DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A59EU
Revision 22
PIAGGIO P-180

July 6, 2015

TYPE CERTIFICATE DATA SHEET No. A59EU

This Data Sheet which is a part of Type Certificate No. A59EU 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. PIAGGIO AERO INDUSTRIES S.p.A
Via Cibrario, 4 - Genova - Italy

Model P-180 (Normal Category), Approved May 7,1990

Engine. Right: Pratt & Whitney of Canada PT6A-66
3037000 BUILD SPEC 676 flat rated at 850 shp
Left : Pratt & Whitney of Canada PT6A-66
3037000 BUILD SPEC 677 flat rated at 850 shp

For airplanes incorporating the Mod. n. 80-0657 or SB 80-0231:

Engine. Right: Pratt & Whitney of Canada PT6A-66B
3072196 BUILD SPEC 1223 flat rated at 850 shp when installed on the aircraft .
Left : Pratt & Whitney of Canada PT6A-66B
3072196 BUILD SPEC 1224 flat rated at 850 shp when installed on the aircraft .

For airplanes from S/N 3001 to subsequent, incorporating the Mod. n. 80-1117:

Engine. Right: Pratt & Whitney of Canada PT6A-66B
3072196 BUILD SPEC 1243 flat rated at 850 shp when installed on the aircraft .
Left : Pratt & Whitney of Canada PT6A-66B
3072196 BUILD SPEC 1244 flat rated at 850 shp when installed on the aircraft .

Fuel. JP4, JP8, JET A, JET A-1, JET B and RP-3 (No.3 Jet Fuel) conforming to the latest revision of Pratt & Whitney Service Bulletin No. 14004.
Fuel Anti-Ice Additive must be used, except for JP-4 and JP-8, in accordance with the latest revision of Pratt & Whitney Service Bulletin No. 14004.

Oil. Refer to Limitations Section of latest revision of Pilot's Operating Handbook and Airplane Flight Manual.

Engine Limits.

	Shaft (hp)	Torque (lb*ft)	N1 Gas Generator Speed (%)	Prop. Shaft Speed (rpm)	Maximum Permissible Interstage Temperature (deg. C)

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Takeoff Max. Cont. Max. Climb Max. Cruise	850	2230 (2480) [*]	104.1	2000 (1800) [*]	830
Nor. Climb Nor. Cruise	850	2230 (2480) [*]	104.1	2000 (1800) [*]	820
Starting (5 sec)	---	----	----	----	1000
Transient (20 sec)	---	2750	104.1	2205	870
Oil Temperature:					
Minimum Starting		-40^{o} C			
Minimum Idle		-40^{o} C to 110^{o} C			
Max. Continuous		0^{o} C to 110^{o} C			

Note: The above mentioned engine limits are applicable to both engine models: PT6A-66 and PT6A-66B
Note [*]: For airplanes from S/N 3001 to subsequent, incorporating the Mod. n. 80-1117

Propeller and Propeller Limits.

Right: Hartzell HC-E5N-3L or 3AL hub with five Hartzell LE8218 blades.
Left : Hartzell HC-E5N-3 or 3A hub with five Hartzell HE8218 blades.
Diameter: 85 in. (Nominal), 84.5 in. (minimum-no further reduction allowed)

Nominal feather pitch angle (at 30 in. station)	89^{o}
Nominal reverse pitch angle (at 30 in. station)	-13^{o}
Stabilized ground operation below rpm is prohibited, except when feathered operation at or below 600 rpm.	900
Stabilized ground operation between 1300 and 1600 rpm is prohibited	

(from S/N 3001 to subsequent modified with Mod 80-1117 installed)

Right: Hartzell HC-E5N-3L or 3AL hub with five Hartzell LE8492 blades.
Left : Hartzell HC-E5N-3 or 3A hub with five Hartzell HE8492 blades.
Diameter: 86.5 in. (Nominal), 86 in. (minimum-no further reduction allowed)

Nominal feather pitch angle (at 30 in. station)	87.6^{o}
Nominal reverse pitch angle (at 30 in. station)	-8^{o}
Stabilized ground operation below rpm is prohibited, except when feathered operation at or below 600 rpm.	900
Stabilized ground operation between 1250 and 1550 rpm is prohibited	

Airspeed Limits.

	KIAS	KCAS
(from S/N 1001 to S/N 1025)		
Vmo (maximum operating)	260	258
Mmo (maximum operating Mach No.)	.67	.665
Va (maneuvering at 10810 lbs.)	195	194
Vfe (max. flap extended, t.o. conf.)	175	174

Vfe	(max. flap extended, lnd. conf.)	165		163	
Vfo	(max. flap operating, t.o. conf.)	170		169	
Vfo	(max. flap operating, lnd. conf.)	150		149	
Vlo	(max. landing gear operating)	175		174	
Vle	(max. landing gear extended)		185		184
Vllo/Vlle	(maximum landing light operating/extended)	160		159	
Vmc	(min. control, prop. feathered)	100		99	
Vmc	(min. control, prop. windmill)	128		127	

(from S/N 1026 to subsequent and from S/N 1004 to S/N 1025 modified with S.B. 80-0023)

Vmo	(maximum operating)	260		258	
Mmo	(maximum operating Mach No.)	.67		.665	
Va	(maneuvering at 11550 lbs.)	199		198	
Vfe	(max. flap extended, t.o. conf.)	180		179	
Vfe	(max. flap extended, lnd. conf.)	175		173	
Vfo	(max. flap operating, t.o. conf.)	170		169	
Vfo	(max. flap operating, lnd. conf.)	150		149	
Vlo	(max. landing gear operating)	180		179	
Vle	(max. landing gear extended)		185		184
Vllo/Vlle	(maximum landing light operating/extended)	160		159	
Vmc	(min. control, prop. feathered)	100		99	
Vmc	(min. control, prop. windmill)	128		127	

(from S/N 1004 to subsequent modified with S.B. 80-0215 or with Mod 80-0642 installed)

Vmo	(maximum operating)	260		258	
Mmo	(maximum operating Mach No.)	.67		.665	
Va	(maneuvering at 12100 lbs)	202		201	
Vfe	(max. flap extended, t.o. conf.)	183		182	
Vfe	(max. flap extended,lnd conf.)	177		176	
Vfo	(max. flap operating, t.o. conf.)	170		169	
Vfo	(max. flap operating, lnd. conf.)	150		149	
Vlo	(max. landing gear operating)	181		180	
Vle	(max. landing gear extended)		185		184
Vllo/Vlle	(maximum landing light operating/extended)	160		159	
Vmc	(min. control, prop. feathered)	100		99	
Vmc	(min. control, prop. windmill)	128		127	

(*) From S/N 1063 to subsequent and from S/N 1034 to S/N 1062 modified with S.B. 80-0159

Mmo	(maximum operating Mach No)	.70		.694	

C.G. Range.
(Landing Gear Extended)

(from S/N 1001 to S/N 1025)

FS 204.3 to FS 214	at 10,810 lbs
FS 195.2 to FS 214	at 8,745 lbs
FS 194 to FS 213	at 8,500 lbs

FS 194 to FS 209.8 at 7,700 lbs or less
Straight line variation between points given.

(from S/N 1026 to subsequent and from S/N 1004 to S/N 1025 modified with S.B. 80-0023)
FS 207.6 to FS 214 at 11,550 lbs
FS 195.2 to FS 214 at 8,745 lbs
FS 194 to FS 213 at 8,500 lbs
FS 194 to FS 209.8 at 7,700 lbs or less
Straight line variation between points given.

Airplanes modified with Mod. 80-0642 or SB-80-0215:
FS 210.25 to FS 214 at 12,100 lbs
FS 195.2 to FS 214 at 8,745 lbs
FS 194 to FS 213 at 8,500 lbs
FS 194 to FS 209.8 at 7,700 lbs or less
Straight line variation between points given.

Empty Weight C.G. Range None

Datum. 236.22 inches forward of the rear pressure bulkhead centerline (at the intersection between the forward pressure bulkhead and cockpit floor centerline).

Leveling Means. Three leveling marks are provided to level the airplane: one is located on the forward mast of cabin door, the other two are located each side to the fuselage, close to the rearmost baggage compartment frame. The airplane may be leveled either on jacks or on wheels using the communicating vessel system and deflecting the tires or the shock absorbers.
Normally the airplane is leveled first laterally then longitudinally.
Some aircraft may have longitudinal level marks on the external power receptacle housing, and lateral level marks on the external power receptacle housing and on the ground test refueling panel housing.

Maximum Weight. (S/N 1001 and 1002)

Ramp	10,900 lbs
Takeoff	10,810 lbs
Landing	10,270 lbs
Zero Fuel	9,000 lbs

(from S/N 1004 to S/N 1025)

Ramp	10,900 lbs
Takeoff	10,810 lbs
Landing	10,270 lbs
Zero Fuel (at forward C.G. limit)	9,500 lbs
(at aft C.G. limit)	9,300 lbs

Straight line variation between limits given.

(from S/N 1026 to subsequent and from S/N 1004 to S/N 1025 modified with S.B. 80-0023)

Ramp	11,600 lbs
Takeoff	11,550 lbs
Landing	10,945 lbs

Zero Fuel
(from S/N 1004 to S/N 1015)
(at forward C.G. limit) 9,500 lbs

	(at aft C.G. limit)	9,300 lbs
	(from S/N 1016 to subsequent)	9,800 lbs
	Straight line variation between limits given.	
	(from S/N 1004 to subsequent modified with Mod. 80-642 or with SB-80-0215)	
	Ramp	12,150 lbs
	Takeoff	12,100 lbs
	Landing	11,500 lbs
	Zero Fuel	
	(from S/N 1004 to S/N 1015)	
	(at forward C.G. limit)	9,500 lbs
	(at aft C.G. limit)	9,300 lbs
	(from S/N 1016 to subsequent)	9,800 lbs
	Straight line variation between limits given	
Minimum Crew.	1 Pilot	
Number of Seats.	Maximum 11 including 2 pilot seats at FS 49.2. See loading instructions in AFM/W&BM for approved seating.	
Maximum Baggage.	Cabin Compartment:	50 lbs at FS 220 40 lbs on coat Rod at FS 220
	Rear Compartment:	290 lbs at FS 298 (S/N 1001-1002)
	Rear Compartment:	400 lbs at FS 298 (S/N 1004 and up)
Fuel Capacity.	S/N 1001 and S/N 1002 377.8 U.S. Gals. at FS 248.2 in 374.6 U.S. Gals. usable	
	S/N 1004 to S/N 1035 396.2 U.S. Gals. at FS 248.2 in 392.6 U.S. Gals. Usable	
	S/N 1004 to S/N1035 with SB-80-0123 installed and from S/N 1036 to subsequent: 421.9 U.S. Gals. at FS 248.2 in 418.2 U.S. Gals. usable	
	S/N 1105 to subsequent with mod. 80-1091 or SB 80-0424 479.7 U.S. Gals. at FS 244.5 in 476.0 U.S. Gals. usable	
Oil Capacity.	6.7 U.S. Gals. at FS 274.6 (2.5 U.S. Gals. usable)	
Maximum Operating Altitude	41,000 ft	
Control Surface Movements(*).	Outboard Wing Flaps (t.o. position)	10^{o} TED(**)
	Outboard Wing Flaps (lnd. position)	30^{o} TED
	Inboard Wing Flaps (t.o. position)	20^{o} TED
	Inboard Wing Flaps (lnd. position)	45^{o} TED

Aileron	19° TEU(***) - 15°30 TED
Aileron Tab (only right aileron)	20° TEU - 19° TED
Forward Wing Flaps (t.o. position)	13° TED
Forward Wing Flaps (lnd. position)	30° TED
Rudder	23° RIGHT - 23° LEFT
Rudder Tab	30° RIGHT - 30° LEFT
Stabilizer	8° TEU - 2° TED
Elevator	14° TEU - 12° TED

(*) Nominal Values
See P.180 Maintenance Manual for rigging instructions, deflections and corresponding tolerances.
(**) TED = Trailing Edge Down
(***) TEU = Trailing Edge Up

Serial Nos. Eligible.

Each individual aircraft manufactured under this type certificate must be accompanied by an Export Certificate of Airworthiness as noted below under "Import Requirements" when an application for a U.S. airworthiness certificate is made.
P.180: S/N 1002,1004 to subsequent.

Certification Basis
FAR 21.17

Date of application for type certificate December 29, 1983, revised November 12, 1986.

(S/N 1001 up to 1104)

Federal Aviation Regulations - 14 CFR Part 23, effective February 1, 1965, including Amendments 23-1 through 23-33 and Section 23.2 Amendment 36.

Special conditions; Piaggio Model P-180 airplanes, No. 23-ACE-29 and No. 23-ACE-52.

Special Federal Aviation Regulations No. 27, effective February 1, 1974, including Amendments 27-1 through 27-5.

S/N 1001 and 1002

Equivalent safety findings exist with respect to the following regulations:
- 14 CFR Section 23.1305(g): Fuel Pressure Indicator
- 14 CFR Section 23.1321(d): Arrangement of flight instruments
- 14 CFR Section 23.1545(b)(5): Marking of airspeed indicator for V_{yse}

S/N 1004 and up

Equivalent safety findings exist with respect to the following regulations:
- 14 CFR Section 23.1305(g): Fuel Pressure Indicator
- 14 CFR Section 23.1545(b)(5): Marking of airspeed indicator for V_{yse}

- 14 CFR Part 36, effective December 1, 1969, including Amendments 36-1 through 36-16
- 14 CFR Part 36, Appendix G, effective February 7,2004, including Amendments 36-25 for A/C's with SB 80-0215.

(S/N1105 to subsequent)

-14 CFR Part 23.1311 and 23.1309 at Amendment level 23-49 for Avionics and Electronic Display;

Special condition FAA CRI SE-1.

14 CFR Part 36, Appendix G ,effective February 7,2004, including Amendments 36-25, when mod. 80-0642 or SB-80-0215 is installed.

The Ente Nazionale per l'Aviazone Civile (ENAC) originally type ertificated this aircraft under its Type Certificate Number A390. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product under their Type certificate Number A059 on behalf of Italy.

Validation Basis.

Type Certificate A59EU was issued pursuant to FAR 21.29 in validation of EASA certification of compliance with the aforementioned certification basis, and in accordance with the standard airworthiness certificate provisions of FAR 21.183(c).

Note: The airworthiness provisions of FAR 21.183(d) may be cited as the basis for issuance of standard airworthiness certificates for aircraft imported from a country other than the country of manufacture.

Equipment.

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for airworthiness certification.In addition, the following item of equipment is required:

1. POH and AFM, Report No. 6591, approved July 7, 1992 (RAI Ltr 282.378/SCMA), or later approved revision (S/N 1004 through 1025 incorporating SB 80-0023 or 1026 through 1104).
2. AFM, Report No. 180-MAN-0010-01100 (EASA approval date:October 21, 2005) and W&B M, Report No. 180-MAN-0020-01101 (EASA approval date: October 21, 2005) (S/N 1002 and 1105 to subsequent).

Import requirements

The FAA can issue a U.S. airworthiness certificate based on an NAA Export Certificate of Airworthiness (Export C of A) signed by a representative of the the Ente Nazionale per l'Aviazone Civile (ENAC) on behalf of the European Community. The Export C of A should contain the following statement " The aircraft covered by this certificate has been examined, tested, and found to comply with EASAs TC No A059 approved under U.S. Type Certificate No. A 59EU and to be in a condition for safe operation".

Country other than Manufacturer (U.S. bilateral agreement and the original Export Certificate of Airworthiness issued by the country of manufacture must exist): A U.S. airworthiness certificate may be issued on the basis of a log book certifying statement endorsed by an authorized representative of the civil aviation authority of the exporting country. It is incumbent upon the exporting civil aviation authority to determine that the certifying statement includes evidence of acceptable service history and modification deviations and the following statement: "The aircraft covered by this certificate has been examined, tested, inspected in accordance with the provisions of FAR 21.183)d) or its equivalent, and found to conform to the type design approved under Type Certificate A59EU and is in a condition for safe operation".

Service Information

Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA) or – for approvals made before September 28, 2003- by the Ente Nazionale per l'Aviazone Civile (ENAC)

- Service bulletins
- Structural Repair Manuals
- Vendor Manuals
- Aircraft Flight Manuals, and
- Overhaul and Maintenance Manuals

The FAA accepts such documents and considers them FAA-approved unless one of the following condition exists:

- The documents change the limitations, performance, or procedures of the FAA approved manuals; or

- The documents make an acoustical or emissions changes to this product's U.S.type certificate as defined in 14 CFR § 21.93.

The FAA uses the post type validation procedures to approve these documents. The FAA may delegate on case-by-case to EASA to approve on behalf of the FAA for the U.S. type certificate. If this is the case it will be noted on the document.

NOTES.

Note 1. Current weight and balance data, loading information, and a list of equipment included in empty weight must be provided for each airplane at the time of original certification.

(a) Basic empty weight includes unusable fuel of 24.8 lbs at (248.8 in) with 8.7 lbs being undrainable at (248.2 in).
(b) For airplane with mod. 80-1091 or SB 80-0424, basic empty weight includes unusable fuel of 24.8 lbs at (248.8 in) with 15.4 lbs being undrainable at (236.7 in).
(c) Basic empty weight includes engine oil of 55 lbs at (274.6 in).

Note 2. Placards (Refer to Manufacturer's Specifications for a complete listing): All required placards as listed in the approved Airplane Flight Manual must be installed in the appropriate locations.

(1) The following placard must be displayed in clear view of the pilot:
"THE MARKINGS AND PLACARDS INSTALLED IN THIS AIRPLANE CONTAIN OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS AIRPLANE IN THE NORMAL CATEGORY. OTHER OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS AIRPLANE IN THIS CATEGORY ARE CONTAINED IN THE AIRPLANE FLIGHT MANUAL."

(2) Refer to the Airplane Flight Manual, Section 2, Limitations for a listing of other required placards.

Note 3. Instructions for Continued Airworthiness are contained in the applicable Maintenance Manual. Airworthiness Limitations are contained in the EASA approved Chapter 4 of the M M. Revisions to Airworthiness Limitations must be FAA approved.

All manufacturer's service bulletins (and other manual material) which contain a statement that the document is approved by the exporting airworthiness authority (EASA) may be interpreted as FAA approved. These approvals pertain to the type design only.

All service bulletins classified as Mandatory by the EASA are identified to that effect and are subject to an Airworthiness directive issued by the FAA.

Note 4. Changing the color and the thickness of the exterior paint (including registration numbers) for

composite components is only permissible after prior approval of the manufacturer.

Note 5. An approved interior must be installed when transporting passengers. When an interior is installed with side facing seats contact the nearest Aircraft Certification Office for approval.

Note 6. S/N 1001 and 1002
Four piece windshield PPG p/n NP-165241-1, p/n NP-165241-2 and Swedlow p/n 6600803-3, p/n 6600803-4 is installed

S/N 1004 to 1022
Two piece windshield PPG p/n NP-165231-01 and p/n NP-165231-02 is installed (3 plies).

S/N 1023 and up
Two piece windshield PPG p/n NP-165251-01 and p/n NP-165251-02 is installed (2 plies).

Note 7. Oxygen bottle 40 cu.ft. is installed on S/N 1004 and up, in accordance with FAR 91 Requirements.

Note 8. Airplanes from S/N 1004 up to 1104, modified with the installation of either the RVSM Kit No. 80KA0075 during manufacturing or the service Bulletin No. 80-0162 per retrofit embodiment, meet the initial airworthiness requirements for operation in Reduced Vertical Seperation Minimum (RVSM) airspace.
Airplanes from 1105 and up have basic capability to perform operation in RVSM airspace.
Each operator must obtain final RVSM operating approval directly from their local FAA Flight Standards Office.

Note 9. S/N 1105 and up
Piaggio Model P-180 airplane manufactured from Serial number 1105 and up will incorporate the Piaggio Modification No. DMT 80-0587 that includes an Electronic Flight Instrument System with an Integrated Avionics processor System – Rockwell Collins Pro Line 21.
This modification must use the "P.180 AVANTI II Airplane Flight Manual",
Report No. 180-MAN-0010-01100 (EASA approval date: October 21, 2005), and
the "P.180 AVANTI II Weight and Balance Manual", Report No. 180-MAN-0020-01101 (EASA approval date: October 21, 2005).

Note 10. S/N 1116 and up:
Approved major change on Piaggio P-180 is:
Change No. 80-0574, "Wing Root Design" Level 2

Note 11. S/N 1105 and up
Piaggio Model P-180 airplane manufactured from Serial number 1105 and up can incorporate an "In Flight Information System" according to the optional Piaggio Modification No. DMT 80-0596 "PA-05 IFIS."
This modification must use the Supplement 16 to "P.180 AVANTI II Airplane Flight Manual,"
Report No. 180-MAN-0010-01100 (EASA approval date June 13, 2006).

Note 12. Engine model PT6A-66B is installed with Piaggio Modification No. 80-0657 during manufacturing or Piaggio Service Bulletin No. 80-0231 per retrofit embodiment.

Airplanes from S/N 1004 up to 1104, modified with Service Bulletin No. 80-0231, must use the Temporary Change No. 2 to the "P.180 Avanti Pilot's Operating Handbook and Airplane Flight Manual" Report No. 6591.
Airplanes from S/N 1105 and up, modified with Mod. No. 80-0657 or Service Bulletin 80-0231, must use the Temporary Change No. 1 to the "P.180 Avanti II Airplane Flight Manual" Report No. 180-MAN-0010-01100.

Note 13. S/N 1105 and up

Piaggio Model P-180 airplane manufactured from Serial number 1105 and up can incorporate a "CPDLC system" according to the optional Piaggio Modification No. DMT 80-1005 "CPDLC – Controller Pilot Data Link Communication System", or relevant Service Bulletin 80-0416.
This modification must use the Supplement 30 to "P.180 AVANTI II Airplane Flight Manual" Report No. 180-MAN-0010-01100 (EASA approval date: February 04, 2014).

Note 14. S/N 1105 and up

Piaggio Model P-180 airplane manufactured from Serial number 1105 and up can incorporate an optional additional fuel tank according to the optional Piaggio Modification No. DMT 80-1091"P.180 Extended range", or relevant Service Bulletin 80-0424.
This modification must use the temporary change 49 to "P.180 AVANTI II Airplane Flight Manual" Report No. 180-MAN-0010-01100 (EASA approval date: June 3, 2014) and the temporary change 15 to the "P.180 AVANTI II Weight and Balance Manual", report no. 180-MAN-0020-01101 (EASA approval date: June 3, 2014).

Note 15. S/N 3001 and up

Piaggio Model P-180 airplane manufactured from Serial number 3001 and up incorporate the Piaggio Modifications No.:

- DMT 80-1117"Community Noise Reduction"
- DMT 80-1121 "Winglet".

These modifications must use the temporary change No. 62 to "P.180 AVANTI II Airplane Flight Manual" Report No. 180-MAN-0010-01100 Rev. A4 (EASA approval date: November 28, 2014).

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