# TYPE-CERTIFICATE DATA SHEET

No. E.219

**for Engine**
Solo 2350 series engines

**Type Certificate Holder**
SOLO Kleinmotoren GmbH
Stuttgarter Straße 41
71069 Sindelfingen
Germany

For Models:
Solo 2350
Solo 2350 B
Solo 2350 BS
Solo 2350 C
Solo 2350 D

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**TABLE OF CONTENTS**



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## I. General

### 1. Type / Models

Solo 2350 / Solo 2350, 2350 B, 2350 C, 2350 D

### 2. Type Certificate Holder

Design Organisation Approval No.: EASA ADOAP: AP 136

### 3. Manufacturer

Solo Kleinmotoren GmbH from 02 June 1982 until 15 July 2013
Stuttgarter Straße 41
71069 Sindelfingen
Germany

SOLO Vertriebs- und Entwicklungs- GmbH from 16 July 2013
Stuttgarter Straße 41
71069 Sindelfingen
Germany

### 4. Date of Application

02 June 1982
Note: The application was made to LBA Germany before EASA had been established according to German national procedures.

### 5. EASA Type Certification Date

02 June 1983

## II. Certification Basis

### 1. EASA Certification Basis

#### 1.1. Airworthiness Standards

JAR-22 Change 2 dated September 13. 1982, Subpart H

#### 1.2. Special Conditions (SC)

None

#### 1.3. Equivalent Safety Findings (ESF)

None

### 1.4. Deviations

None

### 1.5. Environmental Protection

None (not required for piston engines)

## III. Technical Characteristics

### 1. Type Design Definition

Type Design Definition in accordance with parts list 20 00 350 of 10 August 1987 for Solo 2350 B, also applicable for Solo 2350(*)
(*) = or later approved revisions

### 2. Description

Two-stroke, two-cylinder air-cooled inline engine with contactless magneto ignition.
Displacement: 431 cm³
Bore / stroke: 70mm / 56mm

| Model | Solo 2350* | Solo 2350 B** | Solo 2350 C | Solo 2350 D* |
|---|---|---|---|---|
| Compression ratio | 1:10 | 1:10 | 1:12 | 1:12 |
| Gear ratio | - | 1:2,1 | 1:2,3 | 1:1,56 |
| Starter | - | SJCE Mod. 102 Or United Tech. 1077-28-Mo 30 sM | SJCE Mod. 101 Or United Tech. SMH-12-A-104 | - |
| Generator | - | Ducati 435.03. 0600 | - | - |
| Fuel Pump | Bing 80-203A (no longer available) Replacement: Mikuni DF44-18, standard from S/N 1162 | - | Bing 80-203A (no longer available) Replacement: Mikuni DF44-18, standard from S/N 2175 | Bing 80-203A (no longer available) Replacement: Mikuni DF44-18, standard from S/N 296 |

* no throttle control, no engine starter, no generator;
** no fuel pump; see also VI, No. 5.

**3. Equipment**

As stated in the type definition parts list.

**4. Dimensions**

| Model | | Solo 2350 | Solo 2350 B | Solo 2350 C | Solo 2350 D |
|---|---|---|---|---|---|
| Overall Length | mm | 480 | 405 | 472 | 620 |
| Overall Height | mm | 383 | 506 | 575 | 524 |
| Width | mm | 216 | 290 | 259 | 240 |

**5. Dry Mass**

| Model | Solo 2350 | Solo 2350 B | Solo 2350 C | Solo 2350 D |
|---|---|---|---|---|
| Mass kg complete with exhaust system | 17 | 26 | 25 | 23,5 |

**6. Ratings**

| Model | Solo 2350 (*with muffler) | Solo 2350 B | Solo 2350 C | Solo 2350 D |
|---|---|---|---|---|
| Take-off Power | 19,6 (*15,3) KW at 5500 rpm | 17 KW at 6300 rpm | 22 KW at 6500 rpm | 22 KW at 6500 rpm |
| Max. Continuous Power | 19,6 (*15,3) KW at 5500 rpm | 17 KW at 6300 rpm | 20 KW at 6100 rpm | 22 KW at 6500 rpm |

Note: The performance value specified above correspond to minimum values defined under the conditions of ICAO or ARDC standard atmosphere.

**7. Control System**

The engine models Solo 2350, Solo 2350 D are equipped with dual diaphragm carburettors without throttle control, an additional fuel pump and a contactless magneto ignition.
The engine model Solo 2350 B is equipped with dual diaphragm carburettors and a contactless magneto ignition. For the definition of the Model Solo 2350 BS see VI, No. 5. The engine model Solo 2350 C is equipped with two diaphragm carburettors, an additional fuel pump and a contactless magneto ignition.

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

See Operation and Maintenance Manual for approved fluids.

**9. Aircraft Accessory Drives**

None

## IV. Operating Limitations

**1. Temperature Limits**

| Model | | Solo 2350 | Solo 2350 B | Solo 2350 C | Solo 2350 D |
|---|---|---|---|---|---|
| Maximum Cyl.Head Temperature* | °C | 275 | 275 | 275 | 275 |

* see note 4

**2. Speed Limits**

| Model | Solo 2350 | Solo 2350 B | Solo 2350 C | Solo 2350 D |
|---|---|---|---|---|
| Minimum Cont. Speed | * | 2000 rpm | 3000 rpm | * |
| Max.Take off and Cont. Speed | 5500 rpm | 6300 rpm | 6100 rpm | 6500 rpm |
| Maximum Speed | 6500 rpm | 6500 rpm | 6500 rpm | 6600 rpm |

* not possible, no throttle control

**3. Pressure Limits**

**3.1 Fuel Pressure**

Fuel supply pressure min. 0.2 bar; max. 0.4 bar.

**3.2 Oil Pressure**

See engine manual

## V. Operating and Service Instructions

| Model | Solo 2350 | Solo 2350 B | Solo 2350 C | Solo 2350 D |
|---|---|---|---|---|
| Manual for the engine (Handbuch für den Motor) | Solo Typ 2350 01, Issue 1 dated 24.05.1983 (*) | Solo Typ 2350 B, Issue 1 dated 20.08.1987 (*) | Solo Typ 2350 C, Issue 1 dated 27.04.1989 (*) | Solo Typ 2350 D, Issue 1 dated 30.07.2001 (*) |

(*) = or later approved revisions

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## VI. Notes

1. The manufacturer documents recorded in this TCDS are binding in the specified issue or later approved revisions.

2. The suitability and allowable operating ranges of an engine for use in a specific aircraft/propeller combination are to be demonstrated during the aircraft certification.

3. For the permitted engine operating hours refer to the relevant operating instructions.

4. The maximum permissible Cylinder Head Temperature was increased to 275°C for all Models with a Non-significant major change, EASA approved 21. September 2005, Nr. EASA.E.C.01026.

5. Model Solo 2350 B: The deviations of the Model Solo 2350 BS are defined as follows:
The engine model Solo 2350 BS is equipped with a single float type carburettor and a contactless magneto ignition.

   1. Operational limitations
   - Take-off Power: 17 KW at 5500 rpm
   - Max. Continuous Power: 17 KW at 5500 rpm
   - Maximum Speed: 6500 rpm
   - Minimum Cont. Speed: 2000 rpm
   -
   2. Equipment

   Fuel pump: Bing 80-203A (no longer available) Replacement: Mikuni DF44-18
   Carburettor: Bing 84-2

The width is increasing to 405 mm.
All other technical data are identical to the Model solo 2350 B.
Operating instructions: engine manual 2350 BS, Issue 1, dated 12.06.1991 (or later approved revisions).
Both Models are used for pusher-configuration engine installations only.

6. The deviations of the sales designation with starter on the crank shaft are defined in the Service Bulletin No 4603-16, issue 1, dated 19.05.2015.

**SECTION: ADMINISTRATIVE**

## I. Acronyms and Abbreviations

n/a

## II. Type Certificate Holder Record

n/a

## III. Change Record

| Issue | Date | Changes | TC issue |
|---|---|---|---|
| Issue 01 | 09.01.2013 | Initial Issue | Initial Issue, 09.01.2013 |
| Issue 02 | 12.11.2014 | Replacement of fuel pump | |
| Issue 03 | 02.07.2015 | Modification engine 2350 (version with starter) | |
| Issue 04 | 18.09.2015 | Editorial changes | |
| | | | |

[insert rows as needed]

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