

JAPAN CIVIL AVIATION BUREAU
MINISTRY OF LAND, INFRASTRUCTURE,
TRANSPORT AND TOURISM

No.22
Revision 2
SUBARU CORPORATION
FA-200-180
May 23,2019

TYPE CERTIFICATE DATA SHEET No. 22

This data sheet, which is part of Type Certificate No. 22, prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of Japan Civil Aeronautics Law and Regulations.

Type Certificate Holder SUBARU CORPORATION
1-20-8, Ebisu, Shibuya-ku, Tokyo, Japan

Type Certificate
Holder Record Same as above

Model FA-200-180 (Normal, Utility or Acrobatic Category Airplane) approved February 28, 1968

(1) Engine (a) FA-200-180
Name of the Manufacturer: Lycoming
Type approval number of Japan: None
Type certificate number of
country of manufacturer: FAA TC No. 1E10
Model name: IO-360-B1B or
AEIO-360-B1B

(b) FA-200-180AO
Name of the Manufacturer: Lycoming
Type approval number of Japan: None
Type certificate number of
country of manufacturer: FAA TC No. E-286
Model name: O-360-A5AD

(2) Fuel (a) FA-200-180
91/96 minimum grade aviation gasoline
(S/N 12~243, except S/N 101)

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100/130 minimum grade aviation gasoline
(S/N 101, 244 and after)

(b) FA-200-180AO

100/130 minimum grade aviation gasoline

(3) Engine limits

(a) FA-200-180

At time of take-off power and maximum continuous power

Maximum power:	134 kW (180 HP)
Maximum engine speed:	2700 rpm
Maximum cylinder head temp:	260 °C
Maximum oil temp:	118 °C
Oil pressure:	60 psi to 90 psi
Fuel pressure:	14 psi to 45 psi (S/N 12~100)
	0 psi to 10 psi (S/N 101 and after)
Maximum suction pressure:	29 inHg

(b) FA-200-180AO

At time of take-off power and maximum continuous power

Maximum power:	134 kW (180 HP)
Maximum engine speed:	2700 rpm (S/N 12~294)
Maximum take-off engine speed and maximum continuous engine speed :	2700 rpm (S/N 295 and after)
Maximum engine speed for normal conditions:	2600 rpm (S/N 295 and after)
Maximum cylinder head temp:	260 °C
Maximum oil temp:	118 °C
Oil pressure:	60 psi to 90 psi
Fuel pressure:	5 psi to 8 psi

(4) Propeller and
propeller limits

(a) FA-200-180

1. Name of the Manufacturer:	McCauley
Type approval number of Japan:	None

Type certificate number of

country of manufacturer: FAA TC No. P7EA

Model name: B2D34C53-※/74E-0

※ $\left[\begin{array}{l} \text{With regard to the approved propeller dash} \\ \text{number, refer to the latest parts catalogue.} \end{array} \right]$

2. Operating limits:

Suction pressure is not more than 15 inHg, and then engines do not be operated continuously between 2250 rpm to 2550 rpm during flight.

3. Static rpm limits:

Not over 2700 rpm and not under 2650 rpm at maximum permissible throttle setting.

No additional tolerance permitted.

4. Diameter limits:

Maximum 1879.6 mm (74 in)

Minimum 1841.5 mm (72.5 in)

No further increase or reduction permitted.

5. Blade angular location:

Hub model: B2D34C53

Blade model: 74E

Pitch angle(STA 762): Low pitch 12.7°

High pitch 27.5°

pitch angle range: 14.8°

(b) FA-200-180AO

1. Name of the Manufacturer: McCauley

Type certificate

approval number of Japan: None

Type certificate number of

country of manufacturer: FAA TC No. P-857

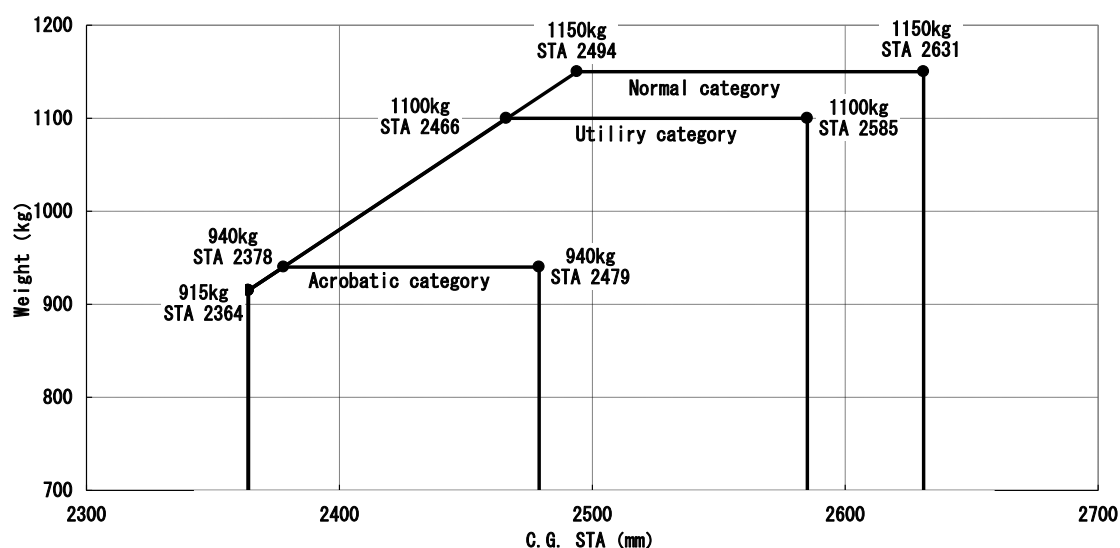
Model name: 1A170/EFA7658

2. Static rpm limits:

Not over 2480 rpm and not under 2320 rpm at maximum permissible throttle setting.

No additional tolerance permitted.

3. Diameter limits:		Maximum	1981.1 mm (76 in)
		Minimum	1879.6 mm (74 in)
		No further increase or reduction permitted.	
(5) Airspeed limits* (CAS)	V _{NE} (Never exceed):		293 km/h (158 kt)
	V _{NO} (Maximum structural cruising):		251 km/h (136 kt)
	V _A (Design maneuvering):	(Normal, Utility Category)	233 km/h (126 kt)
		(Acrobatic Category)	251 km/h (136 kt)
	V _{FE} (Flaps extended 25° or 35°):		193 km/h (104 kt)
	V _{FE} (Flaps extended 15°):		225 km/h (122 kt)
(6) Center of gravity (C.G.) range	(a) FA-200-180		
	Normal Category:		
	STA 2494 to STA 2631 at 1150 kg		
	STA 2364 to STA 2631 at 915 kg or less		
	Utility Category:		
	STA 2466 to STA 2585 at 1100 kg		
	STA 2364 to STA 2585 at 915 kg or less		
	Acrobatic Category:		
	STA 2378 to STA 2479 at 940 kg		
	STA 2364 to STA 2479 at 915 kg or less		



Straight line variation between points given.

(b) FA-200-180AO

Normal Category:

STA 2488 to STA 2631 at 1140 kg

STA 2364 to STA 2631 at 915 kg or less

Utility Category:

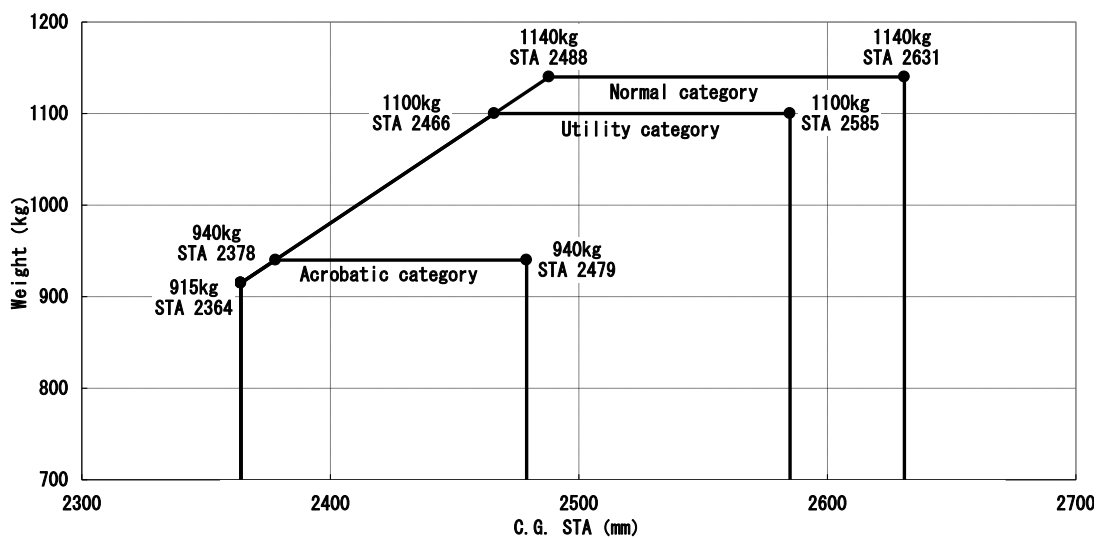
STA 2466 to STA 2585 at 1100 kg

STA 2364 to STA 2585 at 915 kg or less

Acrobatic Category:

STA 2378 to STA 2479 at 940 kg

STA 2364 to STA 2479 at 915 kg or less



Straight line variation between points given.

(7) Empty weight

C.G. range* None

(8) Datum*

1320 mm forward of front face of lower portion of firewall.

(9) Leveling means*

Longitudinally - Plumb screw and rivet on left side of fuselage
above the step. (Bulkhead STA 3970)Laterally - Position spirit level on the flat bar put on the
canopy rail, cross from left to right.

(10) Maximum weights (Maximum take-off weight)	Normal Category:	1150 kg (FA-200-180)			
		1140 kg (FA-200-180AO)			
	Utility* Category:	1100 kg			
	Acrobatic* Category:	940 kg			
(11) Minimum crew*	1 (Seat of pilot: forward left)				
(12) Number of seats*	4				
	Normal Category:	4 (2 at Front sheet (STA 2500), 2 at Rear sheet (STA 3416))			
	Utility Category:	4 (2 at Front sheet (STA 2500), 2 at Rear sheet (STA 3416))			
	Acrobatic Category:	2 (2 at Front sheet (STA 2500))			
(13) Maximum baggage (Normal Category only)	(a) FA-200-180				
	20 kg (STA 4040) (on shelf)				
	80 kg (STA 4485) (in compartment: S/N 22 and after)				
	(b) FA-200-180AO				
	20 kg (STA 4040) (on shelf)				
	80 kg (STA 4485) (in compartment)				
(14) Fuel capacity*	Total capacity:	204.4ℓ (54 U.S. GAL) (2 wing tanks) (STA 2393)			
	Usable fuel:	196.8ℓ (52 U.S. GAL)			
	Unusable fuel:	7.6ℓ (2 U.S. GAL) (See Note 3.)			
(15) Oil capacity*	Total capacity:	7.6ℓ (8 qts) (STA 970)			
	Undrainable oil:	0.6ℓ (0.6 qts) (STA 970) (See Note 3.)			
(16) Maximum operation altitude*	None				
(17) Control Surface Movements*	Wing flaps	Up	0°	Down	35°±1°
	Aileron	Up	20°±1°	Down	15°±1°
	Rudder	Right	25°±1°	Left	25°±1°
	Elevator	Up	25°±1°	Down	15°±1°
		Up	30°±1° **	Down	15°±1° **
	Elevator trim tab	Up	15°±1°	Down	20°±1°

**: S/N FA-200-127 and up, and the airplane modified according to S/B FAS-046 “Extension of the time required to spin”.

(18) Manufacturer's serial numbers (a) FA-200-180
12, 14, 15, 20~22, 28~31, 33~35, 40, 45, 46, 51~55, 80~85, 90~101, 105~109, 114~119, 124~127, 132~134, 138~140, 146~148, 156~158, 160, 161, 166~171, 175, 176, 178, 179, 183~208, 212, 215~218, 222~225, 230, 233~235, 240~242, 244, 245, 247, 251, 254, 255, 272, 273, 277, 279, 281, 282, 298~300

(b) FA-200-180AO
41, 214, 246, 248~250, 252, 253, 256, 258, 261, 264, 265, 269~271, 274~276, 278, 283, 285, 287, 289, 292, 293, 296

(19) Certification basis* Applies followings.

(a) Civil Aeronautics Regulation Annex 1 “Technical Standards for Ensuring Safety of Aircraft and Equipment” (Enacted on dated December 28, 1960 the 45th UNYUSHOREI, including all revisions up to the 2nd UNYUSHOREI dated October 1, 1989)

(b) Part 2 of the TAIKUSEI-SHINSA-YORYO (JCAB Airworthiness Standards) (Enacted on dated October 20, 1966 the KU-KEN-381.)

(c) Conditions of design loading in SUBARU Technical Report UHD-20590 Annex 1 (Approved by JCAB), for control wheel tube 200-524028-13, -15 and -19.

(d) Civil Aeronautics Regulation Annex 2 “Aircraft applicable to Noise Standard of Aircraft Chapter 4, ICAO Annex 16 Volume 1 Chapter 6” (Enacted on dated April 1, 1997 the 24th UNYUSHOREI).*** See the table below. (S/N 295 and after)

1. FA-200-180

	Noise Level (dB(A))	Noise standard level (dB(A))
Overflight	74.8	75.3

[Requirement] Maximum take-off weight: 1150 kg
Engine speed: 2700 rpm
Flight configuration: Cruise

2. FA-200-180AO

	Noise Level (dB(A))	Noise standard level (dB(A))
Overflight	73.3	75.2

[Requirement]	Maximum take-off weight:	1140 kg
	Engine speed:	2600 rpm
	Flight configuration:	Cruise

(e) Standards for exhaust fuel and exhaust gas in Civil Aeronautics Regulation Annex 3 are not applied.

(f) Type certificate number: No. 22 (Issued on February 28, 1968)

(g) Application date of type certificate: August 5, 1966

***: Equivalent to ICAO Annex 16 Volume 1 Chapter 6

(20) Production basis* None

(21) Equipment* The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for type certification.
SUBARU Report FSD-G-1115 contains a list of all required equipment as well as optional equipment installations approved by the JCAB.

(22) Notes

Note 1: Excluding special instructions, items denoted by asterisks (*) are the data common to FA-200-180 and FA-200-180AO.

Note 2: Current weight and balance report, including list of equipment included in certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original certification.

Note 3: The certificated empty weight must include unusable fuel and undrainable oil.

Note 4: Refer to Field Service News No. FAN-038 for maximum operating time for components and inspection interval.