

C90A(B) Info Sheet



General

Engine	PT6A-21	PT6A-135A
Service Ceiling	30,000 (25,000 company)	30,000 (25,000 company)
Max Op Temp	+37° C	+37° C
Max Icing	Moderate	Moderate
Wingspan	50 ft 3 in	50 ft 3 in
Length	35 ft 6 in	35 ft 6 in
Height	14 ft 3 in	14 ft 3 in
Turning Radius	35 ft 6 in	35 ft 6 in
Load Limits Flaps Up	+3.28G – 1.31G	+3.28G – 1.31G
Load Limits Flaps Down	+2.0G – 0G	+2.0G – 0G

Engine

Engine	PT6A-21	PT6A-135A
Shaft Horsepower	550 SHP	549 SHP
Equivalent HP	580 EHP	579 EHP
Torque	1315 FT/LBS (Trans 1500 Ft/LBS)	1520 FT/LBS
ITT	695° (Trans 825°) (Start 1090° 2 Sec)	805° (Trans 880° 2 Sec) (Start 1090° 2 Sec)
RPM	2200 RPM (Trans 2420 RPM)(REV 2100 RPM)	1900 RPM (Trans 2090 RPM)(REV 1815 RPM)
Max Oil Temp	-40° – 99°	-40° – 99°
Oil Pressure	40 PSI – 80 PSI – 100 PSI (Trans 200 PSI)	40 PSI – 85 PSI – 105 PSI
Oil Type	Turbo Oil 2380	Turbo Oil 2380
Oil Quantity	14 Qt	14 Qt
Max Oil Consumption	1 QT / 10 Hours	1 QT / 10 Hours
Min Oil	2.5 QT Low (PT 3QT) (GF 4.5QT)	2.5 QT Low (PT 3QT) (GF 4.5QT)
Pneumatic Pressure	12 PSI – 20 PSI	12 PSI – 20 PSI
Suction	3 PSI – 6 PSI	3 PSI – 6 PSI
Fuel Nozzles	10 Primary 4 Secondary	10 Primary 4 Secondary
Comp Bleed Valve	< 80% N1	< 80% N1
Auto Ignition	3500 Volts < 400 FT/LBS	3500 Volts < 400 FT/LBS
Gear Ratio	15:1	15:1
Engine Fuel Pump	800 PSI	800 PSI
Boost Fuel Pump	30 PSI	30 PSI
Fuel Low Warn	10 PSI	10 PSI
Min FCU Pressure Valve	80 PSI	80 PSI
Minimum Flow Power	48% N1	48% N1
Max no light time	10 Sec	10 Sec
Fuel Introduction	12% N1 – 20% N1	12% N1 – 20% N1
Starter Disengage	> 51% N1	> 51% N1
FCU low idle Max	58% N1	58% N1
FCU high idle Max	70% N1	70% N1
Max Continuous	101.5% N1	101.5% N1
Max Transient	102.6% N1	102.6% N1
Avg Maneuver Torque	700 FT/LBS	700 FT/LBS
Avg APP Torque	500 FT/LBS	500 FT/LBS
Avg MDA/Circle Torque	900 FT/LBS	900 FT/LBS

Props

Engine	PT6A-21	PT6A-135A
Type	Hartzell 4-blade Model No. HC-E4N-3N/D8990S(K)	Hartzell 4-blade Model No. HC-E4N-3N/D8990S(K)
Normal Travel	3° – 12°	3° – 12°
Feather	85.5°	85.5°
Beta	0° – 3 °	0° – 3 °
Reverse	-10° – 0 °	-10° – 0 °
Normal RPM Range	1800 RPM – 2200 RPM	1600 RPM – 1900 RPM
Gov Test	2000 RPM +/- 60 RPM	1720 RPM – 1800 RPM
Prop Gov 104%	2288 RPM	1976 RPM
Fuel Topper Gov 106% (95% REV)	2332 RPM MAX (2090 PRM MAX)	2014 RPM MAX (1805 RPM MAX)
Auto Feather Arm	> 90% N1	> 90% N1
Auto Feather Arming Relay	< 400 FT/LBS	< 400 FT/LBS
Auto Feather Activation	< 200 FT/LBS	< 200 FT/LBS
Max Thrust Rev Speed	40 KNTS (60 KNTS company)	40 KNTS (60 KNTS company)

Electrical

Engine	PT6A-21	PT6A-135A
Battery	24 Volt 42 Amp/Hr	24 Volt 42 Amp/Hr
Starter / Generator	28 Volt 250 Amp	28 Volt 250 Amp
Start Volts	Not below 20 Volts	Not below 20 Volts
Starter Limits	40 sec on 60 sec off x 3 (Then 30 MIN)	40 sec on 60 sec off x 3 (Then 30 MIN)
Gen Load share	Within 10%	Within 10%
Inverter	105–120 Volts 380–420 Hertz	105–120 Volts 380–420 Hertz
Prop Heat	18–24 Amps	18–24 Amps
GPU Limits	28.2 Volts 1000Amps /5 Sec, 500Amps / 2 Min, 300 Amps Continuous	28.2 Volts 1000Amps /5 Sec, 500Amps / 2 Min, 300 Amps Continuous
GPU Switch	Off for GPU connect / disconnect	Off for GPU connect / disconnect
Generator Load Limits <50%	59% N1	59% N1
GLL 50% - 80%	61% N1	61% N1
GLL 80% - 85%	70% N1	70% N1
GLL 85% - 100%	NA on the ground	NA on the ground

Fuel

Engine	PT6A-21	PT6A-135A
Total Quantity	384 Gallons (2573 LBS)	384 Gallons (2573 LBS)
Nacelle Quantity	61 Gallons	61 Gallons
Transfer Pump Actuation	Nac Tank 51 Gallons	Nac Tank 51 Gallons
Center Tank Quantity	44 Gallons	44 Gallons
Outboard Tanks Quantity	48 Gallons	48 Gallons
Leading Edge Tank Quantity	40 Gallons	40 Gallons
Load Imbalance Limit	200 LBS	200 LBS
Min Takeoff Fuel	265 LBS	265 LBS
Pump Cavitation Limit	5 min (Then 10 Hour limit)	5 min (Then 10 Hour limit)
Transfer pump fail unusable	28 Gallons (188 LBS)	28 Gallons (188 LBS)

Landing Gear

Engine	PT6A-21	PT6A-135A
Hydraulic Max PSI	1850 PSI	1850 PSI
Hydraulic Min PSI	1600 PSI	1600 PSI
Main Tires	70 +/- 3 PSI (10 ply)	70 +/- 3 PSI (10 ply)
Nose	51-55 PSI (6 ply)	51-55 PSI (6 ply)
Warning Horn Activation	71%N1 – 81%N1	71%N1 – 81%N1

Weights

Engine	PT6A-21	PT6A-135A
Max Ramp Weight	10,545 LBS	10,545 LBS
Max Take Off Weight	10,485 LBS	10,485 LBS
Max Landing Weight	9,832 LBS	9,832 LBS
Zero Fuel Weight	9,378 LBS	9,378 LBS
Aft Baggage Max	350LBS	350LBS
Nose Baggage Max	350 LBS	350 LBS
Aft Limits	160 IAD	160 IAD
Forward Limits	144.7 IAD < 7,850 LBS 152.0 IAD at 10,100 LBS 152.89 IAD at 10.485 LBS	144.7 IAD < 7,850 LBS 152.0 IAD at 10,100 LBS 152.89 IAD at 10.485 LBS
Datum	83.5 Forward of Jack Point	83.5 Forward of Jack Point
MAC	0% MAC – 135.9 IAD 100% MAC – 211.8 IAD	0% MAC – 135.9 IAD 100% MAC – 211.8 IAD

Speeds

Engine	PT6A-21	PT6A-135A
Vr (MTOW)	100 KNTS	93 KNTS (86 KNTS APP) (100 KNTS company)
Vx	101 KNTS	101 KNTS
Vxse	100 KNTS	100 KNTS
Vy	112 KNTS	115 KNTS
Vyse	108 KNTS	106 KNTS
Va	163 KNTS	163 KNTS
Vtp	161 KNTS	161 KNTS
Vfe	184 KNTS (APP) 148 KNTS (FULL)	184 KNTS (APP) 148 KNTS (FULL)
Vle	182 KNTS	182 KNTS
Vlo	163 KNTS	163 KNTS
Vne	226 KNTS	226 KNTS
Vs1	77 KNTS	79 KNTS
Vs0	88 KNTS	90 KNTS
Vref	101 KNTS	101 KNTS
Vref (app)	110 KNTS	110 KNTS
Vref (full)	115 KNTS	115 KNTS
Vmca	80 KNTS	85 KNTS (83 KNTS APP)
Vsse	97 KNTS	97 KNTS
Vmi	140KNTS	140KNTS
Vwi	226 KNTS	226 KNTS
Vg	125 KNTS	125 KNTS
Ved	182 KNTS	182 KNTS

MISC Limitations

Engine	PT6A-21	PT6A-135A
Autopilot	50 °Roll 40 °Pitch	50 °Roll 40 °Pitch
Max AP Intercept Angle	90 °	90 °
N1	61% high load items	61% high load items
Max differential Pressure	5.1 PSI	5.1 PSI
Max Dem X-wind	25 KNTS	25 KNTS
Av O2	1000 PSI – 2000 PSI	1000 PSI – 2000 PSI
Med-bed O2	1000 PSI – 2215 PSI	1000 PSI – 2215 PSI
Windscreen Heat	30 Sec on/10 sec off (Airborne warm up) 30 Sec Max (Ground ops)(High Prohibited)	30 Sec on/10 sec off (Airborne warm up) 30 Sec Max (Ground ops)(High Prohibited)
Ice Boot Pressure	18 PSI	18 PSI
Single Boot Inflation Times	6 Sec Wing / 4 Sec Tail	6 Sec Wing / 4 Sec Tail
Min Ice Thickness	½ Inch before boot deployment	½ Inch before boot deployment
Min Boot Temp	-40 °C	-40 °C
Engine Anti-ice	On for Ground Ops	On for Ground Ops
Windshield Wipers	Operation on a dry windscreen prohibited	Operation on a dry windscreen prohibited
EFIS Aux Activation	> 18 Volts	> 18 Volts
EFIX Aux test limit	5 Seconds	5 Seconds
EFIS Map mode	INST APP not authorized	INST APP not authorized
FDR reset	Prohibited in flight	Prohibited in flight