Pressure Connectors

   **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.
<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>Access Door 193CB</td>
<td>27.39 m (89.86 ft.)</td>
<td>1.05 m (3.44 ft.)</td>
</tr>
<tr>
<td>Access Door 194CR</td>
<td>27.39 m (89.86 ft.)</td>
<td>1.86 m (6.10 ft.)</td>
</tr>
</tbody>
</table>

A. Connectors:
- Two standard 8 in. SAE AS4262 type B connections.

4. High Pressure Connectors

**NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>Access Door 193KB</td>
<td>30.77 m (100.95 ft.)</td>
<td>On Centerline</td>
</tr>
</tbody>
</table>

A. Connectors:
- Two standard 3 in. ISO 2026 connections.
**ON A/C A350-1000 A350-900**

Low Pressure Ground Connectors
FIGURE-5-4-6-991-001-A01
**ON A/C A350-1000 A350-900**

High Pressure Ground Connectors

FIGURE-5-4-6-991-002-A01
5-4-7 Oil Servicing

**ON A/C A350-1000 A350-900

Engine Oil Servicing

**ON A/C A350-900

1. Engine Oil Servicing

   **NOTE:** The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LH SIDE</td>
<td>RH SIDE</td>
</tr>
<tr>
<td>Engine 1: Access Door 415BR</td>
<td>24.75 m (81.20 ft.)</td>
<td>8.60 m (28.22 ft.)</td>
</tr>
<tr>
<td>Engine 2: Access Door 425BR</td>
<td>24.68 m (80.97 ft.)</td>
<td>12.29 m (40.32 ft.)</td>
</tr>
</tbody>
</table>

**ON A/C A350-1000

2. Engine Oil Servicing

   **NOTE:** The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LH SIDE</td>
<td>RH SIDE</td>
</tr>
<tr>
<td>Engine 1: Access Door 415BR</td>
<td>28.56 m (93.70 ft.)</td>
<td>8.60 m (28.22 ft.)</td>
</tr>
<tr>
<td>Engine 2: Access Door 425BR</td>
<td>28.49 m (93.47 ft.)</td>
<td>12.29 m (40.32 ft.)</td>
</tr>
</tbody>
</table>
**ON A/C A350-1000 A350-900**

Engine Oil Servicing
FIGURE-5-4-7-991-004-A01
**ON A/C A350-1000 A350-900**

VFG Oil Servicing

**ON A/C A350-900**

1. VFG Oil Servicing

   **NOTE:** The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>Engine 1:</td>
<td>24.32 m (79.79 ft.)</td>
<td>11.02 m (36.15 ft.)</td>
</tr>
<tr>
<td>Fan Cowl 415AL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine 2:</td>
<td>24.34 m (79.86 ft.)</td>
<td>9.86 m (32.35 ft.)</td>
</tr>
<tr>
<td>Fan Cowl 425AL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ON A/C A350-1000**

2. VFG Oil Servicing

   **NOTE:** The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>Engine 1:</td>
<td>28.13 m (92.29 ft.)</td>
<td>11.02 m (36.15 ft.)</td>
</tr>
<tr>
<td>Fan Cowl 415AL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine 2:</td>
<td>28.15 m (92.36 ft.)</td>
<td>9.86 m (32.35 ft.)</td>
</tr>
<tr>
<td>Fan Cowl 425AL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**ON A/C A350-1000 A350-900**

VFG Oil Servicing
FIGURE-5-4-7-991-009-A01
**ON A/C A350-1000 A350-900**

**Starter Oil Servicing**

**ON A/C A350-900**

1. **Starter Oil Servicing**

   **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LH SIDE</td>
<td>RH SIDE</td>
</tr>
<tr>
<td>Engine 1: Fan Cowl 415AL</td>
<td>24.60 m (80.71 ft.)</td>
<td>10.57 m (34.68 ft.)</td>
</tr>
<tr>
<td>Engine 2: Fan Cowl 425AL</td>
<td>24.60 m (80.71 ft.)</td>
<td>10.31 m (33.83 ft.)</td>
</tr>
</tbody>
</table>

**ON A/C A350-1000**

2. **Starter Oil Servicing**

   **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LH SIDE</td>
<td>RH SIDE</td>
</tr>
<tr>
<td>Engine 1: Fan Cowl 415AL</td>
<td>28.41 m (93.21 ft.)</td>
<td>10.57 m (34.68 ft.)</td>
</tr>
<tr>
<td>Engine 2: Fan Cowl 425AL</td>
<td>28.41 m (93.21 ft.)</td>
<td>10.31 m (33.83 ft.)</td>
</tr>
</tbody>
</table>
Starter Oil Servicing
FIGURE-5-4-7-991-010-A01
**ON A/C A350-1000 A350-900

APU Oil Servicing

**ON A/C A350-900

1. APU Oil Servicing

   **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE</th>
<th>FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
<td>RH SIDE</td>
</tr>
<tr>
<td>APU: Access Door 316BR</td>
<td>62.52 m (205.12 ft.)</td>
<td>0.48 m (1.57 ft.)</td>
<td>6.45 m (21.16 ft.)</td>
</tr>
</tbody>
</table>

**ON A/C A350-1000

2. APU Oil Servicing

   **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE</th>
<th>FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
<td>RH SIDE</td>
</tr>
<tr>
<td>APU: Access Door 316BR</td>
<td>69.51 m (228.05 ft.)</td>
<td>0.48 m (1.57 ft.)</td>
<td>6.45 m (21.16 ft.)</td>
</tr>
</tbody>
</table>
**ON A/C A350-1000 A350-900**

APU Oil Servicing

FIGURE-5-4-7-991-011-A01
5-4-8 Potable Water Servicing

**ON A/C A350-1000 A350-900

Potable Water Servicing

**ON A/C A350-900

1. Potable Water Servicing

   **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>Potable-Water Ground Service</td>
<td></td>
<td>50.20 m</td>
</tr>
<tr>
<td>Panel: Access Door 164AR</td>
<td></td>
<td>(164.70 ft.)</td>
</tr>
</tbody>
</table>

**ON A/C A350-1000

2. Potable Water Servicing

   **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>Potable-Water Ground Service</td>
<td></td>
<td>57.16 m</td>
</tr>
<tr>
<td>Panel: Access Door 164AR</td>
<td></td>
<td>(187.53 ft.)</td>
</tr>
</tbody>
</table>

**ON A/C A350-1000 A350-900

3. Technical Specifications

   A. Connectors:

   B. Capacity:
      - Standard configuration - two tanks (530 L (140 USgal) each): 1060 L (280 USgal),
      - Optional - two tanks (750 L (198 USgal) each): 1500 L (396 USgal).
C. Filling pressure:
   - Max filling pressure: 8.6 bar (125 psi).
**ON A/C A350-1000 A350-900

Forward Drain Port
FIGURE-5-4-8-991-006-B01
**ON A/C A350-1000 A350-900

Potable-Water Tanks Location
FIGURE-5-4-8-991-007-A01
5-4-9 Waste Water Servicing

**ON A/C A350-1000 A350-900

Waste Water Servicing

**ON A/C A350-900

1. Waste Water Servicing

   **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>Waste-Water Ground Service Panel: Access Door 171AL</td>
<td>52.21 m (171.29 ft.)</td>
<td>On centerline</td>
</tr>
</tbody>
</table>

**ON A/C A350-1000

2. Waste Water Servicing

   **NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>Waste-Water Ground Service Panel: Access Door 171AL</td>
<td>59.19 m (194.19 ft.)</td>
<td>On centerline</td>
</tr>
</tbody>
</table>

**ON A/C A350-1000 A350-900

3. Technical Specifications

   A. Connectors:
      - Draining: 4 in. (ISO 17775).
      - Flushing and filling: 1 in. (ISO 17775).

   B. Usable waste tank capacity:
      - Standard configuration - two tanks (615 L (162 USgal) each): 1230 L (325 USgal).
C. Waste tank - Rinsing:
   - Operating pressure: 3.5 bar (50 psi).

D. Waste tank - Precharge:
   - No precharge required.
**ON A/C A350-1000 A350-900**

Waste-Water Ground Service Panel

FIGURE-5-4-9-991-001-A01
**ON A/C A350-1000 A350-900**

Waste Tanks Location
FIGURE-5-4-9-991-002-A01
5-4-10 Cargo Control Panels

**ON A/C A350-1000 A350-900

Cargo Control Panels

**ON A/C A350-900

1. Cargo Control Panels

**NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>FWD Cargo Door Control Panel: Access Door 132AR</td>
<td>9.59 m (31.46 ft.)</td>
<td>2.48 m (8.14 ft.)</td>
</tr>
<tr>
<td>FWD CLS* Panel: Access Door 132BR</td>
<td>9.59 m (31.46 ft.)</td>
<td>2.77 m (9.09 ft.)</td>
</tr>
<tr>
<td>AFT Cargo Door Control Panel: Access Door 152AR</td>
<td>45.18 m (148.23 ft.)</td>
<td>2.46 m (8.07 ft.)</td>
</tr>
<tr>
<td>AFT CLS* Panel: Access Door 152BR</td>
<td>45.37 m (148.85 ft.)</td>
<td>2.84 m (9.32 ft.)</td>
</tr>
</tbody>
</table>

**NOTE**: * CLS - CARGO LOADING SYSTEMS

**ON A/C A350-1000

2. Cargo Control Panels

**NOTE**: The mean height from ground in the below table may change according to the CG position and aircraft weight.

<table>
<thead>
<tr>
<th>ACCESS</th>
<th>DISTANCE FROM AIRCRAFT CENTERLINE</th>
<th>MEAN HEIGHT FROM GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>FWD Cargo Door Control Panel: Access Door 132AR</td>
<td>9.59 m (31.46 ft.)</td>
<td>2.48 m (8.14 ft.)</td>
</tr>
<tr>
<td>FWD CLS* Panel: Access Door 132BR</td>
<td>9.59 m (31.46 ft.)</td>
<td>2.77 m (9.09 ft.)</td>
</tr>
<tr>
<td>ACCESS</td>
<td>DISTANCE FROM AIRCRAFT CENTERLINE</td>
<td>MEAN HEIGHT FROM GROUND</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td></td>
<td>AFT OF NOSE</td>
<td>LH SIDE</td>
</tr>
<tr>
<td>AFT Cargo Door Control Panel: Access Door 152AR</td>
<td>52.17 m (171.16 ft.)</td>
<td>2.46 m (8.07 ft.)</td>
</tr>
<tr>
<td>AFT CLS* Panel: Access Door 152BR</td>
<td>52.36 m (171.78 ft.)</td>
<td>2.84 m (9.32 ft.)</td>
</tr>
</tbody>
</table>

**NOTE:** *CLS - CARGO LOADING SYSTEMS*
**ON A/C A350-1000 A350-900**

Forward Cargo Control Panels
FIGURE-5-4-10-991-003-A01
**ON A/C A350-1000 A350-900**

Aft Cargo Control Panels

FIGURE-5-4-10-991-004-A01

NOTE:

01 ❯ OUTSIDE CARGO LOADING SYSTEM CONTROL PANEL

02 ❯ CARGO DOOR CONTROL PANEL
5-5-0 Engine Starting Pneumatic Requirements

**ON A/C A350-1000 A350-900**

Engine Starting Pneumatic Requirements

1. The purpose of this section is to provide the minimum air data requirements at the aircraft connection, needed to start the engine within no more than 90 seconds, at sea level (0 feet), for a set of Outside Air Temperatures (OAT).

<table>
<thead>
<tr>
<th>ABBREVIATION</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/C</td>
<td>Aircraft</td>
</tr>
<tr>
<td>ASU</td>
<td>Air Start Unit</td>
</tr>
<tr>
<td>HPGC</td>
<td>High Pressure Ground Connection</td>
</tr>
<tr>
<td>OAT</td>
<td>Outside Air Temperature</td>
</tr>
</tbody>
</table>

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

B. For the requirements below, the configuration with two HPGC is used. Using one connector only (for a given mass flow rate and discharge pressure from the ASU) will increase the pressure loss in the ducts of the bleed system and therefore lower the performances at the engine starter.

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

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

E. To protect the A/C, the charts feature, if necessary:
   - The maximum discharge pressure at the HPGC
   - The maximum discharge temperature at the HPGC.
**ON A/C A350-1000 A350-900**

ROLLS ROYCE TRENT XWB/SEA LEVEL
STARTING TIME: LESS THAN 90 s
AIR DATA AT AIRCRAFT CONNECTION (TWO CONNECTORS)

OUTSIDE AIR TEMPERATURE OAT (° C)
OUTSIDE AIR TEMPERATURE OAT (° F)

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

EXAMPLE:
FOR AN OAT OF 15° C (59° F) AND AN ASU PROVIDING A DISCHARGE TEMPERATURE OF 260° C (500° F) AT HPGC:
– THE REQUIRED PRESSURE AT HPGC IS 41 psia
– THE REQUIRED AIRFLOW AT HPGC IS 102 kg/min.

EXAMPLE:
FOR AN OAT OF 15° C (59° F) AND AN ASU PROVIDING A DISCHARGE TEMPERATURE OF 200° C (392° F) AT HPGC, INTERPOLATING BETWEEN THE LINES 140° C (284° F) AND 260° C (500° F) RESULTS IN:
– A REQUIRED PRESSURE AT HPGC OF 42.5 psia
– A REQUIRED AIRFLOW AT HPGC OF 114 kg/min.

Example for Use of the Charts
FIGURE-5-5-0-991-001-A01
**ON A/C A350-1000 A350-900**

**ROLLS ROYCE TRENT XWB/SEA LEVEL**

**STARTING TIME: LESS THAN 90 s**

**AIR DATA AT AIRCRAFT CONNECTION (TWO CONNECTORS)**

---

**ASU DISCHARGE TEMPERATURE:**
- 70°C (158°F)
- 140°C (284°F)
- 260°C (500°F) MAX

---

Engine Starting Pneumatic Requirements

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

**ON A/C A350-1000 A350-900**

Ground Pneumatic Power Requirements

1. General
   This section provides the time necessary to cool down or heat up the aircraft cabin to the applicable temperature (dynamic cases with aircraft empty).

<table>
<thead>
<tr>
<th>ABBREVIATION</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/C</td>
<td>Aircraft</td>
</tr>
<tr>
<td>AHM</td>
<td>Aircraft Handling Manual</td>
</tr>
<tr>
<td>GSE</td>
<td>Ground Service Equipment</td>
</tr>
<tr>
<td>IFE</td>
<td>In-Flight Entertainment</td>
</tr>
<tr>
<td>LP</td>
<td>Low Pressure</td>
</tr>
<tr>
<td>OAT</td>
<td>Outside Air Temperature</td>
</tr>
<tr>
<td>PCA</td>
<td>Pre-Conditioned Air</td>
</tr>
</tbody>
</table>

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

   **NOTE**: The cooling capability of a vapour-compression refrigeration system is frequently expressed on the basis of tons of refrigeration (1 ton \(\equiv 3.5\) kW), which is the rate of heat transfer in the evaporator (or the rate of heat transfer to the air passing through the evaporator). The cooling capability of the equipment (kW) is only indication and is not sufficient by itself to make sure of the performance. The air temperature and flow rate combinations at A/C inlet are the requirements that the equipment must obey to make sure this performance.

B. The air flow rates and temperature requirements for the GSE are given for the A/C in the configuration "2 LP ducts connected".

   **NOTE**: The maximum air flow is operated by the limitation on pressure at the ground connection.

C. For temperatures at ground connection below 2 deg.C (35.60 deg.F) (Subfreezing), the ground equipment shall be compliant with the Airbus document "Subfreezing PCA Carts - Compliance Document for Suppliers" (contact Airbus to get this document) defining all the requirements with which Subfreezing Pre-Conditioning Air equipment must comply to allow its use on Airbus aircraft. These requirements are in addition to the functional specifications included in the IATA AHM997.
**ON A/C A350-900**

2. Ground Pneumatic Power Requirements
   This section provides the ground pneumatic power requirements for:
   - Heating (pull up) the cabin, initially at OAT, up to 21 deg.C (69.80 deg.F) (FIGURE 5-6-0-991-001-A – Sheet 1).
   - Cooling (pull down) the cabin, initially at OAT, down to 27 deg.C (80.60 deg.F) (FIGURE 5-6-0-991-001-A – Sheet 2).

**ON A/C A350-1000**

3. Ground Pneumatic Power Requirements
   This section provides the ground pneumatic power requirements for:
   - Heating (pull up) the cabin, initially at OAT, up to 21 deg.C (69.80 deg.F) (FIGURE 5-6-0-991-002-A – Sheet 1).
   - Cooling (pull down) the cabin, initially at OAT, down to 27 deg.C (80.60 deg.F) (FIGURE 5-6-0-991-002-A – Sheet 2).
**ON A/C A350-900

PULL UP PERFORMANCE (70° C (158° F) AT A/C INLET)

- PU1: OAT ISA -38° C (100.40° F); A/C INLET 70° C (158° F); A/C EMPTY; IFE OFF; NO SOLAR LOAD; LIGHTS ON; RECIRCULATION FANS ON
- PU2: OAT ISA -45° C (-113° F); A/C INLET 70° C (158° F); A/C EMPTY; IFE OFF; NO SOLAR LOAD; LIGHTS ON; RECIRCULATION FANS ON

Ground Pneumatic Power Requirements
Heating (Sheet 1 of 2)
FIGURE-5-6-0-991-001-A01
**ON A/C A350-900**

<table>
<thead>
<tr>
<th>TIME TO COOL CABIN TO 27° C (80.60° F) ON GROUND (min)</th>
<th>10</th>
<th>30</th>
<th>50</th>
<th>70</th>
<th>90</th>
<th>110</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAXIMUM ALLOWED AIR FLOW (RECIRCULATION FANS ON)</td>
<td>2.5</td>
<td>2.7</td>
<td>2.9</td>
<td>3.0</td>
<td>3.1</td>
<td>3.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AIR FLOW RATE AT A/C INLET (kg/s)</th>
<th>2.5</th>
<th>2.7</th>
<th>2.9</th>
<th>3.0</th>
<th>3.1</th>
<th>3.2</th>
</tr>
</thead>
</table>

---

**PD4:** OAT ISA 23° C (73.40° F); A/C INLET 2° C (35.60° F); A/C EMPTY; IFE OFF; SOLAR LOAD; LIGHTS ON; RECIRCULATION FANS ON

**PD5:** OAT ISA 23° C (73.40° F); A/C INLET −10° C (−50° F); A/C EMPTY; IFE OFF; SOLAR LOAD; LIGHTS ON; RECIRCULATION FANS ON

Ground Pneumatic Power Requirements

Cooling (Sheet 2 of 2)

FIGURE-5-6-0-991-001-A01
**ON A/C A350-1000

**AIR FLOW RATE AT A/C INLET (kg/s)**

2.5 2.7 2.9 3.1 3.3 3.5 3.6 3.7 3.9

**MAXIMUM ALLOWED AIR FLOW (RECIRCULATION FANS ON)**

30.0 40.0 50.0 60.0 70.0 80.0 90.0

**PULL UP PERFORMANCE (70° C (158° F) AT A/C INLET)**

**TIME TO HEAT CABIN TO 21 °C (69.80 °F) ON GROUND (min)**

---

**PU1**: OAT ISA −38 °C (−100.40 °F); A/C INLET 70 °C (158 °F); A/C EMPTY; IFE OFF; NO SOLAR LOAD; LIGHTS ON; RECIRCULATION FANS ON

**PU2**: OAT ISA −45 °C (−113 °F); A/C INLET 70 °C (158 °F); A/C EMPTY; IFE OFF; NO SOLAR LOAD; LIGHTS ON; RECIRCULATION FANS ON

Ground Pneumatic Power Requirements
Heating (Sheet 1 of 2)
FIGURE-5-6-0-991-002-A01
**ON A/C A350-1000

PULL DOWN PERFORMANCE

<table>
<thead>
<tr>
<th>AIR FLOW RATE AT A/C INLET (kg/s)</th>
<th>MAXIMUM ALLOWED AIR FLOW (RECIRCULATION FANS ON)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5</td>
<td>3.5</td>
</tr>
<tr>
<td>2.7</td>
<td>3.7</td>
</tr>
<tr>
<td>2.9</td>
<td>3.9</td>
</tr>
<tr>
<td>3.1</td>
<td>4.1</td>
</tr>
<tr>
<td>3.3</td>
<td>4.5</td>
</tr>
<tr>
<td>3.5</td>
<td>4.6</td>
</tr>
<tr>
<td>3.7</td>
<td>4.7</td>
</tr>
<tr>
<td>3.9</td>
<td>4.8</td>
</tr>
<tr>
<td>4.1</td>
<td>4.9</td>
</tr>
<tr>
<td>4.3</td>
<td>5.0</td>
</tr>
<tr>
<td>4.5</td>
<td>5.1</td>
</tr>
</tbody>
</table>

PD4: OAT ISA 23° C (73.40° F); A/C INLET 2° C (35.60° F); A/C EMPTY; IFE OFF; SOLAR LOAD; LIGHTS ON; RECIRCULATION FANS ON

PD4A: OAT ISA 23° C (73.40° F); A/C INLET -10° C (-50° F); A/C EMPTY; IFE OFF; SOLAR LOAD; LIGHTS ON; RECIRCULATION FANS ON

Ground Pneumatic Power Requirements
Cooling (Sheet 2 of 2)
FIGURE-5-6-0-991-002-A01
5-7-0 Preconditioned Airflow Requirements

**ON A/C A350-1000 A350-900**

Preconditioned Airflow Requirements

1. This section gives the preconditioned airflow rate and temperature necessary to keep the cabin temperature at 24 deg.C (75.20 deg.F).

   These settings must not be used for operation (they are not alternatives for the settings given in the AMM). They are based on theoretical simulations and give the picture of a real steady state.

   The function of the air conditioning (cooling) on the ground (described in the AMM) is to keep the cabin temperature below 24 deg.C (75.20 deg.F) during the boarding-up and until the dispatch of the aircraft (thus it is not a steady state).
**ON A/C A350-900

COOLING/HEATING PERFORMANCE (24° C (75.20° F) CABIN)

MAXIMUM ALLOWED AIR FLOW (RECIRCULATION FANS ON)

Air Flow Rate at Aircraft Inlet (kg/s)

-50 -40 -30 -20 -10 0 10 20 30 40 50

-50 -40 -30 -20 -10 0 10 20 30 40 50

Temperature at Aircraft Inlet (°C)

OAT ISA 23° C (73.40° F); AIRCRAFT EMPTY; IFE OFF; LIGHTS ON; SOLAR LOAD; RECIRCULATION FANS ON

OAT ISA; AIRCRAFT EMPTY; IFE OFF; LIGHTS ON; SOLAR LOAD; RECIRCULATION FANS ON

OAT ISA –38° C (–100.40° F); AIRCRAFT EMPTY; IFE OFF; NO SOLAR LOAD; LIGHTS ON; RECIRCULATION FANS ON

OAT ISA –55° C (–131° F); AIRCRAFT EMPTY; IFE OFF; NO SOLAR LOAD; LIGHTS ON; RECIRCULATION FANS ON

Preconditioned Airflow Requirements
FIGURE-5-7-0-991-001-A01
**ON A/C A350-1000

COOLING/HEATING PERFORMANCE (24° C (75.20° F) CABIN)

MAXIMUM ALLOWED AIR FLOW (RECIRCULATION FANS ON)

- SETTINGS NOT INTENDED TO BE USED FOR OPERATION

- OAT ISA 23° C (73.40° F); AIRCRAFT EMPTY; IFE OFF; LIGHTS ON; SOLAR LOAD; RECIRCULATION FANS ON
- OAT ISA; AIRCRAFT EMPTY; IFE OFF; LIGHTS ON; SOLAR LOAD; RECIRCULATION FANS ON
- OAT ISA −38° C (−100.40° F); AIRCRAFT EMPTY; IFE OFF; NO SOLAR LOAD; LIGHTS ON; RECIRCULATION FANS ON
- OAT ISA −55° C (−131° F); AIRCRAFT EMPTY; IFE OFF; NO SOLAR LOAD; LIGHTS ON; RECIRCULATION FANS ON

Preconditioned Airflow Requirements
FIGURE-5-7-0-991-002-B01
Ground Towing Requirements

**ON A/C A350-1000 A350-900**

Ground Towing Requirements

1. This section provides information on aircraft towing.

   The A350 is designed with means for conventional or towbarless towing. Information/procedures can be found in chapter 9 of the Aircraft Maintenance Manual. Status on towbarless towing equipment qualification can be found in ISI 09.11.00001.

   **NOTE**: The NLG steering deactivation pin has the same design for all Airbus programs. It is possible to tow or push the aircraft, at maximum ramp weight with engines at zero or up to idle thrust, using a towbar attached to the NLG.

   One towbar fitting is installed at the front of the leg (optional towing fitting for towing from the rear of the NLG available).

   The main landing gears have attachment points for towing or debogging (for details, ARM 7).

   This section shows the chart to determine the drawbar pull and tow tractor mass requirements as a function of the following physical characteristics:

   - Aircraft weight,
   - Number of engines at idle,
   - Slope.

   The chart is based on the A350 engine type with the highest idle thrust. The chart is therefore valid for all A350 models.

2. Towbar design guidelines

   The A350 towbar requirements are identical to the towbar requirements of the long range aircraft.

   - ISO 8267-1, "Aircraft - Towbar Attachment Fitting - Interface Requirements - Part 1: Main Line Aircraft",
   - ISO 9667, "Aircraft Ground Support Equipment - Towbars",
   - IATA Airport Handling Manual AHM 958, "Functional Specification for an Aircraft Towbar".

   A conventional type towbar is required which should be equipped with a damping system (to protect the NLG against jerks) and with towing shear pins:

   - A traction shear pin calibrated at 28 620 daN (64 340 lbf),
   - A torsion pin calibrated at 3 130 m.daN (277 028 lbf.in).

   The towing head is designed according to ISO 8267–1, cat. III.
**ON A/C A350-1000 A350-900**

EXAMPLE HOW TO DETERMINE THE MASS REQUIREMENT TO TOW A A350–900 AT 250 000 kg, AT 2% SLOPE, 1 ENGINE AT IDLE AND FOR WET TARMAC CONDITIONS:

- ON THE RIGHT HAND SIDE OF THE GRAPH, CHOOSE THE RELEVANT AIRCRAFT WEIGHT (250 000 kg),
- FROM THIS POINT DRAW A PARALLEL LINE TO THE REQUIRED SLOPE PERCENTAGE (2%),
- FROM THIS POINT OBTAINED DRAW A STRAIGHT HORIZONTAL LINE UNTIL No. OF ENGINES AT IDLE = 2,
- FROM THIS POINT DRAW A PARALLEL LINE TO THE REQUESTED NUMBER OF ENGINES (1),
- FROM THIS POINT DRAW A STRAIGHT HORIZONTAL LINE TO THE DRAWBAR PULL AXIS,
- THE Y–COORDINATE OBTAINED IS THE NECESSARY DRAWBAR PULL FOR THE TRACTOR (15 800 kg),
- SEARCH THE INTERSECTION WITH THE "WET CONCRETE" LINE.
  THE OBTAINED X–COORDINATE IS THE TOTAL TRACTION WHEEL LOAD (27 770 kg).

EXAMPLE HOW TO DETERMINE THE MASS REQUIREMENT TO TOW A A350–1000 AT 310 000 kg, AT 2% SLOPE, 1 ENGINE AT IDLE AND FOR WET TARMAC CONDITIONS:

- ON THE RIGHT HAND SIDE OF THE GRAPH, CHOOSE THE RELEVANT AIRCRAFT WEIGHT (310 000 kg),
- FROM THIS POINT DRAW A PARALLEL LINE TO THE REQUIRED SLOPE PERCENTAGE (2%),
- FROM THIS POINT OBTAINED DRAW A STRAIGHT HORIZONTAL LINE UNTIL No. OF ENGINES AT IDLE = 2,
- FROM THIS POINT DRAW A PARALLEL LINE TO THE REQUESTED NUMBER OF ENGINES (1),
- FROM THIS POINT DRAW A STRAIGHT HORIZONTAL LINE TO THE DRAWBAR PULL AXIS,
- THE Y–COORDINATE OBTAINED IS THE NECESSARY DRAWBAR PULL FOR THE TRACTOR (19 400 kg),
- SEARCH THE INTERSECTION WITH THE "WET CONCRETE" LINE.
  THE OBTAINED X–COORDINATE IS THE TOTAL TRACTION WHEEL LOAD (34 080 kg).

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

Ground Towing Requirements
FIGURE-5-8-0-991-001-A01
De-Icing and External Cleaning

**ON A/C A350-1000 A350-900**

1. De-Icing and External Cleaning on Ground
   The mobile equipment for aircraft de-icing and external cleaning must be capable of reaching heights up to approximately 17 m (56 ft.).

2. De-Icing

<table>
<thead>
<tr>
<th>AIRCRAFT TYPE</th>
<th>Wing Top Surface (Both Sides)</th>
<th>Wingtip Devices (Both Inside and Outside Surfaces) (Both Sides)</th>
<th>HTP Top Surface (Both Sides)</th>
<th>VTP (Both Sides)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A350–900</td>
<td>354 m² (3 810 ft.²)</td>
<td>25 m² (269 ft.²)</td>
<td>72 m² (775 ft.²)</td>
<td>102 m² (1 098 ft.²)</td>
</tr>
<tr>
<td>A350–1000</td>
<td>370 m² (3 983 ft.²)</td>
<td>30 m² (323 ft.²)</td>
<td>72 m² (775 ft.²)</td>
<td>102 m² (1 098 ft.²)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AIRCRAFT TYPE</th>
<th>Fuselage Top Surface (Top Third - 120° Arc)</th>
<th>Nacelle and Pylon (Top Third - 120° Arc) (All Engines)</th>
<th>Total De-Iced Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>A350–900</td>
<td>357 m² (3 843 ft.²)</td>
<td>56 m² (603 ft.²)</td>
<td>966 m² (10 398 ft.²)</td>
</tr>
<tr>
<td>A350–1000</td>
<td>395 m² (4 252 ft.²)</td>
<td>56 m² (603 ft.²)</td>
<td>1 024 m² (11 022 ft.²)</td>
</tr>
</tbody>
</table>

**NOTE:** Dimensions are approximate.

3. External Cleaning

<table>
<thead>
<tr>
<th>AIRCRAFT TYPE</th>
<th>Wing Top Surface (Both Sides)</th>
<th>Wing Lower Surface (Including Flap Track Fairing) (Both Sides)</th>
<th>Wingtip Devices (Both Inside and Outside Surfaces) (Both Sides)</th>
<th>HTP Top Surface (Both Sides)</th>
<th>HTP Lower Surface (Both Sides)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A350–900</td>
<td>354 m² (3 810 ft.²)</td>
<td>384 m² (4 133 ft.²)</td>
<td>25 m² (269 ft.²)</td>
<td>72 m² (775 ft.²)</td>
<td>72 m² (775 ft.²)</td>
</tr>
<tr>
<td>A350–1000</td>
<td>370 m² (3 983 ft.²)</td>
<td>399 m² (4 295 ft.²)</td>
<td>30 m² (323 ft.²)</td>
<td>72 m² (775 ft.²)</td>
<td>72 m² (775 ft.²)</td>
</tr>
</tbody>
</table>
### Aircraft Characteristics - Airport and Maintenance Planning

**Aircraft Type**

<table>
<thead>
<tr>
<th>Aircraft Type</th>
<th>VTP (Both Sides)</th>
<th>Fuselage and Belly Fairing</th>
<th>Nacelle and Pylon (All Engines)</th>
<th>Total Cleaned Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>A350–900</td>
<td>102 m² (1 098 ft.²)</td>
<td>1,073 m² (11,550 ft.²)</td>
<td>166 m² (1,787 ft.²)</td>
<td>2,242 m² (24,133 ft.²)</td>
</tr>
<tr>
<td>A350–1000</td>
<td>102 m² (1 098 ft.²)</td>
<td>1,187 m² (12,777 ft.²)</td>
<td>166 m² (1,787 ft.²)</td>
<td>2,392 m² (25,747 ft.²)</td>
</tr>
</tbody>
</table>

**Note:** Dimensions are approximate.
**ON A/C A350-1000 A350-900**

**Engine Exhaust Velocities and Temperatures**

1. **General**
   This section provides the estimated engine exhaust-efflux velocity and temperature contours for Ground Idle, Breakaway 11% MTO, Breakaway 22% MTO and Maximum Take-Off (MTO) conditions for the A350 engines.
   The contours are available for the Rolls-Royce Trent XWB-84 and Trent XWB-97 engines. The Maximum Take-Off data are presented at the maximum thrust rating. The Breakaway data are presented at a rating that corresponds to the minimum thrust level necessary to start the movement of the A350 at its maximum ramp weight, from a static position or when on an uphill surface with a slope of 1.5%. Breakaway thrust corresponds to 11% MTO when applied on both engines and 22% MTO when applied on a single engine (Idle thrust on the other engine).
   The Idle data are directly provided by the engine manufacturer.
   In the charts, the longitudinal distances are measured from the inboard engine core-nozzle exit section. The lateral distances are measured from the aircraft fuselage centerline.
   The estimated efflux data are shown at ISA +15K (+15°C), Sea Level Static and no headwind conditions.
   The analysis assumes that the core and the bypass streams are fully mixed by the nozzle exit plane. The effects of on-wing installation or ground proximity are not taken into account and the ambient air is assumed to be still.
   The velocity contours are presented at 50 ft/s (15 m/s), 100 ft/s (30 m/s) and 150 ft/s (46 m/s). The temperature contours are shown at ambient temperature +10K (+10°C), ambient temperature +20K (+20°C) and ambient temperature +30K (+30°C).
   In the case of the velocity contours for the Maximum Take-Off operating condition, there is some coalescence of the jet plumes from the port and starboard engines, hence the contours are presented with both a plan view and a side view for twin-engine operation.
   An axisymmetric view is also provided for this case, to be applied only for single engine operation. For the other figures, there is no interference between the two engine plumes in the operating conditions studied and hence the efflux can be adequately described by the axisymmetric contours of a single plume.
6-1-1 Engine Exhaust Velocities Contours - Ground Idle Power

**ON A/C A350-1000 A350-900

Engine Exhaust Velocities Contours - Ground Idle Power

1. This section provides engine exhaust velocities contours at ground idle power.
**ON A/C A350-1000**

Ground Idle Power - TRENT XWB-97 Engine

FIGURE-6-1-1-991-003-A01
**ON A/C A350-1000 A350-900**

**Engine Exhaust Temperatures Contours - Ground Idle Power**

1. This section provides engine exhaust temperatures contours at ground idle power.
**ON A/C A350-1000**

Ground Idle Power - TRENT XWB-97 Engine
(Sheet 1 of 2)
FIGURE-6-1-2-991-002-A01
Ground Idle Power - TRENT XWB-97 Engine
(Sheet 2 of 2)
FIGURE-6-1-2-991-002-A01
**ON A/C A350-900**

**AIRCRAFT CHARACTERISTICS - AIRPORT AND MAINTENANCE PLANNING**


*Ground Idle Power - TRENT XWB-84 Engine* (Sheet 1 of 2)

*FIGURE-6-1-2-91-001-A01*

- **TRENT XWB 84 000 lbf THRUST ENGINE - ESTIMATED EXHAUST EFFLUX TEMPERATURE CONTOURS AT GROUND IDLE SIDE VIEW**
**ON A/C A350-900**

Ground Idle Power - TRENT XWB-84 Engine
(Sheet 2 of 2)
FIGURE-6-1-2-991-001-A01
6-1-3 Engine Exhaust Velocities Contours - Breakaway Power

**ON A/C A350-1000 A350-900

Engine Exhaust Velocities Contours – Breakaway Power

1. This section provides engine exhaust velocities contours at breakaway power.
**ON A/C A350-900**

Breakaway Power (11% MTO Thrust) - TRENT XWB-84 Engine
FIGURE-6-1-3-991-001-A01
**ON A/C A350-900**

Breakaway Power (22% MTO Thrust) - TRENT XWB-84 Engine

FIGURE-6-1-3-991-002-A01
Breakaway Power (11% MTO Thrust) - TRENT XWB-97 Engine

(Sheet 1 of 2)

FIGURE-6-1-3-991-003-A01
Breakaway Power (11% MTO Thrust) - TRENT XWB-97 Engine
(Sheet 2 of 2)
FIGURE-6-1-3-991-003-A01
Breakaway Power (22% MTO Thrust) - TRENT XWB-97 Engine

FIGURE-6-1-3-991-004-A01
6-1-4 Engine Exhaust Temperatures Contours - Breakaway Power

**ON A/C A350-1000 A350-900

Engine Exhaust Temperatures Contours - Breakaway Power

1. This section provides engine exhaust temperatures contours at breakaway power.
Breakaway Power (22% MTO Thrust) - TRENT XWB-97 Engine
(Sheet 1 of 2)
FIGURE-6-1-4-991-004-A01
Breakaway Power (22% MTO Thrust) - TRENT XWB-97 Engine
(Sheet 2 of 2)
FIGURE-6-1-4-991-004-A01
Breakaway Power (11% MTO Thrust) - TRENT XWB-84 Engine
(Sheet 1 of 2)
FIGURE-6-1-4-991-001-A01
Breakaway Power (11% MTO Thrust) - TRENT XWB-84 Engine
(Sheet 2 of 2)
FIGURE-6-1-4-991-001-A01
Breakaway Power (22% MTO Thrust) - TRENТ XWB-84 Engine

(Sheet 1 of 2)

FIGURE-6-1-4-991-002-A01
Breakaway Power (22% MTO Thrust) - TRENT XWB-84 Engine

(Sheet 2 of 2)

FIGURE-6-1-4-991-002-A01
Breakaway Power (11% MTO Thrust) - TRENT XWB-97 Engine
(Sheet 1 of 2)
FIGURE-6-1-4-991-003-A01
Breakaway Power (11% MTO Thrust) - TRENT XWB-97 Engine

(Sheet 2 of 2)

FIGURE-6-1-4-991-003-A01
6-1-5  Engine Exhaust Velocities Contours - Max Take-Off Power

**ON A/C A350-1000 A350-900

Engine Exhaust Velocities Contours - Max Take-Off Power

1. This section provides engine exhaust velocities contours at max take-off power.
Max Take-Off Power - TRENT XWB-97 Engine (Twin)

FIGURE 6-1-5

TRENT XWB 97 000 lbf THRUST ENGINE – ESTIMATED EXHAUST EFFLUX VELOCITY CONTOURS AT MTO SIDE VIEW FOR TWIN ENGINE OPERATION
Max Take-Off Power - TRENT XWB-97 Engine (Twin)
(Sheet 2 of 2)
FIGURE-6-1-5-991-006-A01
Max Take-Off Power - TREN T XWB-84 Engine (Twin)
(Sheet 1 of 2)
FIGURE-6-1-5-991-004-A01
Max Take-Off Power - TREN T XWB-84 Engine (Twin)

(Sheet 2 of 2)

FIGURE-6-1-5-991-004-A01
Max Take-Off Power - TRENT XWB-97 Engine (Single)
(Sheet 2 of 2)
FIGURE-6-1-5-991-005-A01
**ON A/C A350-900**

Max Take-Off Power - TREN'TXWB-84 Engine (Single)

FIGURE-6-1-5-991-003-A01
6-1-6 Engine Exhaust Temperatures Contours - Max Take-Off Power

**ON A/C A350-1000 A350-900**

Engine Exhaust Temperatures Contours – Max Take-Off Power

1. This section provides engine exhaust temperatures contours at max take-off power.
Max Take-Off Power - TRENT XWB-97 Engine
(Sheet 1 of 2)
FIGURE-6-1-6-991-004-C01
Max Take-Off Power - TRENT XWB-97 Engine
(Sheet 2 of 2)
FIGURE-6-1-6-991-004-C01
Max Take-Off Power - TRENT XWB-84 Engine
(Sheet 1 of 2)
FIGURE-6-1-6-991-003-A01
Max Take-Off Power - TRENT XWB-84 Engine
(Sheet 2 of 2)
FIGURE-6-1-6-991-003-A01
6-3-0 Danger Areas of the Engines

**ON A/C A350-1000 A350-900

Danger Areas of the Engines

1. Danger Areas of the Engines

   The intake suction danger areas, which are plotted in this chapter, correspond to very low suction velocities in order to prevent very low density objects (hat, handkerchief) from ingestion by engines. The primary aim of those danger areas is to protect the people working around the engines.
6-3-1 Danger Areas of the Engines - Ground Idle Power

**ON A/C A350-1000 A350-900

Danger Areas of the Engines - Ground Idle Power

1. This section provides danger areas of the engines at ground idle power conditions.
**ON A/C A350-900**

Ground Idle Power - TRENT XWB-84 Engine
FIGURE-6-3-1-991-001-A01
Ground Idle Power - TRENT XWB-97 Engine

FIGURE-6-3-1-991-002-A01
6-3-3 Danger Areas of the Engines - Max Take-Off Power

**ON A/C A350-1000 A350-900**

Danger Areas of the Engines - Max Take-Off Power

1. This section provides danger areas of the engines at maximum take-off power conditions.
**ON A/C A350-900**

Max Take-Off Power - TRENT XWB-84 Engine

FIGURE-6-3-3-991-001-A01
**ON A/C A350-1000

Max Take-Off Power - TRENT XWB-97 Engine
FIGURE-6-3-3-991-002-A01
6-4-0 APU Exhaust Velocities and Temperatures

**ON A/C A350-1000 A350-900

APU Exhaust Velocities and Temperatures

1. This section provides APU exhaust velocities and temperatures.
APU Exhaust Velocities and Temperatures

FIGURE-6-4-0-991-001-A01
**ON A/C A350-1000 A350-900**

**General Information**

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

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

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

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

Landing Gear Footprint:
Section 7-2-0 presents basic data on the landing gear footprint configuration, MRW and tire sizes and pressures.

Maximum Pavement Loads:
Section 7-3-0 shows maximum vertical and horizontal pavement loads for certain critical conditions at the tire-ground interfaces.

Landing Gear Loading on Pavement:
Section 7-4-0 contains charts to find these loads throughout the stability limits of the aircraft at rest on the pavement.
These MLG loads are used as the point of entry to the pavement design charts which follow, interpolating load values where necessary.

Flexible Pavement Requirements - US Army Corps of Engineers Design Method:
The report was prepared by the "U.S. Army Corps Engineers Waterways Experiment Station, Soils and Pavement Laboratory, Vicksburg, Mississippi".
The line showing 10 000 coverages is used to calculate Aircraft Classification Number (ACN).

Flexible Pavement Requirements - LCN Conversion Method:
The Load Classification Number (LCN) curves are no longer provided in section 7-6-0 since the LCN system for reporting pavement strength is obsolete, having been replaced by the ICAO recommended ACN/PCN system in 1983.
For questions regarding the LCN system, contact Airbus.

Rigid Pavement Requirements - PCA (Portland Cement Association) Design Method:
Section 7-7-0 gives the rigid pavement design curves that have been prepared with the use of the Westergaard Equation.
This is in general accordance with the procedures outlined in the Portland Cement Association publications, "Design of Concrete Airport Pavilion", 1973 and "Computer Program for Airport Pavement Design", (Program PDILB), 1967 both by Robert G. Packard.

Rigid Pavement Requirements - LCN Conversion:
The Load Classification Number (LCN) curves are no longer provided in section 7-8-0 since the LCN system for reporting pavement strength is obsolete, having been replaced by the ICAO recommended ACN/PCN system in 1983.
For questions regarding the LCN system, contact Airbus.

ACN/PCN Reporting System:
The ACN/PCN system provides a standardized international aircraft/pavement rating system replacing the various S, T, TT, LCN, AUW, ISWL, etc., rating systems used throughout the world.
ACN is the Aircraft Classification Number and PCN is the corresponding Pavement Classification Number.
An aircraft with an ACN less than or equal to the PCN can operate without restriction on the pavement.
Numerically the ACN is two times the derived single wheel load expressed in thousands of kilograms.
The derived single wheel load is defined as the load on a single tire inflated to 1.25 MPa (181 psi) that would have the same pavement requirements as the aircraft.
Computationally the ACN/PCN system uses the PCA program PDILB for rigid pavements and S-77-1 for flexible pavements to calculate ACN values.
The Airport Authority must decide on the method of pavement analysis and the results of their evaluation shown as follows:

<table>
<thead>
<tr>
<th>PAVEMENT TYPE</th>
<th>SUBGRADE CATEGORY</th>
<th>TIRE PRESSURE CATEGORY</th>
<th>EVALUATION METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>R - Rigid</td>
<td>A - High</td>
<td>W - No pressure limit</td>
<td>T - Technical</td>
</tr>
<tr>
<td>F - Flexible</td>
<td>B - Medium</td>
<td>X - High pressure limited to 1.75 MPa (254 psi)</td>
<td>U - Using Aircraft</td>
</tr>
</tbody>
</table>
### PCN

<table>
<thead>
<tr>
<th>PAVEMENT TYPE</th>
<th>SUBGRADE CATEGORY</th>
<th>TIRE PRESSURE CATEGORY</th>
<th>EVALUATION METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C - Low</td>
<td>Y - Medium pressure limited to 1.25 MPa (181 psi)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D - Ultra Low</td>
<td>Z - Low pressure limited to 0.5 MPa (73 psi)</td>
<td></td>
</tr>
</tbody>
</table>

For flexible pavements, the four subgrade categories (CBR) are:
- A. High Strength CBR 15
- B. Medium Strength CBR 10
- C. Low Strength CBR 6
- D. Ultra Low Strength CBR 3

For rigid pavements, the four subgrade categories (k) are:
- A. High Strength $k = 150 \text{ MN/m}^3$ (550 pci)
- B. Medium Strength $k = 80 \text{ MN/m}^3$ (300 pci)
- C. Low Strength $k = 40 \text{ MN/m}^3$ (150 pci)
- D. Ultra Low Strength $k = 20 \text{ MN/m}^3$ (75 pci)
Landing Gear Footprint

**ON A/C A350-1000 A350-900**

Landing Gear Footprint

1. This section provides data about the landing gear footprint in relation to the aircraft MRW and tire sizes and pressures.
   - The landing-gear footprint information is given for all the operational weight variants of the aircraft.
**ON A/C A350-900**

<table>
<thead>
<tr>
<th>WEIGHT VARIANT</th>
<th>MAXIMUM RAMP WEIGHT</th>
<th>PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP</th>
<th>NOSE GEAR TIRE SIZE</th>
<th>NOSE GEAR TIRE PRESSURE</th>
<th>MAIN GEAR TIRE SIZE</th>
<th>MAIN GEAR TIRE PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A350–900 WV000 (CG 33%)</td>
<td>268 900 kg (592 825 lb)</td>
<td>93.7%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>16.6 bar (241 psi)</td>
</tr>
<tr>
<td>A350–900 WV000 (CG 38.1%)</td>
<td>268 900 kg (592 825 lb)</td>
<td>95.3%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>16.6 bar (241 psi)</td>
</tr>
<tr>
<td>A350–900 WV001 (CG 33.2%)</td>
<td>275 900 kg (608 250 lb)</td>
<td>93.7%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>16.8 bar (244 psi)</td>
</tr>
<tr>
<td>A350–900 WV001 (CG 34.83%)</td>
<td>275 900 kg (608 250 lb)</td>
<td>94.3%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>16.8 bar (244 psi)</td>
</tr>
<tr>
<td>A350–900 WV002 (CG 36.39%)</td>
<td>272 900 kg (601 650 lb)</td>
<td>94.8%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>16.8 bar (244 psi)</td>
</tr>
<tr>
<td>A350–900 WV002 (CG 36.83%)</td>
<td>272 900 kg (601 650 lb)</td>
<td>94.9%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>16.8 bar (244 psi)</td>
</tr>
<tr>
<td>A350–900 WV003</td>
<td>268 900 kg (592 825 lb)</td>
<td>95.3%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>16.8 bar (244 psi)</td>
</tr>
</tbody>
</table>

**Landing Gear Footprint**

(Sheet 1 of 2)

FIGURE-7-2-0-991-001-A01
## ON A/C A350-900

<table>
<thead>
<tr>
<th>WEIGHT VARIANT</th>
<th>MAXIMUM RAMP WEIGHT</th>
<th>PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP</th>
<th>NOSE GEAR TIRE SIZE</th>
<th>NOSE GEAR TIRE PRESSURE</th>
<th>MAIN GEAR TIRE SIZE</th>
<th>MAIN GEAR TIRE PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A350–900 WV004</td>
<td>260 900 kg (575 175 lb)</td>
<td>95.7%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>16.6 bar (241 psi)</td>
</tr>
<tr>
<td>A350–900 WV005</td>
<td>250 900 kg (553 150 lb)</td>
<td>96.2%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>16.6 bar (241 psi)</td>
</tr>
<tr>
<td>A350–900 WV006</td>
<td>272 900 kg (601 650 lb)</td>
<td>94.8%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>16.8 bar (244 psi)</td>
</tr>
<tr>
<td>A350–900 WV007 (CG 33%)</td>
<td>268 900 kg (592 825 lb)</td>
<td>93.7%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>16.6 bar (241 psi)</td>
</tr>
<tr>
<td>A350–900 WV008 (CG 38.1%)</td>
<td>240 900 kg (531 100 lb)</td>
<td>96.7%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>15.2 bar (220 psi)</td>
</tr>
<tr>
<td>A350–900 WV009</td>
<td>275 900 kg (608 250 lb)</td>
<td>93.7%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>16.8 bar (244 psi)</td>
</tr>
<tr>
<td>A350–900 WV010</td>
<td>280 900 kg (619 275 lb)</td>
<td>93.1%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>17.1 bar (248 psi)</td>
</tr>
<tr>
<td>A350–900 WV011</td>
<td>255 900 kg (564 175 lb)</td>
<td>95.9%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>16.6 bar (241 psi)</td>
</tr>
<tr>
<td>A350–900 WV012</td>
<td>250 900 kg (553 150 lb)</td>
<td>96.2%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>16.6 bar (241 psi)</td>
</tr>
<tr>
<td>A350–900 WV013</td>
<td>280 900 kg (619 275 lb)</td>
<td>93.1%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>17.1 bar (248 psi)</td>
</tr>
<tr>
<td>A350–900 WV014</td>
<td>235 900 kg (520 075 lb)</td>
<td>96.7%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>15.2 bar (220 psi)</td>
</tr>
<tr>
<td>A350–900 WV015</td>
<td>277 900 kg (612 675 lb)</td>
<td>93.1%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>16.8 bar (244 psi)</td>
</tr>
<tr>
<td>A350–900 WV016</td>
<td>278 900 kg (614 875 lb)</td>
<td>93.8%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>17.1 bar (248 psi)</td>
</tr>
<tr>
<td>A350–900 WV017</td>
<td>210 900 kg (464 950 lb)</td>
<td>94.6%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>13.6 bar (197 psi)</td>
</tr>
<tr>
<td>A350–900 WV018</td>
<td>217 900 kg (480 375 lb)</td>
<td>94.6%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>1 400x530R23 42PR</td>
<td>13.6 bar (197 psi)</td>
</tr>
</tbody>
</table>
**ON A/C A350-1000**

### Landing Gear Footprint

**FIGURE-7-2-0-991-002-A01**

<table>
<thead>
<tr>
<th>WEIGHT VARIANT</th>
<th>MAXIMUM RAMP WEIGHT</th>
<th>PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP</th>
<th>NOSE GEAR TIRE SIZE</th>
<th>NOSE GEAR TIRE PRESSURE</th>
<th>MAIN GEAR TIRE SIZE</th>
<th>MAIN GEAR TIRE PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A350−1000 WV000 (CG 35.96%)</td>
<td>308 900 kg (681 000 lb)</td>
<td>94.7%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>50x20R22 34PR</td>
<td>15.2 bar (220 psi)</td>
</tr>
<tr>
<td>A350−1000 WV000 (CG 36.28%)</td>
<td>308 900 kg (681 000 lb)</td>
<td>94.8%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>50x20R22 34PR</td>
<td>15.2 bar (220 psi)</td>
</tr>
<tr>
<td>A350−1000 WV001</td>
<td>311 900 kg (687 625 lb)</td>
<td>94.2%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>50x20R22 34PR</td>
<td>15.2 bar (220 psi)</td>
</tr>
<tr>
<td>A350−1000 WV002</td>
<td>316 900 kg (698 650 lb)</td>
<td>93.3%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>50x20R22 34PR</td>
<td>15.2 bar (220 psi)</td>
</tr>
<tr>
<td>A350−1000 WV004</td>
<td>308 900 kg (681 000 lb)</td>
<td>94.7%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>50x20R22 34PR</td>
<td>15.2 bar (220 psi)</td>
</tr>
<tr>
<td>A350−1000 WV005</td>
<td>270 900 kg (597 225 lb)</td>
<td>96.2%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>50x20R22 34PR</td>
<td>15.2 bar (220 psi)</td>
</tr>
<tr>
<td>A350−1000 WV007</td>
<td>260 900 kg (575 175 lb)</td>
<td>96.2%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>50x20R22 34PR</td>
<td>13.1 bar (190 psi)</td>
</tr>
<tr>
<td>A350−1000 WV009</td>
<td>290 900 kg (641 325 lb)</td>
<td>95.3%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>50x20R22 34PR</td>
<td>15.2 bar (220 psi)</td>
</tr>
<tr>
<td>A350−1000 WV010</td>
<td>300 900 kg (663 375 lb)</td>
<td>95.0%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>50x20R22 34PR</td>
<td>15.2 bar (220 psi)</td>
</tr>
<tr>
<td>A350−1000 WV011</td>
<td>316 900 kg (698 650 lb)</td>
<td>93.3%</td>
<td>1 050x395R16 28PR</td>
<td>12.2 bar (177 psi)</td>
<td>50x20R22 34PR</td>
<td>15.2 bar (220 psi)</td>
</tr>
</tbody>
</table>
7-3-0 Maximum Pavement Loads

**ON A/C A350-1000 A350-900**

Maximum Pavement Loads

1. This section provides maximum vertical and horizontal pavement loads for some critical conditions at the tire-ground interfaces.

   The maximum pavement loads are given for all the operational weight variants of the aircraft.
**ON A/C A350-900**

<table>
<thead>
<tr>
<th>WEIGHT VARIANT</th>
<th>MAXIMUM RAMP WEIGHT</th>
<th>MAXIMUM Vert. Nose Gear Ground Load at Most Forward CG</th>
<th>MAXIMUM Vert. Main Gear Ground Load at Most Aft CG</th>
<th>MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A350-900 (CG 33%)</td>
<td>251,300 kg (554,000 lb)</td>
<td>23.4% MAC (a)</td>
<td>35,500 kg (78,525 lb)</td>
<td>36,260 kg (80,045 lb)</td>
</tr>
<tr>
<td>A350-900 (CG 38%)</td>
<td>253,800 kg (561,000 lb)</td>
<td>24.8% MAC (a)</td>
<td>37,000 kg (81,535 lb)</td>
<td>37,650 kg (82,590 lb)</td>
</tr>
<tr>
<td>A350-900 (CG 33%)</td>
<td>275,900 kg (608,250 lb)</td>
<td>23.4% MAC (a)</td>
<td>37,500 kg (82,675 lb)</td>
<td>38,150 kg (84,065 lb)</td>
</tr>
<tr>
<td>A350-900 (CG 33%)</td>
<td>278,900 kg (616,000 lb)</td>
<td>24.2% MAC (a)</td>
<td>40,240 kg (88,725 lb)</td>
<td>40,900 kg (90,105 lb)</td>
</tr>
</tbody>
</table>

**NOTE:**

(a) LOADS CALCULATED USING AIRCRAFT AT MRW.
(b) LOADS CALCULATED USING AIRCRAFT AT 250 200 kg (551 600 lb).
(c) BRAKED MAIN GEAR.

Maximum Pavement Loads
(Sheet 1 of 3)
FIGURE-7-3-0-991-001-A01
**ON A/C A350-900**

### Maximum Pavement Loads

<table>
<thead>
<tr>
<th>WEIGHT VARIANT</th>
<th>MAXIMUM WEIGHT</th>
<th>STATIC LOAD AT FWD CG</th>
<th>STATIC LOAD AT AFT CG</th>
<th>STEADY BRAKING AT 10 ft/s² DECELERATION</th>
<th>MAC (a)</th>
<th>MAC (b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A350−900 WV002</td>
<td>272 900 kg (601 650 lb)</td>
<td>36.15% (93 500 lb)</td>
<td>22.19% (51 730 lb)</td>
<td>25.19% (55 530 lb)</td>
<td>22.19% (51 730 lb)</td>
<td>36.15% (93 500 lb)</td>
</tr>
<tr>
<td>A350−900 WV003</td>
<td>289 800 kg (636 400 lb)</td>
<td>40.3% (88 800 lb)</td>
<td>22.11% (50 130 lb)</td>
<td>25.14% (55 270 lb)</td>
<td>22.11% (50 130 lb)</td>
<td>40.3% (88 800 lb)</td>
</tr>
<tr>
<td>A350−900 WV004</td>
<td>260 900 kg (575 000 lb)</td>
<td>38.9% (85 700 lb)</td>
<td>21.96% (49 100 lb)</td>
<td>25.0% (55 500 lb)</td>
<td>21.96% (49 100 lb)</td>
<td>38.9% (85 700 lb)</td>
</tr>
<tr>
<td>A350−900 WV005</td>
<td>250 900 kg (555 000 lb)</td>
<td>23.2% (51 600 lb)</td>
<td>21.94% (49 100 lb)</td>
<td>25.0% (55 500 lb)</td>
<td>21.94% (49 100 lb)</td>
<td>23.2% (51 600 lb)</td>
</tr>
<tr>
<td>A350−900 WV006</td>
<td>272 900 kg (601 650 lb)</td>
<td>36.15% (93 500 lb)</td>
<td>22.19% (51 730 lb)</td>
<td>25.19% (55 530 lb)</td>
<td>22.19% (51 730 lb)</td>
<td>36.15% (93 500 lb)</td>
</tr>
<tr>
<td>A350−900 WV007</td>
<td>289 800 kg (636 400 lb)</td>
<td>40.3% (88 800 lb)</td>
<td>22.11% (50 130 lb)</td>
<td>25.14% (55 270 lb)</td>
<td>22.11% (50 130 lb)</td>
<td>40.3% (88 800 lb)</td>
</tr>
<tr>
<td>A350−900 WV008</td>
<td>260 900 kg (575 000 lb)</td>
<td>38.9% (85 700 lb)</td>
<td>21.96% (49 100 lb)</td>
<td>25.0% (55 500 lb)</td>
<td>21.96% (49 100 lb)</td>
<td>38.9% (85 700 lb)</td>
</tr>
<tr>
<td>A350−900 WV009</td>
<td>250 900 kg (555 000 lb)</td>
<td>23.2% (51 600 lb)</td>
<td>21.94% (49 100 lb)</td>
<td>25.0% (55 500 lb)</td>
<td>21.94% (49 100 lb)</td>
<td>23.2% (51 600 lb)</td>
</tr>
</tbody>
</table>

NOTE:

(a) LOADS CALCULATED USING AIRCRAFT AT MRW.
(b) BRAKED MAIN GEAR.
(c) BRAKED MAIN GEAR.
<table>
<thead>
<tr>
<th>WEIGHT VARIANT</th>
<th>MAXIMUM RAMP WEIGHT</th>
<th>V_{NG}</th>
<th>V_{MG} (PER STRUT)</th>
<th>H (PER STRUT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A350–900 WV010</td>
<td>280 900 kg (619 275 lb)</td>
<td>25 080 kg (55 300 lb)</td>
<td>39 800 kg (87 750 lb)</td>
<td>43 650 kg (96 225 lb)</td>
</tr>
<tr>
<td>A350–900 WV011</td>
<td>255 900 kg (564 175 lb)</td>
<td>23 510 kg (51 825 lb)</td>
<td>37 880 kg (83 500 lb)</td>
<td>39 770 kg (87 675 lb)</td>
</tr>
<tr>
<td>A350–900 WV012</td>
<td>250 900 kg (553 150 lb)</td>
<td>23 520 kg (51 850 lb)</td>
<td>37 620 kg (82 950 lb)</td>
<td>38 990 kg (85 950 lb)</td>
</tr>
<tr>
<td>A350–900 WV013 (ULR)</td>
<td>280 900 kg (619 275 lb)</td>
<td>25 080 kg (55 300 lb)</td>
<td>39 800 kg (87 750 lb)</td>
<td>43 650 kg (96 225 lb)</td>
</tr>
<tr>
<td>A350–900 WV014</td>
<td>235 900 kg (520 075 lb)</td>
<td>22 970 kg (50 650 lb)</td>
<td>36 220 kg (79 850 lb)</td>
<td>36 660 kg (80 825 lb)</td>
</tr>
<tr>
<td>A350–900 WV015</td>
<td>277 900 kg (612 675 lb)</td>
<td>23 450 kg (51 700 lb)</td>
<td>37 500 kg (82 675 lb)</td>
<td>43 190 kg (95 225 lb)</td>
</tr>
<tr>
<td>A350–900 WV016</td>
<td>278 900 kg (614 875 lb)</td>
<td>23 650 kg (52 150 lb)</td>
<td>39 320 kg (86 675 lb)</td>
<td>43 340 kg (95 550 lb)</td>
</tr>
<tr>
<td>A350–900 WV017</td>
<td>210 900 kg (464 950 lb)</td>
<td>19 380 kg (42 725 lb)</td>
<td>31 230 kg (68 850 lb)</td>
<td>32 770 kg (72 250 lb)</td>
</tr>
<tr>
<td>A350–900 WV018</td>
<td>217 900 kg (480 375 lb)</td>
<td>20 020 kg (44 125 lb)</td>
<td>32 620 kg (71 125 lb)</td>
<td>33 860 kg (74 650 lb)</td>
</tr>
</tbody>
</table>

**NOTE:**
(a) LOADS CALCULATED USING AIRCRAFT AT MRW.
(b) LOADS CALCULATED USING AIRCRAFT AT 250 200 kg (551 600 lb).
(c) BRAKED MAIN GEAR.
(d) LOADS CALCULATED USING AIRCRAFT AT 262 135 kg (577 900 lb).
**ON A/C A350-1000**

<table>
<thead>
<tr>
<th>WEIGHT VARIANT</th>
<th>WEIGHT</th>
<th>V(NG) MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT MOST FORWARDED CG</th>
<th>V(NG) MAXIMUM VERTICAL MAIN GEAR GROUND LOAD AT MOST AFT CG</th>
<th>V(NG) MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A350-1000</td>
<td>308 900 kg (681 000 lb)</td>
<td>24.16% MAC (a)</td>
<td>48 000 kg (105 825 lb)</td>
<td>117 020 kg (257 975 lb)</td>
</tr>
<tr>
<td>A350-1000</td>
<td>308 900 kg (681 000 lb)</td>
<td>24.16% MAC (a)</td>
<td>48 000 kg (105 825 lb)</td>
<td>117 020 kg (257 975 lb)</td>
</tr>
<tr>
<td>A350-1000</td>
<td>308 900 kg (681 000 lb)</td>
<td>24.16% MAC (a)</td>
<td>48 000 kg (105 825 lb)</td>
<td>117 020 kg (257 975 lb)</td>
</tr>
<tr>
<td>A350-1000</td>
<td>308 900 kg (681 000 lb)</td>
<td>24.16% MAC (a)</td>
<td>48 000 kg (105 825 lb)</td>
<td>117 020 kg (257 975 lb)</td>
</tr>
</tbody>
</table>

**NOTE:**
(a) LOADS CALCULATED USING AIRCRAFT AT MRW.
(b) LOADS CALCULATED USING AIRCRAFT AT 310 400 kg (684 325 lb).
(c) BRAKED MAIN GEAR.
<table>
<thead>
<tr>
<th>WEIGHT VARIANT</th>
<th>MAXIMUM RAMP WEIGHT</th>
<th>STATIC LOAD AT FWD CG</th>
<th>V(NG)</th>
<th>V(NG) (PER STRUT)</th>
<th>H (PER STRUT)</th>
<th>MAC (a)</th>
<th>MAC (a)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A350−1000 WV007</td>
<td>260 900 kg (575 175 lb)</td>
<td>24 380 kg (53 750 lb)</td>
<td>21.5% MAC (a)</td>
<td>TBD</td>
<td>125 450 kg (276 575 lb)</td>
<td>41.1% MAC (a)</td>
<td>40 550 kg (89 400 lb) (c)</td>
<td>100 360 kg (221 250 lb)</td>
</tr>
<tr>
<td>A350−1000 WV009</td>
<td>290 900 kg (641 325 lb)</td>
<td>25 910 kg (57 125 lb)</td>
<td>23.06% MAC (a)</td>
<td>TBD</td>
<td>138 680 kg (305 725 lb)</td>
<td>38.21% MAC (a)</td>
<td>45 210 kg (99 675 lb) (c)</td>
<td>110 940 kg (244 575 lb) (c)</td>
</tr>
<tr>
<td>A350−1000 WV010</td>
<td>300 900 kg (663 375 lb)</td>
<td>26 270 kg (57 925 lb)</td>
<td>23.69% MAC (a)</td>
<td>TBD</td>
<td>142 900 kg (315 050 lb)</td>
<td>36.93% MAC (a)</td>
<td>46 760 kg (103 100 lb) (c)</td>
<td>114 320 kg (252 025 lb) (c)</td>
</tr>
<tr>
<td>A350−1000 WV011</td>
<td>316 900 kg (698 650 lb)</td>
<td>26 850 kg (59 200 lb)</td>
<td>24.6% MAC (a)</td>
<td>TBD</td>
<td>147 770 kg (325 775 lb)</td>
<td>30.8% MAC (a)</td>
<td>49 250 kg (108 575 lb) (c)</td>
<td>118 220 kg (260 625 lb) (c)</td>
</tr>
</tbody>
</table>

**NOTE:**
(a) LOADS CALCULATED USING AIRCRAFT AT MRW.
(c) BRAKED MAIN GEAR.
7-4-0 Landing Gear Loading on Pavement

**ON A/C A350-1000 A350-900

Landing Gear Loading on Pavement

1. This section provides data about the landing gear loading on pavement. The MLG loading on pavement graphs are given for the weight variants producing (at the MRW and maximum aft CG) the lowest MLG load and the highest MLG load for each type of aircraft. Example, FIGURE 7-4-0-991-001-A, calculation of the total weight on the MLG for:
   - An aircraft with a MRW of 210 900 kg (464 950 lb),
   - The aircraft gross weight is 210 000 kg (462 975 lb),
   - A percentage of weight on the MLG of 94.64 % (percentage of weight on the MLG at MRW and maximum aft CG at MRW).

The total weight on the MLG group is 198 740 kg (438 150 lb).

NOTE: The CG in the figure title is the CG used for ACN/LCN calculation.
**ON A/C A350-900

Landing Gear Loading on Pavement
WV017, MRW 210 900 kg, CG 36%
FIGURE-7-4-0-991-001-A01

P_AC_070400_1_0010001_01_04
**ON A/C A350-900

Landing Gear Loading on Pavement

WV013 (ULR), MRW 280 900 kg, CG 31.2%

FIGURE-7-4-0-991-002-A01
**ON A/C A350-1000**

Landing Gear Loading on Pavement
WV007, MRW 260 900 kg, CG 41.1%
FIGURE-7-4-0-991-003-A01
**ON A/C A350-1000**

<table>
<thead>
<tr>
<th>WEIGHT ON MAIN LANDING GEAR (x 1,000 kg)</th>
<th>PERCENTAGE OF WEIGHT ON MAIN GEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>80</td>
</tr>
<tr>
<td>130</td>
<td>90</td>
</tr>
<tr>
<td>140</td>
<td>100</td>
</tr>
</tbody>
</table>

**AIRCRAFT GROSS WEIGHT (x 1,000 lb)**

- 130
- 140
- 150
- 160
- 170
- 180
- 190
- 200
- 210
- 220
- 230
- 240
- 250
- 260
- 270
- 280
- 290
- 300
- 310
- 320
- 330
- 340
- 350

**CG FOR ACN/LCN CALCULATION**

- 30.8% MAC

**MTOW** − 316 000 kg

**24.6% MAC**

**MLW**

**MZFW**

**TAKE OFF**

**LANDING**

Landing Gear Loading on Pavement

WV002, MRW 316 900 kg, CG 30.8%

FIGURE-7-4-0-991-005-A01
Flexible Pavement Requirements - US Army Corps of Engineers Design Method

**ON A/C A350-1000 A350-900**

Flexible Pavement Requirements - US Army Corps of Engineers Design Method

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

Example, FIGURE 7-5-0-991-001-A, calculation of the thickness of the flexible pavement for the MLG:
   - An aircraft with a MRW of 210 900 kg (464 950 lb),
   - A "CBR" value of 10,
   - An annual departure level of 3 000,
   - The load on one MLG of 80 000 kg (176 375 lb).

The required flexible pavement thickness is 576 mm (23 in.).

**NOTE** : The CG in the figure title is the CG used for ACN calculation.
**ON A/C A350-900**

Flexible Pavement Requirements
WV017, MRW 210 900 kg, CG 36%
FIGURE-7-5-0-991-001-A01
**ON A/C A350-900**

**Flexible Pavement Requirements**

WV013 (ULR), MRW 280 900 kg, CG 31.2%

FIGURE-7-5-0-991-002-A01
**AIRCRAFT CHARACTERISTICS - AIRPORT AND MAINTENANCE PLANNING**

**ON A/C A350-1000**

**LANDING GEAR**

<table>
<thead>
<tr>
<th>Weight on One Main Landing Gear</th>
<th>(kg)</th>
<th>(lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>125 450 kg</td>
<td>276 575 lb</td>
<td></td>
</tr>
<tr>
<td>110 000 kg</td>
<td>242 500 lb</td>
<td></td>
</tr>
<tr>
<td>100 000 kg</td>
<td>220 450 lb</td>
<td></td>
</tr>
<tr>
<td>90 000 kg</td>
<td>198 425 lb</td>
<td></td>
</tr>
<tr>
<td>80 000 kg</td>
<td>176 375 lb</td>
<td></td>
</tr>
</tbody>
</table>

**MAXIMUM POSSIBLE MAIN GEAR LOAD AT MAXIMUM RAMP WEIGHT AND AFT CG**

10 000 COVERAGES USED FOR ACN CALCULATIONS

**ALPHA FACTOR** = 0.72

**SUBGRADE STRENGTH - CBR**

**FLEXIBLE PAVEMENT THICKNESS**

50x20R22 34PR TIRES

TIRE PRESSURE CONSTANT AT 13.1 bar (190 psi)

Flexible Pavement Requirements
WV007, MRW 260 900 kg, CG 41.1%

FIGURE-7-5-0-991-003-B01

7-5-0

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**ON A/C A350-1000

**FLEXIBLE PAVEMENT THICKNESS**

50x20R22 34PR TIRES

TIRE PRESSURE CONSTANT AT 15.2 bar (220 psi)

Flexible Pavement Requirements

WV002, MRW 316 900 kg, CG 30.8%

FIGURE-7-5-0-991-005-A01

**SUBGRADE STRENGTH – CBR**

WEIGHT ON ONE MAIN LANDING GEAR

- 147 770 kg (325 775 lb)
- 130 000 kg (286 600 lb)
- 120 000 kg (264 550 lb)
- 110 000 kg (242 500 lb)
- 100 000 kg (220 450 lb)

MAXIMUM POSSIBLE MAIN GEAR LOAD AT MAXIMUM RAMP WEIGHT AND AFT CG

10 000 COVERAGES USED FOR ACN CALCULATIONS

ALPHA FACTOR = 0.72

ANNUAL DEPARTURES*

- 1 200
- 3 000
- 6 000
- 15 000
- 25 000

*20 YEAR PAVEMENT LIFE

10 000 COVERAGES USED FOR ACN CALCULATIONS

ALPHA FACTOR = 0.72

ANNUAL DEPARTURES*

- 1 200
- 3 000
- 6 000
- 15 000
- 25 000

*20 YEAR PAVEMENT LIFE

FLEXIBLE PAVEMENT THICKNESS

50x20R22 34PR TIRES

TIRE PRESSURE CONSTANT AT 15.2 bar (220 psi)

Flexible Pavement Requirements

WV002, MRW 316 900 kg, CG 30.8%

FIGURE-7-5-0-991-005-A01

7-5-0
Flexible Pavement Requirements - LCN Conversion

**ON A/C A350-1000 A350-900**

Flexible Pavement Requirements - LCN Conversion

1. The Load Classification Number (LCN) curves are no longer provided in section 7-6-0 since the LCN system for reporting pavement strength is obsolete, having been replaced by the ICAO recommended ACN/PCN system in 1983.
   For questions regarding the LCN system, contact Airbus.
7-7-0  Rigid Pavement Requirements - Portland Cement Association Design Method

**ON A/C A350-1000 A350-900**

Rigid Pavement Requirements - Portland Cement Association Design Method

1. This section provides data about the rigid pavement requirements for the PCA (Portland Cement Association) design method.
   The rigid pavement requirement graphs are given at standard tire pressure for the weight variants producing (at the MRW and maximum aft CG) the lowest MLG load and the highest MLG load for each type of aircraft.
   They are calculated with the PCA design method.
   To find a rigid pavement thickness, you must know the Subgrade Modulus (k), the permitted working stress and the weight on one MLG.
   The procedure that follows is used to develop rigid pavement design curves:
   - With the scale for pavement thickness on the left and the scale for permitted working stress on the right, a random load line is made. This represents the MLG maximum weight to be shown,
   - A plot is then made of all values of the subgrade modulus (k values),
   - More load lines for the incremental values of the weight on the MLG are made based on the curve for $k = 80 \, \text{MN/m}^3$, which is already shown on the graph.

Example, FIGURE 7-7-0-991-001-A, calculation of the thickness of the rigid pavement for the MLG:
   - An aircraft with a MRW of 210 900 kg (464 950 lb),
   - A $k$ value of 80 MN/m$^3$ (300 lbf/in$^3$),
   - A permitted working stress of 35.15 kg/cm$^2$ (500 lb/in$^2$),
   - The load on one MLG of 80 000 kg (176 375 lb).

The required rigid pavement thickness is 239 mm (9 in.).

**NOTE:** The CG in the figure title is the CG used for ACN calculation.
**ON A/C A350-900**

TIRE PRESSURE CONSTANT AT 13.6 bar (197 psi)

1 400x530R23 42PR TIRES

MAXIMUM POSSIBLE MAIN GEAR LOAD AT MAXIMUM RAMP WEIGHT AND AFT CG

RIGID PAVEMENT THICKNESS (cm)

ALLOWABLE WORKING STRESS (kg/cm²)

NOTE:
The values obtained by using the maximum load reference line and any values for \( k \) are exact. For loads less than maximum, the curves are exact for \( k = 80 \text{ MN/m}^3 \) but deviate slightly for any other values of \( k \).

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

Rigid Pavement Requirements
WV017, MRW 210 900 kg, CG 36%
FIGURE-7-7-0-991-001-A01
**ON A/C A350-900

1 400x530R23 42PR TIRES
TIRE PRESSURE CONSTANT AT 17.1 bar (248 psi)

MAXIMUM POSSIBLE MAIN GEAR LOAD AT MAXIMUM RAMP WEIGHT AND AFT CG

- k = 20 MN/m³
- k = 40 MN/m³
- k = 80 MN/m³
- k = 150 MN/m³

WEIGHT ON ONE MAIN LANDING GEAR
- 130 780 kg (288 325 lb)
- 120 000 kg (264 550 lb)
- 110 000 kg (242 500 lb)
- 100 000 kg (220 450 lb)
- 90 000 kg (198 425 lb)

NOTE:
The values obtained by using the maximum load reference line and any values for k are exact. For loads less than maximum, the curves are exact for k = 80 MN/m³ but deviate slightly for any other values of k.

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

Rigid Pavement Requirements
WV013 (ULR), MRW 280 900 kg, CG 31.2%
FIGURE-7-7-0-991-002-A01
Rigid Pavement Requirements
WV007, MRW 260 900 kg, CG 41.1%
FIGURE-7-7-0-991-003-A01

**ON A/C A350-1000

NOTE:
The values obtained by using the maximum load reference line and any values for k are exact. For loads less than maximum, the curves are exact for $k = 80 \text{ MN/m}^3$ but deviate slightly for any other values of k.

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

P_AC_070700_1_0030001_01_01
**ON A/C A350-1000**

RIGID PAVEMENT REQUIREMENTS
WV002, MRW 316 900 kg, CG 30.8%
FIGURE-7-7-0-991-005-A01

NOTE:
THE VALUES OBTAINED BY USING THE MAXIMUM LOAD REFERENCE LINE AND ANY VALUES FOR k ARE EXACT. FOR LOADS LESS THAN MAXIMUM, THE CURVES ARE EXACT FOR k = 80 MN/m³ BUT DEVIATE SLIGHTLY FOR ANY OTHER VALUES OF k.

REFERENCE:
"DESIGN OF CONCRETE AIRPORT PAVEMENTS" AND "COMPUTER PROGRAM FOR AIRPORT PAVEMENT DESIGN – PROGRAM PDILB" PORTLAND CEMENT ASSOCIATION.
Rigid Pavement Requirements - LCN Conversion

**ON A/C A350-1000 A350-900**

Rigid Pavement Requirements - LCN Conversion

1. The Load Classification Number (LCN) curves are no longer provided in section 7-8-0 since the LCN system for reporting pavement strength is obsolete, having been replaced by the ICAO recommended ACN/PCN system in 1983.
   For questions regarding the LCN system, contact Airbus.
7-9-0 ACN/PCN Reporting System - Flexible and Rigid Pavements

**ON A/C A350-1000 A350-900**

ACN/PCN Reporting System - Flexible and Rigid Pavements

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

To find the ACN of an aircraft on flexible and rigid pavement, you must know the aircraft gross weight and the subgrade strength.

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


Example, FIGURE 7-9-0-991-009-A (sheet 1), calculation of the ACN for flexible pavement for:
- An aircraft with a MRW of 210 900 kg (464 950 lb),
- An aircraft gross weight of 210 000 kg (462 975 lb),
- A medium subgrade strength (code B).

The ACN for flexible pavement is 51.

Example, FIGURE 7-9-0-991-009-A (sheet 2), calculation of the ACN for rigid pavement for:
- An aircraft with a MRW of 210 900 kg (464 950 lb),
- An aircraft gross weight of 210 000 kg (462 975 lb),
- A medium subgrade strength (code B).

The ACN for rigid pavement is 48.

2. Aircraft Classification Number - ACN table

The tables in figures (FIGURE 7-9-0-991-008-A and FIGURE 7-9-0-991-011-A) provide ACN data in tabular format similar to the one used by ICAO in the "Aerodrome Design Manual Part 3, Pavements - Edition 1983" for all the operational weight variants of the aircraft.

As an approximation, use a linear interpolation in order to get the ACN at the required operating weight using the following equation:

- ACN = ACN min + (ACN max - ACN min) x (Operating weight - 140 000 kg)/(MRW - 140 000 kg) for the A350-900,
- ACN = ACN min + (ACN max - ACN min) x (Operating weight - 160 000 kg)/(MRW - 160 000 kg) for the A350-1000.

As an approximation, also use a linear interpolation in order to get the aircraft weight at the pavement PCN using the following equation:

- Operating weight = 140 000 kg + (MRW - 140 000 kg) x (PCN - ACN min)/(ACN max - ACN min) for the A350-900,
- Operating weight = 160 000 kg + (MRW - 160 000 kg) x (PCN - ACN min)/(ACN max - ACN min) for the A350-1000.
With ACN max = ACN calculated at the MRW in the table and with ACN min = ACN calculated at 140 000 kg for the A350-900 and 160 000 kg for the A350-1000.

**NOTE**: The CG in the figure title is the CG used for ACN calculation.
**ON A/C A350-900**

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<tr>
<th>WEIGHT VARIANT</th>
<th>ALL UP MASS (kg)</th>
<th>LOAD ON ONE MAIN GEAR LEG (%)</th>
<th>TIRE PRESSURE (MPa)</th>
<th>ACN FOR RIGID PAVEMENT SUBGRADES – MN/m²</th>
<th>ACN FOR FLEXIBLE PAVEMENT SUBGRADES – CBR</th>
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ACN Table

FIGURE-7-9-0-991-008-A01

P_AC_070900_1_0080001_01_00

7-9-0

Page 3

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AIRCRAFT CHARACTERISTICS - AIRPORT AND MAINTENANCE PLANNING

**ON A/C A350-900**

AIRCRAFT CLASSIFICATION NUMBER (ACN)

TIRE PRESSURE CONSTANT AT 13.6 bar (197 psi)

ACN WAS DETERMINED AS REFERENCED IN ICAO AERODROME DESIGN MANUAL PART 3 CHAPTER 1. SECOND EDITION 1983.

ALPHA FACTOR = 0.8

- CBR 3 (ULTRA LOW)
- CBR 6 (LOW)
- CBR 10 (MEDIUM)
- CBR 15 (HIGH)

AIRCRAFT GROSS WEIGHT (x 1 000 lb)

Aircraft Classification Number - WV017, MRW 210 900 kg, CG 36%

Flexible Pavement (Sheet 1 of 2)

FIGURE-7-9-0-991-009-A01

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**ON A/C A350-900**

Aircraft Classification Number - WV017, MRW 210 900 kg, CG 36%
Rigid Pavement (Sheet 2 of 2)
FIGURE-7-9-0-991-009-A01
**ON A/C A350-900

Aircraft Classification Number - WV013, MRW 280 900 kg, CG 31.2%
Flexible Pavement (Sheet 1 of 2)
FIGURE-7-9-0-991-010-A01
**ON A/C A350-900

1 400x530R23 42PR TIRES
TIRE PRESSURE CONSTANT AT 17.1 bar (248 psi)

ACN WAS DETERMINED AS REFERENCED IN ICAO AERODROME DESIGN MANUAL PART 3 CHAPTER 1. SECOND EDITION 1983.

AIRCRAFT CLASSIFICATION NUMBER (ACN)

80 90 100 110 120

300 400 500 600

ACN WAS DETERMINED AS REFERENCED IN ICAO AERODROME DESIGN MANUAL PART 3 CHAPTER 1. SECOND EDITION 1983.

SUBGRADE STRENGTH

C = k = 40 MN/m³ (LOW)
B = k = 80 MN/m³ (MEDIUM)
A = k = 150 MN/m³ (HIGH)
D = k = 20 MN/m³ (ULTRA LOW)

AIRCRAFT GROSS WEIGHT

(x 1 000 lb)

P_AC_070900_1_0100001_02_00

Aircraft Classification Number - WV013, MRW 280 900 kg, CG 31.2%
Rigid Pavement (Sheet 2 of 2)
FIGURE-7-9-0-991-010-A01
**ON A/C A350-1000

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<th>LOAD ON ONE MAIN GEAR LEG (%)</th>
<th>TIRE PRESSURE (MPa)</th>
<th>ACN FOR RIGID PAVEMENT SUBGRADES – MN/m³</th>
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**ON A/C A350-1000**

AIRCRAFT CHARACTERISTICS - AIRPORT AND MAINTENANCE PLANNING

*50x20/22.34 PR TIRES*

TIRE PRESSURE CONSTANT AT 13.1 bar (190 psi)

ACN WAS DETERMINED AS REFERENCED IN ICAO AERODROME DESIGN MANUAL PART 3 CHAPTER 1. SECOND EDITION 1983.

AIRCRAFT CLASSIFICATION NUMBER (ACN)

x 1000 kg

AIRCRAFT GROSS WEIGHT

x 1000 lb

ALPHA FACTOR = 0.72

SUBGRADE STRENGTH

D - CBR 3 (ULTRA LOW)
C - CBR 6 (LOW)
B - CBR 10 (MEDIUM)
A - CBR 15 (HIGH)

Aircraft Classification Number - WV007, MRW 260 900 kg, CG 41.1%
Flexible Pavement (Sheet 1 of 2)
FIGURE-7-9-0-991-012-A01

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**ON A/C A350-1000**

Aircraft Classification Number - WV007, MRW 260 900 kg, CG 41.1%
Rigid Pavement (Sheet 2 of 2)
FIGURE-7-9-0-991-012-A01
**ON A/C A350-1000**

Aircraft Classification Number - WV002, MRW 316 900 kg, CG 30.8%
Flexible Pavement (Sheet 1 of 2)
FIGURE-7-9-0-991-013-A01
**ON A/C A350-1000

*242R234 R TIRE PRESSURE CONSTANT AT 15.2 bar (220 psi)

ACN WAS DETERMINED AS REFERENCED IN ICAO AERODROME DESIGN MANUAL PART 1: SECOND EDITION 1983.

SUBGRADE STRENGTH

- \( D - K = 20 \text{ MN/m}^3 \) (ULTRA LOW)
- \( C - K = 40 \text{ MN/m}^3 \) (LOW)
- \( B - K = 80 \text{ MN/m}^3 \) (MEDIUM)
- \( A - K = 150 \text{ MN/m}^3 \) (HIGH)

Aircraft Classification Number - WV002, MRW 316 900 kg, CG 30.8%
Rigid Pavement (Sheet 2 of 2)
FIGURE-7-9-0-991-013-A01
Scaled Drawings

1. This section provides the scaled drawings.

   **NOTE**: When printing this drawing, make sure to adjust for proper scaling.
**ON A/C A350-900**

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

Scaled Drawings
FIGURE-8-0-0-991-001-A01

P_AC_080000_1_0010001_01_01
**ON A/C A350-1000

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

Scaled Drawings
FIGURE-8-0-0-991-002-A01
10-0-0 Aircraft Rescue and Fire Fighting

**ON A/C A350-1000 A350-900**

Aircraft Rescue and Fire Fighting

1. Aircraft Rescue and Fire Fighting Charts
   This section provides data related to aircraft rescue and fire fighting.
   The figures contained in this section are the figures that are in the Aircraft Rescue and Fire Fighting Charts poster available for download on AIRBUSWorld and the Airbus website.
A350-900

Aircraft Rescue and Fire Fighting Chart

**ON A/C A350-900**

This chart gives the general layout of the A350-900 standard version. The number and arrangement of the individual items vary with the customers. Figures contained in this poster are available separately in the chapter 10 of the "AIRCRAFT CHARACTERISTICS - AIRPORT AND MAINTENANCE PLANNING" document.

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

REFERENCE:
P_RF_000000_1_A350900

REVISION DATE:
JUNE 2019

REFERENCE:
SHEET 1/2

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FIGURE-10-0-0-991-001-A01
A350-1000

Aircraft Rescue and Fire Fighting Chart

ARFC

NOTE:

THIS CHART GIVES THE GENERAL LAYOUT OF THE A350-1000 STANDARD VERSION. THE NUMBER AND ARRANGEMENT OF THE INDIVIDUAL ITEMS VARY WITH THE CUSTOMERS.

FIGURES CONTAINED IN THIS POSTER ARE AVAILABLE SEPARATELY IN THE CHAPTER 10 OF THE "AIRCRAFT CHARACTERISTICS - AIRPORT AND MAINTENANCE PLANNING" DOCUMENT.

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CUSTOMER SERVICES
TECHNICAL DATA SUPPORT AND SERVICES
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Front Page

FIGURE-10-0-0-991-001-C01
Highly Flammable and Hazardous Materials and Components

FIGURE-10-0-0-991-003-A01
Highly Flammable and Hazardous Materials and Components

FIGURE-10-0-991-003-B01
NOTE:
The crew rest compartment installation is optional and related to aircraft configuration.

Crew Rest Compartments Location
FIGURE-10-0-0-991-004-A01
**ON A/C A350-1000

NOTE:
The crew rest compartment installation is optional and related to aircraft configuration.

Crew Rest Compartments Location
FIGURE-10-0-0-991-004-B01
Wheel/Brake Overheat
Wheel Safety Area (Sheet 1 of 2)
FIGURE-10-0-0-991-005-A01
BRAKE OVERHEAT AND LANDING GEAR FIRE

WARNING:

BE VERY CAREFUL WHEN THERE IS A BRAKE OVERHEAT AND OR LANDING GEAR FIRE.

THERE IS A RISK OF FIRE DURING THE LANDING PhASE THAT CAN CAUSE DEATH OR INJURY.

MAKE SURE THAT YOU OBEY THE SAFETY PRECAUTIONS THAT FOLLOW.

THE PROCEDURES THAT FOLLOW GIVE RECOMMENDATIONS AND SAFETY PRECAUTIONS FOR THE COOLING OF VERY HOT BRAKES AFTER NORMAL TAXI IN, REFER TO YOUR COMPANY PROCEDURES.

BRAKE OVERHEAT:

GET THE BRAKE TEMPERATURE FROM THE COCKPIT OR USE A REMOTE MEASUREMENT TECHNIQUE.

NOTE: AT HIGH TEMPERATURES (>800°C), THERE IS A RISK OF WARPPING OF THE LANDING GEAR STRUTS AND AXLES.

BRAKE ASSEMBLY:

1. APPROACH THE LANDING GEAR WITH EXTREME CAUTION AND FROM AN OBLIQUE ANGLE IN THE DIRECTION OF THE TIRE SLOPES IF POSSIBLE, STAY IN A VEHICLE.

2. LOOK AT THE CONDITION OF THE TIRES.

3. IF THE TIRES ARE STILL INFLATED (FUSE PLUGS NOT MELTED), THERE IS A RISK OF FIRE EXPLOSION AND RIM BURST.

4. USE WATER MIST OR CO2 TO DECREASE THE TEMPERATURE OF THE COMPLETE WHEEL AND BRAKE ASSEMBLY.

DO NOT USE FUMING AGENTS.

CAUTION:

AIRBUS RECOMMENDS THAT YOU DO NOT USE DRY POWDERS OR DRY CHEMICALS ON HOT BRAKES OR TO EXTINGUISH LANDING GEAR FIRES. THESE AGENTS CAN CHANGE INTO SOLID OR ENAMELLED DEPOSITS.

THEY CAN INCREASE THE SPEED OF HEAT DISSIPATION WITH A POSSIBLE RISK OF PERMANENT STRUCTURAL DAMAGE TO BRAKES, WHEELS OR TIRES.

ALLOW TIME FOR BRAKE COOLING EFFECTS TO CAUSE THERMAL SHOCKS AND BURST OF HOT PARTS.

LANDING GEAR FIRE:

CAUTION:

AIRBUS RECOMMENDS USING WATER MIST OR CO2 TO DECREASE THE TEMPERATURE OF THE COMPLETE WHEEL AND BRAKE ASSEMBLY.

DO NOT USE FUMING AGENTS.

A) APPROACH THE LANDING GEAR WITH EXTREME CAUTION FROM AN OBLIQUE ANGLE IN THE DIRECTION OF THE TIRES.

B) USE LARGE AMOUNTS OF WATER MIST OR CO2 IF POSSIBLE.

C) DO NOT USE FANS OR BLOWERS.

Wheel/Brake Overheat

Recommendations (Sheet 2 of 2)

FIGURE-10-0-0-991-005-A01

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Wheel/Brake Overheat
Wheel Safety Area (Sheet 1 of 2)
FIGURE-10-0-0-991-005-B01
**ON A/C A350-1000**

**BRAKE OVERHEAT AND LANDING GEAR FIRE**

**WARNING:**

- Be very careful when there is a brake overheat and/or landing gear fire. There is a risk of tire explosion or injury.

- Make sure that you obey the safety precautions that follow.

**NOTE:**

- Procedures that follow give recommendations and safety precautions for the cooling of very hot brakes after abnormal operations such as a rejected take-off or overweight landing.

**CAUTION:**

- Brake overheating can lead to warping of the landing gear struts and axes.

**1.** The real temperature of the brakes can be much higher than the temperature shown on the ECAM.

- At high temperatures (>800°C), there is a risk of warping of the landing gear struts and axes.

**2.** Tire shoulder. Do not go into the rim hazard area and only go in the tire hazard area with caution. (Ref. FIG. Wheel/Break Overheat Hazard Areas). If possible, stay in a vehicle.

**3.** If the tires are still inflated (fuse plugs not melted), there is a risk of tire explosion and rim burst. Do not use cooling fans because they can prevent operation of the fuse plugs.

**4.** Use a technique that prevents sudden cooling. Sudden cooling can cause wheel cracks or rim burst. Do not apply water, foam, or CO2. These cooling agents (and especially CO2, which has a very strong cooling effect) can cause thermal shocks and burst of hot parts.

**LANDING GEAR FIRE:**

- Airbus recommends that you do not use dry powders or dry chemicals on hot brakes or to extinguish landing gear fires. These agents can change into solid or remelted deposits, which can increase the risk of permanent structural damage to the brakes, wheels, or wheel axles.

**1.** Immediately stop the fire. Approach the landing gear with extreme caution from an oblique angle in the direction of the fire. Use a technique that prevents sudden cooling. These cooling agents can change into solid or remelted deposits, which can increase the risk of permanent structural damage to the brakes, wheels, or wheel axles.

**2.** Use large amounts of water mist. If the fuel tanks are at risk, use foam.

**A) Approach the landing gear with extreme caution from an oblique angle in the direction of the fire.**

**B) Use a technique that prevents sudden cooling.**

**C) Do not use fans or blowers.**
Composite Materials Location
FIGURE-10-0-0-991-006-A01
**ON A/C A350-1000**

Composite Materials Location
FIGURE-10-0-0-991-006-B01
Ground Lock Safety Devices
FIGURE-10-0-0-991-007-A01
**ON A/C A350-1000

GROUND LOCK SAFETY DEVICES

FIGURE-10-0-0-991-007-B01
EMERGENCY DESCENT THROUGH THE ESCAPE HATCH WITH THE ESCAPE ROPE

NOTE:
- RH SHOWN, LH SYMMETRICAL.
- DIMENSIONS ARE APPROXIMATE.

Cockpit Escape Rope

Grid equals 1 m (3.28 ft) in reality

Door 4 Dual Lane Slide-Raft
9.35 m (30.68 ft)

Door 3 Single or Dual Lane Slide-Raft
9.43 m (30.94 ft)

Door 2 Single or Dual Lane Slide-Raft
9.38 m (30.77 ft)

Door 1 Single or Dual Lane Slide-Raft
10.25 m (33.63 ft)

Emergency Evacuation Devices
FIGURE-10-0-0-991-008-A01
Emergency Evacuation Devices
FIGURE-10-0-0-991-008-B01
**ON A/C A350-1000 A350-900**

**PASSENGER/CREW DOORS AND EMERGENCY EXITS**

**EXTERIOR CONTROL HANDLES**

- **MECHANICAL DOOR-LOCKING INDICATORS**
- **OUTER HANDLE**
- **RESIDUAL CABIN PRESSURE WARNING LIGHT**
- **SLIDE ARMED WARNING-LIGHT AND BUZZER (SLIDE WILL BE DISARMED AUTOMATICALLY IF DOOR IS OPEN FROM OUTSIDE)**

**TO OPEN:**
1. Make sure that residual cabin pressure warning lights do not flash.
2. Push flap to grasp handle.
3. Lift handle fully up to horizontal position (green line).
4. Pull the door out and move it forward.

Pax/Crew Doors and Emergency Exits

FIGURE-10-0-991-009-A01

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**ON A/C A350-1000 A350-900

** escape rope

The escape hatch is the cockpit emergency exit.

1. Push on the handle. The handle is ejected from its housing.
2. Turn the handle counter clockwise to disengage the latches.
3. Push on the escape hatch. It opens inside the cockpit.

Note: Make sure that no person in the cockpit is below the escape hatch.

Figures:

Cockpit Emergency Exit

FIGURE-10-0-0-991-010-A01
**ON A/C A350-1000 A350-900**

FWD and AFT Lower Deck Cargo Doors

FIGURE-10-0-0-991-011-A01

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**HYDRAULIC AUXILIARY PUMP**

**LOCK HANDLE**

**HANDLE**

**DRILLING MACHINE**

**GEARBOX INDICATOR WINDOWS**

**EXTENSION HANDLE**

**YELLOW GROUND SERVICE PANEL**

**INDICATOR WINDOWS**

**HYDRAULIC AUXILIARY PUMP GEARBOX**

**MANUAL OPERATING DEVICE**

**GREEN INDICATOR LIGHT**

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1. **NORMAL OPERATION**
   - QUICKLY AND FULLY PULL THE LATCH HANDLE DOWN WITH A CONTINUOUS MOVEMENT (OUT AND DOWN).  
   - MAKE SURE THAT THE INDICATOR FLAG COMES OUT AND YOU CAN SEE THE RED INDICATION THROUGH THE EIGHT INDICATOR WINDOWS.  
   - PUSH THE TOGGLE SWITCH ON THE DOOR OPERATION PANEL TO THE "OPEN" POSITION AND HOLD IT UNTIL THE GREEN INDICATOR LIGHT COMES ON (CARGO DOOR FULLY OPEN AND LOCKED).  
   - STOP THE OPERATION OF THE HYDRAULIC AUXILIARY PUMP GEARBOX.  
   - TURN THE MANUAL OPERATING DEVICE TO THE "OPEN" POSITION (CLOCKWISE) AND HOLD IT UNTIL THE GREEN INDICATOR LIGHT COMES ON (CARGO DOOR FULLY OPEN AND LOCKED).  
   - RELEASE THE MANUAL OPERATING DEVICE.  
   - RELEASE THE HYDRAULIC AUXILIARY PUMP GEARBOX.  
   - HYDRAULIC AUXILIARY PUMP GEARBOX (STORED ON THE YELLOW GROUND SERVICE PANEL) TO THE "OPEN" POSITION (CLOCKWISE) AND HOLD IT UNTIL THE GREEN INDICATOR LIGHT COMES ON (CARGO DOOR FULLY OPEN AND LOCKED).  
   - ATTACH THE HYDRAULIC AUXILIARY PUMP GEARBOX (STORED ON THE YELLOW GROUND SERVICE PANEL) TO THE "OPEN" POSITION (CLOCKWISE) AND HOLD IT UNTIL THE GREEN INDICATOR LIGHT COMES ON (CARGO DOOR FULLY OPEN AND LOCKED).  
   - STOP THE OPERATION OF THE HYDRAULIC AUXILIARY PUMP GEARBOX.  

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**WARNING**

- MAKE SURE THAT THE RESIDUAL PRESSURE WARNING LIGHT DOES NOT FLASH.
- MAKE SURE THAT THE RESIDUAL PRESSURE WARNING LIGHT LOCK HANDLE FLAP IN AND PULL THE LOCK HANDLE TO THE "UNLOCKED" POSITION (OUT AND UP).

---

**NOTE**

- TWO OPERATORS ARE NECESSARY FOR THIS OPERATION.
- DO OPERATIONS 1 AND 2 OF THE "NORMAL OPERATION" PROCEDURE.  
- ATTACH THE HYDRAULIC AUXILIARY PUMP GEARBOX (STORED ON THE YELLOW GROUND SERVICE PANEL) TO THE "OPEN" POSITION (CLOCKWISE) AND HOLD IT UNTIL THE GREEN INDICATOR LIGHT COMES ON (CARGO DOOR FULLY OPEN AND LOCKED).  
- STOP THE OPERATION OF THE HYDRAULIC AUXILIARY PUMP.  
- HYDRAULIC AUXILIARY PUMP GEARBOX (STORED ON THE YELLOW GROUND SERVICE PANEL) TO THE "OPEN" POSITION (CLOCKWISE) AND HOLD IT UNTIL THE GREEN INDICATOR LIGHT COMES ON (CARGO DOOR FULLY OPEN AND LOCKED).  
- ATTACH THE HYDRAULIC AUXILIARY PUMP GEARBOX (STORED ON THE YELLOW GROUND SERVICE PANEL) TO THE "OPEN" POSITION (CLOCKWISE) AND HOLD IT UNTIL THE GREEN INDICATOR LIGHT COMES ON (CARGO DOOR FULLY OPEN AND LOCKED).  
- STOP THE OPERATION OF THE HYDRAULIC AUXILIARY PUMP GEARBOX.
**ON A/C A350-1000 A350-900**

Control Panels

FIGURE-10-0-0-991-012-A01
OPERATION:

1. OPEN THE OVERPRESSURE DOOR 316BR TO RELEASE UNWANTED AIR PRESSURE.
2. TURN THE SAFETY LEVER AND BLOCK IT.
3. RELEASE THE HOOK LATCHES ON RIGHT ACCESS DOOR 315AR.
4. OPERATE PIN LATCHES (FORWARD AND AFT).
5. OPEN RIGHT ACCESS DOOR 315AL AND LOCK MANUALLY THE FIXED ROD WHEN DOOR IS FULLY OPEN.
6. OPERATE PIN LATCHES (FORWARD AND AFT) ON LEFT ACCESS DOOR 316AR.
7. OPEN LEFT ACCESS DOOR 315AL AND LOCK MANUALLY THE FIXED ROD WHEN DOOR IS FULLY OPEN.
AIRCRAFT CHARACTERISTICS - AIRPORT AND MAINTENANCE PLANNING

**ON A/C A350-900

AIRCRAFT CONFIGURATION

FUSELAGE

WINGS

DOORS

ENGINE/NACELLE

DIMENSIONS ARE RELATED TO AIRCRAFT WEIGHT AND CG CONFIGURATION

NOTE:

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

Aircraft Ground Clearances

FIGURE-10-0-991-016-A01

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AIRCRAFT CHARACTERISTICS - AIRPORT AND MAINTENANCE PLANNING

**ON A/C A350-1000

Aircraft Ground Clearances
FIGURE-10-0-991-016-B01

NOTE: PASSENGER AND CARGO DOOR GROUND CLEARANCES ARE MEASURED FROM THE CENTER OF THE DOOR SILL AND FROM FLOOR LEVEL.
**ON A/C A350-1000 A350-900

Structural Break-in Points
FIGURE-10-0-0-991-017-A01
The battery case and the exhaust system can contain and isolate an internal battery event. If there is a battery cell venting event, the gases will be released out of the aircraft through a pipe connected to the aircraft skin and closed by a burst disk. When a cell venting event occurs, the ground personnel must stay away from the E/E bay and the exhausted gases. You must not disconnect the power connector or cut off the battery power wires to disconnect the batteries from the electrical network.

**Note:**

Main batteries:
- A (FR0, FR19)
- B (Z120, FR87, FR88)
- C (ELT antenna, ELT)
- BAT 1 (access via Access door 81)
- BAT 2 (access via Access door 81)
- BAT EMER 1 (access via Access door 81)
- BAT EMER 2 (access via FWD cargo compartment door)

Batteries Location and Access

FIGURE-10-0-991-018-A01
**ON A/C A350-1000


NOTE:

MAIN BATTERIES:

- BAT 1
  - ACCESS VIA ACCESS DOOR 811
- BAT 1 EMER
- BAT 2
  - ACCESS VIA FWD CARGO COMPARTMENT DOOR
- BAT 2 EMER

ELT ANTENNA

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Batteries Location and Access

FIGURE-10-0-0-991-018-B01