TYPE-CERTIFICATE DATA SHEET

No. E. 075

for
ASTAZOU XIV series engines

Type Certificate Holder

Safran Helicopter Engines

64510 Bordes
France

For Models:

ASTAZOU XIV B
ASTAZOU XIV H

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I. General

1. Type/Models:

ASTAZOU XIV B, ASTAZOU XIV H. These variants are approved for use on single-engine civil rotorcraft at the ratings and within the operating limitations specified below, subject to compliance with the powerplant installation requirements appropriate to approved installations.

Except where otherwise noted, data applies to all variants.

2. Type Certificate Holder:

Safran Helicopter Engines
64510 Bordes
France

DOA-ref: EASA.21J.070

Unit 18 July 206 Turbomeca
After 18 July 2016 Safran Helicopter Engines

3. Manufacturer:

Unit 18 July 206 Turbomeca
After 18 July 2016 Safran Helicopter Engines

4. DGAC/EASA Certification Application date:

Not identified, before May 1971

5. DGAC/EASA Certification Reference date:

30 June 1969

6. DGAC/EASA Certification date:

ASTAZOU XIV B	14 May 1971
ASTAZOU XIV H	07 April 1976

Note: The present data sheet cancels and replaces the data sheet “Fiche de caractéristiques moteur N° M3” issued by the French Direction Générale de l’Aviation Civile (DGAC).

II. Certification Basis

1. Certification Specifications:

General Technical Conditions CTG 001, dated 30 June 1969 (based on BCAR Section C, Issue 6, dated June 1966), plus BCAR amendments (Blue Papers) 415, 435, 436, 464, 468, 476, 479, 481, 494, 499, 528, 544, 545, 551 and 554.

2. Special Conditions:

None.

3. Deviations:

None.

4. Equivalent Safety Findings:

None.

5. Environmental Protection Requirements:

Fuel venting per CS-34, Original Issue, dated 17 October 2003 (ICAO Annex 16, Volume II, Amendment 5, dated 24 November 2005, Part II, Chapter 2)

III. Technical characteristics

1. Type Design Definition:

	Complete Engine Parts List	Bare Engine Parts List	Fuel Control Equipment List	Engine Equipment List	Definition of Interfaces – Installation Drawing
ASTAZOU XIV B	0 283 00 501 0	0 283 00 000 0	0 283 92 501 0	0 283 85 501 0	0 283 00 900 0
ASTAZOU XIV H	0 283 02 501 0	0 283 02 000 0	0 283 92 504 0	0 283 85 504 0	0 283 02 900 0

2. Description:

The ASTAZOU XIV B and ASTAZOU XIV H are single turboshaft engines with an annular air intake, a two-stage axial compressor, a single centrifugal compressor, an annular combustion chamber with centrifugal fuel injection and a three-stage axial turbine. A co-axial gearbox, housed in the hub of the air intake, provides a drive for a splined transmission shaft to the helicopter main gear box.

3. Equipment:

All equipment required for engine operation is included in the engine Type Design Definition. For additional details, refer to the applicable Installation and Operation Manuals.

4. Dimensions:

	Length mm	Height mm	Width mm
ASTAZOU XIV B	1 434	623.5	520
ASTAZOU XIV H	1 470	565	500

5. Dry Weight:

160 kg (completely equipped, exhaust pipe excluded)

6. Ratings:

	Maximum One-Hour Rating (1)		Maximum Continuous Rating (1)	
	Rotation Speed rpm	Shaft Power kW	Rotation Speed rpm	Shaft Power kW
ASTAZOU XIV H	43 000	440 (2)	43 000	440 (2)
ASTAZOU XIV B	43 000	440 (2)	43 000	405

(1) Minimum values defined under the following conditions:

- static, sea level standard conditions (15 °C, 1 013 mbar);
- on the engine test bed with a hydraulic brake system;
- with the air bleed ports closed;
- with calibrated Safran Helicopter Engine air intake duct P/N 6 202 74 715 0;
- with straight short exhaust pipe P/N 6 103 39 736 0, diameter 235 mm;
- with exhaust gas temperature measured using two thermocouples on the turbine exhaust diffuser.

The performance curves are available in the applicable Operation Manual.

(2) Torque-limited by the helicopter transmission.

7. Control System:

The engines have a hydromechanical control system.

8. Fluids (Fuel/Oil/Additives):

8.1 Fuel

For a list of fuels and fuel additives approved for use in each variant consult the applicable Operation Manual.

8.2 Oil

For a list of oils approved for use in each variant consult the applicable Operation Manual.

9. Aircraft Accessory Drives

	A.C. Generator				
	Rotation Direction of Engine Drive Pad (1)	Reduction Ratio / Nominal Speed rpm	Maximum Steady State Shaft Power kW	Maximum Torque Nm	Maximum Static Overhung Load (2) Nm
ASTAZOU XIV B	clockwise	3.63468 / 11 830	12.00	33.5	15.0
ASTAZOU XIV H	clockwise	3.57173 / 12 039	13.5	33.5	15.0

(1) The direction of rotation is given looking at the accessory drive pad.
(2) Load exerted by the weight of the accessory overhung on the drive pad.

10. Bleed Extraction:

	Maximum Flow Rate g/s
ASTAZOU XIV B	190
ASTAZOU XIV H	100

Limitations on the use of air bleed are defined in the applicable Operation Manual.

IV. Operational Limitations

1. Temperature Limits

1.1 Gas Generator Exhaust Temperature (T45) Limits

	Maximum One-Hour Steady State Power	Maximum Over-Temperature (Emergency)	Maximum Continuous Power	During Start	Transient During Start (Limited to 5 s)
ASTAZOU XIV B	550°C	600°C	470°C (1) 500°C (2)	700°C	750°C
ASTAZOU XIV H	550°C	600°C	500°C	700°C	750°C

(1) Without modification AB 60/N°40 incorporated

(2) With modification AB 60/N°40 incorporated

1.2 Fuel Temperature

Minimum for starting: -10°C to - 30 °C depending on the fuel type.
Maximum in operation: + 55°C.
Refer to the Operation Manual for details.

1.3 Oil Temperature

Minimum for starting: - 30°C with 3 cSt synthetic oil
- 20°C with 5 cSt synthetic oil

Minimum for engine loading: - 15°C with 3 cSt synthetic oil
0°C with 5 cSt synthetic oil

Maximum in operation: + 85°C

Minimum for anti-icing efficiency: + 30°C

2. Maximum / Minimum Speeds:

2.1 Engine Speed

Steady state, normal operating conditions: 43 000 rpm ± 200 rpm
Transient, sharp loading and unloading: 43 000 rpm ± 1 500 rpm
Maximum permissible over-speed: 45 600 rpm (limited to 10 s)

2.2 Output Shaft Speed

	Reduction Ratio / Nominal Speed rpm
ASTAZOU XIV B	7.34528 / 5 854
ASTAZOU XIV H	6.78857 / 6 334

3. Thrust / Torque Limits:

Maximum torque: 1000 Nm.

4. Pressure Limits

4.1 Oil pressure

Minimum: 1.1 bar
Maximum: 5 bar

4.2 Fuel pressure

Pressure at engine inlet for starting: + 0.3 to + 0.6 bar
Pressure at engine inlet in operation: - 0.3 to + 0.9 bar

5. Installation Assumptions:

Refer to the applicable Installation Manual.

6. Time Limited Dispatch

Not applicable to engines with hydromechanical controls.

V. Operational and Service Instructions

	Operation Manual	Maintenance Manual	Overhaul Manual	Installation Manual	Maintenance Spare Parts Catalogue	Maintenance Tools Catalogue
ASTAZOU XIV B	283 00 930	283 00 935	283 00 937	283 02 937	283 00 934	283 00 934
ASTAZOU XIV H	283 02 930	283 02 931	283 02 932	283 02 937	283 02 934	283 02 935

VI. Notes

1. Life-limited engine components are listed in Chapter 5 of the applicable Maintenance Manual.

2. Conversion from non-civil use.

   Case 1: ASTAZOU XIV B or H engines originally assembled by Safran Helicopter Engines may have been in service with military, customs, police or other operators not under the jurisdiction of a civil Authority. This is known to apply to, but is not limited to, engines installed in the Eurocopter SA 319 B "ALLOUETTE III" and SA 342 J "Gazelle" helicopters.

   Case 2: ASTAZOU XIV B or H engines can be created by converting ASTAZOU XIV F engines. The ASTAZOU XIV F is a military variant of the ASTAZOU XIV B, known to be installed in, but not limited to, a military variant of the Eurocopter SA 319 B "ALLOUETTE III" helicopter.
   The compliance of Case 1 and Case 2 engines with the European rules enabling issuance of an aircraft standard certificate of airworthiness must be checked. Their configuration, including design changes and repairs, does not necessarily conform to the type definition approved by EASA, and it is possible that in operation they have exceeded the limits approved by EASA. Before a standard certificate of airworthiness is issued to an aircraft in which a Case 1 or Case 2 ASTAZOU XIV B or H turboshaft engine is installed, an EASA Form 1 must be issued for the engine. This requires incorporation of Safran Helicopter Engines Mandatory Service Bulletin A283 72 0801, Original Issue (or any subsequent approved issue) for Case 1 engines, and Mandatory Service Bulletin A283 72 0803, Original Issue (or any subsequent approved issue) for Case 2 engines.

3. The engines meet the BCAR ice protection requirements when fitted with Safran Helicopter Engines grid P/N 0 235 21 762 0 or SNIAS/EUROCOPTER sound suppressors P/Ns 341 A 540110 or 341 A 541004, and when the oil temperature is above 30°C.

VII SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

n/a

II. Type Certificate Holder Record

Unit 18 July 206 Turbomeca
After 18 July 2016 Safran Helicopter Engines

III. Change Record

Issue	Date	Changes	TC issue
Issue 01	01 July 2009	Initial Issue	01 July 2009
Issue 02	01 August 2016	Name change from Turbomeca to Safran Helicopter Engines	01 August 2016

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