

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

No.20
Revision 2
SUBARU CORPORATION
FA-200-160
May 23,2019

TYPE CERTIFICATE DATA SHEET No. 20

This data sheet, which is part of Type Certificate No. 20, 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-200-160 (Normal, Utility or Acrobatic Category Airplane) approved March 1, 1966

- (1) Engine Name of the Manufacturer: Lycoming
Type approval number of Japan: None
Type certificate number of
country of manufacturer: FAA TC No. E-274
Model name: O-320-D2A
- (2) Fuel (a) 91/96 minimum grade aviation gasoline
(S/N 13~243, except S/N 102)

(b) 100/130 minimum grade aviation gasoline
(S/N 102, 244 and after)
- (3) Engine limits At time of take-off power and maximum continuous power
Maximum power: 119 kW (160 HP)
Maximum engine speed: 2700 rpm (S/N 13~294)
Maximum take-off engine speed
and maximum continuous
engine speed: 2700 rpm (S/N 295 and after)

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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: 0.5 psi to 8 psi

(4) Propeller and
 propeller limits

(a) Name of the Manufacturer: McCauley
 Type approval number of Japan: None
 Type certificate number of
 country of manufacturer: FAA TC No. P-910
 Model name: ① 1C172/MGM7656 or
 1C172/MGM7662
 (S/N 13~243, except S/N 102)
 ② 1C160/FGM7656
 (S/N 102, 244 and after)

(b) Static rpm limits:

For 7656 propeller
 Not over 2460 rpm and not under 2300 rpm at maximum
 permissible throttle setting.
 No additional tolerance permitted.

For 7662 propeller
 Not over 2340 rpm and not under 2180 rpm at maximum
 permissible throttle setting.
 No additional tolerance permitted.

(c) Diameter limits: Maximum 1930.4 mm (76 in)
 Minimum 1879.6 mm (74 in)
 No further increase or reduction
 permitted.

(For 7656 propeller and 7662 propeller)

(5) Airspeed limits (CAS) V_{NE} (Never exceed):

(Normal, Utility Category) 274 km/h (148 kt)
 (Acrobatic Category) 282 km/h (152 kt)

V_{NO} (Maximum structural cruising):	241 km/h (130 kt)
V_A (Design maneuvering):	
(Normal, Utility Category)	217 km/h (117 kt)
(Acrobat Category)	241 km/h (130 kt)
V_{FE} (Flaps extended 25° or 35°):	193 km/h (104 kt)
V_{FE} (Flaps extended 15°):	225 km/h (122 kt)

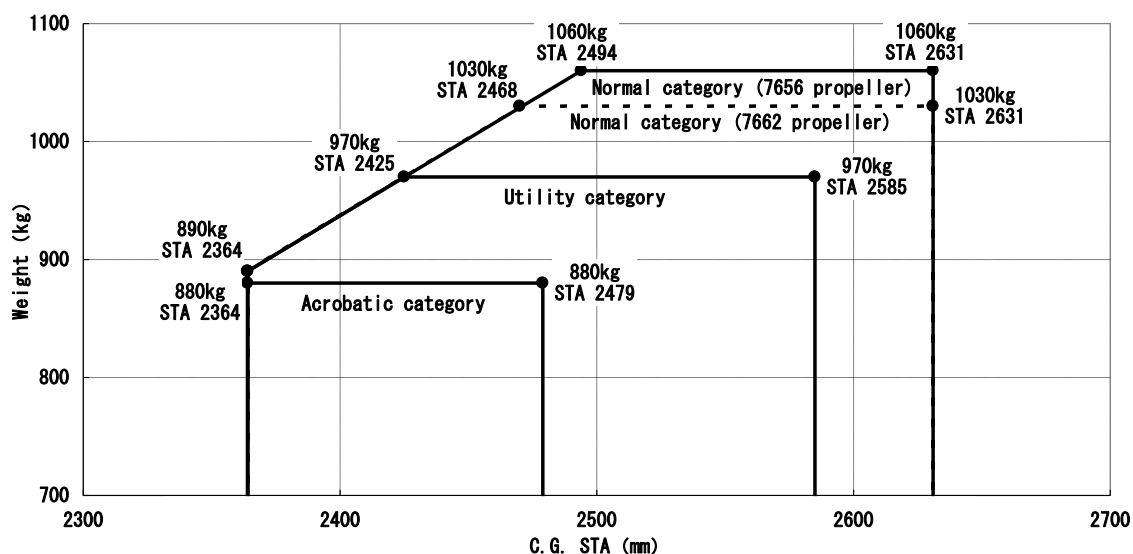
(6) Center of gravity (C.G.) range

Normal Category (for 7656 propeller):
STA 2494 to STA 2631 at 1060 kg
STA 2364 to STA 2631 at 890 kg or less

Normal Category (for 7662 propeller):
STA 2468 to STA 2631 at 1030 kg
STA 2364 to STA 2631 at 890 kg or less

Utility Category (for 7656 or 7662 propeller):
STA 2425 to STA 2585 at 970 kg
STA 2364 to STA 2585 at 890 kg or less

Acrobatic Category (for 7656 or 7662 propeller):
STA 2364 to STA 2479 at 880 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		<p>Longitudinally - Plumb screw and rivet on left side of fuselage above the step. (Bulkhead STA 3970)</p> <p>Laterally - Position spirit level on the flat bar put on the canopy rail, cross from left to right.</p>
(10) Maximum weights (Maximum take-off weight)	<p>Normal Category:</p> <p>Utility Category:</p> <p>Acrobatic Category:</p>	<p>1060 kg (7656 propeller) 1030 kg (7662 propeller)</p> <p>970 kg (7656 propeller or 7662 propeller)</p> <p>880 kg (7656 propeller or 7662 propeller)</p>
(11) Minimum crew		1 (Seat of pilot: forward left)
(12) Number of seats		<p>4</p> <p>Normal Category: 4 (2 at Front sheet (STA 2500), 2 at Rear sheet (STA 3416))</p> <p>Utility Category: 3 (2 at Front sheet (STA 2500), 1 at Rear sheet (STA 3416))</p> <p>Acrobatic Category: 2 (2 at Front sheet (STA 2500))</p>
(13) Maximum baggage (Normal Category only)		<p>20 kg (STA 4040) (on shelf: S/N 13~19, 244 and after)</p> <p>40 kg (STA 4040) (on shelf: S/N 23~243)</p> <p>80 kg (STA 4485) (in compartment: S/N 244 and after)</p>
(14) Fuel capacity	<p>Total capacity:</p> <p>Usable fuel:</p> <p>Unusable fuel:</p>	<p>204.4ℓ (54 U.S. GAL) (2 wing tanks) (STA 2393)</p> <p>196.8ℓ (52 U.S. GAL)</p> <p>7.6ℓ (2 U.S. GAL) (See Note 2.)</p>
(15) Oil capacity	<p>Total capacity:</p> <p>Undrainable oil:</p>	<p>7.6ℓ (8 qts) (STA 970)</p> <p>0.6ℓ (0.6 qts) (STA 970) (See Note 2.)</p>
(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	13, 16~19, 23~27, 32, 36~39, 42~44, 47~50, 56~79, 86~89, 102~104, 110~113, 120~123, 128~131, 135~137, 141~145, 149~155, 159, 162~165, 172~174, 177, 180~182, 209~211, 213, 219~221, 226~229, 231, 232, 236~239, 243, 257, 259, 260, 262, 263, 266~268, 280, 284, 286, 288, 290, 291, 294, 295, 297
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(19) Certification basis	Applies followings.
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- (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)

	Noise Level (dB(A))	Noise standard level (dB(A))
Overflight	72.6	74.1

[Requirement]	Maximum take-off weight:	1060 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. 20 (Issued on March 1, 1966)

(g) Application date of type certificate: October 2, 1964

**: 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: 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 2: The certificated empty weight must include unusable fuel and undrainable oil.

Note 3: Refer to Field Service News No. FAN-038 for maximum operating time for components and inspection interval.