European Aviation Safety Agency

EASA

TYPE-CERTIFICATE
DATA SHEET

Number : E.086
Issue : 01
Date : 17 August 2006
Type : Franklin 2A-120 series engines

Variants
Franklin 2A-120-C1

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I - General

1. Type / Variants : Franklin 2A-120 / Franklin 2A-120-C1

2. Type Certificate Holder :

Franklin Sp. z o.o.
ul. Chełmińska 208
86-300 Grudziądz
Poland

EASA ADOA reference: AP196

3. Manufacturer:

Franklin Sp. z o.o.

4. EASA Certification/Validation Application Date:

2A-120-C1				
05 Jan. 2005				

Note : Application date for transfer of Type Certificate

5. Validation Reference Date:

02 Sep. 1972 (E24EA; original application date to FAA)

6. EASA Certification Date:

2A-120-C1				
18 June 1976				

- Validation of FAA TC by CAO-Poland (CB-131) on 18 June 1976
- Transfer of Type Certificate from " Franklin (USA) " to " WSK PZL-RZESZOW (Poland)" on 11 May 1981
-Transfer of Type Certificate from "WSK-PZL-RZESZOW (Poland) to Franklin SP. zo.o. (Poland) on 17 August 2006

II - Certification Basis

1. EASA Certification Basis:

1.1. Airworthiness Standards:

FAR 33, effective 01.10.1974, as amended by 33-1 to 33-6

1.2 Special Conditions (SC): none

1.3. Equivalent Safety Findings (ESF): none

1.4. Deviations: none

1.5 Environmental Standards: none (not required for piston engines)

III - Technical Characteristics

1. Type Design Definition:

As defined by Engine Parts Catalogue 2A-120-C1.

2. Description:

The Franklin 2A-120-C1 engine is a free aspired, horizontally mounted, opposed, direct drive, two cylinder, four stroke, spark ignited, aircooled, wet sump engine rotation clockwise facing engine rear.

Displacement: 1.917 dm^3 (117 cu. in.)
Bore x stroke: 117.5 mm x 88.9 mm (4.625 in. x 3.5 in.)
Compression ratio: 8.5 : 1
Gear ratio: N/A

3. Equipment:

See latest revision of Description, Operation and Service Manual

4. Dimensions:

Overall Length	682 mm	24.7 in.
Overall Height	520 mm	20.5 in.
Width	793.4 mm	31.2 in.

5. Dry Weight:

2A-120-C1		
69.1 kg		
(152.34 lbs)		

6. Ratings:

Ratings		2A-120-C1		
Power, HP (KW)	Take-off and Maximum Continuous, full throttle at sea level pressure altitude	60 (44,7) at 3200 rpm		

Note: Ratings are based on static sea level standard conditions of dry inlet air at 15 degrees C and 760 mmHg., with no aircraft accessory drive loads.

Production engines conforming with this Type Certificate must be capable of producing not less than 100 percent rated power at rated rpm and inlet pressure.

7. Carburetion

The Franklin 2A-120-C1 engine is equipped with Carburetion Marvel Schebler MA-3A float type with manual correction of mixture.

8. Fluids (Fuel/Oil/Additives):

Fuel: Aviation Gasoline, minimum grade 100/130

Oil: Conf. MIL-L-6082 or MIL-L-22851

Above 5^0C ambient air temp. SAE 50
Below 5^0C ambient air temp. SAE 30

9. Aircraft Accessory Drives:

Designation	Rotation direction (facing drive pad)	Speed ratio to crankshaft	Max. Torque kGm Continuous	 static	Max. Overhang moment kGm
Tachometer	CCW	0.5:1	0.08	0.6	0.06
Starter	CCW	11.44:1		5	1
Alternator	CCW	1.08:1	1.1	8.8	
Fuel Pump	plunger	1.08:1	1.1	8.8	0.06
Vacuum or Hydraulic Pump	CCW	1.08:1	1.42	6.6	0.3

IV - Operational Limitations

1. Temperature limits:

Cylinder head (bayonet thermocouple): 200 °C (392 °F)
Cylinder base: 160ºC (400ºF)

Oil inlet: 125 °C (257 °F)

2. Pressure Limits:

2.1 Fuel Pressure:

Fuel pressure limits 0.1-0.6 bar

2.2 Oil Pressure Limits:

Idle min. 1.7 bar
Rated range 3.2-5.6 bar

V - Operational and Service Instructions

	2A-120-C1
ILUSTRATED PARTS CATALOG	26.0.460 (English) 26.0.420 (Polish)
INSTALATION INSTRUCTIONS	26.0.068
OVERHAUL MANUAL	26.0.143
DESCRIPTION, OPERATION AND SERVICE MANUAL	26.0.054
Service Bulletins and Service Letters	As issued

VI - Notes

Note 1 Engine CL attitude limits for operation, degree:
- Up 30
- Down 25
