DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

H7EU
Revision 21
AGUSTA
Model A109
Model A109A
Model A109A II
Model A109C
Model A109K2
Model A109E
Model A119
Model A109S
October 03, 2006

TYPE CERTIFICATE DATA SHEET NO. H7EU

This data sheet, which is part of Type Certificate No. H7EU, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder.

AGUSTA S.p.A.
Via Giovanni Agusta 520
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Italy

I. Model A109 (Normal Category Helicopter) approved June 1, 1975.

Engines.

Two (2) Detroit Diesel Allison Division of General Motors Corporation Model 250-C20 turboshaft engines.
Bendix gas producer fuel control DP-N1.
Bendix power turbine governor AL-AA1.

Fuel.

For all temperatures:
MIL-T-5624 grade JP-4
ASTM D-1655 Jet B

For temperature above -18ºC (0ºF):
MIL-T-5624 grade JP-5
ASTM D-1655 Jet A
ASTM D-1655 Jet A1
See Note 4

Engine Limits.

All-engine operation

Takeoff (5 minutes)

Torque	113% (302 lb.ft) (346 shp)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	102 % (52000 rpm)
Gas temperature	793ºC (1460ºF)

Maximum Continuous

Torque	113% (302 lb.ft)(346 shp)
Output shaft speed (N2)	95-100% (5716-6016)
Gas producer speed (N1)	101% (51490 rpm)
Gas temperature	737ºC (1358ºF)

Page No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Rev. No.	21	10	11	11	10	10	11	11	11	11	11	18	18	17	19	19	17	19
Page No.	19	20	21	22	23	24	25	26	27	28	29	30	31	32				
Rev. No.	18	20	20	20	20	20	20	20	20	20	20	20	20	21				

I. Model A109 (cont'd)

Single-engine operation (emergency)

Takeoff (5 minutes)

Torque	131% (350 lb.ft)(400 shp)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	102% (52000 rpm)
Gas temperature	793ºC (1460ºF)

Maximum Continuous

Torque	126% (336 lb.ft)(385 shp)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	101% (51490 rpm)
Gas temperature	777ºC (1430ºF)

(See FAA-approved Helicopter Flight Manual for rpm and temperature transient limits).

Rotor Limits.

Power Off	
Maximum	110 % (424 rpm)
Minimum	90 % (346 rpm)
Power On	
Maximum	100 % (385 rpm)
Minimum	95 % (365 rpm)

Rotor Speed Warning.

Low Speed	95 % (365 rpm)
High Speed	105 % (404 rpm)

Airspeed Limits.

Never Exceed Speed (V_{NE})	168 kts	IAS

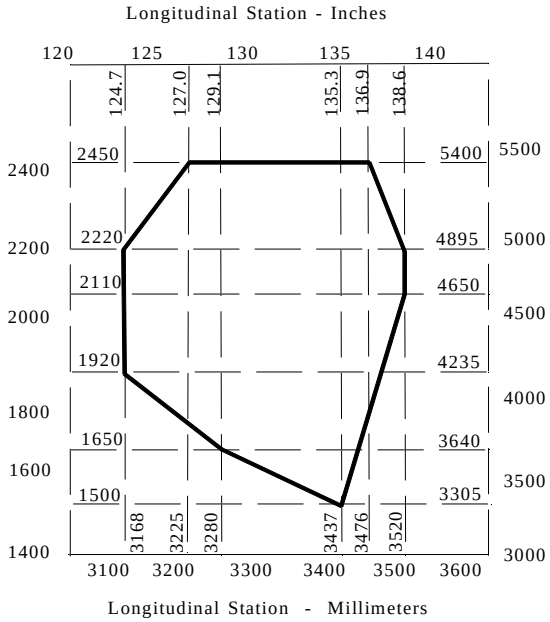
For reduction of V_{NE} with altitude and OAT, see RAI-approved Helicopter Flight Manual.

Maximum Gear Operating Speed (V_{LO})	120 kts	IAS
Maximum Gear Extended Speed (V_{LE})	120 kts	IAS
Maximum Forward Touchdown Speed	40 kts	IAS

C.G. Range (Gear Down).

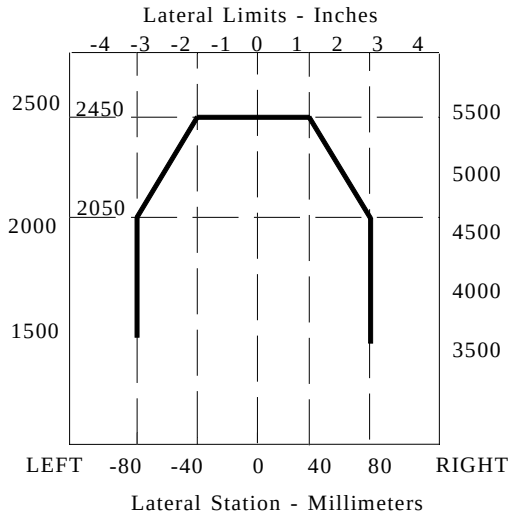
Longitudinal Limits

(Gear retraction moment is a 4 kgm (347 lb. in) moving CG forward).



I. Model A109 (cont'd)

CG Range (Gear Down).



Empty Weight & CG Range. (None)

Maximum Weight. 2450 Kg. (5400 lb)

Minimum Crew. One pilot

Maximum Passenger. 7: For aircraft conforming with Agusta Report 109-06-01.
1 at sta 1650 mm (65 in)
3 at sta 2485 mm (98 in)
3 at sta 3265 mm (129 in)

0: For aircraft in "green" delivery configuration conforming with Agusta Report 109-06-03.

Maximum Baggage. 150 Kg. (330 lb) at sta 4920 mm (194 in)

Maximum floor loading for baggage compartment:
500 Kg/m^2 (102 lb/ft2)

Maximum load per tie-down fitting:
91 Kg. (200 lb.)

Fuel Capacity. Total : 148.4 U.S. Gal. (559 lit.) in two tanks of 74.2 U.S. Gal. (279.5 lit.) each, at sta. 3650 mm (144.0 in.)

Usable : 146 U.S. Gal. (550 lit.)
See NOTE 1 for unusable fuel.

Oil Capacity Engines. 2 U.S. Gal. (7.7 lit.) each engine, at sta. 3053 mm (136 in)
See NOTE 1 for undrainable oil.

Maximum Operating Altitude. 4,560 m (15,000 ft)

Rotor Blade and Control Movements. For rigging information refer to the Model A109 Maintenance Manual.

II. Model A109A (Normal Category Helicopter), approved April 2, 1976.

Engines.

Two (2) Detroit Diesel Allison Division of General Motors Corporation Model 250-C20B turboshaft engines.

Bendix gas producer fuel control DP-N2.

Bendix power turbine governor AL-AA1.

Fuel.

For all temperatures:
MIL-T-5624 grade JP-4
ASTM D-1655 Jet B

For temperatures above -18ºC (0ºF):
MIL-T-5624 grade JP-5
ASTM D-1655 Jet A
ASTM D-1655 Jet A1
See NOTE 4

Engine Limits.

All engine operation

Takeoff (5 minutes)

Torque	113% (302 lb.ft) (346 shp)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	105% (53518 rpm)
Gas temperature	810ºC (1490ºF)

Maximum continuous

Torque	113% (302 lb.ft) (346 shp)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	105% (53518 rpm)
Gas temperature	738ºC (1360ºF)

Single-engine operation (emergency)

Takeoff (5 minutes)

Torque	131% (350 lb. ft) (400 shp)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	105% (53518 rpm)
Gas temperature	810ºC (1490ºF)

Maximum continuous

Torque	126% (336 lb.ft) (385 shp)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	105% (53518 rpm)
Gas temperature	810ºC (1490ºF)

(See FAA-approved Helicopter Flight Manual for rpm and temperature transient limits).

Rotor Limits.

Power off:

Maximum	110%	(424 rpm)
Minimum	90%	(346 rpm)

Power on:

Maximum	100%	(385 rpm)
Minimum	95%	(365 rpm)

Rotor Speed Warning.

Low speed	95%	(365 rpm)
High speed	105%	(404 rpm)

II. Model A109A (Normal Category Helicopter) (cont'd).

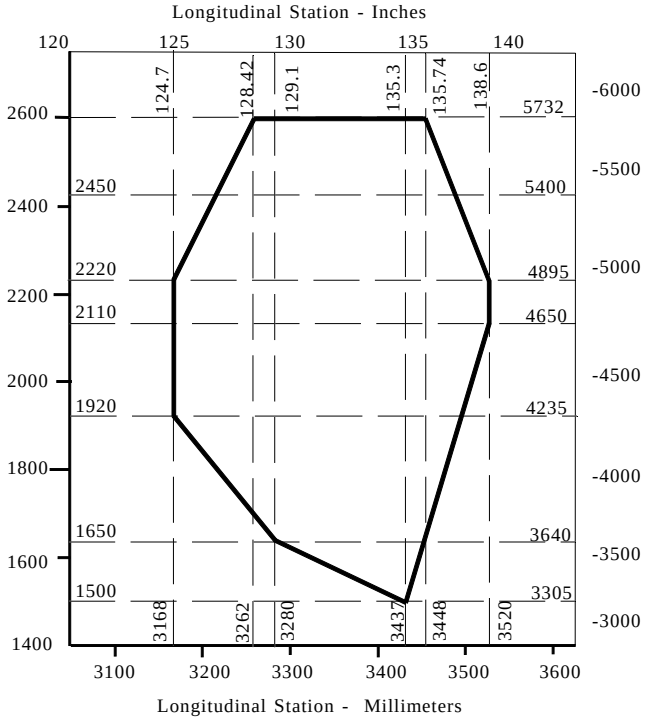
Airspeed Limits.

Never exceed speed (V_{NE}) 158 knots IAS (See NOTE 7)
For reduction of V_{NE} with altitude and OAT, see RAI-approved Helicopter Flight Manual.

Maximum Gear Operating Speed (V_{LO})	120 kts	IAS
Maximum Gear Extended Speed (V_{LE})	120 kts	IAS
Maximum Forward Touchdown Speed	40 kts	IAS

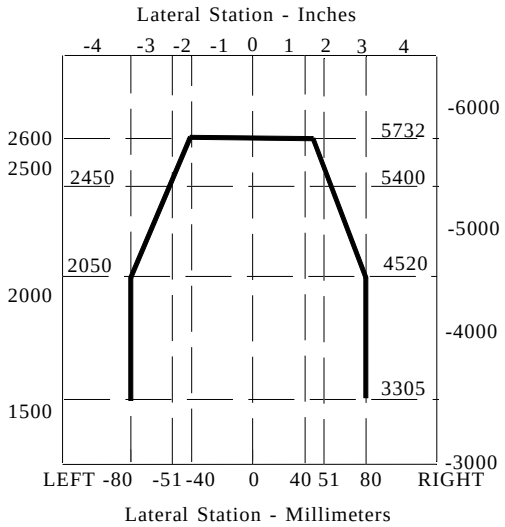
CG Range (Gear Down).

Longitudinal Limits
(Gear retraction moment is 4 kgm (347 lb.in) moving CG forward)



CG Range (Gear Down).

Lateral Limits



II. Model A109A (Normal Category Helicopter) (cont'd).

Empty Weight & CG Range. (None)

Maximum Weight. 2600 kg (5732 lb.) (See NOTE 7)

Minimum Crew. One pilot at Sta. 1630 mm (64 in.) to 1695 mm (67 in.) See NOTE 5.

Maximum Passengers. 7: For aircraft conforming with Agusta Report: 109-06-02.
1 at Sta. 1630 mm (64 in) to 1695 mm (67 in) (See NOTE 4).
3 at Sta. 2485 mm (98 in)
3 at Sta. 3265 mm (129 in)

0: For aircraft in "green" delivery configuration conforming with Agusta Report 109-06-07

Maximum Baggage. 150 kg. (330 lb.) at sta 4920 mm (194 in)

Maximum floor loading for baggage compartment:
500 kg/m2 (102 lb/ft2)

Maximum load per tie-down fitting:
91 kg (200 lb.)

Fuel Capacity. Total: 148 U.S. Gal. (559 lit.) in two tanks of 74.2 U.S. Gal. (279.5 lit.) each, at sta 3652 mm (144.0 in.)
Usable: 146 U.S. Gal. (550 lit.)
See NOTE 1 for unusable fuel.

Oil Capacity Engines. 2 U.S. Gal. (7.7 lit.) each engine, at sta 3053 mm (120 in).
See NOTE 1 for undrainable oil.

Oil Capacity Transmission. 3.2 U.S. Gal. (12 lit.) at sta 3460 mm (136 in)
See NOTE 1 for undrainable oil.

Maximum Operating Altitude. 2,432 m. (8,000 ft.) *See NOTE 7.*

Rotor Blade and Control Movements. For rigging information refer to the Model A109A/A109AII/A109C Maintenance Manual.

III. Model A109A II (Normal Category Helicopter), approved December 4, 1981.

Engines. Two (2) Detroit Diesel Allison Division of General Motors Corporation Model 250-C20B or 250-C20R/1 turboshaft engines.

Bendix gas producer fuel control DP-N2.
Bendix power turbine governor AL-AA1.

Fuel. For all temperatures:
MIL-T-5624 grade JP-4
ASTM D-1655 Jet B

For temperatures above -18ºC (0ºF):
MIL-T-5624 grade JP-5
ASTM D-1655 Jet A
ASTM D-1655 Jet A1
See NOTE 4

III. Model A109A II (Normal Category Helicopter) (cont'd)

Engine Limits.

All Engine Operation

Takeoff (5 minutes)

Torque	97% (323 lb.ft) (370 shp) (-C20R/1 engine)
Torque	121% (323 lb.ft) (370 shp) (-C20B engine)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	105% (53518 rpm)
Gas temperature	810ºC (1490ºF)

Maximum continuous

Torque	97% (323 lb.ft) (370 shp) (-C20R/1 engine)
Torque	121% (323 lb.ft) (370 shp) (-C20B engine)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	105% (53518 rpm)
Gas temperature	738ºC (1360 ºF) (-C20B engine)
Gas temperature	752ºC (1358ºF) (-C20R/1 engine)

Single-engine operation (emergency)

Torque	118% (400 lb.ft) (450 shp) (-C20R/1 engine)
Torque	137% (350 lb.ft) (420 shp) (-C20B engine)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	105% (53518 rpm)
Gas temperature	810ºC (1490ºF)

(See the A109AII Helicopter Flight Manual for rpm and temperature transient limits).

Rotor Limits.

Power off

Maximum	110%	(424 rpm)
Minimum	90%	(346 rpm)

Power on

Maximum	100%	(385 rpm)
Minimum	95%	(365 rpm)

Rotor Speed Warning.

Low speed	95%	(365 rpm)
High speed	105%	(404 rpm)

Airspeed Limits.

Never exceed speed (V_{NE}) 168 knots IAS

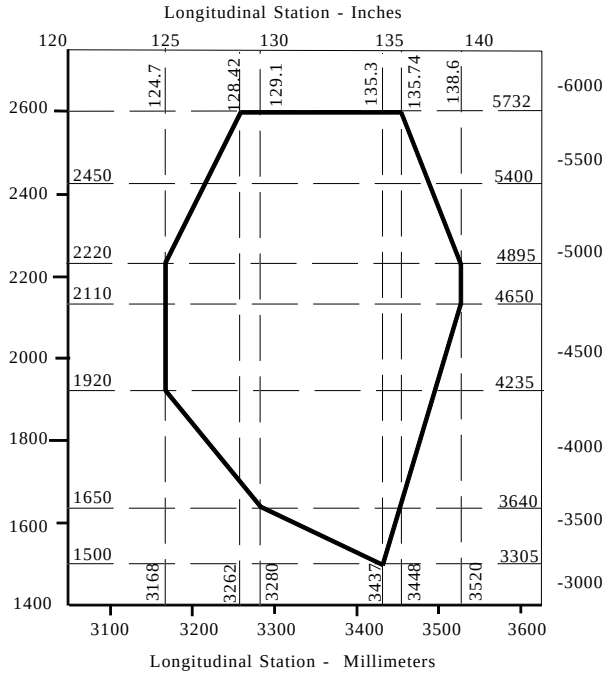
For reduction of V_{NE} with altitude and OAT, see the A109AII Helicopter Flight Manual.

Maximum Gear Operating Speed (V_{LO})	120 kts	IAS
Maximum Gear Extended Speed (V_{LE})	120 kts	IAS
Maximum Forward Touchdown Speed	40 kts	IAS

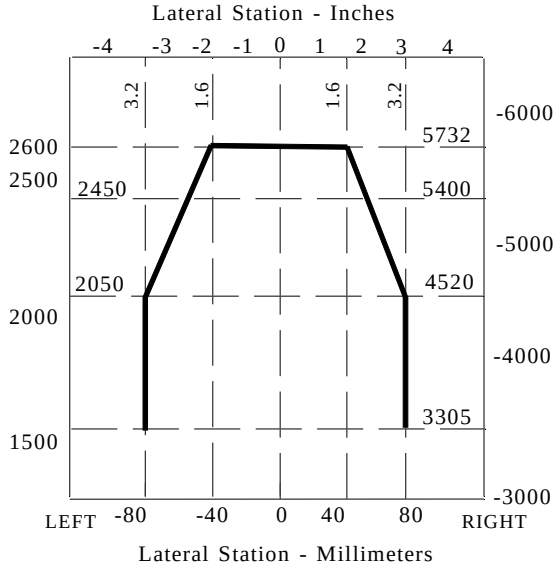
III. Model A109A II (Normal Category Helicopter) (cont'd)

CG Range (Gear Down). Longitudinal Limits

Gear retraction moment is 4 kgm (347 lb.in.) moving CG forward)



CG Range (Gear Down). Lateral Limits



Empty Weight & CG Range (None)

Maximum Weight. 2600 kg (5732 lb.)

Minimum Crew. One pilot at Sta. 1565 mm (62 in.) to 1630 mm (64 in.)

III. Model A109A II (Normal Category Helicopter) (cont'd)

Maximum Passengers.

7: For aircraft conforming with Agusta Report 109-06-29.
1 at sta. 1565 mm (62 in) to 1630 mm (64 in)
3 at sta. 2420 mm (95 in) Facing FWD or 3 at sta 2455 (97 in) Facing AFT
3 at sta. 3200 mm (126 in)

0: For aircraft in "green" delivery configuration conforming with Agusta Report 109-06-07. See Appendix 15 of required flight manual.

Maximum Baggage.

150 kg. (330 lb.) at sta 4920 mm (194 in)
Maximum floor loading for baggage compartment:
500 kg/m2 (102 lb/ft2)
Maximum load per tie-down fitting:
91 kg (200 lb.)

Fuel Capacity.

Total: 148.4 U.S. Gal. (559 lit.) in two tanks of 74.2 U.S. Gal. (279.5 lit.) each, at sta 3652 mm (144.0 in.)

Usable: 146 U.S. Gal. (550 lit.)
See NOTE 1 for unusable fuel
See NOTE 9 for fuel capacity with auxiliary fuel tank installation.

Oil Capacity Engines.

2 U.S. Gal. (7.7 lit.) each engine, at sta 3053 mm (120 in)
See NOTE 1 for undrainable oil.

Oil Capacity Altitude.

3.2 U.S. Gal. (12 lit.) at sta 3460 mm (136 in)
See NOTE 1 for undrainable oil.

Maximum Operating Altitude.

4,560 m. (15,000 ft.)

Rotor Blade Control Movements.

For rigging information refer to the Model A109A/A109AII/A109C Maintenance Manual.

IV. Model A109C (Normal Category Helicopter), approved August 10, 1989.

Engines.

Two (2) Detroit Diesel Allison Division of General Motors Corporation Model 250-C20R/1 turboshaft engines.

Bendix gas producer fuel control DP-N2.

Bendix power turbine governor AL-AA1.

Fuel.

For all temperatures:
MIL-T-5624 grade JP-4
ASTM D-1655 Jet B

For temperature above -18ºC (0ºF):
MIL-T-5624 grade JP-5
ASTM D-1655 Jet A
ASTM D-1655 Jet A1
See NOTE 4

IV. Model A109C (Normal Category Helicopter) (cont'd)

Engine Limits.

All Engine Operation

Takeoff (5 minutes)

Torque	104% (345 lb.ft) (395 shp)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	105% (53518 rpm)
Gas temperature	810ºC (1490ºF)

Maximum Continuous

Torque	100% (332 lb.ft) (380 shp)
Output shaft speed (N2)	95-100% (5715-6016 rpm)
Gas producer speed (N1)	105% (53518 rpm)
Gas temperature	752ºC (1385ºF)

Single-engine operation (emergency)

Torque	118% (400 lb.ft) (450 shp)
Output shaft speed (N2)	95-100% (5715-6015 rpm)
Gas producer speed (N1)	105% (53518 rpm)
Gas temperature	810ºC (1490ºF)

(See the A109C Helicopter Flight Manual for rpm and temperature transient limits).

Rotor Limits.

Power off

Maximum	110%	(424 rpm)
Minimum	90%	(346 rpm)

Power on

Maximum	100%	(385 rpm)
Minimum	95%	(365 rpm)

Rotor Speed Limits.

Low speed	95%	(365 rpm)
High speed	105%	(404 rpm)

Airspeed Limits.

Never exceed speed (V_{NE}) 168 knots IAS

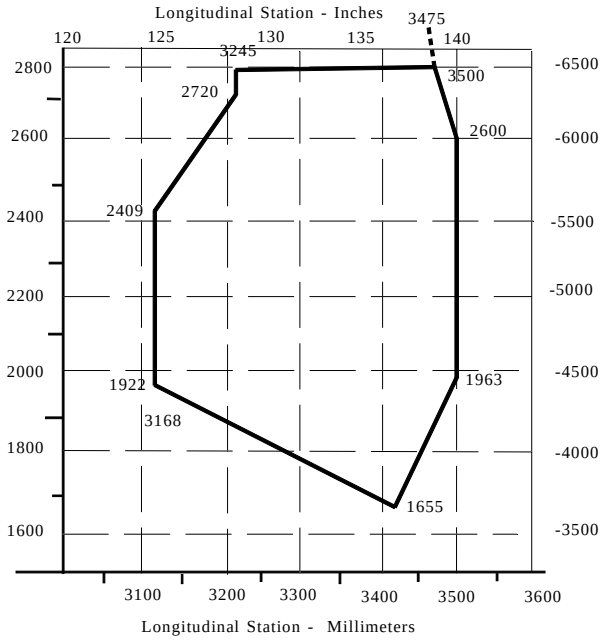
For reduction of V_{NE} with altitude and OAT, see the A109C Helicopter Flight Manual.

Maximum Gear Operating Speed (V_{LO})	120 kts	IAS
Maximum Gear Extended Speed (V_{LE})	120 kts	IAS
Maximum Forward Touchdown Speed	40 kts	IAS

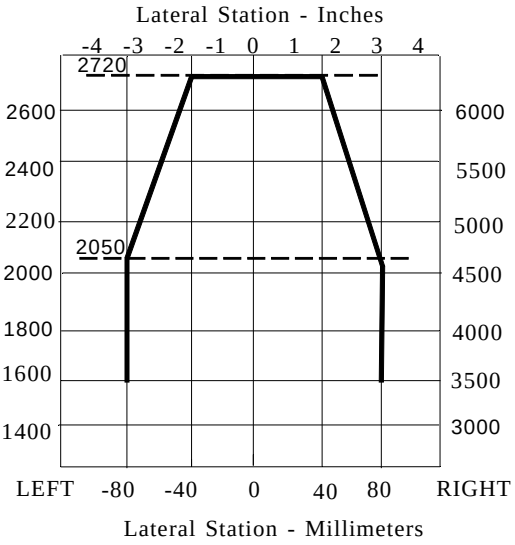
IV. Model A109C (Normal Category Helicopter) (cont'd)

CG Range (Gear Down). Longitudinal Limits

Gear retraction moment is 4 kgm (347 lb. in.) moving CG forward



CG Range (Gear Down). Lateral Limits



Empty Weight & CG Range. (None)

Maximum Weight. 2720 Kg (5997 lb)

Minimum Crew. One pilot at Sta. 1565 mm (62 in.) to 1630 mm (64 in.)

IV. Model A109C (Normal Category Helicopter) (cont'd)

Maximum Passengers.

7: For aircraft conforming with Agusta Report 109-06-67
1 at Sta. 1565 mm (62 in) to 1630 mm (64 in)
See NOTE 5.
3 at Sta. 2420 mm (95 in) Facing FWD or 3 at Sta 2455 (97 in) Facing AFT
3 at Sta. 3200 mm (126 in)

0: For aircraft in "green" delivery configuration conforming with Agusta Report 109-06-07. See Appendix 15 of required flight manual.

Maximum Baggage.

150 kg. (330 lb.) at Sta 4920 mm (194 in)

Maximum floor loading for baggage compartment:
500 kg/m2 (102 lb/ft2)

Maximum load per tie-down fitting:
91 kg (200 lb.)

Fuel Capacity.

Total: 148.4 U.S. Gal. (559 lit.) in two tanks of 74.2 U.S. Gal. (279.5 lit.) each, at sta 3652 mm (144.0 in.)

Usable: 146 U.S. Gal (550 lit.)
See NOTE 1 for unusable fuel.
See NOTE 9 for fuel capacity with auxiliary fuel tank installation.

Oil Capacity Engines.

2 U.S. Gal. (7.7 lit.) each engine, at sta 3053 mm (120 in)
See NOTE 1 for undrainable oil.

Oil Capacity Transmission.

3.2 U.S. Gal. (12 lit.) at sta 3460 mm (136 in)
See NOTE 1 for undrainable oil.

Maximum Operating Altitude.

4,560 m. (15,000 ft.)

Rotor Blade Control Movements.

For rigging information refer to the Model A109A/A109AII/A109C Maintenance Manual.

V. Model A109K2 (Normal Category Helicopter), approved January 15, 1993.

Engines.

Two (2) Turbomeca Model Arriel 1K1 turboshaft engines.

Turbomeca Fuel Control Unit 0164348390.

Fuel.

For all temperatures:
MIL-T-5624 grade JP-4, JP-5,
ASTM D-1655 Jet A, A1, Jet B,
MIL-T-83133 grade JP-8,
AIR 3404-F43 (AVCAT)

For detailed information see Section 1 of the A109K2 Flight Manual FAA approved.

Engine/Xmsn Limits.

All Engine Operation

Takeoff	
Torque	100% (900 SHP at N2 100%)
Output shaft speed (N2)	100% (6,000 rpm)
Gas producer speed (N1) (5 min.)	102% (52,836 rpm)
Gas temperature (5 min.) TOT	845ºC (1,553ºF)

V. Model A109K2 (Normal Category Helicopter) (cont'd)

Engine Limits (cont'd)

Maximum Continuous	
Torque	100% (900 SHP at N2 100%)
Output shaft speed (N2)	100% (6,000 rpm)
Gas producer speed (N1)	98.2% (50,868 rpm)
Gas temperature	775ºC (1,427ºF)
Single-engine operation (emergency) (2½ min.)	
Torque:	71.1% (640 SHP at N2 100%)
Output Shaft Speed (N2)	100% (6000 rpm)
Gas Producer Speed (N1)	103.1% (53406 rpm)
Gas Temperature (TOT) (30 min.)	885ºC (1625ºF)
Gas Temperature (TOT)	845ºC (1553ºF)
Gas Producer Speed (N1)	102% (52,836 rpm)
Maximum Continuous	
Torque	62.2 (560 SHP at N2 100%)
Output Shaft Speed (N2)	100% (6000 rpm)
Gas Temperature	775ºC (1,427ºF)

(See the A109K2 Helicopter Flight Manual for rpm and temperature transient limits).

Rotor Limits.

Power off	
Maximum	110% (422 rpm)
Minimum	90% (346 rpm)
Power on	
Maximum	100% (384 rpm)
Minimum	97% (372 rpm)

Rotor Speed Warning.

Low speed	95% (365 rpm)
High speed	105% (403 rpm)

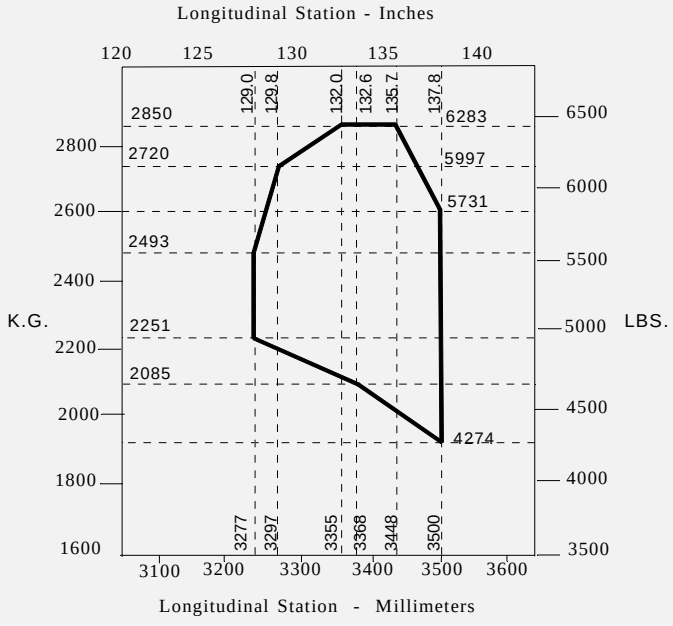
Airspeed Limits.

Never exceed speed (Vne) 152 knots IAS

For reduction of Vne with altitude and OAT, see the A109K2 Helicopter Flight Manual.

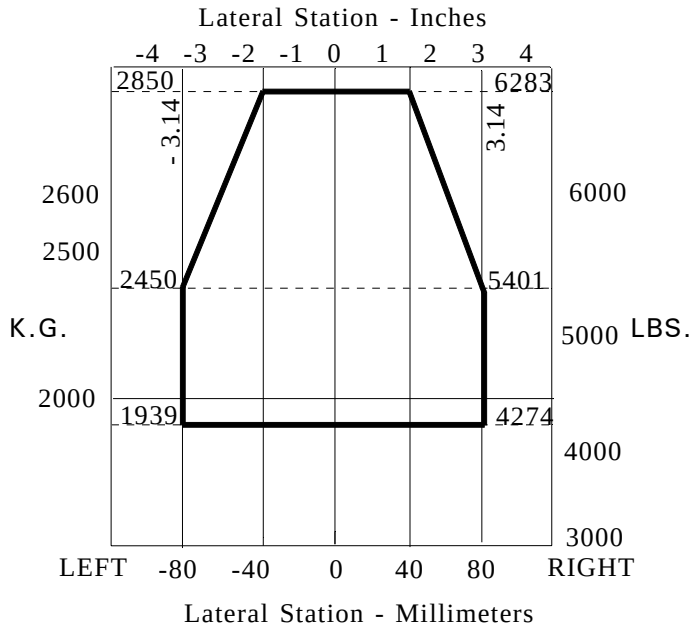
Maximum Forward Touchdown Speed	40 Kts IAS	to	2720 Kg
	30 Kts IAS	over	2720 Kg

CG Range. Longitudinal Limits



V. Model A109K2 (Normal Category Helicopter) (cont'd)

CG Range. (Cont'd) Lateral Limits



Empty Weight & CG Range. (None)

Maximum Weight. 2,850 Kg (6,283 lb)

Minimum Crew. One pilot at Sta 1,565 mm (62 in) to 1,630 mm (64 in)

Maximum Passengers. 7

Maximum Baggage. 150 Kg (330 lb) at Sta 4,920 mm (194 in)

Maximum floor loading for baggage compartment:
500 Kg/m^2 (102 lb/ft2)
Maximum load per tie-down fitting:
91 Kg (200 lb)

Fuel Capacity. Total Usable: 123.6 US Gal (468 lt) at Sta 3,824 mm (150.56 in)
See NOTE 1 for unusable fuel.
See NOTE 8 for fuel capacity with auxiliary fuel tank installation.

Oil Capacity Engines. 2 US Gal (7.7 lt) each engine, at Sta 3,311 mm (130 in)
See NOTE 1 for undrainable oil.

Oil Capacity Transmission. 3.2 US Gal (12 lt) at sta 3,441 mm (135 in)
See NOTE 1 for undrainable oil.

Maximum Operating Altitude. 4,560 m (15,000 ft)

Rotor Blade Control Movements For rigging information refer to the Model A109K2 Maintenance Manual.

VI. Model A109E (Normal Category Helicopter), approved August 26, 1996.

Engines.	Two (2) Pratt & Whitney Canada Inc. PW206C turboshaft engines. FADEC control engines Two (2) Turbomeca Arrius 2K1: TM 2K1 turboshaft engines. FADEC control engines P/N 70 EMK 00520	
Fuel PW 206C.	For all temperatures: ASTM D-1655 Jet A, A1, A2 Jet B.	
Fuel TM 2K1.	ASTM D-1655 Jet A, A1 Military specification (only for reference) MIL-T-5624 grade JP-4, JP-5, MIL-T-83133 grade JP-8, For detailed information see Section I of the applicable FAA approved A109E Flight Manual.	
Engine/Xmsn Limits. (PW206C engine)	All Engine Operation Takeoff	
	Torque	122% (549 SHP at N2 100%)
	Output shaft speed (N2)	102% (6120 rpm)
	Gas producer speed (N1)	98.7% (57250 rpm)
	Gas temperature (5 min.) TOT	863ºC (1585.4ºF)
	Maximum Continuous	
	Torque	122% (549 SHP at N2 100%)
	Output shaft speed (N2)	100% (6060 rpm)
	Gas producer speed (N1)	97.4% (56500 rpm)
	Gas temperature	820ºC (1508ºF)
	Single-engine operation (emergency) 2½ min.	
	Torque	142% (640 SHP at N2 100%)
	Output Shaft Speed (N2)	102% (6120 rpm)
	Gas Producer Speed (N1)	102.4% (59400 rpm)
	Gas Temperature (TOT)	930ºC (1706ºF)
	Maximum Continuous	
	Torque	138% (622 SHP at N2 100%)
	Output shaft speed (N2)	100% (6060 rpm)
	Gas producer speed (N1)	100.4% (58250 rpm)
	Gas temperature	885ºC (1625ºF)
	A109E helicopters that entered service prior to January 29, 1998 have a torque meter scale defined in Appendix 13 of the Rotorcraft Flight Manual.	
(TM 2K1 engine)	All Engine Operation Takeoff	
	Torque	142% (640 SHP at N2 100%)
	Output shaft speed (N2)	102% (6120 rpm)
	Gas producer (ΔN1)	0%
	Gas producer speed (N1)	54706 rpm)
	Gas temperature (5 min.)	TOT905ºC (1661.4ºF)
	Maximum Continuous	
	Torque	127% (573 SHP at N2 100%)
	Output shaft speed (N2)	100% (6060 rpm)
	Gas producer (ΔN1)	-2.4%
	Gas producer speed (N1)	53406 rpm
	Gas temperature	866ºC (1521ºF)

VI. Model A109E (Normal Category Helicopter) (cont'd)

Engine/Xmsn Limits. (cont'd)

Single-engine operation (emergency)	
2½ min.	
Torque	155% (700 SHP at N2 100%)
Output shaft speed (N2)	102% (6120 rpm)
Gas producer (ΔN1)	+2.6%
Gas producer speed (N1)	56113 rpm
Gas temperature	957ºC (1521ºF)
Maximum Continuous	
Torque	142% (640 SHP at N2 100%)
Output shaft speed (N2)	100% (6060 rpm)
Gas producer (ΔN1)	0%
Gas producer speed (N1)	54706 rpm
Gas temperature	905ºC (1521ºF)

Transmission Limits.

All Engine Operation (torque Tq)	
Maximum Continuous	100% (450 SHP)
Transient (6 second)	110% (495 SHP)
Single Engine Operation (torque Tq)	
Maximum Continuous	124% (558 SHP)
2 ½ minute	142% (640 SHP)
Transient (6 seconds)	156% (702 SHP)

Rotor Limits.

Power off	
Maximum	110% (422 rpm)
Minimum	90% (346 rpm)
Power on all engine operative	
Maximum	102% (394 rpm)
Minimum	99% (380 rpm)
Power on single engine (OEI)	
Maximum	102% (394 rpm)
Minimum	90% (346 rpm)

Rotor Speed Warning.

Low speed	
Power On - Maximum	95.5% (367 rpm)
Power Off - Minimum	89.5% (344 rpm)
High speed	105.5% (405 rpm)

Airspeed Limits.

Never exceed speed (Vne)	168 knots IAS power on 128 knots IAS power off/OEI

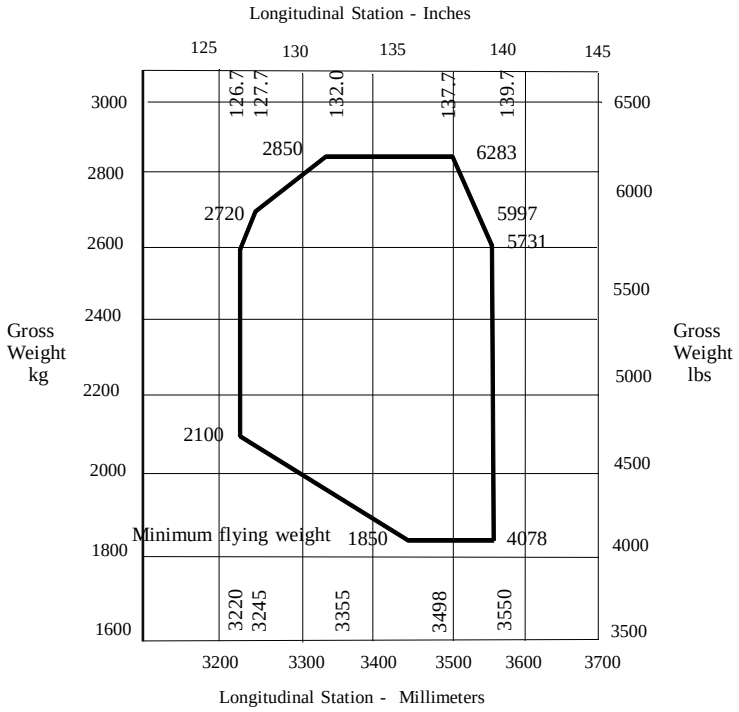
For reduction of Vne with altitude and OAT, see the applicable FAA approved A109E Helicopter Flight Manual.

Maximum Forward Touchdown Speed	40 Kts IAS

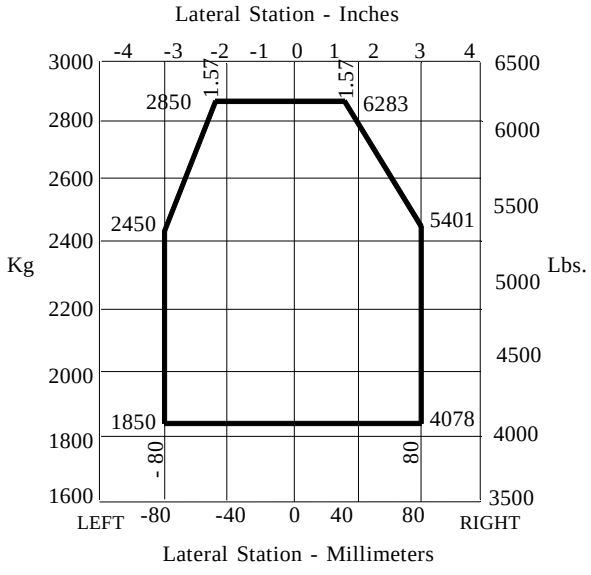
VI. Model A109E (Normal Category Helicopter (cont'd)

C.G. Range

Longitudinal limits



Lateral limits



VI. Model A109E (Normal Category Helicopter) (cont'd)

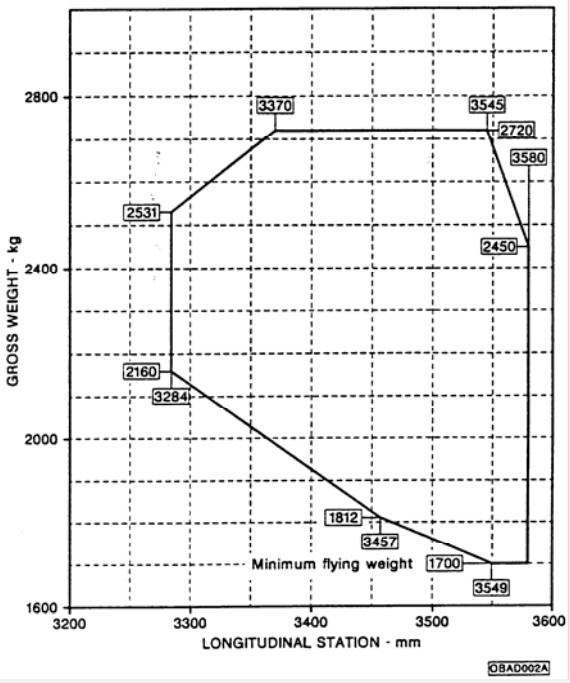
Empty Weight & CG Range.	(None)
Maximum Weight.	2,850 Kg (6,283 lb)
Minimum Crew.	One pilot at Sta 1,565 mm (62 in) to 1,630 mm (64 in)
Maximum Passengers.	7
Maximum Baggage.	150 Kg (330 lb) at Sta 5,300 mm (209 in) Maximum floor loading for baggage compartment: 500 Kg/m^2 (102 lb/ft2) Maximum load per tie-down fitting: 91 Kg (200 lb)
Fuel Capacity.	Total Usable: 157 US Gal (595 lt) *See NOTE 1 for unusable fuel.*
Oil Capacity Engines. PW 206C	1.35 US Gal (5.12 lt) each engine *See NOTE 1 for undrainable oil.*
Oil Capacity Engines. TM 2K1	1.13 US Gal (4.3 lt) each engine *See NOTE 1 for undrainable oil.*
Oil Capacity Transmission.	2.9 US Gal (11 lt) *See NOTE 1 for undrainable oil.*
Maximum Operating Altitude.	PW 206C 15,000 ft (4,560 m) TM 2K1 20,000 ft (6,096 m)
Rotor Blade Control Movements	For rigging information refer to the Model A109E Maintenance Manual.

VII. Model A119 (Normal Category Helicopter), approved April 28, 2000.

Engine.	One (1) Pratt & Whitney Canada Inc. PT6B-37A turboshaft engine. Electronic Engine Control (EEC)	
Fuel.	For all temperatures: ASTM D-1655 Jet A, A 1, A2 Military specification (only for reference) MIL-T-5624 grade JP-5, MIL-T-83133 grade JP-8 For detailed information see Section II of the A119 Flight Manual FAA approved.	
Engine/Xmsn Limits.	Takeoff	
	Torque	108.5% (900 SHP at N2 100%)
	Output Shaft Speed (N2)	101% (4416 rpm)
	Gas Producer Speed (N1)	103.2% (39300 rpm)
	Gas Temperature 5 min. (ITT)	810°C (1490.4°F)
	Maximum Continuous	
	Torque	100% (830 SHP at N2 100%)
	Output Shaft Speed (N2)	101% (4416 rpm)
	Gas Producer Speed (N1)	100.1% (38100 rpm)
	Gas Temperature (ITT)	755°C (1391°F)

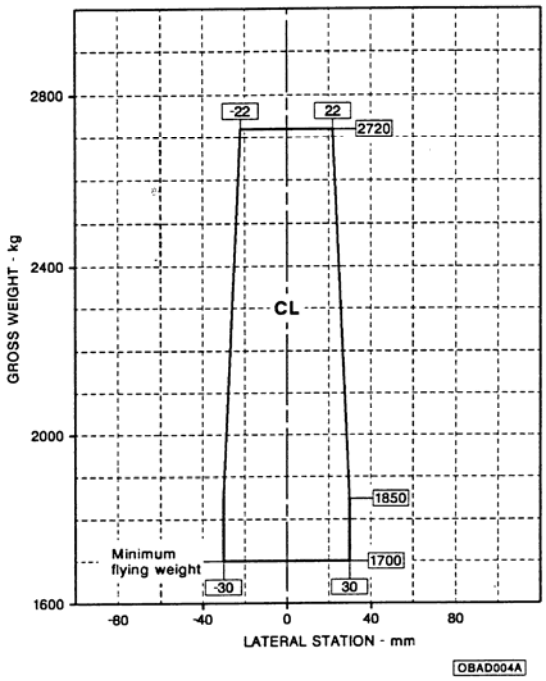
VII. Model A119 (Normal Category Helicopter) (cont'd)

Rotor Limits.	Power off	
	Maximum	110% (422 rpm)
	Minimum	90% (346 rpm)
	Power on	
	Maximum	101% (388 rpm) 103% (396 rpm) with torque <50%
	Minimum	95% (365 rpm)
Rotor Speed Warning.	Low speed	96% (369 rpm)
	High speed	108% (415 rpm)
Airspeed Limits.	Never exceed speed (Vne)	152 knots IAS power on
	For reduction of the Vne with altitude and OAT, see the A119 Rotorcraft Flight Manual.	
C.G. Range.	Longitudinal Limits.	



VII. Model A119 (Normal Category Helicopter) Cont'd

CG Range. Lateral Limits



Empty Weight & CG Range. (None)

Maximum Weight. 2,720 Kg (5,997 lb)

Minimum Crew. One pilot at Sta 1,565 mm (62 in) to 1,630 mm (64 in)

Maximum Passengers. 7

Maximum Baggage. 150 Kg (330 lb) at Sta 4,880 to 6,430 mm (192 to 253 in)
Maximum floor loading for baggage compartment:
500 Kg/m^2 (102 lb/ft^2).

Fuel Capacity. Total Usable: 157 US Gal (595 lt)
See NOTE 1 for unusable fuel

Oil Capacity Engine. 2.76 US Gal (10.45 lt)
See NOTE 1 for undrainable oil.

Oil Capacity Transmission. 2.72 US Gal (10.3 lt)
See NOTE 1 for undrainable oil.

Maximum Operating Altitude. 4,572 m (15,000 ft)

Rotor Blade Control Movements. For rigging information refer to the Model A119 Maintenance Manual.

VIII. Model A109S (Normal Category Helicopter), approved July 20, 2006.

Engines.	Two (2) Pratt & Whitney Canada Inc. PW207C turboshaft engines. FADEC control engines	
Fuel PW 207C.	For all temperatures: ASTM D-1655 Jet A, A1 Military specification (only for reference) MIL-T-5624 grade , JP-5, MIL-T-83133 grade JP-8, For detailed information see Section I of the applicable FAA approved A109S Rotorcraft Flight Manual.	
Emergency Fuel	Refer to FAA approved RFM Section 1 , for detailed information	
Engine/Xmsn Limits. PW207C engine)	All Engine Operation Takeoff	
	Torque	125% (562 SHP at N2 100%) Output
	shaft speed (N2)	102% (6120 rpm)
	Gas producer speed (N1)	99.7% (57826 rpm)
	Gas temperature (5 min.) TOT	900ºC (1652ºF)
	Maximum Continuous	
	Torque	125% (562 SHP at N2 100%)
	Output shaft speed (N2)	101% (6060 rpm)
	Gas producer speed (N1)	97.1% (56318 rpm) Gas temperature 840ºC (1544ºF)
	Single-engine operation (emergency)	
	2½ min	
	Torque	162% (730 SHP at N2 100%)
	Output Shaft Speed (N2)	102% (6120 rpm)
	Gas Producer Speed (N1)	103% (59740 rpm) Gas Temperature
	(TOT)	970ºC (1778ºF)
	Maximum Continuous	
	Torque	141% (633 SHP at N2 100%)
	Output shaft speed (N2)	101% (6060 rpm)
	Gas producer speed (N1)	99.7% (57826 rpm) Gas temperature 900ºC (1652ºF)
Transmission Limits.		
	All Engine Operation (torque Tq)	
	Maximum Continuous	100% (900 SHP)
	Take off (5 minutes)	107% (960 SHP)
	Transient (6 second)	110% (990 SHP)
	Single Engine Operation (torque Tq)	
	Maximum Continuous	133% (600 SHP)
	2 ½ minute	162% (730 SHP)
	Transient (6 seconds)	173% (780 SHP)
Rotor Limits.	Power off	
	Maximum	110% (422 rpm)
	Minimum	95% (365 rpm)
	Power on all engine operative	
	Maximum	102% (394 pm)
	Minimum	99% (380 rpm)
	Power on single engine (OEI)	
	Maximum	102% (394 rpm)
	Minimum	90% (346 rpm)

VIII. Model A109S (Normal Category Helicopter) (cont'd)

Rotor Speed Warning.

Low speed
- Power On – Maximum 95.5% (367 rpm)
- Power Off – Minimum 94.5% (344 rpm)

High speed
- Power On 105.5% (405 rpm)
- Power Off 111% (428 rpm)

Airspeed Limits.

Never exceed speed (Vne) 168 knots IAS power on
128 knots IAS power off/OEI

For reduction of Vne with altitude and OAT, see the applicable FAA approved A109S Rotorcraft Flight Manual.

Refer to FAA approved RFM Section 1 , for detailed information on other VNE limits

Ground Speed Limits

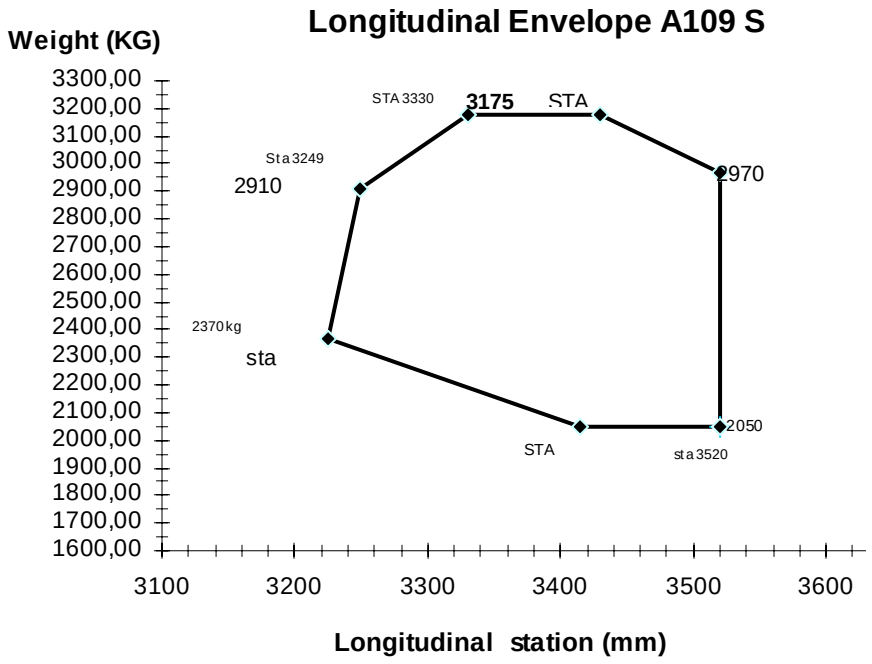
Maximum take off and Touchdown Speed on concrete or even surfaces:
40 Kts IAS

Maximum take off and Touchdown Speed on unprepared or uneven surfaces
20 Kts IAS

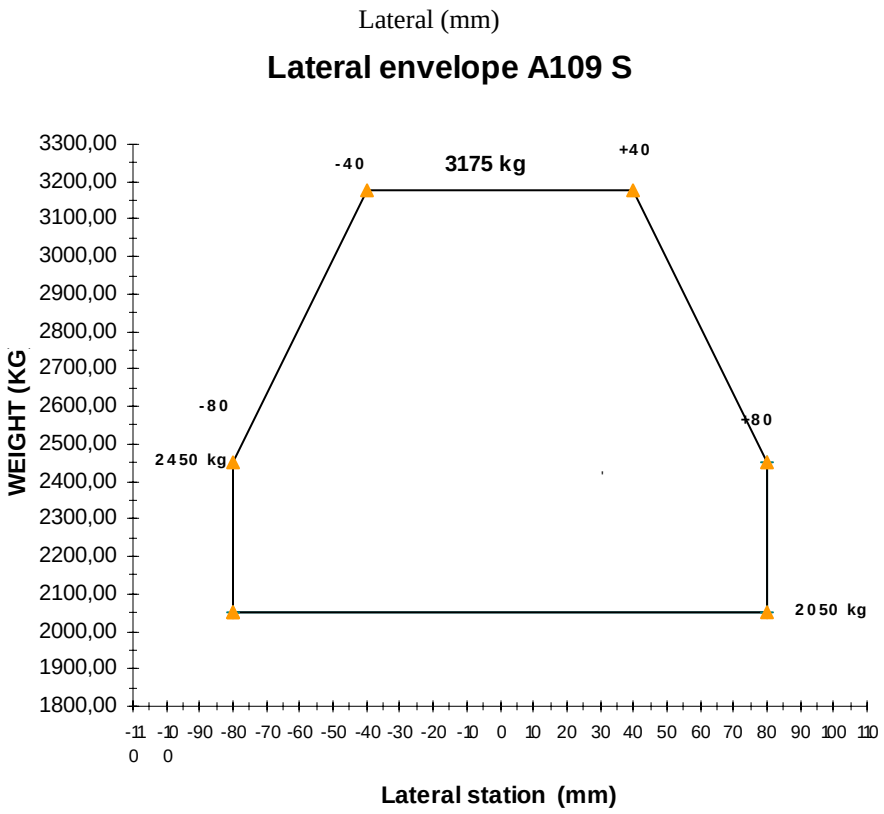
Refer to FAA approved RFM Section 1 , for detailed information

C.G. Range

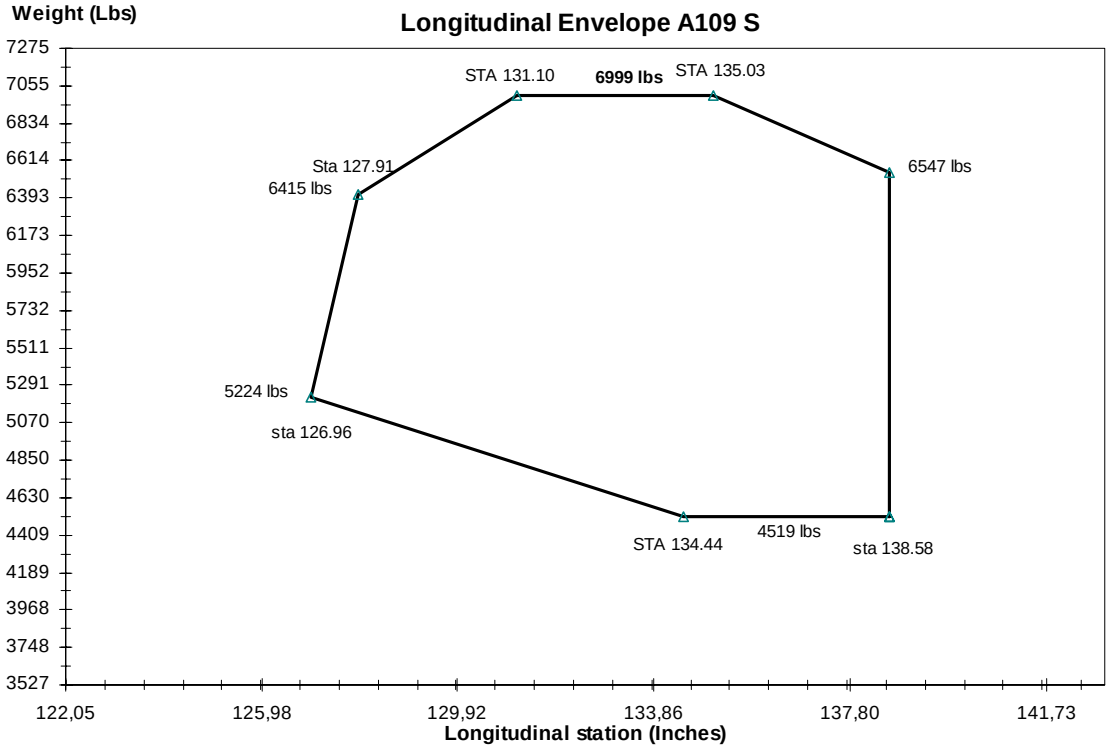
Longitudinal limits (mm)



Lateral (mm)

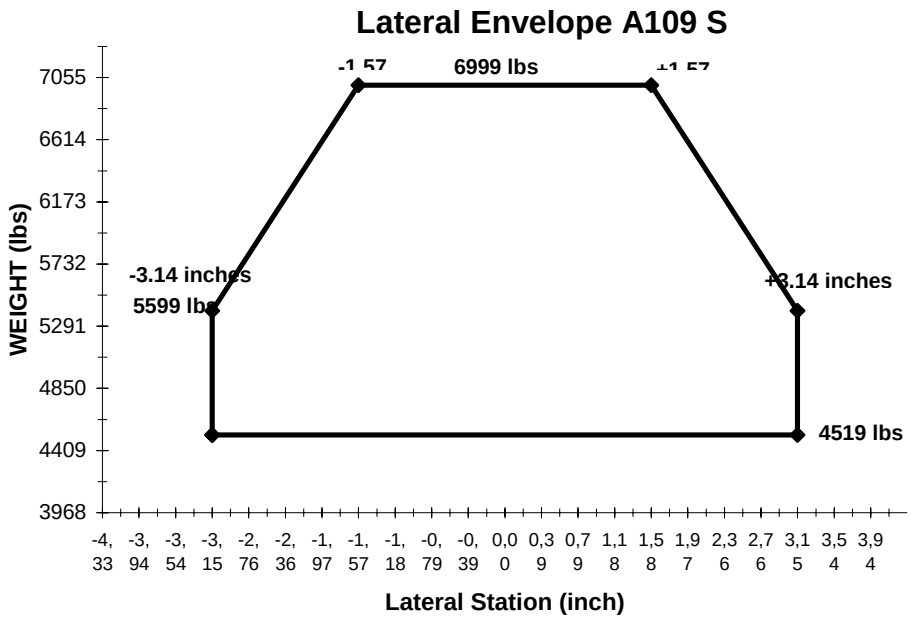


Longitudinal limits (inch)



VIII. Model A109S (Normal Category Helicopter) (cont'd)

Lateral (inch)



Empty Weight & CG Range.	(None)
Maximum Take Off Weight.	3,175 Kg (7,000 lb)
Minimum Crew.	One pilot at Sta 1,328 mm (52,3 in) to 1,404 mm (55,3 in) The pilot must be seated in the right seat
Maximum Passengers.	7
Maximum Baggage.	120 Kg (264 lb) at Sta 4,880 mm to 6430 mm ref .RFM for baggage load distribution Maximum floor loading for baggage compartment: 500 Kg/m^2 (102 b/ft2) Maximum load per tie-down fitting: 91 Kg (200 lb)
Fuel Capacity.	Total Usable: 148.5 US Gal (562 lt) *See NOTE 1 for unusable fuel.*
Oil Capacity Engines. PW 207C	1.38 US Gal (5.25 lt) for each engine *See NOTE 1 for undrainable oil.*
Oil Capacity Transmission.	3,09 US Gal (11,7 lt) *See NOTE 1 for undrainable oil.*
Maximum Operating Altitude. PW 207C	20,000 ft (6,096 m)
Blade Control Movements	Main -1° / +12° Tail RH pedal –7° LH pedal + 24° For rigging information refer to the Model A109S Maintenance Manual.

DATA PERTINENT TO ALL MODELS

Datum.

Longitudinal station 0 (datum) is 1835 mm (72 in) forward of the front jack point.
For the A119, longitudinal station 0 (datum) is 1785 mm (70 in) forward of the front jack point.
For the A109S, longitudinal station 0 (datum) is 1635 mm (64,37 in) forward of the front jack point

Lateral station 0 (datum) is ± 450 mm (± 18 in) inboard of each main jack point and coincides with the rotorcraft longitudinal plane of symmetry.

Leveling Means.

A109, A109A, A109AII, A109C, A109K2, A119 plumb line from ceiling reference point to index plate on floor of passenger cabin.
For A109E and A109S the leveling is performed by a water level put on the datum plate located on the cabin roof, RH side.

Serial Numbers Eligible.

A ENTE NAZIONALE AVIAZIONE CIVILE (ENAC) Certificate of Airworthiness for Export endorsed as noted under import requirements must be submitted for each individual rotorcraft for which application for certification is made.
For the A119, the eligible S/N is 14001 and greater.
For the A109S the eligible S/N is 22001 to 22500

Certification Basis.

FAR 21.29 and FAR Part 27 dated February 1, 1965, including Amendments 27-1 through 27-8.

FAR Part 29 dated February 1, 1965, para. 29.903(b), for Category "A" engine isolation.
Special Conditions for Agusta Model A109 helicopter No. 27-54-EU-17, issued on June 26, 1973.
Equivalent safety in lieu of compliance shown for:

-FAR 27.1189, re shutoff means
-FAR 27.1305(d), re fuel quantity indicator for A109A up to S/N 7165.
-FAR 27.927(c) at amendment 27-12 elected by the applicant

For the Model A109K2, in addition to the above:

-27.25	Amendment 11
-27.79	Amendment 21
-27.143	Amendment 21
-27.865	Amendment 11
-27.923	Amendment 12 (for reference only)
-27.939	Amendment 11
-27.951	Amendment 9
-27.1093	Amendment 20

For the Model A109E in addition to the above:

-27.2	Amendment 28
-27.21	Amendment 21
-27.45	Amendment 21
-27.71	Amendment 21
-27.141	Amendment 21
-27.175	Amendment 21
-27.177	Amendment 21
-27.401	Amendment 27
-27.610	Amendment 21
-27.901	Amendment 23
-27.903	Amendment 23
-27.927	Amendment 23
-27.954	Amendment 23
-27.1091	Amendment 23
-27.1189	Amendment 23
-27.1305	Amendment 23
-27.1321	Amendment 13

-27.1322	Amendment 11
-27.1323	Amendment 13
-27.1325	Amendment 13
-27.1401	Amendment 10
-27.1505	Amendment 21
-27.1519	Amendment 21
-27.1521	Amendment 23
-27.1527	Amendment 14
-27.1529	Amendment 18
-27.1549	Amendment 23
-27.1555	Amendment 21
-27.1557	Amendment 11
-27.1581	Amendment 14
-27.1583	Amendment 16
-27.1585	Amendment 21
-27.1587	Amendment 21

Special conditions for Agusta Models A109D and A109E helicopters, High Intensity Radiated Fields No. 27-ASW-3 issued on June 13, 1996.

Equivalent safety in lieu of compliance shown for: FAR 27.175(c), re static longitudinal stability.

For the Model A119 in addition to the above:
- FAR 27.29, Amdt. 14
- FAR 27.33, Amdt. 14
- FAR 27.65, Amdt. 33
- FAR 27.71, Amdt. 21
- FAR 27.151, Amdt. 21
- FAR 27.161, Amdt. 21
- FAR 27.173, Amdt. 21
- FAR 27.307, Amdt. 26
- FAR 27.321, Amdt. 11
- FAR 27.337, Amdt. 26
- FAR 27.339, Amdt. 11
- FAR 27.351, Amdt. 26
- FAR 27.361, Amdt. 23
- FAR 27.391, Amdt. 26
- FAR 27.395, Amdt. 26
- FAR 27.397, Amdt. 11
- FAR 27.427, Amdt. 27
- FAR 27.501, Amdt. 26
- FAR 27.571, Amdt. 26
- FAR 27.602, Amdt. 38
- FAR 27.603, Amdt. 16
- FAR 27.613, Amdt. 26
- FAR 27.663, Amdt. 26
- FAR 27.672, Amdt. 21
- FAR 27.727, Amdt. 26
- FAR 27.779, Amdt. 21
- FAR 27.783, Amdt. 26
- FAR 27.807, Amdt. 26
- FAR 27.863, Amdt. 16
- FAR 27.917, Amdt. 11
- FAR 27.923, Amdt. 29
- FAR 27.955, Amdt. 23
- FAR 27.967, Amdt. 30
- FAR 27.975, Amdt. 30
- FAR 27.977, Amdt. 11
- FAR 27.997, Amdt. 23
- FAR 27.1027, Amdt. 23
- FAR 27.1041, Amdt. 23
- FAR 27.1043, Amdt. 14
- FAR 27.1045, Amdt. 23

- FAR 27.1141, Amdt. 33
- FAR 27.1143, Amdt. 29
- FAR 27.1145, Amdt. 12
- FAR 27.1193, Amdt. 23
- FAR 27.1327, Amdt. 13
- FAR 27.1337, Amdt. 23
- FAR 27.1411, Amdt. 11
- FAR 27.1501, Amdt. 14
- FAR 27.1525, Amdt. 21
- FAR 27.1545, Amdt. 16
- FAR 27.1547, Amdt. 13
- FAR 27.1559, Amdt. 21
- 27 Appendix A, Amdt. 24

For the Model A109S:

- FAR Part 21.29 and FAR Part 27 as quoted in the FAA TCDS H7EU Revision 19 for unchanged area and FAR Part 27 Amendment 27-1 through 27-40 for the new or changed parts with respect to the A109E identified in the Agusta document n° 109-01-182 rev B;
- the exceptions of 27.863.
- Appendix A to Part 27 of Amendment 27-24.
- Appendix B to Part 27 of Amendment 27-19.
- FAR 36, Appendix H, Amendment 36-1 through the amendment in effect at the time of conducting the noise tests.
- Special Condition for High Intensity Radiated Field (HIRF), No. 27-ASW-3, issued on June 13, 1996.
- The main differences between the A109S and the A109E are as follows:
  - Maximum weight increase from 2850 kg to 3175 kg.
  - Stretched passenger cabin.
  - New tail rotor with composite blades.
  - Engine PW207C with new rating.
  - New main and nose landing gear.
  - New engine and transmission oil cooler components.
  - Engine control cable and engine control lever electronic control.
  - Modified two FFC levers.
  - Modified fuel quantity probe and computing unit for new fuel tanks.
  - Updated new limits in Integrated Display System (IDS).
  - Aircraft Battery relocated.
  - New ICS NAT.
  - New Main rotor P/N 109-0112-01-103.
  - New COM/NAV.
  - New pilot seats.
  - Modified passenger seats installation and fuel system.
  - Installed new interior.

The A109 models with a maximum weight exceeding 6000 lb have been approved following the grant of the exemption No. 6518 dated October 9, 1996.

The Grant of Exemption No. 6648, Regulatory Docket No. 28353 was issued on June 25, 1997, for the A119 in response to Agusta letter of September 27, 1995, requesting exemption from 21.19(b)(1) of Title 14, Code of Federal Regulations (14 CFR) to allow for an amendment to the TC No. H7EU rather than applying for a new Type Certificate due to design change from 2 engine to one engine.

Date of Application for Type Certificate: February 18, 1971. Type Certificate No. H7EU issued June 1, 1975; amended April 2, 1976 to include Model A109A; amended December 4, 1981 to include Model A109AII; amended August 19, 1989 to include Model A109C; amended January 15, 1993 to include Model A109K2; amended August 26, 1996 to include Model A109E; amended April 28, 2000 to include Model A119;amended July 20,2006 to include Model A109S.

For IFR operations See NOTE 6.

Import Requirements.

To be considered eligible for operation in the United States, each aircraft manufactured under this type certificate must be accompanied by a certificate of airworthiness for export or certifying statement endorsed by the exporting foreign civil airworthiness authority which states (in the English language):

"The rotorcraft covered by this certificate has been examined, tested and found to conform to the type design approved under FAA Type Certificate No. H7EU, and to be in condition for safe operation."

The U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 and exported by the country of manufacture is FAR Sections 21.183(c) or 21.185(c).

The U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 exported from countries other than the country of manufacture (e.g. third party country) is FAR Sections 21.183(d) or 21.183(b).

Equipment.

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

In addition, the following items of equipment are required:

(a) Approved Helicopter Flight Manual:

1.	Model A109:	A109 Helicopter Flight Manual dated May 21, 1975 or later revision.
2.	Model A109A:	A109A Helicopter Flight Manual dated May 16, 1979 or later revision.

NOTE: for operations at 2450 Kg (5400 lbs) pages 1-2A, 1-2B and 1-12A are applicable.

3.	Model A109A II:	A109A II Helicopter Flight Manual dated June 2, 1981 or later revision.
4.	Model A109C:	A109C Helicopter Flight Manual dated October 2, 1989 or later revision.
5.	Model A109K2:	A109K2 Helicopter Flight Manual dated January 23, 1992 or later revision.
6.	Model A109E: (PW206C)	A109E Rotorcraft Flight Manual dated May 31, 1996 or later revision
7.	Model A119:	A119 Rotorcraft Flight Manual dated April 19, 2000 or later revision.
8.	Model A109E: (TM 2K1)	A109E Rotorcraft Flight Manual No. 109-08-053 and relevant Section 5 "Optional Equipment" No. 109-08-057, dated September 10, 2001 or later revision.
9.	Model A109S	A109S Rotorcraft Flight Manual No. 109G0040A013 and No. 109G0040A014 RFM Optional Equipment

Supplements

(b) Low-rotor-rpm and engine-failure warning systems in accordance with Agusta drawing Nos. 109-0729-21 or 109-0729-31 and 109-0729-22 for A109A, A109AII and A119 Models; 109-0741-06 for Model A109C; 109-0741-27 and 109-0752-40 for Model A109K2; 109-0753-28 for Model A109E and A109S.

(c) OAT indicator MS28028-1
On A109E and A109S the OAT data are shown on the IDS system and the sensor is P/N E22307-2-4.

Required and optional approved equipment are listed in the A109 Equipment List Report No. 109-07-01; A109A Equipment List Report No. 109-07-03; A109AII Equipment List Report No. 109-07-06; A109C Equipment List Report No. 109-07-09; A109K2 Equipment List Report No. 109-07-14; A109E Equipment List Report No. 109-07-16; A119 Equipment List Report No. 109-07-19.
A109S Equipment List Report No 109G0840W017

For IFR operations see NOTE 6.

Placards. Placards listed in the EASA/ENAC-approved Rotorcraft Flight Manual must be displayed in the appropriate location.

Service Information. Information essential for proper maintenance of the rotorcraft is presented in the following documentation which must be supplied with each rotorcraft at time of delivery:
A109A/A109AII/A109C A109K2 A109E Airworthiness Limitations Section (Chapter 4) of the Maintenance Manual.
A109S Airworthiness Limitations Section (Chapter 4) of the Doc n° 0B-A-AMPI-00-P Aircraft Maintenance Planning Information.

A109A/A109AII/A109C A109K2 A109E inspection requirements and component overhaul schedule (chapter 5) of the Maintenance Manual.
A109A/A109AII/A109C A109K2 A109E Maintenance Manual.
A119 Airworthiness Limitations Section (chapter 4) of the Maintenance Manual.
NOTE: mission profiles using more cycles than those quoted in the A119 MM Section 04-00 “Airworthiness Limitations Section” shall be communicated to the aircraft manufacturer for retirement lives recalculation and approval.

A119 inspection requirements and component overhaul schedule (chapter 5) of the Maintenance Manual
A109S Airworthiness Limitations Section (Chapter 5) of the Doc n° 0B-A-AMPI-00-P Aircraft Maintenance Planning Information.

“Agusta Service bulletins, structural repair manuals, vendor manuals, aircraft flight manuals, and overhaul and maintenance manuals, which contain a statement that the document is European Aviation Safety Agency/ENTE NAZIONALE AVIAZIONE CIVILE (EASA/ENAC) approved, are accepted by the FAA and are considered FAA approved.
These approvals pertain to the type design only.”

Mandatory Bulletins will be identified as such.

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

The certificated empty weight and corresponding CG location must include undrainable oil and undrainable fuel.
Undrainable engine oil is zero Kg. for all models except for the A109E where the undrainable oil is 2.09 Kg./4.61 lbs (0.567 U.S.gal/2.15 lt) at the sta. 4280 mm (168.5 in), for the A119 where the undrainable oil is 1.6 Kg./3.52 lbs (0.433 U.S. gal/1.64 lt) at the sta. 4673 mm (183.9 in) and for the A109E where the undrainable oil is 1.8 Kg/3.96 lbs (0.486 U.S gal/1.84 lt) at sta 4280 mm (168.5 in).

Unusable fuel is 7 Kg /15 lbs (2.4 U.S. gal./9 lt.) at sta. 3750 mm (148°) for Model A109A/AII/C, 9 Kg./20 lbs (3.2 U.S. gal./12 lit.) at sta. 3750 mm (148°) for Model A109K2, 8 Kg/17.6 lbs (2.66 U.S. gal./10 lt at sta 3320 mm (131 in) for Model A109E, 8.15 Kg/18 lbs (2.72 U.S. gal./10.18 lt) at sta 3325 mm (131 in) for Model A119, and 9.6Kg/21.16 lbs (3.17 U.S gal /12 lt) at sta 3761 mm (148 in) for Model A109S.

NOTE 2. All placards indicated in the Rotorcraft Flight Manual (RFM) must be installed in the appropriate location.

NOTE 3. Life-limited components and approved retirement times of the Model A109A/A109AII/A109C/A109K2/ A109E/A119/A109S are listed in the chapter 04 “Airworthiness Limitations” of the applicable “Maintenance Manual” and must be replaced as prescribed therein.

NOTE 4. For operation below 4ºC (40ºF) of the Model A109A/AII/C the use of anti-ice additive is authorized, but is not mandatory due to aircraft anti-ice fuel filter installation. Below 4ºC (40ºF) the AVGAS JET FUEL MIXTURE may be used as an alternative fuel. Refer to Allison Operation and Maintenance Manual for AVGAS mix, cold weather fuel and blending instructions.

For A109E operation below 4ºC (40ºF) the use of anti-ice additive is authorized but not mandatory due to aircraft anti-ice fuel filter installation. For additive requirements and blending procedures refer to Pratt & Whitney or Turbomeca manuals.

For A109S operation below 4ºC (40ºF), the use of anti-ice additive is authorized but not mandatory due to aircraft anti-ice fuel filter installation. For additive requirements and blending procedures refer to Pratt & Whitney PW207C engine/maintenance/installation manual.

For A119 operation below 4°C (40°F) the use of anti-ice additive is not mandatory the engine is equipped with a fuel heater.

NOTE 5. For helicopters up to and including S/N 7114 not equipped with adjustable seat kit P/N 109-0700-49-1, moment arm of pilot and forward passenger seat is 1650 mm (65 in) from sta. 0.

NOTE 6.

a. Model A109A helicopters, S/N 7107, 7130 and subsequent, are eligible for day and night IFR operations, with one pilot or with two pilots, when "IFR" installation Agusta Kit No. 109-0810-22, Rev. E or later FAA-approved revision is incorporated and the helicopter is operated in accordance with Model A109A Flight Manual IFR Supplement No. 1 approved by RAI under date of July 16, 1978 and subsequent approved revisions. (NOTE: the above-noted kit and flight manual supplement comprise the Agusta version of FAA-approved STC No. CH2699SW).
b. Model A109A II and A109C helicopters S/N 7256, and subsequent, are eligible for day and night IFR operations with one, or with two pilots when "IFR" installation Kit No. 109-0810-22, Rev. E or, later FAA approved revision, is incorporated and the helicopter is operated in accordance with Model A109 II and A109C Rotorcraft Flight Manuals.
c. Model A109K2 helicopters S/N 10001 and subsequent are eligible for day and night, single pilot IFR operation when IFR installation Agusta Kit No. 109-0810-22-135 and subsequent approved dash numbers are incorporated.
   Certification Basis:
   - Appendix B to Part 27 - Airworthiness criteria for helicopter instrument flight - Amdt. 27.19.
   - FAR Part 27 Paragraph 27.672 Amdt. 21; 27.1309 Amdt 21; 27.1329 Amdt 21; 27.1335 Amdt. 13.
   The helicopter shall be operated in accordance with the Model A109K2 Flight Manual IFR Supplement No. 2.
d. Model A109E Helicopters S/N 11001 and subsequent, are eligible for day and night, single pilot IFR operation when IFR installation Agusta Kit P/N 109-0810-22-143 and subsequent approved dash numbers are incorporated.
   Certification Basis:
   - Appendix B to Part 27 - Airworthiness criteria for helicopter instrument flight - Amdt. 27.19.
   - FAR Part 27 Paragraph 27.672 Amdt. 21; 27.1309 Amdt 21; 27.1329 Amdt 21; 27.1335 Amdt. 13.
   The helicopter shall be operated in accordance with the Model A109E Flight Manual.
e. Model A109S Helicopters S/N 22001 and subsequent, are eligible for day and night, single pilot IFR operation. The IFR is part of the Basic Certification.

NOTE 7. Model A109A helicopters are eligible for operations at maximum weight of 2600 kg (5732 lb.) when Agusta Technical Bulletin No.109-20 and subsequent approved revisions are incorporated. For Model A109A helicopters not incorporating the Agusta Technical Bulletin No. 109-20, the following limitations are to be applied.

- Airspeed limits

Never exceed speed (V_{NE}) 168 kts IAS

For reduction of VNE with altitude and OAT, see page 1-2A of the FAA-approved Rotorcraft Flight Manual.

- CG Range (Gear Down)
  Longitudinal Limits --
  Refer to diagram on page 5 (Model A109A) for weight up to 2450 kg. (5400 lb.)

Lateral Limits --
Refer to diagram on page 6 (Model A109A) for weight up to 2450 kg. (5400 lb.)

- Maximum Weight 2450 kg (5400 lb.)
  See Page 1-2B of the FAA-approved Rotorcraft Flight Manual.

- Maximum Operating Altitude 4560m (15000 ft)
  See Page 1-2B of the FAA-approved Rotorcraft Flight Manual.

NOTE 8. For Models A109AII, A109C, and A109K2, the auxiliary fuel tank installation P/N 109-0810-56 adds a total fuel capacity of 40.8 U.S. Ga. (153 lit.) at sta. 4708 mm (185.3 in.) of which 40 U.S. Gal. (150 lit.) is usable. For Model A109E, the fuel tank installation P/N 109-0811-49 adds a total of fuel capacity of 70 U.S. gal. (265 lit.) all usable.
For Model A109S, the fuel tank installation P/N 109-0813-32 adds a total of fuel capacity of 60.76 U.S. gal. (230 lit) all usable.

NOTE 9. The Models A109/A109A/A109AII/A109C/A109K2/A109E/A119/A109S are identified by the general assembly drawing as follows:

109-9000-01-5	for A109
109-9000-01-11/15/19/23/27	for A109A
109-9000-01-31	for A109AII
109-9000-01-135	for A109C
109-9000-01-139	for A109K2
109-9000-01-149	for A109E
109-00-155 rev. B	for A119
109-9000-09-101	for A109S

NOTE 10. The model A109K2 is eligible for operations on clear airfield and helipad with the critical engine failure concept when the installation P/N 109-0822-47 (all the approved dashes) is incorporated and the helicopter is operated in accordance with the Model A109K2 Flight Manual Supplement No. 3 "Take-off and landing procedures and performance data on clear airfield and helipad with critical engine failure".

Certification Basis:
That applicable to the A109K2 plus JAR 29.45(a), (b)(2) Amdt. Base; JAR 29.49(a) Amdt. Base; JAR 29.51 Amdt. Base; JAR 29.53 Amdt. Base; JAR 29.55 Amdt. Base; JAR 29.59 Amdt. Base; JAR 29.60 Amdt. Base; JAR 29.61 Amdt. Base; JAR 29.62 Amdt. Base; JAR 29.64 Amdt. Base; JAR 29.65 (a) Amdt. Base; JAR 29.67 (a) Amdt. Base; JAR 29.75 Amdt. Base; JAR 29.77 Amdt. Base; JAR 29.79 Amdt. Base; JAR 29.81 Amdt. Base; JAR 29.85 Amdt. Base; JAR 29.87 (a) Amdt. Base; FAR 29.861(a) Amdt. 26; FAR 29.901(c) Amdt. 25 for engines installations only; FAR 29.901 (c) Amdt. 25. For engines installation only; FAR 29.903(b), (c), (e) Amdt. 31; FAR 29.908(a) Amdt. 25; FAR 29.923 Amdt. 23; FAR 27.927 (a), (b) Amdt. 12; FAR 29.927 (c)(1) Amdt. 26; FAR 29.953 (a) Amdt. Base; JAR 29.1027(a) Amdt. Base; JAR 29.1045 (a)(1), (b), (c), (d), (f) Amdt. Base; JAR 29.1047 (a) Amdt. Base; JAR 29.1181 (a) Amdt. Base; JAR 29.1187 (e) Amdt. Base; JAR 29.1189 (c) Amdt. Base; JAR 29.1191 (a)(1) Amdt. Base; JAR 29.1193 (e) Amdt. Base; JAR 29.1305 (a)(6), (b) Amdt. Base; JAR 29.1309 (b)(2)(i), (d) Amdt. Base; JAR 29.1323 (e)(1) Amdt. Base; JAR 29.1331 (b) Amdt. Base; JAR 29.1587 (a) Amdt. Base. The JAR requirements listed above meet or exceed the FAR Part 27 and FAR Part 29 CAT A. requirements.

NOTE 11. The Model A109E is eligible for operations on clear airfield and helipad with the “Equivalent Category A” when the installation P/N 109-0811-39 (all the approved dashes) is incorporated and the helicopter is operated in accordance with the Model A109E Flight Manual Supplement No. 12 Equivalent Category “A” operations.

In addition to the paragraphs of the Certification Basis, the A109E must comply also with the following paragraphs:
JAR 29.45(a),(b)(2) Amendment base; JAR 29.49(a) Amendment base; JAR 29.51 Amendment base; JAR 29.53 Amendment base; JAR 29.55 Amendment base, JAR 29.59 Amendment base; JAR 29.60 Amendment base; JAR 29.61 Amendment base; JAR 29.62 Amendment base; JAR 29.64 Amendment base; JAR 29.65 (a) Amendment base; JAR 29.67 (a) Amendment base; JAR 29.75 Amendment base; JAR 29.77 Amendment base; JAR 29.79 Amendment base; JAR 29.81 Amendment base; JAR 29.85 Amendment base; JAR 29.87 (a) Amendment base; (JAR 29.571 Amendment base Fatigue evaluation of structure.) AC Material only: AC 29-2A Item 230 Paragraph 10; JAR 29.861 (a) Amendment base; JAR 29.901 (c) Amendment base; JAR 29.903 (b), (c), (e) Amendment base; JAR 29.908 (a) Amendment base; JAR 29.927 (c)(1), JAR 29.953(a) Amendment base; JAR 29.1027(a) Amendment base; JAR 29.1045 (a)(1), (b), (c), (d), (f) Amendment base; JAR 29.1047 (a) Amendment base; JAR 29.1181(a)(1) Amendment base; JAR 29.1193 (e) Amendment base; JAR 29.1195(a), (d) Amendment base; JAR 29.1305 (a)(6),(b) Amendment base; JAR 29.1309 (b)(2)(i), (d) Amendment base; JAR 29.1323 (c)(1) Amendment base; JAR 29.1331 (b) Amendment base; JAR 29.1351(d)(2) Amendment base; JAR 29.1587 (a) Amendment base. The JAR requirements listed above meets the FAR Part 27 and FAR Part 29 CAT A. requirements.

NOTE 12. For the models A109K2 and A109E that has been certified with ditching provisions in accordance with RFM supplements No. 22 & 21 respectively the certification basis has been updated adding with the following paragraphs: FAR 27.563 Amendment 26, FAR 27.801 Amendment 11, FAR 27.807 Amendment 26, FAR 27.1411 Amendment 11, FAR 27.1415 Amendment 11.

NOTE 13. The model A109E and A109S rotorcraft employ electronic engine controls, commonly named Full Authority Digital Engine Controls (FADEC), and is recognized to be more susceptible to Electromagnetic Interference (EMI)
than rotorcraft that have only manual (non-electronic) controls. EMI may be the result of radiated or conducted interference. For this reason modifications that add or change systems that have the potential for EMI, must be either qualified to a standard acceptable to the FAA or tested at the time of installation for interference to the FADEC. This type of testing must employ the particular FADEC's diagnostic techniques and external diagnostic techniques. The test procedure must be FAA approved.

NOTE 14. The model A109E may be equipped with either PW206C or TM 2K1 turboshaft engines. Changes to the approved TC holder Type Design, that may have an effect on engine installation or operation, must be limited in applicability to the engine installation for which they have been tested and approved.

NOTE 15. Model A109 helicopters may be converted to Model A109A helicopters in accordance with EASA/ENAC-approved Service Instructions No. A109-1.

NOTE 16. Cabin Interior and Seating Configurations must be approved.

NOTE 17. Any changes to the type design of this helicopter by means of an amended type certificate (TC), supplemental type certificate (STC), or amended STC, requiring instructions for continued airworthiness (ICA's) must be submitted thru the project aircraft certification office (ACO) for review and acceptance by the Fort Worth -Aircraft Evaluation Group (FTW-AEG) Flight Standards District Office (FSDO) prior to the aircraft delivery, or upon issuance of the first standard airworthiness certificate for the affected aircraft, whichever occurs later as prescribed by Title 14 CFR 21.50. Type design changes by means of a field approval that require ICA's must have those ICA's reviewed by the field approving FSDO.

NOTE 18. Effective August 24, 2006, the Agusta model A119, from serial number 14517 and on, is approved for production at Agusta Aerospace Corporation's (AAC), Philadelphia facility under Production Certificate PC 120NE. This PC is based on a Decision Paper/Licensing Agreement approved on February 24, 2005. All technical data previously developed by Agusta S.p A. in support of this model and approved by ENAC, and further approved by the FAA under the requirements of FAR 21.29 and the BASA between the US and Italy, are still in effect and any revisions to that data will still need to be FAA approved as previously agreed upon prior to the issuance of this PC. All export tags will need to document that this model and serial number were manufactured in Agusta AAC's Philadelphia facility.

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