DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

E3GL
Revision 17
Williams International Co. L.L.C.

FJ44-1A **FJ44-1AP**
FJ44-2A **FJ44-2C**
FJ44-3A **FJ44-3A-24**
FJ44-3AP **FJ44-4A**

18 April 2012

TYPE CERTIFICATE DATA SHEET NO. E3GL

Engines of models described here that conform with this data sheet (which is part of Type Certificate No. E3GL) and other approved data on file with the FAA, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Federal Aviation Regulations provided they are installed, operated, and maintained as prescribed by the FAA approved manufacturer's manuals and other FAA approved instructions.

TYPE CERTIFICATE HOLDER: Williams International Co., L.L.C., Walled Lake, Michigan 48390-0200 USA

MODEL	**FJ44-1A**	**FJ44-1AP**
ENGINE TYPE	Twin spool turbofan with a single-stage fan and single-stage axial compressor direct driven by a two-stage turbine, a single-stage centrifugal compressor driven by a single-stage turbine, an annular combustor and a full length bypass duct.	Twin spool turbofan with a single-stage fan and single-stage axial compressor direct driven by a two-stage turbine, a single-stage centrifugal compressor driven by a single-stage turbine, an annular combustor a full length bypass duct and an exhaust mixer.
RATINGS Note 1.		
Maximum Continuous, lb.	1,900	1,950
Takeoff (5 minutes), lb.	1,900	1,965
CONTROL SYSTEM		
Fuel Control	High Pressure Rotor (N2) Speed Governing Hydro-mechanical Metering Unit (HMU). See Engine Assembly Part No. identified in Note 18.	Dual Channel Full Authority Digital Electronic Control (FADEC) coupled with Fuel Delivery Unit (FDU). See Engine Assembly Part No. identified in Note 18.

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Legend: - - indicates same as previous model; - indicates does not apply

MODEL	FJ44-1A	FJ44-1AP
FUEL		
Fuel Specifications	See Operating Instructions or Maintenance Manual identified in Note 18 for approved fuel specifications. Fuel meeting the requirements of Chinese specification GB6537-94 is approved for use subject to the limitations identified in the Operating Instructions and Maintenance Manual identified in Note 18.	
Fuel Additives	See Note 12.	
Fuel Pump	See Engine Assembly Part No. identified in Note 18.	Integral with Fuel Delivery Unit (FDU).
Motive Flow	See Note 9.	
OIL		
Oil Specification	Synthetic conforming to MIL-L-23699. See Operating Instructions or Maintenance Manual identified in Note 18 for approved oil brands.	
Oil Reservoir	Integral. See Installation Instructions identified in Note 18 for capacity and installed usable quantity.	
IGNITION		
Exciter	Quantity of two. See Engine Assembly Part No. identified in Note 18.	
Igniter Plug	Quantity of two. See Engine Assembly Part No. identified in Note 18.	
PRINCIPAL DIMENSIONS		
Length Overall, inches (cm)	53.4 (135.9)	57.9 (147.1)
Between flanges, inches (cm)	40.3 (102.4)	41.4 (105.2)
Height (Overall) , inches (cm)	29.6 (75.2)	31.1 (79.0)
Forward flange outer diameter, inches (cm)	20.9 (53.1)	20.9 (53.1)
Aft flange outer diameter, inches (cm)	21.7 (55.1)	- -
	See Installation Instructions identified in Note 18 for complete dimensional details.	
DRY WEIGHT		
Total Engine (Includes gearbox and airframe mounted equipment identified in Note 8)	460 lb. maximum.	468 lb. maximum.
Basic engine (Includes gearbox mounted equipment identified in Note 8)	460 lb. maximum.	461 lb. maximum.
C.G. LOCATION	See Installation Instructions identified in Note 18 for center of gravity location.	

MODEL	FJ44-1A	FJ44-1AP
CERTIFICATION BASIS		
Regulations and Amendments	14 CFR Part 33, effective February 1, 1965 including Amendments 33-1 through 33-14. 14 CFR Part 34, effective September 10, 1990.	14 CFR Part 33, effective February 1, 1965 including Amendments 33-1 through 33-20 Engine Emissions: 14 CFR Part 34, effective September 10, 1990, as amended by 34-1 through 34-4. In addition, 40 CFR Part 87, effective December 19, 2005. Equivalent level of safety (ELOS) No. 8040-ELOS-05-NE-01 with respect to 14 CFR Part 33.28(b) and 33.68 (See Note 13)
Application Date	8 December 1989.	28 January 2004.
Type Certificate Date	26 March 1992.	1 June 2005.
PRODUCTION BASIS	Production Certificate 334CE.	

MODEL	FJ44-2A	FJ44-2C
ENGINE TYPE	Twin spool turbofan with a single-stage fan and three-stage axial compressor direct driven by a two-stage turbine, a single-stage centrifugal compressor driven by a single-stage turbine, an annular combustor, a full length bypass duct and an exhaust mixer.	
RATINGS Note 1.		
Maximum Continuous, lb.	2,300	2,400
Takeoff (5 minutes), lb.	2,300	2,400
CONTROL SYSTEM		
Fuel Control	Single Channel Electronic Control Unit (ECU) with High Pressure Rotor (N2) Speed Governing Hydro-mechanical Metering Unit (HMU). See Engine Assembly Part No. identified in Note 18.	High Pressure Rotor (N2) Speed governing Integrated Fuel Control Unit (IFCU). See Engine Assembly Part No. identified in Note 18.
FUEL		
Fuel Specifications	See Operating Instructions or Maintenance Manual identified in Note 18 for approved fuel specifications. Fuel meeting the requirements of Chinese specification GB6537-94 is approved for use subject to the limitations identified in the Operating Instructions and Maintenance Manual identified in Note 18.	
Fuel Additives	See Note 12.	
Fuel Pump	See Engine Assembly Part No. identified in Note 18.	Integral with Integrated Fuel Control Unit (IFCU).
Motive Flow	See Note 9.	

MODEL	FJ44-2A	FJ44-2C
OIL		
Oil Specification	Synthetic conforming to MIL-L-23699. See Operating Instructions or Maintenance Manual identified in Note 18 for approved oil brands.	
Oil Reservoir	Integral. See Installation Instructions identified in Note 18 for capacity and installed usable quantity.	
IGNITION		
Exciter	Quantity of two. See Engine Assembly Part No. identified in Note 18.	
Igniter Plug	Quantity of two. See Engine Assembly Part No. identified in Note 18.	
PRINCIPAL DIMENSIONS		
Length Overall, inches (cm)	59.8 (151.9)	- -
Between flanges, inches (cm)	47.3 (120.1)	- -
Height (Overall) , inches (cm)	29.6 (75.2)	- -
Forward flange outer diameter, inches (cm)	21.8 (55.4)	- -
Aft flange outer diameter, inches (cm)	21.7 (55.1)	- -
	See Installation Instructions identified in Note 18 for complete dimensional details.	
DRY WEIGHT		
Total Engine (Includes gearbox and airframe mounted equipment identified in Note 8)	530 lb. maximum.	520 lb. maximum.
Basic engine (Includes gearbox mounted equipment identified in Note 8)	525 lb. maximum.	520 lb. maximum.
C.G. LOCATION	See Installation Instructions identified in Note 18 for center of gravity locations.	
CERTIFICATION BASIS		
Regulations and Amendments	14 CFR Part 33, effective February 1, 1965 including Amendments 33-1 through 33-15. 14 CFR Part 34, effective September 10, 1990 including Amendments 34-1 through 34-2.	14 CFR Part 33, effective February 1, 1965 including Amendments 33-1 through 33-16. 14 CFR Part 34, effective September 10, 1990 including Amendments 34-1 through 34-3.
Application Date	13 October 1994.	29 September 1998.
Type Certificate Date	7 July 1997.	25 April 2000.
PRODUCTION BASIS	Production Certificate 334CE	

MODEL	FJ44-3A	FJ44-3A-24	FJ44-3AP	FJ44-4A
ENGINE TYPE	Twin spool turbofan with a single-stage fan and three-stage axial compressor direct driven by a two-stage turbine, a single-stage centrifugal compressor driven by a single-stage turbine, an annular combustor, a full length bypass duct and an exhaust mixer.			
RATINGS Note 1.				
Maximum Continuous, lb.	2,820	2,490	3052	3,443
Takeoff (5 minutes), lb.	2,820	2,490	3052	3,621
CONTROL SYSTEM				
Fuel Control	Dual Channel Full Authority Digital Electronic Control (FADEC) coupled with Fuel Delivery Unit (FDU). See Engine Assembly Part No. identified in Note 18.			
FUEL				
Fuel Specifications	See Operating Instructions or Maintenance Manual identified in Note 18 for approved fuel specifications. Fuel meeting the requirements of Chinese specification GB6537-94 is approved for use subject to the limitations identified in the Operating Instructions and Maintenance Manual identified in Note 18.			
Fuel Additives	See Note 12.			
Fuel Pump	Integral with Fuel Delivery Unit (FDU).			
Motive Flow	See Note 9.			
OIL				
Oil Specification	Synthetic conforming to MIL-L-23699. See Operating Instructions or Maintenance Manual identified in Note 18 for approved oil brands.			
Oil Reservoir	Integral. See Installation Instructions identified in Note 18 for capacity and installed usable quantity.			
IGNITION				
Exciter	Quantity of two. See Engine Assembly Part No. identified in Note 18.			
Igniter Plug	Quantity of two. See Engine Assembly Part No. identified in Note 18.			

MODEL	FJ44-3A	FJ44-3A-24	FJ44-3AP	FJ44-4A
PRINCIPAL DIMENSIONS				
Length Overall, inches (cm)	62.4 (158.5)	- -	- -	68.6 (174.3)
Between flanges, inches (cm)	48.0 (121.9)	- -	- -	52.8 (134.1)
Height (Overall) , inches (cm)	31.1 (79.0)	- -	31.6 (80.3)	32.3 (82.0)
Forward flange outer diameter, inches (cm)	23.0 (58.4)	- -	- -	26.4 (67.1)
Aft flange outer diameter, inches (cm)	21.7 (55.1)	- -	- -	23.8 (60.5)
	See Installation Instructions identified in Note 18 for complete dimensional details.			
DRY WEIGHT				
Total Engine (Includes gearbox and airframe mounted equipment identified in Note 8)	535 lb. maximum.	- -	516 maximum	670 lb maximum
Basic engine (Includes gearbox mounted equipment identified in Note 8)	528 lb. maximum	- -	509 maximum See Installation Instructions identified in Note 18 for complete dry weight details.	663 lb. maximum
C.G. LOCATION	See Installation Instructions identified in Note 18 for center of gravity locations.			

MODEL	FJ44-3A	FJ44-3A-24	FJ44-3AP	FJ44-4A
CERTIFICATION BASIS				
Regulations and Amendments	14 CFR Part 33, effective February 1, 1965 including Amendments 33-1 through 33-20. Engine Emissions: 14 CFR Part 34, effective September 10, 1990, as amended by 34-1 through 34-4. In addition, 40 CFR Part 87, effective December 19, 2005. Equivalent level of safety (ELOS) with respect to 14 CFR Part 33.28(b) and 33.68 (See Note 13)	14 CFR Part 33, effective February 1, 1965 including Amendments 33-1 through 33-20. Engine Emissions: 14 CFR Part 34, effective September 10, 1990, as amended by 34-1 through 34-4. In addition, 40 CFR Part 87, effective December 19, 2005. Equivalent level of safety (ELOS) No. 8040-ELOS-NE-02 with respect to 14 CFR Part 33.28(b) and 33.68 (See Note 13)	14 CFR Part 33, effective December 23, 1965 including Amendments 33-1 through 33-30 Engine Emissions: 14 CFR Part 34, effective September 10, 1990, as amended by 34-1 through 34-4. In addition, 40 CFR Part 87, effective December 19, 2005	14 CFR Part 33, effective December 23, 1965 including Amendments 33-1 through 33-28 Engine Emissions: 14 CFR Part 34, effective September 10, 1990, as amended by 34-1 through 34-4. In addition, 40 CFR Part 87, effective December 19, 2005 An Equivalent Level Of Safety Finding has been made for the following regulation: 14 CFR § 33.83 Vibration Test (documented in ELOS Memo 8040-ELOS-09-NE03).
Application Date	6 Feb 2002.	11 Nov 2004	6 July 2010	1 Feb 2006
Type Certificate Date	30 July 2004.	9 Sep 2005.	12 May 2011	2 Feb 2010
PRODUCTION BASIS	Production Certificate 334CE			

NOTE 1. ENGINE RATINGS.

Engine ratings are based on static un-installed thrust stand performance at the following conditions:

- 0% humidity
- sea level ambient pressure (29.92 inches Hg)
- no aircraft gearbox accessory loads
- no aircraft air bleed
- 0% inlet total pressure loss
- using an exhaust nozzle as specified in the Installation Instructions identified in Note 18.
- the flat rate temperature as shown below

Note 18 lists multiple engine assembly part numbers for some engine models. These additional part numbers are for variants of the basic engine that include Integrated Propulsion System components such as inlets, bleed or exhaust systems. These components are part of the engine type design and are approved per 14 CFR Part 33. While some of these variants may have engine thrust reduced from that identified in accordance with the conditions identified above, the base engine model in all cases produces the rated thrust published in this TCDS. See the Installation Instructions identified in Note 18 for the thrust associated with each unique engine assembly part number.

FLAT RATE TEMPERATURES.

MODEL	FJ44-1A	FJ44-1AP
Maximum Continuous	59° F and below	- -
Takeoff	72° F and below	- -

MODEL	FJ44-2A	FJ44-2C
Maximum Continuous	59° F and below	- -
Takeoff	72° F and below	- -

MODEL	FJ44-3A	FJ44-3A-24	FJ44-3AP	FJ44-4A
Maximum Continuous	53° F and below	59° F and below	53° F and Below	46° F and below
Takeoff	79° F and below	72° F and below	- -	79° F and below

ONE ENGINE INOPERATIVE (OEI) OPERATION.

For the following engine models, the rated takeoff thrust and its associated limitations may be used for up to 10 minutes in the event one engine on a multi-engine airplane becomes inoperative during takeoff:

- FJ44-1A
- FJ44-1AP
- FJ44-2C
- FJ44-3A
- FJ44-3A-24
- FJ44-3AP
- FJ44-4A

NOTE 2. TEMPERATURE LIMITS.

MAXIMUM INTERTURBINE TEMPERATURE (ITT).

MODEL	FJ44-1A	FJ44-1AP
Takeoff, °F (°C)	1,508 (820) for 5 minutes*	1,571 (855) for 5 minutes*
	1,530 (832) for 10 seconds	-
Maximum Continuous, °F (°C)	1,465 (796)	1,535 (835)
Starting, °F (°C)	See Operating Instruction identified in Note 18.	

*10 minutes for OEI operations conducted in accordance with Note 1.

MODEL	FJ44-2A	FJ44-2C
Takeoff, °F (°C)	1,508 (820) for 5 minutes	1,508 (820) for 5 minutes*
	1,535 (835) for 10 seconds	- -
Maximum Continuous, °F (°C)	1,481 (805)	- -
Starting, °F (°C)	See Operating Instruction identified in Note 18.	

*10 minutes for OEI operations conducted in accordance with Note 1.

MODEL	FJ44-3A	FJ44-3A-24	FJ44-3AP	FJ44-4A
Takeoff, °F (°C)	1,610 (877) for 5 minutes*	- -	1601 (872) for 5 minutes*	1,571 (855) for 5 minutes*
	1,635 (891) for 10 seconds	- -	1611 (877) for 10 seconds	No transient permitted
Maximum Continuous, °F (°C)	1,545 (840)	- -	1552 (844)	1,535 (835)
Starting, °F (°C)	See Operating Instruction identified in Note 18.			

*10 minutes for OEI operations conducted in accordance with Note 1.

OIL TEMPERATURE. Measured at oil cooler exit.

MODEL	FJ44-1A	FJ44-1AP
Maximum, °F (°C)	250 (121)	275 (135)
		300 (149) for 5 minutes*
Minimum, °F (°C)	-40 (-40) Start and Idle	- -
	50 (10) Takeoff	- -

*10 minutes for OEI operations conducted in accordance with Note 1.

MODEL	FJ44-2A	FJ44-2C
Maximum, °F (°C)	275 (135)	- -
	300 (149) for 5 minutes	300 (149) for 5 minutes *
Minimum, °F (°C)	-40 (-40) Start and Idle	- -
	50 (10) Takeoff	- -

*10 minutes for OEI operations conducted in accordance with Note 1.

MODEL	FJ44-3A	FJ44-3A-24	FJ44-3AP	FJ44-4A
Maximum, °F (°C)	275 (135)	- -	- -	- -
	300 (149) for 5 minutes*	- -	- -	- -
Minimum, °F (°C)	-40 (-40) Start and Idle	- -	- -	- -
	50 (10) Takeoff	- -	- -	- -

*10 minutes for OEI operations conducted in accordance with Note 1.

ENGINE EXTERNAL AMBIENT TEMPERATURE. Certain external and/or airframe mounted engine components have temperature limitations other than those listed here. See Installation Instructions identified in Note 18.

MODEL	FJ44-1A	FJ44-1AP
Maximum, °F (°C)	250 (121)	300 (149)
Minimum, °F (°C)	-65 (-54)	- -
Minimum Starting, °F (°C)	-40 (-40)	- -

MODEL	FJ44-2A	FJ44-2C
Maximum, °F (°C)	250 (121)	300 (149)
Minimum, °F (°C)	-65 (-54)	- -
Minimum Starting, °F (°C)	-40 (-40)	- -

MODEL	FJ44-3A	FJ44-3A-24	FJ44-3AP	FJ44-4A
Maximum, °F (°C)	300 (149)	- -	- -	- -
Minimum, °F (°C)	-65 (-54)	- -	- -	- -
Minimum Starting, °F (°C)	-40 (-40)	- -	- -	- -

NOTE 3. MAXIMUM SPEEDS.

SPEED LIMITATIONS.

MODEL	FJ44-1A	FJ44-1AP
Low Pressure Rotor (N1), rpm (%)	18,000 (104.4)	17,700 (102.6)
	18,160 (105.3) for 20 seconds	No transient permitted
High Pressure Rotor (N2), rpm (%)	40,900 (99.3)	41,200 (100.0)
	No transient permitted	- -

MODEL	FJ44-2A	FJ44-2C
Low Pressure Rotor (N1), rpm (%)	18,150 (105.2)	18,300 (106.1)
	18,350 (106.4) for 30 seconds	18,500 (107.3) for 30 seconds
High Pressure Rotor (N2), rpm (%)	40,700 (98.8)	40,900 (99.3)
	No transient permitted	- -

MODEL	FJ44-3A	FJ44-3A-24	FJ44-3AP	FJ44-4A
Low Pressure Rotor (N1), rpm (%)	18,500 (102.8)	- -	18853 (104.74)	17,139 (104.8)
	18,700 (103.9) for 20 seconds	- -	19,033 (105.74) for 30 seconds	17,303 (105.8) for less than 2 minutes
High Pressure Rotor (N2), rpm (%)	41,200 (100.0)	- -	41550 (100.85)	37,773 (100.9)
	41,500 (100.7) for 20 seconds	- -	41,850 (101.58) for 30 seconds	38,045 (101.6) for less than 2 minutes

REFERENCE (100%) SHAFT SPEEDS.

MODEL	FJ44-1A	FJ44-1AP
100 % Low Pressure Rotor (N1), rpm	17,245	- -
100% High Pressure Rotor (N2), rpm	41,200	- -

MODEL	FJ44-2A	FJ44-2C
100 % Low Pressure Rotor (N1), rpm	17,245	- -
100% High Pressure Rotor (N2), rpm	41,200	- -

MODEL	FJ44-3A	FJ44-3A-24	FJ44-3AP	FJ44-4A
100 % Low Pressure Rotor (N1), rpm	18,000	- -	- -	16,360
100% High Pressure Rotor (N2), rpm	41,200	- -	- -	37,450

NOTE 4. THRUST SETTING.

Setting of engine thrust is based on low pressure rotor speed (N1). See Operating Instructions identified in Note 18.

NOTE 5. PRESSURE LIMITS.

FUEL PRESSURE. Measured at fuel pump or fuel control inlet. See Installation Instructions identified in Note 18 for pressure limitations.

OIL PRESSURE. Measured at oil cooler exit.

MODEL	FJ44-1A	FJ44-1AP
Maximum, psig	90	120
	100 for 5 minutes at or above high pressure rotor (N2) speed of 32,960 rpm	130 for 5 minutes at or above high pressure rotor (N2) speed of 32,960 rpm
Minimum, psig	45 above high pressure rotor speed (N2) of 32,960 rpm	- -
	35 from idle to high pressure rotor speed N2) of 32,960 rpm	- -
	25 for 5 minutes from idle to high pressure rotor (N2) speed of 32,960	23 for 5 minutes from idle to high pressure rotor (N2) speed of 32,960

MODEL	FJ44-2A	FJ44-2C
Maximum, psig	90	- -
	100 for 5 minutes at or above high pressure rotor (N2) speed of 32,960 rpm	- -
Minimum, psig	45 above high pressure rotor speed (N2) of 32,960 rpm	- -
	35 from idle to high pressure rotor speed (N2) of 32,960 rpm	- -
	23 for 5 minutes from idle to high pressure rotor (N2) speed of 32,960	- -

MODEL	FJ44-3A	FJ44-3A-24	FJ44-3AP	FJ44-4A
Maximum, psig	110	- -	120	- -
	120 for 5 minutes at or above high pressure rotor (N2) speed of 32,960 rpm	- -	130 for 5 minutes at or above high pressure rotor (N2) speed of 32960 rpm	130 for 5 minutes at or above high pressure rotor (N2) speed of 29,960 rpm
Minimum, psig	45 above high pressure rotor speed (N2) of 32,960 rpm	- -	- -	40 above high pressure rotor speed (N2) of 29,960 rpm
	35 from idle to high pressure rotor speed (N2) of 32,960 rpm	- -	- -	30 from idle to high pressure rotor speed (N2) of 29,960 rpm
	23 for 5 minutes from idle to high pressure rotor (N2) speed of 32,960	- -	- -	23 for 5 minutes from idle to high pressure rotor (N2) speed of 29,960

NOTE 6. ACCESSORY DRIVES.

The following information applies to the engine accessory gearbox drives for FJ44-1A, FJ44-1AP, FJ44-2A, FJ44-2C, FJ44-3A, FJ44-3A-24 and FJ44-3AP models. See Installation Instructions identified in Note 18 for mounting pad dimensions and power extraction limits.

Drive	Pad Spec.	Rotation Direction, Facing Pad	Speed Ratio Driven/N2*	Max. Torque (in-lb.)			Max. Wt (lb.)	Max. Overhung Moment (in-lb.)
				Continuous	Overload **	Static +		
Starter Generator	MS3326-2(AS)	Clockwise	0.2859	See Installation Instructions identified in Note 18	See Installation Instructions identified in Note 18	-660	38	210
High Speed Accessory ++	MS3325	Clockwise	0.1906	58	85	100	5 15 (FJ44-3AP)	15 55 (FJ44-3AP)
Low Speed Accessory ++	AN20001 Type XI-1B	Clockwise	0.1092	101	150	100	10	30

* 100% High Pressure Rotor Speed (N2) is identified in Note 3.
** 5 minutes maximum in any 4-hour operating period
\+ Start or breakaway torque is negative for torque into drive pad
++ Engine comes equipped with either a low speed or a high speed accessory drive pad. See Engine Assembly Part No. identified in Note 18 to determine the pad configuration for the specific engine part number

The following information applies to the engine accessory gearbox drives for FJ44-4A model. See Installation Instructions identified in Note 18 for mounting pad dimensions and power extraction limits.

Drive	Pad Spec.	Rotation Direction, Facing Pad	Speed Ratio Driven/N2*	Max. Torque (in-lb.)			Max. Wt (lb.)	Max. Overhung Moment (in-lb.)
				Continuous	Overload **	Static +		
Starter Generator	MS3326-2(AS)	Clockwise	0.3146	See Installation Instructions identified in Note 18	See Installation Instructions identified in Note 18	-660	38	220
High Speed Accessory	MS3326-2(AS)	Counter-Clockwise	0.3146	See Installation Instructions identified in Note 18	See Installation Instructions identified in Note 18	125	38	220
Low Speed Accessory	AND200001 TYPE XI-B	Clockwise	0.1506	135	195	135	10	50

* 100% High Pressure Rotor Speed (N2) is identified in Note 3.
** 5 minutes maximum in any 4-hour operating period
\+ Start or breakaway torque is negative for torque into drive pad

NOTE 7. ENGINE MODEL CONFIGURATION.

Model FJ44-1A is the engine basic model.

Model FJ44-1AP engine is similar to Model FJ44-1A except that a new fan has been incorporated and the LP turbines and Dual Channel Full Authority Digital Electronic Control (FADEC) of the FJ44-3A Model have been incorporated.

Model FJ44-2A engine is similar to Model FJ44-1A except that a new fan, two additional stages of IP compression, an exhaust mixer, and an electronic fuel control unit (EFCU) have been incorporated.

Model FJ44-2C engine is similar to Model FJ44-2A except that an integrated hydromechanical fuel control (IFCU) has been incorporated.

Model FJ44-3A engine is similar to Model FJ44-2C except that a new fan, IP compressor rotor (3 stages), new LP turbines and a Dual Channel Full Authority Digital Electronic control (FADEC) have been incorporated.

Model FJ44-3A-24 is identical to Model FJ44-3A except that the engine is de-rated by incorporating reduced thrust schedules in the FADEC.

Model FJ44-3AP engine is similar to the Model FJ44-3A, with a new IP Compressor rotor and corresponding stators (3 stages).

Model FJ44-4A engine is similar to the Model FJ44-3AP, with larger diameter and thrust rating.

For each engine model, there may be differences in the engine configuration, including the addition of optional components, based upon specific airframe installation requirements. See Engine Assembly Part No. identified in Note 18 for specific engine configuration.

NOTE 8. STANDARD EQUIPMENT.

Engine dry weight includes the following standard equipment. Engine dry weight does not include starter or generator.

ENGINE GEARBOX MOUNTED EQUIPMENT.

MODEL	FJ44-1A	FJ44-1AP
Lubrication Pump	Standard equipment	- -
Fuel Control	Standard equipment (HMU)	Standard Equipment (FDU)
Fuel Pump	Standard Equipment	Integral with FDU
Permanent Magnet Alternator (PMA)	-	Integral with FDU

MODEL	FJ44-2A	FJ44-2C
Lubrication Pump	Standard equipment	- -
Fuel Control	Standard equipment (HMU)	Standard Equipment (IFCU)
Fuel Pump	Standard Equipment	Integral with IFCU
Permanent Magnet Alternator (PMA)	-	-

MODEL	FJ44-3A	FJ44-3A-24	FJ44-3AP	FJ44-4A
Lubrication Pump	Standard equipment	- -	- -	- -
Fuel Control	Standard Equipment (FDU)	- -	- -	- -
Fuel Pump	Integral with FDU	- -	- -	- -
Permanent Magnet Alternator (PMA)	Integral with FDU	- -	- -	- -

AIRFRAME MOUNTED EQUIPMENT.

MODEL	FJ44-1A	FJ44-1AP
TT2 Sensor	-	-
TT2/PT2 Sensor	-	Standard Equipment
ECU	-	-
FADEC	-	Standard Equipment

MODEL	FJ44-2A	FJ44-2C
TT2 Sensor	Standard Equipment	-
TT2/PT2 Sensor	-	-
ECU	Standard Equipment	-
FADEC	-	-

MODEL	FJ44-3A	FJ44-3A-24	FJ44-3AP	FJ44-4A
TT2 Sensor	-	-	Standard Equipment	- -
PT2 Sensor	-	-	Standard Equipment	- -
TT2/PT2 Sensor	Standard Equipment	- -	-	-
ECU	-	-	-	-
FADEC	Standard Equipment	- -	- -	- -

NOTE 9. MOTIVE FLOW.

Fuel from the motive flow port on the fuel control unit may be extracted to drive jet or turbine pumps in the airplane fuel system. See Installation Instructions identified in Note 18.

NOTE 10. BLEED EXTRACTION.

HIGH PRESSURE BLEED. Flow rates expressed as percent are based on engine core airflow rate. See Installation Instructions identified in Note 18 for bleed extraction limits during operation with One Engine Inoperative (OEI).

MODEL	FJ44-1A	FJ44-1AP
Maximum, Both Ports	13.0%	37.5 lb./min. or 12.0% whichever is less
Maximum, One Port	6.5%	37.5 lb./min or 6.0%. whichever is less
Minimum	0%	- -
Maximum, Starting	0.222 square inch sharp edge orifice, equivalent flow	- -

MODEL	FJ44-2A	FJ44-2C
Maximum, Both Ports	45 lb./min. or 12.0% whichever is less	- -
Maximum, One Port	45 lb./min or 6.0%. whichever is less	- -
Minimum	0%	- -
Maximum, Starting	0.222 square inch sharp edge orifice, equivalent flow	- -

MODEL	FJ44-3A	FJ44-3A-24	FJ44-3AP	FJ44-4A
Maximum, Both Ports	50 lb./min. or 20.0% whichever is less	- -	59 lb/min. or 20.0% whichever is less	47 lb./min.
Maximum, One Port	50 lb./min. or 10.0% whichever is less	- -	59 lb/min. or 10.0% whichever is less	47 lb./min.
Minimum (ground idle and above)	0.020 square inch sharp edge orifice, equivalent flow	0.053 square inch sharp edge orifice, equivalent flow	0%	0%
Maximum, Starting	0.222 square inch sharp edge orifice, equivalent flow	- -	- -	0.269 square inch sharp edge orifice, equivalent flow

IP COMPRESSOR BLEED. IP compressor bleed is optional for the engine models identified below. See Engine Assembly Part No. identified in Note 18 for specific engine configuration. Bleed flow is limited to the flow which can be extracted from the single bleed port when discharged to ambient static pressure. See Operating Instructions identified in Note 18 to determine effect of bleed on engine performance.

- FJ44-2A
- FJ44-2C

FAN BLEED. Fan bleed is optional for the engine models identified below. See Engine Assembly Part No. identified in Note 18 for specific engine configuration. Bleed flow is limited to the flow which can be extracted from one bleed port when discharged to ambient static pressure. See Operating Instructions identified in Note 18 to determine effect of bleed on engine performance.

- FJ44-1AP
- FJ44-2A
- FJ44-2C
- FJ44-3A
- FJ44-3A-24
- FJ44-3AP
- FJ44-4A

NOTE 11. LIMITED USE FUEL OPERATION.

ASTM D910, Grade 100LL is approved for use on certain engine models. Refer to the Operating Instructions identified in Note 18 for limits on duration, fuel temperature and fuel pressure.

NOTE 12. FUEL ADDITIVES.

Icing Inhibitor. The use of icing inhibitor is required for the FJ44-1A and FJ44-2A engines. The use of icing inhibitors is optional for the FJ44-1AP, FJ44-2C, FJ44-3A,FJ44-3A-24, FJ44-3AP and FJ44-4A engines. See Operating Instructions identified in Note 18 for the approved icing inhibitors and allowable concentration levels.

Anti-static. See Operating Instructions identified in Note 18 for the approved anti-static additives and allowable concentration levels.

Biocide. See Operating Instructions identified in Note 18 for the approved biocide additives and allowable concentration levels.

NOTE 13. ADDITIONAL AIRFRAME CONSIDERATIONS: ANTI-ICING, DE-ICING EQUIPMENT REQUIREMENTS.

The FJ44-1A and FJ44-2C engines meet the 14 CFR Section 33.68 induction system icing requirements without use of an active anti-icing system.

The FJ44-2A, FJ44-3AP and FJ44-4A engines meets the 14 CFR Section 33.68 induction system icing requirements and requires an aircraft supplied source of power to anti-ice the TT2 sensor. Aircraft power requirements are provided in the Installation Instructions identified in Note 18.

The FAA has approved a finding of equivalent level of safety (ELOS) for the FJ44-1AP, FJ44-3A and FJ44-3A-24 engines related to compliance of the engine with the requirements of 14 CFR Section 33.28(b) and 33.68 as related to the TT2/PT2 sensor power supplied by the aircraft. The ELOS identifies specific requirements for aircraft supplied power to the TT2/PT2 heater and/or air data requirements that must be met by the airframe manufacturer. The specific aircraft requirements related to this ELOS are identified in the Engine Installation Instructions listed in Note 18.

NOTE 14. POWER RATINGS FOR HIGH CUSTOMER BLEED AIR USAGE.

Use of significant amounts of high pressure bleed air, such as for aircraft anti-icing, requires reduced thrust settings. See Operating Instructions identified in Note 18.

NOTE 15. ROTOR DISK INTEGRITY AND BLADE CONTAINMENT.

All engine models meet the 14 CFR Part 33 requirements for rotor disk integrity and blade containment. Certain rotor parts are life limited. These limits and the associated flight profile are listed in the Maintenance Manual identified in Note 18.

NOTE 16. TIME LIMTED DISPATCH.

Dispatch of an aircraft employing the FJ44-1AP, FJ44-3A, FJ44-3A-24, FJ44-3AP and FJ44-4A engine is allowed with certain engine control system faults present subject to the limitations identified in the Airworthiness Limitations Section (ALS) of the appropriate Maintenance Manual listed in Note 18.

NOTE 17. ENGINE MOUNT SYSTEM.

See Installation Instructions identified in Note 18 for engine mount dimensions and load limits.

NOTE 18. APPLICABLE DOCUMENTS.

Model	Engine Assembly Part Number	Installation Instructions	Operating Instructions	Line Maintenance Manual	Hot Section Maintenance Manual	Engine Manual
FJ44-1A	45700-104	50772	50771	50773	110506	50774
FJ44-1AP	72100-200	75274	75274	73568	-	73569
FJ44-2A	56000	56208	56209	56210	110507	59870
	56000-103	56208	56209	56210	110507	59870
	56000-104	56208	56209	56210	110507	59870
FJ44-2C	60500	63784	63785	64135	110508	74118
	60500-103	63784	63785	64135	110508	74118
FJ44-3A	67000-200	68583	68584	68585	-	68659
	67000-202	68583-202	68584-202	68585-202	-	68659
FJ44-3A-24	75000-200	68583	68584	68585	-	68659
FJ44-3AP	111000	111366	- -	111339	-	111341
	111000-202	111366-202	- -	111339-202	-	111341
FJ44-4A	73200-200	110675	- -	110990	-	110992

- END -