



Head to Head Caravan Comparison - Cargo Pod Installed

Honeywell TPE331-12JR vs Pratt & Whitney PT6A-42A

Performance	Pratt & Whitney PT6A-42A	SuperVan 900 Honeywell TPE331-12JR	% Diff	ADVANTAGE		Comments
				-42A	-12JR	
Takeoff Distance, Flaps 30, 20C day, S/L GND roll	1155 ft ⁽¹⁾	854 ft ⁽³⁾	26%		✓	More horsepower for takeoff shows in the takeoff distance
Takeoff Distance, Flaps 30, 20C day, S/L 50' obstacle	2035 ft ⁽¹⁾	1597 ft ⁽³⁾	22%		✓	
Takeoff Fuel Flow (-42 @ 850 shp and -12JR @ 900 shp)	82 gal/hr	77 gal/hr	6%		✓	Lower fuel flow with more power
Max Rate of Climb, Flaps UP, 20C day	1195 fpm ⁽¹⁾	1426 fpm ⁽³⁾	19%		✓	More horsepower for climb 900 vs. 850
Cruise- 2,000 feet						
Maximum Speed (2,000 ft, 20C, 175 KIAS)	181 ktas ⁽¹⁾	181 ktas ⁽³⁾	Vmo limited		✓	Gearbox allows more power at altitude for higher max cruise speed.
Cruise Fuel Flow (2,000 ft, 20C)	79.9 gph ⁽¹⁾	68.7 gph ⁽³⁾	14%		✓	11.2 gal/hr savings at same cruise speed
Fuel Cost Savings (@ \$5.00 USD/gal)					✓	\$56/hour fuel savings during low altitude flight
Cruise- 10,000 feet						
Maximum Speed (10,000 ft, 0C, same cruise speed)	189 ktas ⁽¹⁾	189 ktas ⁽³⁾	Same cruise		✓	Gearbox allows more power at altitude for higher max cruise speed.
Cruise Fuel Flow (10,000 ft, 0C)	67.2 gph ⁽¹⁾	59.7 gph ⁽³⁾	11%		✓	7.5 gal/hr savings at same cruise speed
Fuel Cost Savings (@ \$5.00 USD/gal)					✓	\$38/hour fuel savings during high altitude flight
Other Performance Categories						
Maximum Cruise Speed (10,000 ft, 0C)	189 ktas ⁽¹⁾	198 ktas ⁽³⁾	5%		✓	More power equals faster cruise speeds
Power response from idle to max power	3-5 sec	1.5 sec	75%		✓	Fastest acceleration for tight areas
Power response idle to reverse on landing	2 sec	0.5 sec	75%		✓	Fastest propeller response for short runways
Thermodynamic Horsepower	1132 eshp ⁽²⁾	1200 eshp ⁽⁴⁾	6%		✓	Honeywell has more thermodynamic performance
Gearbox Rating for Takeoff	850 shp ⁽²⁾	1000 shp ⁽⁴⁾	18%		✓	-12JR growth for future and gearbox power to spare
Gearbox Rating for Continuous Ops	850 shp ⁽²⁾	970 shp ⁽⁴⁾	14%		✓	
Propeller RPM	2000 rpm ⁽²⁾	1591 rpm ⁽⁴⁾	20%		✓	-12JR Slower turning- less noise with bigger propeller
Propeller Idle RPM	1120 rpm min	1082 rpm	4%		✓	Less tip speed for less propeller erosion when sitting static.
Specific Fuel Consumption (lbs/eshp/hr)	.601 ⁽²⁾	.523 ⁽⁴⁾	13%		✓	More efficient design
FAA Certified Noise Level	83 dB(A)	76 dB(A)	9%		✓	Honeywell is the only one to meet all European noise levels

(1) PT6A-42A Caravan Flight Manual

(2) Pratt and Whitney PT6A-42A Brochure

(3) Supervan 900 Flight Manual

(4) Honeywell TPE331-12JR Engine Brochure



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Base TBO (commercial ops- no extensions)	3600	7000	100%		✓	-12JR basic TBO almost double the -42A which equals substantially lower per hour operating cost
Average Hot Section	\$90,000	\$75,000	17%		✓	Includes parts and labor on an average hot section
Average Overhaul Cost	\$300,000+	\$200,000	58%		✓	The Honeywell cost is a good average, while the PT6 cost is where a lot of overhauls start.
Cost per hour (based on TBO)	\$108.33	\$39.28	70%		✓	Extra money in your pocket
Additional Features	Pratt & Whitney PT6A-42A	SuperVan 900 Honeywell TPE331-12JR	ADVANTAGE			Comments
			-42A	-12JR		
Auto-Start System	PARTIAL	FULL			✓	One button starting makes pilot work load less
Torque and Temperature Limiting System	NO	YES			✓	Prevents pilot from over-torque or over-temp
Compressor wash required	Yes	No			✓	Centrifugal compressors, as found in the 331-12JR, do not require regular washes to retain efficiency.
Gearbox Materials	Magnesium	Aluminum			✓	Major gearbox construction out of aluminum for better corrosion resistance in corrosive environments.
Pilot Training	NO	YES			✓	Provided free of charge by Honeywell.
Starter Panel Modification	NO	YES			✓	Due to auto start feature on SuperVan 900 which is standard
Throttle Quadrant Modification	NO	YES			✓	Emergency Lever not required with TPE-331-12JR
Electrical Junctions Box Redesign	NO	YES			✓	Easier access to ACU, GCU, FCM, and all circuitry.
Prop Diameter	100"	110"			✓	Engines actually sits slightly higher than -114A resulting in more clearance (not less!) between tip and ground. Less tip vortex = less prop FOD. Larger Prop = More thrust
Prop Rotation	Right	Left			✓	You either add left rudder or right rudder – your choice.
Noise Level - Ground	Moderate	Exreme*			✓	High noise level on ground within 20 degrees either side of inlet. Dissipates quickly as angle from inlet increases.
Noise Level – climb out & cruise – FAA Certified	83 dB(A)	76 dB(A)			✓	-12JR is EASA certified at 76DB. Less noise complaints filed by those living close to residential communities.
Batteries Required	1 - existing	2 – NiCad			✓	Over 43 aircraft (our Otter conversion) operating in Canada and Alaska with same battery/engine configuration with zero “cold weather” complaints. They would probably know it to.
Engine Trend Monitoring	YES	YES			✓	Available through Shadin

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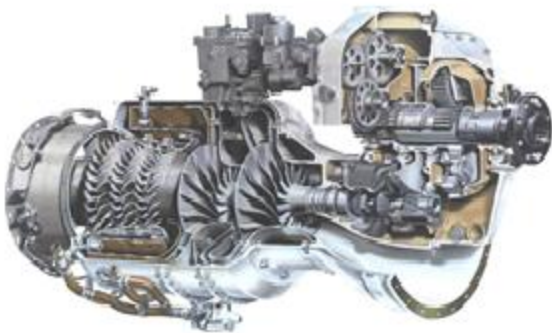


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Installation information	Pratt & Whitney PT6A-42A	SuperVan 900 Honeywell TPE331-12JR	ADVANTAGE		Comments
			-42A	-12JR	
Domestic Installation Facilities	7	7	✓	✓	Complete list available at www.texasturbines.com
International Installation Facilities	6	8		✓	
Lead-time	30 days	30 days	✓	✓	As of July 2012
Installation time (without paint)	3 weeks	4 weeks	✓		Less features installed on -42A at time of conversion.

Warranty information	Pratt & Whitney PT6A-42A	SuperVan 900 Honeywell TPE331-12JR	ADVANTAGE		Comments
			-42A	-12JR	
Engine Warranty Period- Years	1 year	5 years		✓	The -12JR warranty is superior because no operator is going to fly 2500 hours in one year and the -42A warranty ends after one year.
Engine Warranty Period- Hours	No limit	2500 hours	✓		
Kit Warranty Period	Unknown	2 yrs/1000 hrs		✓	



Shutdown Rates (IFSD) on the TPE-331-12 engine as of the May 2012 report the IFSD rates are:

- ✓ -12 fleet (some 900 engines tracked, and 12.8 million hours): 0.0094 per 1000 hours (for a MTBIFSD of 106,421 hrs)
- ✓ -12JR fleet (some 70 engines tracked and 130K hrs): 0.00