

DEPARTAMENTO DE CERTIFICACIÓN AERONÁUTICA
DIRECCIÓN DE AERONAVEGABILIDAD
ADMINISTRACIÓN NACIONAL DE AVIACIÓN CIVIL
REPÚBLICA ARGENTINA

TCDS HE-1601
Rev. 3
Leonardo S.p.A. AW169
Date: October 30, 2019

TYPE CERTIFICATE DATA SHEET N° HE-1601

This Data Sheet which is part of Type Certificate No. HE-1601, prescribes the conditions and limitations under which, the product for which the Type Certificate was issued meets the airworthiness requirements of the Administración Nacional de Aviación Civil (ANAC).

Type Certificate Holder Leonardo S.p.A.
Piazza Monte Grappa 4
00195 Roma
Italy

I. Model AW169, (Transport Helicopter, Category A&B) approved December 07, 2016

Engine Two (2) Pratt & Whitney Canada PW210A. Type Certificate N° MT-1603. Free turbine turboshaft engines with FADEC.

Fuel JET A, JET A1, JP8, JP8 + 100, No. 3 Jet Fuel (for code number specification and more details refer to Rotorcraft Flight Manual).

Oil Transmission AEROSHELL TURBO OIL 555 (DoD-L-85734). No different specification or brand is allowed.

 Engine Refer to approved Rotorcraft Flight Manual

 APU N/A

 Hydraulics MIL-PRF-83282, MIL-PRF-87257 (as alternative)

Coolant R134a

Page No.	1	2	3	4	5	6	7	8	9	10	11
Rev. No.	3	3	2	0	1	1	0	0	3	3	3

Limitations

In accordance with PW210A Pratt & Whitney Canada Installation Manual (Ref. to 30L2374)

Installed Engine Limits

RATING		MAX TORQUE (% - Nm)	MAX ITT (°C)	MAX NG (% - RPM)	MAX NF (% - RPM)
AEO	Continuous	118.6 – 395.9	868	96.5 – 49200	107 - 28120
	Take-off 5 min Take-off 30 min(*)	125.9 – 420.3	930	98.2 - 50100	
OEI	Continuous	148.3% - 494.9	941	98.9 – 50430	107 - 28120
	2.5 min	174.7% - 583	1020	100.7 - 51360	

(*) if Core Avionic SW phase 4.0 P/N 6F4600A00114, or later, is installed.

Transmission Torque Limits

RATING		MAX TORQUE (% - Nm)	INPUT SPEED (RPM)	INPUT POWER (Hp)
AEO	Maximum Continuous	100 – 334 (x2)	14400	1350 (675x2)
	5 min Continuous 30 min(*)	111 – 371 (x2)		1500 (750x2)
OEI	Maximum Continuous	140 – 470	14400	950
	2.5 min	174 - 583		1180

(*) if Core Avionic SW phase 4.0 P/N 6F4600A00114, or later, is installed.

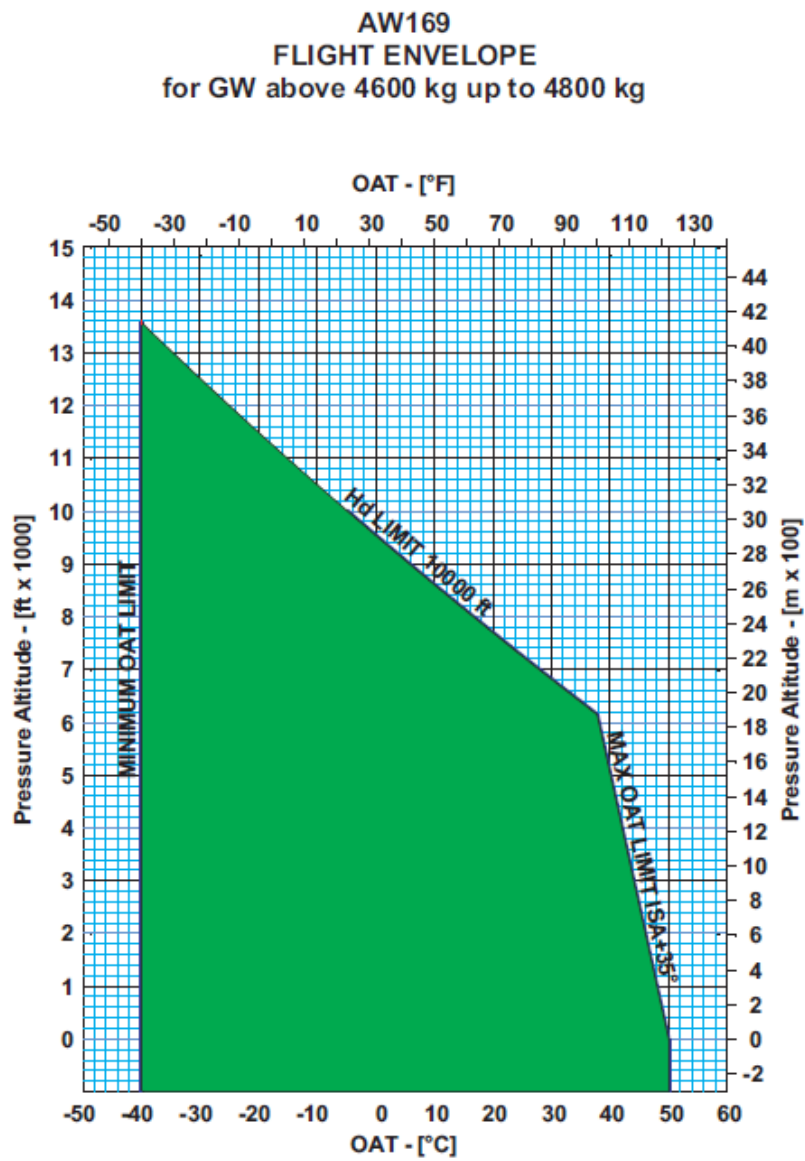
Rotor Speed Limits

Power on AEO (*)		
Condition	(RPM)	(%)
Minimum Continuous	317.56	96.0
Maximum Continuous	354.72	103.0
Power on OEI		
Condition	(RPM)	(%)
Minimum Cautionary	304.05	90.0
Minimum Continuous	341.21	101.0
Maximum Continuous	354.72	105.0
Power Off		
Condition	(RPM)	(%)
Minimum Continuous	304.05	90.0
Maximum Continuous	371.61	110.0

(*)) Maximum and minimum continuous values of the flight envelope. AVSR provides a governing of the rotor speed at different values depending on airspeed (TAS) and density altitude. As the NR datum is variable, NR green band is variable as well ($\pm 2\%$ across the datum value).

See RFM for additional rotor speed limitations.

Flight Envelope



Air Speed Limits

VNE _{power On AEO}	165 kts
VNE _{power On OEI}	135 kts
VNE _{Power Off}	125 KTS

For reduction of the VNE with Density Altitude (HP/OAT), see RFM

Airspeed Envelope

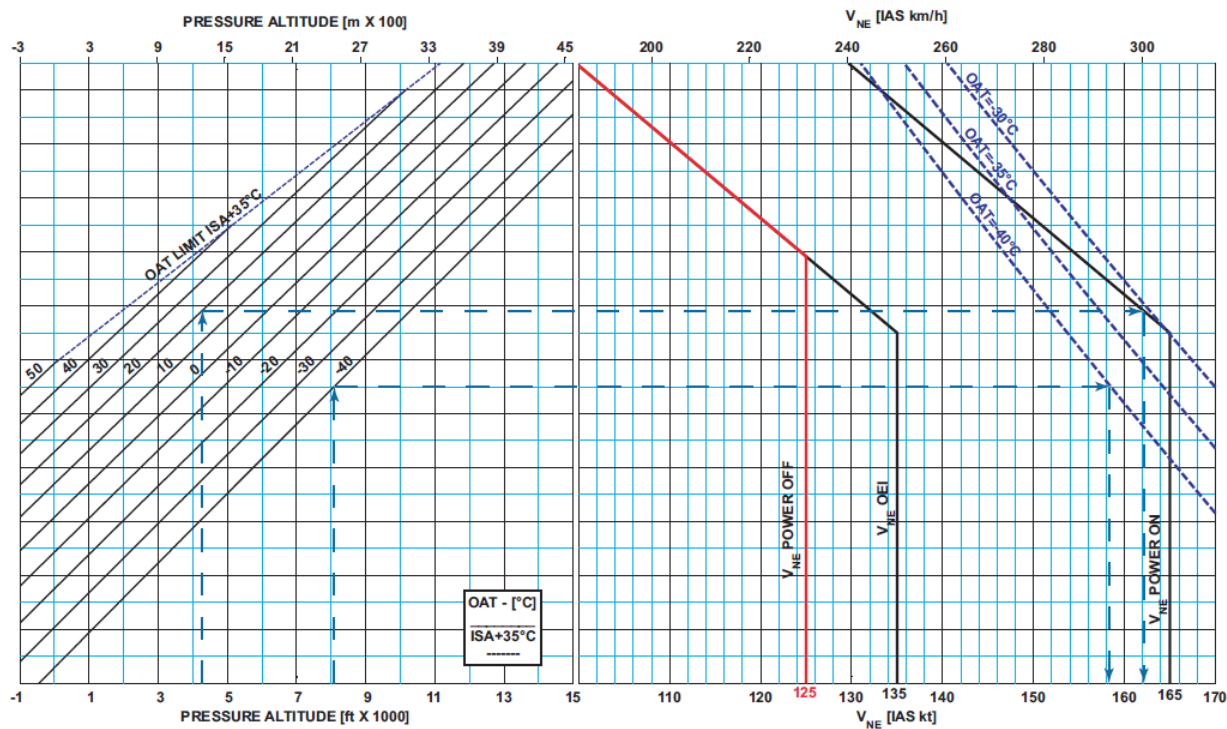
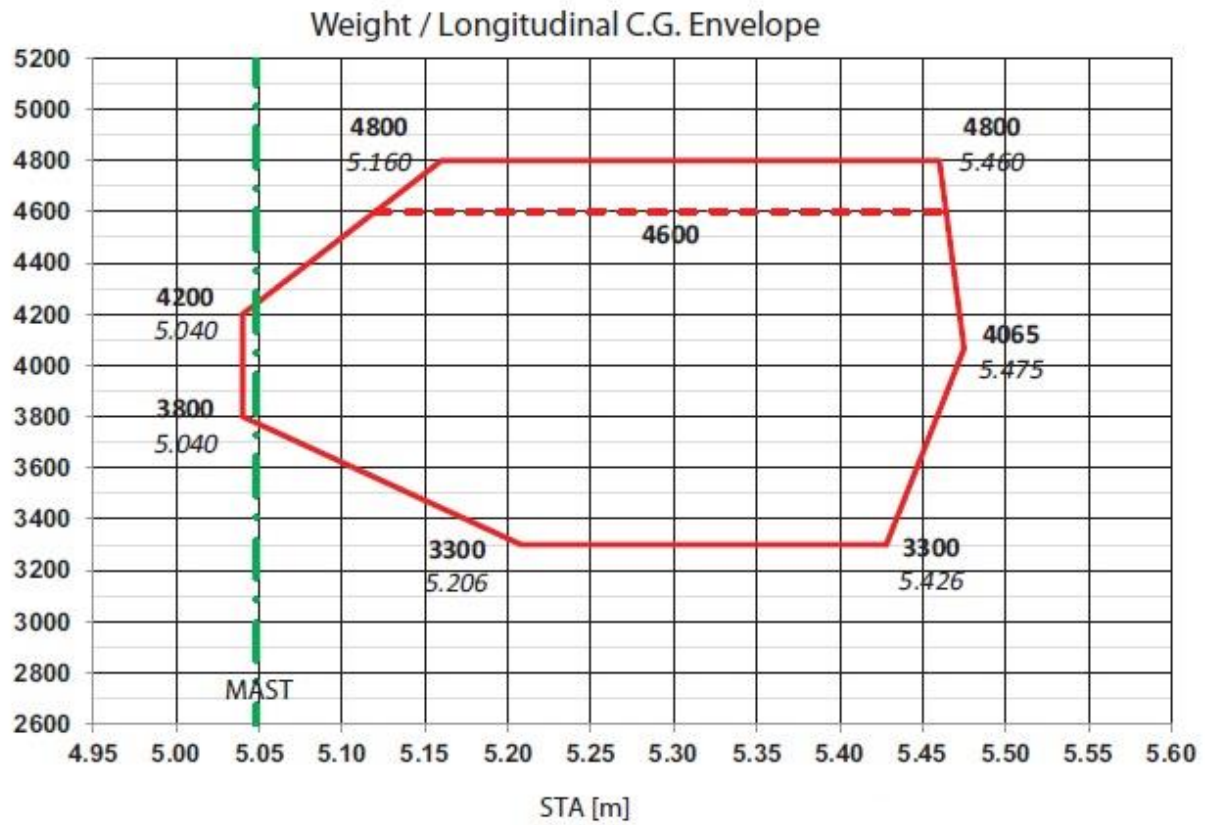


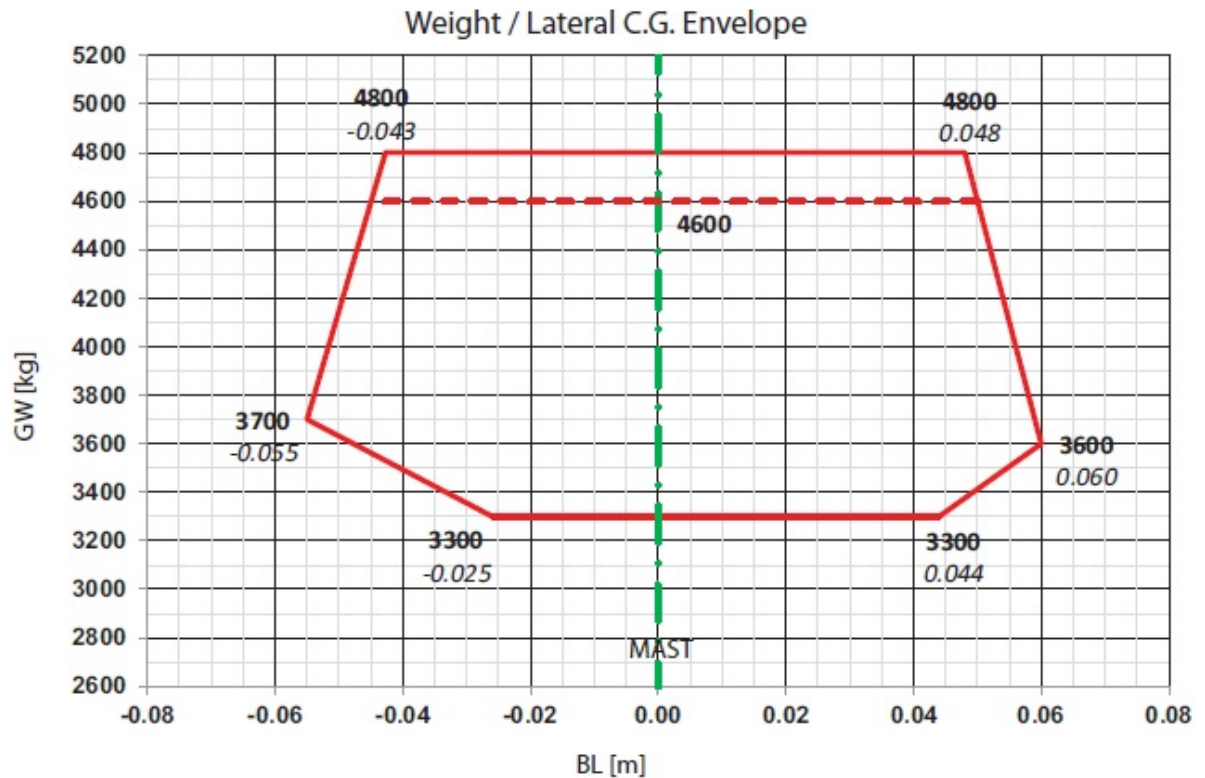
Figure 1-7 Airspeed Envelope (Vne - Power ON, OEI/Power OFF)

Centre of Gravity Range Refer to the approved RFM

Weight and longitudinal Cg Envelope



Weight and lateral Cg Envelope



Datum	<p>Longitudinal Datum (STA 0) is located at 3528 mm forward to the front jack point</p> <p>Lateral Datum (BL 0) is located at +/- 225 mm inboard of LH/RH front jack points</p>
Leveling Means	Plumb line from ceiling reference point to index plate on floor baggage compartment; clinometer.
Maximum Weight	<p>Take-off and Landing 4600 kg, or 4800 kg if P/N 6F0000F00211 is installed</p> <p>Taxi and towing 4650 kg 4850 kg if P/N 6F0000F00211 is installed</p>
Minimum Flight Crew	<p>One (1) for VFR day and One (1) for VFR night and IFR.</p> <p>For NVG operations, two (2) pilots or one (1) pilot and one (1) crew member are required. Both pilot and crew member must be equipped with NVGs (see note 5).</p>

Maximum Passenger
and Seating Capacity

8

10 (if the kit 10 Seats Internal Arrangement P/N 6F2520F00111 is installed)

Passenger Emergency Exit

2 on each side of the passenger cabin

1 on each side of the passenger's cabin, if the kit Sliding Aft Passenger Windows P/N 6F5630F00411 is installed.

Maximum Baggage/
Cargo Loads

250 kg located in the Baggage/Cargo compartment

Fuel Capacity

	Total A/C capacity Litres (Kg (*))	Unusable Litres (Kg (*))
Two main fuel tanks (LH and RH)	1130 (904)	20 (16)

(*) Above fuel mass has been defined assuming a standard fuel density of 0.8 kg/l.

Oil Capacity

	Quantity Litres (Kg) (*)
ENGINE (each)	min 5.25 (4.948) – max 5.78 (5.448)
MAIN GEARBOX (min/max)	Min 17 (16.968) – max 19 (18.964) (16.8 + 2.2 for oil cooler, oil ducts and filter)
INTERMEDIATE GEARBOX	0.77 (0.768)
TAIL GEARBOX	1.10 (1.098)
HYDRAULIC (per each Power Control Module)	1.3 (1.1)

(*) litres (kg at 80°C)

Coolant System capacity

2.1 kg

Maximum Operating Altitude 15.000 ft (pressure/density altitude whichever occurs first), or 10.000 ft for operation at gross weight above 4600 kg

Maximum Take Off and Landing
Altitude

15.000 ft (pressure/density altitude whichever occurs first), or 10.000 ft for operation at gross weight above 4600 kg

Maximum Operating Temperature

-40°C ÷ +50°C (ISA + 35°C)
-40°C ÷ +50°C (ISA + 35°C) for Cat. A operations

For variation of Temperature limitations with altitude, see the RFM and applicable supplement

Operating Limitations VFR/IFR day and night operations in non-icing conditions

Rotor Blade control movement For rigging info refer to RFM

Serial Number Eligible. 69005 and subsequent

Import Requirements:

For new or used aircraft the import documentation to be sent to Argentina must include:

- (a) A European Certificate of Airworthiness (C. of A..) for Export signed by EASA or a designated representative, or
- (b) A Certificate of Airworthiness for Export signed by the Airworthiness Authority of the country with which Argentina has a Bilateral Airworthiness Agreement.

In the case of (a) or (b), the C. of A. must contain the following statement:

“The aircraft covered by this certificate has been inspected, tested and found to be in conformity with the Argentine Approved Type Design as defined by the Argentine Type Certificate Data Sheet N° HE-1601 and is in a condition for safe operation”.

- (c) For countries other than design countries, an Export Certificate of Airworthiness or similar document signed by the Airworthiness Authority of the Exporting country which must contain the following statement:

“The aircraft covered by this certificate has been inspected, tested and found to be in conformity with the Approved Type Design and is in a condition for safe operation”.

Additional guidance is contained in DNA CA 21-23, Airworthiness Certification of Civil Aircraft, Engines, Propellers and Related Products imported into the Republic of Argentina.

Certification Basis

Date of Application for Type Certificate: 27 July 2016.

RAAC 21.29.(b) and RAAC/FAR 29 EFFECTIVE 1 February 1965 including amendments 29-1 through 29-52

Plus RAAC/FAR 29 amendments 55 for the following installations and affected areas only:

KIT Single Rescue Hoist P/N: 6F2591F001215

Plus RAAC/FAR 29 Amendment 55 for the following installations and affected areas only:

RAAC Part 36 Amendment 36-1 through Amendment 36-28.
(See CRI A-01 and Associated CRI N-01)

Special
Conditions

“Loss of Oil from gearboxes Utilizing a Pressurized Lubrication System” (see CRI E-12)

“HIRF Protection” in accordance with JAA Interim Policy INT/POL/27&29/1, issue 3 dated 01-10-2003 (see CRI F-01)

“Lithium Battery Installation” (See CRI F21)

- “Non Rechargeable Lithium Battery Installation” (See CRI F23)

- “Extended Take-Off Power Duration” (See CRI E15)

Exemptions

N/A

Equivalent Safety Findings

RAAC/FAR 29.601, 29.603, 29.605, 29.865, 29.1301 (d) “Hoist Installation” (see CRI D-05)

RAAC/FAR 29.813-(c) – “Emergency Exit Access” (see CRI D-02)

RAAC/FAR 29.807(c)1 – “Passenger Emergency Exits other than Side-of-Fuselage” (see CRI D-03)

RAAC/FAR 29.807 (d)(2) – “Ditching Emergency Exits for Passengers” (see CRI D-07)

RAAC/FAR 29.811(d) “Emergency Exit Signs” (see CRI D-04)

RAAC/FAR 29.1305, 29.1521, 29.1549, 29.1309(c) “Power Index Indicator” (see CRI F-16)

RAAC/FAR 29.1305, 29.1521, 29.1549, 29.1309(c) “Standby Attitude Indicator Power Supply” (see CRI F-18)

RAAC/FAR 29 Subpart B, RAAC/FAR 29.1305, 29.1309, 29.1549 “Engine Training Mode” (see CRI G-01), RAAC/FAR 29.1545(b)(4) “Airspeed indicators green arcs” (see CRI G-02)

The European Aviation Safety Agency (EASA), originally certified this rotorcraft under Type Certificate Number EASA.R.509, effective July 15, 2015. ANAC validated this product under ANAC Type Certificate Number HE-1601.

ANAC Argentine Type Certificate Number HE-9502, Revision 3 and its associated TCDS are based on the European Aviation Safety Agency (EASA) Type Certificate Number EASA.R.105 Rev. 09, effective 19 December 2018.

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (See Certification Basis) must be installed in the helicopter for certification.

Refer to Approved Rotorcraft Flight Manual and MMEL.

Refer to EASA Approved Rotorcraft Flight Manual and related supplements for other approved mandatory and optional equipment. For ANAC Approved Rotorcraft Flight Manual see NOTE 6:

Service Information	Leonardo S.p.A. Service Bulletins, structural repair manuals, vendor manuals, aircraft flight manuals and overhaul and maintenance manuals, which contain a statement that the document is EASA approved, are accepted by the ANAC and are considered ANAC approved. These approvals pertain to the approved type design only.
Flight Manual	EASA approved Rotorcraft Flight Manual, Doc. No. 169F0290X001, issue 2, Rev 8 dated 11-December-2018, or latest approved revision, plus document No. 169F0257A049 issue A “AW169 – MAF for RFM ANAC Argentina issue 2 Rev 8” or latest approved revision. ANAC Argentina Rotorcraft Flight Manual (RFM) additional requirements are incorporated into the gray pages.
Maintenance Manuals	<p>“AW 169 Maintenance Planning Information” Doc. No. 69-A-AMPI-00-P, including:</p> <ul style="list-style-type: none"> - Chapter 4 ALS, initial issue dated 15-07-22015, EASA approved on 15 July 2015 or later Approved revisions; - Chapter 5 with Scheduled maintenance Requirements <p>“Maintenance review Board Report for AW169 Helicopter” Doc. No. 169F0000M005</p> <p>“AW169 Maintenance Publication” Doc. No. 69-A-AMP-00-X</p> <p>“AW169 Material Data Information” Doc. No. 69-A-AMDI-00-X</p> <p>“AW169 Corrosion control Publication” Doc. No. 69-A-ACCP-00-X</p> <p>“AW169 Fault Isolation Publication” Doc. No. 69-A-AFIP-00-X</p> <p>“AW169 Wiring Data Publication” Doc. No. 69-A-AWDP-00-X</p>
Structural Repair	<p>“AW169 Structural Repair Publication” Doc. No. 69-A-ASRP-00-X</p> <p>“AW169 Components Repair and Overhead Publication” Doc. No. 69-A-CR&OP-00-X</p>
Weight and Balance	Refer to section 6 of the RFM and applicable supplements
Illustrated Parts Catalogue	<p>“AW169 Illustrated Tool and Equipment Publication” Doc. No. 69—A-ITEP-00-X</p> <p>“AW169 Illustrated Part data” Doc. No. 69-A-IPD-00-X</p>
Service Letters and Service Bulletins	As published by Leonardo S.p.A. and approved by Leonardo S.p.A. DOA.

NOTES

NOTE 1 Current weight and balance report including loading instructions and list of equipment included in the certificated empty weight must be provided for with each helicopter at the time of original airworthiness certification.

NOTE 2 All placards indicated in the approved Rotorcraft Flight Manual and document 169F1100A001 ("AW169 Helicopter: Markings and Placards installation document for ANAC Argentina registered helicopters") must be installed in the appropriate location.

NOTE 3 Information essential to the proper maintenance of the helicopter is contained in the Manufacturer's Maintenance Manual provided with each helicopter. Life limited components and associated retirement times are presented in Chapter 4 and must be replaced in accordance therewith.

NOTE 4

Effective on 01 January 2016, Agusta Westland S.p.A. ownership was transferred to Finmeccanica S.p.A.;

The following serial is manufactured under the name Agusta Westland S.p.A.: 69009.

The following serials are manufactured under the name Finmeccanica S.p.A.: 69011, 69014, 69017, 69018, 69022

Effective on 15 July 2016, Finmeccanica S.p.A. name was changed into Leonardo S.p.A. The following serials are manufactured under the name Leonardo S.p.A.: 69007, 69013, 69015, 69016, 69023, 69024, 69027, 69033, 69041 and on.

NOTE 5

Night Vision Goggle operations may be granted by the local civil aviation authority if the rotorcraft is operated according to the limitations and procedures within RFM 169F0290X001 Supplement No 16. The rotorcraft configuration involving internal and external light emitting and reflecting equipment approved for use with NVGs is described in Report 169F3360A0+01 "AW169 NVG Compatibility Reference Handbook". Subsequent modifications and deviations to the NVG helicopter configuration shall be managed in accordance with document 169F3360E001 "AW169 Helicopter NVG Policy".

-- END --