TYPE-CERTIFICATE DATA SHEET

No. E. 009

for Engine
RTM 322 / ANETO-1 series engines

Type Certificate Holder

Safran Helicopter Engines

64510 Bordes
France

For Models:

RTM 322-01/1
RTM 322-01/9
RTM 322-01/9A
ANETO-1K
ANETO-1C

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I. General

1. Type / Models

RTM 322-01/1, RTM 322-01/9, RTM 322-01/9A, ANETO-1K and ANETO-1C.

2. Type Certificate Holder

Safran Helicopter Engines
64510 Bordes
France
DOA-ref: EASA.21J.070

Before 16 October 2013 : Rolls-Royce Turbomeca
From 16 October 2013 to 18 July 2016 : Turbomeca
After 18 July 2016 : Safran Helicopter Engines

3. Manufacturer

Before 16 October 2013 : Rolls-Royce Turbomeca
From 16 October 2013 to 18 July 2016 : Turbomeca
After 18 July 2016 : Safran Helicopter Engines

4. Date of Application

RTM 322-01/1	24 October 1989
RTM 322-01/9	11 May 1995
RTM 322-01/9A	1 April 2005
ANETO-1K	30 July 2015
ANETO-1C	11 March 2020

5. CAA/EASA Certification Reference Date:

RTM 322-01/1	24 October 1989
RTM 322-01/9	24 October 1989
RTM 322-01/9A	21 October 1994
ANETO-1K	30 December 2016
ANETO-1C	30 December 2016

6. EASA Type Certification Date:

RTM 322-01/1	27 April 1992
RTM 322-01/9	26 July 2004
RTM 322-01/9A	26 July 2007
ANETO-1K	12 December 2019
ANETO-1C	19 December 2024

EASA Type Certification for the RTM322-01/1 model is granted, in accordance with article 2 paragraph 3 (a)(i) of EU Commission Regulation EC 1702/2003, based on the issue of CAA United Kingdom Type Certificate No. 091.

II. Certification Basis

1. State of Design Authority Certification Basis

RTM 322-01/1	JAR-E change 7 dated 24 January 1986 plus orange paper amendment E/89/1.
RTM 322-01/9	JAR-E change 9 dated 21 October 1994, plus NPA-E-13 for power turbine discs.
RTM 322-01/9A	JAR-E change 9 dated 21 October 1994, plus JAR-E 810 and 840 of JAR-E Amendment 11.
ANETO-1K and ANETO-1C	CS-E Amendment 4, dated 12 March 2015 except JAR-E 640 (JAR-E change 9) for the Low Pressure Fuel Pump Unit, the High Pressure Fuel Pump/ Metering Unit, the IGV/VSV actuator and the Pressurizing Starting Electro Valve.

2. EASA Certification Basis

2.1. Airworthiness Standards

2.2. Special Conditions (SC)

RTM 322-01/1	None
RTM 322-01/9 and RTM 322-01/9A	• Use of One Engine Inoperative (OEI) rating structure. • Rain and hail. • Programmable Logic Devices (PLD). • Use of 30 Minute All Engines Operating (AEO) rating.
ANETO-1K and ANETO-1C	• SC1 – Transient limits. • SC2 – 30 minute All Engine Operating (AEO) rating. • SC3 - Engine Mounts – Non-Declaration of Approved Life.

2.3. Deviations

RTM 322-01/1	None.
RTM 322-01/9 and RTM 322-01/9A	• Deviation from Special Conditions for OEI rating – automatic availability of 30 second OEI rating during transition from OEI training mode. • Ingestion of rain and hail.
ANETO-1K and ANETO-1C	None

2.4. Equivalent Safety Findings

ANETO-1K and ANETO-1C	CS-E 750 Starting Test

2.5. Environmental Protection

RTM 322-01/9	Fuel Venting: ICAO Annex 16, Volume II, 2nd Edition, November 1993, Part 2, Chapter 2.
RTM 322-01/9A	Fuel Venting: Annex (Part 21) to Commission Regulation (EC) 1702/2003 of 27 September 2003, paragraph 21A.18(b)1.
ANETO-1K	Fuel Venting: CS-34, Amendment 2, dated 12 January 2016 in accordance with ICAO Annex 16, Volume II, Amendment 8, as applicable from 25 January 2016.
ANETO-1C	Fuel Venting: CS-34, Amendment 3, as implemented through ED Decision No. RM2019-014-R in accordance with ICAO Annex 16, Volume II, Amendment 9 as applicable from 01 January 2020.

III. Technical Characteristics

1. Type Design Definition

RTM 322-01/1	As defined in parts list: 0 322 00 507 0
RTM 322-01/9	As defined in parts list: 0 322 00 516 0
RTM 322-01/9A	As defined in parts list: 0 322 00 549 0
ANETO-1K	As defined in parts list: 0 620 00 001 0
ANETO-1C	As defined in parts list: 0 620 00 010 0

2. Description

The RTM 322 and ANETO-1 series engines are two spool turboshaft engines of modular design, comprising a three stage axial and a single stage centrifugal compressor, a reverse flow annular combustion chamber, a two stage axial flow gas generator turbine and a two stage axial flow power turbine connected to a forward mounted output drive by a transmission shaft. Control is provided by a dual-channel FADEC. The accessory gearbox is driven by the gas generator. Starter is not part of the engine type definition. The RTM322-01/1 and ANETO-1K are fitted with an inlet particle separator.

3. Equipment

- Equipment units included in the engine type definition: refer to the Installation or Installation and Operating manual.
- Equipment units to be supplied by the Aircraft Manufacturer: refer to the Installation or Installation and Operating manual.

4. Dimensions

	Overall Length (mm)	Overall Width (mm)	Overall Height (mm)
RTM322-01/1	1171	708	615
RTM322-01/9	1181	689	648
RTM 322-01/9A	1181	689	648
ANETO-1K	1171	683	648
ANETO-1C	1171	683	648

5. Dry Weight

	Dry engine weight (kg) (including EECU)
RTM322-01/1	255.00
RTM322-01/9	232.15
RTM 322-01/9A	232.15
ANETO-1K	260.00
ANETO-1C	261.00

6. Ratings

6.1 Normal Power kW:

	Take-Off (5 min)	30 min AEO	Maximum Continuous
RTM 322-01/1(1)	1566	-	1518
RTM 322-01/9(2)	1566(3)(4) 1611(3)(5)	1566(3)(4) 1611(3)(5)	1566(3)(4) 1611(3)(5)
RTM 322-01/9A(2)	1566(3)(6) 1611(3)(7)	1566(3)(6) 1611(3)(7)	1566(3)(6) 1611(3)(7)
ANETO-1K(8)	1063(3)	1063(3)	914(3)
ANETO-1C(8)	1128.2(3)	1128.2(3)	1000(3)

6.2 Contingency Power kW:

	Intermediate Contingency (unlimited duration)	Maximum Contingency (2 min 30 sec)	30 sec OEI	2 min OEI	2 min 30s OEI	30 min OEI	Continuous OEI
RTM 322-01/1(1)	1518	1669	-	-	-	-	-

RTM 322-01/9(2)	-	-	2204(3)	1883	-	-	1808
RTM 322-01/9A(2)	-	-	2204(3)	1993	-	1923	-
ANETO-1K(8)	-	-	-	-	1572/1489(9)	-	1297
ANETO-1C	-	-	-	-	1589.7	-	1189.7

(1) Static sea-level rating under the following conditions:
   a. International standard atmospheric conditions at sea level.
   b. All operational air bleeds closed.
   c. Aircraft service equipment drives unloaded.
   d. Air intake comprising Air intake Bellmouth WDL 1168.20 and Debris Guard WDL 1068-29.
   e. Exhaust unit part Ref. WDL 1068-6.
   f. Output shaft speed 20900 rpm.

(2) The following conditions apply:
   a. Fuel having a net specific energy of 43100 kJ/kg and conforming in all other respects with normal fuels as defined in the Installation and Operating Manual
   b. Engine oils as specified in the Installation and Operating Manual
   c. Standard atmosphere ISO 2533-1975, on test bed
   d. No installation losses
   e. No inlet airflow distortion at the Aerodynamic Inlet Plane
   f. Test bed air inlet referenced in the Installation and Operating Manual
   g. Test bed exhaust duct referenced in the Installation and Operating Manual
   h. No customer bleed airflow or engine anti-icing airflow
   i. No accessory power off-take except that required for engine operation
   j. Output shaft speed 21675 rpm except for OEI ratings; 21154 rpm for OEI ratings

(3) This power value is flat rated due to the Helicopter gearbox torque limitation integrated into the EECU. (All declared powers are limited by the first limit reached – either thermal or mechanical. The mechanical limit is the first torque limit reached, which may be either the engine mechanical limit or an EECU torque limit.)

(4) This power value applies for engines
   - Not embodying modification C3028

   Or
   - Embodying modification C3028 and having the NFHDIS discrete input inactive

(5) This power value applies for engines embodying modification C3028 and having the NFHDIS discrete input active

(6) This power value applies for engines
   - Not embodying modification C3098

   Or
   - Embodying modification C3098 and having the NFHDIS discrete input inactive

(7) This power value applies for engines embodying modification C3098 and having the NFHDIS discrete input active

(8) The following conditions apply:
   a. Aged engine
   b. Engine equipped with a test bed exhaust pipe and test bed air intake Rated power levels (kW) calculated by measurement using the test bed air inlet bell mouth and the test bed exhaust pipe;
   c. ISA conditions at sea level
   d. Static condition
   e. Uninstalled performance: No installation losses

f. No temperature, pressure or flow angle distortion at air inlet
g. No back pressure downstream the exhaust pipe
h. No customer air bleed
i. No power taken off by accessories other than those required for normal operation of engine
j. Nominal output rotational speed : 21,000 rpm
k. Fuel Heating Value = 43 136 kJ/kg
l. Humidity mixing ratio of 0.069 kg/kg dry air at sea level ISA condition

(9) This power value is limited to 1572 kW for the first 30 second and to 1489 kW for the following 2 minutes due to the Helicopter gearbox torque limitation integrated into the EECU. Refer to Installation and Operating Manual for further details.

7. Control System

The engine is equipped with a Full Authority Digital Engine Control (FADEC)

8. Fluids (Fuel, Oil, Coolant, Additives)

8.1 Fuel:

For list of fuels and fuel additives approved for use in each model consult the relevant Installation or Installation and Operating Manual.

8.2 Oil:

For list of oils approved for use in each model consult the relevant Installation or Installation and Operating Manual.

9. Aircraft Accessory Drives

	Starter						
	Rotation direction	Rotation speed ratio to NG	Maximum static overhung moment (daN.m)	Fuse shaft breakaway torque (daN.m)	Maximum Continuous shaft power (Kw)		Maximum torque
					AEO	2 min 30s OEI	
RTM 322-01/1	CW	0.6447	0.23	4.9	-	-	See Installation Manual
RTM 322-01/9	CW	0.6447	3.95	7.0	-	-	See Installation and Operating Manual
RTM 322-01/9A	CW	0.6447	3.95	7.0	-	-	See Installation and Operating Manual
ANETO-1K	CW	0.3784	2.82	13.6	24.6	20	See Installation and Operating Manual
ANETO-1C	CW	0.3784	2.82	13.6	18	18	See Installation and Operating Manual

CW = clockwise looking aft.

10. Maximum Permissible Air Bleed Extraction

	Maximum air delivery for aircraft services	Range of speed at which bleed may be used
RTM 322-01/1	6% of compressor inlet mass flow	Refer to the Installation Manual
RTM 322-01/9	3% of engine inlet air mass flow	Refer to the Installation and Operating Manual
RTM 322-01/9A	3% of engine inlet air mass flow	Refer to the Installation and Operating Manual
ANETO-1K	3,3% of engine inlet air mass flow	Refer to the Installation and Operating Manual
ANETO-1C	3,3% of engine inlet air mass flow	Refer to the Installation and Operating Manual

IV. Operating Limitations

1. Climatic Operating Envelope

1.1 Operating envelope

Consult the relevant Installation or Installation and Operating Manual.

1.2 Starting and re-lighting envelopes

Consult the relevant Installation or Installation and Operating Manual.

2. Temperature Limits

2.1 Gas generator exhaust temperature (T46) limits:

	Start-up °C	Re-light °C	Ground Idle °C
RTM 322-01/1	840 maximum (momentary)	-	570 + 2A
RTM 322-01/9	See Installation and operating Manual	See Installation and operating Manual	570 + 2A
RTM 322-01/9A	See Installation and operating Manual	See Installation and operating Manual	570 + 2A
ANETO-1K	See Installation and operating Manual	See Installation and operating Manual	-
ANETO-1C	See Installation and operating Manual	See Installation and operating Manual	-

A = ambient temperature

	In-flight – Normal °C			
	Take-off	30 min AEO	Maximum Continuous	Maximum Transient Over-temperature
RTM 322-01/1	853	-	834	-
RTM 322-01/9	863	863	831	904 (20 sec limit) (1)
RTM 322-01/9A	895	895	873	936 (20 sec limit) (1)
ANETO-1K	918	918	893	926 (20 sec limit) (2)
ANETO-1C	918	918	893	926 (20 sec limit) (2)

(1) Maximum transient limit is to be considered as the maximum inadvertent exceedance over authorized limit for period up to 20 seconds. This occurrence does not require rejection of the engine from service or maintenance action (other than to correct the cause).

(2) Maximum non inadvertent transient.

	In-flight – Contingency °C						
	Intermediate Contingency	Maximum Contingency	30 sec OEI	2 min OEI	30 min OEI	2 min 30s OEI	Continuous OEI
RTM 322-01/1	834	891	-	-	-	-	-
RTM 322-01/9	-	-	967	903	-	-	866
RTM 322-01/9A	-	-	971	934	921	-	-
ANETO-1K	-	-	-	-	-	984(1)	918
ANETO-1C						984(1)	918

(1) A non inadvertent transient (990 °C) has been validated over authorized limit for a period of 2.2 seconds over 2 min 30s OEI stabilized temperature.

2.2 Fuel temperature:

2.2.1 Maximum temperature:

Consult the relevant Installation or Installation and Operating Manual.

2.2.2 Minimum temperature for engine starting:

Consult the relevant Installation or Installation and Operating Manual.

2.2.3 Use of anti-icing additive:

Consult the relevant Installation or Installation and Operating Manual.

2.3 Oil temperature:

	Minimum oil temperature for engine starting	Minimum oil temperature for power-up	Maximum oil temperature
RTM 322-01/1	-54°C	-10°C for oil with a 5x10-6 m2/s kinematic viscosity -20°C for oil with a 3 x10-6 m2/s kinematic viscosity	135°C
RTM 322-01/9 and RTM 322-01/9A	-40°C for oil with a 5x10-6 m2/s kinematic viscosity -40°C for oil with a 3 x10-6 m2/s kinematic viscosity	-10°C for oil with a 5x10-6 m2/s kinematic viscosity -20°C for oil with a 3 x10-6 m2/s kinematic viscosity	130°C
ANETO-1K and ANETO-1C	-40°C for oil with a 5x10-6 m2/s kinematic viscosity -50°C for oil with a 3 x10-6 m2/s kinematic viscosity	**For oil with a 5x10-6 m2/s kinematic viscosity :** -10°C when the starting altitude is between -610m (-2,000ft) and 4572m (15,000ft), 0°C when the starting altitude is above 4572m (15,000ft). **For oil with a 3 x10-6 m2/s kinematic viscosity :** -20°C when the starting altitude is between -610m (-2,000ft) and 4572m (15,000ft), -10°C when the starting altitude is above 4572m (15,000ft).	130°C

For additional limitations related to oil temperature, consult the relevant Installation or Installation and Operating Manual.

3. Maximum / Minimum Permissible Rotor Speeds:

3.1 Gas generator speed (NG):

	100 % NG	Ground Idle nominal speed	Maximum Transient Overspeed
RTM 322-01/1	36300 rpm	23600 rpm corrected value	38683 rpm (20 sec limit) (1)
RTM 322-01/9	36300 rpm	72% of corrected NG	101.5 DN (20 sec limit for all engines operating only) (1)
RTM 322-01/9A	36300 rpm	72% of corrected NG	102.3 DN (20 sec limit for all engines operating only) (1)
ANETO-1K	36300 rpm	73% of corrected NG	37907 rpm (20 sec limit for all engines operating only) (2)
ANETO-1C	36300 rpm	72% of corrected NG	37907 rpm (20 sec limit for all engines operating only) (2)

	Maximum stabilised speed - Normal		
	Take-off	30 min AEO	Maximum Continuous
RTM 322-01/1	37760 rpm	-	37610 rpm
RTM 322-01/9	100 DN	100 DN	96 DN
RTM 322-01/9A	100 DN	100 DN	96 DN
ANETO-1K	37807 rpm	37807 rpm	37628 rpm
ANETO-1C	37807 rpm	37807 rpm	37628 rpm

	Maximum stabilised speed - Contingency						
	Intermediate Contingency	Maximum Contingency	30 sec OEI	2 min OEI	2 min 30s OEI	30 min OEI	Continuous OEI
RTM 322-01/1	37610 rpm	38300 rpm	-	-	-	-	-
RTM 322-01/9	-	-	114 DN	105 DN	-	-	100.5 DN
RTM 322-01/9A	-	-	114 DN	105 DN	-	103 DN	-
ANETO-1K	-	-	-	-	38817 rpm (3)	-	37979 rpm
ANETO-1C	-	-	-	-	38817 rpm (3)	-	37979 rpm

DN = Display Number. For the definition of DN, refer to the Installation and Operating Manual.

(1) Maximum transient limit is to be considered as the maximum inadvertent exceedance over authorized limit for period up to 20 seconds. This occurrence does not require rejection of the engine from service or maintenance action (other than to correct the cause).
(2) A non inadvertent transient (38,197 rpm) has been validated over authorized limit for a period of 2.2 seconds over the 20 sec transient limit.

(3) A non inadvertent transient (39,209 rpm) has been validated over authorized limit for a period of 2.2 seconds over 2 min 30s OEI stabilized speed.

3.2 Power turbine speed (NP):

	100 % NP	Maximum Transient inadvertent Overspeed(5)	Maximum Transient Usual Overspeed(4)	Minimum transient	Minimum Speed (in Flight Mode)
RTM 322-01/1(1)	20900 rpm	113% (20 sec limit)	-	-	17765 rpm (85%)
RTM 322-01/9(2)	20841 rpm	117% (20 sec limit)	110% (6 sec limit)	-	85%
RTM 322-01/9A(2)	20841 rpm	117% (20 sec limit)	110% (6 sec limit)	-	85%
ANETO-1K	21000 rpm	23667 rpm (112.7% 20sec limit)	-	17850 rpm (85%)	18900 rpm (90%)
ANETO-1C	21000 rpm	23667 rpm (112.7% 20sec limit)	-	17850 rpm (85%)	18900 rpm (90%)

	Maximum stabilised speed - Normal		
	Take-off	30 min AEO	Maximum Continuous
RTM 322-01/1	21400 rpm	-	21400 rpm
RTM 322-01/9	105.5%	105.5%	105.5%
RTM 322-01/9A	105.5%	105.5%	105.5%
ANETO-1K	21987 rpm (104,7%)	21987 rpm (104,7%)	21987 rpm (104,7%)
ANETO-1C	21987 rpm (104,7%)	21987 rpm (104,7%)	21987 rpm (104,7%)

	Maximum stabilised speed - Contingency						
	Intermediate Contingency	Maximum Contingency	30 sec OEI	2 min OEI	2 min 30s OEI	30 min OEI	Continuous OEI
RTM 322-01/1(3)	21400 rpm	21000 rpm	-	-	-	-	-
RTM 322-01/9	-	-	102.8%	102.8%	-	-	105.5%
RTM 322-01/9A	-	-	102.8%	102.8%	-	105.5%	-
ANETO-1K(6)	-	-	-	-	21987 rpm (104,7%)	-	21987 rpm (104,7%)
ANETO-1C(6)	-	-	-	-	21987 rpm (104,7%)	-	21987 rpm (104,7%)

(1) During starting phase, prolonged operation within the range 57% to 85% is prohibited.
(2) Operation in the range 57% to 75% is limited to 20 seconds.

(3) Maximum stabilised speed for autorotation is 21950 rpm.
(4) Normal transient authorised above 105.5% for period up to 6 seconds only in AEO conditions (OEI mode not selected).
(5) Maximum transient limit is to be considered as the maximum inadvertent exceedance over authorized limit for period up to 20 seconds. This occurrence does not require rejection of the engine from service or maintenance action (other than to correct the cause).
(6) Operation between 11,900 rpm (56.7%N2) - 15,120 rpm (72%N2) output shaft speed is limited to a maximum of 20 seconds.

4. Torque Limits:

Maximum torque on engine output shaft during operation:

	Take-off	Maximum Continuous	30 min AEO	30 sec OEI(3)	2 min OEI	30 min OEI	2 min 30s OEI	Continuous OEI
RTM 322-01/1(1)	-	-	-	-	-	-	-	-
RTM 322-01/9	816 Nm	816 Nm	816 Nm	995 Nm 1016 Nm(2)	850 Nm	-	-	816 Nm
RTM 322-01/9A	868 Nm	868 Nm	868 Nm	1011 Nm	900 Nm	868 Nm	-	-
ANETO-1K	791 Nm	766 Nm	791 Nm	-	-	-	863 Nm	791 Nm
ANETO-1C	791 Nm	766 Nm	791 Nm	-	-	-	863 Nm	791 Nm

(1) 950 Nm with no time limit; 1114 Nm overtorque (20 s limit).
(2) 1016 Nm limit applicable only to engines incorporating modification C3024.
(3) Values apply at rated NP. Higher values are permitted at low Np – refer to the Installation and Operating Manual for details.

5. Pressure Limits:

5.1 Oil pressure (gauge):

	Minimum	Maximum
RTM 322-01/1(1)	275 kPa (in flight)	840 kPa
RTM 322-01/9(2)	Refer to the Installation and Operating Manual	840 kPa
RTM 322-01/9A(2)	Refer to the Installation and Operating Manual	840 kPa
ANETO-1K(2)	Refer to the Installation and Operating Manual	840 kPa
ANETO-1C(2)	Refer to the Installation and Operating Manual	840 kPa

(1) For other limitations, refer to the Installation Manual.
(2) For maximum pressure in cold conditions, refer to the Installation and Operating Manual.

5.2 Fuel pressure:

	Minimum	Maximum
RTM 322-01/1	Refer to the Installation Manual	Refer to the Installation Manual
RTM 322-01/9	Refer to the Installation and Operating Manual	Less than or equal to 150 kPa (relative pressure), in all operating phases
RTM 322-01/9A	Refer to the Installation and Operating Manual	Less than or equal to 150 kPa (relative pressure), in all operating phases
ANETO-1K	Refer to the Installation and Operating Manual	Refer to the Installation and Operating Manual
ANETO-1C	Refer to the Installation and Operating Manual	Refer to the Installation and Operating Manual

6. Installation Assumptions:

Consult the relevant Installation or Installation and Operating Manual.

7. Dispatch Limitations:

RTM 322-01/1, RTM 322-01/9, RTM 322-01/9A and Aneto-1C engines are not herein approved for Time Limited Dispatch with any systems or equipment inoperative. All engine systems and equipment must be functional prior to aircraft take-off.

The ANETO-1K engine is approved for Time Limited Dispatch in accordance with CS-E 1030. The maximum rectification period for each dispatchable state is specified in the Installation and Operating Manual.

For installed engines, consult the relevant Installation or Installation and operating Manual.

8. ETOPS Capability

The engine is not approved for ETOPS capability in accordance with CS-E 1040.

V. Operating and Service Instructions

	Installation Manual	Operating Instructions	Installation and Operating Manual	Engine Base Maintenance Manual	Engine Depot Maintenance / Overhaul Manual
RTM322-01/1	IM 14	E/PH2/SE/411	-	2208	2209
RTM322-01/9	-	-	X 322 M8 001 2	M3-A-EBM-00-D	M3-A-EDM-00-D
RTM322-01/9A	-	-	X 322 M8 002 2	M3-B-EBM-00-D	M3-B-EDM-00-D
ANETO-1K	-	-	X 046 1K 001 2	X 046 1K 460 2	X 046 1K 500 2
ANETO-1C	-	-	X 046 1C 002 2	X 046 1C 460 2	X 046 1C 500 2

For Service Letters & Service Bulletins refer to SB and SL directory.

VI. Notes

1. The EECU software meets the following standards:
   RTM 322-01/1 – RTCA/DO-178A (EUROCAE ED-12A), critical.
   RTM 322-01/9 and RTM 322-01/9A – RTCA/DO-178B, level A.
   ANETO-1K and ANETO-1C – RTCA DO-178B /EUROCAE ED-12B, DAL A for EECU.

2. EMI/ Lightning Qualification:
   RTM 322-01/1 – Tests were carried out on the basis of the following documents: MIL-STD-461 for class A1B equipment, AS/AV-E8593E, MIL-STD-1757 and MIL-B-5087, SAE-4L-87-3 Rev. B. For details refer to Installation Manual IM 14.
   RTM 322-01/9 and RTM 322-01/9A – Refer to Installation and Operating Manual for details.
   ANETO-1K and ANETO-1C – Refer to Installation and Operating Manual for details.

3. The electronic control unit must not be installed in a designated fire zone. The installation conditions are defined in the relevant Installation or Installation and Operating Manual.

4. The engine components subjected to a limited service life are specified in the Airworthiness Limitations Section of the relevant maintenance manuals. The EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published in the Engine Base Maintenance Manual document, chapter 5 "Airworthiness Limitations".

5. The RTM 322-01/9 and RTM 322-01/9A engine capability against ingestion of foreign matter has not been fully assessed [JAR-E 790 (a)(1) and JAR-E 800 (a)(3)]. The protection of the engine against strike/ingestion of foreign matter is to be ensured by the powerplant installation on the rotorcraft.

6. The electronic control system of the RTM 322-01/9, RTM 322-01/9A, ANETO-1K and ANETO-1C engines provides a "TRAINING" function for training crews in an engine failure situation. Refer to the Installation and Operating Manual for the characteristics of this function.

7. The engines are approved subject to adherence to the limitations and conditions included in the respective approved Installation or Installation and Operating manual as applicable.

SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

n/a

II. Type Certificate Holder Record

Before 16 October 2013 : Rolls-Royce Turbomeca
From 16 October 2013 to 18 July 2016 : Turbomeca
After 18 July 2016 : Safran Helicopter Engines

III. Change Record

Issue	Date	Changes	TC issue
Issue 01	26 July 2004	Initial Issue	Initial Issue, 26 July 2004
Issue 02	24 August 2006		
Issue 03	26 July 2007	New Model RTM322-01/9A	31 July 2007
Issue 04	23 Sept. 2008	Major Change EASA.E.C.01744	
Issue 05	21 April 2009	Major Change EASA.E.C.01782	
Issue 06	16 October 2013	Transfer from Rolls-Royce Turboméca to Turboméca	16 October 2013
Issue 07	01 Sept. 2014	Introduction of EECU software release 2.1 – EASA Approval Number 10050307	
Issue 08	01 August 2016	Name Change from Turbomeca to Safran Helicopter Engines	01 August 2016
Issue 09	12 December 2019	New Model ANETO-1K	12 December 2019
Issue 10	15 January 2020	Correcting typographical error on the issue date of the issue_09 in the change record table	
Issue 11	06 May 2020	Section IV: new limitations for minimum oil temperature for power-up dded due to operating envelope extension up to 20,000ft (EASA Major Change Approval number 10073185).	
Issue 12	19 December 2024	New Model ANETO-1C	19 December 2024

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