TYPE-CERTIFICATE

DATA SHEET

NO. EASA.A.384

for
P166

Type Certificate Holder
Baykar Piaggio Aerospace S.p.A

Viale Generale Disegna 1,
17038 – Villanova d'Albenga (SV)
ITALY

For models: P 166
P 166 B
P 166 C
P166 S
P166 DL3
P 166 DP1

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SECTION A: P166

A.I. General

1. Type/ Model/ Variant	
1.1 Type	P 166
1.2 Model	P 166
2. Airworthiness Category	Normal
3. Manufacturer	Piaggio Aero Industries SpA Viale Generale Disegna, 1 17038 Villanova d'Albenga (SV) - ITALY
4. EASA Type Certification Application Date	6 March 1957
Note: State of Design Authority certification application date for grandfathered products	
5. State of Design Authority	Italy - ENAC
6. State of Design Authority Type Certificate Date	28 October 1958 (ENAC TC No. A.394)
7. EASA Type Certification Date	28 September 2003

A.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements	6 March 1957
2. Airworthiness Requirements	CAR 3 dated May, 15 1956 and Amendments 3-1 and 3-2.
3. Special Conditions	none
4. Exemptions	none
5. Deviations	none
6. Equivalent Safety Findings	none
7. Environmental Protection	see TCDSN A.384

A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition: not available data

2. Description:
Refer to P.166 Airplane Flight Manual - PIAGGIO report n° 6038/2.

3. 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 items of equipment are required: Pre-stall indicator “Safe Flight Instrument Corp.” Model S (Wing mounted detector mod.164).

4. Dimensions: Refer to P.166 Airplane Flight Manual, PIAGGIO report n° 6038/2.

5. Engines: No. 2

Model: 2 Lycoming GSO-480-B1C6

5.1. Engine Limits

GSO-480-B1C6

Operating Conditions	Shaft Horsepower (HP)	Engine RPM (RPM)	MP Manifold Pressure	ALT Altitude (FT)	TIME (MIN)
Takeoff	340	3400	48.0	s.l.	Limited to 5’
Takeoff	340	3400	44.5	7900	Limited to 5’
Max. continuous	320	3200	45.0	s.l.	Unlimited
Max. continuous	320	3200	43.0	8000	Unlimited

6. Propellers: No. 2

Model: Hartzell HC-B3X20-2CL/L9333CH or HC-A3X20-2CL/L9333CH

Number of blades: 3 (metallic blades type)

6.1. Sense of Rotation: Clockwise in view of flight direction

6.2. Diameter: 2362 mm maximum, 2337 mm minimum.

6.3. Pitch: Nominal pitch angle at 0,762 m (30 in) station

6.4. Propeller Limits
- Max: 83°
- Min (mechanical stop): 15°

7. Fluids:

7.1. Fuel 100/130 minimum octane aviation gasoline

7.2. Oil Refer to P.166 Airplane Flight Manual, PIAGGIO report n° 6038/2.

8. Fluid capacities

8.1. Fuel:

8.1.1. Total 840 Lt (221.9 (US Gal.)

Tank	Capacity		Usable		Arm	
	Lt	US Gal.	Lt	US Gal.	m	in
Main LH	212	56.0	210	55.5	5,320	209.4
Main RH	212	56.0	210	55.5	5,320	209.4
Tip LH	208	54.9	206	54.4	5,240	206.3
Tip RH	208	54.9	206	54.4	5,240	206.3

Refer to note 1 for unusable fuel data.

8.2. Oil:

8.2.1.Oil Capacity:

Total quantity: 30 Lt (7.92 US Gal), 2 oil tanks with 15 Lt (3.96 US Gal) each at 5,200 m (204.7 in).
Refer to Note 1 for undrainable oil.

9. Air Speeds:

SPEED		mph	Knots
V_{NE}	Never Exceeding Speed	261	226
V_{NO}	Max Structural Cruising Speed	206	179
V_P	Design Manoeuvring Speed	158	137
V_{FE}	Max Flap Extended (all settings) from 0° to 23°	150	130
	Flap Down from 23° to 45°	130	113
V_{LE}	Max Landing Gear Extended Speed	161	140
V_{MC}	Minimum Control Speed	90	78

10. Maximum Operating Altitude: 8534 m / 28000 ft

11. All-weather Capability: N.A.

12. Maximum Weight:

- Take-off 3680 kg (8113 lbs)

13. Centre of Gravity Range:

Landing Gear extended C.G. range (Ref. to note 5).

From	To	Weight
+4,564 m (179.7 in)	+4,996 m (196.70 in)	3050 Kg (6720 lbs)
+4,564 m (179.7 in)	+4,945 m (194.70 in)	3520 Kg (7760 lbs)
+4,594 m (180.90 in)	+4,930 m (194.10 in)	3680 Kg (8113 lbs)

Straight line variation between points given.

Empty Weight C.G. Range: None

14. Datum: Airplane nose

15. Mean Aerodynamic Cord (MAC) 1.959 m (77.126 in)

16. Leveling Means: Reference points on LH pilot's seat rails and on passenger's door cut-out frame.

17. Minimum Flight Crew: 1 (Pilot).

18. Maximum Passenger Seating Capacity

Max 8.
2 at 1,900 m (74.8 in)
3 at 2,840 m (111.8 in)
3 at 3,800 m (149.6 in)
Refer to Note 3 for other passenger seating configurations.

19. Exit: No, type

Exits: No. 2
1 doors in the crew's cabin
1 door in the passenger's cabin, LH side

20. Baggage / Cargo Compartments
Baggage/Cargo Compartments maximum weight
Forward vane baggage 55 Kg (120 lb) at + 5,970 m (+ 223.0 in)
Rearward vane baggage 180 Kg (400 lb) at + 6,880 m (+ 270.9 in)

21. Wheels and Tires

21.1. Wheels and Tires size
Nose Landing Gear: 6.00-6
Main Landing Gear: 8.50-10

A.IV. Operating and Service Instructions

1. Flight Manual PIAGGIO Report n. 6083/2, RAI/ENAC approval: June 14 1961.

A.V. Notes

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. Basic empty weight includes:
   - Unusable fuel in wing and tip tanks: 5,7 kg at 5,283 m (207.99).
   - Oil of lubricating system 6,8 Kg at +5,200 m (204.7 in).
2. The following placard must be displayed in clear view of the pilot:
   "QUESTO VELIVOLO DEVE ESSERE IMPIEGATO COME UN VELIVOLO DI CATEGORIA NORMALE IN CONFORMITA' CON LE LIMITAZIONI DEL MANUALE DI VOLO DEL VELIVOLO. NON SONO AMMESSE MANOVRE ACROBATICHE, COMPRESA LA VITE".

   "THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS CONTAINED IN THE AIRPLANE FLIGHT MANUAL.

   NO ACROBATIC MANEUVERS, INCLUDING SPINS, APPROVED."

   All placards required by approved Airplane Flight Manuals must be installed in the correct position.
3. Other approved cabin layouts:
   no. of seats: 10 (2 at + 1,900 m; 2 at + 2,629 m; 2 at +3,350 m; 2 at +4,059 m; 2 at + 4,900 m).
   Other approved cabin layouts are indicated in the Airplane Flight Manual.
4. Optional Changes for P166 variant
   Airspeed limits changes:
   - V_{NE} increases from 192 Kts 226 Kts
   - V_{NO} increases from 152 Kts 179 Kts.
   - Forward C.G. Limit change:
     Old limits from +4,653 m to +4,996 m with 3050 Kg (6720 Lb)
     from +4,727 m to +4,930 m with 3680 Kg (8113 Lb)
     Straight line variation between points given
     New limits see paragraph "centre of gravity range" of P166 variant.
5. Cabin Layout for P166 variant:
   - New cabin layout added (refer to note 3).
   - Max baggage on the rear baggage compartment changes from 136 Kg (300 Lb) to 180 Kg (400 Lb).
   - The changes on airspeed limits, C.G. limits, cabin layout and max baggage limits are approved as optional changes for P166 and requires the RAI approved P166 Airplane Flight Manual Rev. 9 dated Feb. 23, 1965 and the RAI approved Service Letter N° 166-18.

SECTION B: P166 B

B.I. General

1. Type/ Model/ Variant	
1.1 Type	P 166
1.2 Model	P 166 B
2. Airworthiness Category	Normal
3. Manufacturer	Piaggio Aero Industries SpA Viale Generale Disegna, 1 17038 Villanova d'Albenga (SV) - ITALY
4. EASA Type Certification Application Date	31 October 1961
Note: State of Design Authority certification application date for grandfathered products	
5. State of Design Authority	Italy - ENAC
6. State of Design Authority Type Certificate Date	8 January 1963 (ENAC TC No. A.394)
7. EASA Type Certification Date	28 September 2003

B.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements	31 October 1961
2. Airworthiness Requirements	CAR 3 dated May, 15 1956 and Amendments 3-1 and 3-2.
3. Special Conditions	none
4. Exemptions	none
5. Deviations	none
6. Equivalent Safety Findings	none
7. Environmental Protection	see TCDSN A.384

B.III Technical Characteristics and Operational Limitations

1. Type Design Definition: not available data

2. Description: similar to P.166 except for:
   - engine power augmented,
   - new engine nacelles,
   - structural modification,
   - augmented MTOW and other minor changes

   Refer to P.166B Airplane Flight Manual - PIAGGIO report n° 6124/2.

3. 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 items of equipment are required: Pre-stall indicator "Safe Flight Instrument Corp." Model S (Wing mounted detector mod.164).

4. Dimensions: Refer to P.166B Airplane Flight Manual - PIAGGIO report n° 6124/2.

5. Engines: No. 2

   Model: 2 Lycoming IGSO-540-A1C

   5.1 Engine Limits

IGSO-540-A1C

Operating Conditions	Shaft Horsepower (HP)	Engine RPM (RPM)	MP Manifold Pressure	ALT Altitude (FT)	TIME (MIN)
Takeoff	380	3400	47.0	s.l.	Limited to 5'
Takeoff	380	3400	43.5	10500	Limited to 5'
Max. continuous	360	3200	45.0	s.l.	Unlimited
Max. continuous	360	3200	41.7	10500	Unlimited

6 Propellers: No. 2

Model: Hartzell HC-B3Z30-2BL/L10151-8

Number of blades: 3 (metallic blades type)

6.1 Sense of Rotation Clockwise in view of flight direction

6.2 Diameter 2362 mm maximum, 2337 mm minimum.

6.3 Pitch Nominal pitch angle at 0,838 m (33 in) station

6.4 Propeller Limits

- Max: 82°
- Min (mechanical stop): 17°

7 Fluids:

7.1 Fuel 100/130 minimum octane aviation gasoline

7.2 Oil Refer to P.166B Airplane Flight Manual, PIAGGIO report n° 6124/2.

8 Fluid capacities

8.1 Fuel:

8.1.1 Total 840 Lt (221.9 (US Gal.)

Tank	Capacity		Usable		Arm	
	Lt	US Gal.	Lt	US Gal.	m	in
Main LH	212	56.0	210	55.5	5,320	209.4
Main RH	212	56.0	210	55.5	5,320	209.4
Tip LH	208	54.9	206	54.4	5,240	206.3
Tip RH	208	54.9	206	54.4	5,240	206.3

Refer to note 1 for unusable fuel data.

8.2 Oil:

8.2.1 Oil Capacity:
Total quantity: 30 Lt (7.92 US Gal), 2 oil tanks with 15 Lt (3.96 US Gal) each at 5,200 m (204.7 in).
Refer to Note 1 for undrainable oil.

9 Air Speeds:

SPEED		mph	Knots
V_{NE}	Never Exceeding Speed	267	231
V_{NO}	Max Structural Cruising Speed	211	183
V_P	Design Manoeuvring Speed	171	148
V_{FE}	Max Flap Extended (all settings) from 0° to 23°	151	131
	Flap Down from 23° to 45°	130	113
V_{LE}	Max Landing Gear Extended Speed	166	144
V_{MC}	Minimum Control Speed	94.5	82

10 Maximum Operating Altitude: 8534 m / 28000 ft

11 All-weather Capability: N.A.

12 Maximum Weight:

- Take-off 3800 kg (8377 lbs)
(refer to note 4 for MTOW augmented to 3950 kg (7898 Lb))

13 Centre of Gravity Range:

Landing Gear extended C.G. range

From	To	Weight
+4,574 m (180.1 in)	+5,005 m (197.0 in)	3400 Kg (7495 lbs)
+4,672 m (183.9 in)	+4,927 m (193.4 in)	3800 Kg (8377 lbs)

Straight line variation between points given.

Empty Weight C.G. Range: None

14 Datum: 0,295 m (11.61 in) rearward of vertical tangent

to the airplane nose or 5,766 m (226.97 in) forward of wing rear spar.

15 Mean Aerodynamic Cord (MAC) 1.959 m (77.126 in)

16 Leveling Means: Reference points on LH pilot's seat rails and on

passenger's door cut-out frame.

17 Minimum Flight Crew: 1 (Pilot).

18 Maximum Passenger Seating Capacity

Max 8.
2 at 1,900 m (74.8 in)
3 at 2,840 m (111.8 in)
3 at 3,800 m (149.6 in)
Refer to Note 3 for other passenger seating configurations.

19 Exit: No, type

Exits: No. 2
1 doors in the crew's cabin
1 door in the passenger's cabin, LH side

20 Baggage / Cargo Compartments
Baggage/Cargo Compartments maximum weight
Forward vane baggage 55 Kg (120 lb) at + 5,970 m (+ 223.0 in)
Rearward vane baggage 180 Kg (400 lb) at + 6,880 m (+ 270.9 in)

21 Wheels and Tires

21.1 Wheels and Tires size

Nose Landing Gear:	6.00-6
Main Landing Gear:	8.50-10

B.IV Operating and Servicing Instructions

1. Aircraft Flight Manual

PIAGGIO Report n. 6124/2, RAI/ENAC approval: April 13, 1963.

PIAGGIO Report n. 6229, RAI/ENAC approval: November 15, 1969 and subsequent approved amendments for P166B with MTOW of 3950 Kg.

B.V Notes

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. Basic empty weight includes:
   - Unusable fuel in wing and tip tanks: 5,7 kg at 5,283 m (207.99).
   - Oil of lubricating system 6,8 Kg at +5,200 m (204.7 in).

2. The following placard must be displayed in clear view of the pilot:
   "QUESTO VELIVOLO DEVE ESSERE IMPIEGATO COME UN VELIVOLO DI CATEGORIA NORMALE IN CONFORMITA' CON LE LIMITAZIONI DEL MANUALE DI VOLO DEL VELIVOLO. NON SONO AMMESSE MANOVRE ACROBATICHE, COMPRESA LA VITE".

   "THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS CONTAINED IN THE AIRPLANE FLIGHT MANUAL.

   NO ACROBATIC MANEUVERS, INCLUDING SPINS, APPROVED."

   All placards required by approved Airplane Flight Manuals must be installed in the correct position.

3. Other approved cabin layouts:
   no. of seats: 10 (2 at + 1,900 m; 2 at + 2,629 m; 2 at +3,350 m; 2 at +4,059 m; 2 at + 4,900 m).
   Other approved cabin layouts are indicated in the Airplane Flight Manual.

4. Limitations for the Model P.166 B with MTOW of 3950 Kg (8708 lbs)
   Airspeed limitations

V_{NE} (Never Exceeding)	252 mph	(219 Kts)
V_{NO} (cruise struct,. max.)	200 mph	(174 Kts)
V_P (maneuver)	173 mph	(150 Kts)
V_{FE} (flaps from 0° to 23°)	151 mph	(131 Kts)
V_{FE} (flaps from 23° to 45°)	130 mph	(113 Kts)
V_{LE} (landing gear extended)	166 mph	(144 Kts)
V_{MC} s/n (minimum control)	104 mph	(90 Kts)

Centre of Gravity range(landing gear extended)

From + 4,574 m to + 5,005 m with 3400 Kg (7495 lb)
From + 4,672 m to + 4,927 m with 3800 Kg (8377 lb)
From + 4,725 m to + 4,907 m with 3950 Kg (8708 lb)
Straight line variation between points indicated.

Max Take Off Weight. 3950 Kg (8708 lbs)
Max Landing Weight. 3800 Kg (8377 lbs)

Refer to Airplane Flight Manual R. Piaggio Report No.6229, RAI approved with letter n. 80.053/T dated November 5 1969

SECTION C: P166 B

C.I. General

1. Type/ Model/ Variant	
1.1 Type	P 166
1.2 Model	P 166 C
2. Airworthiness Category	Normal
3. Manufacturer	Piaggio Aero Industries SpA Viale Generale Disegna, 1 17038 Villanova d'Albenga (SV) - ITALY
4. EASA Type Certification Application Date	23 March 1963
Note: State of Design Authority certification application date for grandfathered products	
5. State of Design Authority	Italy - ENAC
6. State of Design Authority Type Certificate Date	8 June 1965 (ENAC TC No. A.394)
7. EASA Type Certification Date	28 September 2003

C.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements	23 March 1963
2. Airworthiness Requirements	CAR 3 dated May, 15 1956 and Amendments 3-1 and 3-2.
3. Special Conditions	none
4. Exemptions	none
5. Deviations	none
6. Equivalent Safety Findings	none
7. Environmental Protection	see TCDSN A.384

C.III TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

1. Type Design Definition: not available data

2. Description: similar to P.166 B except for:
   - MTOW augmented,
   - cabin layout,
   - structural modification and landing gear

   Refer to P.166C Airplane Flight Manual - PIAGGIO report n° 6148/2.

3. 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 items of equipment are required: Pre-stall indicator “Safe Flight Instrument Corp.” Model S (Wing mounted detector mod.164).

4. Dimensions: Refer to P.166C Airplane Flight Manual - PIAGGIO report n° 6148/2.

5. Engines: No. 2

   Model: 2 Lycoming IGSO-540-A1C

5.1 Engine Limits

IGSO-540-A1C

Operating Conditions	Shaft Horsepower (HP)	Engine RPM (RPM)	MP Manifold Pressure	ALT Altitude (FT)	TIME (MIN)
Takeoff	380	3400	47.0	s.l.	Limited to 5’
Takeoff	380	3400	43.5	10500	Limited to 5’
Max. continuous	360	3200	45.0	s.l.	Unlimited
Max. continuous	360	3200	41.7	10500	Unlimited

6 Propellers: No. 2

Model: Hartzell HC-B3Z30-2BL/L10151-8

Number of blades: 3 (metallic blades type)

6.1 Sense of Rotation — Clockwise in view of flight direction

6.2 Diameter — 2362 mm maximum, 2337 mm minimum.

6.3 Pitch — Nominal pitch angle at 0,838 m (33 in) station

6.4 Propeller Limits
- Max: 82°
- Min (mechanical stop): 17°

7 Fluids:

7.1 Fuel 100/130 minimum octane aviation gasoline

7.2 Oil Refer to P.166C Airplane Flight Manual, PIAGGIO report n° 6148/2.

8 Fluid capacities

8.1 Fuel:

8.1.1 Total 424 Lt (112.0 US Gal.)

Tank	Capacity		Usable		Arm	
	Lt	US Gal.	Lt	US Gal.	m	in
Main LH	212	56.0	210	55.5	5,320	209.4
Main RH	212	56.0	210	55.5	5,320	209.4
Tip LH Optional	208	54.9	206	54.4	5,240	206.3
Tip RH Optional	208	54.9	206	54.4	5,240	206.3

Refer to note 1 for unusable fuel data.

8.2 Oil:

8.2.1 Oil Capacity:

Total quantity: 30 Lt (7.92 US Gal), 2 oil tanks with 15 Lt (3.96 US Gal) each at 5,200 m (204.7 in).

Refer to Note 1 for undrainable oil.

9 Air Speeds:

SPEED		mph	Knots
V_{NE}	Never Exceeding Speed	252	219
V_{NO}	Max Structural Cruising Speed	200	174
V_P	Design Manoeuvring Speed	173	150
V_{FE}	Max Flap Extended (all settings) from 0° to 23°	151	131
	Flap Down from 23° to 45°	130	113
V_{LE}	Max Landing Gear Extended Speed	166	144
V_{MC}	Minimum Control Speed	104	90

10 Maximum Operating Altitude: 8534 m / 28000 ft

11 All-weather Capability: N.A.

12 Maximum Weight:

- Take-off 3950 kg (8708 lbs)

13 Centre of Gravity Range:

Landing Gear extended C.G. range

From	To	Weight
+4,574 m (180.1 in)	+5,005 m (197.0 in)	3400 Kg (7495 lbs)
+4,725 m (186.0 in)	+4,907 m (193.2 in)	3950 Kg (8708 lbs)

Straight line variation between points given.

Empty Weight C.G. Range: None

14 Datum: 0,295 m (11.61 in) rearward of vertical tangent

to the airplane nose or 5,766 m (226.97 in) forward of wing rear spar.

15 Mean Aerodynamic Cord (MAC) 1.959 m (77.126 in)

16 Leveling Means: Reference points on LH pilot's seat rails and on

passenger's door cut-out frame.

17 Minimum Flight Crew: 1 (Pilot).

18 Maximum Passenger Seating Capacity

Max 13
2 at 1,900 m (74.8 in)
2 from 2,629 m (103.5 in) to 2,705 m (106.5 in)
2 from 3,350 m (131.9 in) to 3,390 m (133.5 in)
2 from 4,095 m (161.2 in) to 4,102 m (161.5 in)
2 at 4,948 m (194.8 in)
3 at 5,910 m (232.7 in)
Refer to Note 3 for other passenger seating configurations.

19 Exit: No, type

Exits: No. 2
1 doors in the crew's cabin
1 door in the passenger's cabin, LH side

20 Baggage / Cargo Compartments
Baggage/Cargo Compartments maximum weight
180 Kg (400 lb) at + 6,800 m (+ 271.0 in)

21 Wheels and Tires

21.1 Wheels and Tires size

Nose Landing Gear:	6.00-6
Main Landing Gear:	8.50-10

C.IV Operating and Servicing Instructions

1. Aircraft Flight Manual

   PIAGGIO Report n. 6484/2, RAI/ENAC approval: June 08, 1965.

C.V Notes

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. Basic empty weight includes:
   - Unusable fuel in wing and tip tanks if installed: 5,7 kg at 5,283 m (207.99).
   - Unusable fuel in wing tanks 2,9 Kg at +5,200 m
   - Oil of lubricating system 6,8 Kg at +5,200 m (204.7 in).

2. The following placard must be displayed in clear view of the pilot:
   "QUESTO VELIVOLO DEVE ESSERE IMPIEGATO COME UN VELIVOLO DI CATEGORIA NORMALE IN CONFORMITA' CON LE LIMITAZIONI DEL MANUALE DI VOLO DEL VELIVOLO. NON SONO AMMESSE MANOVRE ACROBATICHE, COMPRESA LA VITE".

   "THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS CONTAINED IN THE AIRPLANE FLIGHT MANUAL.
   NO ACROBATIC MANEUVERS, INCLUDING SPINS, APPROVED."

   All placards required by approved Airplane Flight Manuals must be installed in the correct position.

SECTION D: P166 S

D.I. General

1. Type/ Model/ Variant	
1.1 Type	P 166
1.2 Model	P 166 S
2. Airworthiness Category	Normal
3. Manufacturer	Piaggio Aero Industries SpA Viale Generale Disegna, 1 17038 Villanova d'Albenga (SV) - ITALY
4. EASA Type Certification Application Date	19 July 1968
Note: State of Design Authority certification application date for grandfathered products	
5. State of Design Authority	Italy - ENAC
6. State of Design Authority Type Certificate Date	27 February 1969 (ENAC TC No. A.394)
7. EASA Type Certification Date	28 September 2003

D.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements	19 July 1968
2. Airworthiness Requirements	CAR 3 dated May, 15 1956 and Amendments 3-1 and 3-2.
3. Special Conditions	none
4. Exemptions	none
5. Deviations	none
6. Equivalent Safety Findings	none
7. Environmental Protection	see TCDSN A.384

D.III TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

1. Type Design Definition: not available data

2. Description: similar to P.166 except for:
   - tip tanks with augmented capacity;
   - emergency exit on top of fuselage and LH side cabin crew door added
   - same nose landing gear of P166B

   Refer to P.166S Airplane Flight Manual - PIAGGIO report n° 6215.

3. 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 items of equipment are required: Pre-stall indicator "Safe Flight Instrument Corp." Model S (Wing mounted detector mod.164).

4. Dimensions: Refer to P.166S Airplane Flight Manual, PIAGGIO report n° 6215.

5. Engines: No. 2
   Model: 2 Lycoming GSO-480-B1C6

5.1. Engine Limits

GSO-480-B1C6

Operating Conditions	Shaft Horsepower (HP)	Engine RPM (RPM)	MP Manifold Pressure	ALT Altitude (FT)	TIME (MIN)
Takeoff	340	3400	48.0	s.l.	Limited to 5'
Takeoff	340	3400	44.5	7900	Limited to 5'
Max. continuous	320	3200	45.0	s.l.	Unlimited
Max. continuous	320	3200	43.0	8000	Unlimited

6. Propellers: No. 2
   Model: R. Piaggio P.1033/G4-BS 0724245-11
   Number of blades: 3 (metallic blades type)

6.1. Sense of Rotation: Clockwise in view of flight direction

6.2. Diameter: 234 cm maximum, (92.1 in)
231,5 cm minimum (91.1 in)

6.3. Pitch: Nominal pitch angle at 81,9 cm (33 in) station

6.4. Propeller Limits
- Max: 78° 30'
- Min: 14°

7. Fluids:
   7.1. Fuel 100/130 minimum octane aviation gasoline

   7.2. Oil Refer to P.166S Airplane Flight Manual, PIAGGIO report n° 6215.

8. Fluid capacities
   8.1. Fuel:
      8.1.1.Total 1058 Lt (279.5 (US Gal.)

Tank	Capacity		Usable		Arm	
	Lt	US Gal.	Lt	US Gal.	m	in
Main LH	212	56.0	210	55.5	5,320	209.4
Main RH	212	56.0	210	55.5	5,320	209.4
Tip LH Optional	323	85.3	320	84.5	5,069	199.6
Tip RH Optional	323	85.3	320	84.5	5,069	199.6

Refer to note 1 for unusable fuel data.

   8.2. Oil:
      8.2.1.Oil Capacity:
      Total quantity: 30 Lt (7.92 US Gal), 2 oil tanks with 15 Lt (3.96 US Gal) each at 5,200 m (204.7 in).
      Refer to Note 1 for undrainable oil.

9. Air Speeds:

SPEED		mph	Knots
V_{NE}	Never Exceeding Speed	221	192
V_{NO}	Max Structural Cruising Speed	175	152
V_P	Design Manoeuvring Speed	153	133
V_{FE}	Max Flap Extended (all settings) from 0° to 23°	150	130
	Flap Down from 23° to 45°	130	113
V_{LE}	Max Landing Gear Extended Speed	161	140
V_{MC}	Minimum Control Speed	85	74

10. Maximum Operating Altitude: 8534 m / 28000 ft

11. All-weather Capability: N.A.

12. Maximum Weight:

- Take-off 3680 kg (8113 lbs)

13. Centre of Gravity Range:

Landing Gear extended C.G. range (Ref. to note 5).

From	To	Weight
+4,624 m (182.04 in)	+4,926 m (193.94 in)	3680 Kg (8113 lbs)
+4,564 m (179.7 in)	+4,926 m (193.94 in)	3350 Kg (7385 lbs)

Straight line variation between points given.

Empty Weight C.G. Range: None

14. Datum: 0,925 m (36.42 in) rearward of vertical tangent

to the airplane nose or 5,766 m (226.97 in) forward of wing rear spar.

15. Mean Aerodynamic Cord (MAC) 1.959 m (77.126 in)

16. Leveling Means: Reference points on LH pilot's seat rails and on

passenger's door cut-out frame.

17. Minimum Flight Crew: 1 (Pilot).

18. Maximum Passenger Seating Capacity

Max 6.
2 at 1,900 m (74.8 in)
2 at 3,119 m (122.8 in)
2 at 3,987 m (157.0 in)

19. Exit: No, type

Exits: No. 4
2 doors in the crew's cabin
1 door in the passenger's cabin, LH side
1 emergency exit on top of fuselage

20. Baggage / Cargo Compartments
Baggage/Cargo Compartments maximum weight 180 Kg (400 lb) at + 6,800 m (+271 in)

21. Wheels and Tires

21.1. Wheels and Tires size

Nose Landing Gear:	6.00-6
Main Landing Gear:	8.50-10

D.IV Operating and Servicing Instructions

1. Aircraft Flight Manual

   PIAGGIO Report n. 6215, RAI/ENAC approval: February 27, 1969.

D.V Notes

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. Basic empty weight includes:
   - Unusable fuel in wing tanks: 2,9 kg at 5,200 m
   - Unusable fuel in tip tanks: 4,2 kg at 5,070 m
   - Oil of lubricating system 6,8 Kg at +5,200 m (204.7 in).

2. The following placard must be displayed in clear view of the pilot:
   "QUESTO VELIVOLO DEVE ESSERE IMPIEGATO COME UN VELIVOLO DI CATEGORIA NORMALE IN CONFORMITA' CON LE LIMITAZIONI DEL MANUALE DI VOLO DEL VELIVOLO. NON SONO AMMESSE MANOVRE ACROBATICHE, COMPRESA LA VITE".

   "THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS CONTAINED IN THE AIRPLANE FLIGHT MANUAL.
   NO ACROBATIC MANEUVERS, INCLUDING SPINS, APPROVED."

   All placards required by approved Airplane Flight Manuals must be installed in the correct position.

SECTION E: P166 DL3

E.I. General

1. Type/ Model/ Variant	
1.1 Type	P 166
1.2 Model	P 166 DL3
2. Airworthiness Category	Normal
3. Manufacturer	Piaggio Aero Industries SpA Viale Generale Disegna, 1 17038 Villanova d'Albenga (SV) - ITALY
4. EASA Type Certification Application Date	18 March 1976
Note: State of Design Authority certification application date for grandfathered products	
5. State of Design Authority	Italy - ENAC
6. State of Design Authority Type Certificate Date	21 July 1978 (ENAC TC No. A.394)
7. EASA Type Certification Date	28 September 2003

E.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements	18 March 1976
2. Airworthiness Requirements	CAR 3 dated May, 15 1956 and Amendments 3-1 and 3-2 plus the following paragraphs of FAR 23, including Amendments from 23-1 to 23-17: 23.155, .253, .335, .361(a)(3), .367, .371, .473(c), .629(e), from .901 to.1193 (subpart E), .1305, .1337, from .1441 to .1449, .1505, .1521, .1527, .1545, .1555, .1583, .1585
Elected to comply :	FAR 23: from 23.21 to 23.253, Amendment 23-17 (Subpart B): 23.1203, amendment 23-18, 23.1353, Amendment 23-20, 23.1416 and 23.1419, Amendment 23-23. Refer to note 5
3. Special Conditions	none
4. Exemptions	none
5. Deviations	none
6. Equivalent Safety Findings	none
7. Environmental Protection	see TCDSN A.384

E.III TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

1. Type Design Definition: Refer to PIAGGIO drawing n° 68-110036-8(--).

2. Description: The PIAGGIO P.166 DL3 is a bi-turboprop utility aircraft with a maximum seating capability of 11 people including crew. Refer to P.166 DL3 Airplane Flight Manual, PIAGGIO report n° 6390 or 6390A

3. 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 items of equipment are required: Pre-stall indicator “Safe Flight Instrument Corp.” Model S (Wing mounted detector mod.164).

4. Dimensions: Refer to P.166 DL3 Airplane Flight Manual, PIAGGIO report n° 6390 or 6390A.

5. Engines: No. 2

Model: 2 AVCO Lycoming LTP 101-600 turboprop engines, or
2 AVCO Lycoming LTP 101-600A turboprop engines, or
2 AVCO Lycoming LTP 101-700A-1A turboprop engines.

5.1 Engine Limits

LTP 101-600

Operating Conditions	Shaft horsepower (HP)	NG Gas Generator Speed (%)	NP Prop. shaft speed (RPM)	ITT Interstage Temperature (°C)
Takeoff (5 min)	599	102.4	1950	763
Max. continuous	565	101.0	1950	740
Starting Limits (12 sec.)				900
Transient (12 sec.)		103.5	2032	843

LTP 101-600A-1A

Operating Conditions	Shaft horsepower (HP)	NG Generator Speed (%)	NP Prop. shaft speed (RPM)	ITT Interstage Temperature (°C)
Takeoff (5 min)	599	103.2	1950	782
Max. continuous	565	101.7	1950	763
Starting Limits (12 sec.)				900
Transient (12 sec.)		104.8	2032	843

LTP 101-700A-1A

Operating Conditions	Shaft horsepower (HP)	NG Gas Generator Speed (%)	NP Prop. shaft speed (RPM)	ITT Interstage Temperature (°C)
Takeoff (5 min)	599	102.3	1950	782
Max. continuous	599	101.0	1950	763
Starting Limits (12 sec.)				900
Transient (12 sec.)		104.8	2032	843

Oil Temperature TP 101-600, LTP 101-600A-1A, LTP 101-700A-1A

- Min for starting:: - 35 °C (min.)
- Ground Idle: - 35 °C ÷ 99 °C
- Flight Idle: 10 °C ÷ 99 °C
- Max. continuous : 20 °C ÷ 99 °C

6 Propellers:

No. 2

Model: Hartzell
HC-B3TN-3DL with blades LT 10282-9.5R, or
LT 10282H-9.5R, or LT 10282N-9.5R

Number of blades: 3

6.1 Sense of Rotation

Propellers rotate Clockwise in view of flight direction

6.2 Diameter 2362 mm maximum, 2320 mm minimum

6.3 Pitch

Nominal pitch angle at 0,762 m (30 in) station

- Max: 85.5°
- Min (mechanical stop): 20°
- Reverse: -11°

6.4 Propeller Limits

- No further reduction of the minimum diameter is allowed.

7 Fluids:

7.1 Fuel

ASTM D 1655-70 Jet A, Jet A-1, Jet B
MIL-T-5624 Grade JP 4, JP 5
MIL-T-83183 Grade JP 8

7.2 Oil

MIL-L-7808; MIL-I-23699

8 Fluid capacities

8.1 Fuel:

8.1.1 From S/N 465 to S/N 474):

Tank	Capacity		Usable		Arm	
	Lt	US Gal.	Lt	US Gal.	m	in
Main LH	214	56.5	187	49.4	5,320	209.4
Main RH	214	56.5	187	49.4	5,320	209.4
Tip LH	334	88.2	325	85.8	5,069	199.6
Tip RH	334	88.2	325	85.8	5,069	199.6
Auxiliary	357	94.4	350	92.6	5,544	218.3

Refer to note 2 for unusable fuel data.
Refer to note 3 for auxiliary fuel system

8.1.2 From S/N 475 and from S/N 465 to S/N 474 when modified as per document DMT 68-0001:

Tank	Capacity		Usable		Arm	
	Lt	US Gal.	Lt	US Gal.	m	in
Main LH	263	69.5	260	68.7	5,320	209.4
Main RH	263	69.5	260	68.7	5,320	209.4
Tip LH	331	87.5	328	86.7	5,069	199.6
Tip RH	331	87.5	328	86.7	5,069	199.6
Fuselage tank	232	61.3	231	61.0	5,408	199.6

Refer to note 2 for unusable fuel data.

8.2 Oil:

Oil Capacity:
(From S/N 465 to S/N 468)

Total quantity: 21 Lt (5.5 US Gal) at 5,200 m (204.7 in) with 17 Lt (4.5 US Gal) in oil tanks.
(From S/N 469)
Total quantity: 18 Lt (4.76 US Gal) at 5,200 m (204.7 in) with 12 Lt (3.17 US Gal) in oil tanks.
Refer to Note 2 for undrainable oil.

9 Air Speeds:

SPEED		KCAS
V_{MO}	Maximum operating speed - Above 10.000 ft decreases of 4 KCAS every 1000 ft	220 up to 10.000 ft
V_A	Max maneuvering speed at max take off weight	157
V_{FE}	Max. flap extended speed, for all flap settings	140
V_{LE} and V_{LO}	Max landing gear extended and operating speed	144
V_{MCA}	Minimum control speed	89

10 Maximum Operating Altitude: 7315 m / 24000 ft

11 All-weather Capability:

The airplane is approved for day and night VFR, IFR operation and flight into known icing condition, provided that the appropriate equipment per AFM is installed and operating.

12 Maximum Weight:

from S/N 465 to S/N 474
- Taxi and ramp 4320 kg (9524 lbs)
- Take-off 4300 kg (9480 lbs)
- Landing 3800 kg (8377 lbs)
- Zero Fuel 3800 kg (8377 lbs)

From S/N 475 and from S/N 465 to S/N 474 when modified as per document DMT 68-0001
- Taxi and ramp 4320 kg (9524 lbs)
- Take-off 4300 kg (9480 lbs)
- Landing 4085 kg (9007 lbs)
- Zero Fuel 3800 kg (8377 lbs)

13 Centre of Gravity Range:

Landing Gear extended C.G. range

From	To	Weight
+4,696 m (184.9 in)	+4,868 m (191.65 in)	4300 Kg (9480 lbs)
+4,653 m (183.17 in)	+4,927 m (193.97 in)	3800 Kg (8377 lbs)
+4,574 m (180.08 in)	+4,927 m (193.97 in)	3400 Kg (7495 lbs) and less

Straight line variation between points given.

Empty Weight C.G. Range: None

14 Datum:
5.766 m (226.97 in) forward of centre line wing rear spar.

15 Mean Aerodynamic Cord (MAC) 1.959 m (77.126 in)

16 Leveling Means: Reference points on passenger's seat rails.

17 Minimum Flight Crew: 1 (Pilot)

18 Maximum Passenger Seating Capacity

Max 10.
2 at 1,905 m (75.0 in)
2 at 2,670 m (105.0 in)
1 at 3,124 m (123.0 in)
1 at 3,600 m (142.0 in)
2 at 4,089 m (161.0 in)
2 at 4,826 m (190.0 in)
Refer to Note 4 for other passenger seating configurations.

19 Exit: No. Type

Exits: No. 4
2 doors in the crew's cabin
1 door in the passenger's cabin, LH side
1 emergency exit in the passenger's cabin, RH side

20 Baggage / Cargo Compartments
Baggage/Cargo Compartments maximum weight
180 Kg (400 lb) at + 6,800 m (+ 271.0 in)

21 Wheels and Tyres

21.1 Wheels
Nose Landing Gear: 6.00-6
Main Landing Gear: 8.50-10

21.2 Tyres:
Nose Landing Gear Tyre Size:
- From S/N 465 to S/N 474: 6.00-6, 6 PR, tube type
- From S/N 475 and from S/N 465 to S/N 474 when modified as per document DMT 68-0001 6.00-6, 8 PR, tubeless

Main Landing Gear Tyre Size:
- From S/N 465 to S/N 474: 8.50-10, 10 PR, tube type
- From S/N 475 and from S/N 465 to S/N 474 when modified as per document DMT 68-0001 8.50-10, 10 PR, tubeless

E.IV Operating and Servicing Instructions

1. Aircraft Flight Manual

   From S/N 465 to S/N 474: PIAGGIO Report n. 6390;RAI/ENAC approval: letter 149.493/T dated July 21 1978;
   From S/N 475 and from S/N 465 to S/N 474 when modified as per doc. DMT 68-0001: PIAGGIO Report n. 6390 A; RAI/ENAC approval: letter 226.007/T dated December 20 1986

2. Maintenance Manual:

   Report No. 9089A “P.166 DL3 Manuale di Manutenzione - Cap. 5 - Scadenze ed Ispezioni”

3. Structural Repair Manual

   “P.166 DL3 Manuale delle Riparazioni Strutturali” – PIAGGIO Report n. 9093.

4. Service Letters/ Service Bulletins

   none

E.V Notes

1. Applicable serial numbers for P.166 DL3: from s/n 465 to s/n 603.

2. 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. Basic empty weight includes:
P.166DL3 (from S/N 465 to S/N 468)
- Oil of lubricating system 20 Kg (44 lbs) at 5,200 m (204.7 in), with 3 Kg (6.6 lbs) being undrainable
P.166DL3 (from S/N 469)
- Oil of lubricating system 17 Kg (38 lbs) at 5,200 m (204.7 in), with 3 Kg (6.6 lbs) being undrainable
P.166DL3 (from S/N 465 to S/N 474)
- Unusable fuel 58 Kg (127 lbs) at 5,320 m (206.5 in)
- P.166DL3 (from S/N 475 and from S/N 465 to S/N 474 when modified as per document DMT 68-0001
- Unusable fuel 8,9 Kg (19.6 lbs) with
7,80 Kg (17.2 lbs) at 5,474 m (215.5 in)
0,36 Kg (0.8 lbs) at 5,070 m (199.6 in)
0,72 Kg (1.6 lbs) at 5,408 m (212.9 in).

3. When supplementary fuel tanks (PIAGGIO drawing 68-101118-801) are installed, the related Supplement must be attached to the Airplane Flight Manual.

4. Other approved cabin layouts for the model P.166 DL3:
no. of seats: 8 (2 at + 1,905 m; 1 at + 2,921 m; 1 at +3,600 m; 2 at +4,090 m; 2 at + 4,826 m).

   Other approved cabin layouts are indicated in the Airplane Flight Manual.

5. P.166 DL3 Model is approved for flight in known icing condition provided that the equipment reported in the Airplane Flight Manual at the paragraph “Flight in known flight condition” are installed and operational.

6. The following placard must be displayed in clear view of the pilot:
“QUESTO VELIVOLO DEVE ESSERE IMPIEGATO COME UN VELIVOLO DI CATEGORIA NORMALE IN CONFORMITA’ CON LE LIMITAZIONI DEL MANUALE DI VOLO DEL VELIVOLO. NON SONO AMMESSE MANOVRE ACROBATICHE, COMPRESA LA VITE”.

   “THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS CONTAINED IN THE AIRPLANE FLIGHT MANUAL.
NO ACROBATIC MANEUVERS, INCLUDING SPINS, APPROVED.”

   All placards required by approved Airplane Flight Manuals must be installed in the correct position.

7. On the P.166 DL3 Model the engine air-bleed air conditioning system (PIAGGIO Drawing n. 68-703560) can be installed. When the system is installed, the related Supplement must be attached to the Airplane Flight Manual.

8. On the P.166 DL3 airplanes, from s/n 465 to s/n 474, the nose wheel steering system (Messier) (PIAGGIO Drawing n. 68-403050-351) can be installed. When the system is installed, the related Supplement must be attached to the Airplane Flight Manual. The system is a basic equipment from s/n 475 and following.

9. The airplane configuration of the P.166 DL3 is identified in the latest revision of PIAGGIO Report No. DL3-CNF-0000-00284.

SECTION F: P166 DP1

F.I. General

1. Type/ Model/ Variant	
1.1 Type	P 166
1.2 Model	P 166 DP1
2. Airworthiness Category	Normal
3. Manufacturer	Piaggio Aero Industries SpA Viale Generale Disegna, 1 17038 Villanova d'Albenga (SV) - ITALY
4. EASA Type Certification Application Date	3 November 1997
Note: State of Design Authority certification application date for grandfathered products	
5. State of Design Authority	Italy - ENAC
6. State of Design Authority Type Certificate Date	23 December 2002 (ENAC TC No. A.394)
7. EASA Type Certification Date	28 September 2003

F.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements	21 November 2002
2. Airworthiness Requirements	CAR 3 dated May, 15 1956 and Amendments 3-1 and 3-2 plus the following paragraphs of FAR 23, including Amendments from 23-1 to 23-17: from 23.21 to .253 (Subpart B), .335, .361(a)(3), .367, .371, .473(c), .629(e), from .901 to .1193 (Subpart E), .1203 (amdt.18), .1305, .1337, .1353(amdt.20), .1416(amdt.23), .1419(amdt.23), from .1441 to .1461, .1505, .1507, .1513, .1521, .1527, .1545, .1555, .1583, .1585; the requirements of the following paragraphs of JAR 23,Ed. March, 11 1994: 23.1, .3, from .471 to .511, .572(a), .629(i), .677, from .721 to .745, .779, .781, .853, .863, .903, .905, .929, from .951 to 979, .1093, from .1301 to 1322, .1325, .1327, .1329, .1335, .1337, .1353(g), .1357(b), .1365, .1401, .1431, .1519, .1547, .1553.
Elected to comply :	JAR 23,Ed. March, 11 1994: 23.33, from .361 to .371, .901, from .907 to .925, from .933 to .943, from .991 to

	.1091, from .1095 to .1203, .1323, .1331, from .1351 to .1361, .1367, .1381, .1411, .1413, .1415, .1435, 1437, .1461, .1521, from .1541 to .1545, .1549, .1551, from .1555 to .1567, .1583(b), and with the following paragraph of EASA CS-23, dated 23/11/2003: 23.1529.
3. Special Conditions	HIRF (rif.: CRI F-01 issue 2), Lightning (rif.: CRI F-02 issue 2), Certification for flight in icing condition (rif.: CRI F-03 issue 5)
4. Exemptions	none
5. Deviations	none
6. Equivalent Safety Findings	JAR 23.1305 (g) (rif.: CRI E-01 issue 3).
7. Environmental Protection	see TCDSN A.384

F.III Technical Characteristics and Operational Limitations

1. Type Design Definition: The configuration 'Basica Civile' P/N 70-110201-801 is identified by the PIAGGIO report n° 5037.
   The mission configuration 'Maritime Surveillance Anti-smuggle (VMA)', P/N 70-110202 is identified by the PIAGGIO report n° DP1-CNF-0000-00483 for aircraft modified according to the document DMT 70-0003.

2. Description: The DP1 differs from the DL3 model in the following:
   - New engines P&WC PT6A-121;
   - Improved landing gear structure to cope with new take-off and landing weights;
   - Structural improvements and new ventral fins;
   - New 3-axis electrical trim system;
   - New Collins Pro-Line II Avionics;
   - Changes in fuel system;
   - New heating system;
   - New pitot/static system;
   - Improvements in interiors and cabin systems;
   - Changes in electrical generation and distribution system.

   Refer to the PIAGGIO report n° 6634 'P.166 DP1 - Design Specification'.

3. 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 items of equipment are required: Pre-stall indicator “Safe Flight Instrument Corp.” Model S (Wing mounted detector mod.164

4. Dimensions: Refer to PIAGGIO report n° 6634 “P.166 DP1 - Design Specification”

5. Engines: No. 2
   Model: Pratt & Whitney of Canada PT6A-121 turboprop engines.

   5.1. Engine Limits

PT6A-121

Operating Conditions	Shaft horsepower (HP)	NG Gas Generator Speed (%)	Torque (ft*lbs)	NP Prop. shaft speed (RPM)	ITT Interstage Temperature (°C)
Takeoff and max. cont. (5 min)	615	101.6	1710	1900	725
Max. climb	600	101.6	1660	1900	710
Max. cruise	550	101.6	1525	1900	685
Starting Limits (2 sec.)	--	--	--	--	1090
Transient (2 sec.)	--	102.6	2200	2090	825

Oil Temperature

- Min for starting: -40°C (min.)
- Lo Idle (Ground Idle): - 40°C ÷ 99 °C
- Takeoff and max. continuous: 10°C ÷ 99 °C
- Max.climb and cruise: 0°C ÷ 99 °C
- Transient: 0°C ÷ 99 °C

6. Propellers:

No.	2
Model:	Hartzell HC-B3TN-3DL with blades LT 10282-9.5R, or LT 10282N-9.5R
Number of blades:	3

6.1. Sense of Rotation

Propellers rotate Clockwise in view of flight direction

6.2. Diameter Max: 236,2 cm (93 in) - Min 232 cm (91 in)

6.3. Propeller Limits

Diameter: Max: 236,2 cm (93 in) - Min 232 cm (91 in)
No further reduction of the minimum diameter is allowed.
Nominal pitch angle at 76,2 cm (30 in) station.
Max. 85,5°
Min. 18° (mechanical stop)
Reverse -11°

7. Fluids:

7.1. Fuel

Jet A, Jet A-1, Jet B, JP 4, JP 8, as defined in the latest revision of Service Bulletin Pratt & Whitney Canada No. 12044, and the Limitations Sect. of Airplane Flight Manual has to be complied with.
The anti-ice blending additives reported by latest revision of Service Bulletin Pratt & Whitney Canada No. 12044, and the Limitations Sect. of Airplane Flight Manual has to be complied with.

7.2. Oil

Mobil JET OIL II, as per latest revision of Service Bulletin Pratt & Whitney Canada No. 12001.
Refer also to Limitations Sect. of Airplane Flight Manual

8. Fluid capacities

8.1. Fuel:

Tank	Capacity		Usable		Arm	
	Lt	US Gal.	Lt	US Gal.	m	in
Collector LH	116	30.6	112	29.6	5,502	216.6
Collector RH	116	30.6	112	29.6	5,502	216.6
Wing LH	205	54.2	204	53.9	5,319	209.4
Wing RH	205	54.2	204	53.9	5,319	209.4
Tip LH	329	86.9	328	86.6	5,136	202.2
Tip RH	329	86.9	328	86.6	5,136	202.2
Auxiliary	125	33.0	120	31.7	7,336	288.8

Refer to Note 2 for unusable fuel data

8.2. Oil:

Total quantity: 9,58 Lt (2.53 US Gal) at 5,572 m (219.4 in).
Refer to Note 2 for undrainable oil.

9. Air Speeds:

		Version	
SPEED (KCAS)		'Basico Civile'	'VMA'
V_{MO}	Maximum operating speed	220 fino a 10.000 ft up to 10.000 ft Above that the CAS decreases of 4 Kts every 1000 ft	210 fino a 12500 ft up to 12500 ft
V_A	Max maneuvering speed at max take off weight	160	
V_{FE}	Max. flap extended speed, for all flap settings	140	
V_{FO}	Max. flap operating speed – take off setting – landing setting	 140 122	
V_{LE} and V_{LO}	Max landing gear extended and operating speed	144	
V_{MCA}	Minimum control speed - feathered propeller (airplane with propeller autofeathering system)	89	87

10. Maximum Operating Altitude: 7315 m / 24000 ft

11. All-weather Capability:
The airplane is approved for operations as per the Airplane Flight Manual.

12. Maximum Weight:

- Taxi and ramp	4520 kg (9965 lbs)
- Take-off	4500 kg (9920 lbs)
- Landing	4275 kg (9425 lbs)
- Zero Fuel	3715 kg (8190 lbs)

13. Centre of Gravity Range:

Landing Gear extended C.G. range

From	To	Weight
+4,750 m (187.0 in)	+4,844 m (190.72 in)	4500 Kg (9920 lbs)
+4,696 m (184.9 in)	+4,868 m (191.65 in)	4300 Kg (9480 lbs)
+4,653 m (183.17 in)	+4,927 m (193.97 in)	3800 Kg (8377 lbs)
+4,574 m(180.08 in)	+4,927 m (193.97 in)	3400 Kg (7495 lbs) and less

Straight line variation between points given.

Empty Weight C.G. Range: None

14. Datum: 5,766 m (226.97 in) forward of centre line wing rear spar

15. Mean Aerodynamic Cord (MAC) 1,959 m (77.126 in)

16. Leveling Means: Reference points on passenger's seat rails.
Longitudinal levelling marks are present on the fuselage LH side, at fuselage station 13,66 and 75,86.
Transversal levelling marks are present at the wing-tip tank intersection, at the wing station 59,84.
Level the airplane according to Airplane Flight Manual procedure.

17. Minimum Flight Crew: 1 Pilot

18. Maximum Passenger Seating Capacity
Max 5, flight crew (2 seats) excluded.
(Refer to Airplane Flight Manual for passengers and crew loading instructions and approved configurations).

19. Exit: No. Type
Exits: No.4
2 doors in the crew's cabin
1 door in the passenger's cabin, LH side
1 emergency exit in the passenger's cabin, RH side

20. Baggage / Cargo Compartments
Baggage/Cargo Compartments maximum weight
180 Kg (400 lb) at + 6,800 m (+ 271.0 in)

21. Wheels and Tyres

21.1. Wheels

Nose Landing Gear Wheel size: 6.00-6
Main Landing Gear Wheels size: 8.50-10

21.2. Tyres:

Nose Landing Gear Tyre Size: 6.00-6, 8 PR, tubeless
Main Landing Gear Tyre Size: 8.50-10, 10 PR, tubeless

F.IV Operating and Servicing Instructions

1. Aircraft Flight Manual

PIAGGIO report n. 6637; RAI/ENAC approval: letter prot. 02/171672/SPA dated December 23, 2002 or later approved revisions;

2. Maintenance Manual

PIAGGIO report n° 166-MAN-0200-05891 “Capitolo 04 Limitazioni di Aeronavigabilita’ (Airworthiness Limitations) Rev. A0 or later approved revisions;

PIAGGIO report n° 166-MAN-0200-05892 “Capitolo 05 Scadenze ed Ispezioni (Inspections - Time Limits) - not EASA approved;

3. Structural Repair Manual (same as per DL3 Variant).

“P.166 DL3 Manuale delle Riparazioni Strutturali” – PIAGGIO Report n. 9093.

4. Service Letters/ Service Bulletins

none

F.V Notes

1. Applicable serial numbers for P.166 DP1:
from s/n 604 to s/n 699, and from s/n 465 to s/n 603 when they are modified according to document DMT 70-0002.
In "VMA" configuration from s/n 701 on, and from s/n 465 to s/n 603 when they are modified according to documents DMT 70-0002 and DMT 70-0003.

2. 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. Basic empty weight includes:

P.166DP1 Oil of lubricating system
8,62 Kg (19.0 lbs) at 5,572 m (219,4 in), with 0,78 (1.7 lbs) being undrainable

P.166DP1 Unusable fuel
6,42 Kg (14.1 lbs) at 5,502 m (216.6 in) (Collector LH +RH)
1,60 Kg (3.6 lbs) at 5,319 m (209.4 in) (Wing tanks LH +RH)
1,60 Kg (3.6 lbs) at 5,136 m (202.2 in) (Tip tanks LH +RH)
4,01 Kg (8.9 lbs) at 7,336 m (288.8 in) (Auxiliary tank).

3. The following placard must be displayed in clear view of the pilot:
“QUESTO VELIVOLO DEVE ESSERE IMPIEGATO COME UN VELIVOLO DI CATEGORIA

NORMALE IN CONFORMITA' CON LE LIMITAZIONI DEL MANUALE DI VOLO DEL VELIVOLO. NON SONO AMMESSE MANOVRE ACROBATICHE, COMPRESA LA VITE".

"THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATING LIMITATIONS CONTAINED IN THE AIRPLANE FLIGHT MANUAL.
NO ACROBATIC MANEUVERS, INCLUDING SPINS, APPROVED."

All placards required by approved Airplane Flight Manuals must be installed in the correct position.

4. When supplementary fuel tanks (PIAGGIO drawing 68-101118-801) are installed, the related Supplement must be attached to the Airplane Flight Manual.

SECTION ADMINISTRATIVE

I Acronyms

None

II. Type Certificate Holder Record

Until 1998
I.A.M. Rinaldo Piaggio S.p.A.

Until April 2018
Piaggio Aero Industries SpA
Viale Castro Pretorio 116 – 00185 ROMA – ITALY
Headquarter:
Viale Generale Disegna, 1
17038 Villanova d'Albenga (SV) – ITALY

From 17 April 2018
Piaggio Aviation SpA
Viale Generale Disegna 1 – 17038 Villanova d'Albenga (SV) – ITALY

Contracted DOA Holder supporting TC Since 17 April 2018
Piaggio Aero Industries SpA
Viale Castro Pretorio 116 – 00185 ROMA - ITALY
Headquarter:
Viale Generale Disegna, 1
17038 Villanova d'Albenga (SV) – ITALY

From 19 September 2018 DOA Responsibility transfer to
Piaggio Aviation SpA
Viale Generale Disegna 1 – 17038 Villanova d'Albenga (SV)
EASA Approval 21J.685
From 19 September 2019 DOA Responsibility transfer to
Piaggio Aero Industries SpA
Viale Generale Disegna, 1
17038 Villanova d'Albenga (SV) – ITALY
EASA Approval 21J.220

From 25 July 2025
Baykar Piaggio Aerospace SpA
Viale Generale Disegna 1 – 17038 Villanova d'Albenga (SV)

DOA responsibility kept with TCH under DOA 21J.220

III. Change Record

Issue	Date	Changes
01	28 September 2007	Initial Issue by EASA
02	16 January 2014	update of the Certification Basis of model DP1; editorial format update
03	18 April 2018	Page 1, 3, 8, 13, 18, 23, and 32 TC holder name changed Page 38 TC holder name changed, and contracted DOA provider name added.
04	25 July 2025	New template. TCH holder change to Baykar Piaggio Aerospace SpA

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